


# Patient Satisfaction with HIV/AIDS Services in Health Centers of East Shoa Zone, Oromia, Ethiopia: A Cross-Sectional Study

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**ABSTRACT:** Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) is a major public health, social, and economic problem in Ethiopia. Even though the government is working to scale up Anti-Retroviral Therapy (ART) services, patient loss to follow-up and ensuring adherence to ART regimens remain major challenges of the ART program in the country; little has also been done on the assessment of patient satisfaction on different HIV/AIDS service dimensions. This study aimed at assessing patient satisfaction with HIV/AIDS services in health centers of East Shoa Zone, Oromia region, Ethiopia. The study employed a cross-sectional survey between February and May 2017. Data was collected through exit interviews using five-point Likert scale-based questions and analyzed using Statistical Package for Social Sciences (SPSS) version 20. The overall mean patient satisfaction score was 3.16 (SD=0.87) on a 1 to 5 scale. Availability of anti-Tuberculosis (anti TB) drugs in pharmacy was an item with the highest mean satisfaction score ( $4.18 \pm 0.61$ ) while waiting time to get pharmacy service was ranked least by the patients (mean score of 1.92, SD=0.81). Merchants and students were more likely to be satisfied compared to other occupational groups. Overall, there was a wider gap in the study facilities concerning patient satisfaction and, therefore, health facility managers, Zonal and Woreda health offices, and Oromia Region Health Bureau should work in collaboration with other stakeholders to improve patient satisfaction with items for which the satisfaction score was low.

**KEYWORDS:** HIV/AIDS, patient satisfaction, health center, East Shoa Zone

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## Introduction

Human Immunodeficiency Virus (HIV), the virus that causes Acquired Immunodeficiency Syndrome (AIDS), has become one of the world's most serious health and development challenges since the first cases were reported in 1981. Approximately 76 million people have become infected with HIV since the start of the epidemic.<sup>1</sup> Today, approximately 38 million people are living with HIV, and tens of millions of people have died of AIDS-related causes since the beginning of the epidemic.<sup>2</sup> Sub-Saharan Africa remains among the hardest hit regions by the pandemic, with nearly 1 in every 25 adults (4.2%) living with HIV, accounting for nearly two-thirds of the global total HIV cases.<sup>3,4</sup> HIV remains underdiagnosed, many patients present late to care or not at all, some do not receive therapy despite clinical eligibility, and others do not remain in care over time in this region.<sup>5-7</sup>

Like in other Sub-Saharan African Countries, HIV/AIDS remains a major public health, social, and economic problem in Ethiopia.<sup>8</sup> According to the 2017 estimate, 720 000 people were living with HIV and 27 104 newly diagnosed cases in the country in 2016. But only 67% of the expected People Living with HIV/AIDS (PLWH) knew their status and 59% of them were enrolled in highly active antiretroviral therapy (HAART) program, while a significant proportion of PLWH had died.<sup>9,10</sup>

Oromia regional state shared 185 516 of PLWH and 6113 new infections of the country's cases of 2016<sup>10</sup>; 17 154 regional cases were from East Shoa Zone.<sup>11</sup>

As part of the multi-sectoral response to mitigate the impact of the pandemic and through the support of The United States President's Emergency Plan For AIDS Relief (PEPFAR) and Global Fund, the Ethiopian government is providing medical care services including ART pharmacy services, ART laboratory services, Prevention of Mother To Child Transmission (PMTCT) services, Anti TB services, and family planning services to PLWH free of charge.<sup>12</sup> The country has made substantial gains in the ART program by expanding access to PLWH. Nevertheless, retention of enrolled clients in treatment services, adherence to ART regimen, capacity for laboratory screening, and point-of-care monitoring, all of which are linked to patient satisfaction, require further improvement.<sup>13,14</sup>

