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# Assessment of psychosocial problems among HIV positive individuals attending in the Teaching Institutes of West Bengal and Bihar, India

**Suparna Chatterjee[1], Panchali Datta[2*], Sumit Datta[3], Amrita Ghosh[4], Gautam Sarker[5] and Ranabir Pal[5]**

[1]Medical Officer, Kolkata Municipal Corporation, No-05, S.N. Banerjee Road, Kolkata-700014, West Bengal, India, [2]Department of Anatomy, Diamond Harbour Medical College and Hospital, Diamond Harbour-743331, West Bengal, India, [3]Department of Radiology, Mata Gujari Memorial Medical College & LSK Hospital, Dinajpur Road, Kishanganj-855107, Bihar, India, [4]Department of Biochemistry, Medical College, 88, College Street, Kolkata-700073 West Bengal, India and [5]Department of Community Medicine, Mata Gujari Memorial Medical College & LSK Hospital, Dinajpur Road, Kishanganj-855107, Bihar, India

**Abstract:** *Background:* HIV infection has a chronic course and long-term involvement associated with social stigma in India leading to serious psychological problems manifesting as depression, loss of insight, agitation, insomnia which are remain undiagnosed and untreated. *Objectives:* This study was done to assess psychological problems among HIV positives. *Methods:* A cross sectional observational study was conducted on 180 patients who were on anti-retroviral therapy selected through systematic random sampling technique in two Teaching Institute of West Bengal and Bihar. Hamilton Rating Scale for Depression and Anxiety for Psychological problems was used to measure the psychological problems. *Results:* The study group had 64.44 percent males**,** among males maximum (56.03%) were between 30-40 yrs. Among females, majority (48.44%) were from age 18-29 years. Among males, 65.52 percent were married followed by divorced (27.59%). Among females**,** 59.44 percent were married followed by widowed (37.5%). Among the participants majority had education up to secondary level. Depression was more common among females (76.56%) compared to males (53.45%); Insomnia was more frequent finding (83.3%) among separated; Illiterates showed lower frequency of depression. Substance abuse was not associated with insomnia. *Conclusions:* Identification of psychological problems is important for a better outcome of people living with HIV/AIDS.
**Keywords:** HIV infection, Depression, Anxiety, Agitation.

## Introduction

The AIDS pandemic continues to grow as the most feared disease despite promising developments in medical science in recent years, [1] Globally an estimated 34 million people are living with HIV/ AIDS, and 68 percent of all those infected with HIV are from low- and middle- income countries [2]. People living with HIV/AIDS (PLWHA) in India is estimated at around 20.9 lakh [3]. The HIV epidemic in developing world had a major impact on the social and economic development and showed serious psychological and social impact on the affected people from intense emotional conflict when they come to know about their disease status. [4] Moreover, though it has spread to general population and the rural areas including women, they were often undiagnosed and hence untreated [5-6]. It not only breaks down body's defence mechanism but also is often accompanied by depression, suicidal ideation, suicide attempts, anxiety, and other somatic and psychological symptoms of distress. The most frequent psychiatric diagnosis associated with HIV is an adjustment disorder with features of anxious, depressed, or mixed mood. The prevalence of depression in HIV-infected clinic populations range from 22-38 percent [7-8].

Published researches from Indian population had shown higher depressive symptoms commonly found among PLWHA on anti-retroviral therapy (ART) [9-10]. Among PLWHA, depression increases the chances of

 

HIV transmission [11] associated with poor adherence to treatment and decreased quality of life [12-13]. Therefore, it is important to understand that HIV infected persons may show poor treatment outcome due to involvement of psychological factors. In the above scenario a study was conducted to find out and assess severity of unrecognised psychological problems and its distribution with some demographic and social parameters among attendees of outpatients among HIV positive individuals in two tertiary care teaching hospitals of eastern India.

## Material and Methods

This institution based cross-sectional study was conducted at the out-patients department at the Tertiary care teaching hospitals in Bihar and Kolkata.

*Study population:* The study population consisted of all adult consecutive HIV positive individuals on follow-up attending the hospital to be recruited in the study. They were from both newly diagnosed cases and those who have already been receiving treatments during the study period.

