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PREVALENCE OF HIV/AIDS AND PSYCHIATRIC DISORDERS AND THEIR RELATED RISK FACTORS AMONG ADULTS IN EPWORTH, ZIMBAMBWE

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ABSTRACT

Objectives: To examine the prevalence of HIV infection, neuropsychiatric disorders, psychiatric symptoms/signs, alcohol use/misuse, CD4 cell counts and risk factors in adult patients.

Design: Cross-sectional study.

Setting: Epworth, which is about 15km on the southeastern part of Harare, Zimbabwe.

Subjects: Two hundred subjects were included in the study out of which six were excluded beacause of HIV-1 indeterminate results.

Materials and Methods: A convenience sample of 200 subjects recruited in a cross-sectional study in Epworth, Zimbabwe. Six subjects had indeterminate HIV-I antibody results and were excluded from the study. The remaining 194 subjects of whom 101 (52.1%) knew about their sero-status and were consecutively recruited, whereas, 93 (47.9%) did not know about their sero-status and were recruited by a systematic random sampling method (1-in-3). They were then interviewed about neuropsychiatric disorders using BPRS, MADRS, AUDIT and MINI Mental State Test, including the risk factors related to HIV infection. After ELISA tests' results, the two groups were combined and then categorised into HIV positive (n=115) and HlV negative (n=79) subjects.

Main outcome measures: Prevalence, neuropsychiatric disorders, increased CD4 cell counts and risk factors associated with HIV infection.

Results: The findings were that the overall point prevalence of the HIV infection was 59.3% (115/194). Comparative analyses between seropositive and seronegative HIV/AIDS subjects showed: over two thirds (71.3%) of the HIV positive subjects suffered from psychiatric disorders, more than those with HIV negative 44.3% (OR= 3.12, 95% Cl= 1.64-5.95, P=0.0002), and subjects aged 35 years and less were mostly HIV seronegatives (n= 77.2%, OR= 2.34, 95% CI= 1.18-4.75, P=0.014). The overall prevalence of alcohol use/misuse was 41(21.1%), with higher prevalence rate among HIV positive subjects, 28 (24.3%) than those who were HIV negative, 13 (16.5%). The commonest psychiatric symptoms/signs (P<0.05) were emotional withdrawal, depressed mood, suspiciousness, apparent sadness, reduced sleep and suicidal thoughts (specially among women).

Conclusion: There is very high point prevalence of HIV/AIDS and psychiatric disorders, including a moderate prevalence rate of alcohol use/misuse in this less affluent community that warranted intervention.

INTRODUCTION

In Zimbabwe there are very scanty studies done in the community pertaining to HIV/AIDS prevalence, neuropsychiatric disorders, substance use/misuse and risk factors. Studies that have been done in Zimbabwean rural areas seemed to indicate a wide range prevalence of HIV infection ranging from 22%-26.3%(l,2). While presence of various STDs has been associated with higher prevalence rates of HIV-I infection in many studies (3,4), however, establishing how much the STD is a risk for transmission is difficult. It is of no doubt that the higher prevalence of STDs in developing countries helps in transmission of HIV(4,5). Besides, women with multiple sexual partners are highly associated with HIV infection (6). The proportion of cases attributed to heterosexual transmission has increased from 3% to 10% (7).

HIV/AIDS individuals are prone to a wide range of psychiatric disorders. Depression and psychosis among HIV infected patients are frequently being recognised by clinicians (8,9). The rates of major depression range from 4% to 21% (10,11) compared with the total population lifetime rate of major depression, which is 3% (12). Mania may occur in up to 9% of patients over the course of their HIV illness

and psychosis often emerges during later stages of AIDS(13). Anxiety disorders appear to occur with the same frequency as in the general population (14). Cognitive deficits among AIDS patients have long been described (15), but subsequent studies did not provide evidence of cognitive impairment (16,l7). Alcoholics may be at a higher risk for infection by HIV-I, because of their higher lifetime prevalence of practicing risky behaviour such as an intravenous drug use (18,19). In addition to strong association between alcohol use and unsafe sexual practice among psychoactive substance users (20). The majority of drug users who are HIV infected may suffer from other psychiatric disorders (21,22). It is suggested that the severity of psychiatric symptoms after HIV testing may be greater in drug users than non-drug users (23), consequently, drug use/misuse is a more important cause of psychopathology than the virus itself (24).

