Original Research Report

Behavioural Factors influencing Overall Health-Related Quality of Life of HIV Positive and HIV Negative Adults in Plateau State

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Abstract

Background: HIV/AIDS has caused millions of deaths worldwide and is now listed as a chronic disease. HRQOL assessment is invaluable in understanding patient views of disease and interventions to improve their care. We determine the behavioural factors associated with the overall QOL of HIV positives benchmark with HIV negative adults.

Method: A comparative cross-sectional study carried out in Plateau state between January - March 2018. A multistage sampling technique was used to recruit 178 each of HIV positive and HIV negative respondents. We adapted the WHOQOL HIV-bref tool to determine the QOL of HIV positive and HIV negative respondents. We determine the behavioural risk factors associated with HRQOL using the Chi-square test and logistic regression at a 5% level of significance. Statistical analysis was done using SPSS version 23.0.

Results: The overall HRQOL and general health perception mean scores were similar among HIV positive and HIV negative respondents (P>0.05). Alcohol consumption and cigarette smoking were not significantly related to overall HRQOL in the two groups (P > 0.05). The number of sexual partners was significantly associated with poor overall QOL among HIV positive respondents (p<00.1). Cigarette smoking was significantly associated with multiple sexual partners among HIV positive respondents (cOR: 24.17; 95%CI: 2.82 – 207.56).

Conclusions: Overall HRQOL of HIV positive and HIV negative adults were comparable. There was increased sexual risk among HIV positive adults that take alcohol. Safe sex counselling should be strengthened as a measure to achieve HIV control.

Keywords: PLHIV, HRQOL, Plateau, WHO HIV-Bref.

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1. Introduction

HIV/AIDS has caused millions of deaths in the last three decades affecting all regions of the world.[1] Low- and middle-income countries are most affected by the vast majority of people living with HIV (PLHIV).[2] HIV/AIDS is one of Africa's most significant social disaster of the 20th century and has continued into the 21st century.[3] Sub-Saharan Africa is the worst affected region, with 25.8 million people living with HIV in 2014. This accounts for an estimated 70% global burden of HIV. The prevalence of HIV for the region is about 4.7%, but this varies between and within countries.[2]

Nigeria is having one of the highest-burden of HIV in the world, second after South Africa.[4,5] It also accounts for about 60% of new infection in western and central Africa, despite, only about 51% of adults, 12% of children under 15 years and only about 30% of mothers are receiving antiretroviral therapy for prevention of mother to child transmission (PMTCT) in 2015.[4] HIV and AIDS-associated illnesses have emerged as one of the leading

causes of morbidity and mortality in Nigeria. The increased child and adult mortality caused by HIV has resulted in a decline in life expectancy and a reversal of health gain. Consequently, increasing the suffering of individuals, families, and community perpetuating poverty.[2]

Survival among patients infected with HIV has remarkably improved since the introduction of highly active antiretroviral therapy (HAART) in the late 90s.[6] HIV/AIDS is listed among chronic diseases with the advent of Antiretroviral (ARV) drugs.[7] However, HIV patients are still faced with challenges of taking medication for a lifetime, a potential side effect of drugs, stigma, and discrimination, which may affect their QOL. HIV has continued to change the life of infected persons, and their QOL has remains a concern.[8] Measures of HRQOL reflect the impact of both disease and treatment as perceived by the patient.

QOL is an individual perception of his satisfaction with life.[9-11] There is a growing need to assess HRQOL to understand both disease and interventions as perceived by the patient and also the need for patient monitoring and management.[12] Understanding the factors affecting HRQOL of HIV positive and HIV negative adults is critical to developing an appropriate intervention. Although different studies identified factors associated with HRQOL, there is no consensus about the main factors.[13-17] This study aims to determine and compare the factors associated with HRQOL of HIV positive with the HIV negative population.

