ISSN: 3065-5102
Research Article

Journal of Sexual Health and AIDS Research

Assessment of Quality of Life of HIV Positive Patients Attending Anti-Retroviral Clinic in Enugu State University Teaching Hospital, Enugu, Nigeria

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Submitted: 14 May 2024 **Accepted:** 22 May 2024 **Published:** 31 May 2024

https://doi.org/10.63620/MKJSHAR.2024.1006

Citation: *Ogbodo, O. C., & Ossai, E. N. (2024). Assessment of Quality of Life of HIV Positive Patients Attending Anti-Retroviral Clinic in Enugu State University Teaching Hospital, Enugu, Nigeria. Journal of Sexual Health and AIDS Research, 1(3), 01-12.*

Abstract

Introduction: *Globally, more than 70 million people have been infected with the HIV virus and about 35 million people have died of HIV related causes since 1981.*

Objective: *To assess the quality of life of HIV positive patients attending Anti-retroviral clinic in Enugu State University Teaching Hospital, Enugu, Nigeria.*

Methodology: *This cross-sectional study was carried out among 400 respondents selected by systematic sampling.*

Results: *Majority (75%) of the respondents were female, and more than half (54.3%) were more than 38 years old. 77.5% perceived their overall quality of life to be in excellent. Those 38 years and above had the best quality of life, while those within the age group 18 to 22 years had the worst quality of life. Married or widowed respondents had better excellent quality of health than those who were separated or single. The quality of life of majority of the respondents was affected by lack of money (75.8%), their physical condition (24.3%), psychological feelings (19.8%), social relationship (11.5%), and stigmatization (8.5%). Also, most of the respondents (56.2%) who were ill had the least quality of life, while those who were not ill (87.5%) had better quality of life. Majority of the respondents (68.3%) were satisfied with their physical condition. While 75.8% were satisfied with their psychological feelings. Also, majority of the respondents were satisfied with their ability to perform daily activities (78.8%), with social relationship with other people (77.5%), and with the environment of where they were living (78.5%).*

Conclusion and Recommendations: *The overall quality of life of majority of the respondents was good, and majority of them were satisfied with their current health status. There should be improvement on early diagnosis and treatment, including social support services.*

Keywords: HIV/AIDS, Quality of life, Anti-retroviral Treatment

Introduction

The first Human immunodeficiency virus infection (HIV) case was reported in USA in 1981 [1]. Since then HIV infection has spread globally [2]. The population groups at increased risk of HIV transmission include: men who have sex with men, people who inject drugs, people in prisons and other closed settings, sex workers and their clients, and transgender people [2]. HIV infection drastically affects the patients' physical condition, socio-cultural relations, mental health, and economic aspects of life [3]. However, Anti-retroviral treatment (ART) has changed the course of HIV infection from a rapidly progressive catastrophic illness to a chronic disease with reduction in mortality rate and prolongation of life [4].

More than 70 million people have been infected with the HIV virus and about 35 million people have died of HIV related causes since 1981 [2]. Sub-Saharan Africa bears most of the global HIV/AIDS burden [2]. Nigeria ranks second in sub-Saharan Africa in HIV/AIDS burden with a prevalence of is 2.9% among the adult population (aged 15-49 years) in 2016[5].

The Quality of Life (QoL) of HIV positive patients usually improve when they are receiving treatment at an ART clinic, and could further encourage the patient to continue their treatment [6]. Therefore, assessment of Quality of life has become an outcome measure in the management of HIV positive patients in ART clinics. This will help to evaluate the human and financial cost and benefits of new programs and interventions [7 ,8].

Methodology

The study site was the antiretroviral (ARV) clinic at Enugu State University Teaching Hospital, Enugu, Enugu State Nigeria. This antiretroviral clinic is accessed mostly by people living in Enugu State, Nigeria. Enugu is the capital of Enugu State located in the Southeast geo-political zone of Nigeria. The people living in Enugu State are predominantly Igbo speaking tribe and mainly Christians. They are mainly farmers, traders and civil servants. The estimated population of Enugu state in 2017 based on the 2006 Nigeria's census is 4,126,227 [9].

