A study on depression in people living with HIV/AIDS in South-West part of Uttar Pradesh, India

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Abstract

HIV/AIDS and depression are often thought to be interlinked. HIV positive cases may trigger symptoms of depression which, in turn, may result in risky sexual behavior and spread of HIV. Interviews were conducted in 104 patients of HIV/AIDS at the Anti-Retroviral Therapy (ART) Clinic of a teaching hospital in Uttar Pradesh (India) to study depression and examine its prevalence and association, if any, with some socio-demographic and clinical variables. The tools used to assess anxiety and depression and their severities were General Health Questionnaire (GHQ) 28 and Montgomery-Asberg Depression Rating Scale (MADRS) . The majority of patients were of age 35 years & above (62%), males (67%), married (85%), Hindus (88%), literate (73.1%), unemployed (35%) and of upper-lower socio-economic status (52%). Significant association of depression was found with religion, occupation and socio-economic status. Depression and anxiety were also found to be significantly associated with each other. There was, however, no association of depression with respondents' age, gender, marital status, education, habitat, income, duration of illness from HIV/AIDS and the CD4 count. The high prevalence rate (67.3%) of depression amongst HIV patients in our study may be taken as marker to alert Counsellors of country's *ART Clinics* for possible risk of depression in HIV patients. The above findings however, should be interpreted in the light of the fact that a parallel control group in the study was not included, studied sample was not large enough and the tools used to study the subjects for depression and anxiety were not adequately standardized.

Keywords: HIV/AIDS, Depression, Anxiety, PLHAs, India.

Introduction

Depression is one of the major disabling factors in chronic illnesses.[1] It is most extensively studied psychiatric co-morbidity, affecting HIV-infected patients, with estimates of lifetime prevalence rates - ranging from 4% to 45%.[2] Further, reasons for high prevalence of depression amongst people living with HIV/AIDS (PLHAs) could be many.[2,3,4] HIV is a chronic and life-threatening illness and, like other such illnesses, can be stressful to manage.[1] Its life-threatening nature may lead to fears of impending mortality. Moreover, medical sequel of HIV infection, its associated opportunistic infections and side effects of antiretroviral treatment can mimic symptoms of depression (viz. fatigue, concentration problems, somatic symptoms, decreased appetite & weight loss etc).[5] On the other hand, several psychiatric conditions including depression may predispose individuals to acquiring HIV infection as a consequence of their influence on behavior.[6,7]

There is good evidence from the international research – particularly from developed countries, that the prevalence of depression in PLHAs is higher than those with HIV-negative controls.[8,9] However, very little is known about their mental problems and subsequent needs in developing countries like India, which are most affected by the HIV- epidemic.[10,11] Incidentally, minimal research on this subject has been done in this part of the globe. The present study was designed to estimate prevalence of

Practice Points

- HIV is a chronic and life-threatening illness. Its positive diagnosis may trigger symptoms of depression, which may, in turn, result in their risky sexual behavior and contribute to further spread of HIV.

- In India, available data suggests that depression is under-recognized and under-treated in HIV-infected individuals.

- The study recorded an overall prevalence rate of depression amongst PLHAs as 67.3%. The majority of HIV/AIDS patients were either moderately or severely depressed (52.9%). Significant association of depression was detected with religion, individual occupation and socio-economic status only.

- The prevalence of anxiety among respondents was found to be 76.9% and 55.8 % had both anxiety and depression. The association between depression and anxiety was found to be statistically significant.

- The high prevalence of depression amongst HIV/AIDS patients may be taken as a marker to alert Counselors of country's ART Centers for possible risk of depression in HIV patients.

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depression amongst HIV/AIDS patients and look into its association with their socio-demographic and clinical variables. Results of this study may help bridging the existing gap in the knowledge and provide a baseline for planning and program development for the PLHAs at ART Centers of the country.