Patient satisfaction remains a commonly used,<sup>15</sup> critical indicator in the evaluation of health care service quality<sup>16-18,19,20</sup> as patients have contributor, target, and reformer roles in quality assurance.<sup>21</sup> Higher patient satisfaction with health care services changes patients' behavioral intentions, such as compliance with prescriber's recommended treatment and appointments to follow-up, which results in better health outcomes<sup>22,23</sup> and recommendations of the service to others.<sup>24</sup> Despite such



importance, studies conducted in Ethiopia (few in number) showed the existence of different problems associated with patient satisfaction on the services given<sup>13,14</sup>; the studies came up with various factors that led to patient dissatisfaction including poor management of the side-effects of HIV medicines and lack of free treatment for opportunistic infections. Shortage of human power and medicines, long waiting time, space problems, and poor room arrangements, disrespect and unhearing, and patients' lower involvement in medical decision making were also shown to be the reasons for client dissatisfaction.<sup>25-28</sup> Based on this, it was found important to undertake this study in the East Shoa zone, one of the zones with high HIV prevalence (but with no study done on patient satisfaction so far) in Oromia regional state,<sup>11</sup> to assist in the identification of the problems associated with patient satisfaction in this zone and to generate ideas for resolving the identified problems.

## Methods

### *Study context*

A facility-based cross-sectional study was conducted in selected health centers of East Shoa Zone, Oromia Regional State from February to May 2017 on HIV/AIDS patients receiving services from these facilities. Excluding the 5 under construction, the zone had a total of 60 health centers of which 14 were giving HIV/AIDS services to 6211 HIV/AIDS patients.<sup>11</sup> Adult Patients (18 years and above) with follow up at least 6 months coming to the facility for HIV/AIDS services on the date of data collection and were willing to participate were included in the study.

### *Data collection methods and instruments*

Questionnaires on different service dimensions were prepared based on published researches<sup>26,29,30</sup> and translated to Afan Oromo and then applied to the selected patients through exit interview at each health center. The questionnaires consisted of socio-demographic characteristics of the patients and satisfaction indicators for HIV/AIDS services. The satisfaction assessment tool covered: ART services (ART clinic services, ART laboratory services, and ART laboratory services), Anti-TB services, PMTCT services, family planning services, psychosocial and nutritional support, service providers availability at the health centers during working hours, skill of service providers, patients' privacy at the health centers, service providers' commitment in assisting patients, time that patients wait at the health center to get various services and patients' general satisfaction with overall HIV/AIDS services. A standardized five-point Likert scale ranging from very dissatisfied to very satisfied (1-5 points) was used to determine patient satisfaction on different satisfaction items. Half-day training was given to the data collectors (1 professional nurse from each health center, 8 in total) by principal investigators on the interview tools and how to approach patients. The standard questionnaires were also pre-tested before the collection of the entire data; 20 randomly

selected patients who received HIV/AIDS services from 2 health centers were interviewed for this purpose. These health centers were not included in the actual data collection.

### *Sampling technique and sample size determination*

The sample of health facilities required for this study was determined using Logistic Indicators Assessment Tool (LIAT) prepared by United States Agency for International Development (USAID)/DELIVER PROJECT. LIAT document suggested that at least 15% of the target health facilities should be selected as a sample for conducting such study.<sup>31</sup> Accordingly, 57% (8 of the total 14 health centers) were selected as a study sample. The selection of the sample facilities was conducted considering the patient load of the health centers. Extreme/deviant sampling technique was utilized to include the 8 health centers (4 with high patient load and 4 with low patient load) in the study.

The total number of patients included in the exit interview was determined using a single proportion formula.<sup>32</sup> It was estimated based on the assumption that 50% of the patients receiving HIV/AIDS services were satisfied, a 5% margin of error, and a 95% confidence level ( $P=50\%$  was taken). The initial sample size was calculated to be 384 accordingly. But, since the source population was <10000 (ie, 6211) the required minimum sample size was obtained from the above figure using the adjusted formula:

$$n_f = n / \left[ 1 + \left( \frac{n}{N} \right) \right]$$

where,

$n_f$  = the minimum sample size required

$N$  = the size of the source population

So, the minimum sample size was found to be 362 based on this formula. Assuming 10% allowance ( $0.1 \times 362 = 36$ ), the total sample size was calculated to be 398 (ie,  $362 + 36$ ). Then the total number of participants to be selected from each health facility was determined based on proportionate to patient load. Consecutive sampling was used in interviewing patients at each health center.

