

**Stigma and Depression in Patients Suffering from HIV/AIDS****Prashant M Mangla<sup>1</sup>, Chirag K Barot<sup>2</sup>**<sup>1</sup>Assistant Professor, Department of Psychiatry, Terna Medical College and Hospital, Nerul, Navi Mumbai, Maharashtra, India<sup>2</sup>Associate Professor, Department of Psychiatry, Medical College Baroda and S.S.G. Hospital, Vadodara, Gujarat, India

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Conflict of interest: Nil

**Abstract:**

**Introduction:** Patients living with HIV/AIDS (PLWHA) are a vulnerable group who are often subjected to discrimination, stigma and have poor social support. This can lead to or worsen depression, resulting in worse health outcome in such population. The aim was to measure the HIV related stigma, severity of depression and their correlation in PLWHA.

**Materials and Methods:** This was an observational cross-sectional study conducted on 100 PLWHA coming to Anti-Retroviral Therapy (ART) Centre of a tertiary care hospital. A semi-structured questionnaire was used for interviewing the patients. HIV related stigma was measured with Berger HIV Stigma Scale and Patient Health Questionnaire – 9 (PHQ-9) was used to screen for and measure severity of depression.

**Results:** 50% of patients scored in moderate range and 50% in severe range of Berger HIV Stigma Scale. Overall HIV related stigma score was high, with mean of 121 and standard deviation 2.11. 39% of the patients screened positive for depression. Mean PHQ-9 score was 7.68 with standard deviation 5.48. There was a positive correlation between overall HIV related stigma and depression (0.457), with highest correlation for negative self-image domain (0.566).

**Conclusion:** PLWHA experience high level of stigma and there is increased prevalence of depression in them. Early diagnosis and treatment of depression is warranted in order to help both the treating physicians and patients in maintaining compliance, improving prognosis and quality of life of such patients.

**Keywords:** HIV, AIDS, Stigma, Depression.

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**Introduction**

HIV/AIDS is one of the major illnesses causing significant burden on public health as it continues to spread despite globally. Disclosure of seropositivity after becoming aware of one's seropositive status can be a stressful decision due to the most important additional aspect of stigma and discrimination leading to life changes in multiple settings. Some of the issues faced by patients living with HIV/AIDS (PLWHA) which may contribute to depression include problems associated with disclosure at workplace and employment, relationship problems including problems with intimacy, problems relating to the physical health complications of HIV/AIDS, antiretroviral drugs treatment and their side effects [1]. PLWHA who suffer with depression are a more vulnerable to poor treatment adherence and nondisclosure of HIV positive status, which may lead to increased transmission leading to poorer health outcomes [2]. The aim of the present study was to measure the HIV related stigma, severity of depression and their correlation in PLWHA.

**Materials and Methods****Study Design**

This was an observational cross-sectional study conducted on patients suffering from HIV/AIDS coming to the Anti-Retroviral Therapy (ART) Centre of a tertiary care hospital in Vadodara, Gujarat. Participants for the study were recruited after getting approval from the Gujarat State AIDS Control Society which was taken after approval from the Institutional Ethics Committee for Human Research (IECHR).

**Sample Size**

A previously conducted study [3] found 0.4 (40%) relationship between stigma and depression in patients suffering from HIV/AIDS. So, a minimum of 85 patients will be required with 1% risk and 90% power. In the present study, 100 patients of HIV/AIDS were assessed.

### Data Collection

Every 10th patient (new and old cases) coming to the ART Centre, diagnosed with HIV/AIDS, was referred for the inclusion in this study and if the patient met the inclusion criteria, he/she was enrolled in the study after taking informed written consent. Data was collected in a period of six months after receiving approval.

### Inclusion Criteria

1. Men and women aged  $\geq 18$  years suffering from HIV/AIDS and coming to ART Centre (every 10th patient).
2. Gave written informed consent.
3. Not having any behavioral disturbance or suffering from psychotic disorder.

### Exclusion Criteria

1. Those who refused to give consent.
2. Those who were  $< 18$  years of age.
3. Those with any behavioral disturbance or suffering from any psychotic disorder or developmental retardation.

### Study Tools

A semi structured questionnaire involving demographic, and illness related variables were used for interviewing the patient. The study tools used were:

#### 1. Berger HIV Stigma Scale [4]:

It is a 40-item scale which measures HIV related stigma in four dimensions i.e. Perceived stigma (18 items), Disclosure concerns (10 items), Negative self-image (13 items) and concern with Public Attitudes about People with HIV (20 items). There is

an overlap of few items across the domains giving a total of 40 items which were rated along a four-point Likert scale (Strongly Disagree, Disagree, Agree, and Strongly Agree). The higher the score the greater is the stigma. Scores from 40 to 80 were interpreted as low, 81 to 120 as moderate and 121 to 160 as high.