*Sample Size:* Considering the prevalence of psychosocial problems among HIV positive individuals being 50 percent (AIDS aetiology diagnosis treatment and prevention) and taking an allowable error of 15 percent, the sample size was estimated to be 180 using the formula $4pq/L^2$.

*Inclusion criteria:*

- Patients ≥ 18 years
- Patients attending outpatients dedicated for HIV cases
- Patients not critically ill
- Willing to participate, and who has given written consent.

*Exclusion criteria:*

1. Patients who were severely ill,
2. Patients who did not fulfil the inclusion criteria

*Sampling Technique:* Sampling was done by systematic random sampling method. The hospitals had twice weekly outdoors for HIV-positive individuals. 100 patients, on an average, were on follow-up everyday at the out-patients department (OPD) dedicated for HIV cases of them 4 (Four) patients was questioned daily. First patient was selected by lottery method and thereafter every $25^{th}$ patient was approached for data collection. If any person could not be taken into study due to non-consent or exclusion criteria, then next patient was included.

*Study instruments:*

- Hamilton Rating Scale for Depression and Anxiety for Psychological problems.
- Pre-tested, pre-designed questionnaire.
- Medical Records and Investigation reports.

*Ethical Consideration:* Ethical clearance was obtained from the Institutional Review Board. Written informed consent was obtained from each study participant after they were introduced to the purpose of the study and informed about their rights to interrupt the interview at any time. Confidentiality was maintained at all levels of the study. Patients who were found to have psychological problems during the study were referred and followed up till date for further investigations and necessary interventions.

*Data collection and study instrument:* Data regarding family and personal characteristics were recorded by interview technique by the principal investigator using predesigned & pretested semi structured questionnaire. This data collection tool used for the study was an interview schedule that was developed at the Institute with the assistance from the faculty members and other experts for socio-demographic profile and social support had variables relating to family and personal characteristics like age, gender, religion, education, occupation. income, family size and family support along with the duration of disease, treatment. By initial translation, back-translation, retranslation followed by pilot study, the questionnaire was custom-made for the study. The pilot study was carried out at the out-patients department of the Institute among comparable patients, following which some of the questions were modified.

*Data Collection Technique:* For assessment of psychological problems among HIV positive

individuals was interviewed using pre-designed and pre-tested questionnaires based on standardized psychosocial scale mentioned below:

*'The Hamilton Rating Scale for Depression' has the variables:* Depressed Mood, Feelings of Guilt, Suicide, Insomnia – early, Insomnia – middle, Insomnia – late, Work and Activities, Retardation, Agitation, Anxiety – Psychic, Anxiety – Somatic, Somatic Symptoms – General, Somatic Symptoms – Gastrointestinal, Genital Symptoms, Hypochondriasis, Weight Loss, Insight.

The health workers informed and motivated the patients and their caregivers to freely participate in the study. All the participants were explained about the purpose of the study and were ensured strict confidentiality. Written informed consent in their vernacular was obtained from each participant prior to the proposed study and were given the options not to participate in the study if they wanted. Information on the psychological problem among HIV-positive individuals was disseminated to participants and their caregivers in multiple health education sessions in both the teaching institutes to complement the findings of study.

*Data Processing and Analyses:* The collected data were screened and entered into Microsoft Excel spreadsheet and then analyzed using Statistical Package for the Social Sciences (SPSS) for Windows evaluation version 16 (SPSS Inc.; Chicago, IL, USA) and Epi-Info 7. Bivariate analysis was done to see the association of each independent variable with the outcome variable. Potential confounders (important) variables were entered into binary logistic regression model to identify the effect of each independent variable with the outcome variables. A *p*-value of less than 0.05 was considered statistically significant, and adjusted odds ratio with 95% CI was calculated to determine association.