Materials and Methods

This cross-sectional study was undertaken at ART Clinic of Maharani Laxmi Bai Medical College & Hospital, Jhansi (UP), India. HIV/AIDS patients registered at the above Clinic - both males & females and aged 18 years and above, were recruited as the study participants. Sample size, using method of Lwanga & Lameshow[12] was estimated to be 96. Giving an allowance for refusal rate, 104 participants, on safer side, were selected, following Systematic Sampling. The study period was from 1 April 2013 to 31 March 2014. Socio-demographic and clinical profiles of respondents were completed by interviewing each participant separately, using pretested questionnaire. The socio-economic status of respondents was assessed using Modified Kuppuswamy Scale[13]. Anxiety as well as depression and their severities were studied, using interview method, applying General Health Questionnaire (GHQ) 28 tool[14] and Montgomery-Asberg Depression Rating Scale (MADRS) tool.[15] Data were analyzed using SPSS version 16. The study had the necessary clearance from the institutional Ethical Committee.

Results

Socio-demographic characteristics
The socio-demographic characteristics of the respondents are shown in Table 1. Majority of the respondents (61.54%) were aged 35 years and more, males (67.3%), married (84.6%) and Hindus (88.5%). More than half (56.7%) of the respondents were from rural habitat, 73% were literate, and 34.6% respondents were unemployed. Earnings of the most of the respondents (51.93%) ranged between Indian Rs. 1,601-Rs. 8,009 per month, with majority belonging to the upper-lower socio-economic status.[13]

Clinical history
The clinical history of the respondents is included in Table 2. All patients of the ART Clinic were referred by a Medical Doctor for treatment. Only 4 cases (3.8%) had consulted a Psychiatrist for their ailments. More than half of respondents (57.6%) were detected as HIV-positive at the ART Clinic during past 3 years and 63.46% of the respondents had CD4 count≤300. They frequently (78.8%) reported heterosexuality as possible route for HIV transmission, followed by blood transfusion (9.6%), unsafe injection (6.7%) and homo-sexuality (2.9%).

Depression and anxiety
Depression as well as anxiety levels in the studied PLHAs are shown in Table 3. Prevalence rate of anxiety in our study was found to be 76.9% against 67.3 % for depression. Majority of patients were either moderately

or severely depressed (52.9%). It may be relevant to indicate here that, with a chronic condition like HIV, depression can fuel additional problems, such as - failure to take life-saving antiretroviral medications. When depression is paired with HIV, the two diseases can feed off of one another.

Table 1: Socio-demographic characteristics of study subjects

Variables	Respondents (n-104)
Age (years)	
<35	40 (38.46%)
≥35	64 (61.54%)
Gender	
Female	34(32.69%)
Male	70(67.31%)
Marital Status	
Married	88(84.62%)
Unmarried	12(11.54%)
Widow	4 (3.84%)
Religion	
Hindu	92(88.46%)
Muslim	12(11.54%)
Caste	
General	44(42.30%)
OBC	30(28.85%)
SC	30(28.85%)
Habitat	
Rural	59(56.73%)
Urban	45(43.27%)
Education	
Illiterate	28(26.92%)
Primary	17(16.35%)
Middle	14(13.46%)
High school	11(10.57%)
Intermediate	12(11.55%)
Graduate/Postgraduate	22(21.15%)
Occupation(Individual)	
Unemployed	36(34.62%)
Unskilled	33(31.73%)
Semiskilled	12(11.55%)
Skilled	2 (1.91%)
Clerical	7 (6.73%)
Semi professional	12(11.55%)
Professional	2 (1.91%)
Monthly Income (Indian Rupees)	
≤1600	5 (4.80%)
1601-4809	28(26.93%)
4810-8009	26(25.00%)
8010-12019	18(17.31%)
12020-16019	8(7.69%)
16020-32049	10(9.62%)
≥32050	9 (8.65%)
Socioeconomic status	
Lower	6 (5.76%)
Upper lower	54(51.93%)
Lower middle	25(24.05%)
Upper middle	17(16.35%)
Upper	2 (1.91%)

