

Perceived HIV Stigma and Associated Factors Among Adult ART Patients in Wolaita Zone, Southern Ethiopia

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Objective: This study aimed to assess perceived HIV stigma and associated factors among adult ART patients in Wolaita Zone, Southern Ethiopia.

Methods: A facility-based cross-sectional study was conducted among 638 participants selected using a multistage sampling technique from July 10 to September 2020. A 12-item short version of the HIV stigma scale was used to measure HIV-related stigma. Data were collected by the interview method using a pre-tested questionnaire. Binary and multivariable logistic regression analyses were performed to identify the factors associated with the outcome variable. The strength and direction of the association were measured using the adjusted odds ratio (AOR) with a 95% confidence interval (CI). Statistical significance was declared at P-value <0.05.

Results: In this study, 57.8% (95% CI = 54.1%-61.9%) of people under HIV care perceived high stigma and 450 (70.5%) disclosed their HIV status. Widowed marital status (AOR = 2.984; 95% CI = 1.728–5.155), primary education (AOR = 3.36; 95% CI = 2.072–5.42), undisclosed HIV status (AOR = 1.657; 95% CI = 1.121–2.451), poor social support (AOR: 2.05; 95% CI = 1.195–3.433), and being member of an HIV support group (AOR: 0.396; 95% CI = 0.249–0.630) were significantly associated with perceived stigma.

Conclusion: The perceived stigma is high among adult ART patients in the study setting. Widowed marital status, primary education, undisclosed HIV status, membership to the social support network NEP+ and poor social support were predictors of perceived HIV stigma. Thus, ART patients should be given more psychosocial support to minimize their perceived public HIV-related stigma.

Keywords: adult, ART, HIV, patients, people living with HIV, perceived stigma

Introduction

In many parts of the world, Human Immunodeficiency Virus (HIV) or Acquired Immuno Deficiency Syndrome (AIDS) is commonly considered a consequence of immoral risky sexual behaviors in the back of society thought including Ethiopia. Due to this reason, people living with HIV (PLHIV) face HIV-related stigma in addition to medical problems.^{1,2} Even though HIV/AIDS is managed in a habitual and convenient condition, PLHIV are facing serious challenges related to HIV-related stigma and discrimination.³

People living with HIV fear stigma and dismissal from their families, friends, and society, and losing their social reputation.⁴ Moreover, the perceived separation that social dismissal brings can lead to loss of self-esteem, depression, and indeed attempt or act of suicide.⁵ In a global assessment of HIV-related stigma and discrimination from 36 countries included, in 25 of them, greater than 50% of people aged 15–49 years hold discriminatory beliefs and attitudes toward PLHIV.⁶

HIV-related Stigma refers to attitudes and beliefs that lead people to reject, avoid, or fear those they perceive as being different.⁷ Perceived stigma refers to the fear of public stigma and discrimination that prevents people from talking about their experiences and seeking help.⁸ Perceived stigma among HIV patients might be expressed by a range of perceived

mistreatment from society such as the denial of services, expulsion from families, and verbal abuse. People who face and anticipate such mistreatment due to their HIV status are in the continuous feeling of guilt, shame, and loss of self-esteem accompanied by frequent thoughts of harming themselves.⁹

Based on the data from UNAIDS, one in eight PLHIV face HIV care limitations due to public stigma and discrimination.¹⁰ In Ethiopia, studies show that the experience of perceived stigma among PLHIV ranges from 42% to 60%.^{11–13} Though in the last ten years, in Ethiopia, public HIV-related stigma and discrimination have significantly declined, PLHIV are still suffering from an exaggerated perceived public stigma and discrimination.^{14,15}

Perceived HIV stigma among PLHIV impedes the nutritional and HIV care programs.¹⁶ In Ethiopia, PLHIV avoids going to therapeutic feeding centers to receive therapeutic foods such as plumpy nuts and avoids going nearer to health facilities for ART drugs in fear of being exposed to the public.^{17,18} Moreover, high perceived HIV stigma among PLHIV compromises the retention of patients in HIV care increases the incidence of mental health problems and affects the overall quality of life.^{19–22} Thus, this affects not only the well-being of the patients but also it affects the overall HIV prevention and control programs.

