

# Perceived Stigma and Associated Factors Among People Living with HIV Attending ART Clinics in Public Health Facilities of Dessie City, Ethiopia

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**Introduction:** Despite the fact that responses to epidemics of human immune-deficiency virus (HIV) have gradually improved; it remains one of the world's public health challenges, particularly in low- and middle-income countries. Evidence is still limited in this area and this study aimed to assess the magnitude of perceived stigma and associated factors among people living with HIV (PLWH) in public health facilities of Dessie city, Ethiopia.

**Methods:** A health facility-based cross-sectional study was conducted among a total of 422 PLWH from September 1 to October 30, 2019 in Dessie city. A pretested structured interviewer-administered questionnaire was used to collect the data and it was analyzed using Stata/SE 14. Multivariable binary logistic regression analysis was used to identify factors associated with perceived stigma. The adjusted odds ratio (AOR) along with 95% confidence interval (CI) was estimated to measure the strength and direction of the association. Statistical significance was declared at P value less than 0.05.

**Results:** The overall magnitude of perceived stigma among people living with HIV in public health facilities of Dessie city was 41.93% [95% CI: (37.25, 46.75)]. Perceived stigma was positively associated with being female [AOR=2.08, 95% CI: (1.26, 3.46)], living in rural areas [AOR=1.80, 95% CI: (1.10, 2.94)] and not disclosing HIV status [AOR=2.36, 95% CI: (1.19, 4.66)].

**Conclusion:** In this study, the magnitude of perceived stigma was high as compared to UNAIDS standard, and sex, place of residence, and disclosure of HIV serostatus were significantly associated with perceived stigma. The findings suggested that special emphasis should be placed on rural residents in order to reduce perceived stigma. Moreover, counseling should focus on disclosing HIV serostatus to anyone else interested to disclose particularly for females.

**Keywords:** stigma, sexually transmitted infections, HIV prevention, HIV, Dessie Ethiopia

## Introduction

HIV remains one of the world's public health challenges, particularly in low- and middle-income countries like Ethiopia.<sup>1,2</sup> According to the 2016 Ethiopian Demographic and Health survey, the prevalence of HIV in Ethiopia was 1.2%.<sup>3</sup> PLWH faced not only medical problems but also social problems associated with the disease. One of these problems is HIV related stigma which means: prejudice, discounting, discrediting and discrimination directed toward persons having HIV.<sup>4,5</sup> Perceived stigma is how PLWH feel when they are negatively treated by partners, family, friends, health care providers and members of their community due to their HIV status and.<sup>6,7</sup>

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A recent study found that evidence-based effective programming to reduce stigma and discrimination had expanded.<sup>8</sup> Efforts to reduce stigma related to HIV/AIDS will not only help countries to achieve key strategies of Sustainable Developmental Goal (SDG), it will also protect and promote human rights. Studies conducted in India indicated that perceived stigma ranged from 10% to 97% whereas, only 26% of the PLWH had experienced stigma.<sup>7,9</sup> In Iran, a study witnessed that 62% and 98% of participants experienced external and internal stigma, respectively.<sup>10</sup> Stigma also reached up to 67.2% in Cameroon and 35% in Nigeria.<sup>4,11</sup> Studies conducted in Jimma hospital revealed that 72.2% experienced perceived stigma whereas it was 49.4% in Hawassa.<sup>12,13</sup>

Perceived stigma greatly affects the quality of life of PLWH, their family members and the healthcare providers who work with them.<sup>10</sup> Stigma causes serious care limitations for PLWH and this is an important factor for the HIV epidemic throughout the world.<sup>10–12</sup> People who experienced stigma report a range of negative effects, including loss of income or job, isolation from communities, and inability to participate as a productive member of society.<sup>14</sup> Stigma also hinders adherence to antiretroviral treatment (ART) and accelerates disease progression.<sup>15–17</sup> They were also more likely to develop low self-esteem, accompanied by feelings of anger and revenge, and emotional stress.<sup>18</sup> They had a higher risk of developing anxiety and other mental disorders.<sup>13,19</sup>