Table 2: Clinical history of study subjects

Variables	Respondents (n -104)
Source of referral	
Doctor	97 (93.27%)
Family/friend	2 (1.93%)
Own	5 (4.81%)
Consulted a psychiatrist	
No	100 (96.15%)
Yes	4 (3.85%)
CD4 count	
≤300	66 (63.46%)
>300	38 (36.54%)
Duration of illness	
<3 years	60 (57.69%)
≥3 years	44 (42.31%)
HIV transmission	
Heterosexual	82 (78.85%)
Blood transfusion	10 (9.62%)
Unsafe injection	7 (6.73%)
Homosexual	3 (2.88%)
Unknown	2 (1.92%)

Table 3: Levels of depression and anxiety in PLHAs

Psychiatric variables	Respondents (n - 104)
Depression Level	
Absent	34 (32.70%)
Mild	15 (14.42%)
Moderate	27 (25.96%)
Severe	28 (26.92 %)
Anxiety Level	
Absent	24 (23.08%)
Low	55 (52.88%)
High	25 (24.04%)

As regards association between depression and anxiety, Table 4 shows that 55.8% of respondents had anxiety as well as depression, 21.1% of respondents with anxiety were not depressed and 11.5% of respondents neither had anxiety nor depression. The association between depression and anxiety was found to be statistically highly significant ($p=0.00$).

Depression and demographic and clinical variables
When investigated for presence of depression and its association with various socio-demographic variables (Table 5), significant association of depression was detected with religion ($p=0.04$), occupation ($p=0.01$) and socio-economic status ($p=0.01$). Variables like age, gender, marital status, education, habitat, income, duration of illness from HIV/AIDS and the CD4 count, did not exhibit any association with the depression.

Discussion

Depression is a major problem in HIV- infected patients, as it can lead to poor adherence to ART, treatment failure, HIV progression and death.[16-19] In our study, majority of respondents were aged 35 years and more, male, married, Hindu, literate and employed. Significant association of depression was found with religion, occupation and socio-economic status. We also found significant association of depression with anxiety. However, no association of depression was seen with other socio-demographic and clinical variables considered in the study including CD_4 count.

Our study further showed that 67.3% of the participants were depressed. A 2001 meta-analysis[4] of studies on HIV and depression showed that people with HIV run twice the risk of depression as those who were at-risk for HIV but remained uninfected. In another Indian study,[20] prevalence rates of depression among HIV sero-positive individuals were ranged from 10% to 40%. In similar studies, Kaharuza *et al.*[21] and Bhatia *et al.*[22] found prevalence of depression to be 47% in Uganda and 45% in USA respectively. Collaborating with these reports, our findings point out that depression could be relatively frequent among HIV/AIDS patients. However, a high rate of depression in PLHAs, as seen above, should be seen in the light of the fact that a parallel control group in the present study was not included, enabling us to measure the role of HIV/AIDS in increasing risk for depression in them.

Socioeconomic factors have been reported as predisposing factors in HIV infection and have also been found to be relevant factors in depression related to HIV disease progression.[23-24] The association between individual occupation and depression in our study has been found to be statistically significant. Further, around 35% of the respondents (34.6%) were unemployed. This indicates that people who were not working were more likely to be depressed than those who had employment of some kind. These findings add to the existing evidence that unemployment predicts depression.[25] This possibly is due to the fact that working PLHAs are assured of some income that would enable them AIDS' care. Another study[26] from Nigeria showed that PLHAs who were unemployed were three times more depressed as compared to those who were employed (OR:2.94, $p<0.04$). A multivariate analysis from Uganda[27] has also shown that major depressive

Table 4: Association between depression and anxiety in respondents

Depression	Anxiety		Total
	Present	Absent	
Present	58 (55.76%)	12 (11.54%)	70 (67.31%)
Absent	22 (21.15%)	12 (11.54%)	34 (32.69%)
Total	80 (76,92%)	24 (23.08%)	104 (100%)
Chi Square=4.24, d.f.=1, *p*=0.039			

