Perceived stigma among people living with HIV/AIDS in Pokhara, Nepal

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Background: HIV-related stigma among people living with HIV/AIDS (PLWH) is the foremost barrier to HIV prevention, treatment, care, and support. The aim of this study was to identify the perceived stigma level of PLWH and its relation with selected demographic and situational factors in Pokhara, Nepal.

Methods: Cross-sectional descriptive study was conducted among 282 PLWH after probability sampling from antiretroviral treatment center of Western Regional Hospital, Pokhara, Nepal. Face-to-face interview was taken by using Bunn standard HSS tool. Stigma was measured in terms of felt stigma (public attitude concern [PAC], disclosure concern [DC], negative self-image [NSI]), enacted stigma [ES], as well as overall stigma.

Result: The mean score of PAC, DC, NSI, ES, and overall stigma was 3.09, 3.02, 2.79, 1.66, and 2.52, respectively, where mean score of all domains of felt stigma (PAC, DC, and NSI) was >2.5, thus reflecting a higher level of felt stigma. ANOVA and t-test revealed higher level of overall stigma among younger age group (P < 0.001), highly educated group (P = 0.007), unmarried group (P < 0.001), and recently HIV-diagnosed group (P = 0.003).

Conclusion: The study suggests high level of felt stigma, which has devastating effects on PLWH as well as leads to nondisclosure of sero-positive status. So considering the significant impact of felt stigma on control of HIV epidemic, it is important to have a broader comprehension of this phenomenon and its repercussions on PLWH via timely intervention like better educational intervention and counseling to PLWH, wide-scale societal awareness campaigns, and more focused local interventions.

Keywords: stigma, felt stigma, public attitude concern, disclosure concern, negative self-image, enacted stigma, people living with HIV/AIDS

Introduction

AIDS is a chronic, potentially life-threatening condition caused by the HIV. Infection with the virus results in progressive deterioration of the immune system, leading to immune deficiency.¹

HIV-related stigma remains highly prevalent across the globe.²³ There is growing recognition that gaps across the cascade of HIV prevention, testing, and treatment services are fuelled by stigma and discrimination faced by people living with HIV and people at high risk of HIV infection.⁴ Studies on stigma and discrimination and health-seeking behavior show that people living with HIV who perceive high levels of HIV-related stigma are 2.4 times more likely to delay enrolment in care until they are very ill.⁵ Furthermore, it is a disease that probably brings separation among families in
triggering a compassionate, solidarity response. So addressing stigma affecting people living with HIV/AIDS (PLHWA) is a global priority.

HIV-related stigma and discrimination may be internalized and experienced as shame or guilt or externalized as discrimination. Enacted stigma (ES) (discrimination) is experiences such as being denied, improperly treated due to HIV-positive status, while internalization is the adoption of society’s negative views into the self-concept. It may lead to self-blame, shame, lack of disclosure, reduced self-confidence, loss of motivation, withdrawal from social contact and health-based interactions, and abandonment of planning for the future.

Moreover, stigma level is comparatively more prevalent in developing countries. A study carried out in Tamil Nadu, India, showed that prevalence of severe level of stigma is high. It was also concluded that ensuring high-quality comprehensive services at the antiretroviral treatment (ART) centers and social support for the PLHWA is vital to decrease stigma and depression, and increase the quality of life. In Nepal, stigma and discrimination against the PLHAs are found in family, society, health care setting, and fellow PLHAs. Though Nepal is said to achieve a significant progress in policy and human rights for PLHAs, enforcement is yet needed to be strong.

HIV/AIDS-related stigma is recognized to be a major obstacle to successfully control the spread of this disease. A consistent, negative association has been found between fear of stigma and use of testing and treatment services. Therefore, it is worthwhile to identify the perceived stigma among PLHWA so that unique associated factors can be identified early. Hence, this study was carried out:

- To find out the level of perceived stigma in terms of enacted and felt stigma.
- To examine the differences in perceived stigma score according to selected sociodemographic variables.
- To determine the differences in perceived stigma score according to selected clinical characteristics.

### Methods

Descriptive cross-sectional research design was used to identify the perceived stigma among people living with HIV/AIDS. The study was conducted in ART center of Kaski District, Western Regional Hospital (WRH), which is situated in Ramghat, Pokhara.

Patients diagnosed with HIV/AIDS who were under antiretroviral therapy in ART center of Kaski District were the study population of the study. Total number of adult patients (≥20 years) under antiretroviral therapy at that time was 724. So sample size was calculated by standard formula. Hence, sample size calculated was 282. Systematic random sampling was used to collect the sample. Sampling interval was 724/282 = 2.56, that is, 2. So researcher took every second client as sample. For the first sample, simple random sampling was done by lottery method from 1 and 2. By lottery method, number 2 got selected, and hence, the first sample taken was second patient of the day.