Study Design

This study was a facility-based cross-sectional analytical study.

Study Participants

The study participants were HIV positive patients who are age 18 years and older attending anti-retroviral clinic in Enugu State University Teaching Hospital, Enugu, Enugu State, Nigeria.

Sample Size Determination

The minimum sample size was determined by the formula for cross sectional study used for single proportions [10]. A total of 400 participants were used for the study based on the proportion of 79.75% that had excellent overall quality of life in a previous study, and on a type 1 error (α) of 0.05 [11].

Sampling Technique

The eligible and consenting adult patients were selected by systematic sampling technique. The last three months attendance of adult patients prior to this study was calculated using the facility's register. In the last three months prior to this study, the number of active adult male patients per month was 517, while the number of active adult female patients per month was 1,498. Therefore, the ratio of male adults to female adult patients was approximately 1:3. The study sample size of 400 was proportionately allocated to male and female patients in the ratio of 1:3. Thus 100 male patients and 300 female patients were used for this study. The number of active male patients (517), and active female patients (1,498) were used as the sampling frame for the male and female patients respectively. The sampling interval was determined by dividing the sampling frames with the sample size 100, and 300 for male and female patients respectively.

Study Instruments

A pretested, semi-structured, interviewer-administered questionnaire adapted from WHOQol-HIV bref instrument and WHOQoL-HIV instrument users' manual was used to collect data on socio-demographic factors, quality of life, and satisfaction with the services at the antiretroviral clinic [12, 13].

Outcome Measure

The percentage Quality of Life (QoL) scores for each domain in the WHOQol-HIV bref instrument was calculated as the sum of individual scores obtained in the domain divided by the total attainable score in that domain multiply by 100. The factors that affects quality of life of the participants were determined by using tables, frequencies, proportions, and cross tabulations to determine the effect of socio-economic, and health related factors on the QoL of the respondents. Satisfaction level was assessed by the proportion of the participants who were satisfied with the services they received at the antiretroviral clinic.

Data Analysis

Data were collected and edited manually same day to detect omissions and to maintain uniform coding. The SPSS statistical package, version 21 was used for data entry and analysis. For descriptive variables, data was presented using table, frequencies and percentages, means, and cross tabulations. Categorical variables were analysed by use of proportions, while continuous variables that included QoL scores were summarised through the use of means and standard deviation. Testing between proportions was carried out using Fisher Exact and chi square test where appropriate. Student t-test was used for the analysis of statistical differences between the mean scores of QoL for dichotomous variables. Spearman's correlation was calculated to assess the effect of certain factors on mean QoL scores of the respondents. The level of statistical significance was set at $p < 0.05$.

Results

Table 1: Socio-demographic characteristics of the respondents

Variable	Frequency (n=400)	Percent (%)
Gender		
Male	100	25.0
Female	300	75.0
Age (years)		
Overall Mean (±SD)	39.3±12.3	
Mean age (male) (±SD)	43.8±13.9	
Mean age (female) (±SD)	37.8±11.4	
Age of respondents in groups		
18-22	17	4.3
23-27	47	11.8

28-32	76	19.0
33-37	43	10.8
38 and above	217	54.3
Tribe		
Ibo	351	87.8
Yoruba	13	3.3
Hausa	25	6.3
Other	11	2.8
Religion		
Christianity	374	93.5
Islam	25	6.3
African Traditional Religion	1	0.3
Education		
None	21	52
Primary	115	28.8
Secondary	179	44.8
Post-secondary	85	21.3
Marital status		
Single	93	23.3
Married	279	69.8
Living as married	3	0.8
Separated	2	0.5
Divorced	23	5.8
Employment status ((respondents)		
Unemployed	72	18.0
Self employed	250	62.5
Salary employed	78	19.5
Employment status (spouse/partner)		
No spouse/partner	147	36.8
Unemployed	23	5.5
Self employed	184	45.3
Salary employed	50	12.5

Table 1 shows the socio-demographic characteristics of the respondents. The overall mean age of the respondents was 39.3 years. The mean age of the males was 43.8 years, while that of the females was 37.8 years. There is a high literacy level among the respondents as only 5.2% of them did not attempt any formal education. Majority of the respondents were married (69.8%), and only a few (5.8%) were divorced. Majority of the respondents (62.5%) were self-employed. However, 43.3% of the respondents' spouse/partner were self-employed, while 36.8% of the respondents did not have a spouse/partner.

