



Factors Influencing the Occurrence of Mental Illness in Persons Living with HIV/AIDS in Kabarole District, Uganda

Kabiru Usman Muhammad^{1,*}, Peter Chidiebere Okorie^{2,3}, Esther Umahi¹, Emmanuel Obiano², Joel Rimande¹

¹Department of Public Health, Taraba State University, Jalingo, Nigeria

²Department of Environmental Health Sciences, Taraba State University, Jalingo, Nigeria

³Department of Dental Technology, Faculty of Health Technology and Engineering, Federal College of Dental Technology and Therapy, Enugu, Nigeria

Email address:

kabiru.muhammad78@yahoo.com (K. U. Muhammad)

*Corresponding author

To cite this article:

Kabiru Usman Muhammad, Peter Chidiebere Okorie, Esther Umahi, Emmanuel Obiano, Joel Rimande. Factors Influencing the Occurrence of Mental Illness in Persons Living with HIV/AIDS in Kabarole District, Uganda. *International Journal of HIV/AIDS Prevention, Education and Behavioural Science*. Vol. 4, No. 2, 2018, pp. 35-43. doi: 10.11648/j.ijhpebs.20180402.12

Received: November 8, 2018; **Accepted:** December 4, 2018; **Published:** December 26, 2018

Abstract: HIV infection and psychiatric disorders have a complex relationship. Being HIV infected could result in psychiatric disorders as a psychological consequence of the infection or because of the effect of the HIV virus on the brain. This study aimed at investigating Factors Influencing the Occurrence of Mental Illness in Persons Living with HIV/AIDS in Fort Portal Regional Referral Hospital, Kabarole District, Uganda. Structured, pretested Individual Patient Record Review Checklist and General Patient Record Checklist was used to collect data from the hospital's records. Key Informant Interview (KII) were used to validate checklist findings. It was found that most of the respondents were females (58%), most were in age group (26-36yrs) 40%, majority of the respondents were married (53%), by religion most were protestant (39%), by tribe majority were Mutooro (53%), most of the respondent were illiterate (37%), by occupation majority were peasant farmer 78 (50%), most of the respondent has less than 5 children (80%) and majority were from fort portal municipality (35%) respectively. It was equally found that there was a significant relationships between age, marital status and level of education, where psychological disorder were most common among female with depression 22, anxiety 16, grief 9 and dementia 4, depression is most common in age group of 16-25yrs and 26-35yrs with 11 respectively, depression is mostly among married client 17 (45%) followed by single 12 (31%). These findings suggests that more attention needs to be paid to these disorders, particularly in the light of literature demonstrating the impact of mental disorders, especially depression and anxiety, on disease progression and adherence to antiretroviral medication and formation of liason in management of HIV/AIDs and psychological disorders or to generate a joint treatment plan.

Keywords: AIDS, HIV, Illness, Mental and Psychological

1. Introduction

The World Health Organization defines mental health as “a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community” [1]. In this, the absence of mental disorder does not necessarily mean the presence of good mental health [2, 3]. Looked at in another

way, people living with mental disorder can also achieve good levels of wellbeing – living a satisfying, meaningful, contributing life within the constraints of painful, distressing, or debilitating symptoms. Mental disorders include anxiety, depression, schizophrenia, and alcohol and drug dependency. Common mental disorders can result from stressful experiences [4], but also occur in the absence of such experiences; stressful experiences do not always lead to mental disorders. Many people experience sub-threshold mental disorders, which means poor mental health that does

not reach the threshold for diagnosis as a mental disorder. Mental disorders and sub-threshold mental disorders affect a large proportion of populations [5]

Mental health problems are an increasing public health concern worldwide [6] reported a figure of 400 million people to be having mental health problems worldwide. It is also estimated that mental health problems account to 12.5% of all disabilities, and in ten years to come (from 2000) it is projected to rank 1st in causing disability. Mental disorders make a substantial independent contribution to the burden of disease worldwide. It is estimated that, neuropsychiatric conditions account for up to 15% of all disability-adjusted life-years, and up to 30% of those attributable to non-communicable diseases. Neuropsychiatric disorders also account for 1.2 million deaths every year [7]. These figures are most likely underestimated as official statistics in low and middle income countries are scanty and unreliable. Human immunodeficiency virus (HIV) infection has become a psychiatric epidemic as it both Causes and exacerbates mental disorder [8]. In the early stages of the HIV epidemic, the individuals who were affected did not know that their behavior predisposed them to a potentially fatal disease. The epidemic also mushroomed at the time of a liberal and tolerant culture and dis-inhibited sexual restraint. Hence intravenous drug abuse and multiple sexual partners spread the epidemic in communities where these behaviors were more rampant [8].