2. Materials and Methods

2.1 Study setting, design and sample size

A comparative cross-sectional study carried out in January-March 2018, in Aids Prevention in Nigeria (APIN) centre located in Jos North Local Government Area, Plateau.[18] APIN is among the seven Health Facilities providing comprehensive HIV treatment, care, and support services in Jos North. [19,20] APIN has over twenty thousand clients on ART in care.[21]

The minimum sample size was calculated using the formula for two independent samples for a quantitative study,[22], and the mean, standard deviation score for infected and non-infected was obtained from a previous study.[23]

2.2 Study population and sampling technique

All consenting HIV-infected clients 18 years and above enrolled in care and are on HAART for at least one year, accessing treatment, care, and support at APIN centre, JUTH in Jos North LGA, Plateau State were recruited into the study. In the comparison group, HIV non-infected clients 18 years and above, who were attending (clients who had attended the OPD clinic at least four times) OPD for medical care for at least one year, in Jos University Teaching Hospital were also recruited. Those with comorbid conditions of either Tuberculosis, Hypertension, Diabetes, or Cancers were excluded in both groups.

We used a multistage sampling technique to select the study population. Jos North was Purposively selected out of the 17 LGAs Plateau State because it is the LGAs with the highest prevalence of HIV/AIDS in the State.[20] The LGA has seven health facilities providing comprehensive HIV/AIDS care and support services (APIN-JUTH, Bingham Unversity Teaching Hospital, Plateau Specialist Hospital, Our Lady of Apostle's Hospital, Faith Alive Hospital, Hwolshe Medical Centre and Solat Hospital). APIN-JUTH was purposely selected as the major Health Facility providing HIV treatment, care, and support services in the State.

A list of PLHIV that met the inclusion criteria was drawn from the monthly clinic booking register of all the clients, assessing HIV/AIDS treatment, care, and support of APIN centre, categorized into females and males. A simple random sampling technique using the computer-generated table of a random number was used to obtain a sample size of 178 (89 males and 89 females). Similarly, using the same technique, the non-infected respondents were selected from a list of those who have met the inclusion criteria from the weekly booking register of those attending OPD in JUTH.

2.3 Study instrument and data collection

A validated questionnaire adapted from the WHOQOL-HIV bref version was used.[24,25] Information was collected on sociodemographic, clinical characteristics, behavioural characteristics, and quality of life.[24] HIV counselling and testing using Determine,(Rapid Diagnostic Test kit) were done following the national guideline for all the HIV non-infected to ascertained their status.

The quality of life was assessed in six domains of the WHOQOL HIV bref questionnaire, namely, physical, psychological, level of independence, social relationship, environment and spirituality, overall HRQOL, and general health perception.

2.4 Measurement of variables

The dependent variables were the various domains and overall HRQOL, while behavioural risk factors were independent.

The grading of overall QOL and general health perception was a score from 1-5, a score of 1-3 was poor and 4-5 good overall QOL.

2.5 Data analysis

Data generated were entered and analyzed using the IBM Statistical Package for Social Sciences (SPSS) version 23. A p-value of ≤ 0.05 was considered statistically significant for all statistical tests. Basic descriptive statistics of the sociodemographic characteristic was presented. Mean scores and standard deviations were used to summarise and the HRQOL of the domains and the overall HRQOL. Chi-square was done to describe associations between behavioural risk factors and overall HRQOL

stratified by HIV status. The factors that determined risk sexual behaviour was obtained using multiple logistic regression at a 5% level of significance.

2.6 Ethical consideration

We obtained ethical approval from the JUTH Health and Research Ethics Committee, and permission was also obtained from the principal investigator of APIN. Written informed consent was obtained from each study participant. Respondents were free to withdraw anytime during the study if they so desired. The participants were assured of the confidentiality of their information.

3. Results

The mean age of HIV positive respondents was 38.37±9.76 years, and 35.43±10.20 years for HIV negative respondents. Most of the HIV positive (91.0%) and HIV negative (93.8%) respondents were literate. Over two-thirds of the respondents among HIV positive (68.5%) and the HIV negative (73.0%) were married. Christianity was the predominant religion among respondents in both groups. Most of the HIV positive 109(61.3%) and HIV negative 95(53.5%) respondents earn less than #18,000 00 minimum wage in Nigeria (Table 1).