At present most psychiatric disorders, and all the so-called functional disorders, are classified largely on the basis of their clinical symptoms, or, to be precise, a combination of the symptoms the patient complains of and the behavioural abnormalities evident on the history and mental state examination. A recent study by Sebit *et al.* (10) among HIV/AIDS depressed patients found the most significant symptoms/signs were lassitude, pessimistic thoughts and suicidal thoughts. Psychiatric symptomatology among HIV/AIDS persons has been studied in Zimbabwe (10), but not among the HIV/AIDS seronegative individuals. Absolute CD4 Iymphocyte counts are still being used in monitoring the severity of immunologic damage in HIV infected persons (l0,25). The main research questions were two: (a) to what extent is the point prevalence of HIV infection in this less affluent Epworth community? and (b) are there any differences/associations between those subjects with and without HIV/AIDS infections with respect to neuropsychiatric disorders, alcohol use/misuse, psychiatric symptoms/signs, CD4 cell count, risk factors and socio-demographic variables?

MATERIALS AND METHODS

The study was conducted in Epworth, which is about 15 Km on the Southeastern of Harare, Zimbabwe. According to the 1992 census by Central Statistics Office (CSO) (26), the Epworth health indicators seemed to suggest that the growth rate was estimated at 10% and a birth rate at 4.1%. About 50% of the people were formally employed, but mostly unskilled labourers. The common health hazards prevailing in this area were over crowdness, poor sanitation and other unhealthy behaviours (26).

Participants: The study's design was a cross-sectional study, using a convenient sampling size of 200 subjects. Six out of 200 subjects were excluded from the analysis, because of the HIV-I indeterminate results. For a practical reason, since the primary aim of this study was to determine the point prevalence of HIV/AIDS in this less affluent community, it was therefore justifiable to use two sample populations and two sampling methods for subjects' recruitment. Participation

was voluntary. The first sample population comprised of 101 (52.1%) subjects who claimed to know about their serostatus of being HIV/AIDS seropositive and was consecutively recruited. In this group, those who had mental illness, prior neurological disease, head trauma, being a pregnant woman or seriously sick were excluded from the study. The second sample population comprised of 93 (47.9%) subjects who did not know about their HIV serostatus and were recruited by a systematic random sampling (1-in-3 houses) of a population of houses. Any eligible subject in that house was recruited for the study. In this second group, eligible subjects were those who had no history of TB, hypertension, diabetes mellitus and mental illness. Both groups were recruited from the same areas of the Epworth and subjects aged 18-55 years were included in the study. Below the age of eighteen years, subjects were excluded from the study, because of the consent and above the fifty-five years to avoid including subjects with possible degenerative diseases. Both male and female subjects were included. Since the secondary aim of this study was to determine the prevalence of neuropsychiatric disorders, alcohol use/misuse, psychiatric symptoms/signs and risk factors in relation to the serostatus of the subjects, the two groups were combined and re-categorised after the ELIZA results for HIV-I antibody into HlV positive (n=115) and HlV negative (n=79) subjects.

Assessment instruments: Socio-demographic characteristics and the use of antiretroviral drugs or any other drugs were obtained from the subjects. A particular attention was paid to collecting data on number of sex partners in the last five years, STD, homosexual or lesbianism preference. The module used for psychiatric assessment included the sections for psychotic, affective, and anxiety disorders of a modified version of the Composite International Diagnostic Interview (CIDI) (27), which incorporates algorithms for the psychiatric diagnosis according to the DSM-IV (28). CIDI comprised of two modules. The first module was the Brief Psychiatric Rating Scale (29,30) (BPRS), which had an 18-item dimension rating scale filled out on a patient based on a semi-structured interview. Each dimension represents a domain of psychiatric symptomatology and is rated on a seven-point Likert Scale from "not present = 0", "very mild= 1", "Mild = 2", "Moderate = 3", "Moderately severe= 4" to "extremely severe= 6" and "uncertained or not applicable=9". It provides a quantitative score that reflects global pathology and incorporates algorithms for the psychiatric diagnosis according to the DSM-IV (28). The second module was the Montgomery-Asberg Depression Rating Scale (MADRS) (31) used to assess depressive symptoms in HIV/AIDS subjects. It is a 10-item questionnaire that measures the frequency of depressive symptoms at a six-point scale. Responses for each item range from none of the time or not present (scored as 0) to most or all of the time (scored as 6) or not applicable or uncertain (scored 9). Summing across the 10-items of the MADRS that give score of at least 20 on the MADRS means presence of prominent depressive symptoms. Mini Mental State Test (32) is a quick test used to get a rough index of cognitive impairment. It assessed orientation, registration, attention/concentration, recall, language, and construction. lt takes five minutes to administer. It consists of thirty points' scores, a score of less than 25 suggests impairment, but a score of less than 20 usually suggests definite impairment. Karnofsky Performance Scale (KPS) (33) is a summary of clinical status of a patient based on a physical functional index ranging from zero to 100. A score of zero means death and 100 suggests normality. Cases were considered positive

by the Centre for Disease Control and Prevention (34) case definitions for ATDS if an indicator disease was present after thorough clinical interviews and physical examinations using a questionnaire.