Perceived HIV-related stigma aggravates the undisclosing of actual or likely HIV status, and it increases the chance of risky sexual behavior.²³ For instance, a study conducted in Ethiopia shows that one in six PLHIV who have high perceived HIV-related stigma reported that their negotiation skills regarding safe sex practice were poor and it has prevented them from seeking sexual and reproductive health services.²⁴

Achieving the Sustainable Development Goal (SDG) of creating an AIDS-free era and ensuring healthy lives for all by 2030 requires reducing the incidence of HIV/AIDS.²⁵ Perceived HIV stigma affects HIV prevention and control programs by increasing risky sexual practices, affecting the nutritional and healthcare programs, limiting the accessibility of healthcare services, and increasing the isolation of patients from health and social services. However, in Ethiopia, perceived HIV-related stigma is not fully known. Therefore, this study aimed to assess the magnitude of perceived HIV stigma and its associated factors among adult ART patients in Wolaita Zone, Southern Ethiopia.

Materials and Methods

Description of the Study Setting

This study was conducted in Wolaita Zone, Southern Ethiopia. Wolaita Zone is one of sixteen zones in the Southern Region of Ethiopia. According to the Wolaita Zone base plan of 2019, from the total population of 2, 067,163 living in the Zone, 1,054,233 were females while the remaining were males. The Zone has a total area of 4512 square kilometers and is administratively divided into 16 districts and 6 town administrations. In Wolaita Zone there are 10 hospitals; two private and eight public, 427 primary healthcare units (77 health centers and 350 health posts), and several pharmacies and drug vendors. Of the total health facilities, 18 were currently providing ART service in the Zone.

Study Design, Period, and Population

A facility-based cross-sectional study design was conducted among 638 adult ART patients from July 10 to September 2020. The source population was all people who are receiving ART medication and aged 15 years. Adult ART patients in the selected facility and aged 15 years and above were considered as the study population. Patients with less than 6 months duration of HIV care, severely ill and unable to respond to questions, and mentally impaired were excluded from the study. A simple cognitive mental impairment test tool was used to screen patients for cognitive status.²⁶ Patients whose screening test results for cognitive impairment score equal to or greater than seven scores were omitted from the study. However, these patients were referred for further mental health status assessment and treatment.

Measurements and Operational Definition

Perceived Stigma

Was assessed using a reliable HIV stigma scale which was used in the other previous studies.^{13,27–29} The short 12 item stigma scale was used to collect the data.³⁰ The scale consisted of 12 items rated on 4-point Likert scores (strongly disagree to disagree) and the score ranging from 12 to 48 scores with an average score of 30. Then, its reliability was

assessed in the study area context and cronbach's alpha was 0.758. In this study, an average value of 30 was used as a cut-off point to determine the level of HIV stigma by benchmarking previous studies.^{31–35} Hence, study participants who had a stigma score of equal or greater than the variable mean score of 30 from 12 stigma assessment questions were classified as having “high perceived HIV stigma” while a score less than a variable mean score of 30 was considered as “low perceived HIV stigma”.

Adherence

Was defined as patients' self-reported behavior of taking ARV medications without missing at least a single ARV dose 30 days before the study. Poor adherence if missed ≥ 6 pills ($<84\%$) of 30 doses at the time of the study and good Adherence (95%), if missed ≤ 2 doses of 30 doses or fair adherence (85–94%), if missed 3–5 doses of 30 ARV doses.^{36,37}

Viral Load Suppression (VLS)

Was assessed using the patient chart review, and the client's last 6-month serum viral load results were considered at the time of the data collection. A client is having a high viral load if he/she had a serum viral load of >1000 copies/mL before the survey and a non-detectable viral load if below 1000 copies/mL.³⁷

Social Support

In this study, HIV patients were asked to rate the support they receive from their community members using Oslo Social Support Scale (OSSS-3).³⁸ The scale was three items with scores ranging from three to fourteen scores. Its internal consistency in our test was 0.711, which was better than the internal consistency of (0.640) on the developer's scales. HIV patients are said to have poor social support if they had a score of 3–8 out of three questions, moderate social support was those scored 9–11 scores out of three questions. Otherwise, strong social support if scored 12–14 scores out of the three questions.