Psychological and psychiatric issues associated with HIV infection have received considerable attention in the last decade owing to the emotional impact of the disease and its effect on an individual's personal, sexual, occupational and social life. Apart from the more obvious impact of HIV on mental health, there are several ways in which HIV infection and psychiatric disorders are linked. (i) HIV infection owing to its malignant course and the associated stigma often results in emotional reactions of a serious nature among those infected. (ii) The HIV has direct effects on the brain that may lead to neurocognitive disturbances, psychosis or behavioral changes. (iii) Opportunistic neurological and systemic infections and their treatment may lead to neuropsychiatric problems. (iv) Some of the drugs used in HAART (highly active antiretroviral therapy) are known to be associated with psychiatric side effects. (v) Persons with severe mental illness are known to be vulnerable to HIV infection and there are special management concerns in this population. (vi) Substance abuse and HIV are linked in direct ways (intravenous drug use: IVDU) and in indirect ways by their influence on sexual behavior. (vii) Treatment adherence and course of illness have been found to be influenced by emotional factors and substance use [9]. HIV infection and psychiatric disorders have a complex relationship. Being HIV infected could result in psychiatric disorders as a psychological consequence of the infection or because of the effect of the HIV virus on the brain. Disorders may be as varied as depression, post-traumatic stress disorders, AIDS

phobias, grief and the whole gamut of cognitive disorders. In addition, several psychiatric conditions may predispose individuals to acquiring HIV infection as a consequence of their influence on behavior [9].

There has been much speculation on the role that mental disorders play in the spread of HIV. It is suggested that people with mental disorders may be more at risk of acquiring the disease as a result of risky sexual behavior. Evidence from the United States of America indicates that people with severe mental illnesses are at greater risk because of their particular vulnerability [10]. Recent evidence from South Africa shows that depressive and anxiety disorders play a role in the development of risky sexual behavior [11], possibly as a result of lack of concern for the future, or even suicidal ideation. These issues are not within the scope of this thesis, and the primary focus will be on the consequences of HIV infection in terms of depressive and anxiety disorders.

The prevalence of mental illnesses in HIV-infected individuals is substantially higher than in the general population. HIV/AIDS imposes a significant psychological burden. People with HIV often suffer from depression and anxiety as they adjust to the impact of the diagnosis of being infected and face the difficulties of living with a chronic life-threatening illness, for instance shortened life expectancy, complicated therapeutic regimens, stigmatization, and loss of social support, family or friends. HIV infection can be associated with high risk of suicide or attempted suicide. The psychological predictors of suicidal ideation in HIV-infected individuals include concurrent substance-use disorders, past history of depression and presence of hopelessness [12].

Evidence from Low and middle income countries is limited and less clear. Most of the studies done in Africa with HIV positive participants have shown differing but high percentages of mental distress, for example, Orange Free State, South Africa 40% [13], rural Ethiopia 14%. [14] and Botswana 28% [15]. A meta-analytic study identified 13 studies on mental disorders and HIV infection in low and middle income countries. The prevalence of mental disorders varied widely among these studies. However the studies revealed that depression was higher among symptomatic HIV patients as compared to either, non-symptomatic cases and the sero negative control groups [16]. In Uganda population, studies show that a ratio of 2:5 people has a mental health problem [6]. Other studies in Uganda indicates that between 20-25% of the general population experiences some form of psychiatric disorder at any one time, and 20-30% of the primary health care attendees do so primarily due to emotional problems [17].

Considering the potential influence of psychological disorders and social traumas on the people living with HIV/AIDS, this study investigated the Factors Influencing the Occurrence of Mental Illness in Persons Living with HIV/AIDS in Fort Portal Regional Referral Hospital, Kabarole District, Uganda.

2. Methods

2.1. Study Area

The study was conducted in Fort portal Regional Referral hospital, Kabarole district which was purposely selected because it serves as a Regional referral in Rwenzori region. The district has a prevalence of 11.6% [18]; it is located in South Western Uganda at a road distance of 320km from Kampala the capital city of Uganda. It is the most urbanized district in the region with a population of around 409,400 people.

2.2. Study Design and Sampling

The study employed across-sectional study, which utilized both qualitative and quantitative methods. The study primarily targeted all HIV Patients who visited Fort portal Regional Referral Hospital, Kabarole district; HIV unit between 15-75years of age from January 2014 to December 2014. In order to obtain a representative sample for my target population, Cochran modified formulae (1977) was used for the estimation of a representative sample. Systematic sample random techniques were employed to determine selection of patient, who visited the hospital from January, 2014 to December, 2014; sampling interval of every 10th were derived by dividing the total number of HIV patients of Kabarole district by the sample size. Validity was ensured by making sure that data collection tools were pretested from Kabarole Hospital and corrections were made. Every checklist was given a number such that during data cleaning it would be simple to trace the recorded data and make corrections if necessary. In the same way research assistants were given codes which would be very important in case of any missing information for clarity. Reliability was ensured through training research assistants before the real data collection period and they were supervised during pretest of tool to identify any weakness and to retrain them if necessary. Inclusively all patients with HIV aged 15-75 years of age, only patients from Kabarole district were included in the study and only persons whose data was captured between January – December, 2014 were included in the study. Exclusively of all Patients with similar characteristics with characteristics of interest but not captured in January – December, 2014 were excluded.

