



RESEARCH ARTICLE

IMPACT OF PERSISTENT PHYSICAL SYMPTOMS ON THE DEVELOPMENT OF PSYCHIATRIC MORBIDITY IN HIV POSITIVE PATIENTS; NEED FOR EARLY IDENTIFICATION AND TREATMENT

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ABSTRACT

Background: Human immunodeficiency virus (HIV) infection tends to immune suppression which progresses terminally to death. The introduction of the highly active anti-retroviral therapy (HAART) has changed the status of HIV infection from that of a rapidly fatal disorder to a chronic one with persisting physical symptoms.

Aim: The aim of this study is to investigate the effects of persistent physical symptoms on psychiatric morbidity in HIV positive patients.

Methods: Using a systematic sampling method, 353 subjects were recruited into two groups; HIV positive subjects from the RVD clinic and HIV negative subjects from the GOPD clinic. They were assessed using a self-designed questionnaire to elicit socio-demographic and clinical variables. The subjects were screened for psychological distress with a 12 item General Health Questionnaire and diagnoses made using Present State Examination (PSE) manual (version 10). Data was analysed using the statistical package for social sciences (SPSS, version 15).

Results: The study shows that there was a significant difference in the prevalence of psychiatric morbidity in HIV positive patients when compared with controls. Significantly prevalent physical symptoms among the patients with psychiatric morbidity were fits, cough, dermatological lesions, chronic pain, vomiting, diarrhea, weight loss and fever. Via logistic regression, "persistent fever" was identified as a risk factor for psychiatric morbidity.

Conclusion: The findings from this study underscore among other things, the need for a high index of suspicion and early identification of cases of psychiatric morbidity among HIV positive patients. This will definitely translate to a more favourable management outcome in the long run.

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INTRODUCTION

Human immunodeficiency virus (HIV) infection tends to immune suppression which progresses terminally to death (Fauci *et al.*, 2008). It is estimated that over 4 million Nigerians are currently living with the different stages of HIV infection and AIDS (Federal Ministry of Health, 2008). The introduction of the highly active anti-retroviral therapy (HAART) has changed the status of HIV infection from that of a rapidly fatal disorder to a chronic one comparable to hypertension and diabetes (<http://unesdoc.org/images/0014/001497/149722e.pdf> in October 2011). Consequently, people infected with HIV are living longer and healthier lives as a result better medical care, major advances in anti-retroviral therapy and prophylaxis of some of the initially fatal complications (Cohen *et al.*, 2002). However, this change in status to a chronic medical condition is accompanied by its own peculiarities especially in a developing country such as

Nigeria where specific psychosocial stressors are associated with living with a socially stigmatizing illness that is perceived to be terminal (Owe-Larson, 2009). Indeed there have been reports that people living with HIV and AIDS are at an increased risk of co-morbid psychiatric disorder (Lyketsos *et al.*, 1996; Stanley *et al.*, 2007). However, most of the studies investigating the occurrence of psychiatric morbidity in HIV patients are from the developed world. The dearth of studies on psychiatric morbidity in this group of patients in Nigeria has prompted this study. This study sought to investigate the effects of persistent physical symptoms on psychiatric morbidity in HIV positive patients.

Literature review

HIV 1 and HIV 2 are lentiviruses of the retroviridae family which preferentially attacks T4 lymphocytes and neuroglial cells of the central nervous system (Kumar, 2006; Power *et al.*, 2004). They have been identified as the causative agents of the acquired immune deficiency syndrome (AIDS) which is a lethal neuro-medical disorder (Sadock, 2000).

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HIV 1 can penetrate the CNS soon after initial systemic infection and has been implicated in the neurological and psychiatric symptoms of seropositive individuals (Bell, 2004; Reger, 2002). Case reports indicate that HIV2 can cause similar neurological symptoms as HIV 1 (Dwyer *et al.*, 1992; Klemm *et al.*, 1998). Infection and consequent depletion of the T4 lymphocytes throughout the course of HIV disease results in a catastrophic collapse of cell mediated immunity, as well as immune dysregulation, ultimately leading to death from overwhelming infection, neoplasia or wasting syndrome (Kroenke *et al.*, 1993). Studies have reported an increased risk of psychiatric disorders in physical illness especially the chronic medical conditions (Gelder, 1995; Bakare, 2004). The psychiatric sequelae of such chronic physical illness can result from the direct effects of the illness or its drug treatment, psychological reactions to the illness or abnormal coping behavior and adjustment to the illness. HIV and AIDS cause several physical manifestations. The virus affects every organ system of the body and may cause malaise, fever, diarrhoea, cough and nephropathy¹. In the nervous system, HIV causes meningitis, focal neurological signs, brain calcifications, encephalopathy, dementia and brain abscess amongst others. There is an increased risk of developing a mental illness in the HIV population compared to the general population (Bing, 2004). The psychiatric consequences of HIV/AIDS may result from the direct attack of the virus on the brain, complications of immunosuppression, psychological reactions to testing positive or complications of medications (Joint United Nations program, 2006).