Sample Size Determination

The Sample size was estimated by using Epi info statistical software version seven. We used the proportion of perceived HIV stigma as 29.1% ($p=29\%$) from the previous study,³⁹ 95% CI, the margin of error between the estimated and actual population proportion of HIV stigma at 5%, and obtained a sample size of 316. However, we have 18 ART-providing clusters for this group of patients. To account for this intra-cluster variation of the health facilities, we used a design effect of two the sample size become 632. Adding the 10% non-response the final sample size was estimated to be 695.

Sampling Procedure

In this study, a multi-stage sampling technique with proportional allocation to the size of each health facility was done. Currently, there are seven hospitals and 69 health centers in the Wolaita Zone of which 18 health facilities were identified as providing ART service. The health facilities were stratified into hospitals and health centers. Hospitals were further stratified into referral and primary hospitals. Nine health facilities (five-health centers, one referral hospital, and three primary hospitals) were randomly selected from each stratum of the health facilities.

The total sample size was then proportionally allocated to the average monthly patient flow using the last 6-months before the study. Accordingly, the total monthly patient flow for the nine ART health facilities was 3280. Using the total sample size of 695, the sampling interval was calculated to be $3280/695 = \text{five}$. The lottery method was used to determine the first participant from the first one to five on the patient logbook and the 3rd participant was randomly selected. After including the third (3rd) participant, the second would be the eighth ($3+5=8$), the third would be ($8+5=13$), and we continued this way until fulfilling the allocated sample size from all health facilities.

Data Quality Control and Data Collection

The quality of data assured of the maximum attainable level by using a standardized adapted questionnaire. To ensure the quality of data, we used 5% (35 participants) of the total sample size to pre-test data collection tools. Data collectors were trained for two days on the purpose and procedure of data collection by principal investigators. All data collectors availed of the field guideline that was prepared in their local language to maintain the procedure consisting of all ART clinics.

The four supervisors and investigators coordinated data collection. Cronbach's alpha was calculated for the stigma scale to ensure reliability. Besides, data collectors, supervisors, and the principal investigator checked the questionnaire for completeness and consistency after each day of data collection.

Data were collected through face-to-face interviews in a separate room after participants complete their ART services. The data collection tool consisted of two parts: first, background information and HIV-related question, and the second part consisted of adopted HIV stigma scale questions. The trilingual person translated the tool from English to Amharic then to “Wolaitatto dona” and back to English to confirm its consistency ([Supplementary Files Section 2](#)). Six ART-providing health professionals and six case managers were involved in the data collection process. All of the ART-providing health professionals were bachelor's degree holders and from the six case managers, two were bachelor of nursing holders, one was a diploma in public health nursing and the remaining three were secondary education completed with a minimum of two years of psychosocial support work experience with PLHIV.

Data Management and Analysis

Before data entry in Epi Data version 3.1, the data were checked for completeness and consistency. Then, the data were exported into SPSS version 21 for data analysis was done. Descriptive statistics including proportions, distribution, and measures of central tendency were computed. Stigma responses were summed for the total stigma score. In the regression model, the stigma scores equal to or greater than the variable mean score of 30 were coded as “1” for high stigma, and stigma scores less than the variable mean score of 30 were coded as “0” for low stigma.

Variables with a p-value less than 0.25 in the bivariate logistic regression analysis were considered candidates for multivariable logistic regression analysis. The Hosmer–Lemeshow goodness-of-fit test was checked and the model was a good fit (P-value=0.263). Variables with a p-value<0.05 in multivariable logistic regression were considered statistically significant. The multi-co linearity test was conducted using a VIF cut-off <5 and was in the acceptable range. Both crude and adjusted odds ratios with a 95% CI were reported.

