



ORIGINAL ARTICLE

Magnitude and Factors Associated with Depression Among HIV Positive Patients in a Tertiary Care Hospital at Kolkata: Influence of Coping Strategies.

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ABSTRACT

Background & Objectives: Depression is one of the most common neuropsychiatric complications of HIV disease, and in turn it is associated with worse HIV-related outcomes. The objectives of the study were to determine the magnitude of depression among HIV positive patients under Anti- Retroviral Therapy (ART), to identify the strategies used by the patients to cope with their illness and to determine the association, if any, of different factors and the coping strategies used, with depression

Methods: Interviews were conducted with 197 HIV-infected patients, selected by Systematic Random Sampling, who were on ART for more than six months at School of Tropical Medicine, Kolkata. Depression was assessed using the Zung Self Rated Depression Scale. Coping strategy was assessed using Brief Cope Questionnaire

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Results: This study included 197 subjects, of which males were 67.5%, females 27.9% and 4.6% were transgenders. Overall depression was present among 20.3% of patients. No significant association of depression was present with age group, gender, residence, marital status, education, occupation, sex orientation, per capita income and living accommodation. Significant association of depression was present with substance abuse ($p = 0.000$), ART duration in years ($p = 0.015$), low CD4 count ($p = 0.005$) and treatment with Efavirenz medicine ($p = 0.003$).

Coping strategies commonly used by the patients were: planning (mean score:5.73), behavioral disengagement (mean score:5.62), positive reframing (mean score:5.59), acceptance (mean score:5.54), religion (mean score :5.45), instrumental support (mean score :5.39), and active coping (mean score :5.31).

Depression was found to be inversely correlated with planning ($r = -0.026$), behavioral disengagement ($r = -0.013$), positive reframing ($r = -0.030$), active coping ($r = -0.023$), emotional support ($r = -0.038$), substance abuse ($r = -0.042$), and humor ($r = -0.026$). Self-blame ($r = 0.007$), religion ($r = 0.038$), instrumental support ($r = 0.052$) were found to be positively correlated with depression.

Conclusion: Depression was present in one fifth of the patients with HIV. Maintaining a high CD 4 count, judicious use of Efavirenz medicines, counseling on reducing substance abuse, and positive coping strategies are recommended.

Key words:- HIV, CD4 Count, Depression, Coping

Introduction:

India has the third largest number of people living with HIV/AIDS. The Government of India estimates that about 2.40 million Indians are living with HIV (1.93 -3.04 million) with an adult prevalence of 0.31% (2009). Children (<15 yrs) account for 3.5% of all infections, while 83% are in the age group 15-49 years. The epidemic is no longer confined to the high-risk groups of sex workers, migrant workers, truck drivers, injecting drug users, it is spreading to the general population.¹

Psychiatric disorders are common among those infected with HIV, and depression is especially prevalent.^{2,3} A diagnosis of HIV infection is typically a traumatic event⁴, and depression compounds the physical and emotional stress associated with HIV infection. Depression is associated with poor adherence to highly active antiretroviral treatment (HAART)⁵⁻⁷, deterioration in psychosocial functioning, reduced immune response, more rapid progression of HIV, and higher mortality rates.⁸⁻¹⁴

Coping has been the focus of research in the social sciences for a long time and is considered a complex multidimensional process that is sensitive to the environment (i.e., to environmental demands and resources) and to personality dispositions that influence the appraisal of stress and coping resources¹⁵⁻¹⁸. When people achieve a good 'fit' between stressful events and their coping strategies, they experience fewer complications than when there is a lack of 'fit'. In particular, they would be less likely to resort to maladaptive coping behaviors¹⁹⁻²⁰(i.e., coping that fails to regulate distress or manage the underlying problem), such as cognitive escape and avoidance behaviors (including the use of alcohol or drugs, or avoiding addressing problems).²¹⁻²⁴

The objectives of the study were to determine the magnitude of depression among HIV positive patients under Anti- Retroviral Therapy (ART), to identify the strategies used by the patients to cope with their illness and to determine the association, if any, of different factors and the coping strategies used, with depression

Material and methods

A Hospital based cross sectional study was conducted in the School of Tropical Medicine, Kolkata, which is the model centre in HIV care, support and treatment. A total of 197 HIV positive patients (on ART for more than six months) attending ART Center at School of Tropical Medicine, Kolkata between August 2013 – January 2014 were selected by Systematic Random Sampling.