### Data collection instrument/procedure

Research proposal was approved by Ethical Review Board of Tribhuwan University, Institute of Medicine, Kathmandu. The data collection unit was people living with HIV/AIDS who were under ART of Kaski ART center, WRH. All respondents were informed briefly regarding objectives of the study and verbal and written informed consent was taken from them. Respondents were not influenced by any means to participate in the study. Strict confidentiality of their identities was reassured. Voluntary participation of respondents was ensured with the choice to withdraw any time without fear and clarification. Data were collected from 282 respondents who came for ART services in ART center, using interview schedule in the separate room (ie, extra counseling room) of ART center after completion of their ART services, considering their convenient time. Data were collected for one-and-a-half month period. Study was carried out in accordance with the principle of Helsinki.

Data were collected using the interview schedule, which consisted of two parts. Part I (A) dealt with background information, which consisted of sociodemographic data, and Part I (B) dealt with questions related to HIV diagnosis, risk practices, and its disclosure. Researcher herself developed the questionnaire of this section, through extensive literature search.

Part II consisted of standard tool HSS developed by Bunn, which was the adopted version of Berger HIV stigma scale. Permission to use that scale was taken from Bunn. This tool was a 4-point Likert scale (from strongly disagree to strongly agree) containing 32 questions with 4 domains, where questions 8 and 18 had negative scoring.

The specific questions and the domains they cover are given below.

| Question number | Domain                  |
|-----------------|-------------------------|
| Q2, Q3, Q7, Q8, Q11, Q13, Q20 | Negative self-image |
| Q5, Q9, Q10, Q12, Q14, Q17 | Public attitude concern |
| Q1, Q4, Q6, Q15, Q18, Q19, Q22, Q30 | Disclosure concern |
| Q16, Q21, Q23, Q24, Q25, Q26, Q27, Q28, Q29, Q31, Q32 | Enacted stigma |

| Question number | Domain                  |
|-----------------|-------------------------|
| Q2, Q3, Q7, Q8, Q11, Q13, Q20 | Negative self-image |
| Q5, Q9, Q10, Q12, Q14, Q17 | Public attitude concern |
| Q1, Q4, Q6, Q15, Q18, Q19, Q22, Q30 | Disclosure concern |
| Q16, Q21, Q23, Q24, Q25, Q26, Q27, Q28, Q29, Q31, Q32 | Enacted stigma |
The scores ranged from 32 to 128 (1 × 32 items to 4 × 32 items). For the ES domain, scores ranged from 11 to 44. For the disclosure domain, scores ranged from 8 to 28. For the public attitudes domain, scores can range from 6 to 24. All 32 questions measure overall stigma.

The validity of the tool was established by adopting the valid previous tool, extensive literature review, and consultation with subject matter experts (ART counselor, PL WHA volunteer of HIV/AIDS support group). To use the tool in Nepalese context, first forward translation (from English to Nepali) and then backward translation (From Nepali to English) were done by two independent bilingual translators. Pretesting of the Nepali version tool was done for its feasibility and appropriateness among 10% of the sample who met sample criteria in a similar setting (ART center of Bharatpur Hospital). Reliability in terms of internal consistency of part II of the tool was tested with Cronbach’s alpha from the pretested data and overall internal consistency was found to be 0.907.

Statistical analyses
Data were analyzed using SPSS 21. Stigma score was obtained by summing up the responses of each item of subscale and later mean was computed from the composite value of each subdomain by the number of items corresponding to each subscale in order to obtain a comparable figure. The higher the mean value, higher the stigma level was considered while calculating the mean difference of stigma scores.

Mean score ≥2.5 was considered as high-level and <2.5 as low-level stigma as in the previous study in order to identify the stigma level. To find out the difference in stigma scores with different sociodemographic variables and clinical characteristics, independent t-test and ANOVA test were done. Independent t-test was used to compare means of two variables, whereas ANOVA test was used to compare the means of more than two variables. The level of significance was considered at 5% with P<0.05 and 95% CI.

Results
Sociodemographic characteristics of PLWHAs
Table 1 shows the sociodemographic characteristics of PLWHAs. Among PLWHAs, 27.3% belonged to the age group of 40–49 years, where female occupied 50.7%. Overall mean and SD of age of the PLWHA was 39.04±11.03. More than two-third (67.7%) of them reported living with partner and 63.1% were from municipality. Considering ethnicity, 46.5% of them were Janajati. Majority (86.2%) of them were literate and 54.3% were unemployed.

