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Pattern and prevalence of psychiatric comorbidity among people living with HIV (PLWHIV) at the University of Port Harcourt teaching hospital (UPTH)

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Abstract

Background: HIV, a communicable disease, is assuming an alarming epidemic dimension with increasing level of psychiatric co-morbidity and mortality. These psychiatric comorbidities appear to be generally under-recognized and under-treated by clinicians.

Aim: The aim of this study, therefore, was to determine the pattern and prevalence of psychiatric co-morbidity among PLWHIV attending the virology clinic of UPTH.

Methodology: Following ethical approval from the ethical committee of the hospital and informed consent from the participants, 230 subjects were recruited based on the study's inclusion and exclusion criteria, via a systematic random sampling. PLWHIV were further administered with the study's instruments including the socio-demographic questionnaire and GHQ-12. The data were analyzed using the SPSS version 20 statistical package. Confidence interval was set at 95% while P- value of less than 0.05 was considered statistically significant.

Results: One hundred and sixty (69.6%) out of the total number of 230 PLWHIV studied had no psychiatric diagnosis while 70 (30.4%) had different associated psychiatric morbidity. Of the total number with psychiatric diagnosis, 38 (16.0%) had depressive illness. Generalized anxiety disorder was diagnosed in 8 (3.5%) respondents, while 4 (1.7%) respondents had mixed anxiety and depression. Nine (9) (3.8%) patients had adjustment disorder while 3 (1.3%) females were diagnosed with hyposexual dysfunction. Six (2.6%) patients had alcohol abuse, 11 (5.8%) were diagnosed with PTSD and only 1 patient (0.4%) had panic disorder.

Conclusion: The findings of this study support the impression that HIV infection is a chronic debilitating illness, associated with psychiatric co-morbidity. The results support the call that the management of patients with HIV should include attention to their mental health status in order to enhance the quality of care.

Key words: Parttern; Prevalence, Psychiatric co-morbidity; PLWHIV; UPTH

1. Introduction

HIV infection is a chronic illness that has been ranked among the top leading causes of year of life lived with disability [1]. In Nigeria, HIV infection has been found to have relatively high prevalence of 4.6% [2,3]. The high rate of complications and mortality associated with this chronic medical condition has equally generated enormous public health concern [4,5].

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HIV is mainly acquired from infected persons or objects [6,7]. Secondly, HIV infection is associated with high level of stigma and social discrimination [8,9]. Severe emotional trauma can predispose an individual to acquiring HIV due to poor sense of judgment, leading to sexual indiscretion and other risk bearing behaviours [10].

HIV infection constitutes a greater percentage of all the referrals from other non-psychiatric units seeking for psychiatric evaluation in the University of Port Harcourt Teaching Hospital (UPTH). HIV infections is characterized by chronicity with subsequent need for long term medications[11, 12], effects on the central nervous system (CNS)[12], high rate of mortality [13,14], and morbidity [15, 17], and impact on emotion[18, 19], (the component that is often neglected). In addition, patients with the conditions need extensive education, attitudinal change, coping and healthy lifestyle including diet[20, 21]. The need for these adjustments are imperative considering the immediate changes that usually accompany the diagnosis of this medical condition. They include burden of the diseases, regular hospital visits, complications arising from the primary illness, stigma, particularly with HIV infections and job adjustment [22, 23].

Due to all these, together with their direct effects on the central nervous system (CNS) [10], or the consequences of labeling,[24-26], no doubt, the patients commonly present with varying degrees of psychopathology [27-31]. They can, either singly or in association with other adverse psychosocial and clinical factors, predispose to psychiatric disorders. Furthermore, some of the medications employed in the management of these conditions have been associated with inherent neuropsychiatric complications [31-34], either as direct side effects, from drug interactions with psychoactive substances [35-36], from multiple drug therapy or with other concomitantly administered drugs for other comorbid conditions.