Sample size was estimated to be 190 based on previous estimate of depression of 43.8% among HIV positive patients (Jagannath V et al²³) at 95% level of confidence and 10% allowable error (absolute). Design effect of 2 was applied. Pre-designed

and pre-tested questionnaire in the local language was used to collect data. Coping strategies was assessed through the Brief COPE which includes 28 items and uses a four-point Likert scale with responses ranging from 1 = 'I have not done this at all' to 4 = 'I have been doing this a lot'. In total, 14 dimensions (two items for every dimension) are put forward by this scale²⁴. They are self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion and self-blame.²⁴ Depression was assessed using the Zung Self Rated Depression Scale²⁵. There are 20 items on the scale that rate the four common characteristics of depression: the pervasive effect, the physiological equivalents, other disturbances, and psychomotor activities. There are ten positively worded and ten negatively worded questions. Each question is scored on a scale of 1-4 (a little of the time, some of the time, good part of the time, most of the time). The score ranges from 20-80. Categorization of depression is as follows: Upto49 Normal Range, 50-59 Mildly Depressed, 60-69 Moderately Depressed, 70 and above Severely Depressed.²⁵

Data were analyzed using SPSS Ver. 17 Software. Ethical committee clearance was taken from All India Institute of Hygiene & Public Health, Kolkata and School of Tropical Medicine, Kolkata. Written informed consent was taken from each participant. Every participant was assured of confidentiality and granted that his or her identity would neither be recorded nor the information be used for the purpose other than study.

Results

This study included 197 subjects. Out of this, males were 67.5%, females were 27.9% and 4.6% were transgenders.

Overall depression was present among 20.3% of patients (mild-14.2%, moderate 5.1%, severe depression 1.0%). It increased with increase in age though it was not statistically significant ($P= 0.256$). **(Table 1)**.

Table 1 : Association of depression among HIV Positive Patients on ART with various factors

Variables	Categories	Depression		Total	P
		Yes	No		
Age group	Upto 25 years	6(14.6)	35(85.4)	41(20.8)	0.256
	26 to 35 years	15(17.2)	72(82.8)	87(44.1)	
	36 to 45 years	13(25.5)	38(74.5)	51(25.9)	
	46 years and above	6(33.3)	12(66.7)	18(09.2)	
Gender	Male	28(21.1)	105(78.9)	133(67.5)	0.771
	Female	11(20.0)	44(80.0)	55(27.9)	
	Transgender	1 (11.1)	8(88.9)	09(4.6)	
Residence	Rural	22(20.4)	86(79.6)	108(54.82)	0.562
	Urban	18(20.2)	71(79.8)	89(45.18)	
Marital status	Unmarried	10(22.2)	35(77.8)	45(22.8)	0.912
	Married	27(20.0)	108(80.0)	135(68.6)	
	Widow/ er, divorcee	3(17.6)	14(82.4)	17(8.6)	
Educational status	Up to secondary	21(18.3)	94(81.7)	115(58.4)	0.398
	H.S & above	19(23.2)	63(76.8)	82(41.6)	
Occupation	Employed	22(17.2)	106(82.8)	128(64.9)	0.184
	Business	08(33.3)	16(66.7)	24(12.2)	
	Unemployed/student/farmer / home maker	10(22.2)	35(77.8)	45(22.9)	
Sex orientation	Multiple partner	22(20.4)	86(79.6)	108(54.8)	0.058
	Single partner hetero	11(15.3)	61(84.7)	72(36.5)	

