

Original Research Article

Mental health status and its correlates among people living with HIV/AIDS in a tertiary care center of West Bengal

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ABSTRACT

Background: People with mental disorders experience disproportionately higher rates of disability and mortality. Bidirectional link between mental illness and HIV/AIDS accelerates the disease progression, reduces willingness to access health care, promotes high risk behavior, leads to low medication adherence, and ultimately results in poor disease outcome. The present study was conducted with the objectives to estimate the prevalence of common mental disorders (CMD) among people living with HIV/AIDS (PLWHA) attending anti-retroviral therapy (ART) clinic at Burdwan medical college and hospital and to find out the association if any, between sociodemographic characteristics and CMD among the study population.

Methods: A cross sectional descriptive study was conducted among 410 adult PLWHA, selected through systematic random sampling, registered at ART clinic of Burdwan medical college and hospital, West Bengal during October 2022 to February 2023. Interview of each study subject, with a pre-designed, pre-tested, semi-structured schedule was done to obtain socio-demographic characteristics and CMD was assessed using WHO's self-reporting questionnaire (SRQ)-20. Univariate and multivariable logistic regression was performed to predict the factors associated with CMD. Data were analysed using SPSS v23.

Results: Prevalence of CMD was 30.2% among PLWHA attending ART clinic. In univariate logistic regression, female gender, persons not living with partner (un-married, widow/widower, divorced/separated), current smoker, pre-ART cases and persons with WHO stage 3 disease were found to be significantly associated with presence of CMD. But in multivariable logistic regression, persons not living with partner [AOR 2.114 (95% CI: 1.228-3.641)] and pre-ART cases [AOR 8.909 (95% CI: 4.770-16.640)] were remained statistically significant.

Conclusions: Screening and treating the PLWHA suffering from CMD, should be considered to be an integral part of HIV care, support and treatment at the primary level.

Keywords: HIV/AIDS, Common mental disorder, Self reporting questionnaire-20

INTRODUCTION

Mental health is an integral part of our general health and well-being and a basic human right.

According to the world health organization (WHO), mental health is "a state of well-being in which the individual realizes his or her own abilities, can cope with

the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community".¹

Mental health can exist on a complex continuum, with experiences ranging from an optimal state of well-being to debilitating states of great suffering and emotional pain. Although most people are remarkably resilient,

people who are exposed to unfavorable circumstances-including poverty, violence, inequality and chronic debilitating health conditions-are at higher risk of experiencing poor mental health conditions.² Again, people with mental disorders experience disproportionately higher rates of disability and mortality. Mental disorders are often associated with diseases like cancer, cardiovascular disease and HIV (Human immunodeficiency virus) infection/ AIDS (acquired immunodeficiency syndrome).² It has been established in many studies that there is a bidirectional link between HIV/AIDS and mental illness.³ There are many common factors in both, such as homelessness, incarceration, poverty and substance abuse. In addition, there is the social stigma which jeopardize one's life including relationships, family, employment, financial conditions etc. Psychiatric comorbidity in HIV ranges from minor cognitive deficits to frank psychosis. Among these depression and anxiety are prevalent among the PLWHA. Depression again leads to high-risk behavior, and substance abuse which affects medication adherence, and ultimately results in poor disease outcome.³

Again, it was observed that highly active ART (HAART) have some psychiatric side effects too and HIV itself affects central nervous system leading to cognitive, perceptual and behavioral changes in the affected individual.⁴ Mental health problems accelerate the disease progression, reduces adherence to treatments, affects willingness or ability to access health care and increases risk of transmission of other sexually transmitted infections (STI) by increasing high-risk behaviors among PLWHA.^{4,5}

Common mental disorder (CMD) consisting of a group of disorder namely, depression, anxiety and somatoform disorder, is highly prevalent among PLWHA compared to non-HIV infected people.⁶ It was concluded in many studies conducted in low and middle-income countries, that the prevalence of CMD, particularly depression, is more than 30% among the PLWHA.⁶⁻⁸ Depression in PLWHA could be triggered by stress, difficult life events, side effects of medications, or the effects of HIV infection on the brain which may accelerate HIV's progression to AIDS.⁹

Though HIV/AIDS is still a major public health problem and mental health is of greater concern for achievement of sustainable development goal globally, there is a significant dearth in knowledge as well as information regarding the mental health status among the PLWHA in the developing countries like India.