Subjects were interviewed using the Alcohol Use Disorders Identification Test (AUDIT) (35,36), instrument. The AUDIT was devised by World Health Organisation (WHO) as a brief screening method suitable for identification of currently active hazardous and harmful drinkers in general medical settings in both developing and developed countries. The 10 item AUDIT questionnaire measured alcohol consumption, dependence symptoms, personal and social harm reflective of drinking. Cut off scores for identifying cases with evidence of alcohol-related problems were scores of < 16 points for hazardous drinkers and 16 points for hazardous drinkers and 16 for harmuful drinkers in the AUDIT instrument. A modified questionnaire developed by Duke *et al.* (37) was used to assess about life time and current (last 12 months) use of cannabis, amphetamine, cocaine, crack, opiates, LSD, ecstasy, barbiturates, benzodiazepine solvent, including *mudzepete* and tobacco. *Mudzepete* is a psychostimulant substance used in Zimbabwe by snuffing. AUDIT rated the frequency of use as every day, 1-3 times a week, less than once a week but more than once a month, less than once a month, and never.

Procedure: The Medical Research Council of Zimbabwe approved the study protocol (MRCZ). After written informed consent was obtained, eligible subjects were enrolled for the study. Six Village Community Workers (VCWs) helped in mobilising subjects from the community. Each VCW was assigned to mobilise and assemble subjects in one house for clinical interviews and physical examinations, including weighing, measuring the blood pressure and taking of whole blood specimens. Each subject received pre-test counseling before the whole blood was obtained for diagnostic laboratory tests. Those who wanted their HIV tests' results were provided with post-test counseling. The language used in the study was *Shona*. A professional translator translated the questionnaires into *Shona* language. The research team consisted of General Practitioners and specialists and was trained using a WHO Training Manual (38) in a series of a live examination of HIV-I seropositive subjects in the community before running the main study. There was a spot check for conformity to protocol throughout the study period. Patients were assigned on the bases of clinical evaluation and investigation to one of three groups of the CDC (34) criteria for AIDS staging.

Laboratory investigations: The blood samples were collected in EDTA vacutainer tubes that contained tri-potassium ethylene diamine tetra-acetate (K3EDTA) anticoagulant. The Genelavia mix assessed the HIV- I and II serostatus (Sanofi Diagnostics Pasteur, France), and Recombigen (Cambridge Diagnostics, Galway, Ireland) HIV-I and II enzyme immunoassay Kits. CD4 and CD8 positive Iymphocytes were visualised and enumerated according to the method of Lisse *et al* (39), as modified in WHO manual (40). The absolute CD4 (CD) count was determined as WBC X lymphocyte % X CD4 (CD8)/200. The Iymphocyte percentage and WBC values were derived from Coulter counts.

Statistical analysis: Two levels of statistical analyses were carried out using SPSS/PC + software (SPSS Inc., Chicago, Illinois, USA). The first level of analysis was to get the overall prevalence of HIV infection; whereas, the second level of analysis were the comparisons between those who were HIV positive and HIV negative. Non-parametric tests were used for group comparisons (HIV-I seropositive versus HIV-I seronegative subjects) using the X^2 test, with Yates corrected P-value. When expected values were five or below Fisher's exact 2-tailed values of P-value and analysis exact confidence intervals were calculated. Psychiatric diagnoses were made according to the DSM-IV, with the total scores on the individual items of the BPRS/ MADRS. Summary statistics of change in CD4 counts using Wilcoxon test was done. ANOVA test was used for KPS and weight to compare between serostatus groups (HIV positive versus HIV positive) as a dependent variable. Ninenty five percent confidence intervals for the differences between means, F statistics and significance were set at a 5%.