	Gay, lesbian and TG	7(41.2)	10(58.8)	17(8.7)	
Per capita income (Rs)	Up to 1546	15(22.7)	51(77.3)	66(33.5)	0.835
	1547 – 2577	15(19.0)	64(81.0)	79(40.1)	
	> 2577	10(19.2)	42(80.8)	52(26.4)	
Living accommodation	Family	37(21.0)	139(79.0)	176(89.3)	0.661
	Friend & alone	3(14.3)	18(85.7)	21(10.7)	
Substance abuse	Yes	37(21.0)	43(79.0)	117(59.4)	0.000
	No	3(14.3)	114(85.7)	43(21.8)	
Drug treatment	Efavirenz	24(55.8)	19(44.2)	43(21.8)	0.000
	Non Efavirenz	16(10.4)	138(89.6)	111(78.2)	
ART (yrs)	Up to 3 years	17(14.2)	103(85.8)	120(60.9)	0.015
	3 to 6 years	15(26.8)	41(73.2)	56(28.4)	
	More than 6 years	08(38.1)	13(61.9)	21(10.7)	
CD4 count	Less than 200	6(60.0)	4(40.0)	10(5.1)	0.005
	200-500	27(18.9)	116(81.1)	143(72.6)	
	More than 500	07(15.9)	37(84.1)	44(22.3)	

Depression was more common among male patients (21.1%) followed by female (20.0%) and was least among Transgender (11.1%) (Table 1). However the differences were not statistically significant (P= 0.771). It was maximum among unmarried patients (22.2%) followed by married patients (20.0%) and least among widow/widower and divorcee/separated group (17.6%) though the differences were not statistically significant (P =0.912). Depression was more common among patients who were more than secondary educated (23.2%) than those who were educated up-to secondary level (18.3%)(P =0.398). It was maximum among

business group (33.3%) followed by unemployed, student, farmer and home maker group (22.2%). Depression was least among employed group (17.2%) ,however the differences were not statistically significant ($P = 0.184$). Depression was more common among patients whose sexual orientation were towards Gay, Lesbian (41.2%) followed by patients whose sexual orientation were towards multiple partner (20.4 %). It was least among patients whose sexual orientation was towards single hetero-sexual partner (15.3 %). However there was no significant association among the groups ($P = 0.058$). Depression was more among patients whose per capita monthly income was less than Rs. 1547 (22.7%) than the other groups (per capita income Rs. 1546- Rs.2577, (19.0%) and per capita income more than Rs. 2578 (19.2 %), though the differences were not statistically significant ($P = 0.835$). Depression was more among patients who were prescribed Efavirenz (55.8%) compared to patients not prescribed (10.4%) and it was statistically significant ($P = 0.000$). It was more among patients having the habit of substance abuse (21.0%) than that among patients not using any substance (14.3%) The difference was statistically significant ($P = 0.000$). Depression was maximum (60.0%) among patients whose CD4 counts were less than 200 followed by 18.9 % among the patient whose CD4 count were within 200- 500 and least (15.9%) for those with CD4 counts more than 500. The differences were statistically significant ($P = 0.005$). The following coping strategies were found to be used more commonly by the patients (Table 2): planning (mean score :5.73), behavioral disengagement (mean score :5.62), positive reframing (mean score :5.59), acceptance (mean score :5.54), through religion (mean score :5.45), instrumental support (mean score :5.39), and active coping (mean score :5.31). Self-blame had a mean score: 4.13. Other coping items less frequently used were emotional support (mean score: 3.69), venting (mean score :3.23), substance abuse (mean score :2.72), denial (mean score :2.41) and humor (mean score :2.10).

Table 2 :- Coping strategy scores of patients

Coping strategy	N	Mean	Std. Deviation	Range	Median	Q ₁	Q ₂	Mode
Self-distraction	195	4.85	1.512	2-8	5	4	6	4
Active coping	197	5.31	1.451	2-8	5	4	6	5

Denial	196	2.41	0.996	2-8	2	2	2	2
Substance abuse	197	2.72	1.558	2-8	2	2	2	2
Emotional support	197	3.69	1.795	2-7	4	3	4	4
Instrumental support	197	5.39	1.398	2-8	5	4	6	6
Behavioral disengagement	197	5.62	1.526	2-8	6	4	6.5	6
Venting	197	3.23	1.077	2-7	3	3	4	3
Positive reframing	196	5.59	1.3911	2-8	6	5	6	6
Planning	197	5.73	1.513	2-8	6	5	7	2
Humor	196	2.1	0.496	2-5	2	2	2	2
Acceptance	196	5.54	1.55	2-8	6	4	6	6
Religion	197	5.45	1.53	2-8	5	4	6	5
Self -blame	191	4.13	1.611	2-8	4	3	5	4

Correlation coefficients for different coping strategies were estimated with the depression scores of the patients (Table 3). Depression was found to be inversely correlated with planning (Correlation coefficient(r) -0.026), behavioral disengagement (r= -0.013), positive reframing (r=-0.030), active coping (r= -0.023), emotional support (r= -0.038), venting, substance abuse (r= -0.042), and humor (r= -0.026). Positive correlation were observed with self-blame (r=0.007), religion (r=0.038), instrumental support (r= 0.052).

