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Risk factors of suicidality among HIV positive subjects in a treatment centre, Kaduna Metropolis, Nigeria

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Suicide behaviour complicates human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS). Some of the risk factors attributed to this behavior include stigmatization, depression, cultural beliefs, deterioration in physical condition and overwhelming infections. The aim of this paper is to identify the risk factors of suicidal behaviour among HIV respondents in an antiretroviral treatment centre in Kaduna metropolis. This will also present opportunity for primary prevention of suicide among these respondents. The study was a cross sectional, descriptive study involving two hundred and fifty HIV positive respondents, selected through convenience sampling. Two self-administered questionnaires (sociodemographic and Beck depression inventory) were given to the subjects to fill after receiving written consent. All the participating subjects were interviewed for suicidality using suicidality module of MINI and also clinically examined by the author. The statistical package for social science (SPSS), 15th edition was used for analysis. Multiple logistic regression analysis was used to identify predictors of suicidility. Level of significance was set at $p < 0.05$. The prevalence of suicidality among these patients receiving antiretroviral care at AIDS Relief Centre of St-Gerard Catholic hospital was 16% while the prevalence of depression among the subjects was 26%. Factors significantly associated with suicidality in this study were depression ($p = 0.000$; $x^2 = 37.645$,df = 1), reaction to illness by friends, colleagues, and relation ($p = 0.000$; $x^2 = 26.5$,df = 2), past psychiatric history ($p = 0.023$; $x^2 = 1$,df = 1), physical state of the patient ($p = 0.0016$; $x^2 = 5.787$,df = 1), and previous suicidal attempt ($p = 0.000$; $x^2 = 66.17$,df = 1). On multiple regression analysis, depression ($p = 0.000$; odd ratio = 11.242 and 95% CI = 4.147 to 30.478) and reaction to illness by friends, relation and colleagues ($p = 0.032$; odd ratio = 0.193 and 95% CI = 0.043 to 0.866) were found to be predictors of suicidality. The more severe the depression, the higher the rate of suicide behaviour. Predictor ($p = 0.000$, odd ratio = 64.68 and 95% = 10.33 to 1388). The implication of this finding is that suicidality complicates HIV/AIDS disease among infected subjects in Nigeria. Therefore, there is need for prompt recognition of risk factors to suicidality and the need to prevent it among these subjects.

Key words: HIV/AIDS, risk factors, suicide behavior.

INTRODUCTION

According to World Health Organization, between 0.5 and 1.2 million people worldwide die from suicide each year (World Health Organization, 2000). Suicidal ideation, attempted suicide and suicide are complex clinical issues associated with life-threatening medical conditions and this has been reported for human immunodeficiency infection (Kelly et al., 1998). The risk factors of suicide are diverse and inter related and may be particularly

complex in HIV infected individuals (Govender and Schlebusch, 2013). Depression as one of the risk factors of suicidality is also common psychiatric complications associated with HIV disease. In Nigeria, depression has been found to be five times more common among people living with HIV AIDS (PLWHA) than in apparently healthy populations (Chikezie et al., 2013). Olley (2007), in his report on assessment of psychiatric morbidity in recently diagnosed HIV patients in South Africa, using MINI questionnaire, revealed the following prevalence rates: Current depression = 38.7%, dysthymia = 28%, suicidality = 8.7%. Audu et al. (2008) in a 5-year retrospective study of 58 HIV positive patients confirmed by Western Blot assay at Jos University Teaching Hospital, Nigeria reported the prevalence of psychiatric disorders as follows: Depression (36.2%); delirium (22.4%); psychosis (19%) and dementia (10.3%). Others are Mania (6.9%); anxiety (1.7%); psychoactive substances (mainly alcohol) were used by 20.7% of the subjects. In their conclusion, they suggested the need for a multidisciplinary approach in the management of HIV/AIDS patients (Audu et al., 2008).