Table 2: Clients health status

Variable	Frequency (n=400)	Percent (%)
General health condition		
Very poor	6	1.5
Poor	14	3.5
Neither Poor nor Good	34	8.5
Good	306	76.5
Very Good	40	10.0
Currently ill		
No	272	68.0
Yes	128	32.0

WHO Clinical Stage		
Stage 1	294	73.5
Stage 2	81	20.3
Stage 3	20	5.0
Stage 4	5	1.3
Perceived mode of HIV infection		
Sex with a man	96	24.0
Sex with a woman	31	7.8
Injection of drugs	24	6.0
Blood products	51	12.8
Sharp objects/ health facility related	31	7.8
Could not tell how	165	41.3
Mother to child	2	0.5

Table 2 shows the health status of the respondents at the time of the study. Majority of the respondents (76.5%) perceived their health status to be good, 68% of them were not ill at the time of their participation in this study. Most of the respondents (73.5%) were in WHO HIV clinical stage 1. A good proportion (41.3%) of the respondents did not know how they became infected with HIV virus. The total proportion of the respondents that perceived their mode of infection to be through sexual intercourse was 31.8% (24% of males and 7.8% of females).

Table 3: Overall Quality of Life (QoL) of the respondents.

Variables	Frequency (n=400)	Percent (%)
Overall quality of life		
Poor	29	7.3
Good	61	15.3
Excellent	310	77.5

Table 3 shows the overall quality of life of the respondents. Majority (77.5%) of the respondents perceived their health to be in excellent condition, while 15.3% of the respondents perceived their health to be in good condition. A low percentage (7.3%) of the respondents were in poor health.

Table 4: General factors influencing respondents' overall quality of life

Variable	Frequency n=400	Percent (%)
Physical condition	97	24.3
Psychological feelings	79	19.8
Level of independence	19	4.8
Social relationship	46	11.5
Environment	31	7.8
Lack of information	21	5.3
Lack of money	303	75.8
Your spirituality	21	5.3
Stigmatization	34	8.5

Table 4 shows the general factors influencing respondents' overall quality of life

The quality of life of majority of the respondents was affected by lack of money (75.8%), their physical condition (24.3%), psychological feelings (19.8%), social relationship (11.5%), and stigmatization (8.5%).

Table 5: Demographic and economic factors influencing respondents' overall quality of life.

Demographic Factor	Overall quality of life			Total	Chi-square (P-value)
	Poor n=29	Good n=61	Excellent n=310		
Gender					
Males	5(5.0)	13(13.0)	82(82.0)	100(100)	1.72(0.42)
Females	24(8.0)	48(16.0)	228(76.0)	300(100)	
Marital status					
Single	10(10.5)	22(23.7)	63(65.6)	93(100)	0.01FT
Married	18(6.4)	33(11.8)	230(81.6)	279(100)	
Separated	0(0)	0(0)	3(75.0)	3(100)	
Divorced	0(0)	2(100)	0(0)	2(100)	
Widowed	1(4.3)	4(17.4)	18(78.3)	23(100)	
Age					
18-22	3(17.6)	5(29.4)	9(52.9)	17(100)	0.02FT
23-27	3(6.4)	11(23.4)	33(70.2)	47(100)	
28-32	8(10.5)	12(15.8)	56(73.7)	76(100)	
33-37	1(2.3)	10(23.3)	32(74.4)	43(100)	
38 and above	14(6.5)	23(10.6)	180(82.9)	217(100)	
Educational					
None	2(9.5)	4(19.0)	15(71.4)	21(100)	0.58FT
Primary	6(5.2)	14(12.2)	95(82.6)	115(110)	
Secondary	12(6.7)	31(17.3)	136(76.0)	179(100)	
Tertiary	9(10.6)	12(14.1)	64(75.3)	85(100)	

Table 5 shows the demographic and economic factors influencing respondents' overall quality of life. Gender and educational level of the respondents did not influence the quality of life of the respondents. Married or widowed respondents had better excellent quality of health than those who were separated or single. The respondents that are 38 years or above had the best quality of life, while those within the age group 18 to 22 years had the worst quality of life.