Clinical characteristics of respondents
Sixty eight percent of PLWHAs were diagnosed with HIV before 3 years and 48.2% had tested their HIV status mainly during treatment of other illnesses due to HIV-related symptoms. The preceding risk factor of acquiring HIV was sexual relationship with multiple partners, that is, 45%. Among 282 PLWHAs, 85.3% (n=221) disclosed their HIV status to others.

Perceived stigma level of PLWHAs
Table 2 summarizes perceived stigma level of PLWHAs. Among felt stigma domains, majority (83.3%) of PLWHAs had high level of public attitude concern (PAC), while 25.4% and 46.1% had high level of enacted and overall stigma, respectively.
Mean score of overall stigma and their domains
Table 3 demonstrates mean score of overall stigma and their domains. Out of 282 PLWHA the mean score of overall stigma was 2.52, with score ranges from 1.21 to 3.81, with the SD of 0.48. Among the four domains, PAC had the highest mean score of 3.09 with SD of 0.52 and ES had the least mean score of 1.66 with the SD of 0.48.

Differences on NSI score according to sociodemographic and clinical characteristics
Relation between NSI and sociodemographic and clinical characteristics is highlighted in Table 4. It depicts that there was significant difference in NSI mean score with regard to age (P<0.0001), educational status (P<0.0001), marital status (P<0.0001), place of residence (P=0.014), and time of HIV diagnosis (P<0.0001). NSI mean score was significantly high among young adult, PLWHA who resided in urban area, had higher-level education status, were unmarried, and who were diagnosed as having HIV infection for <3 years. On the other hand, no significant difference in DC score was found to be significantly high among young adult PLWHA (P<0.0001), female (P=0.003), unmarried (P=0.010), those with higher-level education status (P=0.007), those with high-risk behavior practices (P=0.034), and those PLWHA who were diagnosed as having HIV infection for <3 years (P<0.0001). However, there was no significant difference in PAC scores according to place of residence.

Differences in PAC scores according to sociodemographic and clinical characteristics
Table 5 summarizes the relation between sociodemographic characteristics and PAC score. Mean score of PAC was

Table 2 Perceived stigma level of PLWHA

| Stigma level | Frequency | Percentage |
|--------------|-----------|------------|
| Low          | 113       | 40.1       |
| High         | 169       | 59.9       |

Table 3 Mean score of overall stigma and their domains

| Stigma                      | Mean | SE  | 95% CI         | SD  |
|-----------------------------|------|-----|----------------|-----|
| Negative self-image (n=282) | 2.79 | 0.41| (2.71, 2.88)   | 0.70|
| Public attitude concern (n=282) | 3.09  | 0.31| (3.02, 3.15)   | 0.52|
| Disclosure concern (n=282)  | 3.02  | 0.52| (2.91, 3.12)   | 0.88|
| Enacted stigma (n=221)      | 1.66  | 0.06| (1.53, 1.79)   | 1.08|
| Overall stigma (n=282)      | 2.52  | 0.28| (2.46, 2.57)   | 0.48|

Abbreviation: SE, standard error.

Table 4 Relation between NSI and sociodemographic and clinical characteristics

| Sociodemographic and clinical characteristic | NSI mean score | SD  | P value |
|----------------------------------------------|----------------|-----|---------|
| Age (years)                                  |                |     | <0.0001 |
| Marital status                               |                |     | <0.0001 |
| Educational status                           |                |     | <0.0001 |
| Place of residence                           |                |     | <0.0001 |

Table 5 Difference in DC scores according to sociodemographic and clinical characteristics

| Sociodemographic and clinical characteristic | DC mean score | SD  | P value |
|----------------------------------------------|---------------|-----|---------|
| Age (years)                                  |               |     | <0.0001 |
| Marital status                               |               |     | <0.0001 |
| Educational status                           |               |     | <0.0001 |
| Place of residence                           |               |     | <0.0001 |

Table 6 Difference in PAC scores according to sociodemographic and clinical characteristics

| Sociodemographic and clinical characteristic | PAC mean score | SD  | P value |
|----------------------------------------------|---------------|-----|---------|
| Age (years)                                  |               |     | <0.0001 |
| Marital status                               |               |     | <0.0001 |
| Educational status                           |               |     | <0.0001 |
| Place of residence                           |               |     | <0.0001 |
Among them, 48.2% tested their HIV during treatment of other illnesses due to HIV-related symptoms. Concerning the high-risk behavior practices, 45.0% was in sexual relationship with multiple partners.