In another study in one of the other North Central states of Nigeria, prevalence rates of depression among HIV positive patient was reported as high as 56.7% (Shittu et al., 2013). In a study conducted in Ogun, Oyo and Osun South western states of Nigeria by Kola et al in 2005, responses of a representative sample of 2,183 persons were sought to a question concerning their attitudes to the provision of care for people living with HIV/AIDS. Their opinions were also sought regarding the provision of a group home in their neighborhood for the care of persons with a range of medical and social conditions such as AIDS, mental retardation, physical disability, drug abuse problems, mental illness and exconvicts. The study observed that there was a high level of rejection by individuals and the community as a whole to the care of people living with HIV/AIDS than to the care of persons with other medical and social problem (Kola et al., 2005). International findings on correlation between suicide and HIV /AIDS are diverse. The results however show compelling evidence to screen for suicide risk and intervention as early as possible (Catalan et al., 2011; Badiee et al., 2012). This study sought to identify the risk factors of suicide and also help in determining those who have the potential to perfect complete suicide in primary prevention interventions.

METHODOLOGY

Study design

This is a cross sectional descriptive study.

Setting

The study was conducted at St-Gerard's Catholic Hospital, Kakuri, Kaduna South L.G.A. of Kaduna State, Nigeria. This mission hospital was established in 1957 and presently has 230 admission beds. The AIDS relief anti retro-viral treatment (ART) project of USA President's Emergency Plan for AIDS Relief (PEPFAR) is a program under the supervision of the hospital. It was established on the 6th of February, 2006 with the aim of providing quality care and treatment for people living with HIV/AIDS (PLWHAS) in Kaduna State. The centre has 67 staff strength, 13 different units and is being headed by project team leader, an experienced general medical practitioner. They run five (5) out-patients clinic per week, 4 adult and 1 pediatrics clinics. The total registered number of patients stands at 5,626 with1,891 males and 3,735 females.

Study population

Inclusion criteria

The inclusion criteria were registered, 18 years and above HIV positive clients that can read and write in English language.

Exclusion criteria

This included those who are too physically and mentally ill to participate in the study and those who decline to participate despite explanation and re-assurance.

Sample size

Using appropriate statistical formulae, the sample size was calculated to be 234.577 at an average estimated prevalence of suicidality among HIV positive patients from previous studies as 18.8% (Kelly et al., 1998; Olley, 2007; Perry et al., 1990). The minimum number was rounded up to 250 for conveniences in data analysis. Purposive random sampling technique was used to obtain the minimum size of 250 respondents.

Instruments

1. Socio-Demographic Questionnaire: Age, sex, marital status, education, occupation.
2. The mini international neuro-psychiatric interview: This instrument was designed as a brief structured interview for the major Axis 1 Psychiatric disorder in DSM IV and ICD10. it has acceptably high validity and reliability scores (Sheehan and Lecrubriar, 2005).
3. Beck depression inventory: The instrument is a 21-item self-administered questionnaire. Each item contains four possible responses which range in severity from 0 to 3. Each respondent was expected to pick the one that best describes the way he feels. The scoring system involves adding up the points. The cut off for screening of depression is score of 18 and above.

Procedure

The setting of the study was at the outpatient clinic of AIDS relief

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project of the St. Gerard's Catholic Hospital, Kaduna. About 15 to 20 subjects participated on daily basis for a period of 4 weeks (November to December, 2009). On each participating day, the patients were addressed on the purpose of the study and those eligible to participate. Those that initially gave verbal consent were taken to the unit seminar apartment that had a consulting room. These patients were further assured of confidentiality and the possibility of declining further participation at any stage of the study. Each subject was given a pencil containing eraser and 2 self-administered questionnaires (socio-demographic questionnaire and Beck's depression inventory) after taken a written consent. The seating arrangement was done to ensure privacy in completion of the questionnaires. After completion of the questionnaire, each of the respondents was interviewed for Suicidality using Suicidality module of MINI and subjects who scored 18 and above on Beck's depression inventory were further interviewed for diagnosis of depression using major depressive disorder module of MINI. 20 of 183 subjects who scored below 18 on BDI were also interviewed to correct for misclassification rules (false negative results). Every subject that participated in the study was also physically examined by the author in the presence of one of the unit nurses and subsequently grouped into one of the 4 (i-iv) stages of HIV/AIDS disease (WHO, 2003).

