

Factors Associated with HIV-Related Perceived Stigma among HIV-Positive Youths Attending ART Follow-Up in Jimma Town Public Health Facilities, Southwest Ethiopia

Derara Girma^{1*}, Hiwot Dejene¹, Leta Adugna¹ and Bilisumamulifna Tefera²

¹Department of Public Health, College of Health Sciences, Salale University, Fitcha, Ethiopia

²Department of Public Health, College of Health Sciences, Mettu University, Mettu, Ethiopia

*Corresponding Author: Derara Girma, Department of Public Health, College of Health Sciences, Salale University, Fitcha, Ethiopia.

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Abstract

Introduction: Youth living with HIV (age 15 - 24) had a higher risk of HIV-related stigma than any older age group. As well, HIV-related stigma is the main risk factor for adverse outcomes among HIV-positive youths. However, the magnitude and factors associated with perceived stigma among HIV-positive youths in Ethiopia have not been extensively quantified so far. Therefore, site-specific evidence is vital to identify factors associated with perceived stigma among HIV-positive youths.

Methods: An institution-based cross-sectional study was conducted from March 2020 to June 2020 among 341 HIV-positive youths on anti-retroviral therapy follow-up. Participants were selected using a systematic random sampling technique. Data were collected using interviewer-administered techniques and medical record review. The collected data were entered into Epi Data 3.1 and exported to SPSS version 22 for analysis. The Adjusted Odds Ratio (AOR) with 95% CI was used to measure the association along with a respective p-value < 0.05 to identify statistically significant variables in the multivariable logistic regression.

Results: A total of 325 HIV-positive youths have participated in this study with a response rate of 95.3%. The magnitude of perceived stigma among HIV-positive youths was 63.15 (95% CI: 57.2, 68.0). In multivariable analysis, rural resident (AOR = 2.55, 95%CI: 1.37 - 4.74), HIV serostatus nondisclosure (AOR = 2.84, 95%CI: 1.55 - 5.19), poor antiretroviral treatment adherence (AOR = 2.52, 95%CI: 1.18-5.38), TB co-morbid (AOR = 2.27, 95%CI: 1.04 - 4.98), and less than one year since diagnosed with HIV/AIDS (AOR = 1.90, 95%CI: 1.10 - 3.28) were factors independently associated with perceived stigma.

Conclusion: This finding confirmed that HIV-positive youths in the study area experienced a high magnitude of perceived stigma. For stigma to be declined, giving notable consideration to factors significantly associated with stigma would be beneficial.

Keywords: Stigma; HIV; Adolescent; Youth; Ethiopia

Abbreviations

AIDS: Acquired Immuno-Deficiency Virus, AOR: Adjusted Odds Ratio, ART: Anti-Retroviral Therapy, CI: Confidence Interval, COR: Crude Odds Ratio, HIV: Human Immuno-deficiency Virus, LMICs: Low- and Middle-Income Countries, OI: Opportunistic Infection, PTSD: Post-Traumatic Stress Disorder, TB: Tuberculosis, WHO: World Health Organization

Introduction

The emergence of the Human Immunodeficiency Virus (HIV) has brought weighty health challenges in adolescents and youths globally [1]. Currently, more than 30% of all new HIV infections across the globe are estimated to occur among adolescents and youth (15 - 25 years) [2]. Most adolescents and youth living with HIV live in low- and middle-income countries (LMICs), with 84% in sub-Saharan Africa [3]. In this regard, adolescents and youth living with HIV (15 - 24 years) in Ethiopia are listed as a major group vulnerable to HIV/AIDS. Particularly, Jimma town is one of the high-burden areas with the target for HIV prevention in Ethiopia [4].

HIV-related stigma refers to prejudice, negative attitudes, and abuse directed at HIV-positive people [5,6]. It is known as “the third phase of the HIV/AIDS epidemic” [7]. HIV/AIDS-related perceived (self-stigma) occurs when an individual internalizes feelings of shame or blame due to his/her negative social judgment of the HIV-positive status [8]. It arises from internalizing perceived negative public attitudes towards HIV-positive people and admits as it is relevant to oneself [9].

Consistently, studies across low-, middle-, and high-income countries indicate a high rate of HIV-related stigma in adolescents and youth living with HIV ranging from 26.5% - 64% [10-14]. Despite this, mental and behavioral health challenges including stigma are neglected in HIV-infected young people, particularly in resource-limited settings where most of them live [15].