### *Data quality assurance*

Appropriately designed data collection methods and instruments were used. The instruments were pre-tested on 2 health centers and necessary modification was made before starting the actual study. Every day the collected data was reviewed and checked by principal investigators and/or data collectors for completeness and consistency of the response.

### *Data entry and analysis*

The collected data were checked for consistency and completeness of the information and analyzed using SPSS version 20. The relationship between the dependent variable (general/overall satisfaction) and independent socio-demographic variables

was examined using binary logistic regression. To do this, participant patients were initially divided into 4 groups based on their age (group1: 20-29 years; group2: 30-39 years; group3: 40-49 years; group4:  $\geq 50$  years). They were also categorized according to their length of stay as clients at the health centers into 3 groups (group1:  $< 2$  years; group2: 2-4 years and group3:  $> 4$  years). Very dissatisfied, dissatisfied, and neutral responses were considered as dissatisfied while satisfied and very satisfied were considered as satisfied based on literature.<sup>29,33</sup> Then, a bivariate logistic regression was performed for each independent variable with the outcome of interest (General/overall satisfaction) to identify associated factors. Finally, multivariable logistic regression was done to determine the independent predictors of general/overall satisfaction.

### *Ethical consideration*

Ethical clearance was obtained from the Research and Ethics Review Committee of the School of Pharmacy, Addis Ababa University. Permission letter was written from Regional Health Bureau to Zonal Health Office which in turn wrote to the respective woreda Health Offices. Each of the study facilities received letters from the woreda Health Offices before starting the study. Informed verbal consent was also obtained from each participant after explaining the purpose of the study in the language they understand (ie, in Afan Oromo or Amharic as required).

## **Results**

### *Socio-demographic characteristics of the respondents*

A total of 398 HIV/AIDS patients were enrolled in the study and the response rate was 100%. Three hundred and seven (77.10%) of them responded to anti-TB service-related questions and the remaining 91 (22.90%) patients were not interviewed for anti-TB service-related questions because they reported that they had never received any anti-TB services since their enrollment to the facilities. The total participants in PMTCT and family planning (FP) service-related interviews were 116 (29.10%) and 222 (55.80%) patients respectively. The remaining patients were excluded from the interview on PMTCT (male patients and non-pregnant female patients) and FP (non-married males and females, married males and females but who can't bear a child ["sterile" as reported by participants]) because they were not eligible for these services. The mean age of the participants was 35.46 years (Standard Deviation [SD]=7.66, range: 20 to 53 years). One hundred and seventy-eight of the respondents, (44.70%) had an age of 30 to 39 years and the majority of the study participants, 232 (58.30%), were females. More than half of the participants, 226 (56.80%) were married and followers of Orthodox Christianity, 205 (51.50%). The majority of the patients, 247 (62.10%), lived in an urban area. One hundred and three (25.90%) had an education level of grade 5 to 8. Farmers, 83 (20.90%), constituted a slightly higher percentage

of the study participants followed by merchants, 82 (20.60%), and housewives, 72 (18.10%). Patients remained clients at the study facilities for a period of 6 months to 10 years with a mean of 3.95 years (SD=2.51). One hundred and eighty-two (45.70%) of the participants had been on HIV/AIDS services at the study facilities for a period of 2 to 4 years (Table 1).