Results

Socio-Demographic and Psychosocial Characteristics of Adult ART Patients in Wolaita Zone, Southern Ethiopia

A total of 638 participants were included in this study with a response rate of 92%. Fifty-five participants terminated the interview before completing the full questions and two refused to participate in the study. More than half, 353 (55.3%) of the participants were females and 295 (46.2%) belong to the age group of 30–39 years. The mean age of participants was 35±8.3 years. The majority, 365 (57.2%) of the participants were Wolaita in ethnicity, and 285 (44.7%) were married. Among the study participants, 257 (40.3%) completed primary education and 266 (42.3%) were merchants in occupation. Regarding income, 427 (66.9%) were earning a monthly income of more than one thousand Ethiopian birrs and 537 (84.2%) were urban residents ([Table 1](#)).

Individual and HIV-Related Characteristics of Adult ART Patients in Wolaita Zone, Southern Ethiopia

The majority of ART patients, 176 (27.6%) were tested for HIV due to suspect of HIV/AIDS by health providers during their first-time diagnosis, 430 (67.4%) were tested by their free will, 142 (22.3%) were forced to be tested, and 578 (90.6%) were received both pre- and post-test counseling. Three hundred ninety-eight (62.4%) were diagnosed with HIV more than a year ago.

Regarding the disclosure of HIV status, 450 (70.5%) participants disclosed their HIV status either to their spouses or to family or close friends. The majority of undisclosed HIV status was due to fear of losing their family 97 (15.2%). Sixty (9.4%) of the participants reported that their HIV status was disclosed against their will and 23 (3.6%) blamed family members or caregivers, and 13 (2%) blamed health service providers for their involuntary HIV status disclosure.

As to the clinical characteristics of participants, 471 (73.8%) were treated for >3 years, and 541 (84.8%), 65 (10.2%), and 32 (5%) had good, fair, and poor adherence to ARV medications respectively. On the other hand, 502 (78.7%) of

Table I Socio-Demographic and Psychosocial Characteristics of Adult People Living with HIV (n=638) in Wolaita Zone, July 10-September 2020

Characteristics (n=638)	Frequency	Percent
Age (years)		
20–29	176	27.6
30–39	295	46.2
40–49	101	15.8
≥50	66	10.3
Sex		
Male	285	44.7
Female	353	55.3
Marital status		
Single	144	22.6
Married	285	44.7
Divorced/separated	109	17.2
Widowed	100	15.7
Religion		
Orthodox	245	39.5
Protestant	296	45.3
Muslim	69	10.8
Catholic	28	4.4
Ethnicity		
Wolaita	365	57.2
Gamo	85	13.3
Amhara	66	10.3
Gurage	52	8.2
Hadiya	39	6.1
Other ^a	31	4.9
Educational status		
No formal education	91	14.3
Primary	258	40.4
Secondary	162	25.4
Tertiary	127	19.9
Occupation		
Merchant	266	42.3

(Continued)

Table 1 (Continued).

Characteristics (n=638)	Frequency	Percent
Daily laborer	149	22.6
Government employee	116	18.2
Private full time	46	7.2
Not employed	33	5.2
Other ^b	28	4.4
HH monthly income		
0–500	47	7.4
501–1000	164	25.7
>1000	427	66.9
Living arrangement		
1.family	190	29.8
2.Alone	124	19.4
3.husband/wife	254	39.8
4. children	70	11.0
Residence		
Urban	537	84.2
Rural	101	15.8
Social support		
Poor	338	53
Moderate	215	33.7
Strong	85	13.3
Membership of an HIV support group		
Yes	115	18
No	523	82
Family size		
1	160	25.1
2–3	244	38.2
>3	234	36.7
Family support		
God	295	46.2
Bad	155	24.3
Undecided	188	29.5

Notes: ^aDawuro, Silte, Oromo and Tigre, ^bstudents, housewife.

participants had viral suppression of less than 1000 copies/mL and 119 (18.7%) had comorbidity in the last three months. Regarding the WHO stage of the disease, 11 (1.9%) had stage 3/4 HIV/AIDS and 57 (8.9%) were admitted to the hospital in the last 6 months for HIV-related treatment. Moreover, 127 (19.9%) rated their current health status as bad (Table 2).