Adolescents and Youth living with HIV experience numerous challenges and stigma complicates the challenges of living with HIV/AIDS [16]. The HIV-related stigma has been associated with specific psychological challenges for adolescents and youth living with HIV such as increased symptoms of depression and anxiety, as well as decreased self-esteem and social support [17,18]. In turn, such mental distress, have increased engagement in sexual [18,19] and substance use risk behaviors [18-20], suicidal ideation and attempts [10,21] decreased adherence to ART, increased medical appointments missing [22] and limited quality of life [23] and disclosure [24]. Collectively, stigma hurts youth engagement in all phases of the HIV care continuum [25].

Moreover, in different literatures so far HIV-related stigma was significantly associated with factors such as serostatus nondisclosure [14,26], poor social support [18], death of a parent (s) [27], reduced retention in care [13], discomfort communication with caregivers [26] and treatment non-adherence [28]. On the other hand, the need to address more factors leading to HIV-related stigma was previously documented [29,30].

Despite medical advancements in HIV/AIDS prevention and control, HIV-related stigma is still prevalent in many countries, hindering prevention, treatment, and care. In Ethiopia, it has been identified as one of the biggest challenges to HIV/AIDS prevention, treatment, and care [31]. Even though scanty literatures existed in Ethiopia, they focused on HIV stigma among adult HIV-positive people [32-34] and were only limited to the qualitative findings [35].

Regardless of the public health importance of stigma in HIV/AIDS, there is a notable gap in the study among adolescents and youth living with HIV in Ethiopia. In the meantime, it appears that the stigma of HIV/AIDS may vary depending on the social, economic, and structural factors driving it [36]. Besides, given the range of negative psychosocial and medical consequences that adolescents and youth living with HIV may experience due to the deleterious effects of HIV-related stigma, identifying the magnitude and factors associated with stigma is crucial to combat these negative aftermaths [16]. Therefore, this finding will be a point of departure towards filling this gap by providing evidence on the perceived stigma among adolescents and youth living with HIV in Ethiopia.

Methods

Study design, setting, participants, and sampling procedure

A cross-sectional study was conducted at all ART clinics (Jimma Medical Center, Shenen Gibe General Hospital, Jimma Health Center, and Higher2 Health Center) in Jimma town, southwest Ethiopia from March 2020 to June 2020. Jimma town is listed among the high burden (hotspot) areas with geographic priorities of HIV prevention response in Ethiopia [4]. All adolescents and youth living with HIV [15-24] who were attending ART clinics in Jimma town during the study period and who had at least one previous visit to ART clinics were eligible for the study. The sample size was calculated using a single population proportion formula in Epi-Info 7 Stat Calc with the assumptions of a 95% confidence level, 4% margin of error, and 41% prevalence of stigma [10]. Hence, after adding a 10% nonresponse rate, the final sample size obtained was 341. The study subjects were selected from the ART clinics using a systematic random sampling technique for interviews.

Data collection procedures and measurements

Structured interviewer-administered questionnaires were used to collect data. Clinical data were extracted from the medical records of adolescents and youth living with HIV. Four clinical nurse data collectors and one psychiatric nurse supervisor were assigned to data collection. The questionnaires were designed in English and translated to Afan Oromo (with forward and backward translation) to ensure consistency and were pretested. One day of training was given to the data collectors and supervisors. The data collection process was monitored by supervisors daily.

A reliable and valid 32-points HIV-stigma scale was used to measure perceived stigma. The scale consists of a 4-point Likert scale (strongly disagree, disagree, agree and strongly agree) questions regarding disclosure status, negative self-image, and public attitudes. The scale had good internal consistency (Cronbach's $\alpha = 0.81$) [37]. A score of 0 was given for those who answered "strongly disagree" and "disagree". A score of 1 was given for those who chose "agree" and "strongly agree". The scores were summated and a total score $\geq 50\%$ was considered as having a perceived stigma. A total score of $< 50\%$ was considered as not having a stigma [32,37,38]. The tool was reliable in this study (Cronbach-alpha = 0.88). The Oslo-3 Social Support Scale (OSS-3) was used to measure the family/social support level of HIV-positive youths. The tool contains valid values ranging from 3 - 14. A score ranging from 3 - 8 is classified as "poor support", 9 - 11 "intermediate support", and 12-14 "strong support" [38]. The tool was reliable in this study (Cronbach-alpha = 0.71). Adherence to ART was measured based on the number of prescribed pills and missed pills in the past 14-days before the data collection day. The patients who had an intake of $\geq 95\%$ of the prescribed medication were considered as good adherence, and those who had an intake of $< 95\%$ were poor adherence [39]. Besides, different socio-demographics, psycho-social, and clinical characteristics were assessed as explanatory variables.

