

Comparison of Health-Related Quality of Life of HIV patients with and without TB registered in a Tertiary Hospital in Port-Harcourt, Nigeria

Type:

Research paper

Abstract:**Background**

Little is known about the health-related quality of life (HRQOL) of patients who suffer from HIV/TB in Nigeria. This study was carried out to measure and compare the HRQOL of HIV patients with and without TB at the HIV Clinic of University of Port Harcourt Teaching Hospital, Port-harcourt, Nigeria.

Material and methods

A comparative cross-sectional study design and simple random sampling was used to recruit 144 HIV patients with TB and 144 HIV patients without TB. Information was collected on socio-demographic and socioeconomic variables, while their HRQOL was measured using the 26-item WHO Quality of Life instrument. Univariate and bivariate analysis was carried out in Epi-info 7

Results

Females constituted 52% and 56% of HIV-only and HIV/TB co-infected groups respectively. Their mean ages were 36.03 ± 10.92 and 35.69 ± 10.28 years, respectively ($p=0.532$). HRQOL score ranged from 61.9 to 78.5 for HIV patients and 61.6 to 75.8 for the co-infected patients. Co-infected patients had lower HRQOL in the physical ($p=0.016$), psychological ($p=0.006$) and global ($p=0.029$) domains of HRQOL than HIV-only patients. The two groups did not differ significantly in the social and environmental domains ($P>0.05$).

Conclusions

The co-morbidity condition of HIV/TB significantly lowers the quality of life of sufferers. Attention should be focused on the medical and psychological management of HIV/TB co-infected patients in order to enhance their QOL.

Keywords:

health-related quality of life, HIV, HIV/TB, Port harcourt, Nigeria

1 **Comparison of Health-Related Quality of Life of HIV patients with and without TB**
2 **registered in a Tertiary Hospital in Port-Harcourt, Nigeria**

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Summary

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Univariate and bivariate analysis was carried out in Epi-info 7.

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Conclusion: The co-morbidity condition of HIV/TB significantly lowers the quality of life of sufferers. Attention should be focused on the medical and psychological management of HIV/TB co-infected patients in order to enhance their QOL.

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BACKGROUND

The Human Immunodeficiency Virus (HIV) infection causes a chronic and debilitating disease of global public health concern. The pandemic has caused millions of deaths worldwide and has crippled the lives of many more.^{1,2} Sub-Saharan Africa is the most affected region, with nearly sixty-nine percent of all people living with HIV living in the region.³ Nigeria bears a huge burden of the epidemic with an estimated 3.1 million people living with HIV in 2011.⁴ It ranks as one of the countries with the highest burden of HIV infection in the world, next only to India and South Africa.⁵ Almost 28 years after the first case of AIDS was reported in Nigeria, the country still faces epidemics and the majority of HIV/AIDS patients continue to suffer with the debilitating effect of the disease, with a serious impact on their quality of life.⁶ The impact of tuberculosis (TB) on the lives of HIV patients cannot be over-emphasized. TB remains the leading cause of death among people living with HIV.^{2,7} People living with HIV and infected with TB are 30 times more likely to develop active TB disease than people without HIV. At least a third of people living with HIV worldwide are infected with the tuberculosis bacteria⁸, with HIV and TB forming a lethal combination, each speeding the other's progress. The World Health Organization's Quality of Life (WHOQOL) group has defined Quality of Life (QOL) as individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.⁹ The term Health-related Quality of Life (HRQOL) is a multi-dimensional construct referring to patients' perceptions of the impact of disease and treatment on their physical, psychological, social function and wellbeing. QOL encompasses the concept of HRQOL and other domains such as environment, family,

54 and work. When quality of life is considered in the context of health and disease, it is
55 commonly referred to as health-related quality of life. The effect of HIV and AIDS on an
56 individual goes beyond the physical symptoms and signs. It is a disease that is highly
57 associated with stigma and discrimination and is known to also affect the psychological,
58 social, spiritual life as well as other aspects of the patients' life.^{10,11} It thus impairs the
59 quality of life. Many HIV patients battle numerous social problems such as stigma and
60 depression, which affect their quality of life, in terms of their physical, mental, and social
61 health.^{1,6} HIV and HIV/TB co-infection are associated with stigma, resulting in patients
62 being rejected by their families, their communities, at their places of work and are seen
63 as unfit for work. In addition, health workers' attitude could lead to mental stress and a
64 reduction in QOL.¹²