Those who also experienced felt stigma related to a disruption of their personal lives while mediated by depression were likely to report poor overall health.<sup>20</sup> Stigma affects the overall quality of life of PLWH and isolates them from the community.<sup>21–25</sup> A study conducted in Cameroon indicated that 23% of the victims lost their job due to stigma and discrimination.<sup>26</sup> They are also at a higher risk of suicide.<sup>27</sup> It is due to stigma that HIV positive people do not disclose their HIV status.<sup>5</sup> A study conducted in Amhara, Ethiopia showed that those who felt stigmatized were more likely to develop distress and depression.<sup>7,28–30</sup> A study also indicated that stigma affects access to health care.<sup>31</sup> Some studies have shown that aspects of stigma have been reported as factors constituting a serious obstacle for HIV counseling and testing (VCT) service utilization and HIV prevention.<sup>32,33</sup>

To end the epidemic of HIV by the year 2030, the joint united nation program on HIV/AIDS has set a broad goal agenda calling for the three zeros: no new HIV infection, no new HIV related death and no HIV

related stigma and discrimination.<sup>34</sup> Perceived stigma could be influenced by socio-demographic characteristics of HIV infected people,<sup>6,11,35–37</sup> duration of ART<sup>11,37</sup> and time since being diagnosed,<sup>14,35,38</sup> family size and wealth,<sup>6</sup> CD4 count and being on ART,<sup>39</sup> social and family support.<sup>38,40,41</sup> Although large numbers of PLWH are found in Ethiopia, the situation of perceived stigma related to HIV has not been addressed. Therefore, this study aimed to assess the magnitude of perceived stigma and associated factors among people living with HIV attending ART clinics in public health facilities of Dessie City, Ethiopia.

## Materials and Methods

### Study Area, Study Design and Participants

A cross-sectional study was conducted in ART clinics of Dessie city from September 1 to October 30, 2019. Dessie is the center of South Wollo zone located 401 km away from Addis Ababa, the capital city of Ethiopia and 480 km away from Bahir Dar. According to the 2019 Dessie town Administrative Health Office report, two government hospitals and three health centers were providing ART services. Nine thousand seven hundred and forty seven HIV positive people were registered in all public health facilities (5818 in Dessie referral hospital, 904 in Boru hospital, 2152 in Dessie health center, 422 in Buanbwuha health center and 541 in Segnogebeya health center) of Dessie city. All HIV positive people who were registered in ART logbook and who were on ART were included and those participants aged less than 18 were excluded from the study.

### Sample Size and Sampling Procedure

The sample size was calculated using a single population proportion formula by taking the proportion of perceived stigma as 49.4% which was conducted in Hawassa.<sup>13</sup> Thus, adding 10% for non-response, the minimum required sample size was 422. The sample size was proportionately allocated to each health facility providing ART services based on the average number of client flow per month. Then, the study participants were selected systematically until reaching the sample size.

### Data Collection Tools and Measurements

Data were collected by face to face interview using a structured and pretested Amharic version questionnaire. Medical records were also reviewed to identify clinical

markers like CD<sub>4</sub> count, viral load and World Health Organization (WHO) clinical staging. A very reliable and valid 40-point HIV stigma psychometric assessment scale employed elsewhere was used to measure perceived stigma.<sup>42</sup> 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 greater or equal to 50% was considered as having a stigma. A total score less than 50% was considered as not having a stigma.<sup>12</sup>

## Statistical Analysis

Data were coded and entered into Epi-Data Version 3.1 and exported to STATA/14 for statistical analysis. Descriptive statistics such as frequency, proportion and figure were computed. All independent variables having a p-value less than 0.2 were included in the multivariable binary logistic regression model. Multicollinearity was checked using the standard error and variance inflation factor (VIF). Variables having P value of less than 0.05 were considered as statistically significant predictors of perceived stigma and adjusted odds ratios with 95% confidence interval were also computed to see the strength and direction of association.

## Ethical Approval and Consent to Participate

The data were collected after getting Ethical clearance from the Ethical Review Committee of Wollo University College of Medicine and Health Sciences (CMHS). Official letter of cooperation was obtained from each health facility administration. An informed verbal consent was obtained from each participant before their enrollment and the Ethical Review Committee also approved verbal consent with the ethical approval number CMHS/398/02/2011. This study was conducted in accordance with Helsinki Declaration and the data collection procedure was anonymous for keeping the privacy and confidentiality of any information.