Data processing and analysis

Data were entered into Epi Data version 3.1 and exported into SPSS version 25 for analysis. Descriptive and bivariable logistic regression analyses were done to see the frequency distribution and to test whether there was an association between the independent and dependent variables, respectively. All factors with a p-value ≤ 0.25 in the bivariable analysis were simultaneously included in the multivariable analysis to identify factors independently associated with stigma. The strength and presence of statistical associations were assessed using the Adjusted Odds Ratio with a 95% confidence interval. Finally, a p-value < 0.05 was declared a statistically significant variable. The Hosmer and Lemeshow goodness-of-fit model was used to check for model fitness and it was fitted (p-value = 0.780).

Results

Socio-demographic characteristics of the respondents

A total of 325 participants out of 341 recruited were included in the study making the response rate 95.3%. The majority of the respondents, 199 (61.2%), were male. Of the total respondents, 201 (61.8%) were in the age range 20 - 24. Concerning education level, about 174 (53.5%) had attended primary education. The predominant, 252 (77.5%) of adolescents and youth living with HIV were urban dwellers (See table 1).

Variable	Category	Frequency (n)	Percentage (%)
Sex	Male	199	61.2
	Female	126	38.8
Age	15 - 19	124	38.2
	20 - 24	201	61.8
Education level	Primary (1 - 8) grade	174	53.5
	Secondary and above	151	46.5
Residence	Urban	252	77.5
	Rural	73	22.5
Religion	Muslim	115	35.4
	Orthodox	123	37.8
	Protestant	62	19.1
	Catholic	25	7.7
Ethnic group	Oromo	185	56.9
	Amhara	69	21.2
	Dawuro	33	10.2
	Yem	23	7.1
	Others ^a	15	4.6

Table 1: Sociodemographic characteristics of adolescents and youths living with HIV attending ART clinics in Jimma town, southwest Ethiopia, 2020.

^a: Tigre, Gurage.

Caregiver, psycho-social, and clinical characteristics of the respondents

Of a total of participants, 223 (68.6%) had a primary caregiver. Almost three-fourths, 238 (73.2%) have disclosed their HIV status. Regarding social support, the majority, 192 (59.1%) had poor social support. About, 49 (15.1%) of adolescents and youth living with HIV had been living alone. Concerning clinical factors, the median (IQR) baseline CD4 count was 380 (278) and the mean (SD) was 1083 (745). The majority, 145 (44.6%) were in WHO clinical stage 1, 271 (83.4%) had good ART adherence, and 116 (35.7%) had one form of opportunistic infection (OI). The leading OI was Pulmonary Tuberculosis 30 (9.2%), followed by pneumonia 17 (5.2%), and oral candidiasis 15 (4.6%) (See table 2).

Variable	Category	Frequency (n)	Percentage (%)
Presence of primary care-giver	Yes	223	68.6
	No	102	31.4
Disclosed HIV status	Yes	238	73.2
	No	87	26.8
Hospitalization history	Yes	104	32.0
	No	221	68.0
Bullied for one's physical appearance	Yes	125	38.5
	No	200	61.5
Social support	Poor support	192	59.1
	Intermediate support	89	27.4
	Strong support	44	13.5
Living accompany	With birth parents	179	55.1
	With siblings	71	21.8
	Alone	49	15.1
	Others ^b	26	8.0
WHO clinical stage	Stage-1	145	44.6
	Stage-2	71	21.8
	Stage-3	69	21.2
	Stage-4	40	12.3
Treatment adherence	Good adherence	271	83.4
	Poor adherence	54	16.6
Opportunistic infection (s)	Present	116	35.7
	Absent	209	64.3

Table 2: Caregiver, psycho-social, and clinical characteristics of adolescents and youths living with HIV attending ART clinics in Jimma town, southwest, Ethiopia, 2020.

^b: Relatives, orphanage.