In this context, to address the above situation, this study was conducted with the following objectives-to estimate the prevalence of CMD among PLWHA attending ART clinic at Burdwan medical college and hospital, to find out the association if any, between the socio-demographic characteristics as well as CMD among the study population.

METHODS

Type and design of the study

It was a facility-based descriptive study, cross sectional in design.

Study settings/area

This study was conducted in ART clinic at Burdwan medical college and hospital of Purba Bardhaman district, West Bengal.

Study population

All the seropositive patients aged 18 years and above attending ART clinic at Burdwan medical college and hospital during the period of data collection from November 2022 to January 2023.

Inclusion criteria

Patient with aged ≥ 18 years, all cases registered in the ART center at Burdwan medical college and hospital during the period of data collection, willing to give informed consent were included.

Exclusion criteria

Unable to read Bengali, pregnant and post-partum women, past or family history of psychiatric illness, bereavement in the family within last 3 months and seriously ill patients were excluded.

Study duration

This study was done for a duration 5 months, from October 2022 to February 2023.

Sample size

According to a study done in ART center of a tertiary care hospital, Delhi, prevalence of depression among PLWHA was found to be 58.75%.⁶

Thus, considering the prevalence to be 59%, with 95% level of confidence and an absolute precision of 5%, the minimum required sample size for this study was calculated as follows:

$$\begin{aligned} n &= [(Z_{1-\alpha/2})^2 \times P \times (1-P)] / d^2 \\ &= [(1.96)^2 \times (0.59) \times (1-0.59)] / (0.05)^2 \\ &= 372 \end{aligned}$$

Further considering non-response rate of 10%, the final sample size was 410.

Sampling technique

Analysing the previous records from ART clinic registers, it was found that average 100 outpatients attend the ART clinic each day. On pre-testing of the schedule, it was found feasible to interview 20 patients on each day of data collection and about 80 would meet the eligibility criteria. So, the sampling interval was 4. On each day of data collection, a random number was chosen between 1 to 10 to start from and every 4th eligible patient was selected consecutively. For preparing the sample frame at the clinic, a co-researcher screened for the eligibility of the patient and sought consent from them. Names of those eligible patients were noted sequentially. Subjects of selected serial number were taken to a separate room after the doctor consultation was over and were interviewed by the researcher.

Tools and techniques

Tools

Pre-designed, pre-tested, semi-structured schedule consisting of socio-demographic characteristics.

WHO's SRQ-20:¹⁰ It is a screening tool for psychiatric disorders developed by the WHO. The vernacular version, Bengali, was used for data collection.¹¹ It consists of 20 closed ended questions with dichotomous answers (yes/no). A 'YES' was given a score of 1 and 'NO' was given a score 0. The maximum score was 20 and the minimum score was 0. A cutoff score of ≥ 7 was used to identify probable cases of CMD.

Relevant records and registers.

Techniques

Interview of the study subjects about demographic, socio-economic factors by pre-designed, pre-tested semi-structured schedule.

Self-administration of the SRQ-20 tool to the study subjects about common mental disorder (CMD) using vernacular version (Bengali).

Review of relevant records and registers.

Data collection

Data was collected after obtaining ethical approval from the institutional ethics committee of Burdwan medical college. At the ART clinic of Burdwan medical college and hospital, after briefing the purpose of this study, informed consent was taken from the subjects. Interview of each study subject, with a pre-designed, pre-tested, semi-structured schedule was done to obtain their demographic, socio-economic characteristics. CMD was assessed using WHO's SRQ-20. They were assured about the confidentiality of information.

Data management and analysis

Data were organized and presented applying the principles of descriptive statistics in the form of tables and calculating proportions. Association between categorical variables like demographic, socio-economic and clinical variables were checked using Pearson Chi square tests and Fisher exact tests. The multivariable logistic regression analysis was performed to predict the factors associated with CMD. All the variables which showed a p value of ≤ 0.05 in the univariate analysis, or if the variable was of known clinical importance were included in the final model. Data were analysed using statistical package for the social sciences (SPSS v23), p value of ≤ 0.05 was considered as the statistically significant.