The primary finding of the current study revealed that high level of overall stigma was prevalent among 46.1% of adult PL WHA. Remaining 53.9% of PL WHA had low level of overall stigma. Similarly, a majority (83.3%) of adult PL WHA had high level of PAC followed by DC (68.1%) and NSI (59.9%), whereas only 25.4% of adult PL WHA had a higher level of ES. It reveals that fear of being stigmatized is more than actual stigma experience.

Similar to the study of Oli and Onta, many participants experienced internalized stigma related to their HIV status. This finding is also consistent with the results from a study in Kenya using the PLHIV Stigma Index. An important observation of the study is that the level of experience of most types of internalized stigma is much higher than the levels of external stigma (ES) and discrimination experienced.

**Discussion**

The study focused on the perceived stigma level of PL WHA residing in Pokhara, Nepal. As far as the sociodemographic characteristics of the adult PL WHA are concerned, the study indicates that the mean age calculated was 39.04 years, where 27.3% of PL WHA were of 40–49 years old, 50.7% were females, 46.5% were janajati, 63.1% were residing in urban area, and 67.7% were married. The group was predominantly literate (86.2%), and among them 54.3% were unemployed.

Regarding the time of HIV diagnosis, 68.1% adult PLWH A were diagnosed as HIV positive since >3 years ago.
Relationship of felt stigma with sociodemographic and clinical characteristics

Stigma against PLWHAs remains one of the central barriers to effective prevention, treatment, and care of HIV. Internalized/felt stigma is said to be harsher than ES and its effects are very devastating to PLWHAs if it remains unresolved.

The mean score ± SD of domains of felt stigma, that is, NSI, PAC, and DC were 2.79±0.70, 3.09±0.52, and 3.02±0.88, respectively. This study shows that there was significant difference in mean scores of all domains of felt stigma with younger age group, single/divorced, highly educated, and recently HIV-diagnosed PLWHAs. Moreover, PAC mean score was significantly different with female PLWHAs and those who were involved in high-risk behavior practices.

A study in South Africa supports the findings of this study. It revealed that 43% of respondents reported that they had some experiences of internalized stigma. Internalized stigma had significant association with age (P<0.001), length of time living with HIV (P<0.001), relationship status (P<0.001), and high education (P<0.001).16 Inversely the South African married respondents had high personal stigma (NSI) mean score of 3.1 in comparison to unmarried (2.8) and unmarried with partner (2.6).17

This study depicts that regarding the age group, mean score of all domains of felt stigma was significantly high in younger (20–29 years) adult PLWHAs. NSI being less in older adults might be due to the reason that older PLWHAs had developed ways of managing life with HIV. Similar studies in Canada, Brazil, and New York found internalized stigma to be significantly lower in older adults compared to those younger than 40 years.6,18–20 In agreement with the results herein, other studies have reported that older people tend to divulge HIV status more frequently than do younger ones.21

Less disclosure by the young respondents was probably due to their lower levels of felt stigma.

### Table 5: Difference in PAC scores according to sociodemographic and clinical characteristics, n=282

| Characteristics                  | No. | Mean score | SE  | CI of mean difference (95%) | Statistical value | P-value |
|----------------------------------|-----|------------|-----|-----------------------------|-------------------|---------|
| **Age (years)**                  |     |            |     |                             |                   |         |
| 20–29                            | 71  | 3.40       | 0.04| (0.39, 0.72)                | 16.18*            | <0.0001*|
| 30–39                            | 74  | 3.13       | 0.06| (0.13, 0.46)                |                   |         |
| 40–49                            | 77  | 2.98       | 0.06| (−0.02, 0.30)               |                   |         |
| ≥50                              | 60  | 2.83       | 0.06| (−0.30, 0.02)               |                   |         |
| **Sex**                          |     |            |     |                             |                   |         |
| Male                             | 139 | 2.99       | 0.04| (−0.30, −0.06)              | 0.523*            | 0.003*  |
| Female                           | 143 | 3.18       | 0.04|                             |                   |         |
| **Residence**                    |     |            |     |                             |                   |         |
| Rural                            | 104 | 3.06       | 0.04| (−0.18, 0.07)               | 0.790*            | 0.455   |
| Urban                            | 178 | 3.10       | 0.04|                             |                   |         |
| **Marital status**               |     |            |     |                             |                   |         |
| Married                          | 191 | 3.04       | 0.03| (−0.10, 0.24)               | 5.363*            | 0.010*  |
| Unmarried                        | 36  | 3.36       | 0.06| (0.15, 0.61)                |                   |         |
| Divorced/separated               | 14  | 3.32       | 0.09| (−0.24, 0.10)               |                   |         |
| Widow/widower                    | 41  | 2.97       | 0.08|                             |                   |         |
| **Education status**             |     |            |     |                             |                   |         |
| Illiterate                       | 39  | 3.03       | 0.08| (−0.16, 0.21)               | 4.072*            | 0.007*  |
| Basic and less                   | 100 | 3.01       | 0.05| (−0.21, 0.016)              |                   |         |
| Secondary                        | 97  | 3.09       | 0.05| (−0.06, 0.22)               |                   |         |
| Higher level                     | 46  | 3.32       | 0.06| (0.03, 0.65)                |                   |         |
| **Time of HIV diagnosis**        |     |            |     |                             |                   |         |
| <3 years                         | 90  | 3.30       | 0.04| (0.18, 0.43)                | 2.510*            | <0.0001*|
| ≥3 years                         | 192 | 2.99       | 0.03|                             |                   |         |
| **High-risk behavior practices** |     |            |     |                             |                   |         |
| Present                          | 116 | 3.17       | 0.05| (0.01, 0.26)                | 1.953*            | 0.034*  |
| Absent                           | 166 | 3.03       | 0.03|                             |                   |         |