MATERIALS AND METHODS

This was a two-stage cross-sectional comparative study that was conducted at the retro-viral disease clinic and the general outpatient department of the University Port Harcourt Teaching Hospital.

psychological distress with the 12 -item general health questionnaire (GHQ – 12). A cut off point of 3 was adopted, and scores of 3 and above was indicative of psychological distress. Such subjects, who were regarded as cases, were thereafter assessed for psychopathology by using the 10th version of the present state examinations (PSE – 10). Symptoms from this instrument were then used to generate a diagnosis according to the definitions and criteria of ICD – 10.

Procedure

At the initial stage, a list of all the patients, attending both clinics was obtained from the medical records and this constituted the sampling frame. The sampling method adopted was systematic sampling technique (nth sample). The first patient to be interviewed was selected by balloting, and subsequent ones systematically of 1 in 5 until the quota was satisfied. Three hundred and fifty three subjects were recruited into two groups over a four month period. The first group (group A) was recruited from the retroviral disease (RVD) clinic of the University of Port – Harcourt Teaching Hospital and included all confirmed HIV seropositive patients who had no past histories of neurological or psychiatric disorders and who were not chronically ill. The second group (group B) were recruited from the general outpatient department (GOPD) of the same hospital, and included all confirmed HIV seronegative patients without a history of a chronic medical or psychiatric disorder. Subjects in both groups were between the ages of 18-60 years and gave informed written consent to participate in the study.

Ethical Consideration

Permission for the study was obtained from the ethical committee of the University of Port-Harcourt Teaching Hospital to ascertain that the methodology of the study did not

Table 1. Sociodemographic Characteristics of the Patient and Comparison Group

Sociodemographic Characteristics	Patient N = 89 n (%)	Control N = 152 n (%)	χ^2	P
Age (years)				
18 – 27	12(13.5)	38(25.0)		
28 – 37	34(38.2)	61(40.1)	6.72	0.15
38 – 47	27(30.3)	30(19.7)		
48 – 57	11(12.4)	17(11.2)		
58 – 67	5(5.6)	6(4.0)		
Gender				
Male	38(42.7)	84(55.3)	3.55	0.06
Female	51(57.3)	68(44.7)		
Religion				
Christianity	87(97.7)	148(97.4)	FE*	1.0
Non Christians	2(2.3)	4(2.6)		
Employment				
Employed	57(64.0)	84(52.3)		
Not employed	32(36.0)	68(47.7)	1.78	0.18
Marital status				
Currently married	43(48.3)	59(38.8)		
Not currently married	46(51.7)	93(61.2)	2.07	0.15
Years of education				
0 – 6	12(13.5)	14(9.2)	2.93	0.23
7 -12	41(46.0)	60(39.5)		
>12	36(40.5)	78(51.3)		

*FE: Fishers Exact

Materials

Subjects who consented to participate in the study were assessed using a pretested specially designed questionnaire to elicit socio-demographic and clinical variables including age, gender, sexual orientation, type of HIV infection, CD4 count and stage of HIV disease. The subjects were also screened for

contravene laid down regulations for experiments involving human beings. Patients were duly informed, and the objectives of the study explained to them.

Statistical Analysis

Data was pre-coded to ensure accuracy and was analyzed using the 15th version of the statistical package for social sciences

(SPSS – 15). Tables were generated according to objectives and the t – test and analysis of variance (ANOVA) were used to analyze parametric variables, while the chi – square and fisher’s exact test were used for non-parametric variables where applicable. For risk factors analysis, variables with significant association with psychiatric morbidity during bivariate analysis were entered into the regression equation. A reference category was also entered to facilitate interpretation of odds ratios. All analyses were set at 0.05 level of significance two-tailed test.

compared to the control group ($X^2=4.99$, $p=0.03$). A higher proportion of the HIV positive subjects had a mood disorder compared to other disorders but this observation was not significant. Table 3 shows the socio-demographic correlates of psychiatric morbidity in HIV. The table shows a significant female preponderance in the prevalence of psychiatric morbidity. There was also a higher prevalence of psychiatric morbidity in patients within the age group of 28-37 years compared to other age groups.