## Result

### Socio-Demographic Characteristics of Participants

Four hundred and fifteen people living with HIV participated in this study, making the response rate 98.3%. More than half (50.36%) of the respondents were aged less than 35 years and one out of ten were aged greater than 44

years. Again more than half (55.90%) of the participants were females. Three hundred and twenty three (77.83%) of the respondents were urban dwellers. Concerning their educational status, nearly one quarter (23.37%) of the participants was not formally educated. Lastly, one hundred and ninety two (46.26%) of the respondents were below the middle wealth quintile (Table 1).

### Magnitude of Perceived Stigma Among People Living with HIV

The overall magnitude of perceived stigma among people living with HIV was 41.93% [95% CI: (37.25, 46.75)] (Figure 1).

### Factors Associated with Perceived Stigma Among PLWH

The multivariable analysis result showed that sex and residence of participants and disclosing HIV status to anyone else interested were found to have a significant statistical association with perceived stigma in PLWH. The odds of perceived stigma among female people living with HIV were 2 times higher than their counterparts [AOR=2.08, 95% CI: (1.26, 3.46)]. Those HIV infected people who lived in rural area also had 1.7 times higher risk of developing perceived stigma as compared to urban dwellers [AOR=1.80, 95% CI: (1.10, 2.94)]. Lastly, the odds of developing perceived stigma were 2 times higher in those who did not disclose their HIV serostatus [AOR=2.36, 95% CI: (1.19, 4.66)] (Table 2).

## Discussion

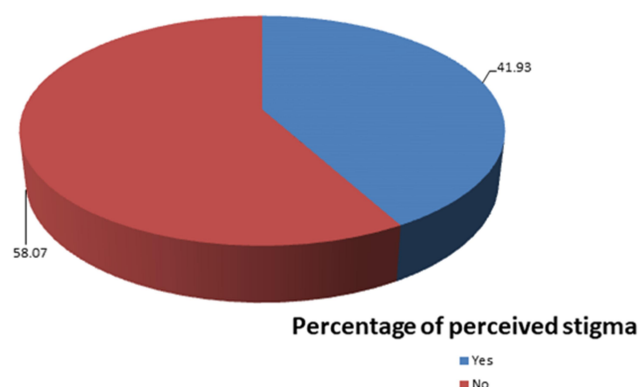
In this study the magnitude of perceived stigma was 41.93% [95% CI: (37.25, 46.75)]. Variables like sex and place of residence of respondents and disclosing HIV serostatus were significantly associated with perceived stigma. The magnitude of perceived stigma is lower than in the previous studies conducted in Hawassa and Jimma, Ethiopia.<sup>12,13</sup> But, it is higher than a study conducted in Nigeria and Botswana.<sup>4,43</sup> Whereas, it is also lower than studies conducted in Cameroon and Iran.<sup>10,11</sup> The possible reason for this discrepancy may be due to time variation and different context especially with those studies being outside Ethiopia. It may also be due to different governmental and non-governmental interventions.

The finding also revealed that females were more likely to have perceived stigma. This is also supported by a previous study conducted in Jimma, Ethiopia.<sup>6</sup> The

**Table 1** Socio-Demographic Characteristics of People Living with HIV in Public Health Facilities of Dessie City, Ethiopia, 2019