Magnitude of HIV-related Perceived Stigma, descriptive statistics for the HIV Stigma Scale and its three subscales

The overall magnitude of perceived stigma among adolescents and youth living with HIV was 63.15% (95% CI:57.2, 68.0). Regarding descriptive statistics, the HIV Stigma scale's mean (standard deviation) score was 16.59 (5.23) and its three subscales mean (standard deviation) scores; Disclosure concern: 4.41 (1.77), Negative self-image: 5.90 (2.20), and Public attitude: 6.28 (2.35) (See table 3).

Scale (range)	Min-Max	Mean (SD)	Median (IQR)	Reliability (Cronbach- α)
HIV Stigma scale (8 - 32)	8-32	16.59 (5.23)	16.0 (7.0)	0.87
Disclosure concerns (2 - 8)	2-8	4.41 (1.77)	4.0 (3.0)	0.80
Negative self-image (3 - 12)	3-12	5.90 (2.20)	6.0 (3.0)	0.84
Public attitude (3 - 12)	3-12	6.28 (2.35)	6.0 (4.0)	0.82

Table 3: Descriptive statistics for the HIV Stigma Scale and its three sub-scales among adolescents and youths living with HIV attending ART clinics in Jimma town, southwest, Ethiopia, 2020.

Factors associated with HIV-related perceived stigma

In the multivariable model, after controlling for potential confounders, five (5) variables were independently associated with HIV-related perceived stigma. Accordingly, rural residents’ adolescents and youth living with HIV were more than twice at risk of stigma compared to urban residents (AOR = 2.55, 95%CI: 1.37 - 4.74). Those adolescents and youth living with HIV who did not disclose their HIV serostatus were almost three times more likely to be stigmatized compared to those who did disclose their HIV serostatus (AOR = 2.84, 95%CI: 1.55 - 5.19). Regarding treatment adherence, adolescents and youth living with HIV who were poorly adhered to antiretroviral treatment had more than two-fold likelihood of developing stigma (AOR = 2.52, 95%CI: 1.18 - 5.38). Additionally, adolescents and youth living with HIV with TB comorbid and who have been treated for it had more than two times the chance of HIV-related stigma (AOR = 2.27, 95%CI: 1.04 - 4.98). Concerning the length of HIV/AIDS diagnosis, those who have a duration of below a year had two times more chances to have a stigma (AOR = 1.90, 95%CI: 1.10 - 3.28) (See table 4).

Variable	Category	Stigma		COR (95%CI)	AOR (95%CI)
		Yes	No		
Residence	Rural	55 (75.3%)	18 (24.7%)	2.08 [1.15-3.74]	2.55 [1.37-4.74]**
	Urban	150 (59.5%)	102 (40.5%)	1	1
Presence of primary caregiver	Yes	127 (57.0%)	96 (43.0%)	2.46 [1.45-4.17]	1.35 [0.52-3.51]
	No	78 (76.5%)	24 (23.5%)	1	1
HIV/AIDS disclosure status	Non-disclosed	69 (79.3%)	18 (20.7%)	2.88 [1.61-5.13]	2.84 [1.55-5.19]**
	Disclosed	136 (57.1%)	102 (42.9%)	1	1
Death of biological parent (s)	Yes	69 (67.6%)	136 (61.0%)	1.34 [0.82-2.19]	0.90 [0.52-1.56]
	No	33 (32.4%)	87 (39.0%)	1	1
History of hospital admission	Yes	70 (67.3%)	34 (32.7%)	1.31 [0.80-2.14]	1.27 [0.75-2.15]
	No	135 (61.1%)	86 (38.9%)	1	1
Treatment adherence	Poor adherence	44 (81.5%)	10 (18.5%)	3.01 [1.45-6.23]	2.52 [1.18-5.38]*
	Good adherence	161 (59.4%)	110 (40.6%)	1	1
TB co-morbid and treatment	Yes	35 (77.8%)	10 (22.2%)	2.26 [1.08-4.76]	2.27 [1.04-4.98]*
	No	170 (60.7%)	110 (39.3%)	1	1
Duration since diagnosed with HIV	≤ one year	134 (59.0%)	93 (41.0%)	1.83 [1.09-3.06]	1.90 [1.10-3.28]*
	> one year	71 (72.4%)	27 (27.6%)	1	1
Opportunistic infection (s)	Yes	77 (66.4%)	39 (33.6%)	1.25 [0.78-2.01]	0.96 [0.55-1.65]
	No	128 (61.2%)	81 (38.8%)	1	1

** p-value < 0.01, * p-value < 0.05, 1 = references, AOR = Adjusted Odds Ratio, COR = Crude Odds Ratio, CI = Confidence Interval

Table 4: Factors associated with Perceived Stigma among adolescents and youths living with HIV attending ART clinics in Jimma town, southwest Ethiopia, 2020.