Notes: *One-way ANOVA, †Independent t-test, ‡P-value significant at <0.05. Abbreviation: SE, standard error.
to negative public attitude regarding cause of HIV, fear of exposure of their risky behavior, and fear of breakup in relationship. This finding is worrisome as due to less disclosure status by young adult PLHWA, there is a higher chance of transmission of HIV to unaffected sexual partner. Therefore, an interventional educational program targeting students and young people is necessary to promote disclosure.

Similarly, significant mean differences were observed in educational status in relation to NSI, PAC, and DC. It was revealed that higher the education, higher the mean score of NSI (3.20), PAC (3.27), and DC (3.27). This study contradicts the findings of many studies that suggest that higher the education level, lower the felt stigma.22 Positive relation between DC and higher education level might be due to perceived susceptibility and perceived severity of stigma and fear of abandonment. So despite their higher knowledge, they still refuse to disclose their status.

The mean score of the domains of felt stigma of the adult PLHWA who were diagnosed with HIV before 3 years and after 3 years differed significantly. Same result has been obtained in the studies carried out in India, Chicago, and South Africa.6,17,23 More the time of HIV diagnosis, lower the internalized stigma.6,20 A study carried out in Chicago revealed that the most recently diagnosed HIV-positive young patients consistently reported higher levels of stigma on all scales and subscales when compared to those diagnosed more than a year ago.21 It might be partly due to increased acceptance of HIV because of the availability of more time and effectiveness of counseling. With more time people usually learn to live their life even in difficult circumstances in acceptance level, as the patients' coping increases with time.

The difference in the mean score of marital status was found to be statistically significant in the domains of NSI (P<0.0001), PAC (P=0.010), and DC (P<0.0001). Mean score of NSI, DC, and PAC was high in unmarried followed by divorced, married, and widower/widowed. It means that felt stigma is high in unmarried adult PLHWA. Similar findings have been found in other studies in DC and PAC domain24 but regarding NSI finding was refuted.6

Table 6 Difference in disclosure DC scores according to sociodemographic and clinical characteristics, n=282