Table 6: Health factors influencing the overall quality of life

Demographic Factor	Overall quality of life			Total	Chi-square (P-value)
	Poor n=29	Good n=61	Excellent n=310		
Perceived health					
Very poor	5(83.3)	0(0)	1(16.7)	6(100)	0.00FT
Poor	6(42.9)	4(28.6)	4(26.7)	14(100)	
Neither	6(17.1)	17(50.0)	11(32.4)	34(100)	
Good	12(3.9)	36(11.8)	258(84.3)	306(100)	
Very good	0(0)	4(10.0)	36(90.0)	40(100)	
Consider yourself ill					
No	9(3.3)	25(9.2)	238(87.5)	272(100)	49.64(0.00)
Yes	20(15.6)	36(28.1)	72(56.2)	128(100)	
Clinical staging					
Stage 1	22(7.5)	46(15.6)	226(76.9)	297(100)	0.83FT
Stage 2	5(6.2)	14(17.3)	62(76.5)	81(100)	
Stage 3	2(10)	1(5.0)	17(85.0)	20(100)	
Stage 4	0(0)	0(0)	5(100)	5(100)	

Table 6 shows the health factors influencing the overall quality of life. Most of the respondents (56.2%) who were ill had the least quality of life, while those who were not ill (87.5%) had better quality of life.

Table 7: Respondents' level of satisfaction with their health

Variable	Frequency (n=400)	Percent (%)
Physical condition	8	2.0
Very dissatisfied	16	4.0
Dissatisfied	21	5.3
Neither satisfied nor dissatisfied	273	68.3
Satisfied	82	20.5
Very satisfied		
Psychological feeling	13	3.3
Very dissatisfied	14	3.5
Dissatisfied	39	9.8
Neither satisfied nor dissatisfied	303	75.8
Satisfied	31	7.8
Very satisfied		
Level of independence		
Very dissatisfied	13	3.3
Dissatisfied	9	2.3
Neither satisfied nor dissatisfied	44	11.0
Satisfied	315	78.8
Very satisfied	19	4.8
Social relationship		
Very dissatisfied	14	3.5
Dissatisfied	6	1.5
Neither satisfied nor dissatisfied	45	11.3
Satisfied	310	77.5
Very Satisfied	25	6.3
Satisfaction with their Environment		
Very dissatisfied	15	3.8
Dissatisfied	14	3.5
Neither satisfied nor dissatisfied	48	12.0
Satisfied	314	78.5
Very satisfied	9	2.3

Table 7 shows respondents' level of satisfaction with their health. Majority of the respondents (68.3%) were satisfied with their physical condition. While 75.8% were satisfied with their psychological feelings. Also, majority of the respondents were satisfied with their ability to perform daily activities (78.8%), with social relationship with other people (77.5%), and with the environment of where they were living (78.5%).

Discussion

Majority of the respondents were females (75%) [14, 15, 16]. This is similar to other findings in studies done in Lagos, Nigeria (61%), Uyo, South South, Nigeria (60%), in Kogi state, Nigeria, and in Ho Municipality, Ghana (73.4%) [17]. The highest proportion (54.3%) of the total respondents in this study was within age group 38 and above years. This suggests that age group (38 and above) is an important risk group in HIV epidemic in Enugu State, Nigeria.

The mean age of the respondents was 39.3 ± 12.3 years. However, the average age of the males was 43.8 years, while that of the females was 37.8 years. This is similar to the mean age of respondents (38.1 ± 9 years) in a similar study done in Ibadan, Nigeria: Quality of life of People living with HIV and AIDS attending the Antiretroviral Clinic, University College Hospital, Nigeria [18]. Majority of the respondents were married (69.8%), while 23.3% of the respondents were single. Similarly, most of the respondents in a similar study done in an ART clinic in Lagos, Nigeria were married (61.4%) [14].