A laboratory form was filled for each of the subjects to test for current CD4 cell counts. Laboratory investigations like full blood counts, chest x-ray, sputum examination are all paid for by the HIV positive patients like other patients. However CD4 cell counts is free of charge if the patient is registered with the centre. Subjects found to be depressed and suicidal were referred to the nearest psychiatric facilities for further assessment and management.

Data analysis

The statistical package for social science (SPSS), 15th edition was used for analysis. Descriptive statistic such as mean and standard deviation were calculated. Chi-square was used for categorical variables analysis. Multiple logistic regression analysis was used to identify predictors of suicidility. Level of significance was set at $P < 0.05$.

Ethical considerations

Permission was obtained from the Ethical committees of the Federal Neuro-Psychiatric Hospital Barnawa, Kaduna and that of St. Gerard's Catholic Hospital Kaduna. Informed consent were also obtained from all HIV positive patients that participated in the study. Opportunity to decline participation at any stage of the study was given and confidentiality also assured.

RESULTS

Socio-demographic characteristics of the subjects

The socio-demographic characteristics of the subjects are shown in Table 1. Two hundred and fifty subjects participated in the study. All subjects were on outpatient treatment with 234 (93.6%) of them currently on antiretroviral medications while 16 (6.4%) were yet to be commenced on medications. The state of origin of the subjects spread across the 6 geo-political zones of Nigeria with one of the subject being a Ghanaian citizen. North-west zone had 138 subjects (55.2%), North-central had 58 subjects (23.2%), South-east had 22 subjects (8.8%), South west had 10 subjects (4%). Others were South-South with 13 subjects (5.2%) and North-east with 8 subjects constituting 3.2% of the participants. There were 96 male (38.4%) and 154 female (61.6%) who participated in the study.

One hundred and twenty-five subjects (50%) were married as compared with 85 (34%) who were single, 26 (10.4%) widow and widowers 8 (3.2%) separated from their spouses while 6 (2.4%) were divorced. The age range of the subjects was 18 to 64 years, with the mean of 35.58 (SD + 8.8). One hundred and seventy-two (68.8%) subjects were between the age of 18 to 39 years while 78 (31.2%) were between 40 to 64 years of age. One hundred and twenty-six (90%) subjects were Christians while 24 (9.6) were Muslims. One hundred and thirty-seven subjects (54.8%) had secondary education, 63 (25.5%) had tertiary education, and 49 (19.6%) had primary education while one had Islamic education. In terms of occupation, 126 (50.4%) of the participants were employed while 105 (42%) were unemployed.19 (7.6%) were students.

Clinical status of the participants

Table 2 shows the clinical characteristics of the subjects. On clinical examination of the patients, two hundred and seventeen (86.8%) of them were found to be physically health while 33 (13.2%) were found to be physically ill. Using the WHO (2003) classification of HIV/AIDS disease (World Health Organization, 2003), one hundred and seventy-nine (71.6%) were grouped into stage 1, 39 (15.6%) were grouped into stage 2, 22 (8.8%) were grouped into stage 3 while 10(4%) were grouped into stage 4 of HIV/AIDS clinical stages. The patients were also divided into four groups using CD4 cell counts. Nine (3.6%) of them had CD4 counts less than 100, 103 (41.2%) had CD4 between 100 and 299 and 80 (32%) had CD4 between 300 and 499, while 58 (23.2%) had CD4 cell count of 500 u/ml and above. Therefore 193 (77.2%) subjects had CD4 cell count below 500 u/ml while the remaining 58 (23.2%) of the subjects had counts of 500 u/ml and above.

On the duration of illness, 43 (17%) of the subjects had diagnosis of seropositivity of less than 1 year duration, 148 (59.2%) had the diagnosis 1 to 3 years ago, 51 (20.4%) subjects were diagnosed 3 to 5 years ago while 8 (3.2%) subjects were diagnosed more than 5 years ago. Fifty (20%) of the subjects started antiretroviral medication less than 1 year before the study, 146 (56.8%) subjects commenced their medication 1 to 3 years before the study. 40 (16%) started medication 3 to 5 years while only 2 (0.8%) started antiretroviral medication more than 5 years before the study. Sixteen (6.4%) had not started taking medication as at the time of the study.

Table 1. Socio-demographic of the respondents.

