

ORIGINAL ARTICLE

Psychiatric symptoms among an HIV positive Urban Population in Lusaka, Zambia

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ABSTRACT

Objectives: The aim of the study was to determine how frequently psychiatric symptoms in an HIV positive adult population occur, as well as to determine social, demographic and clinical factors that are associated with the presence of these symptoms.

Design: Through a cross sectional study, one hundred and eighty five HIV positive adults attending the HIV clinic, at Chilenje clinic in Lusaka, Zambia were recruited.

Measures: Psychiatric symptoms were assessed using The Mini International Neuropsychiatric Interview (MINI)

Results: Overall, 17.3% of the participants had a disorder. Alcohol dependence/abuse, depression, any anxiety disorder and mania/hypomania were accounted for by 9.2% (n=17), 7% (n=13), 6.5% (n=12) and 2.7% (n=5) respectively. Psychotic symptoms were present in 9.2% (n=17). Co-morbidity was present in 13(7.0%) accounted for mostly by depression with an anxiety disorder.

Conclusion: The rate of psychiatric symptoms in HIV positive patients in this population is high. Most of them go unnoticed and therefore untreated. Therefore, the fight against this pandemic will be strengthened by the integration of mental health care into the routine management of HIV infected patients.

INTRODUCTION

Shortly after HIV/AIDS was recognized, it was noted to be frequently associated with psychiatric disorders.¹ In the HAART era, as people with HIV live longer, the prevalence of such disorders has substantially increased.²

Studies describing prevalence of mental disorders in HIV disease have produced widely varying results, the range being attributed to differences in the study populations used, the comparison groups' and the instruments applied.

Studies from outside Africa have had prevalence's approaching 50%.^{3,4} However, most of these study populations have been dominated by homosexual males and substance abusers who have higher rates of psychiatric morbidity independent from HIV. Therefore they may not be a true representation of the population mostly affected by HIV in sub-Saharan Africa, which is more heterosexual, with over half of the affected being female.

Despite Africa having the highest rates of HIV, few epidemiological studies regarding the prevalence of psychiatric disorders in HIV infection exist.

One such study comparing the prevalence of psychiatric disorders between HIV positive and HIV negative patients found that the rate of psychiatric disorders in the HIV positive patients was 59.1% while that in HIV negative participants was 19.5%⁵ while, a similar study found higher rates reporting a prevalence of 71.5% in HIV positive individuals, in comparison to 44.3% in HIV negative people.⁶

Psychiatric disorders have important consequences on HIV disease. They have been recognized as a risk factor for HIV transmission, through their effect on various aspects of sexual behavior.^{2,7} Psychiatric disorders also affect the outcome of HIV disease. Firstly, depression may reduce adherence to anti retro-viral drugs.^{8,9} Furthermore, depressed patients lack the motivation and

ability to cope with procedures of standard HIV care¹⁰ which may affect the outcome of their disease. Substance and alcohol use disorders have also been associated with poor compliance to medication.

Evidence suggests that depression can accelerate HIV disease progression even after correcting for HAART adherence.¹¹ Depression has also been associated with increased mortality through unnatural causes such as suicide and accidental death.

However most psychiatric disorders remain under diagnosed,¹ marginalized² and therefore under treated, frequently being viewed as an expected response,⁷ while ignoring the serious consequences and impact they have on HIV disease.

This study therefore aimed at determining the prevalence of psychiatric disorders in an ambulant HIV positive urban population in Lusaka Zambia as well as to determine clinical and socio-demographic factors associated with these disorders.

METHODS

Study Setting and Participants

This was a hospital based study conducted at Chilenje clinic in Lusaka Zambia, a primary health care facility. Participants were HIV positive patients attending the clinic. At the time, 9889 patients were enrolled to the clinic, of which 7905 were on anti-retroviral therapy and the clinic would see up to one hundred patients a day. One hundred and eighty five patients were enrolled for the study, based on an expected prevalence of 14%, at 95% confidence levels and precision of +/-5%. They were eligible for the study if they had a confirmed HIV positive result, whether they were on ART or not and were 18 years and above. They had to be able to give consent or have a next of kin able to do on their behalf. Non-consenting patients and those suffering from a serious medical illness or with severe cognitive impairment which could have interfered with study evaluation were excluded from the study.

