

Expectation and satisfaction of HIV/AIDS patients toward the pharmaceutical care provided at Gondar University Referral Hospital, Northwestern Ethiopia: a cross-sectional study

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Purpose: Measurements of patient satisfaction help to assess the performance of health service provision and predict treatment adherence and outcomes. This study aimed to assess human HIV/AIDS patients' expectation of and satisfaction with the pharmaceutical service delivered at Gondar University Referral Hospital, Ethiopia.

Patients and methods: An institution-based cross-sectional study was performed from May 11 to 25, 2015. A total of 291 patients living with HIV/AIDS were included using a simple random sampling method. Data were collected using structured questionnaires measuring expectation and satisfaction of respondents using a Likert scale of 1–5 through face-to-face interviews. The data collected were entered into and analyzed using Statistical Packages for Social Sciences. Comparison was made between those respondents who lived in and outside the town.

Results: The overall mean expectation and satisfaction of respondents toward pharmacy setting and services were 3.62 and 3.13, respectively. More than half (56.1%) of the participants were dissatisfied with the comfort and convenience of waiting area and private counseling room. Similarly, 69.3% of the respondents claimed that pharmacy professionals did not give information about side effects and drug–drug and drug–food interactions of antiretroviral medications. There was a statistically significant difference between respondents who live in and outside Gondar town in overall expectation ($t=3.415$, $P=0.001$) with the pharmacy setting and services.

Conclusion: In this study, the overall satisfaction level of respondents with pharmaceutical service (pharmacy setting and services) provided at Gondar University Referral Hospital was found to be low, while the overall respondents' expectation from the pharmaceutical services were exceedingly high. The hospital should implement good dispensing practice systems in relation to the services and continuing professional development to professionals in order to improve the satisfaction of patients.

Keywords: pharmaceutical care, Ethiopia, HIV/AIDS, antiretroviral therapy

Introduction

HIV infection affects residents of all countries of the world, but the greater majority of affected individuals reside in the developing countries.¹ HIV has globally claimed >20 million lives, and currently >34 million people are living with the infection. Even though HIV/acquired immunodeficiency syndrome (AIDS) remains a worldwide pandemic, Ethiopia is one of the highly affected Sub-Saharan countries.^{2,3} In 2014, the national HIV/AIDS prevalence in Ethiopia was 1.14%, and the estimated

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number of people living with HIV was 769,600, with 15,700 new HIV infections and 35,600 AIDS-related mortalities.⁴ After the introduction of antiretroviral therapy (ART), the nature of the HIV/AIDS pandemic has changed from a deadly disease to a chronic manageable health condition, and there are reports coming out showing signs of stabilization of the disease with a decrease in morbidity and mortality. Safe and effective ART helps to improve the quality of life, reduce HIV-related morbidity, increase survival, decrease HIV-related deaths, prevent emergence of drug resistance, and decrease the number of orphanages caused by HIV/AIDS and the incidence of the disease.⁵

Quality of service is a fundamental concept in bringing about the ideal health outcome in response to ART through a sustainable, safe, and effective service.⁶ Evaluation of patient satisfaction, with respect to their expectation, with the pharmaceutical care provided is an important part of the health services and will help identify specific areas of pharmaceutical care that needs improvement. Many studies have supported the notion that patients' expectation from the pharmaceutical care varies significantly by many factors, including the type of pharmacy practice site⁷ and age.⁸ Many patients also expect the pharmacist to communicate and share responsibility with the physician for providing a better pharmaceutical care.⁹ Satisfaction can be defined as the degree to which desired goals have been achieved.^{10,11} Patient satisfaction has been considered as an important part when evaluating the health outcomes and quality of care.^{12,13} Furthermore, a satisfied patient is more likely to develop a longer lasting rapport with their health care provider, leading to better compliance and continuity of care.^{14,15} An individual who fails to take the ART due to dissatisfaction will end up in developing resistant strains to the drugs in a matter of few minutes.^{16–19} Measurements of patient satisfaction could also help to assess the performance of health service provision and predict treatment adherence and outcomes.²⁰ Besides, it will enhance appropriate communication and build stronger health worker–patient relationship based on identified gaps and barriers to effective performance of HIV/AIDS prevention and control programs from the patients' perspective. Although several studies have reported challenges with HIV/AIDS prevention and control programs,^{21–23} data regarding the magnitude and patterns of patients' expectation from and satisfaction with the pharmaceutical services are still scarce in Ethiopia. This study aimed at assessing HIV/AIDS patients' expectation from and satisfaction with the pharmaceutical service delivered at Gondar University Referral Hospital (GURH).

