International Journal of Research Studies in Medical and Health Sciences
Volume 3, Issue 8, 2018, PP 20-26
ISSN : 2456-6373

Prevalence of Depression in Patients Attending Comprehensive Care Centre, Kenyatta National Hospital

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ABSTRACT

Depression is one of the most common neuropsychiatric complications of HIV disease, and this leads to worse HIV-related health outcomes. With 350 million people affected worldwide, rates of depression are roughly two times greater in people living with HIV than in the general population.

***Objective:** Determine prevalence of depression in patients attending Comprehensive Care Centre-Kenyatta National Hospital*

***Design:** Descriptive cross-sectional quantitative study.*

***Settings**: Kenyatta National Hospital, Comprehensive Care Centre, Kenya*

***Methods**: This data is from a bigger study 'prevalence of alcohol use disorders and depression in patients attending Comprehensive Care Centre (CCC) in Kenyatta National Hospital'. The study population consisted of PLWHA attending the CCC at KNH. Two hundred and seventy-two (N=272) participants from CCC attendants were recruited. All consenting male and female aged 18-65 years were interviewed using the researcher's designed questioner to collect their socio-demographic characteristics. Fully completed questionnaires were entered into excel sheets and analyzed using the Statistical Package for Social Sciences (SPSS) Version 20.*

***Results:** The overall prevalence of depression was 23.8%, with mild depression at 9.7%, moderate depression at 10.4% and severe depression accounting for 3.7%, respectively. Depression was associated with alcohol use (p=0.024). A significant difference between depression and age where depression levels worsens as age advances; respondents in age category of 18-21 years had less or no depression compared to those in the age category of 33 years and above. We found an association between depression and employment. Those laid-off work (1/3), and the retired (15%) had more depression compared to the employed (11%) or self-employed 6%, with a P value of 0.55 (borderline). On multivariate analysis severity of depression (OR=5.5, 95% CI of OR [2.1 – 14.3], p<0.0001) was associated with male gender (OR=10, 95% CI of OR [3.6 – 28.3], p<0.0001).*

***Conclusion:** The study findings indicate a high prevalence of depressive symptoms in patients attending the CCC. There is need to set-up appropriate interventions and strategies to reduce the prevalence of mental health disorders into routine HIV clinical care and support at CCC.*

Keywords: *HIV, AIDS; PLWH, depression, ART, mental health*

INTRODUCTION

Depression is a leading cause of disease burden globally (Collins et al., 2011; Patel et al., 2011)

In 2010, 68% of all people living with HIV resided in Sub-Saharan Africa, a region with only 12% of the global population (UNAIDS 2011). Sub-Saharan Africa also accounted for 70% of new HIV infections and 67% of AIDS-related deaths in 2010 (UNAIDS 2011).

Mental disorders, especially depression, are common in HIV-infected persons globally (Gaynes, et al., (2012). Reports on the actual prevalence of depression in HIV-infected persons have varied widely, from 22% to 71% (Chikezie, et al., 2013). With 350 million people affected worldwide (WHO 2012), rates of depression are roughly two times greater in people living with HIV than the general population (approximately 10% versus 5%).

A study among HIV-infected patients on ART in a semi-urban center in Cameroon reported that one in five participants met lifetime criteria for major depression disorders (Gaynes et al., 2012). Depression has also been associated with poorer physical health, (Sikkema, 2011). This study aimed at determining the prevalence of depression in HIV-infected patients attending the comprehensive care services at Kenyatta national hospital, Kenya.

Evidence from other countries show that major depression impacts negatively on the course of HIV infection (Simoni, et al., 2011). Depression is an important but neglected public health problem in sub-Saharan Africa (Abas, et al., 2014). Depression, refers to major depression or clinical depression, which is characterized by changes in mood, thinking, concentration, sleep, appetite, energy and in a person's normal capacity to gain pleasure and motivation from life and the world around them (APA (2013). Immune changes as a result of viral infections may be responsible for depression, while psychological adjustment to the awareness of one's HIV status may predispose to depression (Chikezie, et al., 2013).

Prevalence of depression increases with the severity of symptoms related to HIV infection (Bhatia & Munjal, 2014). The prevalence of depressive disorders in HIV-infected patients ranges from 12% to 66% and is undiagnosed in 50% to 60% of these patients (Silveira et al., 2012). These variations have been attributed to a number of factors, including differential assessment strategies, varying recruitment approaches and other methodological issues (Silveira et al., 2012). Prevalence rates for depression among PLWHAs vary depending on the setting of the study. Conversely, rates average between 10% and 30% (Chikezie U. E, et al 2013).