Study Procedure and Sampling

Following ethical approval, data was collected within a period of six weeks. Convenience sampling was used as

participants who were recruited for the study were drawn from those who came to attend the out-patient ART clinic on each particular day. With a sampling frame of 100 patients per clinic day and using the list of patients in order of when they had arrived at the clinic as indicated by the order of their cards, every tenth person was selected. Patients were recruited as they waited in line for their regular review by a nurse and a voluntary peer educator, who explained the nature of the study and assessed eligibility. Following their regular clinic review consent was obtained as they came into the interview room, from whence the interviews were conducted.

Study Instruments

The Mini Neuropsychiatric Interview was used to assess for psychiatric disorders. In addition, a Socio-demographic questionnaire was administered and clinical records reviewed. Adherence was measured through self reporting.

Statistical Analysis

The statistical package for the social sciences (SPSS), version 20 was used to analyze the data. Student t-test and Mann Whitney U test were used to compare means and medians respectively and chi-squared tests for proportions. Fishers' exact test was applied for categorical data results that were sparse. To investigate univariate associations between the independent variables (socio-demographic and clinical factors) and the dependent variables (psychiatric disorders), logistic regression models were used, using separate models for each dependent variable. Those that reached a statistical significance value of <0.05 were entered into multivariable models for the purpose of determining their independent effect.

RESULTS

Of the 185 participants, 71.9% were females and the average age was 39 years. Nearly half, 48.6% were married and 2% had not been to school. A third of the respondents were not formally employed and fifty-nine (31.9%) respondents had no regular monthly income.

Table 1: Socio-demographic characteristics of the Participants

Variable	Values	Frequency (n=185)	Percent
Sex	male	52	28.1
	female	133	71.9
Age	35 years and below	76	41.1
	above 35 years	109	58.9
Marital status	Single	18	9.7
	married	90	48.6
	separated	10	5.4
	divorced	19	10.3
	widowed	48	26.0
Educational level	none	4	2.2
	lower primary	11	5.9
	upper primary	48	25.9
	secondary	78	42.2
Employment status	tertiary	44	23.8
	student	11	5.9
	unemployed	66	35.7
	formerly employed	50	27.0
Monthly income	self-employed	58	31.4
	K100-599	50	27.0
	K600-1099	19	10.3
	K1100-1600	14	7.5
	K1700-2000	4	2.2
	> K2000	39	21.1
	No regular monthly income	59	31.9

Table 2: Clinical characteristics of participants

Variables	Values	Frequency (n=185)	Percent
Duration of knowledge of HIV status	0-11 months	7	3.8
	1-5 years	64	34.6
	>5 years	114	61.6
On ART	yes	182	98.4
	no	3	1.6
Duration of ART	not applicable	3	1.6
	< 1 year	21	11.4
	> 1 year	160	86.5
	Nil	162	87.6
Number of doses missed in the past 7 days	Once	12	6.5
	Twice	5	2.7
	3+	2	1.1
	Not sure	1	.5
	Not applicable	3	1.6
Most Recent CD4	<350	60	32.5
	350+	124	67.0
	not stated	1	.5
Previous OI	Nil	133	71.9
	TB	52	28.1
Current OI	nil	180	97.3
	TB	4	2.2
	Pneumonia	1	.5
Medical conditions	Nil	172	93.0
	Hypertension	10	5.4
	Anemia	2	1.1
	Stroke	1	.5
	Diabetes	0	0.0

A hundred and eighty-two (98.4%) respondents were on ART and two thirds had a recent CD4 count of 350 cells/ul or more. Among the opportunistic infections explored, only 52 (28.1%) respondents had a history of TB. Four (2.2%) were currently on treatment for pulmonary TB while only one respondent was having a current pneumonia. None at the time was receiving treatment for a CNS opportunistic infection. Other medical conditions of note are as indicated in the table.

Table 3 shows respondents' behavior in relation to HIV related issues and the duration of knowledge of their status.