### *Satisfaction with HIV/AIDS services*

Likert scale results revealed that the overall mean rate of patient satisfaction with different HIV/AIDS services was 3.16 (SD=0.87). The item with the highest mean score ( $4.18 \pm 0.61$ ) was satisfaction concerning the availability of anti-TB medicines in pharmacy while waiting time to get pharmacy service was an item with the lowest mean score ( $1.92 \pm 0.81$ ). Patient satisfaction was also higher on the availability of laboratory facilities, location of ART clinic, FP services, PMTCT services, and privacy during disease counseling at ART clinic with the mean scores of 3.89 (SD=0.71), 3.86 (SD=1.06), 3.84 (SD=0.79), 3.76 (SD=0.75) and 3.70 (SD=0.97) respectively. But it was lower with waiting time at the laboratory ( $2.20 \pm 0.89$ ), convenience of the pharmacy dispensing area ( $2.34 \pm 1.14$ ), privacy during drug counseling at ART pharmacy ( $2.42 \pm 0.98$ ), cleanliness and comfort of ART laboratory waiting area ( $2.46 \pm 1.16$ ), and privacy in ART laboratory ( $2.70 \pm 0.97$ ). Patients were also less satisfied with the cleanliness and comfort of the ART pharmacy waiting area ( $2.72 \pm 1.24$ ) and the cleanliness and attractiveness of the ART laboratory ( $2.84 \pm 1.16$ ). Two hundred and eighty-six (71.90%) patients said that they were satisfied with the availability of laboratory facilities and almost a quarter (24.60%) of patients reported they were very satisfied with the location (accessibility) of the ART clinic. An appreciable proportion of patients, 188 (47.20%) stated they were dissatisfied with the privacy they got at ART pharmacy during drug counseling and 96 (24.10%) patients said they were very dissatisfied with the convenience of the ART pharmacy dispensing area. One hundred and seven (26.90%) were neutral regarding their level of involvement in their own medical decisions (Table 2).

### *Factors associated with patient satisfaction*

Analysis of patient satisfaction by socio-demographic characteristics revealed that only occupation (being a merchant and being a student) had an association with the overall patient satisfaction. Students were 5 times more likely to be satisfied compared to government employees (AOR=5.12; 95% CI [1.20-21.79]). Merchants were 2.6 times more likely to be satisfied with the overall services compared to government employees (AOR=2.61; 95% CI [1.17-5.85]). Daily laborers, housewives, and farmers had no difference in general satisfaction as compared to government employees. There was no association between patients' gender, age, marital status, residence, educational status, and length of time spent at health centers as a client and general satisfaction (Table 3).

**Table 1.** Socio-demographic characteristics of patient participants at selected health centers of East Shoa Zone, Oromia, Ethiopia, 2017 (N=398).

SOCIO DEMOGRAPHIC PROFILE		NUMBER (%)
Age (in years)	20-29	97 (24.40)
	30-39	178 (44.70)
	40-49	104 (26.10)
	≥50	19 (4.80)
Gender	Male	166 (41.70)
	Female	232 (58.30)
Marital status	Single	92 (23.10)
	Married	226 (56.80)
	Divorced	46 (11.60)
	Widowed	34 (8.50)
Religion	Orthodox	205 (51.50)
	Protestant	95 (23.90)
	Muslim	69 (17.30)
	Others*	29 (7.30)
Residence	Urban	247 (62.10)
	Rural	151 (37.90)
Educational status	Unable to read and write	46 (11.60)
	Able to read and write but no formal education	62 (15.60)
	Grade 1-4	76 (19.10)
	Grade 5-8	103 (25.90)
	Grade 9-12	88 (22.10)
	Above 12	23 (5.80)
Occupation	Government employee	39 (9.80)
	Merchant	82 (20.60)
	Daily laborer	64 (16.10)
	House wife	72 (18.10)
	Farmer	83 (20.90)
	Student	17 (4.30)
	Others**	41 (10.30)
Length of time as a client (in years)	<2	73 (18.30)
	2-4	182 (45.70)
	>4	143 (35.90)

\*Wakefata, Adventist and Jhova witnesses.

\*\*Waiter/waitress, driver, house maid, guard at private company and shoeshine.

## Discussion

Results of the service satisfaction scale indicated that patients in the study facilities were generally slightly satisfied with the services they obtained. The mean scores were positive (>2.5/5) in

the majority and they mainly averaged between 3 and 4 on the Likert scale. The overall mean rate of patient satisfaction in the current study (3.16, SD=0.87) was lower compared to a study from South Africa and Tanzania that showed high overall

**Table 2.** HIV/AIDS patients' satisfaction with different services at selected health centers of East Shoa Zone, Oromia, Ethiopia, 2017 (N=398).