## Results

Among the 180 respondents 116 (64.44%) were males; among males, maximum (56.03%) were in the age group 30-44 years followed by 18-29 years (27.59%) age group. But among females, majority (48.44%) were from age group of 18-29 years. Hence majority of HIV affected females were younger than from the corresponding males. Regarding marital status, among males**,** 65.52 percent of respondents were married followed by divorced (27.59%). Among females, 59.44 percent were married but followed by 37.5 percent who were widowed. Out of the total respondents**,** majority were having secondary education, males 54.31 percent and females 43.75 percent. Also, 22.78 percent of the respondents were either illiterate or literate without schooling.

A great majority of both males (76.72%) and females (93.75%) had been affected by sexual mode of transmission. Further, majority of males (49.14%) were infected through Partner-Single. However, the females (89.06%) were infected through their spouse. On the criteria of presence of substance abuse, it was observed that among males, 69.83 percent were addicted to alcohol followed by 49.14 percent to Chewing Tobacco and 45.69 percent to Smoking Tobacco. Among females, 85.94 percent were having no addiction.

Psychological problems in relation to different demographic parameters: Although the insight for psychological problems were present in majority of the males, most of the psychological problems were "absent" among males with some specific highs such as Retardation (86.21%), Genital Symptoms (99.14%), Hypochondriasis (90.52%) and loss of weight (85.34%) [Table 1].

The psychological factors among females showed a mixed response in all the categories with occasional highs in absent status i.e. Feelings of Guilt (75.0%), Retardation (92.19%), loss of weight (85.94%) [Table 2].

The presence of psychological factors was noted across all age groups with a mixed observation with higher response among the middle age group participants in the range of 30-44yrs [Table 3].

The presence of psychological factors across marital status showed a different response for separated individuals for Insomnia-Early, Insomnia-Middle & Insomnia-Late (83.33% each). Also Genital Symptoms were absent in singles [Table 4].

| Table-1: Classification of psychological factors among male (n=116) | | | | | |
|---|---|---|---|---|---|
| **Psychological factors** | **Absent (%)** | **Mild (%)** | **Moderate (%)** | **Severe (%)** | **Total** |
| Depressed Mood | 29(25.00) | 37(31.90) | 45(38.79) | 5(4.31) | 116 |
| Feelings of Guilt | 50(43.10) | 36(31.03) | 30(25.86) | 0(0.00) | 116 |
| Suicide | 72(62.07) | 24(20.69) | 17(14.66) | 3(2.59) | 116 |
| Insomnia-Early | 68(58.62) | 39(33.62) | 0(0.00) | 9(7.76) | 116 |
| Insomnia-Middle | 74(63.79) | 0(0.00) | 42(36.21) | 0(0.00) | 116 |
| Insomnia-Late | 85(73.28) | 4(3.45) | 1(0.86) | 26(22.41) | 116 |
| Work & Activities | 44(37.93) | 25(21.55) | 24(20.69) | 23(19.83) | 116 |
| Retardation | 100(86.21) | 9(7.76) | 7(6.03) | 0(0.00) | 116 |
| Agitation | 64(55.17) | 22(18.97) | 28(24.14) | 2(1.72) | 116 |
| Anxiety-Psychic | 26(22.41) | 57(49.14) | 31(26.72) | 2(1.72) | 116 |
| Anxiety-Somatic | 33(28.45) | 45(38.79) | 37(31.90) | 1(0.86) | 116 |
| Somatic Symptoms-Gastro Intestinal | 67(57.76) | 40(34.48) | 0(0.00) | 9(7.76) | 116 |
| Somatic Symptoms-General | 29(25.00) | 23(19.83) | 0(0.00) | 64(55.17) | 116 |
| Genital Symptoms | 115(99.14) | 1(0.86) | 0(0.00) | 0(0.00) | 116 |
| Hypocondriasis | 105(90.52) | 9(7.76) | 2(1.72) | 0(0.00) | 116 |
| Weight Loss | 99(85.34) | 1(0.86) | 11(9.48) | 5(4.31) | 116 |
| Insight | 28(24.14) | 0(0.00) | 26(22.41) | 62(53.4) | 116 |