RESULTS

A total of 410 patients, participated in the study providing response rate of 100%.

Socio-demographic characteristics

It was observed that, among the 410 study subjects, the mean age was 34.3 years (SD \pm 9.2). Among them, 212 (51.7%) study subjects were male, 192 (46.8%) were female and 6 (1.5%) were Transgender. 297 (72.4%) were Hindus and 113 (27.6%) belonged to Islam religion by faith. There were 183 (44.6%) study subjects who belonged to the General caste and 187 (45.6%) and 40 (9.8%) study subjects were from scheduled caste and Scheduled tribe caste respectively. 310 (75.6%) of them were married, 49 (12%) were un-married, 41 (10%) were either divorced or separated and 10 (2.4%) were widows. More than two-third (70%) of them belonged to nuclear families. Among them, 311 (75.9%) had education upto primary level, followed by 52 (12.7%) and 36 (8.8%) had education upto middle school and secondary level respectively. Among them, 257 (62.7%) were employed and 153 (37.3%) were unemployed. More than half (55.9%) of them belonged to the middle class of socio-economic status, followed by lower middle class 124 (30.2%) and lower class 31 (7.6%) as per modified B. G. Prasad scale. More than half of them (54.9%) lived in rural areas. Out of 410, only 19 (4.6%) study subjects had history of current alcohol consumption, while the 87 (21.2%) had current history of smoking.

From the study it was found that majority of the study subjects, 339 (82.7%) were already on ART while 71 (17.3%) were registered as new cases awaiting to be put on ART. According to WHO staging, 272 (66.4%) were diagnosed to be suffering from stage 1 disease whereas 126 (30.7%) and 12 (2.9%) were diagnosed to had stage 2 and stage 3 disease. Among the 410 study subjects and 305 (74.4%) had no HIV affected family members (Table 1).

Prevalence of CMD among HIV/AIDS patients

From this study it was revealed that out of 410 study subjects, 124 were suffering from CMD; therefore, prevalence of CMD was found to be 30.2% among PLWHA attending ART clinic at Burdwan medical college and hospital.

Factors associated with CMD among PLWHA

The association between independent variables like socio-demographic and clinical characteristics with CMD were checked using bivariate and multivariable logistic regression.

In univariate logistic regression, female gender, persons not living with partner (un-married, widow/widower, divorced/separated), current smoker, pre-ART cases and persons with WHO stage 3 disease were found to be significantly associated with presence of CMD. Among all these variables, persons not living with partner [AOR 2.114 (95% CI: 1.228-3.641)] and pre-ART cases [AOR 8.909 (95% CI: 4.770-16.640)] remained statistically significant even after adjusting with other variables as seen in multivariable logistic regression. The p value of Hosmer and Lemeshow test for this model was 0.597, indicating its fitness. And 29.3% of the variability of the dependent variable can be explained by this model (Table 2).

Table 1: Association between common mental disorder and background characteristics of the study subjects, (n=410).