Patients and methods

Study design and setting

An institution-based cross-sectional study was employed to assess the level of expectations from and satisfaction of HIV/AIDS patients with the pharmaceutical services provided by GURH-ART pharmacy. GURH is one of the oldest teaching hospitals in the country with >400 beds and a range of specialties, including pediatrics, surgery, gynecology, psychiatry, dermatology, dentistry, ophthalmology, and pharmacy (inpatient, outpatient, ART, and emergency). The study was conducted from May 11 to 25, 2015.

Sample size determination and sampling procedure

The sample size was determined by using a single mean formula.²⁴

$$\begin{aligned} n &= Z^2 \times p(1-p)/d^2 \\ &= (1.96)^2 \times 0.745(1-0.745)/(0.05)^2 \\ &= 291.92 \approx 292 \end{aligned} \quad (1)$$

where n is the required number of sample size, Z is the standard normal distribution designed 95% confidence, usually $Z=1.96$, p is the percentage of patient satisfaction in pharmacy service from previous study in Ethiopia, which is 0.745, and d is the degree of accuracy/allowable error, usually 5%.

By expecting 74.5% of overall satisfaction at 95% confidence interval considering previous studies,^{6,25,26} 292 patients were interviewed. For obtaining statistically significant representative of the population who has been visiting the pharmacy, simple random sampling was used. The average daily patient flow to the pharmacy was estimated to be ~80, and the number of patients to be interviewed during the 15 days of data collection was 20. By dividing the daily patient flow to the pharmacy with the number of patients to be surveyed per day, every fourth patient was approached to be interviewed and participate into the study. The first patient was selected daily through simple random sampling from one up to four and continuing with every fourth number until the daily sample limit was reached.

All adult patients (18 years and older) living with HIV/AIDS who were willing to give consent, able to listen oral Amharic language, and completed the interview process were included, while patients with uncontrolled psychiatric disease that leads to inability to complete the questionnaire and patients seeking emergency medical attention were excluded from the study.

Data collection and management

The data collection tool used in the study was adopted and modified from previous studies.^{27,28} The questionnaire has three major parts. Part one assessed the sociodemographic characteristics of respondents. Part two included queries about expectations and satisfaction with the pharmaceutical services provided. It was further divided into two parts focusing on the sittings and services of the pharmacy. The satisfaction section contained 23 5-point Likert scale items; on the scale, “1” stood for rating of the item as “poor”, while “2”, “3”, “4”, and “5” stood for “fair”, “good”, “very good”, and “excellent”, respectively. Similarly, the section that focused on expectations of patients contained 15 5-point Likert scale items, where “1” stood for rating of the item as “strongly disagree”, while “2”, “3”, “4”, and “5” stood for “disagree”, “neutral”, “agree”, and “strongly agree”, respectively. Based on this, the mean levels of expectation and satisfaction of patients were calculated by averaging their ratings for the 15 and 23 parameters of measuring expectations and satisfaction, respectively. The resulting mean was interpreted by considering the closest Likert scale to it. The data were collected by four principal investigators through interviewer-administered questionnaires and face-to-face interviews by explaining the questions for those unable to read and write. The questionnaire, originally written in English, was translated to local language (Amharic) and back to English in order to ensure that the translated version gives the proper meaning. The content validity of the tool (questionnaire) was confirmed by a team of experts including a senior physician, epidemiologist, and clinical pharmacist. The questionnaire was pretested on 15 HIV patients prior to the gross data collection, which were excluded from final study, and relevant modifications were instituted. In the pretest, there was an item measuring patient’s satisfaction on electronic medication dispensing service availability. Since our health care system is not well developed and patients with ARV should have a counseling service before they refill their medications to assess their adherence and monitor side effects, we omitted this question from the final data collection tool.

Statistical analysis

The final data collection tool was ensured for completeness, and the responses were entered into and analyzed by the Statistical Package for the Social Sciences software Version 21.0 for Windows. In the study, sociodemographic characteristics, satisfaction, and expectation level of patients were described using frequencies, percentage, mean, and SD. Student’s *t*-test and one-way analysis of

variance (ANOVA) were used to evaluate the difference in expectation and satisfaction level of patients. *P*-value <0.05 and 95% confidence interval were used as cutoff points for determining the statistical significance of associations among different variables.

Ethical considerations

This study was approved by the Ethical Committee of the University of Gondar. Written informed consent from the respondents was also obtained before conducting this study. Respondents’ information obtained was kept confidential. Respondents were also told that participation was voluntary.

