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Original Research Article

A cross-sectional study on stigma among people living with HIV attending anti-retroviral therapy center in Jaya Arogya Group of Hospital, Gwalior, Madhya Pradesh

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ABSTRACT

Background: AIDS stigma exists in a variety of ways, including ostracism, rejection, discrimination, and avoidance of HIV-infected people. Some people are rejected by family and community, whereas others face poor treatment in healthcare and educational settings, erosion of their rights, and psychologic damage. All these limit access to HIV testing, treatment, and other HIV services.
Methods: A hospital-based cross-sectional design conducted over a twelve-month period. The study focused on 380 HIV-positive participants within the 25 to 35 years of age. Assessments were performed using a structured questionnaire and the Berger stigma scale to access the overall stigma. Data were analysed using SPSS v27, with $p<0.05$ considered significant.
Results: Out of 380 participants, 135 (35.5%) reported mild levels of stigma, 116 (30.5%) experienced moderate levels, while 129 (34.0%) reported severe stigma.
Conclusions: Stigma remains a pervasive and significant challenge for PLHIV. Among the subscales of the Berger stigma scale, public attitude stigma registered the highest mean score (45.62±10.41), indicating that external societal prejudice and misconceptions are more dominant than internalized shame or disclosure concerns.

Keywords: AIDS, ART, Family, India, PLHIV, Stigma

INTRODUCTION

Human immunodeficiency virus (HIV) infection and its advanced stage, acquired immunodeficiency syndrome (AIDS), continue to be among the most highly stigmatized health conditions worldwide. Beyond its medical consequences, HIV/AIDS represents a global pandemic that significantly influences the physical health, psychological well-being, and social functioning of affected individuals. Persistent stigma and discrimination often lead to social isolation, delayed health-seeking behaviour, and poor treatment adherence. Moreover, cultural beliefs and societal attitudes surrounding HIV further exacerbate marginalization, thereby negatively impacting quality of life and overall disease outcomes.[1]

HIV-related stigma is widely recognized to be associated with various socio-demographic factors, including age, sex, marital status, educational level, socioeconomic status, and place of residence. Studies indicate that people living with HIV/AIDS (PLWHA) in rural areas bear a greater burden of stigma than those residing in urban areas, reflecting disparities in awareness, social norms, and access to healthcare and support systems.[2,3]

In light of the foregoing context, the present study was undertaken at the antiretroviral therapy (ART) centre JAH, Gwalior to assess the sociodemographic determinants of people living with HIV and to assess the stigma of people living with HIV attending ART centre.

The outcomes of this epidemiological investigation are anticipated to contribute to a deeper understanding of stigma-related challenges, thereby assisting in the development of effective strategies to curb HIV transmission, enhance the quality of life of affected individuals, and formulate evidence-based interventions to reduce and prevent HIV-associated social stigma.

METHODS

Place of study

The study was conducted at the antiretroviral therapy (ART) Centre of the Jaya Arogya Group of Hospitals in Gwalior, Madhya Pradesh.

Period of study

The present study was carried from 1st May 2024 to 30th April 2025.

Sample size determination

The sample size was estimated by document analysis of Sahu et al.[5]

Using the formula:

$$n = \frac{Z^2_{\alpha/2} P(100 - P)}{d^2}$$

and assuming a 5% level of significance and 5% absolute error and p value of 43.45, the minimum sample size was 378, rounding in total of 380 subjects.

Objective

The objective was to estimate the prevalence of the stigma and sociodemographic determinants of people living with HIV and behavioral factors that contribute to mental health challenges among patients at anti-retroviral therapy facility in Gwalior.

Inclusion criteria

All registered participants who are HIV positive and in between 25 to 35 years of age irrespective of gender attending ART Centre, JAH, GRMC, Gwalior. All HIV positive patients registered at ART Centre, JAH, Gwalior to give consent for his/her participation to study.

Exclusion criteria

Participants below 25 years of age and above 35 years of age. Severely ill patients. Patients diagnosed with AIDS. Participants not willing to participate in the study.

Ethical consideration

The study received ethical clearance from the institutional ethical committee, Approval no.- 1449/IEC-GRMC/2024; Dated: 01/05/2024 of Gajra Raja Medical College, Gwalior (MP).