| Table-2: Classification of psychological factors among female (n=64) | | | | | |
|---|---|---|---|---|---|
| **Psychological factors** | **Absent (%)** | **Mild (%)** | **Moderate (%)** | **Severe (%)** | **Total** |
| Depressed Mood | 9(14.06) | 12(18.75) | 40(62.50) | 3(4.69) | 64 |
| Feelings of Guilt | 48(75) | 9(14.06) | 7(10.94) | 0(0.00) | 64 |
| Suicide | 23(35.94) | 15(23.44) | 23(35.94) | 3(4.69) | 64 |
| Insomnia-Early | 31(48.44) | 31(48.44) | 0(0.00) | 2(3.13) | 64 |
| Insomnia-Middle | 31(48.44) | 1(1.56) | 32(50.00) | 0(0.00) | 64 |
| Insomnia-Late | 39(60.94) | 3(4.49) | 0(0.00) | 22(34.38) | 64 |
| Work & Activities | 15(23.44) | 12(18.75) | 33(51.56) | 4(6.25) | 64 |
| Retardation | 59(92.19) | 5(7.81) | 0()0.00 | 0(0.00) | 64 |
| Agitation | 29(45.31) | 14(21.88) | 21(32.81) | 0(0.00) | 64 |
| Anxiety-Psychic | 7(10.94) | 17(26.56) | 35(54.69) | 5(7.81) | 64 |
| Anxiety-Somatic | 10(15.63) | 10(15.63) | 42(65.63) | 2(3.13) | 64 |
| Somatic Symptoms – Gastro Intestinal | 34(53.13) | 28(43.75) | 0(0.00) | 2(3.13) | 64 |
| Somatic Symptoms-General | 18(28.13) | 21(32.81) | 0(0.00) | 25(39.06) | 64 |
| Genital Symptoms | 42(65.63) | 16(25.00) | 0(0.00) | 6(9.38) | 64 |
| Hypocondriasis | 53(82.81) | 8(12.50) | 3(4.69) | 0(0.00) | 64 |
| Weight Loss | 55(85.94) | 0(0.00) | 8(12.50) | 1(1.56) | 64 |
| Insight | 6(9.38) | 0(0.00) | 9(14.06) | 49(76.56) | 64 |

| Table-3: Classification of psychological factors on age group basis | | | |
|---|---|---|---|
| **Psychological factors** | **19 -29 yrs (n=63)** | **30-44 yrs (n=93)** | **45-59 yrs (n=21)** |
| | **Present (%)** | **Present (%)** | **Present (%)** |
| Depressed Mood | 48(76.19) | 8 3(89.25) | 10(47.62) |
| Feelings of Guilt | 27(42.86) | 48(51.61) | 6(28.57) |
| Suicide | 36(57.14) | 43(46.24) | 6(28.57) |
| Insomnia-Early | 31(49.21) | 41(44.09) | 8(38.10) |
| Insomnia-Middle | 23(36.51) | 45(48.39) | 6(28.57) |
| Insomnia-Late | 17(26.98) | 34(36.56) | 4(19.05) |
| Work & Activities | 38(60.32) | 70(75.27) | 11(52.38) |
| Retardation | 4(6.35) | 17(18.28) | 0(0.00) |
| Agitation | 27(42.86) | 51(54.84) | 9(42.86) |
| Anxiety-Psychic | 50(79.37) | 80(86.02) | 15(71.43) |
| Anxiety-Somatic | 48(76.19) | 74(79.57) | 13(61.90) |
| Somatic Symptoms-Gastro Intestinal | 25(39.68) | 45(48.39) | 9(42.86) |
| Somatic Symptoms-General | 42(66.67) | 71(76.34) | 19(90.48) |
| Genital Symptoms | 17(26.98) | 5(5.38) | 1(4.76) |
| Hypocondriasis | 8(12.70) | 14(15.05) | 0(0.00) |
| Weight Loss | 9(14.29) | 14(15.05) | 2(9.52) |
| Insight | 43(68.25) | 63(67.74) | 6(28.57) |
| *Note:* < 18 yrs, n=1 and > 60 yrs, n=2 has not been considered due to low frequency | | | |