Table 2. Sociodemographic Correlates of Psychiatric Morbidity in HIV

Variable	Psychiatric morbidity present N = 21 n (%)	Psychiatric morbidity absent N = 68 n (%)	x^2	P value
Age (years)				
18 – 27	2(16.7)	10(83.3)		
28 – 37	9(26.5)	25(73.5)	0.77	0.9
38 – 47	7(25.9)	20(74.1)		
48 – 57	2(18.2)	9(81.8)		
58 – 67	1(20.0)	4(80.0)		
Gender				
Male	5(13.2)	33(86.8)		
Female	16(31.4)	35(68.6)	4.01	<0.05
Religion				
Christianity	21(24.1)	66(75.9)	-	-
Islam	-	2(100)		
Years of education				
0 – 6	4(33.3)	8(66.7)		
7 -12	12(29.3)	29(70.7)	3.28	0.2
>12	5(13.9)	31(86.1)		
Employment status				
Employed	11(19.3)	46(80.7)		
Not employed	10(31.3)	22(68.7)	1.62	0.2
Marital status				
Presently married	9(20.9)	34(79.1)		
Presently not married	12(26.1)	34(73.9)	0.33	0.6

Table 3. Pattern and Prevalence of Psychiatric Morbidity among the Respondents

Variable	Patient n (%)	Control n (%)	x^2	P value
Psychiatric morbidity				
Present	21(23.6)	19(12.5)		
Absent	68(76.4)	133(87.5)	4.99	0.03
Total	89(100)	152(100)		
Types of psychiatric morbidity				
Any mood disorder	18(71.4)	16(84.2)	*FE	1.0
Anxiety and Other disorders**	3(28.6)	3(15.8)		
Total	21(100)	19(100)		

**Other disorders i.e. generalized anxiety disorder, phobic anxiety and organic delusional disorder

*FE – Fisher’s Exact

RESULTS

The study involved a total of 241 subjects. Eighty nine of them were HIV positive and were receiving treatment at the retroviral disease (RVD) clinic of the UPTH while 152 subjects were HIV negative and attended the general out-patient department (GOPD) of the same hospital for varied minor ailments. According to table 1, a higher proportion of the controls were in the younger age groups (18-37 years) while the reverse was the case with the patients who had a higher representation in the older age groups (38-60 years). However, this difference in age distribution was not significant ($X^2=6.72$, $P= 0.15$). The table further shows that there were more females within the patient group (57.3%) while there were more males (55.3%) in the control group. There was no significant difference in gender distribution between both groups of subjects ($X^2=3.55$, $P=0.02$). Table 2 shows the prevalence of psychiatric morbidity among the HIV positive subjects. There was a significant difference in the prevalence of psychiatric morbidity in the HIV positive patients when

However, this observed difference did not attain statistical significance. The patients who attended the RVD clinic had a variety of physical complaints. Table 4 shows the relationship between the presence of physical symptoms in HIV positive patients with psychiatric morbidity. Significantly prevalent physical symptoms among the patients with psychiatric morbidity were fits, coughs, dermatological lesions (patches) chronic pain, vomiting, diarrhoea, weight loss and fever. The table further shows that other physical symptoms such eye problems, rashes and swellings were more prevalent in patients who had a psychiatric morbidity relative to those that did not have a psychiatric morbidity. However, these differences did not attain statistical significance. Variables that were significantly associated with psychiatric comorbidity during bivariate analysis ($P<0.05$) were subjected to a logistic regression analysis to determine their risks for psychiatric morbidity in HIV positive patients. These variables were diarrhoea, persistent fever, weight loss, vomiting, chronic pain, patches, cough and fits. Table 5 shows the variables in the logistic regression equation.

Table 4. Comparison of Physical Symptoms in HIV Positive Patients with Psychiatric Morbidity

Variable	Psychiatric morbidity present N = 21 n (%)	Psychiatric morbidity absent N = 68 n (%)	χ^2	P value
swelling				
Yes	2(9.5)	-	-	-
No	19(90.5)	68(100)		
Rashes				
Yes	2(9.5)	4(5.9)	*FE	0.56
No	19(90.5)	64(64.1)		
Fits				
Yes	6(28.6)	4(5.9)	*FE	<0.01
No	15(71.4)	64(64.1)		
Cough				
Yes	6(28.6)	7(10.3)	4.3	0.04
No	15(71.4)	61(89.7)		
Eye problems				
Yes	5(28.6)	10(14.7)	0.95	0.33
No	16(71.4)	58(85.3)		
Dermatological lesions				
Yes	5(28.6)	1(1.5)	FE	<0.01
No	16(71.4)	67(98.5)		
Chronic pain				
Yes	6(28.6)	3(4.4)	FE	<0.01
No	15(71.4)	65(95.6)		
Vomiting				
Yes	8(38.1)	4(5.9)	FE	<0.01
No	13(61.9)	64(64.1)		
Weight loss				
Yes	10(47.6)	9(13.2)	11.3	<0.01
No	11(52.4)	59(86.8)		
Diarrhea				
Yes	3(14.2)	1(1.5)	FE	<0.01
No	18(85.8)	67(98.5)		
Persistent fever				
Yes	9(42.9)	6(8.8)	13.3	<0.01
No	12(57.1)	62(91.2)		