Table 2 Individual and HIV-Related Characteristics of Adult People Living with HIV (n=638) in the Wolaita Zone, July 10-September 2020

Characteristics (n=638)	Frequency	Percent
The decision to test HIV on the first Dx		
Yes and voluntary action	436	68.3
Yes, but pressured	142	22.3
No, I was forced	29	4.5
I did know I was testing	31	4.9
Counseling received		
Yes, both pre and post	578	90.6
Only post-test counselling	47	7.4
Other ^a	13	2.0
Disclosed HIV/AIDS		
Yes	450	70.5
No	188	29.5
Reason for hiding HIV status		
Fear of losing family	97	15.2
Fear of rejection by society	73	11.4
Other ^b	18	2.8
Involuntary disclosure		
Yes	60	9.4
No	578	90.6
Blame for involuntary disclosure		
Family members/caregivers	23	3.6
Spouse/sexual partner	16	2.5
Health service providers	13	2.0
Employer/colleague/friend	8	1.3
Duration for HIV Rx		
6–12 month	60	9.4
13–36 month	107	16.8
>36 month	471	73.8

(Continued)

Table 2 (Continued).

Characteristics (n=638)	Frequency	Percent
ART adherence		
Good	541	84.8
Fair	65	10.2
Bad	32	5.0
Viral load suppression		
Undetectable	502	78.7
High	136	21.3
HIV stage		
Stage I	589	92.3
Stage II	38	6
Stage III/V	11	1.7
Admission to hospital		
Yes	57	8.9
No	581	91.1
Self-rated health status		
Good	511	80.1
Bad	127	19.9
Time since HIV Dx		
≤24	240	37.6
>24	398	62.4

Notes: ^aOnly pre-test counseling, no counseling, ^bFear of losing friends, fear of losing care provider.

Perceived HIV-Related Stigma and the Social Support of Adult ART Patients in Wolaita Zone, Southern Ethiopia

Of the total study participants, 369 (57.8%), (95% CI=54.1–61.9) reported high HIV-related stigma while the remaining reported low. Regarding the response to individual items toward perceived stigma, most of the study participants agree that they had the concern to disclose their HIV/AIDS status to others (Table 3).

Out of the total study participants, only 115 (18%) were a member of an HIV/AIDS support group (NEP+) while 155 (24.3%) of participants reported that they were facing bad family support. Concerning the family size of the participants, 234 (36.5%) were living with more than 3 people and 254 (39.8%) were living with their spouse. Three hundred thirty-eight (53%) participants reported that the social support from their community is poor (Figure 1).

Factors Associated with Perceived HIV Stigma Among Adult ART Patients in Wolaita Zone, Southern Ethiopia

In bivariate logistic regression analysis at p-value <0.25 age, residence, marital status, educational status, the decision to test HIV, membership in NEP+, ART adherence, viral load suppression, and social support were found to be statistically

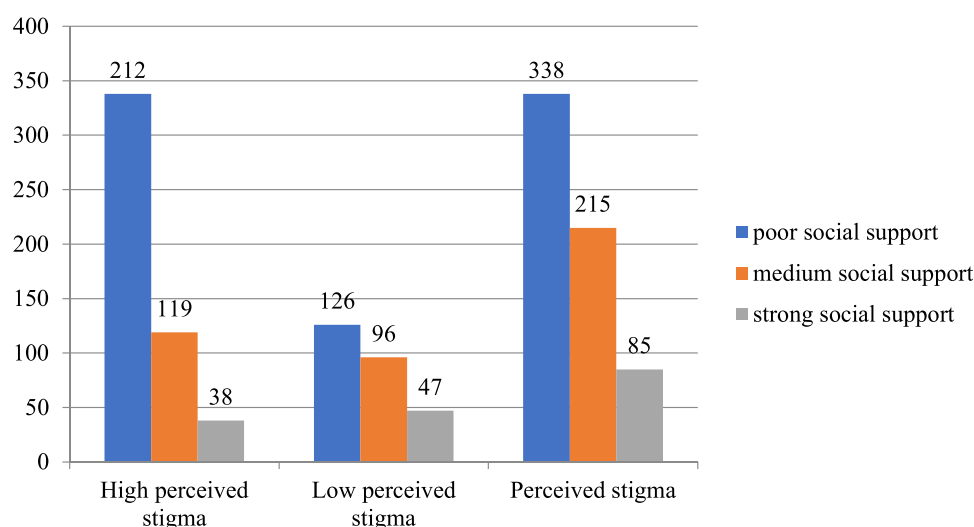
Table 3 Stigma Responses Towards Individual Items by Adult People Living with HIV (n=638) in Wolaita Zone, July 10-September 2020