Table 1: Sociodemographic characteristics of HIV positive and HIV negative adult respondents

Characteristics	HIV positive group (n = 178)		HIV negative group (n = 178)	
	Frequency	Percentage	Frequency	Percentage
Level of education				
Non-formal	16	9.0	11	6.2
Primary	29	16.3	32	18.0
Secondary	63	35.4	37	20.0
Tertiary	70	39.3	98	55.1
Marital status				
Single	34	19.1	43	24.2
Married	123	69.1	131	73.6
Divorced	9	5.1	3	1.7
Widowed	12	6.7	1	0.6
Religion				
Christian	139	78.1	134	75.3
Islam	38	21.3	41	23.0
Others	1	0.6	3	1.7
Occupation				
Artisan	28	15.7	26	14.6
Farming	28	15.7	20	11.2
Civil servant	49	27.5	52	29.2
Business	56	31.5	49	27.5
Student	17	9.6	31	17.4
Monthly income (#)				
<18000	109	61.2	95	53.4
18001-50000	39	21.9	28	15.7
50001-100000	24	13.5	40	22.5
>100000	6	3.4	15	8.4

More respondents reported having multiple sexual partners among HIV positive 40 (22,2%) compared with HIV negative 17(9.6%) respondents. Less than one-quarter of the respondent in both HIV positive (22.5%) and HIV negative 27(14.2%) respondents consistently use a condom for coitus (Table 2).

Table 2: Behavioural characteristics of HIV positive and HIV negative adult respondents

Characteristics	HIV positive group (n = 178)		HIV HIV negative group (n = 178)	
	Frequency	Percentage	Frequency	Percentage
Alcohol				
Yes	22	12.4	24	13.5
No	156	87.6	154	85.5
Smoking				
Yes	7	3.9	6	3.4
No	171	96.1	172	96.6
Sexual partner				
Single	138	77.5	161	90.4
Multiple	40	22.5	17	9.6
Condom use				
Never	42	23.6	50	28.1
Rarely	23	12.9	29	16.3
Sometimes	48	27.0	28	15.7
Often	25	14.0	44	24.7
Always	40	22.5	27	15.2

There was no significant difference in the overall QOL and general health perception of HIV positive and HIV negative respondents (p>0.05, Table 3).

Table 3: Comparison of Overall HRQOL of HIV positive and HIV negative respondents

Variable	HIV status	Mean/standard deviation	95%CI	p-value
Overall QOL	HIV positive	15.910 ± 2.787	-0.880 - 0.206	0.223
	HIV negative	16.247 ± 2.411		
General Health Perception	HIV positive	15.528 ± 3.062	-526 - 0.796	0.688
	HIV negative	15.663 ± 3.273		

Overall HRQOL was not statistically related to alcohol consumption and cigarette smoking among HIV infected and non-HIV infected respondents (P > 0.05). The number of sexual partners was significantly associated with Overall QOL among HIV positive respondents (p<00.1), but this was not significant among the HIV negative respondents (p=0.243). There was no statistically significant association between condom use and HRQOL among HIV infected (p= 0.838) and non-HIV infected (p= 0.206) respondents. (Table 4)

Table 4: Behavioural factors with overall HRQOL among HIV positive and HIV negative respondents

	HIV Positive			Non-HIV positive		
	Overall Health-related quality of life					
Variables	**Good (%)**	**Poor (%)**	**p-value**	**Good (%)**	**Poor (%)**	**p-value**
Alcohol						
Yes	18(81.8)	4(18.2)	1.000	21(87.5)	3(12.5)	1.000
No	125(80.1)	31(19.9)		134(87.0)	20(13.0)	
Smoking						
Yes	5(71.4)	2(28.6)	0.625	6(100.0)	0(0.0)	0.604
No	138(80.7)	33(19.3)		149(86.6)	23(13.4)	
Sexual						
Single	113(81.9)	25(18.1)	0.001	124(88.2)	19(11.8)	0.243
Multiple	30(75.0)	10(25.0)		13(76.5)	4(23.5)	
Condom use						
Never	34(81.0)	8(19.0)	0.838	42(84.0)	8(16.0)	0.206
Rarely	20(87.0)	3(13.0)		24(82.8)	5(17.2)	
Sometimes	38(79.2)	10(20.8)		27(96.4)	1(3.6)	
Often	21(84.0)	4(16.0)		38(86.4)	6(13.6)	
Always	30(75.0)	10(25.0)		24(88.9)	3(11.1)	

The odds of having multiple sexual partners were four times higher among those that take alcohol compared to those not taking alcohol (cOR:4.38; 95%CI: 1.7 – 11.08). Those who smoke cigarettes have 24 times odds for multiple sexual partners compared to those that do not smoke a cigarette (cOR: 24.17; 95%CI: 2.82 – 207.56, Table 5).