It has also been suggested that HIV infection can directly impair relevant neurotransmitter functions [37], due to direct toxic effects on the brain cells (neurons) either from the viral cells [38,39] or other opportunistic infections [40]. It is equally important to note that baseline adverse psychosocial factors, psychological distress or clearly identified psychiatric conditions have been implicated as predictors of HIV infection, through impairment of judgement [41,42]. In light of the foregoing, there appears to be a bidirectional relationship between associated psychiatric disorders and this medical condition. This propensity to be associated with emotional disturbances, with tendency to either predispose to or co-morbid with psychiatric disorders, has further increased the degree to which they affect the psychological well-being and quality of life of the sufferers [43-46] The focus of medical practice has always tended towards relieving physical symptoms, in this case HIV infection, which often neglects the huge impact on the psychological well-being, psychiatric co-morbidity and the overall quality of life, often occasioning monumental health consequences [47,48].

Furthermore, such therapy, especially with efivarenz, can be associated with a range of side effects on the central nervous system, including depression, nervousness, euphoria, hallucination and psychosis[49]. Little evidence is available from low- and middle-income countries, although one study from Uganda reported no association of these conditions with adherence [50], whereas in Ethiopia depression was associated with less than 95% self-reported adherence.

Integration of mental health into HIV/AIDS initiatives and programmes in countries presents an opportunity to improve the health of people with HIV/AIDS [53]. WHO has produced a series of modules and training material for integration of mental health interventions into antiretroviral therapy programmes [54].

Current HIV management needs multidisciplinary teams with the incorporation of mental health specialists, for early detection and treatment of neuropsychiatric disorders as well as neuropsychiatric complications of antiretroviral regimens [55]. Particular attention should be paid to substance abuse, triple diagnosis, and HIV associated neurocognitive disorders. Appropriate psychiatric interventions may also contribute to prevent the spread of HIV from and among the mentally ill. The aim of this study, therefore, was to determine the pattern and prevalence of psychiatric comorbidity among PLWHIV.

2. Material and methods

Following ethical approval from the appropriate committee of the hospital and informed consent from the participants, 230 subjects were recruited based on the study's inclusion and exclusion criteria, via a systematic random sampling. PLWHIV Subjects were further administered with the study's instruments including the socio-demographic questionnaire, GHQ-12, and WHO CIDI. The data were analyzed using the SPSS version 20 statistical package. Confidence interval was set at 95% while P- value of less than 0.05 was considered statistically significant.

3. Results

Table 1 Socio-demographic and Clinical Characteristics of People Living with HIV (PLWHIV)

	HIV = 230	**Statistical Analysis**
Age	Freq	$X^2 = 150.83$ df = 4 p=0.001
<20 yrs	6(2.6%)	
20-29	56(24.3%)	
30-39	101(43.3%)	
40-49	59(25.7%)	
≥50	8(3.5%)	
Gender		$X^2 = 0.73$ df = 1 p=0.39
Male	82(35.7%)	
Female	148(64.3%)	
Marital status		$X^2 = 41.72$ df = 4 p=0.001
Married	121(52.6%)	
Single	61(26.5%)	
Divorced	13(5.7%)	
Separated	6(2.6%)	
Widowed	29(12.6%)	
Educational		$X^2 = 20.64$ df = 3 p=0.001
None	5(2.2%)	
Primary	32(14.0%)	
Secondary	121(52.8%)	
Tertiary	71(31.0%)	
Tribe		$X^2 = 17.97$ df = 6 p=0.006
Hausa	10(4.3%)	
Ibo	103(36.1%)	
Yoruba	4(20.0%)	
Ijaw	46(20.0%)	
Ogoni	23(10.0%)	
Ikwerre	28(12.2%)	
Others	10(4.3%)	
Occupation		$X^2 = 64.47$ df = 10 p=0.001
Managers	2(0.9%)	
Professionals	2(0.9%)	
Technicians and Associates professionals	3(1.3%)	
Clerical support workers	9(2.9%)	