Discussion

This study has measured the magnitude of perceived stigma and associated factors among adolescents and youth living with HIV. In the current study, 63.15% of adolescents and youth living with HIV have reported perceived HIV-related stigma. The finding of this study is

consistent with the previous study conducted in the USA (64%) [14]. However, it is lower than the study conducted in South Africa (69%) [40]. Measuring stigma among adolescents and youth living with HIV with multi-morbidity including depression, anxiety, and PTSD may increase its level in South African study [40]. Moreover, the strengthened prevention interventions of HIV-related stigma and discrimination in Ethiopia may lower it [4].

In contrast, the magnitude of HIV-related perceived stigma in this study is higher than the previous studies done among HIV-positive youths in Uganda (41%) [10] and two studies from South Africa (33.1%) [13] and (26.5%) [12]. The discrepancy may be attributable to the use of different measuring tools and variation in HIV-positive youths' age and study settings. In addition, this result is higher than the study conducted among HIV-positive adults in Ethiopia (41.93%) [32]. Adolescents and youths with a chronic illness like HIV/AIDS are at greater risk of stigma than adults [41,42].

Regarding factors associated with stigma, adolescents and youths living with HIV, who reside in rural have more than two times the likelihood of perceived stigma than urban residents. This is supported by previous studies from Ethiopia [32] and Iran [43]. This is maybe due to variations in cultural beliefs and practices, poor knowledge, and misunderstandings about HIV/AIDS that happen in rural residents [32]. HIV serostatus nondisclosure heightened the chance of perceived stigma. This is in line with previous studies from Ethiopia [32], Kenya [44] and the USA [14]. Fear of being HIV-positive and misunderstanding was wrongly taken as it was due to their HIV serostatus [32]. Besides, negative images about disclosure to others will take a sense of being normal away from them, assuming that they will be handled differently [45].

Additionally, adolescents and youths living with HIV with TB comorbid had more than two times the chance of developing perceived stigma. This is supported by the prior study done in Ethiopia [46]. TB is perceived as a marker for HIV positivity and the relation between the two diseases has contributed to stigmatization [47]. Additionally, poor adherence to antiretroviral treatment had increased the likelihood of developing perceived stigma. Perceived stigma affected the time and place to take medication, the visit to the clinic for ART refill, and self-disclosure of HIV status. This is confirmed by previous studies from Kenya [44] and Zambia [48]. Furthermore, less than one year since HIV/AIDS diagnosis increased the risk of perceived stigma. Fear of social unacceptableness, negative self-image, and negative value judgments lead to heighten perceived stigma in recently diagnosed HIV-positive youths. This is evidenced by a study from Nepal [49].

Conclusion

In summary, this finding confirmed that adolescents and youths living with HIV in the study area experienced a high percentage of HIV-related perceived stigma, according to the World Health Organization [50]. For stigma to be declined, giving remarkable consideration to adolescents and youths living with HIV who have TB comorbidity, poor adherence to antiretroviral treatment, status nondisclosure, less than one year since diagnosed with HIV/AIDS, and rural residents would be beneficial. Besides, routine screening and implementation of effective stigma alleviation interventions necessitating healthcare providers' multidisciplinary approach in healthcare settings is suggested. More studies with a mixed method to delineate factors associated with stigma among HIV-positive youths will enhance knowledge and overall improvement of care.

Limitations of the Study

The lack of temporality ascertainment because of its cross-sectional nature. Additionally, the use of self-reported questionnaires may introduce social desirability bias.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon reasonable request.

Ethical Approval

Ethical clearance was obtained from the Institutional Review Board of Jimma University.

Consent

Informed written consent for youths ≥ 18 years old and assent for youths < 18 years old was obtained from each study participant. In addition, parents'/caregivers' permission was obtained for youths < 18 years old. To ensure confidentiality, all of the study participants were assured that the data will be anonymous and personal identifiers will be removed.

Conflict of Interest

The authors declare that they have not had any conflicts of interest.

Authors' Contributions

Derara Girma, Hiwot Dejene, Leta Adugna, and Bilisumamulifna Tefera have conceptualized the study, involved in the design of the study, reviewed the article, analyzed, report writing, and drafted the manuscript. All authors read and approved the final manuscript.

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