RESULTS

The overall prevalence of HIV infection was 59.3% (115/194). However, the HIV/AIDS prevalence was higher among subjects who claimed to be HIV seropositive, 80.2% (81/101) than among those who did not know about their serostatus, 36.6% (34/93). Figure l, shows that those subjects who knew about their serostatus were 7.03 times more likely to be HIV seronegative than those who were HIV-I seropositive (OR=7.03, 95% CI=3.52-14.18; P<0.0001). Comparisons between HIV positive and HIV negative subjects after re-categorisation of the subjects showed that the HIV positive subjects' CDC (38) diagnoses as follows: asymptomatic, 54 (47.0%), PGL, 33 (28.7%), and AIDS, 28 (24.3%) cases (Figure 2). The mean ± s.d. weight being higher for HIV seronegative subjects, 59.8 ± 8.3 than HIV seropositive subjects, 55.3 ± 10.9 (F-statistic 7.9, P= 0.006). The mean ± s.d. KPS's scores being higher for HIV seronegative subjects, 104.5 ± 80.2 than for HIV seropositive subjects, 87.2 ± 11.6, (F-statistic 5.2, P= 0.024). This means that the HIV seronegative subjects had better weights and healthier than those with HIV/AIDS. ANOVA showed the HIV seropositive subjects were older, mean ± s.d. (33.3 ± 8.5) than those who were HIV seronegatives (28.7 ± 9.95), P=0.001. It can be seen in Table 1 that subjects aged 35 years and less were 2.34 times more likely to be HIV seronegative than those aged 36 years and above (n= 77.2%, OR= 2.34, 95% CI= 1.184.75, P= 0.014), otherwise no significant differences were found between HIV positive versus HIV negative with regard to gender, educational attainment and occupation. However, the majority of the subjects (62.0%) were married/cohabited (P<0.0001) and were mostly HIV seronegative.

It can be seen in Table 2 that over two thirds (71.3%) of the subjects who tested HIV seropositive suffered from mental illness (OR=3.12, 95% CI= 1.645.95, (P= 0.0002) according to the BPRS. However, 68.4% of the subjects who were HIV-I seronegative had no depression (OR= 2.91, 95% CI= 1.53-5.57, P=0.001) according to MADRS. DSM-IV psychiatric diagnoses as follows (i.e., HIV-seropositive versus HIV seronegative subjects): schizophrenia (18 versus 8),

depression (27 versus 8), mania (1 versus 3), generalised anxiety disorders (19 versus 10), and other psychiatric diagnoses (17 versus 6). Most of the subjects whether they were HIV seropositive or seronegative scored more than 25 points of having no cognitive impairments (P= 0.017) in Mini Mental State Tests. Only five (6.3%) subjects scored less than 20 points for a definitive cognitive impairment and were HIV seronegative. Table 3 shows significant differences were found related to risk factors: most of the HIV seronegative subjects (62%) had a single partner (P=0.017) and 81% of them had no history of STD (P<0.0001). When we controlled for HIV serostatus and matched sex by number of partners, marital status or STD. The likelihood ratios were significant among HIV seronegative females who had single partners (P=0.012) and were married/ cohabited (P<0.0001). However, the likelihood ratio was significant (P=0.020) for HIV seropositive females who had two or more episodes of STD. No significant differences were found regarding sexual desire and blood transfusion (Table 3). None of the subjects were on anti-retroviral drugs. Table 4 shows CD4 and CD8 cell count: a significant difference was found between HIV seropositive and seronegative subjects as for CD4 cells count. As expected the Wilcoxon analysis showed a very high mean rank (82.4) for HIV-I seronegative subjects (significance, 2-tailed P<0.0001) than seropositive subjects (51.0).

Figure 1

Comparison between group 1 and group 2
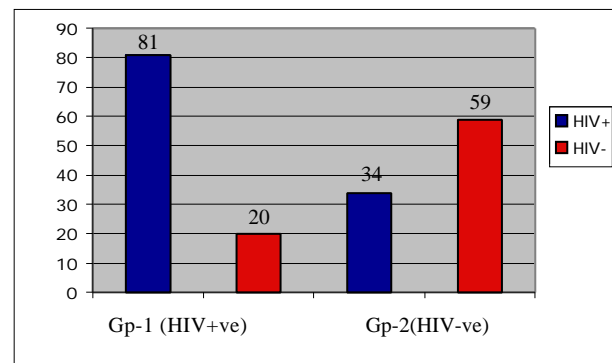
Figure 2

CDC diagnoses of the HIV seropositive
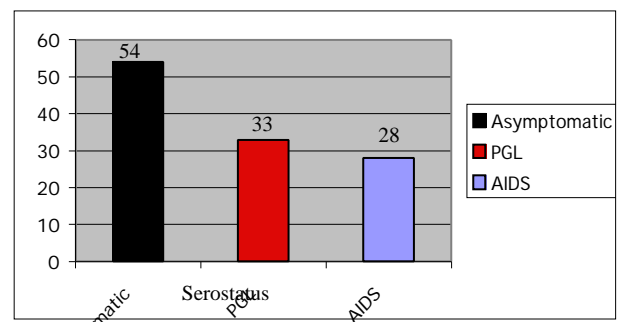
Table 1