Item	Scores			
	1	2	3	4
People's attitudes about HIV/AIDS make me feel worse	14(2.2)	202(31.7)	302(47.3)	120(18.8)
Telling someone I have HIV/AIDS is risky	16(2.5)	105(16.5)	357(56.0)	160(25.1)
People I care about stopped calling after learning I have HIV	25(3.9)	192(30.1)	270(42.3)	151(23.7)
I am very careful whom I tell that I have HIV	159(24.9)	337(52.8)	117(18.3)	25(3.9)
I work hard to keep my HIV a secret	95(14.9)	146(22.9)	259(40.6)	138(21.6)
I feel I am not as good as others because Have HIV	40(6.3)	197(30.9)	321(50.3)	80(12.5)
Some people avoid touching me once they know I have HIV	92(14.4)	220(34.5)	260(40.8)	66(10.3)
Most people are uncomfortable around someone with HIV	62(9.7)	291(45.6)	207(32.4)	78(12.2)
People with HIV/AIDS are treated like outcasts	103(16.1)	182(28.5)	246(38.6)	107(16.8)
I have lost friends by telling them I have HIV	77(12.1)	178(27.9)	315(49.4)	68(10.7)
I feel guilty because I have HIV	18(2.8)	164(25.7)	284(44.5)	172(27)
Most people believe a person who has HIV is dirty	29(4.5)	222(34.8)	276(43.3)	111(17.4)

Notes: 1=Strongly disagree, 2=Disagree, 3=Agree, Strongly 4=agree.

significantly associated with perceived HIV-related stigma and candidate variables for subsequent multivariable regression analysis.

In the final model (multivariable logistic regression analysis), marital status, educational status, HIV disclosure, poor social support, and being a member of NEP+ were found to be independently associated with perceived HIV stigma. Perceived HIV stigma was approximately 3 times higher among widowed HIV patients than among married HIV patients (AOR=2.984; 95% CI=1.728–5.155). HIV patients who attained primary education were more than three times more likely to experience perceived HIV/AIDS stigma when compared to those who attended tertiary education (AOR=3.36; 95% CI=2.072–5.42). HIV patients who did not disclose their status were nearly two times more likely to experience perceived HIV stigma than those who disclosed their HIV status (AOR=1.657; 95% CI=1.121–2.451).

**Figure 1** Level of social support by perceived stigma.

Perceived HIV stigma was two times higher among patients who get poor social support than those who get good social support (AOR: 2.05; 95% CI=1.195–3.433). On the other hand, those patients who owned a membership in NEP+ were 60% less likely to experience perceived stigma as compared with a non-member (AOR=0.396; 95% CI=0.249–0.63) (Table 4).

Table 4 Factors Associated with Perceived HIV Stigma Among Adult People Living with HIV in HIV (n=638) in Wolaita Zone, July 10-September 2020