S/N	Sociodemographic variable	Frequency (n=250)	Percentage
	Sex		
1	Male	96	38.4
	Female	154	61.6
	Age		
2	18-39	172	68.8
	40-64	78	31.2
	Religion		
3	Islam	24	9.6
	Christianity	226	90.4
	Marital status		
4	Single	85	34
	Married	125	50
	Divorced	6	2.4
	Separated	8	3.2
	Widow	26	10.4
	Geopolitical zone		
5	Northwest	138	55.2
	North central	58	23.2
	Northeast	8	3.2
	Southeast	22	8.8
	South-south	13	5.2
	Southwest	10	4.0
	Ghana	1	0.4
	Education		
6	Islamic	1	0.4
	Primary	49	19.6
	Secondary	137	54.8
	Tertiary	63	25.2
	Employment		
7	Employed	162	50.4
	Unemployed	105	42
	Student	19	7.6
	Living with		
8	Alone	24	9.6
	Spouse	109	43.6
	Parents	47	18.6
	Children	46	18.4
	Relative	22	8.8
	Others	2	0.8

Psychosomatic characteristics

Table 3 shows the psychosomatic characteristics of the respondents. Sixty-seven (26.8%) of the participants had a score of 18 and above on the Beck depression inventory (BDI) used in screening for depression. These

Table 2. Clinical status of the respondents.

S/N	Clinical variables	Frequency (n=250)	Percentage
	State of health		
1	Asymptomatic(Physically healthy)	217	86.8
	Symptomatic(Physically ill)	33	13.2
	CD4 cell count		
	<100	9	3.6
2	100 – 299	103	41.2
	300 – 499	80	32.0
	>500	58	23.2
	Duration of HIV infection		
	<1yr	43	17.2
3	1-3yrs	148	59.2
	3-5yrs	51	20.4
	>5yrs	8	3.2

Table 3. Psychosomatic characteristics of the respondents.

S/N	Psychosomatic variables	frequency	Percentage
	Depression		
1	Depressed	65	26.0
	Non- depressed	185	74.0
	Severiity of depression		
2	Mild	28	43
	Moderate	24	37
	Severe	13	20
	Past psychiatric hiistory		
3	Yes	13	5.2
	No	237	94.8
	Previous suicide attempt		
4	Yes	12	4.8
	No	238	95.2
	Reaction to illness		
5	Good	170	68.0
	Fair	66	26.4
	Poor	14	5.6

67 subjects were further interviewed using the major depressive disorder module of MINI. Sixty-five (26%) of the subjects were diagnosed to have major depressive disorder. Twenty-eight (43%) had mild depressive disorder, 24 (37%) had moderate depressive disorder while 13 (20%) had severe depressive disorder.

Out of the 250 subjects that participated in the study, 13 (5.2%) had previous psychiatric history as compared with 237 (94.8%) with no history of psychiatric illness. Twelve (4.8%) of the subjects reported that they have attempted suicide during the course of their illness while 238 (95.2%) had no history of previous suicide attempt.

Table 4. Suicidal behavior and socio-demographic characteristics of the subjects.

S/N	Socio-demographic variables	Suicidality (%)		dF	X^2	P
		Non-suicidal	Suicidal			
	Age					
1	18-39	144(83.8)	28(16.2)	1	0.032	0.850
	40-64	66(84.6)	12(15.4)			
	Sex					
2	Male	83(86.5)	13(13.5)	1	0.701	0.400
	Female	127(82.5)	27(17.5)			
	Marital status					
	Married	109(87.2)	16(12.8)			
	Single	69(81.2)	16(18.8)			
3	Separated	5(62.5)	3(37.5)	4	5.930	0.200
	Widow/widower	23(88.5)	3(11.5)			
	Divorced	4(66.7)	2(33.3)			
	Religion					
4	Islam	18(75)	6(25)	1	1.600	0.200
	Christianity	192(85)	34(15)			
	Education					
	Islamic	1(100)				
5	Primary	46(93.9)	3(6.1)	3	6.981	0.073
	Secondary	108 (78.8)	29(21.2)			
	Tertiary	55(87.3)	8(12.7)			
	Occupation					
6	Unemployed	83(79)	22(21)	2	3.360	0.186
	Employed	110(87.3)	16(12.7)			
	Student	17(89.5)	2(10.5)			
	Living with					
	Alone	19(79.2)	5(20.8)			
	Spouse	92 (84.4)	17(15.6)			
7	Children	39(84.8)	7(15.2)	5	298.000	0.702
	Parents	39(83)	8(17)			
	Relatives	20(91)	2(9)			
	Others	1(50)	1(50)			