Results

Sociodemographic characteristics of respondents

Of the 292 patients who were interviewed, 287 completed the questionnaire, giving a response rate of 98.3%. The reasons for nonparticipation were fear of stigmatization as some of the participants assume that participating in this study may endanger them to be stigmatized by the community since most of the participants are not willing to share their ARV status to other persons. The mean ages of respondents were 34 ± 12 years with majority of them between 18 years and 30 years of age (52.3%). More than half (58.9%) of respondents were females and live in urban area (66.6%). Nearly half (49.5%) of the respondents were married, and majority (77.4%) were Orthodox Christians. Approximately 47% of the respondents reported an average monthly income of <500 Ethiopian birr. Majorities of the respondents (66.6%) visit the ART pharmacy for self-care, while 33.4% of respondents visit for self-care as well as for their family and relatives. Other sociodemographic characteristics of respondents are depicted in Table 1.

Patients’ satisfaction toward the pharmaceutical service

The respondents had relatively low satisfaction on comfort and convenience of waiting area, private counseling room, and waiting time until they get the service with a mean satisfaction of 2.86, 2.88, and 2.99, respectively. But they were relatively satisfied on convenience of the pharmacy location with a mean satisfaction of 3.47 (Table 2). Among the parameters the respondents were rated, the lowest satisfaction level was observed in question related to taking important drug and health-related history from the patients with the mean satisfaction rate of 2.46. Most respondents also stated that pharmacy professionals did not tell about

Table 1 Distribution of respondents by sociodemographic characteristics, GURH, 2015

| Variables | Frequency (%) |
|------------------------------------|---------------|
| Age (mean \pm SD), years | 34 \pm 12 |
| Age group, years | |
| 18–30 | 150 (52.3) |
| 31–40 | 61 (21.3) |
| 41–50 | 40 (13.9) |
| 51–60 | 24 (8.4) |
| >60 | 12 (4.2) |
| Sex | |
| Female | 169 (58.9) |
| Male | 118 (41.1) |
| Area of residence | |
| Urban | 191 (66.6) |
| Rural | 96 (33.4) |
| Marital status | |
| Married | 142 (49.5) |
| Single | 120 (41.8) |
| Separated | 15 (5.2) |
| Widowed | 10 (3.5) |
| Educational status | |
| Illiterate | 54 (18.8) |
| Primary school (Grades 1–8) | 67 (23.3) |
| High school (Grades 9–12) | 71 (24.7) |
| Diploma | 36 (12.5) |
| Degree | 51 (17.8) |
| Postgraduate | 8 (2.8) |
| Religion | |
| Orthodox | 222 (77.4) |
| Muslim | 48 (16.7) |
| Protestant | 13 (4.5) |
| Catholic | 19 (0.3) |
| Other ^a | 3 (1) |
| Ethnicity | |
| Amhara | 257 (89.55) |
| Oromo | 8 (2.8) |
| Tigray | 19 (6.6) |
| Other ^b | 3 (1) |
| Occupation | |
| Student | 71 (24.7) |
| Unemployed | 13 (4.5) |
| Government employed | 68 (23.7) |
| Farmer | 45 (15.7) |
| Housewife | 43 (15.0) |
| Merchant | 24 (8.4) |
| Other ^c | 23 (8.0) |
| Monthly income in ETB | |
| <500 | 135 (47) |
| 500–999 | 37 (12.9) |
| 1,000–1,499 | 35 (12.2) |
| 1,500–2,499 | 53 (18.5) |
| >2,500 | 27 (9.4) |
| Frequency of visit | |
| First time | 81 (28.2) |
| Repeat | 206 (71.8) |
| ART pharmacy service sought for | |
| Self | 191 (66.6) |
| Self and others (family/relatives) | 96 (33.4) |

Notes: ^aJehovah's witness. ^bAgew, Kimant, and Debub (Wolayita, Sidama). ^cPrivate workers and labor workers.

Abbreviations: GURH, Gondar University Referral Hospital; ETB, Ethiopian birr; ART, antiretroviral therapy.

the side effects of ART medications, how to mitigate those side effects, and about drug–drug and drug–food interactions with a mean satisfaction level of 2.79, 2.53, and 2.63, respectively, but they were satisfied with the use of language for communication by the pharmacists, which is easy and understandable, with a mean satisfaction level of 3.90 (Table 3).