Characteristics (n=638)	Perceived Stigma		COR (95% CI)	AOR (95% CI)	P-value
	High	Low			
Age of HIV patients					
20–29	109(61.9)	67(38.1)	1.282 [0.875–1.877]	1.144[0.700–1.871]	0.591
30–39	165(55.9)	130(44.1)	I	I	
40–49	63(62.4)	38(37.6)	1.306[0.822–2.077]	1.132[0.673–1.905]	0.640
≥50	32(48.5)	34(51.5)	0.742[0.434–1.266]	0.845[0.468–1.526]	0.576
Marital status					
Single	85(59)	59(41)	1.492[0.995–2.238]	1.348[0.790–2.299]	0.274
Married	140(49)	145(50.9)	I	I	
Divorced	70(64.2)	39(35.8)	1.859[1.179–2.931]	1.643[0.896–3.418]	0.052
Widowed	74(74.0)	26(26.0)	2.948[1.782–4.878]	2.984[1.728–5.155]	0.000
HIV test decision					
Yes &voluntary	237(54.4)	199(45.6)	I	I	
Yes, but pressured	92(64.8)	50(35.2)	1.545[1.043–2.288]	1.470[0.949–2.276]	0.084
No, I was forced	19(65.5)	10(34.5)	1.595[0.725–3.510]	1.274[0.529–3.068]	0.590
I know I was tested	21(67.7)	10(32.3)	1.763[0.811–3.832]	2.007[0.868–4.638]	0.103
Educational status					
No formal education	48(52.7)	43(47.3)	1.495[0.873–2.560]	1.609[0.850–3.046]	0.144
Primary education	184(71.6)	73(28.4)	3.376[2.175–5.240]	3.361[2.072–5.42]	0.000
Secondary education	81(50.9)	78(49.1)	1.391[0.873–2.215]	1.579[0.952–2.619]	0.077
Tertiary	56(42.7)	75(57.3)	I	I	
ART adherence					
Good (Ref)	306(56.6)	235(43.4)	I	I	
Fair	43(66.2)	22(33.8)	1.501[0.874–2.579]	1.283[0.689–2.390]	0.432
Poor	20(62.5)	12(37.5)	1.280[0.613–2.671]	0.991[0.439–2.239]	0.983
Disclosure					
Yes	242(53.8)	208(46.2)	I	I	
No	127(67.6)	61(32.4)	1.789[1.252–2.558]	1.657[1.121–2.451]	0.011

(Continued)

Table 4 (Continued).

Characteristics (n=638)	Perceived Stigma		COR (95% CI)	AOR (95% CI)	P-value
	High	Low			
Residence					
Urban	303(56.4)	234(43.6)	I	I	
Rural	66(65.3)	35(34.7)	1.456[0.934–2.270]	1.271 [0.752–2.147]	0.371
Viral Load suppression					
Undetectable	284(56.6)	218(43.4)	I	I	
High	85(62.5)	51(37.5)	1.279[0.867–1.889]	0.981 [0.624–1.544]	0.953
Social support					
Poor social support	212(62.7)	126(37.3)	2.08[1.286–3.367]	2.05[1.195–3.433]	0.009
Medium social support	119(55.3)	96(44.7)	1.533[0.925–2.541]	1.516[0.872–2.636]	0.141
Strong social support	38(44.7)	47(55.3)	I	I	
Network of PLWH					
Yes	50(43.5)	65(56.5)	0.492[0.327–0.740]	0.396[0.249–0.63]	0.000
No	319(61)	204(39)	I	I	

Discussion

This study attempted to determine perceived HIV stigma and associated factors among adult ART patients in Wolaita Zone, Southern Ethiopia. The study found that the overall perceived HIV stigma among adult ART patients was found to be 57.8%, (95% CI=54.1–61.9) in the study area.

In Ethiopia, Turi et al (2021), Adane et al (2020) and Chekole (2020) found a lower perceived HIV stigma of 42%, 49%, and 43%, respectively, than the current study.^{31,32,40} This dissimilarity could be explained by the difference in the study setting, sample size, tool, and participant variation.

The finding is consistent with the study reported by other researchers; Nigeria (59.9%), Cameroon 62.6% and Ethiopia reported 61.1%.^{41–43} The current study found a lower perceived HIV stigma than three other studies from South Africa, Nigeria, and Iran where the studies reported perceived HIV stigma of 66.5%, 77.2%, and 67.9%, respectively.^{35,44,45} The difference can also be due to the variation in socioeconomic status, culture, sample size, and stigma measurement tool.

The odds of experiencing perceived HIV stigma was three times higher for widowed HIV patients than married HIV patients. This finding was similar to the study findings from Ethiopia,³² and South Africa⁴⁵ and inconsistent with the findings from India⁴⁶ and Iran.³³ The possible reason for the inconsistency might be attributed to the study setting, socio-cultural variation, and the time lapse between the studies.