| Table-4: Classification of psychological factors based on marital status | | | | |
|---|---|---|---|---|
| **Psychological factors** | **Married (n=107)** | **Single/ Divorced (n=33)** | **Widowed (n=27)** | **Separated (n=12)** |
| | **Present(% )** | **Present (%)** | **Present (%)** | **Present (%)** |
| Depressed Mood | 85(79.44) | 25(75.76) | 21(77.78) | 11(91.67) |
| Feelings of Guilt | 48 (44.86) | 20(60.61) | 6(22.22) | 6(50.00) |
| Suicide | 45(42.06) | 12(36.36) | 18(66.67) | 9(75.00) |
| Insomnia-Early | 45(42.06) | 14(42.42) | 11(40.74) | 10(83.33) |
| Insomnia-Middle | 41(38.32) | 12(36.36) | 11(40.74) | 10(83.33) |
| Insomnia-Late | 31(28.97) | 8(24.24) | 6(22.22) | 10(83.33) |
| Work & Activities | 73(68.22) | 17(51.52) | 20 (74.07) | 10(83.33) |
| Retardation | 14(13.08) | 3 (9.09) | 1(3.70) | 2(16.67) |
| Agitation | 54(50.47) | 8(24.24) | 17(62.96) | 7 (58.33) |
| Anxiety-Psychic | 89(83.18) | 23(69.70) | 25(92.59) | 9(75.00) |
| Anxiety-Somatic | 82(76.64) | 23(69.70) | 22 (81.48) | 9(75.00) |
| Somatic Symptoms-Gastro Intestinal | 45(42.06) | 11(33.33) | 16(59.26) | 6(50.00) |
| Somatic Symptoms-General | 74(69.16) | 25(75.76) | 22(81.48) | 10(83.33) |
| Genital Symptoms | 14(13.08) | 0(0.00) | 7(25.93) | 2(16.67) |
| Hypocondriasis | 9(8.41) | 4(12.12) | 7(25.93) | 2(16.67) |
| Weight Loss | 16(14.95) | 4(12.12) | 5(18.52) | 1(8.33) |
| Insight | 66(61.68) | 19(57.58) | 18(66.67) | 9(75.00) |
| Note: n=1, male unmarried is excluded from the table | | | | |

The presence of psychological factors across literacy level showed uniformity except one occasional low 'Depressed Mood' (50.0%) among Illiterates and a high point of 'Retardation' (76.19%) among respondents having education up to primary level.

The presence of psychological factors based on the abuse of substances showed noted deviations for the category of 'No Substance'. Here, Insomnia-Early (92.75%), Insomnia-Middle (92.75%), Agitation (91.30%) and Insight (75.36%) were much higher than other categories of Psychological factors based on mode of transmission of HIV infection showed a varied response among all categories with different high & low spots in almost all factors [Table 5].

There was significant difference in absence of guilt, absence of insight, late insomnia and severity in work place between genders which was statistically significant.

**Table-5: Classification of psychological factors based on mode of transmission**

| Psychological factors | Sexual (n=149) | Blood Transfusion (n=12) | IDU (n=3) | Denial to divulge (n=13) |
|---|---|---|---|---|
| | Present (%) | Present (%) | Present (%) | Present (%) |
| Depressed Mood | 120 (80.54) | 10 (83.33) | 3 (100.00) | 8 (61.54) |
| Feelings of Guilt | 76 (51.01) | 3 (25.00) | 1 (33.33) | 2 (15.38) |
| Suicide | 72 (48.32) | 5(41.67) | 2(66.67) | 5 (38.46) |
| Insomnia-Early | 66 (44.30) | 8(66.67) | 1(33.33) | 4 (30.77) |
| Insomnia-Middle | 67 (44.97) | 4(33.33) | 1 (33.33) | 2 (15.38) |
| Insomnia-Late | 50 (33.56) | 3(25.00) | 1(33.33) | 1 (7.69) |
| Work & Activities | 103 (69.13) | 5(41.67) | 3 (100.00) | 8 (61.54) |
| Retardation | 18 (12.08) | 0 (0.00) | 1 (33.33) | 2 (15.38) |
| Agitation | 72 (48.32) | 6 (50.00) | 1 (33.33) | 4 (30.77) |
| Anxiety-Psychic | 125 (83.89) | 11 (91.67) | 3 (100.00) | 6 (46.15) |
| Anxiety-Somatic | 117 (78.52) | 11 (91.67) | 3 (100.00) | 4 (30.77) |
| Somatic Symptoms-Gastro Intestinal | 67 (44.97) | 5 (41.67) | 1(33.33) | 5 (38.46) |
| Somatic Symptoms-General | 112 (75.17) | 8 (66.67) | 1 (33.33) | 10 (76.92) |
| Genital Symptoms | 22(14.77) | 1(8.33) | 0 (0.00) | 0 (0.00) |
| Hypocondriasis | 20 (13.42) | 0 (0.00) | 1 (33.33) | 1(7.69) |
| Weight Loss | 20 (13.42) | 1 (8.33) | 0 (0.00) | 3(23.08) |
| Insight | 95(63.76) | 9 (75.00) | 2(66.67) | 4(30.77) |