Table 5 : Association of depression with demographic and clinical variables

Variables	Subject studied (n=104)	Depression		Statistical significance of association		
		No	Prevalence rate (%)	Chi-square	d f	*p*- value
Age (years)						
<35	40	24	60	1.577	1	0.209
≥35	64	46	71.89			
Gender						
Male	70	44	62.86	1.927	1	0.165
Female	34	26	76.47			
Marital Status						
Married/Ever married	92	64	69.6	1.847	1	0.174
Un-married	12	6	50			
Religion						
Hindu	92	65	70.65	4.053	1	0.04[*]
Muslim	12	5	41.67			
Education						
Illiterate	28	17	60.71	0.757	1	0.384
Literate	76	53	69.74			
Occupation						
Un-occupied	36	30	83.33	6.426	1	0.01*
Occupied	68	40	58.82			
Habitat						
Rural	59	41	69.5	0.296	1	0.587
Urban	45	29	64.4			
Income (Rupees)						
<5000	33	26	78.8	2.895	1	0.089
≥5000	71	44	62			
Duration of illness						
<3 years	60	40	66.66	0.026	1	0.871
≥3 years	44	30	68.2			
CD4 Count						
≤300	66	47	71.21	1.251	1	0.263
>300	38	23	60.53			
Socioeconomic status[†]						
Lower	60	46	76.7	10.408	2	0.005*
Middle	25	17	68			
Upper	19	7	36.84			

p-value significant, [†]Lower SES includes Lower and Upper- Lower, and Upper SES includes Upper - Middle and Upper SES.

disorder was significantly associated with lacking employment.

A study from Pakistan,[28] where HIV was almost non-existent, reported significant association of depression with poor socioeconomic status. This is true for depressed PLHAs in our ART Clinic participants with low socio-economic status. Such PLHAs were more depressed than those who had a higher socio-economic status. Studies have shown that emotional distress and poor socio-economic state affect people's ability to cope with HIV infection.[29]

Our Study further showed significant association between depression and anxiety. Such an association looks biologically plausible and so implied also. A study from India[30] also showed similar relationship between anxiety and depression levels. In another similar study from India found that majority (90%) of the patients with depressive symptoms also had prominent anxiety symptoms and fulfilled the ICD-10 criteria for generalized anxiety disorder and that, this association was found to be statistically significant.[20]

Our study showed no significant association between depression and age, gender, habitat, marital status, duration of HIV/AIDS and CD4 count of respondents. Almost similar results have also been found in other studies.[26,31,32] More planned studies with sufficiently large samples however, are needed to examine such hypotheses.

We can thus, see that it is essential to screen, identify, and treat depression among patients entering into ART Centers for HIV treatment. Data also suggest that depression is under-recognized and under-treated in

HIV-infected individuals and so, further research in this part of globe is needed. Also, diagnosis and management of depression are important factors for optimal outcome of HIV/AIDS patients.

Limitations of the study

This study has some limitations. First, this was a cross-sectional study, undertaken in special population group, (i.e. HIV positive people). Hence, its results on depression – particularly with regard to its prevalence rate, cannot be compared with other studies, undertaken in general populations. Secondly, tools used in this study were not adequately standardized. These have mostly been used in measuring severity of the condition. This consideration needs to be taken care of while comparing its results with other studies, undertaken in similar population groups. With qualitative and more standardized tools, this study could have yielded better results. In fact, in studies like the present one, more qualitative tools such as focused group-discussions are desirable as respondents often have many issues and experiences to share with the study Investigators. Thirdly, a parallel control group in this study was not considered. A high rate of depression amongst the studied PLHAs should therefore, be viewed in the light of this fact. Further, a longitudinal probe could have thrown better light on different aspects of the study, including association between psychiatric morbidity and HIV/AIDS.

Conclusion

Our findings indicate a high rate of prevalence of depression in HIV-infected people and its significant association with some demographic variables, viz. religion, individual occupation and socio-economic status. The depression was not found to be associated with age, gender, marital status, education, habitat, income, duration of illness from HIV/AIDS and CD_4 count. This highlights the need of efficient mental health interventions to be integrated into HIV Care Centers in the country. A quality counseling to the HIV patients could avoid acute depression amongst them. Safe and effective treatment of depression, one of the most common co-morbid conditions in individuals infected with HIV, will significantly lower down its morbidity and mortality in the country.

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