Those HIV patients who did not disclose their status were almost two times more likely to experience perceived HIV stigma than those who disclose their status. This result was reported similarly to the other two studies in Ethiopia.^{31,39}

This study also indicated that those who attended the primary educational level were four times more likely to experience perceived HIV stigma than those who attended the tertiary educational level. A lower level of education was similarly associated with higher HIV-related stigma in several previous studies.^{32,41,43,47} However, the present study result seems to be inconsistent with the study reports of India and China where the studies reported a higher level of education (above secondary educational level) has a positive association with HIV-related stigma.^{34,48} The difference might be explained in terms of socio-cultural, lifestyle, and accessibility of education.

The statistical association between educational level and HIV-related stigma was not reported in the other two studies from India and South Africa.^{33,45} The possible explanation for the difference might be that socio-cultural and sample size differences.

The odds of perceived HIV stigma was more than 2 times higher among patients who poorly get social support than those who get good social support. Those who owned a membership of a NEP+ are less likely to develop perceived HIV stigma than non-members. This result was reported similarly in another study from South Africa.⁴⁵ However, the finding is contrary to the study finding from India.⁴⁹ This discrepancy might be due to the study population, sample size, and the study setting.

According to this study's findings, high-perceived stigma by PLHIV was reported in the study area contrary to the decline in the actual stigma and discrimination due to national and international HIV-related stigma elimination efforts. A high perception of stigma may halt the effort to HIV prevention and control through risky sexual practice, unsafe sex, undisclosed HIV status, and imposing high care-seeking limitations.

Policymakers, governmental and non-governmental organizations, and other stakeholders who are working on HIV prevention and control should simultaneously focus on HIV patients' perceived stigma and actual. Wolaita Zone and other policymakers should design and implement improving the accessibility of education for HIV patients. Enhancement of social support schemes and membership in HIV patients support network (NEP+) should be improved. Furthermore, further large-scale studies using mixed methods and implementation science principles are recommended.

Strength of the Study

The present study provides additional evidence concerning HIV-related stigma among PLHIV in southern Ethiopia from the patients' perspective in which little is known. The study also included the special population group of PLHIV and created an opportunity for the participants to share their perceptions regarding HIV-related stigma. The study findings' validity was also ensured by the use of a large stratified random sample and using the standard measurements and data collection tool.

Limitations of the Study

This study does not consider people with HIV who are not enrolled in HIV care. Hence, the findings are generalized to only those in HIV care. During the translation and adoption of the data collection tool, there might be an introduction of deviation from the original developer's version. Lastly, the subjectivity of some of the questions may pave the way for social desirability bias.

Conclusion

According to this study, the perceived HIV stigma was high among adult ART patients in this study area when compared to the fact that the declining actual HIV-related stigma and discrimination in Ethiopia. Perceived HIV stigma was significantly higher among widowed, those who attended only primary education, and those who did not disclose their HIV status. However, perceived HIV stigma was significantly lower among those who owned membership to the HIV support group NEP+ and those getting higher social support. Targeted counseling and encouragement of PLHIV to disclose their HIV status, encouraging patients to be included in the HIV support group NEP+, and strengthening the social support system for PLHIV are recommended.

Abbreviations

ART, anti-retroviral therapy; HIV/AIDS, human immunodeficiency virus/acquired immunodeficiency syndrome; NEP+, Network of Networks of HIV positives in Ethiopia; PLHIV, people living with HIV.

Data Sharing Statement

All data generated or analyzed during this study are included in this published article and its [Supplementary Information Files](#).

Ethical Consideration

The current study was conducted following the declaration of Helsinki for studies involving human participants. The study protocol was approved by Wolaita Sodo University, College of Health and Medical Science, Institutional Health Research Ethics Review Committee. Official letters of cooperation were written to all hospitals, health centers, and concerned administrative bodies sequentially. Information on the study was explained to the participants, including the procedures, potential risks, and benefits of the study. Informed voluntary written consent was obtained from all respondents before the study ([Supplementary Files Section 1](#)).

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Author Contributions

All authors equally contributed to this work beginning from the conception, study design, execution, acquisition of data, analysis, and interpretation. Authors of this work took part in the drafting, revising, and/or critically reviewing of the article and finally agreed on the journal to which the article was submitted. All authors are also reviewed and agreed on all versions of the article before submission, during revision, and the final version is accepted for publication and agreed to be accountable for all aspects of the work.

Disclosure

The authors declare that they have no competing interests.

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