| Characteristics                     | No. | Mean score | SE  | CI of mean difference (95%) | Statistical value | P-value  |
|-------------------------------------|-----|------------|-----|---------------------------|-------------------|----------|
| Age (years)                         |     |            |     |                           |                   |          |
| 20–29                               | 71  | 3.60       | 0.07| (1.06, 1.59)              |                   | 33.02*   | <0.0001* |
| 30–39                               | 74  | 3.07       | 0.09| (0.53, 1.05)              |                   | 9.710*   | 0.218    |
| 40–49                               | 77  | 3.01       | 0.08| (0.47, 0.99)              |                   |          |          |
| ≥50                                 | 60  | 2.27       | 0.11| (−0.99, −0.47)            |                   |          |          |
| Sex                                 |     |            |     |                           |                   |          |          |
| Male                                | 139 | 2.95       | 0.06| (−0.33, 0.07)             |                   | 2.89     | 0.09     |
| Female                              | 143 | 3.08       | 0.07|                           |                   | 0.005*   | 0.055    |
| Residence                           |     |            |     |                           |                   |          |          |
| Rural                               | 104 | 2.89       | 0.08| (−0.42, 0.004)            |                   | 1.01     |          |
| Urban                               | 178 | 3.09       | 0.08|                           |                   | 0.005*   | 0.055    |
| Marital status                      |     |            |     |                           |                   |          |          |
| Married                             | 191 | 2.99       | 0.06| (0.18, 0.75)              |                   | 9.54*    | <0.0001* |
| Unmarried                           | 36  | 3.58       | 0.08| (0.68, 1.43)              |                   | 1.18     |          |
| Divorced/separated                  | 14  | 3.43       | 0.09| (0.40, 1.42)              |                   | 0.88     |          |
| Widow/widower                       | 41  | 2.52       | 0.16| (−0.75, −0.18)            |                   | 0.82     |          |
| Education status                    |     |            |     |                           |                   |          |          |
| Illiterate                          | 39  | 2.76       | 0.15| (−0.34, 0.28)             |                   | 1.01     |          |
| Basic or less                       | 100 | 2.79       | 0.09| (−0.28, 0.34)             |                   | 0.01     |          |
| Secondary                           | 97  | 3.13       | 0.07| (−0.05, 0.68)             |                   | 0.89     |          |
| Higher level                        | 46  | 3.50       | 0.10| (0.37, 1.10)              |                   | 0.85     |          |
| Time of HIV diagnosis               |     |            |     |                           |                   |          |          |
| <3 years                            | 90  | 3.56       | 0.06| (0.59, 1.00)              |                   | 0.82     |          |
| >3 years                            | 192 | 2.76       | 0.06|                           |                   | 0.08     |          |
| High-risk behavior practices        |     |            |     |                           |                   |          |          |
| Present                             | 116 | 3.00       | 0.09| (−0.23, 0.18)             |                   | 0.82     |          |
| Absent                              | 166 | 3.03       | 0.06|                           |                   | 0.06     |          |

Notes: *One-way ANOVA, #Independent t-test, *P-value significant at <0.05.
Abbreviation: SE, standard error.
In this study female PLWH had a high mean score of NSI (2.82) and DC (3.08) than male adult PLWH though no statistical differences were found, while in the domain of PAC, statistically significant \((P=0.003)\) differences were present in sex. A study in New York city and Nigeria revealed that NSI was high in female\(^{20,25}\), whereas the study in India, South Africa, and Nepal showed a contradictory result that male had high NSI in comparison to female\(^6,17,26\).

Considering the place of residence, a higher level of NSI was seen more in PLWH who reside in urban area, which was significantly different \((P=0.014)\), but the mean score of other domains of felt stigma based on the place of residence was not significantly different. Similarly, adult PLWH involved in any one of the risk practices had statistically significant \((P=0.034)\) PAC mean score but not in other domains. This concludes that NSI is high in those who reside in urban area, whereas PAC level is high in those involved in risk practices. However, many studies have not taken this variable into consideration.

Based on these findings, it can be concluded that internal stigma is very common among all adult PLWH. The silence surrounding HIV virus and disease, along with the misconceptions and widely perceived negative risk factors associated with HIV/AIDS (eg, promiscuity, drug use) among both PLWH and general population, might be the potential cause of felt stigma.

### Relationship of ES with sociodemographic and clinical characteristics

When stigma is acted upon, the result is discrimination (ES). PLWH are stigmatized and were looked at negatively by people at large. Discrimination and prejudice extend its reach to people associated with HIV-positive people in various levels in various places. ES against PLWH is primarily due to low level of community awareness about the epidemic, sources of epidemic, routes of transmission, and prevention\(^{27}\).

A study carried out on discrimination of PLWH in Asia Pacific, Caribbean, Europe, North America, and South