The overall satisfaction was described by parameters for pharmacy setting and services. The overall levels of satisfaction in pharmaceutical service (pharmacy setting and services) among respondents were 3.13. Based on the Student's *t*-test performed on sociodemographic variables, statistically significant satisfaction difference with respect to the pharmacy setting was found in areas of residence. One-way ANOVA test showed significant differences among respondents with different marital, occupational, and educational status as well as religion (Tables 4 and 5).

Patients' expectation from the pharmaceutical service

Among the parameters rated by the patients related to the pharmacy setting, majority of the participants expected convenient and comfortable waiting area (agree and strongly agree = 71.4%) and sufficient number of ART units (agree and strongly agree = 65.5%). A significant number of respondents (agree and strongly agree = 84.7%) expected comfortable and convenient private counseling room (Table 6). Most respondents (agree and strongly agree = 69.7%) expected pharmacy professionals to advise/counsel them in detail on how each of their medication(s) supposed to help, check their prescription for completeness, accuracy, and legality (agree and strongly agree = 75.9%), and advise them on their diseases and provide general tips on healthy life style (agree and strongly agree = 66.2%). Majority of the respondents expected the pharmacy for adequate supply of the ARV drug(s) (agree and strongly agree = 84.7%) and the pharmacy professionals to keep reasonable privacy during discussion of their conditions (agree and strongly agree = 84.7%) (Table 7). The overall mean expectation of the patients toward pharmacy setting and services was 3.62 on a 5-point Likert scale (Tables 6 and 7). There was a statistically significant difference ($t=3.415$, $P=0.001$) in the overall expectation toward setting and services of ART pharmacy between respondents whose residence was in Gondar town and out of Gondar town. The mean expectation of the respondents who live outside of Gondar town (3.38) was lower than that of the respondents who live in Gondar town (3.73) (Table 8).

Table 2 Percentage distribution of patients' satisfaction toward pharmacy setting, GURH, 2015

| Variables | Total (%) | Poor to fair, n (%) | Good, n (%) | Very good and excellent, n (%) | Mean |
|--|-----------|---------------------|-------------|--------------------------------|------|
| The convenience of ART pharmacy location | 287 (100) | 88 (30.66) | 172 (59.93) | 27 (9.4) | 3.47 |
| Comfort and convenience of waiting area | 287 (100) | 161 (56.1) | 100 (34.84) | 26 (9.06) | 2.86 |
| The cleanliness and tidiness of ART pharmacy | 287 (100) | 103 (35.89) | 136 (47.39) | 48 (16.72) | 3.41 |
| Provision of clear and organized service | 287 (100) | 141 (49.1) | 108 (37.6) | 38 (13.2) | 3.15 |
| Comfort and convenience of private counseling room | 287 (100) | 157 (54.7) | 102 (35.5) | 28 (9.8) | 2.88 |
| Waiting time until getting the service | 287 (100) | 17 (5.92) | 111 (38.68) | 159 (55.40) | 3.81 |

Abbreviations: GURH, Gondar University Referral Hospital; ART, antiretroviral therapy.

Discussion

Assessing the level of expectations and satisfaction of patients with their health care services provided has become important worldwide.²⁹ Surveys assessing level of patients' expectations and satisfaction are essential in obtaining an inclusive understanding of the patients' need and their opinion of the service received. This will help to fill the gap between what the patients need and what they really get.³⁰

Among the 287 participants, the overall mean satisfaction toward pharmacy setting and pharmaceutical services was found to be average (3.13), and the overall satisfaction

of the respondents was 54.7%. Similar finding was reported from the study done on quality assessment of ART service in private hospitals in Addis Ababa, by recruiting 183 ART clients from six private hospitals (54.2%).⁶ Nearly half of the respondents in this study were satisfied by the convenience and comfort of ART pharmacy waiting area. This was very much lower than the study reported in South Africa and Addis Ababa specialist ART units, which were 86% and 84.6% for the same question, respectively.^{31,32} The reason attributed for this was the lack of organized ART care structures in the hospital. Together with this, majority of the respondents in