VARIABLE		LEVELS OF SATISFACTION, N (%)					MEAN (SD)
		VD	D	N	S	VS	
ART services	ART clinic services						
	Location of ART clinic (accessibility)	18 (4.5)	45 (11.3)	11 (2.8)	226 (56.8)	98 (24.6)	3.86 (1.06)
	Cleanliness and comfort of the ART clinic waiting area	26 (6.5)	160 (40.2)	17 (4.3)	135 (33.9)	60 (15.1)	3.11 (1.26)
	Counseling on disease at ART clinic	18 (4.5)	116 (29.1)	32 (8.0)	188 (47.2)	44 (11.1)	3.31 (1.14)
	ART pharmacy services						
	Location of the pharmacy (accessibility)	21 (5.3)	88 (22.1)	16 (4.0)	226 (56.8)	47 (11.8)	3.48 (1.12)
	Cleanliness and comfort of pharmacy waiting area	57 (14.3)	177 (44.5)	15 (3.8)	119 (29.9)	30 (7.5)	2.72 (1.24)
	Convenience of the dispensing area	96 (24.1)	178 (44.7)	26 (6.5)	88 (22.1)	10 (2.5)	2.34 (1.14)
	Promptness of the dispensers in processing prescription	12 (3.0)	106 (26.6)	29 (7.3)	243 (61.1)	8 (2.0)	3.32 (0.99)
	Medicine adherence counseling	10 (2.5)	119 (29.9)	41 (10.3)	218 (54.8)	10 (2.5)	3.25 (0.99)
	Information given on proper storage of your medication	9 (2.3)	113 (28.4)	43 (10.8)	221 (55.5)	12 (30.0)	3.29 (0.99)
	Availability of prescribed medicines in the pharmacy	74 (18.6)	81 (20.4)	53 (13.3)	163 (41.0)	27 (6.8)	3.01 (1.28)
	ART Laboratory services						
	Location of ART laboratory (accessibility)	14 (3.5)	101 (25.4)	24 (6.0)	238 (59.8)	21 (5.3)	3.38 (1.03)
	Cleanliness and comfort of ART laboratory waiting area	88 (22.1)	170 (42.7)	37 (9.3)	90 (22.6)	13 (3.3)	2.46 (1.16)
Cleanliness and attractiveness of the laboratory	57 (14.3)	121 (30.4)	59 (14.8)	151 (37.9)	10 (2.5)	2.84 (1.16)	
Information provided to you during specimen collection	16 (4.0)	127 (31.9)	83 (20.9)	168 (42.2)	4 (1.0)	3.04 (0.97)	
Promptness of laboratory staff in accomplishing lab. activities	10 (2.5)	118 (29.6)	57 (14.3)	209 (52.5)	4 (1.0)	3.20 (0.96)	
Availability of laboratory facilities	2 (0.5)	25 (6.3)	36 (9.0)	286 (71.9)	49 (12.3)	3.89 (0.71)	
Anti-TB services	Location of TB clinic (accessibility)	3 (0.97)	62 (20.2)	16 (5.2)	180 (58.6)	46 (15.0)	3.66 (1.00)
	Cleanliness and comfort of TB clinic waiting area	34 (11.1)	90 (29.3)	30 (9.8)	106 (34.5)	47 (15.3)	3.14 (1.30)
	Counseling on TB	0 (0.0)	62 (20.2)	27 (8.8)	193 (62.9)	25 (8.1)	3.59 (0.90)
	Counseling on anti-TB medicines	2 (0.7)	54 (17.6)	25 (8.1)	196 (63.8)	30 (9.8)	3.64 (0.90)
	Availability of anti-TB medicines in the pharmacy	0 (0.0)	7 (2.3)	13 (4.2)	205 (66.8)	82 (26.7)	4.18 (0.61)
	PMTCT services	0 (0.0)	9 (7.8)	23 (19.8)	71 (61.2)	13 (11.2)	3.76 (0.75)
	Family planning services	1 (0.5)	22 (9.9)	18 (8.1)	152 (68.5)	29 (13.1)	3.84 (0.79)
	Psycho social and nutritional support	9 (2.3)	84 (21.1)	90 (22.6)	183 (46.0)	32 (8.0)	3.36 (0.98)
Staff availability	Availability of service providers during working hours	6 (1.5)	48 (12.1)	75 (18.8)	249 (62.6)	20 (5.0)	3.62 (0.76)