2.3. Data Collection

The tools used were; a data review check list that was used to review socio-demographic record of HIV patients and nature of presenting mental disorders. A key informant (in-depth interview) guide was used for health workers in both HIV/Psychiatric units. Quantitative data was collected from records of all HIV-patients aged 15 -75 years of Kabarole district and qualitative data was also collected from health worker in both HIV and Psychiatric units in the district.

2.4. Data Analysis

The method of data analysis was descriptive, Data

collected were presented in tables of frequency distribution and were all expressed as the percentage of the distribution. The data collected was analyzed using Microsoft computer program of Microsoft Excel 2010.

3. Results

Socio-demographic characteristics

A total of 150 HIV/AIDS case files were involved in the study. Table 1 showed that the mean age and the standard deviation were 16.53+5.24 years. Most of the respondents were females (58%), most were in age group (26-36yrs) 40%, majority of the respondents were married (53%), by religion most were protestant (39%), by tribe majority were Mutooro (53%), most of the respondent were illiterate (37%), by occupation majority were peasant farmer 78 (50%), most of the respondent has less than 5 children (80%) and majority were from fort portal municipality (35%) respectively (Table 2).

Proportion of persons living with HIV and having psychological problem

As shown in the table 3, of all the 1639 of person living with HIV Enroll in the year 2014, only 409 representing (25%) had psychological disorders. Most psychological disorders were in the month of march and April with 61 and 62 patients respectively (Figure 1).

Proportion of psychological disorders in persons living with HIV/AIDS in the sample population (n=158)

As shown in the figure 1 above, the prevalence of psychological problem among persons living with HIV/AIDS was 34%.

Common psychological disorders in persons living with HIV/AIDS

As shown in the table 4 below, depression is the most common psychological problem in persons living with HIV/AIDS 37 (47%).

Table 1. Socio-Demographic Data of HIV/AIDS Patients.

Variables	Frequency	Percentage
Sex		
Male	66	42
Female	92	58
Age group		
15yrs	4	2
16-25yrs	27	16
26-35yrs	67	40
36-45yrs	42	25
46-55yrs	11	7
56-75yrs	16	10
Marital status		
Single	37	23
Married	83	53
Widow	22	14
Widower	16	10
Religion		
Catholic	59	37
Protestant	62	39
Muslim	37	24

Variables	Frequency	Percentage
Tribe		
Mutooro	83	53
Mukonjo	18	11
Muganda	6	4
Munyaroro	15	17
Mukiga	27	17
Munyankole	9	6
Level of Education		
None	58	37
Primary	30	19
Secondary	52	33
Tertiary	18	11
Occupation		
None	10	6
Civil Servant	13	8
Peasant farmer	78	50
Business	52	33
Others	5	3
No of Children		
Less than 5	126	80
5 and above	32	20

Table 2. Socio-Demographic Data of HIV/AIDS Patients.

Demographic characteristics	Frequency	Percentage (%)
Sub-county		
Bukuuku	9	6
Njara	1	1
Rwengaju	2	1
Mugusu	2	1
Kaswa	2	1
Kisomoro	1	1
Buhesi	12	8
Kibiito	6	4
Hakibale	11	7
Butese	2	1
Harungonga	1	1
Karambi	8	5
Kiko	3	2
Rwimi	1	1
F/P Municipality	56	35
Busoro	16	10
Kichawamba	23	15
Kiburara	2	1

Table 3. Proportion of Persons living with HIV and having psychological problem.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct.	Nov.	Dec.	Total
HIV Enrollment	155	91	188	133	168	117	144	141	151	147	122	82	1639
HIV/Mental illness	33	21	61	62	37	38	30	41	30	26	14	16	409