Table 3 Patients' satisfaction toward pharmacy services, GURH, 2015

| Variables | Total (%) | Poor to fair, n (%) | Good, n (%) | Very good and excellent, n (%) | Mean |
|--|-----------|---------------------|-------------|--------------------------------|------|
| Taking time to listen to what you want | 287 (100) | 137 (47.7) | 74 (25.8) | 76 (26.5) | 3.21 |
| Taking important drug and health-related history from the patient | 287 (100) | 207 (72.1) | 71 (24.7) | 9 (3.2) | 2.46 |
| Briefly explaining how to take the ARV medications | 287 (100) | 175 (61) | 95 (33.1) | 17 (5.9) | 2.80 |
| Providing adequate information about ARV medication precautions and side effects | 287 (100) | 178 (62) | 90 (31.3) | 19 (6.7) | 2.79 |
| Providing adequate information about ARV medication drug-drug and drug-food interactions | 287 (100) | 188 (65.5) | 80 (27.8) | 19 (6.7) | 2.63 |
| Treating the patient with dignity and respect | 287 (100) | 97 (33.8) | 156 (54.4) | 34 (11.8) | 3.43 |
| Availability of the pharmacy professionals during the time of visit | 287 (100) | 75 (26.1) | 164 (57.1) | 48 (16.8) | 3.65 |
| Provision of ARV drug information in written form whenever needed | 287 (100) | 208 (72.5) | 67 (23.3) | 12 (4.2) | 2.54 |
| Keeping privacy during counseling | 287 (100) | 129 (45) | 120 (41.8) | 38 (13.2) | 3.38 |
| Providing service equally to all patients | 287 (100) | 69 (24) | 165 (57.5) | 53 (18.5) | 3.70 |
| Providing information on how to solve ARV medication-related side effects | 287 (100) | 199 (69.3) | 69 (24) | 19 (6.7) | 2.53 |
| Answering queries you may have | 287 (100) | 127 (44.3) | 124 (43.2) | 36 (12.5) | 3.37 |
| Use of language by the pharmacist is easy and understandable | 287 (100) | 53 (18.5) | 166 (57.8) | 68 (23.7) | 3.90 |
| Label my medicines in readable and understandable instruction | 287 (100) | 144 (50.2) | 112 (39) | 31 (10.8) | 3.10 |
| Giving medicines with appropriate packaging | 287 (100) | 156 (54.3) | 103 (35.9) | 28 (9.8) | 3.00 |
| Telling information about proper storage of medications | 287 (100) | 166 (57.8) | 91 (31.7) | 30 (10.5) | 2.84 |
| Availability of the required medicines | 287 (100) | 17 (5.9) | 82 (28.6) | 188 (65.5) | 3.94 |

Abbreviations: GURH, Gondar University Referral Hospital; ARV, antiretroviral.

Table 4 Test of statistical significance (Student's *t*-test) of variation in the mean satisfaction level of patients by sociodemographic characteristics, GURH, 2015

| Variables | Satisfaction with setting | | Satisfaction with services | | Overall satisfaction | |
|---|---------------------------|---------|----------------------------|---------|----------------------|---------|
| | Mean (SD) | P-value | Mean (SD) | P-value | Mean (SD) | P-value |
| Sex | | 0.584 | | 0.179 | | 0.274 |
| Female | 3.16 (0.863) | | 3.04 (0.586) | | 3.10 (0.568) | |
| Male | 3.22 (0.790) | | 3.14 (0.699) | | 3.18 (0.639) | |
| Residence | | 0.011* | | 0.673 | | 0.125 |
| Gondar town | 3.09 (0.860) | | 3.09 (0.634) | | 3.09 (0.622) | |
| Out of Gondar town | 3.36 (0.749) | | 3.06 (0.642) | | 3.21 (0.542) | |
| Frequency of visit | | 0.544 | | 0.025* | | 0.443 |
| First time | 3.23 (0.878) | | 2.95 (0.610) | | 3.09 (0.609) | |
| Repeat | 3.16 (0.815) | | 3.13 (0.639) | | 3.15 (0.595) | |
| Service sought for | | 0.490 | | 0.520 | | 0.890 |
| Self | 3.16 (0.861) | | 3.09 (0.678) | | 3.13 (0.629) | |
| Both (self and others [family/relatives]) | 3.23 (0.775) | | 3.05 (0.544) | | 3.14 (0.536) | |

Note: *P-value <0.05.