Background characteristics	Total, n (%)	Common mental disorder		Statistical test	
		Absent, (n ₁ =286), n (%)	Present, (n ₂ =124), n (%)	Chi square value (df)	P value
Age (Years)					
≤ 45	359 (87.6)	246 (68.5)	113 (31.5)	1.331 (1)	0.329
> 45	51 (12.4)	39 (76.5)	12 (23.5)		
Gender					
Male	212 (51.7)	164 (77.4)	48 (22.6)	17.168 (2)	0.000
Female	192 (46.8)	115 (59.9)	77 (40.1)		
Transgender	6 (1.5)	6 (100)	0		
Religion					
Hindu	297 (72.4)	209 (70.4)	88 (29.6)	0.374 (1)	0.550
Muslim	113 (27.6)	76 (67.3)	37 (32.7)		
Caste					
General	183 (44.6)	135 (73.8)	48 (26.2)	3.122 (2)	0.210
Scheduled caste	187 (45.6)	125 (66.8)	62(33.2)		
Scheduled tribe	40 (9.8)	25 (62.5)	15 (37.5)		
Marital status					
Married	310 (75.6)	232 (74.8)	78 (25.2)	57.709 (3)	0.000
Un-married	49 (12)	40 (81.6)	9 (18.4)		
Widow/widower	10 (2.4)	5 (50)	5 (50)		
Divorced/separated	41 (10)	8 (19.5)	33 (80.5)		
Education					
≤ Primary	311 (75.9)	214 (68.8)	97 (31.2)	0.299 (1)	0.618
Above primary	99 (24.1)	71 (71.7)	28 (28.3)		
Occupation					
Unemployed	153 (37.3)	98 (64.1)	55 (35.9)	3.433 (1)	0.076
Employed	257 (62.7)	187 (72.8)	70 (27.2)		
SES*					
Upper middle	26 (6.3)	18 (69.2)	8 (30.8)	0.072 (3)	0.995
Middle	229 (55.9)	159 (69.4)	70 (30.6)		
Lower middle	124 (30.2)	87 (70.2)	37 (29.8)		
Lower	31 (7.6)	21 (67.7)	10 (32.3)		
Place of residence					
Rural	225 (54.9)	160 (71.1)	65 (28.9)	0.602 (1)	0.452
Urban	185 (45.1)	125 (67.6)	60 (32.4)		
Current alcohol user^u					
Yes	19 (4.6)	15 (78.9)	4 (21.1)	0.837 (1)	0.451
No	391 (95.4)	270 (69.1)	121 (30.9)		

Continued.

Background characteristics	Total, n (%)	Common mental disorder		Statistical test	
		Absent, (n ₁ =286), n (%)	Present, (n ₂ =124), n (%)	Chi square value (df)	P value
Current smoker^β					
Yes	87 (21.2)	72 (82.8)	15 (17.2)	9.143 (1)	0.002
No	323 (78.8)	213 (65.9)	110 (34.1)		
Category of cases					
Pre-ART	71 (17.3)	18 (25.4)	53 (74.6)	79.016 (1)	0.000
On-ART	339 (82.7)	267 (78.8)	72 (21.2)		
WHO stage					
Stage 1	272 (66.4)	193 (71)	79 (29)	4.671 (2)	0.097
Stage 2	126 (30.7)	87 (69)	39 (31)		
Stage 3	12 (2.9)	5 (41.7)	7 (58.3)		
Family H/O HIV					
Present	105 (25.6)	68 (64.8)	37 (35.2)	1.503 (1)	0.222
Absent	305 (74.4)	217 (71.1)	88 (28.9)		

*SES=socio-economic status according to Modified B. G. Prasad scale, January 2022 where CPI-IW was 125.1. ^αPersons who have consumed a drink containing alcohol in the last 12 months before data collection. ^βPersons who were smoking at the time of the study and had smoked >100 cigarettes in their lifetime.

Table 2: Multivariable logistic regression showing predictors of common mental disorder among the study subjects, (n=410).

Background characteristics	Total, n (%)	Common mental disorder		Statistical test	
		Present (n ₁ =124), n (%)	OR (95% CI)	AOR (95% CI)	
Gender					
Male	212 (51.7)	48 (22.6)	1	1	
Female	192 (46.8)	77 (40.1)	2.288 (1.485-3.524)#	1.186 (0.684-2.056)	
TG/TS	6 (1.5)	0	0.000	0.000	
Marital status					
Living with partner	310 (75.6)	78 (25.2)	1	1	
Not living with partner	100 (24.4)	47 (47)	2.638 (1.650-4.216)#	2.114 (1.228-3.641)*	
Education					
≤ Primary	311 (75.9)	97 (31.2)	1	1	
Above primary	99 (24.1)	28 (28.3)	0.584 (0.528-1.433)	0.948 (0.535-1.680)	
Occupation					
Employed	257 (62.7)	70 (27.2)	1	1	
Unemployed	153 (37.3)	55 (35.9)	1.499 (0.976-2.304)	1.506 (0.915-2.478)	
Current alcohol user^α					
No	391 (95.4)	121 (30.9)	1	1	
Yes	19 (4.6)	4 (21.1)	0.595 (0.193-1.830)	1.493 (0.350-6.369)	
Current smoker^β					
No	323 (78.8)	110 (34.1)	1	1	
Yes	87 (21.2)	15 (17.2)	0.403 (0.221-0.737)#	0.498 (0.215-1.152)	
Category of cases					
On-ART	339 (82.7)	72 (21.2)	1	1	
Pre-ART	71 (17.3)	53 (74.6)	10.919 (6.024-19.790)#	8.909 (4.770-16.640)*	
WHO stage					
Stage 1	272 (66.4)	79 (29)	1	1	
Stage 2	126 (30.7)	39 (31)	1.095 (0.692-1.734)	1.201 (0.712-2.025)	
Stage 3	12 (2.9)	7 (58.3)	3.420 (1.054-11.099)#	2.016 (0.478-8.510)	