(Continued)

Table 2. (Continued)

VARIABLE		LEVELS OF SATISFACTION, N (%)					MEAN (SD)
		VD	D	N	S	VS	
Skill of service providers	The way professionals explain medical terms to you	1 (0.3)	90 (22.6)	87 (21.9)	216 (54.3)	4 (1.0)	3.33 (0.84)
	Your level of involvement in your medical decisions	3 (0.8)	118 (29.6)	107 (26.9)	168 (42.2)	2 (0.5)	3.12 (0.87)
Privacy	Privacy during disease counseling at ART clinic	9 (2.3)	63 (15.8)	23 (5.8)	247 (62.1)	56 (14.1)	3.70 (0.97)
	Privacy during medicine counseling at ART pharmacy	60 (15.1)	188 (47.2)	73 (18.3)	75 (18.8)	2 (0.5)	2.42 (0.98)
	Privacy in ART laboratory	32 (8.0)	162 (40.7)	105 (26.4)	93 (23.4)	6 (1.5)	2.70 (0.97)
Assistance to patients	Courtesy and respect of service providers to you	1 (0.3)	55 (13.8)	102 (25.6)	218 (54.8)	22 (5.5)	3.52 (0.81)
	Willingness of professionals to listen and answer your questions	3 (0.8)	76 (19.1)	96 (24.1)	209 (52.5)	14 (3.5)	3.39 (0.86)
	Attention of professionals to your individual needs	4 (1.0)	107 (26.9)	106 (26.6)	176 (44.2)	5 (1.3)	3.18 (0.88)
Others	Waiting time for disease counseling at ART clinic	41 (10.3)	123 (30.9)	40 (10.1)	183 (46.0)	11 (2.8)	3.00 (1.14)
	Waiting time to get pharmacy services	122 (30.7)	211 (53.0)	41 (10.3)	23 (5.8)	1 (0.3)	1.92 (0.81)
	Waiting time to get TB services	9 (2.9)	61 (19.9)	59 (19.2)	167 (54.4)	11 (3.6)	3.36 (0.94)
	Waiting time at the laboratory	77 (19.3)	213 (53.5)	61 (15.3)	47 (11.8)	0 (0.0)	2.20 (0.89)
General satisfaction with the overall HIV/AIDS services*		1 (0.3)	119 (29.9)	93 (23.4)	184 (46.2)	1 (0.3)	3.16 (0.87)

Abbreviations: VD, very dissatisfied; N, neutral; VS, very satisfied; D, dissatisfied; S, satisfied; SD, standard deviation.

\*It was calculated from single question.

patient satisfaction with HIV/AIDS services.<sup>30,34</sup> It is also lower than a study conducted in Kenya where a majority of the patients ranked overall satisfaction high with a mean of 5 on a five-point Likert scale.<sup>35</sup> The lower satisfaction score in the current study compared to the comparatives could be attributed to the difference between the studies in delivery of services including ART services and anti-TB services and service providers availability and approaches they used while treating patients.

Availability of anti TB medicines had the highest mean satisfaction score ( $4.18 \pm 0.61$ ) among patient satisfaction indicators used in the current study. The high satisfaction score with this item might be since the facilities place emergency orders or borrow from nearby facilities at the time of stockout. The facilities took these measures may be because they understood the risks of missing anti TB medicines, especially for HIV/AIDS patients.<sup>36,37</sup>

Similar to the findings of the current investigation, research done in Addis Ababa revealed that patients were least satisfied by the time they wait to get pharmacy services.<sup>38</sup> Incongruent to the findings of this study, however, a study conducted in Dar es Salaam, Tanzania showed that the majority of HIV/AIDS patients were comfortable with waiting time for getting pharmacy services.<sup>39</sup> Abebe et al<sup>40</sup> also found from their study in

Gondar that almost all (95.1%) of the HIV/AIDS patients were well satisfied with waiting time to get pharmacy service. The dissatisfaction in the current study may be due to a limited human power available to provide pharmacy services and a problem in promptness of the available service providers. It might also be due to differences in the facility level: the comparator studies were conducted in hospitals that would have a higher number of pharmacists/druggists compared to the current study which was conducted in health centers.