Study procedure

A total of 380 participants were interviewed by a pre-designed, pre structured, pre-validated questionnaire. Informed consent has been taken from each participant in their local language and the confidentiality would be maintained. The study tools are Berger stigma scale and Hamilton Depression Scale.

The level of stigma among people living with HIV was assessed using the stigma measurement framework adopted from Adhikari et al at Kolkata.[4] The tool included domains reflecting perceived, internalized, and experienced stigma. Individual responses were scored, and the total stigma score was computed for each participant. To classify the degree of stigma, percentile-based cut-offs were applied following the method described by Adhikari et al at Kolkata. Participants scoring below the 33rd percentile were categorized as having mild stigma, those between the 33rd and 66th percentile as moderate stigma, and those above the 66th percentile as severe stigma. The prevalence of stigma was subsequently calculated based on these categorical classifications 4.

Data were analysed using SPSS version 27.0. Multiple linear regression was used to assess factors associated with stigma scores, with $p<0.05$ considered statistically significant.

RESULTS

Table 1 illustrates a total of 380 participants were included in the study. The study population was predominantly male (74.7%), with females constituting about one-fourth (24.5%). Slightly more than half of the participants were aged 31 years or above (53.9%), indicating a relatively mature study population.

With respect to educational status, the majority had attained at least middle school education, and one-fifth of the participants were graduates or post-graduates (20.3%). Illiteracy was observed in a relatively small proportion (7.6%). Occupationally, unskilled workers formed the largest group (31.0%), followed by semi-skilled (23.7%) and skilled workers (10.3%), reflecting a predominantly lower to middle occupational profile.

Table 1: Distribution of study participants according to their socio-demographic profile (n=380).

Variables		Frequency	Percentage
Gender	Male	284	74.7
	Female	93	24.5
	Transgender	03	0.8
Age groups (years)	≤30	175	46.1
	≥31	205	53.9
Education	Illiterate	29	7.6
	Primary school	73	19.2
	Middle school	76	20.2
	High school	61	16.1
	Intermediate	64	16.8
	Graduate/post graduate	77	20.3
Occupation	Student	20	5.3
	Professional	34	8.9
	Semi professional	08	2.1
	Clerical	11	2.9
	Unskilled	118	31.0
	Shop owner	22	5.8
	Farmer	38	10.0
	Skilled	39	10.3
	Semi-skilled	90	23.7
Socio-economic status (revised BG Prasad classification Jan 2025)	I upper class	65	17.1
	II upper middle class	125	32.9
	III middle class	113	29.7
	IV lower middle class	63	16.6
	V lower class	14	3.7
Caste	General	198	52.0
	OBC	118	31.1
	Scheduled caste	58	15.3
	Scheduled tribe	6	1.6
Religion	Hindu	347	91.3
	Muslim	22	5.8
	Sikh	8	2.1
	Christian	3	0.8
Residence	Urban	232	61.0
	Urban slum	28	7.4
	Rural	120	31.6
Marital status	Married	195	51.2
	Unmarried	153	40.3
	Divorced	6	1.6
	Widow	17	4.5
	Separated	9	2.4
Family type	Single	30	7.9
	Nuclear family	210	55.3
	Joint family	140	36.8

According to the Revised BG Prasad socio-economic classification (January 2025), most participants belonged to the upper-middle (32.9%) and middle (29.7%) classes, while a smaller proportion belonged to the lower-middle (16.6%) and lower (3.7%) classes. More than half of the participants were from the general caste category (52.0%), followed by other backward classes (31.1%) and scheduled castes (15.3%).

Table 2: High risk sexual behaviour of study participants.

Variables		Frequency	Percentage
Adherence to ART	Non adherent	84	22.1
	Adherent	296	77.9
Time elapsed since last counselling (in months)	<1	82	21.6
	>3	114	30.0
	1-3	184	48.4
Duration of treatment (in years)	<1	76	20.0
	1-4	158	41.6
	>4	146	38.4
Alcohol intake before sexual intercourse	Yes	53	13.9
	No	327	86.1
Smoking status before sexual intercourse	Yes	93	24.5
	No	287	75.5
Use of condom	Yes	258	67.9
	No	122	32.1
Sexual Partners	Single sexual partner	222	58.4
	Multiple sexual partner	49	12.9
	Presently without partner	109	28.7

The majority of participants were Hindu (91.3%). Most participants resided in urban areas (61.0%), followed by rural areas (31.6%), indicating a predominantly urban study population. In terms of marital status, about half of the participants were married (51.2%), while a substantial proportion were unmarried (40.3%). With regard to family structure, more than half of the participants belonged to nuclear families (55.3%), followed by joint families (36.8%).