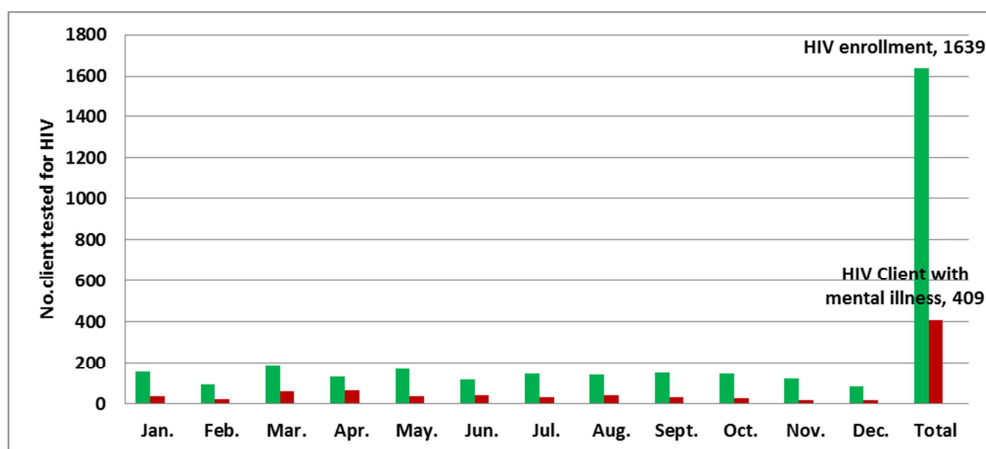


Figure 1. Graph showing prevalence of psychological disorders in persons living with HIV/AIDS.

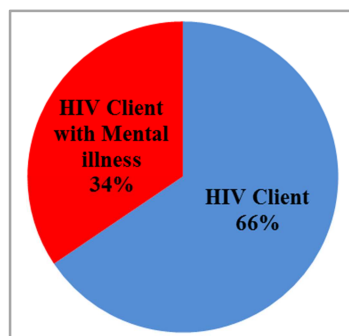


Figure 2. Proportion of psychological disorders in persons living with HIV/AIDS in the sample population (n=158).

Table 4. Common Psychological disorders in persons living with HIV/AIDS.

Disorders	Frequency	Percentage (%)
Depression	37	47
Grief	16	22
Anxiety	25	28
Dementia	5	3

Relationship between socio-demographic characteristics and occurrence of Mental Illness in persons living with HIV/AIDS

Psychological disorder were most common among female with depression 22, anxiety 16, grief 9 and dementia 4 (Figure 3), Depression is most common in age group of 16-25yrs and 26-35yrs with 11 respectively (Figure 4), Table 5 equally

shows that depression is mostly among married client 17 (45%) followed by single 12 (31%). Depression and anxiety is most common with Catholics with 18 (45%) and 12 (30%) respectively (Figure 6). Signs of depression and anxiety is most common among Mutooro 17 and 13 respectively (Figure 7). As shown in the table 6 depression is most common among secondary school levers and anxiety is most common among

the tertiary school levers. As shown in the figure 8, anxiety is most common among peasant farmers 15 (35%) followed by depression 13 (30%) and among business client depression is most common 15 (55%). As shown in figure 8, depression is most common among clients with 5 and above children 21 (54%) and table 7 shown that depression is most common among HIV/AIDS client of fort portal municipality 17 (45%).

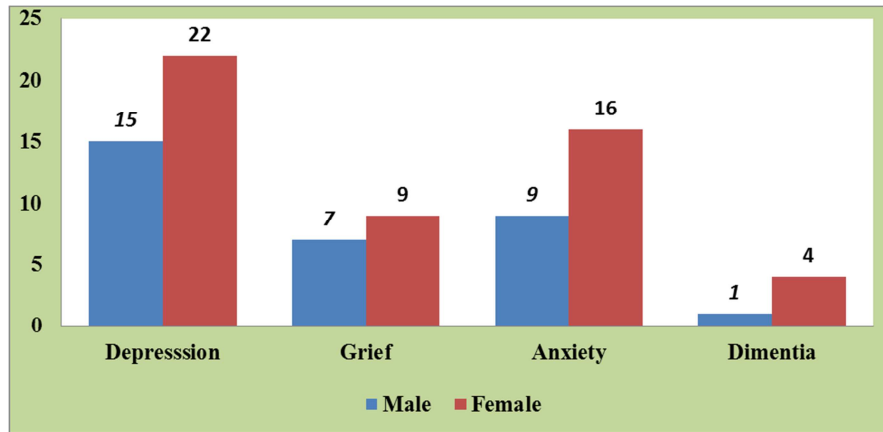


Figure 3. Sex distribution of the different psychological disorders.