Majority (77.5%) of the respondents' quality of life was excellent. This could as a result of the fact that majority of the respondents (73.5%) were in WHO HIV clinical stage 1, and high proportion of them (68%) were not ill at the time of this study. Over half of the participants (56%) in a multi-ethnic study rated their QoL as 'good or very good' [19]. In contrast, in United Kingdom, people living with HIV have significantly lower QoL than do the general population [20]. QoL of HIV positive patients is also significantly low in Xin-jiang, West China. In Cross River State, Nigeria, majority of the respondents rated their QoL scores as good (46.3%), very good (17.1%) [21]. Also, majority of the patients (84.7%) attending a HIV clinic in Lagos, Nigeria perceived their quality of life to be good [14]. However, significant proportion of HIV positive patients on ART in Uyo, Nigeria (78.5%) perceived their overall QoL to be poor [15].

The respondents' perception of their QoL regarding different aspects of health was varied. Majority (61.8%) of the respondents' physical condition was poor. This could be attributed to loss of weight associated with HIV infection. Also, mentally and physically, HIV positive patients attending ART clinics are not as healthy as their healthy neighbours [17]. In UK, physical health mean scores for HIV patients receiving treatment was higher than scores in other health domains [22]. But in India, the quality of life score was lowest for physical condition of the HIV patients receiving treatment [23]. In other aspects of health, a high proportion of the respondents (75.8%) in this study had good psychological feeling, 72% of the respondents consider their relationship with their environment to be good, 60% had excellent level of independence, almost half (49%) of the patients had excellent social relationship, while 92.5% of them had very poor level of spirituality.

Similar respondents in a study done in Indiareported highest QoL score in spirituality/religion/personal belief domain than in physical, psychological, social, and level of independence domains [24]. In contrast, in Ibadan, Nigeria, Kwara State Nigeria, the social domain recorded the lowest mean score [18, 25]. In Sao Paulo Brazil, worst average scores were reported in the Environment and Level of independence domains, while in Burkina Faso, the Environment and Level of independence domains also had lower scores compared to other quality of life domains [26, 27]. In Kogi state, north-central Nigeria, respondents that participated in similar study reported lower scores in the environmental and social domains [16].

Gender and educational factors did not influence the quality of life of the respondents in this study. However, similar studies done in Nigeria showed that gender influenced the quality of life of the respondents [16, 21, 18]. In Kogi State, Nigeria, female HIV patients have a higher QoL score when compared to their male counterparts in all domains [16]. Studies done in Cross River State, and Ibadan, in Nigeria did not report any significant difference in QoL scores between males and females living with HIV/AIDS and receiving care at ART clinics [21, 18].

Married or widowed respondents in this study had better excellent quality of health than those who were separated or single. Similarly, in Ilorin, Kwara State, Nigeria, HIV sero-positive married women have the highest QoL scores in all the domains compared to those with a different marital status. Also, in Uyo, South South Nigeria, HIV positive patients who are single, separated or widowed have poor QoL in social and environmental domains [25, 28]. Respondents who are 38 years or above had the best quality of life, while those within the age group 18 to 22 years had the worst quality of life. Similarly, in China, and Iran, older age is also associated with a high QoL score [29, 30]. In contrast, in Portugal, older people (40years and above) living with HIV have lower QoL in a number of domains (physical, level of independence, and social relationships) [31]. QoL of HIV patients in Croatia is also improved by being of younger age [32]. Also, in United States of Americaa, younger age is associated with better QoL among HIV positive patients [33].