Results of this study revealed that patient satisfaction was higher on the availability of laboratory facilities (mean = 3.89, SD = 0.71). This is comparable to a study done in Sidama Zone where the mean satisfaction score with this item was found to be  $3.89 (\pm 0.86)$ .<sup>29</sup> Satisfaction with the location of ART clinic and family planning services were also found to be highly similar to a study from South Africa.<sup>41</sup>

Patient satisfaction was lower in this study concerning time spent waiting for laboratory services (Mean = 2.20, SD = 0.89) unlike a study from Sidama Zone (Mean = 3.30, SD = 0.94).<sup>29</sup> and a study done in Addis Ababa (Mean = 3.40, SD = 0.87).<sup>42</sup> The lower satisfaction in this study might be associated with the unbalanced patient load and human resources available to perform laboratory services and the problem with promptness

**Table 3.** Patients' general satisfaction with the overall HIV/AIDS services at selected health centers of East Shoa Zone, Oromia, Ethiopia, 2017 (N=398).

VARIABLE	GENERAL SATISFACTION		COR	AOR
	SATISFIED, N (%)	DISSATISFIED, N (%)		
Gender				
Male	64 (38.60)	102 (61.40)	1.00	1.00
Female	120 (51.70)	112 (48.30)	1.47 [0.98-2.19]	1.55 [0.94-2.56]
Age (in years)				
20-29	40 (41.30)	57 (58.80)	0.49 [0.18-1.33]	0.50 [0.16-1.64]
30-39	88 (49.40)	90 (50.60)	0.74 [0.29-1.94]	0.81 [0.28-2.31]
40-49	45 (43.30)	59 (56.70)	0.56 [0.21-1.49]	0.55 [0.19-1.62]
≥50	11 (57.90)	8 (42.10)	1.00	1.00
Marital status				
Single	36 (39.10)	56 (60.90)	0.64 [0.29-1.42]	0.55 [0.22-1.34]
Married	103 (45.60)	123 (54.40)	0.82 [0.40-1.69]	0.67 [0.30-1.47]
Divorced	31 (67.40)	15 (32.60)	1.88 [0.76-4.64]	2.10 [0.80-5.51]
Widowed	16 (47.06)	18 (52.90)	1.00	1.00
Residence				
Urban	108 (43.70)	139 (56.30)	1.00	1.00
Rural	77 (60.00)	74 (49.00)	1.28 [0.86-1.93]	1.05 [0.58-1.89]
Educational status				
Unable to read and write	24 (52.20)	22 (47.80)	1.70 [0.61-4.70]	2.21 [0.54-9.01]
Able to read and write but no formal education	24 (38.70)	38 (61.30)	0.98 [0.37-2.62]	1.09 [0.29-4.12]
Grade 1-4	32 (42.10)	44 (57.90)	1.19 [0.46-3.09]	1.28 [0.34-4.74]
Grade 5-8	53 (51.50)	50 (48.50)	1.59 [0.63-3.99]	1.80 [0.51-6.42]
Grade 9-12	40 (45.50)	48 (54.50)	1.49 [0.58-3.79]	1.46 [0.46-4.68]
Above 12	8 (34.80)	15 (65.20)	1.00	1.00
Occupation				
Government employee	12 (30.80)	27 (69.20)	1.00	1.00
Merchant	45 (54.90)	37 (45.10)	2.56 [1.15-5.66]*	2.61 [1.17-5.85]*
Daily laborer	23 (35.90)	41 (59.40)	1.12 [0.49-2.60]	1.00 [0.32-3.13]
House wife	33 (45.80)	39 (54.20)	2.11 [0.94-4.76]	1.68 [0.56-5.01]
Farmer	41 (49.40)	42 (50.60)	1.95 [0.88-4.31]	1.53 [0.47-4.96]
Student	11 (64.70)	6 (35.30)	3.67 [1.11-12.14]*	5.12 [1.20-21.79]*
Others**	14 (34.10)	27 (65.80)	1.04 [0.41-2.62]	0.90 [0.27-2.97]
Length of time as a client (in years)				
<2	30 (41.10)	43 (58.90)	1.00	1.00
2-4	84 (46.20)	98 (53.80)	1.26 [0.73-2.18]	1.00 [0.53-1.89]
>4	69 (48.30)	74 (51.70)	1.37 [0.78-2.43]	1.02 [0.50-2.10]

Abbreviations: COR, crude odds ratio; AOR, adjusted odds ratio.