Abbreviation: GURH, Gondar University Referral Hospital.

this study were dissatisfied by the comfort and convenience of private counseling area. This might have resulted from the absence of separate private counseling area/room in the pharmacy. However, in the study conducted by Selente et al,³¹ most of the study participants were satisfied by the counseling room and the ART service provided by the hospitals, since most of the ART clinics and pharmacies are supported by nongovernmental organizations such as the US President's Emergency Plan For AIDS Relief. In contrast, our findings were higher than a study done in Kenya where two-thirds of the clients were not satisfied by the ART service provided; these might be due to insufficient infrastructure available to counseling service. Almost all (95.1%) the HIV/AIDS patients were satisfied with waiting time to get service. This could be explained by the fact that pharmacy professionals do not provide detailed information about ARV drugs, as supported by other findings in this study (advice about ART medications precautions and side effects [mean =2.79], drug–food interactions [mean =2.63], and proper storage condition [mean =2.84]). This finding was in agreement with the study carried out in Addis Ababa specialist ART units (93.33%).³² Compared to a study conducted in Kenya, this finding was much lower.³³ A large proportion of the participants reported that they were, in general, satisfied regarding treating the patient with dignity and respect (66.2%) and good communication (81.5%) with the attending pharmacy professionals. This finding was in agreement with a study conducted in South Africa on patient satisfaction at accredited ART sites (98%); they reported that health professionals were kind, polite, respectful, and attentive

during consultations.³¹ Similarly, a patient satisfaction survey conducted in Singapore, Tigray, and Jimma on clients' satisfaction with ART services showed that the courtesy and respect displayed by health professionals have a positive impact on patient satisfaction; in this regard, most of the questions on level of satisfaction regarding the skill, attitude, and interaction of ART staffs were answered positively.^{25,26,34} The result can be attributed to different reasons; the major reason could be due to the better attention given by Federal ministry of health and regional health bureau and existence of nongovernmental organizations specifically working on ART care such as Management Sciences for Health, Pharmaceuticals Fund and Supply Agency, and System for Improved Access to Pharmaceuticals and Services. Almost all (94.1%) the study participants were satisfied with the availability of required ART medications. This could be explained by having free supply of ARV drugs that will definitely take their level of satisfaction to higher level. Similar high levels of satisfactions from different aspects of ART pharmacy services were reported by studies in Nigeria and Addis Ababa.^{6,32,35} More than half of the respondents were dissatisfied by information about the storage of medicines and labeling instructions that were not provided to them. This might have resulted because of pharmacy professionals' unawareness in delivering such information with a thought that patients do know this information, or it might be related to the common dispensing malpractice.^{36,37} In one-way ANOVA test, statistically significant satisfaction differences were found among different educational levels, marital status, and religions of the participants. On post hoc

Table 5 Test of statistical significance (one-way ANOVA) of the variation in the mean satisfaction level of patients by sociodemographic characteristics, GURH, 2015