METHODS

This data is part of a larger study 'to determine the prevalence of alcohol use disorder and depression in patients attending Comprehensive Care Centre (CCC) in Kenyatta National Hospital in Kenya'. Two hundred and seventy two participants were recruited for this study and interviewed about their socio-demographic characteristics. This study was a facility based descriptive cross-sectional quantitative study carried out in the months of August to October 2014. The study population consisted of two hundred seventy two (N=272) PLWH; 51.1% (139 males) and 48.9% (133) females aged 18 years and above. The participants voluntarily consented to take part in the study, were literate (English, Kiswahili or both), not physically ill and included the disabled. Study objectives were amply informed to eligible study participants, benefits and harms preceding voluntarily signing the consent forms followed by administration of the research questionnaires. Socio-demographic characteristics were captured on the researcher locally designed instrument that captured age, sex, occupation, type of housing. Presence and severity of depression was estimated using Beck's Depression Inventory (BDI-II) (Kim, et al. 2014). Fully completed questionnaires were entered into excel sheets on the computer the same day by the researcher and later analysed using the Statistical Package for Social Sciences (SPSS) Version 20.

Statistical Analysis Plan

The actors associated with depression were identified using Chi-squared test where occupation, religion, income, STI/HIV counseling and testing. Adjustment for confounder's and effect modifiers in the model was done to determine independence in the relationship between variables. This was achieved using binary stepwise backward multinomial logistic regression. There was an association between Depression and other variables were explored using logistic regression analysis. All variables associated with Depression with a p value <0.05 were included in the final multi-variable model.

RESULTS

Social Demographic Characteristics of the Study Participants

The study sought to identify distribution of the participants as summarized in Table 1. Distribution of participants according to age groups, the results showed that more than half of the participants were in the age category of 33 years and above 55.9% (152), 30-33 years were 16.5% (45), 25-29 years were 11% (30), 22-25 years were 8.8% (24) and 18-21 years were 7.7% (21). The minimum age was 18 and the maximum age was above 33 years. On marital status, the study sought to establish the distribution of participants as at the time of participating in the study, 45.66% (124) were married, 36.8% (100) were single, 8.1% (22) were separated and 6.2% (17) were cohabiting, the rest were either divorced or widowed. Distribution of participants according to the level of education that each participant had

attained at the time of participation in the study indicated that; only a few, 1.8% (5) had no education, 13.6% (37) had primary education. Over two thirds of the study respondents had at least secondary education where 37.5% (102), 33.5% (91) had college education and 37 (13.6%), had university education.

Distribution of participants according to their livelihood indicated that; most of the respondents had a source of income where 47.1% (128) were self-employed and 42.6% (116) were employed. The rest were retired, never employed or laid off. The study established the monthly income in Kenya Shillings of the participants as follows: over half of the study participants were earning a salary below Kenya Shillings 20,000 with 39.4% (104) earning 1,000-10,000, and 28.4% (75) earning between11, 000-20,000 shillings. 12.9% (34) were earning between 20,000-30,000 shillings a month. While 7.6% (20) were earning 30,000-40,000, and 4.5% (12) were earning 40,000-50,000. Only 7.2% (19) were earning 50,000 and above. Distribution of participant's religion indicated that most of the participants, 84.5% (230) were Christians of which 38.2% (104) were Catholics and 46.3% (126) were Protestants. Muslims were 4.4% (12), while other religions (Traditional, Earthiest, Pagan and Hinduism,) accounted for 11% (30). Distribution of participant's housing showed that less than a fifth, 18.1% (49) lived in their own houses, while 64.2% (174) were living in rented houses, 10.3% (28) living with parents, 4.8% (13) lived with friends and 2.6% (7) lived with other people or facilities.