Table 2 depicts that most participants were adherent to ART (77.9%). Nearly half had received counselling within the past 1-3 months (48.4%), while 30.0% reported a gap of more than three months. About two-fifths had been on treatment for 1-4 years (41.6%). Alcohol and smoking before sexual intercourse were reported by 13.9% and 24.5% participants, respectively. Condom use was reported by 67.9%, while 32.1% did not use condoms. Most participants had a single sexual partner (58.4%), whereas 12.9% reported multiple partners.

Table 3: Distribution and prevalence of stigma among people living with HIV (n=380).

Stigma status	Frequency	Percentage
Mild	135	35.5
Moderate	116	30.5
Severe	129	34.0
Total	380	100.0

Table 3 represents 135 (35.5%) reported mild levels of stigma, 116 (30.5%) experienced moderate levels, while 129 (34.0%) reported severe stigma.

The Table 4 presents the mean and standard deviation of the four subscales of HIV-related stigma among study participants. The highest mean score was observed for public attitude stigma (45.62±10.41), followed by personalized stigma (37.68±9.18), negative self-image stigma (32.18±6.91), and disclosure stigma (26.21±4.70).

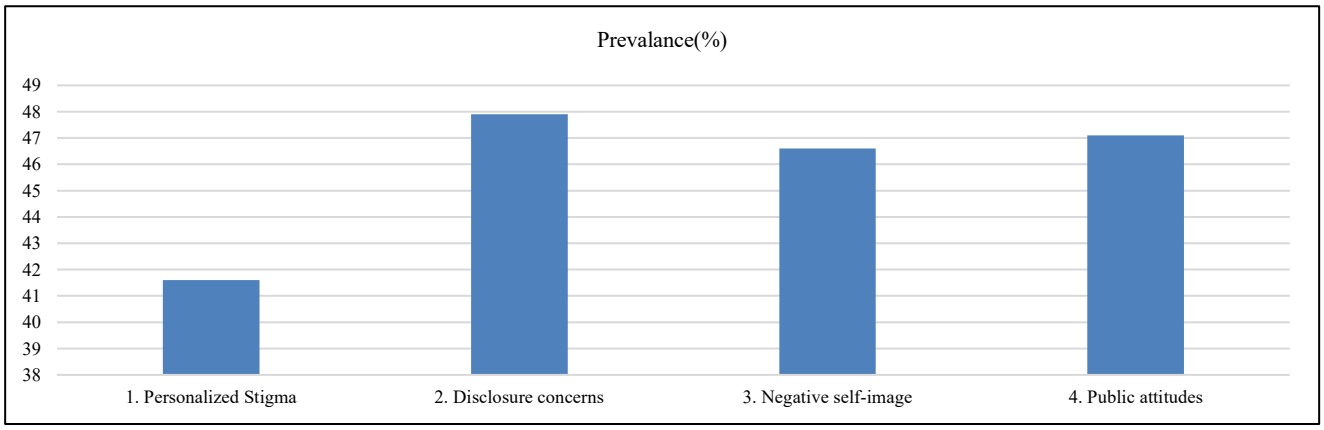

Figure 1: Prevalence of various stigmas among study subjects.

Table 4: Mean and standard deviation of HIV related stigma sub scale scores (n=380).

Stigma sub-scale	Mean±SD
Personalized stigma score	37.68±9.18
Disclosure stigma score	26.21±4.70
Negative self-image score	32.18±6.91
Public attitude stigma score	45.62±10.41

Figure 1 shows that disclosure concerns were the most common form of stigma (48%), followed by public attitudes and negative self-image (47%). Personalized stigma was comparatively lower (42%), though still substantial among the study participants.