One hundred and seventy (68%) of the subjects revealed that reaction to their illness by friends, family, colleagues and other people were good, 66 (26.4%) said the reaction was fair while 14 (5.6%) believed the reaction to their illness was poor (Tables 4 to 6).

DISCUSSION

The age range of the subjects was 18 to 64 years, with mean of 35.58 years (sd = 8.8). Similar age distribution was found in a study conducted by iliyasu et al (2004) which also reported a mean age of 33.7 (sd = 8) among HIV positive patients.

Majority of the respondents were physically healthy while one tenth subjects were found to be physically ill at the time of the study. This is inconsistent with Olley et al. (2005) report which revealed that 75 (50.3%) subjects were asymptomatic while 74 (49.7%) subjects were symptomatic. Sale and Gadanya (2007) revealed that one third of his subjects were asymptomatic compared with two-third that were symptomatic at the time of his

Table 5. Suicide behaviour and clinical status of the patients.

S/N	Clinical variables	Suicidality (%)		dF	X^2	P
		Non-Suicidal	Suicidal			
	Physical					
1	Asymptomatic(Healthy)	187(86.2)	30(13.8)	1	5.787	0.016
	Symptomatic (Ill)	23(69.7)	10(30.3)			
	CD4 cell count (u/ml)					
2	<500	160(83.4)	32(16.6)	1	0.212	0.640
	500 & more(> 500)	49(86)	8(14)			
	Duration of HIV infection					
	<1yr	34(82.4)	9(17.6)			
3	1-3yrs	127(85.8)	21(14.2)	3	2.633	0.756
	3-5yrs	42(82.4)	9(17.6)			
	>5yrs	7(87.5)	1(12.5)			
	Duration of ARV treatment					
	<1yr	38(76%)	12(24%)			
4	1-3yrs	121(85.2%)	21(14.8%)	4	4.758	0.575
	3-5yrs	34(85%)	6(15%)			
	>5yrs	2(100%)	0			
	Yet to start Rx	15(93.8%)	1(6.2%)			

Table 6. Suicide behavior and psychosomatic characteristics of the respondents.

S/N	Psychological variables	Suicidality (%)		dF	X2	P
		Non-Suicidal	Suicidal			
	Depression					
1	Depressed	39(60)	26(40)	1	37.645	0.000
	Not depressed	171(92.4)	14(7.6)			
	Past psych. Hx					
2	Yes	8(37.5)	5(62.5)	1	1.000	0.023
	No	202(85.2)	35(14.8)			
	Past suicide attempt					
3	Yes	0	12(100)	1	66.170	0.000
	No	210 (88.3)	28(11.7)			
	Reaction of others to HIV infection					
4	Poor	5(35.8)	9(64.2)	2	26.500	0.000
	Fair	55(83.4)	11(16.6)			
	Good	150(88.2)	20(11.8)			

study. Wakawa (2009) also reported that 282 (93%) subjects were symptomatic as compared with 21 (7%) that were asymptomatic at the time of his study. Duration of illness and the time of carrying out the examination may have accounted for the difference. For example, Olley et al. (2005) carried out their study among recently diagnosed HIV positive subjects. Another possible reason for the differences was that 93% of the respondents in this study were on medication and this might have been responsible for the physically healthy condition of the

subjects. About 3/4 subjects had cell counts less than 500 u/ml while 1/4 subjects had CD4 cell count of 500 u/ml and above at the time of the study. The mean CD4 cell count in this study was 362 u/ml. Wakawa (2009) reported that 250 (83.2%) out of the 303 subjects studied had CD4 less than 399 u/ml while 51 (16.8%) had CD4 of 400 and above. Olley et al (2005) reported mean CD4 of 315.71 u/ml while Sale and Gadanya (2007) reported mean of 306 u/ml at the time of his study.CD4 cell counts being immunological status of the subject are said to correlate with the physical state of the patient. The possible explanation for the differences among the various studies quoted above may be accounted for by variation of the cell count at different stages of the illness. Improvement in clinical state of the subject secondary to different interventional measures such as antiretroviral therapy may have also accounted for the differences.