| Variables | Satisfaction with setting | | Satisfaction with services | | Overall satisfaction | |
|-----------------------------|---------------------------|---------|----------------------------|---------|----------------------|---------|
| | Mean (SD) | P-value | Mean (SD) | P-value | Mean (SD) | P-value |
| Age (years) | | 0.723 | | 0.386 | | 0.476 |
| 18–30 | 3.12 (0.889) | | 3.03 (0.613) | | 3.08 (0.636) | |
| 31–40 | 3.20 (0.835) | | 3.15 (0.635) | | 3.18 (0.577) | |
| 41–50 | 3.29 (0.706) | | 3.05 (0.653) | | 3.17 (0.530) | |
| 51–60 | 3.27 (0.663) | | 3.11 (0.637) | | 3.19 (0.522) | |
| >60 | 3.33 (0.848) | | 3.36 (0.842) | | 3.35 (0.585) | |
| Marital status | | 0.055 | | 0.223 | | 0.047* |
| Married | 3.29 (0.777) | | 3.15 (0.702) | | 3.22 (0.580) | |
| Unmarried | 3.04 (0.901) | | 2.99 (0.533) | | 3.02 (0.617) | |
| Divorced | 3.08 (0.730) | | 3.19 (0.612) | | 3.13 (0.530) | |
| Widowed | 3.50 (0.207) | | 3.01 (0.784) | | 3.26 (0.565) | |
| Education status | | 0.001* | | 0.180 | | 0.002* |
| Illiterate | 3.35 (0.718) | | 3.04 (0.670) | | 3.19 (0.556) | |
| Primary school (Grades 1–8) | 3.37 (0.738) | | 3.22 (0.622) | | 3.29 (0.515) | |
| High school (Grades 9–12) | 3.23 (0.775) | | 3.15 (0.616) | | 3.19 (0.587) | |
| College/diploma | 3.04 (0.807) | | 2.97 (0.686) | | 3.00 (0.627) | |
| Degree holders | 2.76 (0.994) | | 2.96 (0.606) | | 2.86 (0.659) | |
| Postgraduates | 3.41 (0.972) | | 2.95 (0.527) | | 3.17 (0.568) | |
| Religion | | 0.002* | | 0.025* | | 0.004* |
| Orthodox | 3.25 (0.829) | | 3.05 (0.644) | | 3.15 (0.615) | |
| Muslim | 3.11 (0.699) | | 3.27 (0.616) | | 3.19 (0.440) | |
| Protestant | 2.62 (0.998) | | 3.06 (0.392) | | 2.84 (0.601) | |
| Other | 1.833 (0.144) | | 2.23 (0.144) | | 2.03 (0.000) | |
| Ethnicity | | 0.101 | | 0.132 | | 0.498 |
| Amhara | 3.20 (0.831) | | 3.07 (0.635) | | 3.14 (0.601) | |
| Oromo | 2.91 (0.915) | | 3.56 (0.542) | | 3.23 (0.618) | |
| Tigray | 2.89 (0.761) | | 3.02 (0.635) | | 2.96 (0.577) | |
| Other | 4 (0.750) | | 2.75 (0.661) | | 3.37 (0.451) | |
| Occupation | | 0.002* | | 0.221 | | 0.002* |
| Student | 2.87 (0.997) | | 2.96 (0.547) | | 2.92 (0.645) | |
| Laborer | 3.08 (0.892) | | 3.05 (0.633) | | 3.06 (0.624) | |
| Government employee | 3.11 (0.851) | | 3.02 (0.627) | | 3.06 (0.605) | |
| Farmer | 3.39 (0.694) | | 3.07 (0.609) | | 3.23 (0.491) | |
| Housewife | 3.35 (0.625) | | 3.24 (0.698) | | 3.29 (0.554) | |
| Merchant | 3.42 (0.789) | | 3.14 (0.708) | | 3.28 (0.636) | |
| Other | 3.49 (0.566) | | 3.29 (0.743) | | 3.39 (0.430) | |
| Monthly income (birr) | | 0.133 | | 0.763 | | 0.316 |
| <500 | 3.08 (0.876) | | 3.05 (0.602) | | 3.06 (0.617) | |
| 500–999 | 3.46 (0.663) | | 3.11 (0.708) | | 3.28 (0.551) | |
| 1,000–1,499 | 3.14 (0.777) | | 3.20 (0.630) | | 3.17 (0.558) | |
| 1,500–2,499 | 3.27 (0.735) | | 3.09 (0.694) | | 3.18 (0.597) | |
| >2,500 | 3.23 (1.005) | | 3.02 (0.617) | | 3.13 (0.559) | |

Note: *P-value <0.05.

Abbreviations: ANOVA, analysis of variance; GURH, Gondar University Referral Hospital.

analysis, higher level of satisfaction was reported among illiterate respondents than in those having higher education, and similarly, higher level of satisfaction was reported among married respondents compared to unmarried ones. Similar findings were reported by studies conducted in Kenya and Tigray.^{25,33} The higher level of satisfaction among the illiterate and married respondents could be associated with lesser

understanding of the significance of details of the functions in the pharmacy and the services they deserved to get.

More than two-thirds (76%) of the respondents agreed or strongly agreed that they expected pharmacy professionals to check the completeness, accuracy, and legality of the prescriptions. This could be related to the fact that prescription refill is the most common duty of pharmacy professionals

Table 6 Percentage distribution of respondents' expectation toward pharmacy setting, GURH, 2015

| Variables | Total (%) | Strongly disagree and disagree, n (%) | Neutral, n (%) | Agree and strongly agree, n (%) | Mean |
|--|-----------|---------------------------------------|----------------|---------------------------------|------|
| Comfort and convenience of waiting area | 287 (100) | 64 (22.3) | 18 (6.3) | 205 (71.4) | 3.62 |
| Comfort and convenience of private counseling room | 287 (100) | 25 (8.7) | 19 (6.6) | 243 (84.7) | 4.15 |
| Sufficient number of ART units | 287 (100) | 78 (27.2) | 21 (7.3) | 188 (65.5) | 3.58 |
| Overall appearance appropriate for work | 287 (100) | 45 (15.7) | 23 (8) | 219 (76.3) | 3.97 |

Abbreviations: GURH, Gondar University Referral Hospital; ART, antiretroviral therapy.