#### 2) PHQ-9[5]:

PHQ-9 is a screening tool based on the Diagnostic and Statistical Manual of Mental Disorders. It scores the severity of depressive symptoms ranging from 0 to 27. A PHQ-9 score of greater than 9 has a sensitivity of 83% and a specificity of 92% for major depressive disorder (MDD) diagnosis. In the present study, patients with PHQ-9 Score  $> 9$  were considered as screened positive for MDD. Scores were interpreted as minimal [0-4], mild [5-9], moderate [10-14], moderately severe [15-19] and severe [20-27].

### Statistical Analysis

Data was entered in excel sheet and statistical analysis was carried out using MedCalc software. Statistical association between HIV related stigma and depression was tested with Pearson's correlation coefficient. Other appropriate tests such as frequency, percentage, mean and standard deviation and chi-square were also used. P value  $< 0.01$  was considered statistically significant.

### Results

#### Description of Study Population

**Table 1: Socio-demographic and disease related characteristics (N=100)**

Variable		Percentage %
Age (in years)	18 to 39	53
	$\geq 40$	47
Gender	Male	55
	Female	45
Area	Rural	27
	Urban	73
Education	Illiterate	12
	Literate	88
Occupation	Unemployed	18
	Employed	82
Total family income in Rs. (monthly)	$< 5000$	37
	$\geq 5000$	63
Marital Status	Single/Divorced/Separated/Widow/Widower	30
	Married	70
Substance abuse (except nicotine)	Present	26
	Absent	74
Family history of HIV	Present	32
	Absent	68
Mode of Infection	Intravenous drug use	03
	Homosexual intercourse	01
	Heterosexual intercourse	51

	Maternal to child transmission	02
	Contaminated blood products	12
	Don't know	31
When Diagnosed with HIV	In the past 3 months	06
	3 months to 1 year ago	09
	1 to 5 years ago	33
	More than 5 years ago	52

The mean age (in years) of HIV/AIDS patients was found to be 39.02 with a standard deviation of 10.77.

HIV related stigma in PLWHA:

**Table 2: Frequency distribution and mean score of respondents on Berger HIV Stigma score (N=100)**

Stigma domain	Score Level	Score value	Percentage	Mean $\pm$ S.D.
HIV Related Stigma Overall	Low	40-80	00	121 $\pm$ 2.11
	Moderate	81-120	50	
	High	121-160	50	
Personalized Stigma	Low	18-36	00	57.37 $\pm$ 5.63
	Moderate	37-54	34	
	High	55-72	66	
Negative Self Image	Low	13-26	03	35.56 $\pm$ 4.99
	Moderate	27-39	74	
	High	40-52	23	
Disclosure Concerns	Low	10-20	00	30.87 $\pm$ 3.19
	Moderate	21-30	51	
	High	31-40	49	
Public Attitudes and Behavior	Low	20-40	00	63.51 $\pm$ 5.97
	Moderate	41-60	32	
	High	61-80	68	

50% patients scored in moderate range of overall HIV related stigma and 50% scored in high range. Overall mean score of 100 patients in Berger HIV Stigma Scale was 121.00 with standard deviation of 2.11. Domain of public attitudes and behavior scored the highest of all the four domains with mean score 63.51 and standard deviation 5.97.

#### Depression in PLWHA:

**Table 3: Frequency distribution of respondents on depression score level (N=100)**

PHQ-9 scores	Percentage
Minimal (scores 0-4)	37
Mild (scores 5-9)	24
Moderate (scores 10-14)	27
Moderately severe (scores 15-19)	9
Severe (scores 20-27)	3
Total Not Depressed (scores $\leq$ 9)	61
Total Depressed (scores $>$ 9)	39

39% patients screened positive for depression (PHQ-9 score  $>$ 9). Mean score was 7.68 with standard deviation 5.48.

#### Correlation between HIV related stigma and depression:

**Table 4: Relationship between HIV related stigma and Depression by scores on Berger HIV Stigma Scale and PHQ-9 respectively**

Variables	Pearson's correlation coefficient R	P value
HIV related stigma and Depression	0.457	$<$ 0.0001
Personalized Stigma and Depression	0.332	0.0007
Negative Self Image and Depression	0.566	$<$ 0.0001
Disclosure Concerns and Depression	0.377	0.0001
Public Attitudes and Behavior and Depression	0.261	0.0087

A positive correlation of 0.457 was found between HIV related stigma and depression which was statistically significant. All the four stigma domains also showed statistically significant correlation with depression individually. Correlation was highest with negative self-image domain (0.566), followed by domains of disclosure concerns (0.377), personalized stigma (0.332) and public attitudes and behavior (0.261).