About 60% of the subjects had diagnosis of HIV seropositivity between 1 to 3 years, 17.2% subjects had diagnosis less than 1 year, one-fifth of the subjects had diagnosis 3 to 5 years while 3.2% had diagnosis 5 years and above. This is similar to Wakawa (2009) study that reported 70% of subjects used in his study to have had diagnosis between 1 to 3 years. One in five of the subjects commenced antiretroviral medication less than 1 year from the time of the study while majority (56.8%) commenced medication between 1 to 3 years. Only 2 subjects commenced medication 5 years and above while 16.4% were yet to commence antiretroviral medication. Commencement of antiretroviral medication depends on immunological and physical state of the patients. Hence subject variation between duration of illness and duration of drug medication may account for the difference noted above.

Psychosomatic variables

The prevalence of depressive disorder in this study was 26%.This finding is similar to that of Bolton et al. (2004) in south west Uganda who reported 21% prevalence of depressive disorder among HIV positive patients. This finding is also similar to the prevalence of 29.3% reported by Chikezie (2009). However it is different from that of Audu et al. (2008) and Sale and Gadanya (2007) which reported 36.2 and 34.8%, respectively. The retrospective nature and fewer patients used by Audu et al. (2008) may have accounted for the increased prevalence found in their study. Sale and Gadanya (2007) reported that two-third of the subjects were symptomatic as at the time of their study and it has also been reported (Wakawa, 2009) that onset and deterioration of physical health can predispose to the development of depressive disorder and suicide behaviour. Hence the increased prevalence of depressive disorder among HIV/AIDS patients reported by Sale and Gadanya (2007) may be explained on this basis. Olley (2005) also reported a much higher prevalence of 38.7% of depressive disorder in a study in South Africa. Environmental, cultural and social factors as negative psychosocial stressors may have contributed to the increased prevalence of depressive disorder reported among HIV positive patients in their study. One in 20 subjects reported to have had past history of psychiatric illness. Two of the subjects reported depressive illness, 1 reported psychosis and 10 could not classify their psychiatric illness. This finding is similar to Sale and Gadanya (2007) and Wakawa (2009) reports that revealed 9 (3.6%) and 18 (5.9%) subjects with previous psychiatric illness, respectively.

One hundred and seventy subjects (68%) reported that reaction to their illness by friends, family and relations were good, 66 (26.4%) felt the reaction was fair while one in twenty of the subjects revealed that reaction to their illness was poor. This is not consistent with Sale and Gadanya (2007) report that revealed no social support from 75 (30%) subjects. The difference may be attributed to different perception of the disease by different people. Reaction to illness by friends, relation and colleagues was found to be significantly associated with suicidality in this study. 9 (64.2%) suicidal subjects reported that reaction to their illness was poor, 11 (16.6%) reported reaction to their illness has been fair whereas 20 (11.8%) reported the reaction was good ($x^2 = 62.5$, $p = 0.000$, $df = 2$). Possible reason for this association may be explained on the basis of the negative reactions leading to stigmatization with consequent suicidal behaviour, whereas good reaction may increase social support that reduces tendency to suicidality.

Predictors of suicidality

The gender of the subjects was not found to be statistically significant in this study when comparing the rates of suicidality. This finding is consistent with Olley et al. (2005) and Kelly et al. (1998) whose reports also revealed no statistical difference among the two genders. There was also no statistical association found between the different age groups and suicidality. This is consistent with the report of Kelly et al. (1998). However, the finding was inconsistent with Olley et al. (2005) which reported significant association of younger age groups (mean of 25.84 years, SD = 5.85) with suicidality. The possible explanation for none significant association in this study may be the availability of medication and the knowledge that HIV positive patients can be managed and also give birth successfully without transferring the infection to their children. This can be achieved through a continuous care during and after pregnancy thereby reducing risk of mortality among the infants of the infected patients. Reaction to illness by friends, colleagues and relatives was however found to be statistically significant in this study ($x^2 = 26.5$, $p = 0.000$, $df = 2$). 64.2% of the subjects that reported reaction to their illness as being poor were