| Characteristics                  | No. | Mean score | SE  | CI of mean difference (95%)         | Statistical value | P-value |
|----------------------------------|-----|------------|-----|------------------------------------|-------------------|--------|
| **Age (years)**                  |     |            |     |                                    |                   |        |
| 20–29                            | 47  | 2.13       | 0.11| (-0.11, 0.41)                      | 2.071^             | 0.105  |
| 30–39                            | 56  | 2.30       | 0.10| (0.66, 0.57)                       |                   |        |
| 40–49                            | 64  | 1.98       | 0.07| (-0.38, 0.13)                      |                   |        |
| ≥50                              | 54  | 2.10       | 0.09| (-0.13, 0.38)                      |                   |        |
| **Sex**                          |     |            |     |                                    |                   |        |
| Male                             | 114 | 2.01       | 0.05| (-0.41, -0.04)                     | 5.168*             | 0.024^ |
| Female                           | 107 | 2.24       | 0.07|                                    |                   |        |
| **Residence**                    |     |            |     |                                    |                   |        |
| Rural                            | 88  | 2.13       | 0.78| (-0.01, 0.20)                      | 0.16*              | 0.912  |
| Urban                            | 133 | 2.12       | 0.06|                                    |                   |        |
| **Marital status**               |     |            |     |                                    |                   |        |
| Married                          | 147 | 2.05       | 0.05| (-0.23, 0.37)                      | 4.874^             | 0.003^ |
| Unmarried                        | 23  | 1.98       | 0.16| (-0.37, 0.23)                      |                   |        |
| Divorced/separated               | 11  | 2.80       | 0.17| (0.31, 1.17)                       |                   |        |
| Widow/widower                    | 40  | 2.27       | 0.11| (-0.07, 0.64)                      |                   |        |
| **Education status**             |     |            |     |                                    |                   |        |
| Illiterate                       | 33  | 2.18       | 0.13| (-0.11, 0.47)                      | 1.162^             | 0.325  |
| Basic and less                   | 83  | 2.20       | 0.08| (-0.02, 0.42)                      |                   |        |
| Secondary                        | 75  | 2.00       | 0.07| (-0.45, 0.14)                      |                   |        |
| Higher level                     | 30  | 2.15       | 0.14| (-0.14, 0.45)                      |                   |        |
| **Time of HIV diagnosis**        |     |            |     |                                    |                   |        |
| <3 years                         | 58  | 2.13       | 0.09| (-0.20, 0.22)                      | 0.399*             | 0.946  |
| ≥3 years                         | 163 | 2.12       | 0.05|                                    |                   |        |
| **High-risk behavior practices** |     |            |     |                                    |                   |        |
| Present                          | 92  | 2.17       | 0.07| (-0.11, 0.27)                      | 0.345*             | 0.407  |
| Absent                           | 129 | 2.09       | 0.06|                                    |                   |        |

Notes: ^One-way ANOVA, #Independent t-test, *P-value significant at <0.05.
Abbreviation: SE, standard error.
America revealed that between 5% and 30% of respondents (depending on the geographical region) had perceived or experienced exclusion from taking part in family and social interactions, love and sexual relationships, work, and education. Two percent of respondents in developed countries and 6.5% in the rest of the world are physically assaulted by perpetrators including family members, medical authorities, and police.28

This study was carried out among 282 adult PLWHAs though the ES was measured among those PLWHAs who disclosed their seropositive status more than their spouse/partner, that is, 221 adult PLWHAs. The overall mean ± SD score of ES among 221 adult PLWHAs was 1.66±1.08. This study portrays that there is significant association between sex (P=0.024) and marital status (P=0.003) but not with other selected variables under study.

In this study mean score of ES was high in female (2.24) than male (2.01). A study carried by UNAIDS in Asian countries (Bangladesh, Cambodia, China, Fiji, Myanmar, Pakistan, the Philippines, Sri Lanka, and Thailand) also found that women were significantly more likely than men to experience HIV-related discrimination within their family and community.30 This might be due to existing social inequality/male-dominant society that makes women inferior to men thus getting less support and women become victims of their spouses’ irresponsible sexual behaviors. These findings were also supported by the studies in Nigeria, Uganda, India, and Thailand.25,30–32

It was found that ES mean score was high in divorced/separated (2.80) followed by widowed/widower (2.27), married (2.05), and unmarried respondents (1.98). This finding is supported by a study carried out in Central China. A study in South Central China revealed that a high level of ES included lack of presence of a spouse or significant other (P=0.001), single/divorced, or widowed (P=0.001).33

Table 8 Difference in overall stigma scores according to sociodemographic and clinical characteristics, n=282