Services and sales workers	14(6.1%)	
Skilled agricultural forestry and fishery workers	26(11.3%)	
Craft and related trade workers	27(11.7%)	
Plant and machine operators and assemblers	31(13.5%)	
Elementary occupation	77(21.4%)	
Armed forces occupation	0(0.8%)	
Unemployed	22(6.1%)	
Ave. Income		$X^2 = 20.86$ df = 4 p=0.001
≤ 10,000	50(25.9%)	
10,000 – 30,000	75(38.9%)	
30,000 – 50,000	34(17.6%)	
50,000 – 100,000	26(13.5%)	
> 100,000	8(4.1%)	
No income	9(4.3%)	
Unable to estimate	16(8.2%)	

Table 2 Pattern and Prevalence of Psychiatry Morbidity in PLWHIV

S/N	**Diagnosis**	**PLW HIV**		
		Freq.	**Male**	**Female**
1	Adjustment disorder with anxiety	4(1.7%)	1(1.2%)	3(2.0%)
2	Adjustment disorder with anxiety and depressive mood	1(0.4%)	0(0.0%)	1(0.7%)
3	Adjustment disorder with depressive mood	4(1.7%)	1(1.2%)	3(2.0%)
4	Substance abuse/male erectile dysfunction	0(0.0%)	0(0.0%)	0(0.0%)
5	Generalize anxiety disorder/substance abuse/male erectile dysfunction	0(0.0%)	0(0.0%)	0(0.0%)
6	Generalized anxiety disorder	2(0.9%)	1(1.2%)	1(8.7%)
7	Generalized anxiety disorder with somatic features	3(1.3%)	1(1.2%)	2(4.7%)
8	Generalized anxiety disorder	3(1.3%)	0(0.0%)	3(2.0%)
9	Generalized anxiety disorder/ male erectile dysfunction	0(0.0%)	0(0.0%)	0(0.0%)
10	Obsessive Compulsive Disorder (OCD)	2(0.9%)	0(0.0%)	2(4.7%)
11	Mixed anxiety and depression/ male erectile dysfunction	0(0.0%)	0(0.0%)	0(0.0%)
12	Moderate depression/male erectile dysfunction	0(0.0%)	0(0.0%)	0(0.0%)
13	Mild depression/male erectile dysfunction	0(0.0%)	0(0.0%)	0(0.0%)
14	Male erectile dysfunction	0(0.0%)	0(0.0%)	0(0.0%)
15	Mild depressive disorders	4(1.7%)	1(1.2%)	3(2.0%)
16	Dysthymia	4(1.7%)	1(1.2%)	3(2.0%)

17	Mild depression with anxiety features	12(5.2%)	5(6.1%)	7(4.7%)
18	Mild depression with somatic features	8(3.5%)	5(6.1%)	3(2.0%)
19	Mixed anxiety and depressive disorders	4(1.7%)	0(0.0%)	4(2.8%)
20	Moderate depression/female hyposexual disorder	5(1.9%)	0(0.0%)	5(3.3%)
21	Moderate depressive disorders	1(0.4%)	0(0.0%)	1(0.7%)
22	Moderate depression/ substance abuse	2(0.9%)	0(0.0%)	2(1.4%)
23	Panic disorder without agoraphobia	1(0.4%)	0(0.0%)	1(0.7%)
25	Severe depression/ female hyposexual disorder	3(1.3%)	0(0.0%)	3(2.0%)
26	Severe depression with psychotic features	5(2.2%)	1(1.2%)	4(2.8%)
27	Severe depressive disorders	2(0.9%)	1(1.2%)	1(0.7%)
28	Personality disorders	0(0.0%)	0(0.0%)	0(0.0%)
29	Substance abuse	4(1.7%)	3(3.7%)	1(0.7%)
30	Nil (No diagnosis)	160(69.6%)	60(73.2%)	100(67.6%)
	Total	230(100%)	82	148