Socio-demographic characteristics of HIV/AIDS subjects

Variable	HIV negative (n=79) No. (%)	HIV positive (n=115) No. (%)	OR	95% CI	P-value
Age					
35	61 (77.2)	68 (59.1)	2.34	1.18-4.75	0.014*
36+	18 (22.8)	47 (40.9)			
Sex					
Male	22 (27.8)	25 (21.7)	1.39	0.68-2.84	0.421
Female	57 (72.2)	90 (78.3)			
Marital status					
Single	18 (22.8)	5 (4.3)			<0.0001*
Married/coh.	49 (62.0)	62 (53.9)			
Others	12 (15.2)	48 (41.7)			
Education					
Nil	4 (5.1)	8 (7.0)			0.754
Primary	37 (46.8)	57 (49.6)			
Higher/Un./Col	38 (48.1)	50 (43.4)			
Occupation					
Nil	45 (57.0)	52 (45.2)	1.60	0.87-2.98	0.144
Employed	34 (43.0)	63 (54.8)			

Coh= cohabited; Un/Col= University/ College; *P= significance

Table 2

Distribution of neuropsychiatric disorders in HIV/AIDS subjects

Variable	HIV negative(n=79) No. (%)	HIV positive(n=115) No. (%)	OR	95% Cl	P-value
BPRS					
No	44(55.7)	33(28.7)	3.12	1.64-5.95	0.0002*
Yes	35(44.3)	82(71.3)			
MADRS					
No	54(68.4)	49(42.6)	2.91	1.53-5.57	0.001**
Yes	25(31.6)	66(57.4)			
MINI M. S.					
<20 scores	5 (6.3)	0			0.017#
<25 scores	2 (2.5)	6(5.2)			
25 + scores	72(91.1)	109(94.8)			

*P & #P= significance

Table 3

Risk factors in HIV/AIDS infection

Variable	HIV negative (n=79) No. (%)	HIV positive (n=115) No. (%)	X^2	Df	P-value
Number of sexual Partners					
Nil	11(13.9)	7(6.1)	8.2	2	0.017*
One	49(62.0)	60(52.2)			
2 +	19(24.1)	48(41.7)			
STD					
Nil	64(81.0)	55(47.8)	22.5	2	<0.0001**
Once	10(12.7)	31(27.0)			
2 +	5(6.3)	29(25.2)			
Sexual desire					
None	72(91.1)	113(98.2)			
Homosexual	0	1(0.9)			
Lesbian	7(8.9)	1(0.9)			
Blood transfusion					
No	72(91.1)	103(89.6)			0.907
Yes	7(8.9)	12(10.4)			

*P= significance

Table 4

Distribution of CD4 and CD8 in relation to HIV/AIDS

Variable	N	Mean Rank	Wilcoxon	Z	Asymp sig (2-tailed)
CD4 cells count					
HIV negative	55	85.4	3725.0	-4.7	<0.0001*
HIV positive	75	51.0			
CD8 cells count					
HIV negative	24	35.8	859.0	-0.60	0.547
HIV positive	51	39.0			

* P= significance

Table 5

Socio-demographic characteristics of the alcoholics

Variable	HIV positive		HIV negative		OR	95% CI	P-value
	Non-Users (n=87) No. (%)	Users (n=28) No. (%)	Non-Users (n=66) No. (%)	Users (n=13) No. (%)			
Age (years)							
16-25	18(20.7)	6(21.4)	29(44.0)	8(61.5)	1.21	0.29-4.7	0.996
26-35	35(49.2)	9(32.2)	22(33.3)	2(15.4)	2.82	0.5-28.9	0.305
36+	3(39.1)	13(46.4)	15(22.7)	3(23.1)	1.91	0.4-11.8	0.523
Gender							
Male	13(14.9)	12(42.9)	15(22.7)	7(53.8)	1.98	0.52-78	0.406
Female	74(85.1)	16(57.1)	51(77.3)	6(46.2)	1.84	0.63-6.1	0.335
Marital Status							
Single	2(2.3)	3(10.7)	12(18.2)	6(46.2)	3.00	0.2-43.1	0.343
Married/Coh.	50(57.5)	12(42.9)	44(66.7)	5(38.5)	2.11	0.63-8.2	0.287
Others*	35(40.2)	13(46.4)	10(15.1)	2(15.3)	1.86	0.3-19.5	0.712
Education							
Nil	10(11.5)	5(17.8)	6(9.1)	0			0.262
1-7 years	45(51.7)	12(42.9)	31(47.0)	6(46.2)	1.38	0.42-4.9	0.754
8+	32(36.8)	11(39.3)	29(43.9)	7(53.8)	1.42	0.43-4.9	0.705
Occup.							
Nil	17(19.5)	9(32.2)	18(27.3)	5(38.2)	1.91	0.45-8.7	0.497
Employed	37(42.5)	16(57.1)	17(25.8)	4(30.8)	1.84	0.48-8.6	0.495
Others**	33(38.0)	3(10.7)	31(46.9)	4(30.8)	0.70	0.10-4.5	0.710