| Characteristics          | No. | Mean score | SE  | CI of mean difference (95%) | Statistical value | P-value |
|--------------------------|-----|------------|-----|-----------------------------|-------------------|---------|
| Age (years)              |     |            |     |                             |                   |         |
| 20–29                    | 71  | 2.77       | 0.04| (0.34, 0.66)                | 14.08*            | <0.0001*|
| 30–39                    | 74  | 2.55       | 0.05| (0.13, 0.44)                |                   |         |
| 40–49                    | 77  | 2.45       | 0.04| (0.03, 0.33)                |                   |         |
| ≥50                      | 60  | 2.26       | 0.06| (−0.33, −0.02)              |                   |         |
| Sex                      |     |            |     |                             |                   |         |
| Male                     | 139 | 1.65       | 0.08| (−0.27, 0.23)               | 12.58*            | 0.858   |
| Female                   | 143 | 1.67       | 0.09|                             |                   |         |
| Residence                |     |            |     |                             |                   |         |
| Rural                    | 104 | 1.80       | 0.10| (−0.04, 0.48)               | 1.953*            | 0.100   |
| Urban                    | 178 | 1.58       | 0.08|                             |                   |         |
| Marital status           |     |            |     |                             |                   |         |
| Married                  | 191 | 2.46       | 0.03| (−0.17, 0.15)               | 6.597*            | <0.0001*|
| Unmarried                | 36  | 2.71       | 0.07| (0.08, 0.42)                |                   |         |
| Divorced/separated       | 14  | 2.93       | 0.11| (0.20, 0.72)                |                   |         |
| Widow/widower            | 41  | 2.47       | 0.09| (−0.15, 0.17)               |                   |         |
| Education status         |     |            |     |                             |                   |         |
| Illiterate               | 39  | 2.43       | 0.08| (−0.19, 0.16)               | 2.789*            | 0.041*  |
| Basic and less           | 100 | 2.45       | 0.05| (−0.16, 0.19)               |                   |         |
| Secondary                | 97  | 2.53       | 0.04| (−0.83, 0.27)               |                   |         |
| Higher level             | 46  | 2.68       | 0.05| (0.04, 0.45)                |                   |         |
| Time of HIV diagnosis    |     |            |     |                             |                   |         |
| <3 years                 | 90  | 1.37       | 0.12| (−0.69, −0.16)              | 9.686*            | 0.003*  |
| >3 years                 | 192 | 1.80       | 0.07|                             |                   |         |
| High-risk behavior practices |    |            |     |                             |                   |         |
| Present                  | 116 | 2.53       | 0.04| (−0.09, 0.13)               | 2.040*            | 0.690   |
| Absent                   | 166 | 2.51       | 0.03|                             |                   |         |

Notes: *One-way ANOVA, †Independent t-test, *P-value significant at <0.05.
Abbreviation: SE, standard error.
In this study no significant differences ($P>0.05$) were observed with ES and other variables like age, educational status, place of residence, time of HIV diagnosis, and high-risk behavior practices. While considering sociodemographic conditions with ES, limited evidence has suggested that older adults experience greater stigma and disclose HIV status to fewer individuals than their younger counterparts. Moreover, a study carried out in Central China revealed that younger age in comparison with older age ($P=0.03$) and urban residence ($P=0.003$) had a higher level of ES. Similarly, a study in Nepal stated that more discrimination was experienced by those PLWH who had been found to be HIV positive over 1 year ago than who were diagnosed $<1$ year. A study in South Africa found that the variables that make a significant contribution to ES are age group ($t=-2.118$; $P=0.0357$), disability ($t=-3.517$; $P=0.0006$), province ($t=-3.197$; $P=0.0017$), and whether the participant was living in an urban, town/village, or rural area ($t=2.263$; $P=0.025$).

This result might be due to the variation in disclosure status as limited adult PLWA disclosed their status to others and many of them only disclosed their status to their partner and within close family members only with whom they had trust with disclosure of their serostatus.

**Overall stigma**

While going through all subscales by compiling the value, a difference in the magnitude of overall stigma was reported by age ($P<0.0001$), marital status ($P<0.0001$), educational status ($P=0.041$), and time of HIV diagnosis ($P=0.003$). Overall stigma mean score was significantly high among young adults (20–29 years), divorced/separated, PLWA who had high-level education, and those who were diagnosed as having HIV $>3$ years ago. The lack of major differences in stigma score by respondent’s characteristics such as sex, place of residence, and risk practices was notable.

**Conclusion**

Given the prominence in findings, it is concluded that felt stigma level is high in comparison to ES, which has devastating effects on PLWA. Practically, results of the study have their significance in adding valuable information to ART center as well as VCT center to intensify their effort on educating/counseling PLWA, managing peer support group, and so on, which add self-image level of PLWA to improve disclosure. Moreover, the findings of the study on ES guide the responsible authorities to educate PLWA, advocating the right of PLWA and fostering awareness and knowledge among the public. The findings can be ultimately used to inform programs and interventions to reduce stigma experienced by PLWA.

**Limitations**

Comorbidity and disability status in relation with stigma were not included. Similarly, this study could not address the domain of ES properly as the respondents had limited disclosure status.

**Recommendations**

Qualitative and mixed method may be used to find out the in-depth feelings, perspectives, and experiences of PLWA regarding stigma that quantitative aspect cannot reveal.

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