Table1. *Socio-demographic characteristics*

Characteristic	Category	n (%)
Age category	18-21 years	21 (7.7%)
	22-25 years	24 (8.8%)
	25-29 years	30 (11%)
	30-33 years	45 (16.5%)
	>33 years	152 (55.9%)
Marital status	Married	124 (45.6%)
	Cohabiting	17 (6.2%)
	Single	100 (36.8%)
	Divorced	5 (1.8%)
	Separated	22 (8.1%)
	Widowed	4 (1.5%)
Level of education	None	5 (1.8%)
	Primary	37 (13.6%)
	Secondary	102 (37.5%)
	College	91 (33.5%)
	University	37 (13.6%)
Employment	Employed	116 (42.6%)
	Self-employed	128 (47.1%)
	Retired	7 (2.6%)
	Never employed	17 (6.2%)
	Laid off work	4 (1.5%)
Income bracket in Kenya Shillings per month	1k-10 KShs	104 (39.4%)
	10k-20 KShs	75 (28.4%)
	20k-30 KShs	34 (12.9%)
	30k-40 KShs	20 (7.6%)
	40k-50 KShs	12 (4.5%)
	>50 KShs	19 (7.2%)
Religion	Catholic	104 (38.2%)
	Protestant	126 (46.3%)
	Muslim	12 (4.4%)
	Other	30 (11%)
Housing	Own	49 (18.1%)
	Rented	174 (64.2%)
	Friends	13 (4.8%)
	Parents	28 (10.3%)
	Other	7 (2.6%)

Prevalence of Depression

To assess the presence of depressive symptoms, Beck Depression Inventory was filled out by the respondents and results showed that 76.2% (205) had no features to meet DSM-V criteria for depressive, 9.7% (26) had mild depression, 10.4% (28) had moderate depression and 3.7% (10) had severe depression. The results are shown in the Table 2.

Table2. *Becks Depression Inventory*

Categorized BECKS Score	N	%
No depression	205	76.2%
Mild depression	26	9.7%
Moderate depression	28	10.4%
Severe depression	10	3.7%

Association between Depression and Social Demographics

Table 3 presents association between depression and socio-demographic variables. There is a significant difference between depression and age where depression levels worsens as age advances; respondents in age category of 18-21 years had less or no depression compared to those in the age category of 33 years and above.

Table3. *Association of Depression and Social Demographics*

	Depression			
	Minimal-mild	Moderate-Severe	Chi square	P value
Age				
18-21 years	21(100.0)	0(0.0)	13.3	0.01
22-25 years	21(87.5)	3(12.5)		
25-29 years	26(86.7)	4(13.3)		
30-33 years	31(68.9)	13(28.9)		
>33 years	132(86.8)	17(11.2)		
Education				
None	3(60.0)	2(40.0)	9.7	0.046
Primary	30(81.1)	7(18.9)		
Secondary	83(81.4)	18(17.6)		
College	81(89.0)	9(9.9)		
University	34(91.9)	1(2.7)		
Gender				
Male	121(87.1)	15(10.8)	1.8	0.181
Female	110(82.7)	22(16.5)		
Income				
1k-10k	85(81.7)	18(17.3)	5.2	0.39
10k-20k	66(88.0)	8(10.7)		
20k-30k	27(79.4)	6(17.6)		
30k-40k	17(85.0)	3(15.0)		
40k-50k	12(100.0)	0(0.0)		
>50k	17(89.5)	1(5.3)		
Marriage				
Married	109(87.9)	13(10.5)	5.4	0.366
Cohabiting	16(94.1)	1(5.9)		
Single	82(82.0)	17(17.0)		
Divorced	4(80.0)	1(20.0)		
Separated	16(72.7)	5(22.7)		
Widowed	4(100.0)	0(0.0)		
Religion				
Catholic	83(79.8)	19(18.3)	6.5	0.091
Protestant	114(90.5)	10(7.9)		
Muslim	10(83.3)	2(16.7)		
Other	24(80.0)	6(20.0)		

Association of Depression and Employment of participants

In Table 4, we picked, minimum or / no depression, Mild depression, Moderate depression and severe depression without combining the columns.

We found an association between depression and employment. Those laid-off work (1/3),

and the retired (15%) had more depression compared to the employed (11%) or self-employed 6%, with a P value of 0.55 (borderline) as indicated in table 4 below.