*FE : Fishers Exact

Table 5. Variables in the Equation A variable(s) entered on step 1: sex, social support, gender, diarrhea, fever, weight loss, vomiting, pain, cough, fits (prediction 76.4%)

	B		Wald	Df	Sig.	Exp(B)	95.0% C. I for EXP (B)	
	Lower	Upper					Lower	Upper
Step sex(1) ^a	1.537	4.418	.121	1	.728	4.651	.001	118.390
Social support (1)a	1.911	.862	4.910	1	.027	6.758	1.247	36.627
Gender(1)	-1.713	.834	4.222	1	.040	2.480	1.335	5.924
Diarrhea	-.356	1.923	.034	1	.853	.701	.016	30.385
Fever(1)	1.986	.949	4.382	1	.036	7.286	1.935	46.787
Weight loss(1)	.733	.841	.760	1	.383	2.082	.400	10.825
Vomiting(1)	1.147	.986	1.353	1	.245	3.150	.456	21.771
Pain(1)	1.468	1.154	1.617	1	.204	4.340	.452	41.705
Patches(1)	-.566	1.749	.105	1	.746	.568	.018	17.502
Cough(1)	.142	1.223	.014	1	.907	1.153	.105	12.674
Fits(1)	.625	1.185	.278	1	.598	1.867	.183	19.068
Constant ^b	-3.546	4.437	.639	1	.424	.029		

a. Availability of emotional, educational, financial and other help from family or group that provides such for HIV positive persons

According to the table, the physical symptom that was a risk factor for psychiatric morbidity in HIV positive patients was persistent fever, OR = 7.3, 96% CI(1.9-46.8), P<0.04.

DISCUSSION

This study provides information about the psychological effects of the presence of physical symptoms in HIV patients attending the retroviral disease clinic of the University of Port Harcourt Teaching Hospital (UPTH). The study sample consisted of 89 confirmed HIV positive patients without a previous history of a psychiatric disorder. A comparison group of 152 confirmed HIV negative patients attending the GOPD were used as controls.

The subjects of this study were assessed at two stages; at the first stage, subjects were screened for psychological distress with the 12-item general health questionnaire (GHQ -12) and a pre-tested specially designed questionnaire to determine socio demographic and clinical variables. Subjects with identified psychological distress (GHQ ≥ 3) proceeded to the second stage and were interviewed with the 10th version of the present state examination (PSE-10). Table 2 shows the socio demographic correlates of psychiatric morbidity in HIV. According to this study, a significant female preponderance among the HIV population with psychiatric morbidity was reported. This was confirmed by multivariate analysis. Generally, it has been found that females are more affected by emotional disorder such as anxiety and depressive disorders (Gelder *et al.*, 1995).

They are also more likely to have a higher prevalence of HIV infection than males (Joint United Nations program on HIV/AIDS (UNAIDS) report on global AIDS epidemic. 2006). This higher prevalence of HIV infection in females could result from a larger surface area of the female genital tract and its increased vulnerability to cuts and excoriations. The study also noted that a physical symptom was present in every HIV positive patient that was assessed. Indeed, the presence of physical symptoms, notably fits, coughs, dermatological lesions, pain, vomiting, weight loss, diarrhoea and persistent fever were significantly associated with the presence of a psychiatric morbidity in this group. The persistence of fever was further observed to be a risk factor for psychiatric morbidity after multivariate analysis. This observation suggests the need for a high index of suspicion and identification of psychiatric morbidity in this vulnerable population. Such an approach will ensure early treatment and reduce the burden of psychiatric morbidity in this group of patients.

Limitations

This study was limited by a number of factors such as;

- This was a hospital based study. A community based survey would have given a better representation of the general population.
- The cross-sectional nature of this study does not permit causal inferences. A longitudinal study may provide a better evaluation of psychiatric problems in this group of patients.

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