| Variables                    | Frequency | Percentage |
|------------------------------|-----------|------------|
| <b>Age in complete years</b> |           |            |
| 18–24                        | 33        | 7.95       |
| 25–29                        | 86        | 20.72      |
| 30–34                        | 90        | 21.69      |
| 35–39                        | 97        | 23.37      |
| 40–44                        | 69        | 16.63      |
| ≥ 45                         | 40        | 9.64       |
| <b>Sex</b>                   |           |            |
| Male                         | 183       | 44.10      |
| Female                       | 232       | 55.90      |
| <b>Marital status</b>        |           |            |
| Single                       | 66        | 15.9       |
| Married                      | 231       | 55.66      |
| Widowed                      | 34        | 8.19       |
| Divorced                     | 84        | 20.24      |
| <b>Place of residence</b>    |           |            |
| Urban                        | 323       | 77.83      |
| Rural                        | 92        | 22.17      |
| <b>Education status</b>      |           |            |
| Not formally educated        | 97        | 23.37      |
| Primary                      | 161       | 38.80      |
| Secondary                    | 106       | 25.54      |
| College and above            | 51        | 12.29      |
| <b>Occupation</b>            |           |            |
| Government employee          | 55        | 13.49      |
| Private employee             | 62        | 14.94      |
| Housewife                    | 55        | 13.25      |
| Merchant                     | 72        | 17.35      |
| Farmer                       | 79        | 19.04      |
| Daily laborer                | 64        | 15.42      |
| Others <sup>a</sup>          | 27        | 6.51       |
| <b>Ethnicity</b>             |           |            |
| Amhara                       | 377       | 90.84      |
| Others <sup>b</sup>          | 38        | 9.16       |
| <b>Religion</b>              |           |            |
| Christian                    | 170       | 40.96      |
| Muslim                       | 245       | 59.04      |
| <b>Wealth of household</b>   |           |            |
| Poorest                      | 86        | 20.72      |
| Poorer                       | 106       | 25.54      |
| Middle                       | 49        | 11.81      |
| Richer                       | 108       | 26.02      |
| Richest                      | 66        | 15.9       |

**Notes:** <sup>a</sup>Student and jobless, <sup>b</sup>Oromo and Tigray and Christian-Protestant and Orthodox.

**Figure 1** Magnitude of perceived stigma among people living with HIV in public health facilities of Dessie city, Ethiopia, 2019.

finding is also in line with a study conducted in Uganda.<sup>37</sup> The possible reason for this association may be due to frequent history of exposure to high risk things and females were less stable emotionally and had low self-esteem as compared to males.<sup>44</sup>

The odds of perceived stigma among rural residents were more than that of their counterparts. The finding is in agreement with a study conducted in Arbaminch, Ethiopia.<sup>45</sup> It is also similar to a study conducted in Iran.<sup>38</sup> The possible reason for this association may be due to cultural beliefs and practices that would magnify its effect which may persist in rural residents. It may also be due to poor knowledge regarding its cause as they may think of it as a sign of sin, and different misconceptions were found in rural residents. Even though cultures should be respected, all cultural practices and beliefs are not useful, particularly in Ethiopia. So, information, education, communication, and behavioral change communication would be necessary to address those bad cultural practices.

The other finding was that those who did not disclose their HIV positive serostatus were more likely to have perceived stigma. The reason for this association may be due to fear of being HIV positive and every misunderstanding was mistakenly interpreted as it was due to their HIV serostatus. Despite the fact that this study tried to investigate all possible factors of perceived stigma, it is not without limitations. It was only facility based, which will not be representative of community based studies. In addition, as it was conducted through face to face interview, the study may be prone to social desirability biases.

**Table 2** Regression Model for Factors Associated with Perceived Stigma Among People Living with HIV in Health Facilities of Dessie City, 2019