Coh.= cohabited; Occup.= occupation; Others* = divorced/widowed/separated, Others** = house wife, self-employed, students

Table 6

Audit score and other substance use/misuse versus serostatus

Score	HIV positive (n=115) No. (%)	HIV positive (n=79) No. (%)	X^2	df	P-value
Alcohol					
Nil	87(75.7)	66(83.5)	1.76	2	0.415
Scores <16	19(16.5)	9(11.4)			0.253
Scores 16+	9(7.8)	4(5.1)			
Other substances					
Cannabis	4(3.5)	1(1.3)			
Tobacco	23(20)	5(6.3)			
Mudzepete	3(2.6)	1(1.3)			

Table 7

Comparison of depression, risk factors, HIV positive status and alcoholism

Variable	HIV positive		HIV negative		OR	95%CI	P-value
	Non-users (n=87) No.(%)	Users(n=28) No.(%)	Non-Users(n=66) No.(%)	Users(n=13) No.(%)			
Number of sexual partners							
Nil	7(8.0)	0	10(15.2)	1(7.7)	Und	Und	1.000
One	50(57.5)	10(35.7)	44(66.7)	5(38.5)	0.57	0.14-2.0	0.487
2 +	30(34.5)	18(64.3)	12(18.1)	7(53.8)	0.97	0.27-3.3	0.818
STD							
Nil	43(49.4)	12(42.9)	54(81.8)	10(76.9)	0.66	0.23-1.9	0.528
Once	22(25.3)	9(32.1)	8(12.1)	2(15.4)	0.16	0.05-4.1	0.700
2 +	22(25.3)	7(25.0)	4(6.1)	1(7.7)	0.79	0.01-9.9	1.000
MADRS							
Depression	53(60.9)	13(46.4)	19(28.8)	6(46.2)	1.29	0.35-4.3	0.871
Nil	34(39.l)	15(53.6)	47(71.2)	7(53.8)	0.34	0.11-1.0	0.052

Table 8

Socio-demographic characteristics of HIV/AIDS subjects

Variable	HIV positive (n=79) No. (%)	HIV negative (n=115) No. (%)	OR	95%CI	P-value
Age (years)					
35	61 (77.2)	68 (59.1)	2.34	1.18-4.75	0.014*
36+	18 (22.8)	47 (40.9)			
Sex					
Male	22 (27.8)	25 (21.7)	1.39	0.68-2.84	0.421
Female	57 (72.2)	90 (78.3)			
Marital status					
Single	18 (22.8)	5 (4.3)			<0.0001*
Married/coh.	49 (62.0)	62 (53.9)			
Others	12 (15.2)	48 (41.7)			
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Occupation					
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Employed	34 (43.0)	63 (54.8)			

Coh.= cohabited, Un./Col. = University/College, * P= significance

Table 9

*Significant findings according to the Brief Psychiatric Rating Scale (BPRS) for
the assessment of psychiatric symptoms*

Symptom	HIV positive Mean rank	HIV negative Mean rank	MWU	Z	Significance 2-tailed
Somatic concern	111.1	77.7	2977	-4.2	0.000
Anxiety	107.9	82.4	3346	-3.2	0.001
Emotional withdrawal	112.5	75.7	2816.5	-4.8	0.000
Coceptual disorganization	108.6	81.3	3264.5	-3.7	0.000
Tension	106.1	84.9	3550.5	-2.7	0.007
Depressed Mood	107.9	82.3	3341.5	-3.2	0.001
Hostility	105.2	86.4	3663	-2.4	0.017
Suspiciousness	107.1	83.5	3437	-3.4	0.001
Hallucinatory behaviour	102.4	90.3	3976.5	-1.96	0.050
Motor retardation	90.7	107.33	3765.5	-2.6	0.009
Unusual Thought content	104.4	87.5	3755	-2.8	0.006