65 One of the aims of HIV/AIDS therapy is to improve the wellbeing and quality of life of
66 affected people. The introduction of Highly Active Antiretroviral Therapy (HAART) has
67 led to a marked reduction in AIDS-related morbidity and mortality.¹³ Although the
68 patients live longer, their quality of life is usually severely compromised. HIV and
69 HIV/TB co-infected patients often suffer from intense social stigma which forces them to
70 change jobs or places of living, putting further stress on the already weak economic
71 situation.¹⁴ They experience discrimination and/or misunderstanding, tend to become
72 isolated and lose social support from persons significant to them.¹⁵ These often
73 compromise their quality of life. With the appreciable rise in longevity of people living
74 with HIV and AIDS (PLWHA), it is important to improve their quality of life.¹⁶ HIV/AIDS
75 and TB have such serious repercussions on psychic, social and physical well-being of
76 the infected, that the assessment of their HRQOL will help in measuring how these

78 people are re-integrated into the society after the initial health crisis they faced on
79 diagnosis of the disease. There is limited evidence in Nigeria on how PLWHA perceive
80 their quality of life in the face of TB/HIV co-infection. It is imperative therefore, to
81 understand these issues in order to evaluate the impact of the disease on their health
82 outcomes.

83 The aim of this study was, therefore, to measure and compare the health-related quality
84 of life of adult patients with HIV/AIDS with those with HIV/TB co-infection. This was in
85 an attempt to provide information on the management of these two conditions for better
86 treatment adherence and outcomes. It was also aimed at contributing to health systems
87 strengthening by having patient centered healthcare services.

88 MATERIALS AND METHODS

89 Study area

90 The study was carried out in the Anti-Retroviral (ARV) clinic of the University of Port-
91 Harcourt Teaching Hospital (UPTH), Rivers state, Nigeria. Rivers state has one of the
92 highest prevalence rates of HIV/AIDS in Nigeria with a prevalence of 15.2%.¹⁷ The state
93 has a total population of 5.18 million with an annual growth rate of 3.0%. The state is
94 cosmopolitan, but is home to all ethnic groups in Nigeria and foreigners. It is also an
95 economic hub in Nigeria because of its abundant natural resources in oil and gas. The
96 economic importance of the state makes it attractive to people from all works of life
97 searching for economic opportunities. Rivers state has a health care system at tertiary,
98 secondary and primary levels. The health care system is a combination of public and
99 private sector based. There are two tertiary hospitals and several secondary and

101 primary centres fairly distributed all over the state. Nevertheless, the health care system
102 is generally weak and plagued by acute shortage of essential medicines and supplies,
103 poor infrastructure and human resources.

104 **Study setting**

105 The University of Port Harcourt Teaching Hospital is a 800 bed tertiary institution owned
106 and managed by the Federal government of Nigeria. It serves as a referral hospital to all
107 secondary and primary health facilities in Rivers State and neighbouring Abia, Akwa
108 Ibom, Bayelsa and Imo States. The anti-retroviral clinic has close to 12,000 registered
109 HIV/AIDS patients, out of which about 5,300 are on anti-retroviral treatment (ART). It is
110 one of the 6 health facilities caring for HIV/AIDS patients in the State. The clinic attends
111 to an average of 60-100 HIV patients daily, with over 50% of these patients co-infected
112 with TB. The ARV Clinic is supported by a grant from the Family Health International
113 (FHI-360) under the American President's Emergency Plan for AIDS Relief (PEPFAR)
114 Initiative to implement its diverse activities. All HIV positive clients received in the ARV
115 clinic are screened for TB, and those diagnosed with active TB are enrolled in the
116 Directly Observed Treatment Short Course (DOTS) programme for the management of
117 TB. Similarly, all TB suspects/patients are offered HIV counselling and testing, and if
118 confirmed positive, they go on to receive HIV/AIDS care. This two way referral is in
119 accordance with the Nigeria National Tuberculosis and Leprosy Control Program
120 (NTBLCP) guidelines for treatment and control of HIV/TB in Nigeria.⁷

121 **Study design and Population**

122 The study was a comparative, cross-sectional study of the health related quality of life of
123 adult patients with HIV/AIDS and those with HIV/AIDS and Tuberculosis co-infection

125 carried out among adult patients 18 years and above, diagnosed with HIV/AIDS, with or
126 without tuberculosis co-infection, attending the ARV clinic in the University of Port-
127 Harcourt Teaching Hospital Rivers state.

128 **Inclusion and Exclusion criteria**

129 All adult HIV patients 18 years and above with or without TB co-infection and patients
130 with confirmed HIV-positive status who had received anti-retroviral drugs for at least a
131 month prior to the study (this is to allow adequate time for the patients to adapt to the
132 drugs) were included in the study, while all HIV positive clients who were yet to
133 commence ART or had been on therapy for less than 1 month before the study were
134 excluded because they may not have adequately adapted to the antiretroviral drugs.
135 Also excluded, were pregnant women and terminally ill/debilitated patients, including
136 patients on admission as well as patients with other co-morbidities except for the
137 comparison group of HIV/AIDS and TB co-infection.