Table 3 : Correlations between Coping strategies & depression

Coping strateg	Pearson's correlation	P	N
Self-distraction	0.076	0.288	195

Active coping	-0.023	0.745	197
Denial	-0.040	0.578	196
Substance abuse	-0.095	0.183	197
Emotional support	-0.038	0.598	197
Instrumental support	0.052	0.471	197
Behavioral disengagement	-0.013	0.861	197
Venting	-0.042	0.556	197
Positive reframing	-0.030	0.681	196
Planning	-0.026	0.716	197
Humor	-0.027	0.709	196
Acceptance	-0.000	0.996	196
Religion	0.085	0.236	197
Self-blame	0.050	0.492	191

Discussion:

Depression is a major problem in HIV-infected patients, because it can lead to poor adherence to ART, treatment failure, HIV progression and death.^{13,26,27,28,29} Accordingly, we sought to determine the prevalence and correlates of depressive symptoms among HIV-infected patients put on ART for at least six months. Co-morbid psychiatric illnesses, including depression, are common in HIV-infected patients.³⁰ The prevalence of depression in HIV-infected clinic populations has ranged from 22% to 38%.^{29,30,31,32} The prevalence of depression among our subjects was 20.3% and there was no significant difference between genders. Another similar study in the West Indies by Hays et al²⁵ shows that moderate to severe depressive symptoms were reported by 17.3% of the HIV-infected patients with females reporting significantly higher levels of depression than males. The scientific literature on the prevalence of depression in PLWHA is variable. Ciesla and

Roberts²¹ estimated that major depression is twice as frequent in HIV-positive patients when compared with HIV-negative patients.

As age increased, the prevalence of depression also increased though no significant association was found. This is probably because advances in the treatment of HIV have resulted in a large number of older adults with HIV. These ageing adults face added social, psychological, and physical challenges associated with the ageing process. Correlations between depression, loneliness, health, and HIV/AIDS-related stigma have been studied by Grov C et al³³ but there was little evaluation of these associations among HIV-positive adults over the age of 50. In their study 39.1% of the old participants exhibited symptoms of major depression which is similar to that found in the present study.

In this study depression was least among employed group (17.2%). This finding corroborates with that found in the study by Wagner et al.³⁵ It was found to be more common among patients who were more educated (23.2%) which is in contrast to previous study by Goldman et al.³⁶

It was also observed that depression was more among patients whose CD4 count was less than 200. This finding supports the previous studies that depression has been related to faster increase in plasma HIV viral load, more rapid decline in CD4 + T lymphocyte cells count²⁰ and increased mortality.^{4,32}

This study showed that patients were frequently using the following coping items such as:- planning, behavioral disengagement, positive reframing, acceptance, religion, instrumental support, active coping. These findings are more or less similar with the study by CR Fumaz et al.²² In their study they found high scores in religion, humor, use of support, active coping or planning, venting/self-distraction, denial/self-blame and acceptance.

Cyril S. Ubiem³⁷ in his study among Africans and Latinos found significant relationship between depression and overall coping strategies. Specifically, significant relationships were found among three factors of coping: optimistic planning, spirituality, and anger. Previous study by Huanguang Jia et al³⁸ found that

coping strategies such as seeking social support, and spirituality improved depressive symptoms. According to Folkman Set et al.³⁹, active coping was associated with diminished depressive mood and passive or detachment coping was related to increased depressive mood.

Conclusions: : Depression was present in one fifth of the patients with HIV. Maintaining a high CD 4 count, judicious use of Efavirenz, counseling on reducing substance abuse, and positive coping strategies are recommended.

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