Table 3: HIV Related Issues

Variable	Values	Frequency (n=185)	Percent
Knowledge of HIV status	0-11 months	7	3.8
	1-5 years	64	34.6
	> 5 years	114	61.6
Number of current sexual partners	nil	69	37.3
	1	115	62.2
	2+	1	.5
Condom use with regular sexual partners in the past six months	always	69	37.3
	sometimes	44	23.8
	never	5	2.7
	not applicable	67	36.2
Condom use with non-regular sexual partners in the past six months	always	2	1.1

Overall, 32(17.3%) of the respondents had a psychiatric disorder. Of these, 13(7.0%) had co morbid MINI defined psychiatric disorder, mostly major depressive disorder with an anxiety disorder. The most prevalent psychiatric disorder alcohol use disorder (9.2%) and psychosis (9.2%). Of the psychotic symptoms, 3.8% (n=7) were psychotic symptoms viewed to be related to ARVS, 2.7% (n=5) was mood disorder with psychotic symptoms, and only 2.7% (n=5) were primary psychotic symptoms. Other disorders included any depressive disorder (7.0%), hypomania (2.7%), and panic disorders (2.7%). Agoraphobia (1.6%), Suicidality (1.1%), social phobia (1.1%) and PTSD (1.1%) were the least prevalent psychiatric disorders.

Table 4: Frequency of psychiatric diagnoses among the patients

	Frequency	Percent
Alcohol	17	9.2%
Any Psychotic disorder	17	9.2%
Major Depressive disorder	13	7.0%
Any Anxiety disorders	12	6.5%
Panic disorder	5	2.7%
Agoraphobia	3	1.6%
Social phobia	2	1.1%
PTSD	2	1.1%
Hypo/mania	5	2.7%
Suicidality	2	1.1%

Those with alcohol dependence/abuse were more likely to be males ($\chi^2=16.718, P=0.001$) and most likely to practice unsafe sex ($\chi^2=8.803, P=0.009$). Patients with depression were more likely to be separated or widowed ($\chi^2=7.177, P=0.046$) and unemployed or students ($\chi^2=7.794, P=0.035$). Panic disorders were associated with being a student or unemployed ($\chi^2=7.779, P=0.022$), whilst patients with mania/hypomania were likely to be younger (average age 31) ($t=2.048, P=0.042$).

DISCUSSION

Though other studies exist that have looked at the prevalence of mood, anxiety and alcohol use disorders in HIV positive populations in Zambia, this study is to the best of our knowledge the first study in Zambia on the prevalence of a wider range of psychiatric disorders in an HIV positive Zambian population.

MINI defined psychiatric disorders were present in 17.3% of this population and none of the affected patients were at the time receiving any intervention for the diagnosed condition or had been previously diagnosed. The findings are comparable to that found in a South African study which reported a prevalence of 19%.¹² Other studies have found higher prevalence rates^{5,13} and this could be attributed to the differences in the characteristics of the study population.

In this study, alcohol use disorders were more prevalent than mood and anxiety disorders, a finding that was unexpected. This might be attributed to the high unemployment status seen in this population. And consistent with other studies¹², a strong association between being male and having an alcohol use disorder was found. Given that males constituted only about a quarter of the sample size and alcohol use disorders were the most frequent diagnosis the finding suggests that alcohol abuse and dependence are a major problem in HIV positive male patients in this population.

Further, males who had an alcohol related disorder were more likely to have unprotected sexual intercourse a finding consistent with literature^{7,14} and underscores the risk of HIV spread. No associations were found between alcohol use and number of sexual partners or adherence as was expected. This might be due to under reporting and regarding adherence, the instrument being a self report measure and done retrospectively, might have influenced recall.

The prevalence of Anxiety and depressive disorders was lower than what was expected and seen in many studies.⁵ However, evidence suggests that anxiety disorders tend to be more prevalent in the few months following HIV diagnosis and in those with physical symptoms.⁷ In this study only 3.8% had known their status for less than a year. The population was an ambulant one, with over 67% with CD4 counts above 350 cells/ul, implying general good physical health, factors which might explain the lower prevalence of anxiety disorders found in this population. It is not apparently clear however, why depressive disorders were not as high as expected, though the findings are relatively similar to a meta-analysis which reported prevalence of 9.4%.¹⁵

Though no clinical factors were found to be associated with psychiatric disorders in this population, various socio demographic factors were. Being separated or widowed was associated with depression. Students and unemployed patients were more likely to suffer from depression and post traumatic stress disorder, than their formally or self employed counterparts. In this study,

younger people were more likely to suffer from mania or hypomania.

Other than marital status, it is notable that other socio-demographic factors that have been associated with depression in the general population such as age and sex were not found in this study. This finding may imply that most of the depression seen in this population maybe due to the neuropathological effect of the virus on the brain, other than a complication of psychological responses.