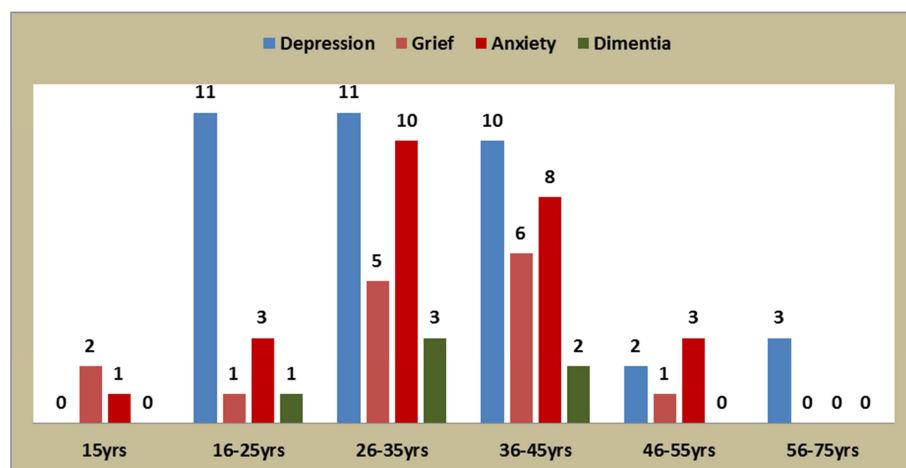


Figure 4. Age distribution of psychological problem in persons living HIV/AIDS.

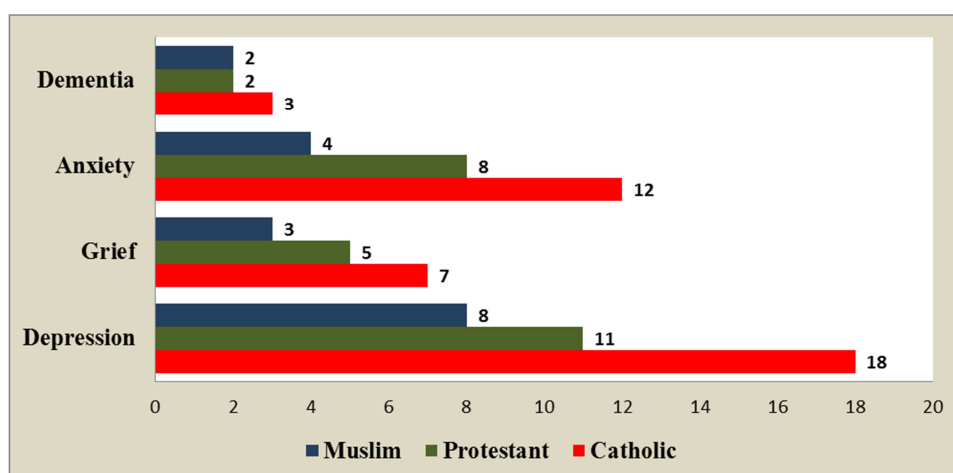


Figure 5. Distribution of psychological problem among persons living with HIV/AIDS by Religion.

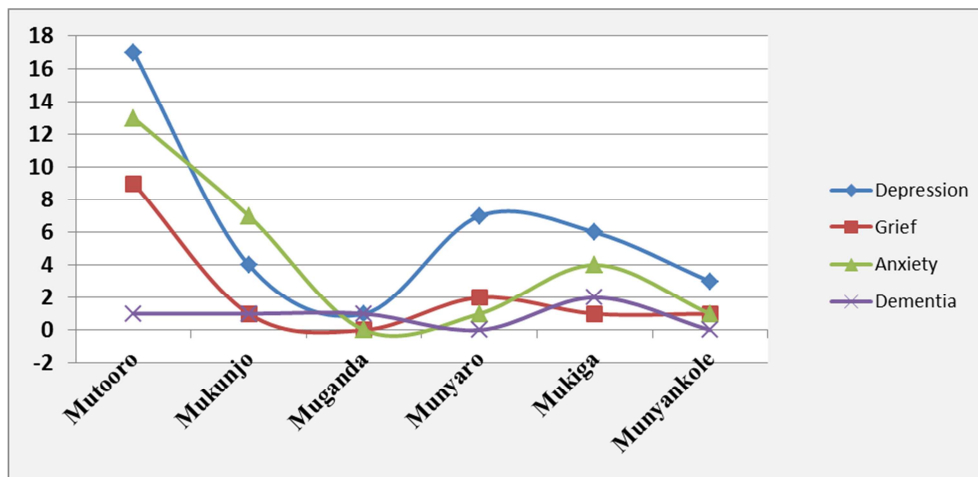


Figure 6. Distribution of psychological problem among persons living with HIV/AIDS by Tribe.

Table 5. Distribution of Psychological Problem in Persons living with HIV/AIDS by Marital status.

	Depression	Grief	Anxiety	Dementia
Single	12	5	5	1
Married	17	6	12	3
Widow	3	2	6	2
Widower	6	1	2	0

Table 6. Distribution of Psychological Problem in Persons living with HIV/AIDS by Level of Education.