MWU= Mann-Whitney U Test

Table 10

HIV prevalence and depressive symptoms/signs by gender

Variable	Likehood ration value	d.f	P-value
Apparent sadness			
Male	10.2	4	0.037*
Female	21.3	6	0.002
Reported sadness			
Male	19.9	3	<0.0001*
Female	10.3	6	0.112
Inner tension			
Male	12.4	5	0.030*
Female	6.15	5	0.292
Inability to feel			
Male	6.7	2	0.013*
Female	6.8	4	0.144
Apparent sadness			
Male	6.3	2	0.843
Female	12.0	4	0.017*

* P= significance

Alcohol use/misuse: The overall point prevalence of alcohol use/misuse among subjects was 21.1%(n=41; 95% CL = 15.4-26.8). Table 5 shows that there were no significant differences found between alcohol users versus non-users and socio-demographic factors with regard to the HIV/AIDS prevalence. However, further analyses were done among HIV/AIDS subjects only with regard to alcohol users versus non-users: females were 0.23 times more likely to be non-users of alcohol (n=74, OR=0.23, 95% CI=0.08-0.68, P=0.004), likewise, HIV/AIDS subjects were mostly employed and users/ misusers of alcohol (n=16, X^2= 7.40, df= 2, P= 0.024). AUDIT scores in Table 6 show there was no significant difference between those with and without HIV infection, when comparisons were made between users and non-users of (P=0.415) or even between hazardous and harmful drinkers (P=0.253). But there was a slightly high prevalence rate of alcohol use/misuse among the HIV positive subjects, 24.3% (28/l15) than those who were HIV negative, and 16.5% (13/79). Other substance of use, tobacco was the most used substance, 20%. Table 7 shows no significant differences were found between HIV serostatus and alcohol status of the subjects with regard to number of sexual partners, a history of STD or depression. However, a significant number of subjects (71.2%) had no depression and were non-users of alcohol (P= 0.052). On a further analysis made among HIV seropositive subjects versus their alcohol status (users versus non-users) a significant difference was found between those who had one versus two partners (OR= 3.00, 95% CI= 1.13-8.28, P= 0.025) with 64.3% of those who had two or more partners used/misused alcohol.

Psychiatric symptoms/signs: A non-parametric analysis was used, Mann-Whitney U test, to compare between subjects serostatus and individual psychiatric symptoms/signs (Table 8 and 9). Only eleven out of the 19 BPRS's symptoms/signs showed significant (P<0.05) mean rank differences in terms of the HIV-I seroprevalence: Somatic concern, anxiety, emotional withdrawal, conceptual disorganisation, tension, depressed mood, hostility, suspiciousness, hallucinatory behaviour, motor retardation, unusual thought content. Similarly, six out of the ten MDARS's symptoms/signs showed significant (P <0.05) mean rank differences between individual depressive symptoms/signs and the HIV-I seroprevalence: apparent sadness, reported sadness, reduced sleep, inability to feel and suicidal thoughts. It can be seen in Tables 8 and 9 that HIV-I seropositive subjects had worst psychiatric symptoms/ signs than HIV-I seronegative subjects. Comparison was made between HIV/AlDS serostatus and gender in relation to depressive symptoms/signs. Table 10 shows associations between psychiatric symptoms/signs and gender. The Likelihood Ratios showed significant associations were found in reported symptoms of apparent sadness for both male (P=0.037) and female (P=0.002). However, male subjects were consistently

reported symptoms of reported sadness (P<0.0001), inner tension (P=0.030), and inability to feel (P=0.013). Interestingly enough, female subjects reported symptoms of suicidal thoughts (P=0.017) more than male counter parts (P=0.843).

DISCUSSION

In spite of the major efforts by the government and NGOs to prevent the spread of HIV disease, changing human behaviour is a very complex issue worldwide. It is therefore of no surprise that the HIV/ AIDS prevalence rate was very high in this less affuent community. It is even much higher than that found in rural areas in Zimbabwe (1,2). Well, the fact that the community is less affluent in itself is self-explanatory. Again, this high prevalence might be attributed partially to a suggestion (41), that the most important determinant of the spread of HIV is the proportion of men engaging in sexual relations with people other than their spouses, including contact with sex workers and short-term partners. In this study, being female subjects, having single sexual partners and married/cohabited were most likely to be HIV seronegative, this is not in agreement with a study done elsewhere (42). This seems to suggest that marriage could be a protective factor against spread of HIV infection. However, having STDs is significantly associated with HIV infection in a number of reported studies (3), but not in the current study. The prevalence of depression was higher among HIV seropositive subjects (57.4%) according to MADRS and as well as 71.3% of them suffered from psychiatric disorders according to BPRS. These are in agreement with previous studies (8-l0). In spite of the fact that many authors used different instruments to investigate psychiatric disorders among HIV/AIDS subjects, still the findings are comparable. On one hand, it is difficult to implicate HIV/AIDS as the only causative factor in the high prevalence of psychiatric disorders in this less affluent community. On the other hand, this high prevalence of psychiatric disorders might be explained by the fact that having HIV/AIDS is scaring, since there is no cure at hand. Other factors though not a focus of the current study, may be playing part such as social isolation, stigma, worrying about the financial support to the family versus treatment of HIV infection can increase vulnerability to psychological stresses. In addition, it is worth noting that in African settings people cannot tolerate the unwarranted restricted sexual activities because of HIV/AIDS this may contribute to more psychological stresses (43). CD4 cells count rank was higher in HIV negative than HIV positive subjects (P<0.0001). This can be explained by the fact that during the asymptomatic phase of the infection, virus replication and clearance appear to be dynamic processes in which high rates of virus production and infection of CD+ cells are balanced by equally high rates of virus clearance (44). Besides, 24.3% of our subjects were