Table5: Association between behavioral factors and number of sexual partners among HIV positive and HIV negative respondents

	HIV INFECTED			NON-HIV INFECTED		
Variable	**Odd's ratio**	**95% confidence interval**	**p-value**	**Odd's ratio**	**95% confidence interval**	**p-value**
Alcohol consumption						
Yes	4.38	1.73-11.08	0.002	2.16	0.64-7.30	0.211
No	1					
Cigarette smoking						
Yes						
No	24.17	2.82-207.56	0.004	5.23	0.88-30.97	0.068

4. Discussion

We found a lower overall HRQOL mean score among HIV positive compared with the HIV negative respondents, but this was comparable. This was corroborated in a study done in Uganda among HIV positive and HIV negative women that found a higher mean score of HRQOL among the HIV negative women compared with the positive women.[23]A similar finding was reported in a South Africa study done among HIV positive and HIV negative miners.[26] A systematic review reported significantly decreased HRQOL among HIV positive compared to the general population in all domains.[27] Among PLHIV, HRQOL means the score was higher among asymptomatic than symptomatic

respondents.[28] This may be since, HRQOL of HIV positive may be altered by either the virus, side effects of antiretroviral treatment, presence of opportunistic infection, and associated stigma and discrimination. There is a need to enhance repeated adherence counselling on ART as PLHIV makes contact with health workers. Strengthening social support systems in facilities, communities, and within families will help them develop a healthy attitude in managing the disease and its stigma and discrimination, thereby improving their QOL.

Most of the respondents in both HIV positive and negative groups reported not taking alcohol. This may be due to labelling and stigmatization of persons that take alcohol. The people who drink alcohol are considered irreligious in the churches and communities sometimes subjected to church discipline. Despite religious sensitivity, the consumption of alcohol and cigarette smoking seems to be on the rise with the proliferation of "alcohol joints" in the city. In this study, alcohol consumption was not associated with overall HRQOL. Similar findings obtained in other studies.[29-31] A study done in Delta found that alcohol consumption was negatively associated with overall HRQOL.[32] This was corroborated in a study done in Uganda that reported alcohol consumption was negatively associated with overall HRQOL.[33]

The effect of cigarette smoking On HRQOL was not well studied. We found that cigarette smoking was not associated with HRQOL. This may be because few respondents admitted smoking cigarette as this was an unacceptable behaviour expected of responsible persons within the community, and also seen as irresponsible behaviour by dominant religion in the State. However, other studies had suggested that cigarette smoking was associated with poor HRQOL.[34-36]

The number of sexual partners was associated with poor quality of life among the HIV positive respondents. This may be due to increased risk for sexually transmitted infections and increased socio-economic stress experienced by individuals having more than one partner. We also found that among HIV positive respondents, those who consume alcohol and smoke cigarette are more likely to have multiple sexual partners. This was suggested in an updated review of the literature.[37] This may be an expression of risk behaviour for HIV transmission. This was even more worrisome because of the risk of HIV transmission to uninfected partners, couple with a low rate of correct and consistent among respondents. There is a need to strengthen ART adherence and safe sex counselling among HIV positive persons if HIV control must be achieved.

Our study was a comparative cross-sectional study compared to prior studies on the subject, most of which were cross-sectional surveys. We also used the validated WHOQOL HIV bref questionnaire in generating evidence. However, this study was not able to measure other forms of drug abuse, such as the ingestion of heroin, tramadol, and intravenous drugs that influences behaviour. A more robust population-based study will be required to explore behavioural risk factors its effects on HRQOL, thereby, leveraging on the understanding of the behavioural risk factors to achieving the control of HIV and attainment of UNAID 95-95-95 target.

5. Conclusion

The overall QOL was similar among HIV negative and HIV negative. Sexual risk behaviour was high among HIV positive individuals, especially among those who smoke a cigarette. Safe sex counselling and practice should be promoted to curtail the spread of HIV infection.

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Competing interests

The authors declared no competing interest

Authors contributions

KIB and ZAI contributed to the conception and design. KIB acquired article for review, abstracted findings to tables, contributed to analysis and interpretation. All the authors participated in the review and critique process and revised it critically for intellectual content. All the authors read and approved the final manuscript.

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