Level of Edu,	Depression	Grief	Anxiety	Dementia
None	10	7	9	0
Primary	5	3	2	3
Secondary	16	3	7	1
Tertiary	5	1	11	0

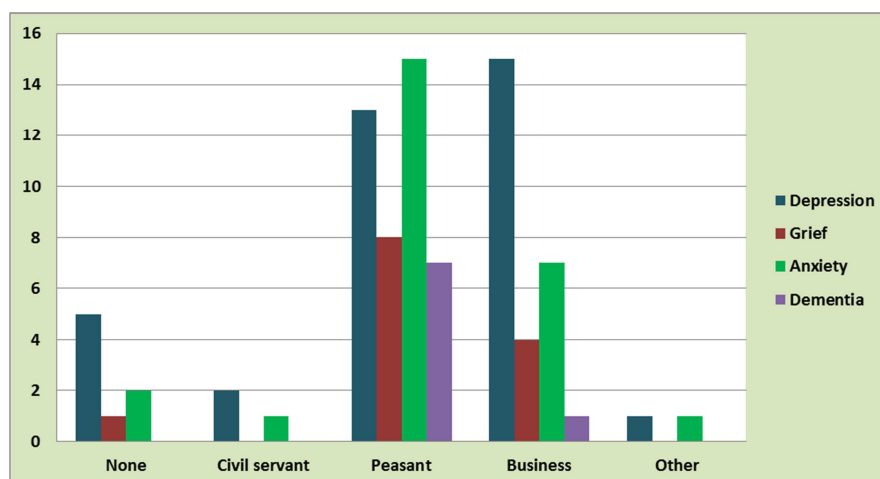


Figure 7. Distribution of psychological problem among persons living with HIV/AIDS by Occupations.

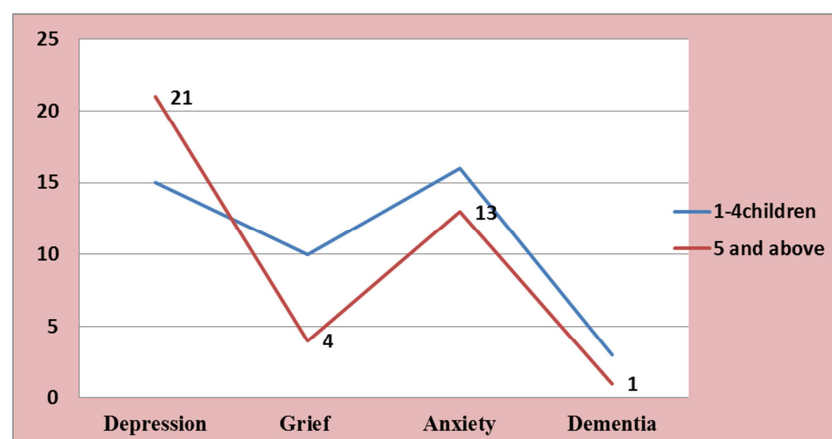


Figure 8. Distribution of psychological problem among persons living with HIV/AIDS by No. of children.

Table 7. Socio-Demographic Data of HIV/AIDS Patients.

Variables	Frequency	Percentage	Anxiety	Dementia
Sub-county				
Bukuuku	2	1	2	0
Njara	1	0	0	0
Rwengaju	0	2	0	0
Mugusu	0	0	1	0
Kaswa	1	0	0	0
Kisomoro	1	0	1	0
Buhesi	1	1	5	0
Kibiito	1	2	0	0
Hakibale	3	0	1	0
Butese	1	0	0	0
Harungonga	0	1	0	0
Karambi	3	2	1	0
Kiko	0	2	0	0
Rwimi	1	0	0	0
F/P Municipality	17	0	7	3
Busoro	5	2	0	1
Kichawamba	1	2	6	0
Kiburara	0	0	1	0

Key Informant Interview (KII)

Factors associated with psychological disorders among persons living with HIV/AIDS

Key informant interviews were conducted with HIV/AIDS clinician and principle psychiatrist the following were noted as the factors associated with psychological disorders among persons living with HIV/AIDS.

Both the informant mentioned stigma and labeling as a major factors leading to psychological disorders among persons living with HIV/AIDS “*patients mostly fear they might die of HIV and leave their children, stigmatized by the community which might lead to moods aloof causing cases of suicide and Para suicides*” (HIV clinician), the other informat says “*emotional reaction like stigma and labeling, fatality, chronicity are major causes of psychological disorders among persons living with HIV/AIDS however the neuropathological view as HIV can directly attacks the brains cells can leads to psychological disorders in HIV*” (Principle psychiatrist).