*Note:* Vertical transmission, n=1 and others n=2 not considered due to low frequency

## Discussion

The present study was aimed to measure the different psychological problems associated with PLWHA and its distribution with some demographic and social parameters. The present study shows a mixed result with high response among the middle age group between 30-44yrs while suicidal tendency is more in the age group between 19-29yrs. Depression is more common in female (76.56%) in comparison to male (53.45%). These findings corroborates with the findings of Chandra *et al* [14]. This reflected more social stigma and poor health seeking trends in case of Indian women. Psychological problems show mixed response in relation to the marital status except separated where the insomnia is more frequent finding (83.3%).

This finding contradicts the finding of Sreelekshmi R [15] where she found married people used more problem and emotion focused coping strategy than the subjects who live as single. The presence of psychological factors across literacy level shows uniformity except low 'Depressed Mood' (50.0%) among Illiterates. A study conducted by Swindells et al [16] shows that quality of life did not correlate with age, gender, race, education or marital status rather it is correlates with employment, high income, satisfaction with social support which is associated with a significant better quality of life.

The presence of psychological factors based on substance abused shows deviations for category 'No Substance' where Insomnia-Early (92.75%), Insomnia-Middle (92.75%), Agitation (91.30%) and Insight(75.36%) are much higher than other categories. Depression and anxiety were the most common psychiatric problems which HIV patients used to come across according to my study .This finding corroborated with the finding of Agrawal *et al* [4] where she founded Anxiety to be commonest.

*Strengths of the study:* This study identified an increasing need for nationwide efforts to develop intervention programs for psychological problem of PLWHAs by a multidisciplinary approach comprising dermatologist and psychiatrist in the year when WHO has given stress on depression. To the horizon of our knowledge we are yet to find published literature on this research question from eastern India.

*Limitations of the study:* We had several limitations. Firstly, in our infrastructure poor settings, due to shortage of time the sample size had to be restricted to a total of 180. So, the results cannot be generalized to national population. Secondly, as the study was conducted by selecting patients on the basis of systematic random sampling the patients attending the out-door twice a week were taken into account. This therefore, may not reflect the actual picture of the disease among the people. As a result**,** statistical significance based on demography could not be calculated and proper conclusions could not be drawn. Thirdly, because of the cross-sectional design, this study had a limited extrapolative value. Lastly, participants in this field were troubled with shyness and psychological problems that were not addressed and probability of missing data cannot be excluded in the study on OPD cases.

*Future directions of the study:* A longitudinal study for a longer period of time with sufficient follow-ups of a particular group of people to get more clear idea of changing pattern in psychological problems among different variables could be undertaken. It would help in better statistical comparison.

## Conclusions

It can be concluded from the present study that the psychological factor (depressed mode) among both male and female are moderately present though both have the insight of being depressed. The psychological problem aggravates the complication in people living with HIV/AIDS. Therefore, early diagnosis and management of depressive symptoms is an important factor for optimal outcome of the patients.

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*All correspondences to: Dr. Panchali Datta, Demonstrator, Department of Anatomy, Diamond Harbour Medical College and Hospital, Diamond Harbour-743331, West Bengal, India. E-mail: panchalisom78@gmail.com