3.1. Pattern and Prevalence of Psychiatric Morbidity in PLWHIV

One hundred and sixty (69.6%) out of the total number of 230 PLWHIV studied had no psychiatric diagnosis while 70 (30.4%) had different associated psychiatric morbidity (Table 2). Of the total number with psychiatric diagnosis, 38 (16.0%) had depressive illness. Seven subjects (2 males, 5 females) with severe depressive illness had suicidal ideation while 2 (also with severe depression) who had attempted suicide were female. Generalized anxiety disorder was diagnosed in 8 (3.5%) while 4 (1.7%) respondents had mixed anxiety and depression. 9 (3.8%) patients had adjustment disorders while 3 (1.3%) females were diagnosed with hyposexual dysfunction. 6 (2.6%) patients had alcohol abuse with equal sex distribution. All 11 (5.8%) cases of PTSD, were diagnosed only in PLWHIV and all were females. One case (0.4%) of panic disorder was diagnosed in a female.

Note: 5 patients have more than one diagnosis as follows: 3 with GAD and hypersexual dysfunction and 2 respondents moderate depression and alcohol abuse.

4. Discussion

In PLWHIV, the prevalence peaked at age group 30-49, and gradually showed a decrease with advancing age. Human immunodeficiency virus infection affects the young, youth and young adults commonly. Despite other modes of transmission that are known, in Africa, and particularly Nigeria, over 80% of HIV infection is contracted through sexual intercourse[56,57]. No doubt, the age groups 20-29 and 30-39 years constitute the most sexually active period of life, and prevalence of such a disease that is largely sexually transmitted should expectedly be higher in this age group. The practice of use of protective barriers during sexual intercourse, expected to contribute to lower rate of transmission, has achieved barely 50% success rate among Nigerians [58]

Females predominating in the study with 64.3%. Interestingly, in this study, there was high prevalence of the married females. Another probable reason for the predominance of females in this study is that females are more willing and likely to volunteer their symptoms easier than males and consequently tend to have better health seeking behaviors. This has equally been pointed out by another study [59]. HIV is equally well known to be commoner in females [60]**.** Several reasons have been postulated for this. Females, by reason of their reproductive anatomy, have larger surface area for the transmission of the virus. It has also been reported that the sperm contains heavy viral concentrations per/ml compared to vaginal fluid. Unfortunately, cultural factors further highten this adversity among the female gender. Furthermore, the positive disposition of women compared to men to volunteer their symptoms has remained a key reason. In both illnesses, females predominated among those with psychiatric co-morbidity [61].

The single (26%) was next to the married group (52.6%), and separated, the least (2.6%). The lower prevalence of HIV infection in the married group and high rate in the single suggests that marriage is more protective for HIV. HIV infection

may be more common among the single, probably due to frequent changes of sexual partners. The same reason also subsits for the groups of separated and divorced while the low rate of HIV among the widow (12.6%) is because most of them were older. In PLWHIV, however, they are likely to influence the outcome of the disease. Thus, in HIV infection, they are more of effects.

Most of the subjects in this study had attained various levels of formal education especially secondary and tertiary. Perhaps the influence of westernization and urbanization in Rivers State, Niger Delta and Nigeria, might have played an important role. Furthermore, the cosmopolitan nature of Port Harcourt, domiciling majority of ethnic groups in Nigeria, with over 50% of Nigeria's oil and gas business, makes education a priority.

The prevalence of psychiatric morbidity in PLWHIV was 31.4%. Although, previous studies found variable prevalence rates of 81.2% [1] ,35% [2], and 21% [3,4], the lower prevalence rate in this study could be a reflection of increased awareness, following aggressive campaigns by both Government and voluntary organizations, more access to existing medical care, articulated interventional measures by Government, such as the free antiretroviral drug scheme, and efforts aimed at reducing discrimination and stigma. Furthermore, variable rates reported by previous studies may be due to the setting as well as methodology of the various studies. Depression was also the highest here with 37(16.2%), and this figure is similar to the finding of Olisah of 14.2% in a study in Nigeria ,[2], and also consistent with several other studies which put the prevalence of depression (amongst PLWHIV) at 5-25% [4], and 10-40% [1,61-63].Females recorded higher percentage, consistent with the male to female ratio of 1:2 in depression.[59-61]