Moreover the key informants mentions the challenges faced in management of HIV/AIDS which might also leads to development of Psychological disorders among persons living with HIV/AIDS where I asked; What are the organizational challenges faced in management of HIV/AIDS client with psychological disorders? “*we got HIV clients with signs of mental illness but we do not refer to mental units we managed already clerked mental patients, mental patients care is low because clinicians are busy and when there is no support especially in HIV induced psychosis may leads to non-compliance to drugs and the patients may not even turn up for ARVs*” (HIV clinician).

Also the principle psychiatrist mentioned the following as the faced in management of psychological disorders in HIV/AIDS “*Drugs both for HIV/AIDS and Mental illness are rare and expensive so patient can find then out or might be costly however follow ups become a challenge as most come from far distance*” and he add on by saying “*other medical professionals deny liason psychiatric care, they really let us*

down they do not refer patients to mental units”.

4. Discussion

This study carried out in Kabarole District, Uganda provides information on Factors Influencing the Occurrence of Mental Illness in Persons Living with HIV/AIDS in Fort Portal Regional Referral Hospital, Kabarole District, Uganda. And the findings are discussed below;

The information of study respondents were mostly female 92 (58%) within the age group of 26-35yrs of age, also most were married (53%) and Christian by religion and the Mutooro tribal block 83 (53%) were the majority of the respondents and most have not gone to school (37%). In term of occupation of the respondent majority were peasant farmers 78 (50%) with less than 5 children 126 (80%), moreover most were from fort portal municipality 56 (35%) followed by Kichawamba 23 (15%).

The prevalence of psychological disorders among persons living with HIV/AIDS was 34% which were mostly noted in the month of March and April of the year 2014, the hospital enrolled 1639 HIV/AIDSs client which 409 developed psychological disorders making 25% of the total client enrolled from January to December 2014, these shows a high magnitude of psychological Disorders in persons living with HIV/AIDS of Kabarole district and more less than 90% reported by WHO in 2010 world wide. The prevalence is mostly among female 22% within the age group of 26-35yrs which were married, as majority were Mutooro by tribe making 80% with no educational background and peasant farmers by occupation with at least 5 and above number of children, of Fort portal municipality.

Depression as a psychological disorder is most common among persons living HIV/AIDS with 37 of the respondent making (47%) followed by anxiety in 25 of the respondent which is (28%) which is in line with the study conducted in India by [9] which reports that “*Depression is the commonest psychiatric syndrome reported in studies among HIV infected*

individuals. Major depression in HIV-positive population is elevated about two fold above those in healthy community sample. Rates of depression have ranged from 5 to 25 per cent or even higher 10-12.” This report is similar to the study since both were in developing countries.

Moreover, depression were mostly noted among female, 22 within the age group of 26-35yrs and also mostly among married client 17 (45%) followed by single 12 (31%), depression and anxiety is most common catholic with 18 (45%) and 12 (30%) respectively and mostly Mutooro by tribe with no educational background, anxiety is most common among peasant farmers 15 (35%) followed by depression 13 (30%) with at least 5 and above children 21 (54%) and majority were of fort portal municipality 17 making 45%.

The key informants both mentioned stigma and labeling as the major cause or factor leading to psychological disorders among persons living with HIV/AIDs, however, it is not the only factor mentioned. There is fatality where the clients feel getting HIV is like a death certificate, also chronicity of the infection as it has no cure and lastly neuropathological aspect as HIV can directly attack the brain cells of individuals affected.

Moreover non-compliance to ARVs might also lead to or cause development of psychological disorders among persons living with HIV/AIDs or due to lack of referral of HIV client with signs of psychological disorders to the mental units. The distance of the patients to the hospital might also lead to non-adherence and non-compliance to treatment and those drugs are not easily accessible and they expensive to acquire.

5. Conclusion

This study has shown that the occurrence of mental illness is more common among persons living with HIV/AID. However, the results suggest that more attention needs to be paid to these disorders, particularly in the light of literature demonstrating the impact of mental disorders, especially depression and anxiety, on disease progression and adherence to antiretroviral medication and formation of liaison in management of HIV/AIDs and psychological disorders or to generate a joint treatment plan. Therefore, training and provision of necessary logistic support may translate into improvement of mental illnesses reporting among HIV/AIDs patients. However, it was noted that Aids phobia, depression in HIV infections, anxiety disorders, bereavement and grief are the major factors associated with mental illness among HIV patients.

It is thereby recommended from that:

Findings from this research should be disseminated to public sector health service, managers, mental healthcare professionals, HIV-physicians, other health workers, HIV-infected individuals and their families.

Management of mental disorders, including depressive and anxiety disorders, in HIV-infected individuals should be improved by ensuring liaison in management between the psychiatrist and the HIV practitioners/clinicians.