known to patients as it is the major role currently in Ethiopia. Approximately 65.5% and 82.9% of the respondents agreed or strongly agreed that they expected sufficient number of ART units and adequate supply of ART drugs, respectively. This finding was relatively lower compared to a study conducted in Addis Ababa, which was 94.82% and 91.12%, respectively. More than two-thirds (69.7%) of the respondents were expected provision of adequate drug-related information. This finding was also lower compared to a study conducted in Addis Ababa, which reported 95.56%.³² A statistically significant difference was found in the overall expectation toward setting and pharmacy services between the respondents whose residence was in Gondar town and out of Gondar town. The mean expectation of the respondents whose residence was out of Gondar town (3.38) was lower than those who live in Gondar town (3.73), with a *P*-value of 0.001. This might be because of better awareness and access to health-related information among patients who live in Gondar town, which in turn pushed up their expectations. The study has some limitations that should be considered while interpreting the results. The fact that each/specific

pharmaceutical service patients got was not assessed in detail may interfere with this study's ability to assess the overall level of expectations and satisfaction of patients with regard to the pharmaceutical services.

Limitations of the study

The study has some limitations that should be taken into account while interpreting the results. As this study was done in a single center and was cross sectional in nature, the findings cannot be generalized to other similar settings in Ethiopia and do not have the nature of in-depth description that could have been realized if qualitative methods or comparative studies (which includes a provider aspect) were employed. In addition, some of the respondents may provide extreme responses compared to others, due to the motivations and beliefs of the respondents, and might have affected the finding.

Conclusion

In this study, the overall satisfaction level of respondents with pharmaceutical service (pharmacy setting and services)

Table 7 Percentage distribution of respondents' expectation toward pharmacy services, GURH, 2015

| Variables | Total (%) | Strongly disagree and disagree, n (%) | Neutral, n (%) | Agree and strongly agree, n (%) | Mean |
|---|-----------|---------------------------------------|----------------|---------------------------------|------|
| Checking my prescription for completeness, accuracy, and legality | 287 (100) | 34 (11.8) | 35 (12.2) | 218 (76) | 3.83 |
| Advise me how well my medical conditions are controlled | 287 (100) | 70 (24.4) | 57 (19.9) | 160 (55.7) | 3.39 |
| Advise/counsel me in detail how each of my medication supposed to help me | 287 (100) | 60 (20.9) | 27 (9.4) | 200 (69.7) | 3.60 |
| Offer me a choice of information sources | 287 (100) | 73 (25.4) | 49 (17.1) | 165 (57.5) | 3.41 |
| Ask me if I have concerns about medication | 287 (100) | 121 (42.2) | 43 (15) | 123 (42.8) | 2.93 |
| Pharmacy staff to be pleasant and courteous | 287 (100) | 22 (7.7) | 18 (6.3) | 247 (86) | 4.17 |
| Reasonable privacy during discussing my condition | 287 (100) | 25 (8.7) | 19 (6.6) | 243 (84.7) | 4.15 |
| Advise me about my disease and provide general advise on healthy life style | 287 (100) | 58 (20.2) | 39 (13.6) | 190 (66.2) | 3.57 |
| Involve me in decision making during the provision of health care | 287 (100) | 60 (20.9) | 55 (19.2) | 172 (59.9) | 3.48 |
| Adequate supply of drugs | 287 (100) | 32 (11.2) | 17 (5.9) | 238 (82.9) | 4.12 |
| Label my medications with appropriate instructions | 287 (100) | 96 (33.4) | 12 (4.2) | 179 (62.4) | 3.52 |

Abbreviation: GURH, Gondar University Referral Hospital.

Table 8 Student's t-test of differences between categories of respondents in expectation toward pharmacy, GURH, 2015

| Variables | Overall expectation with setting and services | |
|---|---|---------|
| | Mean (SD) | P-value |
| Sex | | |
| Female | 3.63 (0.849) | 0.668 |
| Male | 3.59 (0.819) | |
| Residence | | |
| Gondar town | 3.73 (0.754) | 0.01* |
| Out of Gondar town | 3.38 (0.940) | |
| Frequency of visit | | |
| First time | 3.60 (0.841) | 0.817 |
| Repeat | 3.36 (0.836) | |
| Service sought for | | |
| Self | 3.61 (0.831) | 0.755 |
| Both (self and others [family/relatives]) | 3.64 (0.851) | |

Note: *P-value <0.05.

Abbreviation: GURH, Gondar University Referral Hospital.

provided at GURH was found to be low, while the overall respondents' expectation from the pharmaceutical services were exceedingly high. Lower satisfaction levels were reported regarding comfort and convenience of waiting area and private counseling room. The reported low satisfaction level parameters should be further studied to find appropriate solutions in solving the problems. The hospital should implement good dispensing practice systems in relation to the services and continuing professional development to professionals in order to improve the satisfaction of patients.

Disclosure

The authors report no conflicts of interest in this work.

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