The prevalence of suicide ideation, attempt or completed suicide has been reported to be high among PLWHIV[64-66]. In this study,18.2% reported death wish, 4.3% reported occasional suicidal ideation while 0.9% had attempted suicide. This finding somewhat agrees with previous findings of 20%,12% and 8% respectively.[64-66] The lower rates of the last two found in this study might reflect both concern shown by government, non-governmental organizations as well as corporate bodies, and the degree of family cohesion that is common in African societies including the Niger Delta. The two cases of suicide attempt, both females, found among those with depression in PLWHIV, incidentally, were among the subjects that reacted to their seropositive diagnosis with a "wish to die". This might suggest that depression in PLWHIV tended to be more severe and may also carry poor prognosis [48].

The possible aetiological mechanisms of depression in HIV have been explained from the biological (physical) as well as the psychological points of view. [67-70]. The viral cells and even some opportunistic infections may either directly destroy the brain cells responsible for emotions in the limbic system or indirectly affect the neurotransmitter system altering their release or uptake, and in effect causing depression[71]. From the psychological point of view, the burden of the illness, fear of the future, chronic sense of rejection and feeling of loss, possible loss of functional capability with reduced quality of life, associated stigma, and fear of impending death, all had additive effects for depression [72-76.] The threat to life and perceived loss or difficulty having a life partner may be responsible for the anxiety. The predominant feeling of loss involves that of functional capability, loss of job, relationship and even difficulty to secure a life partner. Truly, these are both depressogenic and anxiogenic.

Substance abuse in PLWHIV, also mainly alcohol, has equal sex distribution. Although the prevalence may appear low (2.6%), this finding might further explained the psychological impact of the "news" of the diagnosis of one's seropositive status as the major reason to self-medicate their depression and/or anxiety using drugs, particularly alcohol [33]. It is important to note that both the viral cells alone or acting together with opportunistic infections and most substances of abuse, particularly alcohol, can directly impair or damage brain cells [35,51,77,78]. Thus, these will synergistically hasten the deterioration of the health of the individual, thereby negatively affecting his/her psychological well-being and quality of life. Secondly, interactions between substances of abuse, particular alcohol, and antiretroviral medication have also been associated with poor drug adherence, as well as poor effectiveness of medications [35,51,78]. Most often, these result in unbearable side effects.

Posttraumatic stress disorders (PSTD)(3.0%), adjustment disorders(3.8%) and OCD (0.9%) were other psychiatric diagnoses found in this study. PSTD which may initially present as acute stress disorder usually occurs in the setting of experiences or life events that are of catastrophic magnitude to the mindset. HIV, with all its psycho-social difficulties including stigma, and associated economic burden due to its chronic nature with very little hope of long-term survival, could be weighed as catastrophic to many sufferers [79-81].

Posttraumatic stress disorders and multiple loss syndrome have been described in some persons who have experienced AIDS related multiple losses [79-82]. HIV positive women have a higher prevalence of post-traumatic stress symptoms, compared to men[8,41,81,82]. Several studies have reported that discovering that one is HIV-positive is psychologically traumatic and distressing [80-83]. Typical reactions to being diagnosed as HIV-positive include feelings of shock,

numbness and disbelief, denial[18], and subsequently, anxiety and anger. Furthermore, HIV-positive individuals have reported that on being diagnosed as HIV-positive, they experienced feelings of sadness, hopelessness, helplessness, despair, blame, disappointment, and guilt. It has been argued that posttraumatic stress may be a natural consequence of learning that one is HIV positive, to the extent that PTSD may be common among persons living with HIV [79, 81 ,83].

The Diagnostic and Statistical Manual of Mental Disorders (DSM) [84], included the event of being diagnosed with a life-threatening illness as a qualifying trauma that could result in symptoms of PTSD or PTSD caseness. As a result, there has recently been an increase in studies that explored PTSD in response to being diagnosed as HIV-positive or being HIV-positive. Although results from previous studies have indicated that the prevalence of PTSD in response to a diagnosis of HIV or being HIV-positive is high, depending on the method of assessment, found to range between 15% and 64%, [79-81], the low rate found in this study may be attributed to increased awareness and strong family cohesion typical of African society. Most cases of PTSD usually had gone through the acute phase, and so acute stress disorders are common in the early stages of the diagnosis. However, none was diagnosed in this study probably because of the limitation placed by the inclusion criteria of illness duration of 1 year and above.