HIV practitioners/clinicians should be assisted to identify the major psychological disorders in persons living with HIV/AIDS such depressive and anxiety disorders.

The treatment of HIV-infected individuals with depressive and anxiety disorders should be improved as the most common psychological disorders among persons living with HIV/AIDS.

Appropriate treatment guidelines for the management of organic mental disorders related to HIV infection should be developed and widely distributed within health services, to HIV practitioners/clinicians and mental health practitioners.

Suggestions for further research on to explore more on the relationship between mental disorder and HIV/AIDs and the factors associating mental illness among persons living with HIV/IADS.

Authors' Contributions

MKU conceived the study designed the study and collected data, OPC was involved in study design and drafting of manuscript, UE participated in study and supervision of data collection, OEC was involved in the study design and supervision of data collection, RJ participated in study design and collected data. All authors read and approved the final manuscript.

Acknowledgements

We thank the study participants who were involved in this study. We also acknowledge the contributions of ethics and research unit of the Fort Portal Regional Referral Hospital, Kabarole District, Uganda for the privilege given to us and finally to the clinicians and psychologists who gave us concept on Key Informant Interviews.

Competing Interest

The authors declare that they have no competing interests.

References

- [1] World Health Organization (2013). What is mental health? WHO web page: World Health Organization; [updated 2013/05/01/]. Available from: <http://www.who.int/features/qa/62/en/>
- [2] Keyes, C. L. (2005). Mental illness and/or mental health? Investigating axioms of the complete state model of health. *Journal of Consulting Clinical Psychology*; 73 (3): 539-548.
- [3] Barry, M. M. (2009). Addressing the Determinants of Positive Mental Health: concepts, evidence and practice. *International Journal of Mental Health Promotion*; 11 (3): 4-17.
- [4] Patten, S. B. (1991). Are the Brown and Harris “vulnerability factors” risk factors for depression? *Journal of Psychiatry Neuro sci.*; 16 (5): 267-271.
- [5] Murray, C. J. L., Vos, T., Lozano, R., Naghavi, M., Flaxman, A. D., Michaud, C. (2012). Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet*; 380 (9859): 2197-2223.

- [6] WHO (2000). World Health Report-Mental Health: New Understanding, New Hope. Geneva, 2001.
- [7] Peter, J. C. (2005). Mental Health in the Era of HIV: Investigating Mental Distress, its Determinants, Conceptual models and the Impact of HIV in Zambia, *University of Bergen*.
- [8] Treisman, G. J & Angelino, A. F. (2004). The Psychiatry of AIDS: A Guide to Diagnosis and Treatment. *The Johns Hopkins University press*.
- [9] Prabha, S. C., Geetha, D. & Sanjeev, R. (2005). HIV & Psychiatric Disorders. *Indian Journal of Medical Research*, 121 (4), 451-467.
- [10] Cournos, F., McKinon, K. & Sullivan, G. (2005). Schizophrenia and Co-morbid Human Immunodeficiency virus or Hepatitis C virus. *Journal of Clinical Psychiatry*. 66 (6); 27-33.
- [11] Smit, J; Myer, L; Middelkoop K, Seedat, S; Wood, R; Bekker, L. G & Stein, D. J. (2006). Mental Health and sexual risk behaviours in a South African township: a community-based cross-sectional study. *Public Health*, 120 (6): 534–542.
- [12] WHO (2008). HIV/AIDS and Mental Health, EXECUTIVE BOARD EB124/6, 124th Session 20 November 2008, Provisional agenda item 4.3.
- [13] Tancred, H. A. J., VanRensburg, H. P., Joubert, G. (2000). The prevalence and severity of major depression in heterosexual male HIV infected patients in the orange free state. *Genneskunde. The Medical Journal*; 42: 27-31.
- [14] Tafari, S & Aboud, F. E. (1991). Determinants of mental illness in rural Ethiopian population. *Soc. Sci Med*; 32 (2): 197-201.
- [15] Gupta, R., Dandu, M., Packel, L., Rutherford, G., Leiter, L., Phaladze, N. (2010). Depression and HIV in Botswana: A population-based study on Gender-specific socioeconomic and Behavioral Correlates. *Plos ONE*. 5 (12).
- [16] Collins, P. Y., Holman, A. R., Freeman, M. C, & Patel, V. (2006). What is the relevance of mental health to HIV/AIDS care and treatment programs in developing countries? A systemic Review. *AIDS*; 20: 1571-1582.
- [17] District HIV Surveillance Report (2012). District HIV/AIDS Strategic Plan. Kabarole District, 2011/12-2014/2015.
- [18] Kabarole District Local Government Health Sector (2013). Kabarole District Local Government Health Sector Annual Plan 2013/2014.