The Table 5 displays that there was no statistically significant difference in total stigma scores among males, females and transgender participants (H=2.722, df=2, p=0.256).

Table 5: Comparison of total stigma score across gender using Kruskal-Wallis test (n=380)

Variables	Gender groups	Test statistics (H)	df	P value
Total stigma score	Male, Female, Transgender	2.722	2	0.256

Table 6: Multiple linear regression analysis for total stigma score.

Variables	B	Std. error	Beta	t	P value
Age	-2.535	1.864	-0.068	-1.360	0.175
Gender	2.780	2.142	0.068	1.298	0.195
Caste	-0.930	1.142	-0.039	-0.814	0.416
Religion	3.038	2.049	0.073	1.483	0.139
Place of residence	-1.387	1.042	-0.068	-1.331	0.184
Education (illiterate versus literate)	-1.788	0.595	-0.155	-3.003	0.003*
Occupation	-0.057	0.404	-0.007	-0.141	0.888
Marital status	-0.131	1.243	-0.006	-0.106	0.916
Type of family	-1.507	1.577	-0.049	-0.955	0.340
Socio-economic class	-1.651	0.948	-0.095	-1.742	0.082
Adherence to ART	3.358	2.176	0.075	1.543	0.124
Time since last counselling	0.646	1.150	0.028	0.562	0.575
Duration on treatment	-3.039	1.291	-0.121	-2.354	0.019*
Alcohol intake before sex	-3.844	2.854	-0.072	-1.347	0.179
Tobacco intake	3.125	2.288	0.072	1.366	0.173
Ever unprotected sex	2.040	2.091	0.051	0.975	0.330
Number of sexual partners	0.352	1.231	0.017	0.286	0.775
Experienced discrimination	-17.084	3.421	-0.248	-4.994	<0.001*

*: Significant B: Unstandardized Coefficient; β: Standardized Coefficient

The analysis of Table 6 revealed that education (p=0.003), duration on treatment (p=0.019), and experience of discrimination (p<0.001) were found to be significantly associated with the total stigma score. Participants with lower educational levels had higher stigma scores compared to those who were literate. A longer duration on ART treatment was also found to be positively associated with increased stigma levels. Furthermore, individuals who reported experiencing discrimination exhibited a significantly higher stigma score compared to those who did not.

DISCUSSION

In present study, out of 380 participants, 35.5% reported mild levels of stigma, 30.5% experienced moderate levels, while 129 (33.9%) reported severe stigma. According to Sahu et al the total mean stigma score among participants was 122.82±6.66, with the highest prevalence of stigma observed in relation to HIV status disclosure (58.63%), followed by negative self-image (43.45%), personalized stigma (38.39%), and public attitudes (37.8%).[5] In a study conducted by Oke et al at Abeokuta, Nigeria, 138 participants (35.8%) reported having experienced enacted stigma within the past 12 months. The overall mean perceived stigma score was moderately high (95.74±16.04).[6] Similarly, Charles et al in south India found that 27% of people living with HIV/AIDS (PLWHA) had experienced severe forms of stigma. Among them, personalized stigma (28.8%), negative self-image (30.3%), perceived public attitude (18.2%), and

disclosure concerns (26%) were the most prominent dimensions.[7]

According to Feyissa et al at southwest Ethiopia stigmatization was highest for extra precaution factor (%SM=66.44) followed by the fear of work-related HIV transmission (%SM=53.33) and the lack of feelings of safety (%SM=49.38).[12]

Another study done by Di Gennaro et al at Italy 336 (59.1%) PLWH reported to perceive moderate-severe social stigmatization, 246 (42%) people reported stigma from their family members.[13]

In this study the majority of the participants (53.9%) were aged ≥31 years, while 46.1%were aged ≤30 years. In a study carried out by Sahu et al the participants had a mean age of 36.42 years with a standard deviation of 10.29 years.[5] Similarly, Oke et al in their research conducted at Abeokuta, Nigeria, observed that the overall mean age of the respondents was 41.20±9.12 years.[6]

In this study the majority were male (74.7%), followed by female participants (24.5%), while 0.8% identified as transgender. Similarly, findings from Dutta et al in West Bengal revealed that males constituted 59.3% of the study participants.[8]