Mania in HIV has been commonly associated with advanced disease and marked cognitive impairment. Since this association did not hold true in this study, it is possible that in this population, the manic symptoms seen were primary mania, in the context of bipolar mood disorder. Furthermore, about 83% of the respondents had CD4 counts above 250, implying that on average most of them were not severely immune-compromised and therefore not at risk for secondary Mania, as HIV mania been associated with CD4 counts of less than 200.

Study Limitations

The study has limitations. Financial limitations did not allow investigating for Central Nervous System opportunistic infections and viral load. Due to its nature, causal relationships cannot be established. Further, generalization of the results cannot be done as the study was done at one health facility in an urban setting. For the purposes of generalization a larger scale study involving other centers including rural settings, would be necessary. However the study, still gives a snapshot of the magnitude of the problem and its implications and provides a basis for other studies such as case-control studies to establish casual relationships.

CONCLUSION

The study reveals that psychiatric symptoms in HIV positive patients in this urban population are high evidenced by the finding that nearly a quarter of the participants were diagnosed with a disorder. Many of these disorders go unnoticed and therefore untreated, despite most of them being treatable. Some of these disorders are associated with sexually risky behaviors which may be fueling the spread of HIV and leading to

reinfections. Therefore, the fight against HIV is incomplete without consideration of the relevance of mental health on the management of people living with HIV.

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REFERENCES

1. Evans, D. and Mason, K. Neuropsychiatric manifestations of HIV - 1 and AIDS. *Neuropsychopharmacology. The Fifth Generation of Progress* 2002; 1281 - 1299.
2. Treisman, G. Fishman, M., Schwartz, J., Hutton, H. and Lyketsos, C. Mood disorders in HIV. *Depression and Anxiety* 1998; 7: 178 - 187.
3. Gaynes, B. Prevalence and co-morbidity of psychiatric diagnosis based on reference standard in an HIV patient population. *Psychosomatic Medicine* 2008; 70: 505 - 511.
4. Brian, P. Prevalence of DSM-IV Defined Mood, Anxiety and Substance use Disorders in an HIV Clinic in the Southeastern United States. *Journal of Acquired Immune Deficiency Syndrome* 2006; 42: 298 - 306.
5. Adewuya, A., Afolabi, M., Oguandele, O., Ajibare, A. and Oladipo, B. Psychiatric disorders among HIV positive populations in Nigeria: A Control Study. *Journal of Psychosomatic Research* 2007; 63: 203 - 206.
6. Sebit, M., Tombe, M., Siziya, S. Balus, S., Nkomo, A. and Maramba, P. Prevalence of HIV/AIDS and psychiatric disorders, and their related risk factors among adults in Epworth, Zimbabwe. *East African Medical Journal* 2003; 80: 503 - 512.
7. Chandra, P. HIV and psychiatric disorder. *Indian J Med Res* 2005; 121: 451 - 467.
8. Gordillo, V. Socio-demographic and psychological variables influencing adherence to anti-retroviral therapy. *AIDS* 1999; 13: 1763 - 1769.

9. Ammassari, A. Depressive symptoms, neurocognitive impairment, and adherence to highly active antiretroviral therapy among HIV - infected persons. *Psychosomatics* 2004; 45: 394 - 402.
10. Holzemer, W. Predictors of self-reported adherence in persons living with HIV disease. *AIDS Patient care and STDs* 1999; 13.
11. Ickovics, J., Hamburger, M., Vlahov, D., Schoenbaum, B., Schuman, P., Boland, R. and Moore, J. Mortality, CD4 cell count decline and depressive symptoms among HIV sero-positive women. *JAMA* 2001; 285: 1466 - 1474.
12. Myer, L., Smith, J., Roux, L., Siraaj, P., Stein, D. and Seedat, S. Common Mental Disorders among HIV-infected individuals in South Africa: prevalence, predictors and validations of brief psychiatric rating scales. *AIDS patient care and STDs* 2008; 22: 147 - 158.
13. Ovuga, E. Psychiatric disorders in HIV positive individuals in urban Uganda. *The Psychiatrist* 2005; 29: 455 - 458.
14. Sall, L., Salamon, E., Allgulander, C. and Owe-Larsson, B. Psychiatric symptoms and disorders in HIV infected mine workers in South Africa: A retrospective descriptive study of acute first admissions. *African Journal of Psychiatry* 2009; 12: 206 - 212.
15. Ciesla, J. A. and Roberts, J. E. Meta-analysis of the relationship between HIV infection and risk for depressive disorders. *American Journal of Psychiatry* 2001; 158: 725 - 730.