AIDS cases. Although, cognitive impairment was not found among these subjects, as well as reported elsewhere (l6,l7), this does not mean that cognitive impairments do not occur in HIV/AIDS subjects. The major finding of this study is that there was a moderate prevalence of alcoholic use/misuse among HIV/AlDS subjects (24.3%), which is lower than the one found in a similar study among urban cammunity in Harare, 30.5% (45). This discrepancy can be explained by the fact that this is a less affluent and poor community that might turn to religion rather than alcohol use/misuse for their self-healings. The second explanation is that the sample population is mainly women, and this study proved that a significant number of women (85.1%) were HIV seronegative and non-users of alcohol. Besides, most of those who are employed earn wages that are below the poverty datum line (26).

The socioeconomic, political and demographic characteristics of the Epworth community, which unequivocally might have a strong bearing on this moderate relationship between alcohol use misuse and HIV infection. A significant number (64.3%) of those who were having HIV/AIDS and had two or more sexual partners used/misused alcohol. This study is in agreement with many studies that found a strong association between alcohol use and unsafe sexual practice among psychoactive substance users (20,46). This can be explained by the fact that common health hazards prevailing in this area were over crowdedness, poor sanitation and this can encourage other unhealthy behaviours (26). In addition, this may lead to frustration, stress and consequently to self -medication with alcohol.

Depressive symptoms/signs such as apparent sadness, reported sadness, reduced sleep and inability to feel are not in agreement with reported symptoms/signs in a previous study conducted in Zimbabwe (10). However, the two studies agree on reported symptoms/signs lassitude and suicidal thoughts. It is hard to give a concrete explanation to the high level of psychiatric symptoms/signs in this community. First there is element of poverty, malnutrition and high unemployment rate that may contribute indirectly and enormously to psychological distress. Secondly, persistent traditional means of treating ailment in the face of increasing modern medicine may delay patients benefiting from modern medicine and avert psychiatric symptomatology, as previously reported in Zimbabwe (46). This may lead to the disease becoming chronic and subsequently may lead to an over presentation of clinical symptomatology. The current study concords with the notion (47) that a positive HIV serostatus is associated at most with a modest elevation in suicidal risk. This may be explained by the fact that having HIV/AIDS is scaring, since there is no cure at hand, in addition to social isolation and stigma. It is interesting that a significant number of female subjects reported symptom of suicidal thoughts (P=0.017) more than male counter parts (P=0.843). This is expected as males during stress may

resort to alcohol use for self-medication as opposed to female subjects.

The clinical implication of the current study is that in any clinical setting HIV infection should be considered as a vital hidden differential diagnosis for organic mental disoders. Prevention and control policies such as early detection and a broad range of biopsychosocial interventions are needed for this community. It is important to note that psychiatric syndromes seen in HIVinfected patients are of multiple and mixed aetiologies e.g., substance-induced and require aggressive screening, diagnosis and treatment. The high prevalence of psychiatric symptoms/signs among this less affluent community indicate a need for rapid interventions. This is because many of these subjects are sexually active, breadwinners of their families and it is crucial to promote safer sexual and health seeking behaviour through public education.

The shortcomings of the current study are many:(a) the findings cannot be generalised to other communities in the country, (b) the using of the two sample populations and two sampling methods for the recruitment, but this has been necessitated by the primary aim of the study, and (c) comparison could have been done between the two sample populations those who claimed to be HIV seropositives and those who did not know about their serostatus) had not a small sample size of HIV seronegative (n=20) among those who claimed to be HIV seropositive. In addition, the small sample size of harmful drinkers, as a result the hazardous and harmful drinkers had to be combined for statistical analysis.

ACKNOWLEDGEMENTS

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