| Variables                | Category            | Stigma |     | COR (95% CI)      | AOR (95% CI)        |
|--------------------------|---------------------|--------|-----|-------------------|---------------------|
|                          |                     | Yes    | No  | n=415             | n=415               |
| Age in complete years    | 18–24               | 16     | 17  | 1.41 (0.56, 3.58) | 1.70 (0.52, 5.52)   |
|                          | 25–29               | 52     | 34  | 2.29 (1.06, 4.94) | 1.72 (0.72, 4.10)   |
|                          | 30–34               | 37     | 53  | 1.04 (0.49, 2.24) | 0.75 (0.32, 1.78)   |
|                          | 35–39               | 39     | 58  | 1.01 (0.47, 2.14) | 0.83 (0.36, 1.93)   |
|                          | 40–44               | 14     | 55  | 0.38 (0.16, 0.90) | 0.42 (0.16, 1.06)   |
|                          | ≥45                 | 16     | 24  | 1                 | 1                   |
| Place of residence       | Rural               | 31     | 61  | 2.07 (1.38, 3.12) | 1.80 (1.10, 2.94)*  |
|                          | Urban               | 143    | 180 | 1                 | 1                   |
| Sex                      | Female              | 111    | 121 | 1.75 (1.17, 2.60) | 2.08 (1.26, 3.46)** |
|                          | Male                | 63     | 120 | 1                 | 1                   |
| Educational status       | Not educated        | 34     | 63  | 0.41 (0.20, 0.82) | 0.72 (0.23, 2.25)   |
|                          | Primary             | 55     | 106 | 0.39 (0.20, 0.75) | 0.60 (0.2, 1.64)    |
|                          | Secondary           | 56     | 50  | 0.84 (0.43, 1.66) | 0.89 (0.35, 2.26)   |
|                          | College and above   | 29     | 22  | 1                 | 1                   |
| Occupation               | Government employee | 31     | 25  | 1                 | 1                   |
|                          | Private employee    | 30     | 32  | 0.76 (0.37, 1.56) | 1.21 (0.45, 3.21)   |
|                          | Housewife           | 25     | 30  | 0.67 (0.32, 1.42) | 0.85 (0.29, 2.50)   |
|                          | Merchant            | 34     | 38  | 0.72 (0.36, 1.45) | 1.37 (0.52, 3.64)   |
|                          | Farmer              | 24     | 55  | 0.35 (0.17, 0.72) | 0.85 (0.27, 2.64)   |
|                          | Daily laborer       | 19     | 45  | 0.34 (0.16, 0.72) | 0.42 (0.18, 1.47)   |
|                          | Others              | 11     | 16  | 0.55 (0.22, 1.14) | 0.57 (0.12, 1.47)   |
| Religion                 | Christian           | 79     | 91  | 1                 | 1                   |
|                          | Muslim              | 95     | 150 | 0.73 (0.49, 1.08) | 0.78 (0.49, 1.26)   |
| With whom they lived     | Sexual partner      | 79     | 136 | 1                 | 1                   |
|                          | Family              | 64     | 82  | 1.34 (0.87, 2.06) | 1.23 (0.71, 2.12)   |
|                          | Alone               | 31     | 23  | 2.32 (1.27, 4.26) | 0.96 (0.40, 2.30)   |
| Wealth index             | Poorest             | 42     | 44  | 1                 | 1                   |
|                          | Poorer              | 45     | 61  | 0.77 (0.43, 1.37) | 0.87 (0.45, 1.720)  |
|                          | Middle              | 13     | 36  | 0.38 (0.18, 0.81) | 0.64 (0.27, 1.54)   |
|                          | Richer              | 46     | 62  | 0.77 (0.44, 1.37) | 0.84 (0.42, 1.66)   |
|                          | Richest             | 28     | 38  | 0.77 (0.40, 1.47) | 0.94 (0.44, 1.99)   |
| Disclose HIV serostatus  | Yes                 | 132    | 219 | 1                 | 1                   |
|                          | No                  | 42     | 22  | 3.17 (1.84, 5.54) | 2.36 (1.19, 4.7)*   |
| Multiple sexual partners | No                  | 150    | 219 | 1                 | 1                   |
|                          | Yes                 | 24     | 22  | 1.59 (0.86, 2.94) | 1.17 (0.53, 2.57)   |
| Drug side effect         | No                  | 159    | 231 | 1                 | 1                   |
|                          | Yes                 | 15     | 10  | 2.18 (0.95, 4.97) | 1.75 (0.67, 4.58)   |
| Concomitant disease      | No                  | 132    | 197 | 1                 | 1                   |
|                          | Yes                 | 42     | 44  | 1.42 (0.88, 2.29) | 1.43 (0.82, 2.49)   |

**Notes:** 1: Reference, \*P-value < 0.05 and \*\*P-value < 0.01 in multivariable analysis.

**Abbreviations:** AOR, adjusted odds ratio; COR, crude odds ratio; Stigma, perceived stigma; Others, student and jobless.



## Conclusion

In this study, the magnitude of perceived stigma was high as compared to UNAIDS standard, and sex of respondent, place of residence and disclosure of HIV serostatus were significantly associated with perceived stigma. The findings suggested that special emphasis should be placed on rural residents in order to reduce perceived stigma. Moreover, counseling should focus on disclosing HIV serostatus to anyone else interested to disclose particularly for females.

## Abbreviations

AIDS, acquired immune deficiency syndrome; ART, antiretroviral therapy; CD4, cluster of differentiation; HIV, human immune-deficiency virus; PLWH, people living with HIV; WHO, World Health Organization.

## Data Sharing Statement

The datasets used and/or analyzed during this study will not be shared.

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## Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

## Disclosure

The authors declare that they have no conflicts of interest for this work.

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