Adjustment disorder was 3.8% among PLWHIV and this might be due to the initial grief reaction which usually occurs in PLWHIV following the diagnosis of seropositive status [8, 18, 41], It appears some time is required to adjust adequately through stages of rejection, denial, guilt, acceptance and resolution. This disorder results when this process is halted. Adjustment disorder with anxiety or depressed mood has been reported to occur in 5 to 20 percent of patients infected with HIV. The incidence of adjustment disorder in persons infected with HIV is higher than usual in some special populations, such as military recruits and prison inmates. The low rate of adjustment disorder found in this study might reflect all the palliative measures from government [56], and other organisations [57, 58], now available, aimed at reducing the socioeconomic burden of the disease on the sufferers. Secondly, the exclusion of subjects with duration of diagnosis less than 1 year would have contributed to the low rate found in this study.

Another disorder found in the study is disorder of sexual function, hyposexual desire disorder (HSDD). This disorder, characterized by decreased libido, lack of sexual motivation, and decreased sexual fantasies, is still a controversial concept. The reason is because, it is often difficult to separate sexual symptoms occurring in chronic and disabling conditions such as HIV infection from common transient alterations in sexual behavior related to interpersonal problems, life stressors, and just common fatigue, overwork, and sleep deprivation that are part of living in developing world. Furthermore, decreased libido is often part of major depressive disorder [37], For this reason, it is possible that decreased libido is more likely to be a residual symptom of moderate to severe depressive episode that has not gone into remission rather than an independent clinical entity. Some researchers have argued that this might only be a part of the symptomatology of depression[4]. The fact that all the females who reported hyposexual desire disorders also had co-morbid depression, appears to lend credence to this argument. The drive or obsession for money and material wealth among young people particularly unmarried females which often compel them into casual and most times unprotected sexual intercourse is more than enough reason for contacting HIV infection, with or without any background personality disorders [10-16].

5. Conclusion

HIV infection are chronic disabling diseases, associated with high psychiatric morbidity with further affectation of the functional capability of the sufferers. Unfortunately, low level of awareness of the psychological impact has often resulted in poor management and prognosis, with result poor quality of life.

On account of the above, advocacy for a formal integration of functional Liaison-psychiatric practice has become imperative in the management of most chronic medical conditions for optimal benefits of patients and physicians. Early identification of these diseases, and paying prompt attention to the psychological components will, no doubt, go a long way in improving the clinical outcomes of the sufferers.

Recommendations

- That the intervention of government in terms of increasing awareness campaign as well as free antiretroviral scheme of the federal government for PLWHIV should be sustained and further improved upon.
- Comprehensive Health Policy should strongly advocate workable NHIS beneficial to all, making Quality Health Care available and accessible.
- Psychiatry Liaison Practice with internists should be fully established and integrated at both secondary and tertiary Health Institutions to guarantee quality health.

- There had been no previous study, both hospital or community based, done in this environment, with which to compare the results of this study, hence, further reaches may be required as follow-up to this study.

Limitations of the study

- It was difficult to establish by history, the exact chronology of the medical and psychiatric conditions, hence, it was difficult to establish true causal relationship.
- No measure to overcome the effect of the window period in PLWHIV, suggesting a possibility that some subjects screened to be seronegative may actually be seropositive with recent infection.
- Variations in mode of acquiring the illness which was difficult to control for. Being aware of the presence of such a genetically transmitted disease in the patient may affect the individual perception of the disease and hence affect his/her psychological well-being.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare no conflict of interest.

Statement of ethical approval

Ethical approval was obtained from the research ethical committee of the University of Port Harcourt Teaching Hospital.

Statement of informed consent

Informed consent was obtained from participants of the study. Also, subjects who declined participating in the research were not denied their treatment care right.

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