## Associated Factors

**Table 5: Association of HIV related stigma and Depression with socio-demographic and disease related characteristics**

Variable	Total (N)	Ber-gerHIVStigma Scale Score		$\chi^2$	P value	PHQ-9 Score		$\chi^2$	P value
		Moderate	High			Depressed	Not Depressed		
Age (in years)									
18 to 39	53	33	20	5.7	0.0162	11	42	14.19	0.0002
≥40	47	17	30	81		28	19		
Gender									
Male	55	23	32	2.5	0.1078	29	26	8.441	0.0037
Female	45	27	18	86		10	35		
Area									
Rural	27	08	19	5.0	0.0243	10	17	0.000	0.9889
Urban	73	42	31	74		29	44		
Education									
Illiterate	12	06	06	0.0	0.7583	07	05	1.319	0.2509
Literate	88	44	44	947		32	56		
Occupation									
Unemployed	18	10	08	0.0	0.7943	05	13	0.658	0.4173
Employed	82	40	42	678		34	48		
Total family income in Rs. (monthly)									
<5000	37	19	18	0.0	1.00	14	23	0.000	0.9763
≥5000	63	31	32	0		25	38		
Marital Status									
Single/	30	11	19	2.3	0.1266	16	14	2.89	0.0891
Divorced/Separated/Widow/Widower									
Married	70	39	31	33		23	47		
Substance abuse									
Present	26	06	20	8.7	0.003	17	09	8.837	0.003
Absent	74	44	30	84		22	52		
Family history of HIV									
Present	32	20	12	5.8	0.1186	06	26	9.230	0.0264
Absent	68	30	38	60		33	35		
Mode of Infection									
Intravenous drug use	03	00	03		9.8	02	01	4.148	0.5284
Homosexual intercourse	01	01	00			01	00		
Heterosexual intercourse	51	25	26			19	32		
Maternal to child transmission	02	02	00		0.0803	00	02	4.148	0.5284
Contaminated blood products	12	09	03			04	08		
Don't know	31	13	18	26		13	18		
When Diagnosed with HIV									
In the past 3 months	06	04	02	1.3	0.7154	02	04	3.425	0.3306
3 months to 1 year	09	04	05			01	08		
1 to 5 years ago	33	18	15			14	19		
More than 5 years ago	52	24	28	58		22	30		

Statistically significant association was found between HIV related stigma and substance abuse (P = 0.003). Also, depression was significantly associated with age ≥40 years (P = 0.0002), male gender (P = 0.0037) and substance abuse (P = 0.003).

## Discussion

### HIV Related Stigma in PLWHA

In the present study, overall HIV related stigma in PLWHA was found to be high, measuring  $121 \pm 2.11$  on Berger HIV Stigma Scale, with highest mean score in the public attitudes and behavior domain. Similarly, high levels of stigma have also been reported in the People Living with HIV Stigma Index study conducted in Tamil Nadu, India [6]. Some of the other studies found overall stigma in moderate range [7-10]. Disclosure concerns domain scores were highest in some studies [9-11] while one study showed higher scores in personalized stigma and public attitude stigma [8]. Lack of adequate knowledge and information in the general population regarding transmission of HIV may lead to increased discrimination and higher levels of stigma in PLWHA.

### Depression in PLWHA

In the present study, 39 % of the PLWHA had moderate to severe depression (i.e. screened positive for major depressive disorder) and 24% had mild depression. This was in line with most of the previous studies [12-18]. While there were also a few studies where depression was much lower [19,20] or higher [21-23] as compared to the present study. Difference of rates of depression found in some of the studies may be due to geographical variations and different study tools used. Also, prevalence of depression in the general population is found to be 5-17% (average 12%) [24]. Thus, the prevalence of depression calculated in the present study population is around three times higher than the general population.

### Relation between HIV Related Stigma and Depression in PLWHA

In the present study, overall Berger HIV stigma score had moderately positive significant correlation with depression ( $r = 0.457$ ). Out of the four subscales, negative self-image had moderately positive significant correlation with depression ( $r = 0.566$ ), whereas the other three subscales had weakly positive but significant correlation with depression ( $r = 0.332$  for personalized stigma,  $r = 0.377$  for disclosure concerns stigma, and  $r = 0.261$  for public attitudes and behavior stigma). These findings were consistent with the previously conducted studies [3,19,25-30]. A similar study had found only weakly positive correlation of overall Berger HIV stigma and its subscales with depression [20].

### Associated Factors

In the present study, significant association was established between HIV related stigma and history of substance abuse. Also, depression was significantly associated with age (older age), gender

(male) and history of substance abuse. No significant association could be established for rest of the socio-demographic and disease related characteristics. These findings are similar to some of the previous studies [16,18,20,21,31,32]. Some of the previous studies showed association of older age [3], female gender [3], lower income [3,9,33], unemployment [33], lower level of education [10], route of infection [10] and longer duration of diagnosis [33] with HIV related stigma. While in a few studies, depression was associated with female gender [3,18], lower income, unemployment [25], lower level of education [25] and longer duration of diagnosis [34]. These variations in findings may be due to geographic and socio-cultural differences of study populations included in various studies.

Limitations of the present study were that it was a cross sectional study, some of the information collected was subjective which may lead to social desirability bias, and the participants may not be completely representative of the study population as they were included only from one centre. A longitudinal study with larger sample size and data collection from multiple regions may produce more significant findings.

## Conclusion

Thus, we conclude that PLWHA are a vulnerable group of people who constantly have to deal with the stigma and discrimination which may lead to depression. Improved social support and sensitization of treating physicians towards the early diagnosis and treatment of depression is warranted in order to help the patient in maintaining compliance, improving prognosis and the quality of life.

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