In our present study 20.2% were graduates, 20.2% had completed middle school, 19.2% had education up to primary school, 16.8% had studied up to the intermediate level, and 16.1% had completed high school, while 7.6% of the participants were illiterate. According to Sahu et al about 21.73% of the participants were illiterate.[5] In a study conducted by Charles et al in south India, it was reported that 11.2% of men and 17.5% of women were non-literate.[7]

In this study the majority of participants (32.9%) belonged to the upper middle class, followed closely by lower middle class (29.7%). Around 17.1% of participants were from the upper class, indicating that nearly one-fifth of the respondents had relatively higher socio-economic status. The upper lower class constituted 16.6%, while only 3.7% of participants were from the lower class. Similarly, Adhikari et al at Kolkata, using the BG Prasad Socio-demographic scale (modified in 2018), classified 25.2%, 34.0%, 25.9%, 14.2%, and 0.7% of respondents into classes I, II, III, IV, and V, respectively. Furthermore, 50.7% of participants reported a personal income below ₹5000 per month, 6.5% were non-income earners, and 2.0% identified their occupation as sex work. Additionally, 6.5% of respondents reported tobacco and/or alcohol use at the time of the study.[4]

In this study, the majority of participants were Hindu (91.3%), followed by Muslim (5.8%), Sikh (2.1%), and Christian (0.8%). This distribution reflects the predominant religious composition of the population in the study region of Gwalior. According to Dutta et al in West Bengal, the study revealed that the majority of participants (79.1%) were Hindus, while 10% were Muslims and 11.9% were 158 Christians.[8] In a study from Kolkata by Sarkar et al it was observed that most participants were Hindus (80%), followed by Muslims (17.3%). Among the Hindu respondents, 51.1% belonged to the general category, while 22.2% were from the scheduled caste.[9]

In this study 258 (67.9%) reported using condoms during sexual intercourse, while 122 (32.1%) admitted to engaging in unprotected sexual intercourse. In a study conducted in Nepal, Bhatta et al observed that approximately one-fourth of individuals living with HIV (26.0%, 95% CI: 17.2-34.7) reported having sexual intercourse without using a condom.[10] Similarly, in Botswana, Weiser et al found that 38% of respondents had engaged in unprotected sex within the past year, while only 12-13% of both men and women reported having unprotected sexual intercourse with a non-monogamous partner during the previous month.[11]

In this study only 53 (13.9%) reported consuming alcohol before sexual intercourse, while the vast majority 327 (86.1%) denied such behavior and 93 (24.5%) reported smoking prior to sexual intercourse, while 287 (75.5%) denied such behavior. A study conducted in Nepal by Bhatta et al. reported that among individuals living with HIV, approximately 26.5% were current tobacco users [95% confidence interval (CI): 18.9-34.1], whereas 22.7% (95% CI: 15.5 30.0) consumed alcohol.[10] Similarly, in Botswana, Weiser et al found that 38% of respondents had engaged in unprotected sex within the past year, while only 12-13% of both men and women reported having unprotected sexual intercourse with a non- monogamous partner during the previous month.[11] The study strictly included participants only between the ages of 25 and 35 years. This narrow focus limits the generalizability of the findings to younger adolescents or older adults living with HIV. As a hospital-based study focused on an ART centre, it may underestimate the true burden of stigma, as it excludes undiagnosed individuals or those avoiding treatment due to extreme fear of discrimination.

CONCLUSION

The study concludes that stigma is a pervasive challenge for people living with HIV (PLHIV), with 34% reporting severe levels and 30.5% experiencing moderate stigma. Among the subscales measured, perceived public attitude stigma registered the highest scores, suggesting that external societal prejudice is a more dominant concern for patients than internalized shame or disclosure anxiety. Crucially, the research identifies a strong, statistically significant positive correlation between stigma and depression ($\rho=0.498$, $p<0.001$), positioning stigma as a primary predictor of psychological distress. Furthermore, higher stigma levels were significantly associated with lower educational attainment and a longer duration on ART.

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Ethical approval: The study was approved by the Institutional Ethics Committee of Gajra Raja Medical College, Gwalior (MP) Approval no.- 1449/IEC-GRMC/2024; Dated: 01/05/2024

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