In increasing magnitude, stigmatization, social relationship, psychological feelings, physical condition of the patient, and lack of money reduces the QoL of the respondents in this study. Respondents in this study with better health had high quality of life, while those who were ill had the least quality of life. This may be because HIV patients with poor medical history are inclined to have worse QoL [29]. This can also explain why respondents in similar study done in India,66 reported better daily routine activities (level of independence) and social activities in asymptomatic patients compared to those with AIDS defining symptoms [34]. Similarly, in Bangladesh, it was observed that asymptomatic HIV patients have better QoL that permits them to still perform their normal activity [35]. Among HIV positive patients on ART in Uganda, number of visits to clinic, level of education, WHO HIV stage and level of depression are determinants of physical health score [36]. Also, symptomatic HIV patients in Ghana, and Nigeria, significantly presented with a lower overall quality of life [17, 18].

In Brazil, having acquired opportunistic infections were predictors associated with a poorer quality of life [37]. It has also been observed in various studies across the world, that stigmatization lowers QoL scores [38-40]. Social support is also positively associated with the QoL of HIV/AIDS patients [41-43]. It has been observed in India, and Brazil, that presence and severity of symptoms are associated with lower physical domain score and overall QoL of HIV patients [24, 26]. In Ghana, HIV patients' self-appraisal of their health significantly predicted their quality of life, with lower QoL recorded among those who perceived themselves as ill [17]. In United States of Americaa, younger age, higher income, and better social relation and support are associated with better QoL among HIV positive patients [33].

A high proportion (68.3%) of the respondents in this study was satisfied with their physical condition. Also, 75.8% were satisfied with their psychological feelings, 78.8% were satisfied with their ability to perform daily activities, and 77.5% were satisfied with social relationship with other people. A high proportion (78.5%) of the respondents was also satisfied with the environment of where they were living. This is because most of the respondents in this study are in WHO HIV stage 1, and were not suffering from serious HIV co-infection diseases. However, remarkably, in Vietnam, the proportions of respondents completely satisfied with overall service quality and treatment outcomes at HIV clinics were 42.4% and 18.8%, respectively [44]. Also, in Southern Ethiopia, 46.4% of HIV positive patients attending ART clinic were satisfied with the services they received [45]. Similar study done in Cross River, Nigeria, showed that majority

of the respondents (48%) were 'satisfied' with their health [21, 46-113].

Conclusion

Majority of the adult patients attending antiretroviral clinic at Enugu State University Teaching Hospital were females (75%) of the respondents were female, while over half of (54.3%) of them were aged between ages 38 and above. Majority of the respondents were married (69.8%), and 23.3% of the respondents were single. The overall quality of life of majority of the respondents was good, and majority of them were satisfied with their current health status. This could be attributed to the fact that majority of the respondents were in WHO HIV clinical stage 1, and because only few of them were sick at the time of the study.

Majority of the respondents (68.3%) were satisfied with their physical condition. While 75.8% were satisfied with their psychological feelings. Also, majority of the respondents were satisfied with their ability to perform daily activities (78.8%), with social relationship with other people (77.5%), and with the environment of where they were living (78.5%). However, a very high proportion of the respondents (92.5%) were bothered by people blaming them, fear for their future, and worry about death. Age, marital status, and the current health of the respondents were the factors that determined the QoL of the respondents.

Recommendations

Government/Policy Makers and Health Workers

1. Government, policy makers, and health care workers should focus more on early diagnosis and treatment of HIV patients. This will ensure a better QoL of for these patients when they are receiving treatment.
2. They should also encourage enrolment of males at the ART clinics by health education, and counselling at every contact with them.

Health Workers

Health workers should improve or adjust their social support services available to these patients. This will positively improve their spirituality, religious, and personal beliefs.

Ethical Approval

Ethical approval and informed consent process for the study was obtained from Enugu State University Teaching Hospital ethical committee. Permission for this study was obtained from Enugu state ministry of health through the Enugu state ministry of health ethical committee on research projects. Permission was also obtained from the management of Enugu State University Teaching Hospital. Informed consent was obtained from each participant and participation in the study was voluntary. All information from this study was kept confidential and the information was used in such a way that no individual who participated in the study was linked to any information. The respondents were given the opportunity to withdraw from the study at any time during the study without any consequences to them.

Limitations

This study is a cross sectional study and therefore cannot draw conclusions about causality.

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