#univariate logistic regression p≤0.05, *multivariable logistic regression p≤0.05, Nagelkerke R² value: 0.293, Hosmer and Lemeshow test (p value): 0.597. ^αPersons who have consumed a drink containing alcohol in the last 12 months before data collection. ^βPersons who were smoking at the time of the study and had smoked >100 cigarettes in their lifetime.

DISCUSSION

The present study was aimed to estimate the prevalence of CMD among PLWHA attending ART clinic of a tertiary care center, West Bengal, using WHO SRQ-20 with the cut-off score ≥ 7 which is highly sensitive and specific in Indian context.¹¹

From this study it was revealed that prevalence of CMD among PLWHA attending ART clinic was 30.2%.

A study done by Sarkar et al in Siliguri sub-division, West Bengal among 350 randomly selected adult PLWHA using SRQ-24 explored that 75.1% PLWHA had psychiatric morbidity which contrary to the findings of this study.¹² They had found that factors associated significantly with presence of psychiatric morbidity were marital status, education, religion, caste, occupation, socio-economic status, presence of stressful life-events, intra-family relationship, and addiction, but the present study found that gender, marital status, current smoking, newly diagnosed case were associated factors.

Another cross-sectional study conducted by Chaterjee et al in two Tertiary care teaching hospital in Bihar and Kolkata, India, among 180 patients using Hamilton rating scale for depression and anxiety for psychological problems stated that depression was more common among female patients than male which is similar to the findings of the present study though study tool was different.¹³

In a study done by Bhatia et al among 160 adult PLWHA attending a tertiary care hospital in Delhi, India using CES-D (Center for Epidemiologic studies-depression) scale, it was noted that prevalence of depression was 58.75% among PLWHA at ART clinic.⁹ This was not similar to this study may be because of a different tool was used to estimate prevalence of depression. There was higher prevalence of depression among unemployed, uneducated, unmarried, belonging to joint family, no or low-income groups which was similar to the present study.

A cross-sectional study conducted at Hawassa university comprehensive specialized hospital, Ethiopia, during 2018 among 294 HIV patients, using WHO SRQ-20 tool by Duko et al revealed that the prevalence of CMD was 32.7% which was quite similar to this study findings.¹⁴ It was noted that female gender, widow, HIV related stigma, past history of mental illness, poor social support was significantly associated with CMD but in the present study, prevalence of CMD was significantly associated with marital status and category of cases.

Another institution based cross-sectional study conducted at Harar town, eastern Ethiopia among 420 adult HIV patients, using WHO SRQ-20 tool by Motumma et al had found that the prevalence of CMD was 28.1% which was almost similar findings to this study.⁴

There are similar other studies conducted in India as well as African continent which showed that depression or CMD was higher among female PLWHA and association was significant with being widow/separated/divorced, low literacy level, low family income and poor social support.¹⁵⁻¹⁸

Limitations

WHO self-reporting questionnaire-20 is widely used as a screening tool for detecting CMD, not for specific diagnosis. Only those patients who were literate in Bengali language, were included in this study, this might affect the study findings.

CONCLUSION

This study revealed that nearly one-third (30.2%) of the PLWHA attending a tertiary care center was suffering from common mental disorder. Being unmarried and/or currently not living with their spouse and newly diagnosed individuals in whom ART is yet to be started were the certain factors, significantly associated with CMD, that prevented them from living a life with better mental health and well-being.

As the CMD leads to substance abuse, high risk behaviours that affects treatment adherence resulting in poor disease outcome, therefore, it can be recommended that screening and treating the PLWHA suffering from CMD, should be considered to be an integral part of HIV care, support and treatment at the primary level.

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