Table4. *Association of Depression and Employment of participants*

	Depression			
	Minimal-mild	Moderate-Severe	Chi square	P value
Age				
18-21 years	21(100.0)	0(0.0)	13.3	0.01
22-25 years	21(87.5)	3(12.5)		
25-29 years	26(86.7)	4(13.3)		
30-33 years	31(68.9)	13(28.9)		
>33 years	132(86.8)	17(11.2)		
Education				
None	3(60.0)	2(40.0)	9.7	0.046
Primary	30(81.1)	7(18.9)		
Secondary	83(81.4)	18(17.6)		
College	81(89.0)	9(9.9)		
University	34(91.9)	1(2.7)		
Gender				
Male	121(87.1)	15(10.8)	1.8	0.181
Female	110(82.7)	22(16.5)		
Income				
1k-10k	85(81.7)	18(17.3)	5.2	0.39
10k-20k	66(88.0)	8(10.7)		
20k-30k	27(79.4)	6(17.6)		
30k-40k	17(85.0)	3(15.0)		
40k-50k	12(100.0)	0(0.0)		
>50k	17(89.5)	1(5.3)		
Marriage				
Married	109(87.9)	13(10.5)	5.4	0.366
Cohabiting	16(94.1)	1(5.9)		
Single	82(82.0)	17(17.0)		
Divorced	4(80.0)	1(20.0)		
Separated	16(72.7)	5(22.7)		
Widowed	4(100.0)	0(0.0)		
Religion				
Catholic	83(79.8)	19(18.3)	6.5	0.091
Protestant	114(90.5)	10(7.9)		
Muslim	10(83.3)	2(16.7)		
Other	24(80.0)	6(20.0)		

DISCUSSION

The study found that 23.8% of participants overall had a score ≥13 on the BDI indicative of depressive disorders, with more than half (14.1%) having moderate-severe depressive symptoms. Rodrigueet al., 2013 reported that prevalence of depression in HIV patients in Cameroon at 63%. Other studies report substantially higher estimates from various settings in Africa, South America and Asia of between estimates from 11% to 53% (Akena et al., 2012). Our study falls within the postulated results. Study findings may differ as a result of the ways depression is measured (Graham, Massak, Demers, & Rehm, 2007).

There is a significant difference between depression and age where depression levels worsens as age advances; respondents in age category of 18-21 years had less or no depression compared to those in the age category of 33 years and above. However, a recent study from South Africa reported a low prevalence of depression in older people of 4% (Peltzer and Phaswana-Mafuya, 2013).

Another association was in respondents whose monthly income was higher than Kenya shillings 50,000. The more income people have, the more educated they are and the higher their social status or class.

We found further an association between depression and employment. Those laid-off work (1/3), and the retired (15%) had had severe depressive levels compared to the employed (11%) or self-employed 6%, with a P value of

0.55 (borderline). Our study found prevalence of depression higher in patients who were unemployed. We postulate that economic insecurity leads to frustration and dysfunctional family life and feeling of worthlessness. by Being unemployed is seen as a risk factor for depression among PLWHAs and this replicates similar findings ------. Unemployment may correlate with poor quality of life outcomes, which are related to poor psychological adjustment (Chikezie et al., 2013).The study could not determine if the diagnosis of HIV/AIDS resulted in unemployment due to the study design. Social causation assumes that conditions of poverty increase the risk of mental illness, while social selection postulates that people with mental illness are at increased risk of drifting into or remaining in poverty due to factors such as loss of employment, reduced productivity, and increased health expenditure (Lund et al 2011).

LIMITATIONS

Our study is a cross-sectional study looking at the prevalence of depression among people living with HIV/AIDS. We are unable to test the extent to which this misreporting could have influenced our results, but our findings are likely to be valid since they are consistent with results by others in similar study settings (Rochat et al., 2011; Akena et al., 2012). This study focused on current depressive symptomatology rather than a current or lifetime DSM-V diagnosis of a mood disorder. This study employed a cross-sectional design; thus a cause-effect relationship could not be established.

RECOMMENDATIONS

- This study bring to light the need for routine screening for depression as an integral component of HIV/AIDs treatment
- Depression treatment should be an integral part of HIV/AIDs treatment
- Integrate mental health interventions into routine HIV clinical care

CONCLUSION

Our study indicates a high prevalence of depressive symptoms in HIV-infected patients attending the comprehensive care services. The study indicated that depression worsened with age. Those unemployed had more depression compared to the employed. Screening for depression should be routinely conducted in the patients to reduce mortality and improve outcomes. This study also highlights the necessity to integrate mental health interventions into routine HIV clinical care in the Comprehensive Care Center.

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Citation: *Anne Wanja Kibera, B. et.al., "Prevalence of Depression in Patients Attending Comprehensive Care Centre, Kenyatta National Hospital". International Journal of Research Studies in Medical and Health Sciences. 2018; 3(8):20-26.*