\*Statistical significance ( $P < .05$ ).

\*\*Waiter/waitress, driver, housemaid, guard at a private company, and shoeshine.

of the laboratory specialists. It might also be due to differences in facility-level: the current study was conducted in health centers that would have fewer laboratory specialists compared to the comparator studies which were conducted in hospitals.

### *Factors associated with patient satisfaction*

The current study found that students (AOR=5.12; 95% CI [1.20-21.79]) and merchants (AOR=2.61; 95% CI [1.17-5.85]) were more likely to be satisfied with HIV/AIDS services compared to government employees. This is inconsistent with a study from Vietnam where these characteristics were shown to have no association with patient satisfaction on HIV/AIDS services.<sup>43</sup> Most of the merchants spend their time doing their businesses (which allows them to visit health facility and get the desired service when need arise/whenever they want; example when they think good services are available) and hence which might increase their level of satisfaction) unlike government employees who need permission from the workplace to visit a health facility. The higher satisfaction among students compared to government employees might be related to differences in service type expectation and service level expectation between these groups; government employees might expect more variety and high-level services from the health facilities but got lower services than expected while students might get services to the type and level they expected.

Daily laborers, housewives, and farmers had no difference in general satisfaction compared to government employees. Gender and age were not associated with overall patient satisfaction in this study. A similar finding was reported by Iwu et al<sup>44</sup> while a study conducted in Kenya and India showed that females had higher general satisfaction as compared to males.<sup>35,45</sup> A study from Vietnam also indicated that older patients had higher satisfaction compared to younger ones.<sup>43</sup>

In the current study, marital status, residence, and educational status were found to be not associated with overall satisfaction unlike a study conducted in Nigeria that showed a significant association between these variables and overall patient satisfaction.<sup>44</sup> Mwhitoh et al<sup>35</sup> also found that divorced patients were more satisfied compared to the married group. Length of time patients spent as clients at the health centers had no association with general satisfaction just similar to the findings of Tran and Nguyen.<sup>43</sup>

### *Limitations of the study*

The study design was cross-sectional and therefore it does not show a causal relationship. There was also a likely risk of social desirability bias from patients' side since the survey tool was administered orally.

### **Conclusion**

Overall there were differences in levels of patient satisfaction with different HIV/AIDS services but they were generally

slightly satisfied with the services they obtained from the facilities. Patient satisfaction with items like availability of anti TB drugs in pharmacy and availability of laboratory facilities was higher while it was lower on items like waiting time to get pharmacy and laboratory service, the convenience of the pharmacy dispensing area, privacy during drug counseling at ART pharmacy, cleanliness, and comfort of the ART laboratory's waiting area and privacy in ART laboratory. Health facility managers, Zonal and Woreda health offices, and Oromia Region Health Bureau should therefore work in collaboration with other stakeholders to improve patient satisfaction with items for which the satisfaction score was lower. Finally, patient satisfaction should be viewed as an important issue in health care organizations and further studies on the subject are recommended. These studies can uncover details associated with patient satisfaction in health centers and other health care organizations and lead to the improved overall medical care of patients.

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### **Authors' Contributions**

Temesgen Aferu Yilma designed the research work and facilitated data collection process. He also conducted the overall analysis and drafted the manuscript. Teferi Gedif Fenta and Gebremedhin Beedemariam Gebretekle provided guidance on the work and corrected the manuscript. All authors read and approved the final manuscript.

### **Availability of Data and Materials**

All datasets from which the authors derived their conclusion are deposited in SPSS soft-ware in the hands of the first author and can be shared upon request.

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