suicidal as compared with 20 (28.6%) that reported the reaction to their illness as being good. Negative reactions to illness by friends, colleagues and relations may impair adequate social support which may consequently predispose to emotional disorder and suicidal behaviour whereas good reaction may lead to social support that protect against suicidal behaviour. One in three subjects of those that were physically ill had suicidal behaviour as compared with 13.8% of subjects that were physically healthy. There was a significant association between physical state and suicidality. This finding is similar to the report of Kelly et al. (1998). However it contrasts with Olley et al. (2005) who reported no significant association between physical state and suicidality. The possible explanation for the association may be because, physically healthy HIV positive patients are likely to function optimally when compare with physically compromised HIV patients who may not. They are also likely to face less discrimination and stigmatization. There was no significant statistical difference between CD4 cell groupings and Suicidality (x^2 = 0.212, p = 0.64, df = 1). This finding is consistent with Olley et al. (2005) that also reported no significant association between CD4 and CD8 cell counts and suicidality. The possible explanation for the lack of significant association may be the varying level of cell counts at different stages of the illness. The stages of the illness, rather than the actual CD4 cell counts might be more important in determining suicide behaviour.

Duration of HIV illness and antiretroviral drug therapy were also not found to be significantly associated with suicidality in this study. The possible reason for this finding may be earlier psychological adjustment to the illness as well as the availability and free provision of antiretroviral medications. Depression was found to be significantly associated with suicidality in this study (x^2 = 37.645, p = 0.000, df = 1). The degree of depression was also found to be significantly associated with the rate of Suicidality (x^2 = 1.011 p = 0.000, df = 8).

These findings are consistent with many other studies of suicidality among HIV positive patients (Kelly et al., 1998; Olley, 2007). The explanation is that depression reduces quality of life of patients, which may subsequently lead to hopelessness and suicidal behavior. Depression has also been reported to be a strong risk factor in the etiology of suicide and deliberate self-harm (Lewis, 1934). Previous suicidal attempt was also found to be significantly associated with suicidality in this study (x^2 = 66.17, p = 0.000, df = 1). This finding is consistent with Kelly et al. (1998) who also reported significant association in their study. Previous suicidal attempt can predispose to another suicidal behaviuor as it is reported to be a risk factor for another episode of suicidal behavior (Gould et al., 1996). About one-third of subjects among those that with previous psychiatric history had suicidality as compared with 14.8% subjects without previous psychiatric history. The difference between these two groups was statistically significant (x^2 = 1, p= 0.023, df =1). This finding is consistent with the findings of Olley et al. (2005).

An explanation for this association may be the increased risk of suicidality reported for those with past psychiatric illness. The five factors that were significantly associated with suicidality namely depression, reaction to illness, physical state, previous suicidal attempt and past psychiatric illness were all entered into multiple logistic regression analysis. Only depression (p = 0.000; odd ratio = 11.242 and 95% CI = 4.147 to 30.478) and reaction to illness by friends, colleagues and relatives (p = 0.032; odd ration = 0.193 and 95% CI = 0.043 to 0.866) were found to be significant predictors of suicidality in this study.

Conclusion

The prevalence of suicidality in this study was 16%. Depressive disorder had a prevalence of 26%. Thirty-one (77.5%) Suicidal subjects had low to moderate risk while 9 (22.5%) had high suicidal risk. The subjects' state of origin spread across the 6 geo-political zones of Nigeria with one Ghania citizen. Five independent factors were found to be significantly associated with suicidality viz: depression, reaction to illness, physical state, past psychiatric illness and previous suicidal attempt. However, only depression and reaction to illness by friends, relatives and colleagues were found to be significant predictors of suicidality among these subjects. Also, the more severe the depressive disorder, the higher the risk of suicide behaviour in this study. All the subjects found to have depressive disorder and suicidality were referred to the nearest psychiatric facility for further review and management.

Conflict of Interests

The authors have not declared any conflict of interests.

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