138 **Sample size determination**

139 The formula for calculating sample size to determine a difference between 2 proportions
140 was employed as follows $n = (u+v)^2[(p_1(100-p_1) + p_2(100-p_2))] / (p_1-p_2)^2$, where $n =$
141 minimum sample size for each group; $u =$ power at 90% = 1.28; $v =$ significance level at
142 5% = 1.96; $p_1 =$ proportions of HIV/AIDS patient assumed to have good HRQOL=
143 50.38% (derived from a previous study)¹⁸; $p_2 =$ proportions of patients with HIV/AIDS
144 and Tuberculosis co-infection with good HRQOL= 30.97% (derived from the same
145 study)¹⁸; and non-response rate of 10%. Minimum sample size (n) was 144 per group.

147 **Sampling technique**

148 Recruitment of participants was by simple random sampling. The list of registered HIV
149 patients presenting daily for treatment in the clinic was obtained from the Medical
150 Records staff. Numbers were assigned to each patient. Using a table of random
151 numbers, 3 HIV patients and 3 HIV/TB co-infected patients were randomly selected and
152 interviewed daily in order to broaden the scope of the sample.

153 **Study instruments**

154 A structured interviewer-administered questionnaire with the WHOQOL-BREF was
155 adapted from WHOQOL Group and used to collect information from the respondents.
156 The questionnaire consisted of questions of socio-demographic details, socio-economic
157 characteristics and WHO Quality Of Life (WHOQOL-Bref) assessment.¹⁹ The
158 WHOQOL-BREF is a 26-item generic questionnaire, a short version of the WHOQOL-
159 100 assessment.²⁰ It measures four broad domains namely; physical health,
160 psychological well-being, social relations and the environment.⁹
161 Physical health domain comprises of 7 items that assess areas such as the presence of
162 pain and discomfort, dependence on substances or treatments, energy and fatigue,
163 mobility, sleep and rest, activities of daily living, and perceived working capacity.
164 Psychological well-being comprises of 6 items that assess areas such as patient's
165 affect, both positive and negative, self-concept, higher cognitive functions; body image
166 and spirituality. Social relationship assesses areas such as social contacts, family
167 support, the ability to care for family and sexual activity. Environmental domain
168 comprises of 8 items that assess aspects such as freedom, quality of home

170 environment, physical safety, security and financial status, involvement in recreational
171 activity, health and social care as applicable to the quality and accessibility thereof.
172 There are two other items that were measured separately: (1) patient's overall
173 perception of QOL, and (2) overall perception of his/her health. Each item was
174 categorized into a five-point Likert's scale ranging from 1-5, with 1 being the lowest
175 possible state and 5 being the highest. Domain scores are scaled in a positive direction;
176 higher scores denote higher QOL. The mean score of items within each domain was
177 used to calculate the domain scores compatible with the scores used in WHO QOL-100
178 and subsequently transformed into a 0–100 scale.²¹

179 This instrument has been reported to be convenient, reliable and valid for use in large
180 research studies. It has also been translated in different languages including indigenous
181 languages like Hausa and Yoruba, and used in different cultural settings yielding
182 comparable scores across different languages and cultures.^{22,23} The WHOQOL-BREF
183 has been well validated for measuring quality of life in people living with AIDS
184 elsewhere in Nigeria and abroad with satisfactory results.^{16,24-26}

185 **Data collection methods**

186 Three research assistants were trained to administer the questionnaires to the patients
187 daily over a period of 3 months.

188 **Data analysis**

189 Data was analyzed using SPSS version 19 statistical software. Demographic and
190 socioeconomic factors were presented with frequency tables. Domain scores were
191 manually calculated, entered and cross-checked for accuracy with the computer. The
192 HRQOL was interpreted using the mean values as the cut off for data that were

194 normally distributed and the median values for data that were skewed. Values below the
195 mean/median scores were graded as poor, while those above the mean or median were
196 graded as good.²⁰ Means and standard deviations were calculated for continuous
197 variables, the independent student's t-test was used to compare differences between
198 mean scores. The Chi-square test was used to test for associations between quality of
199 life and HIV status. A p-value of 0.05 was considered statistically significant.

200 Ethical consideration

201 Ethical approval for the study was obtained from the Research Ethics Committee of the
202 University of Port Harcourt Teaching Hospital. The aim and objectives of the study were
203 explained to the members of staff of the ARV clinic and written informed consent was
204 obtained from each participant before the interview. All study participants were informed
205 of the benefits of the study and assured of their confidentiality.

206 RESULTS

207 Socio-demographic characteristics of study participants

208 A total of 144 HIV/AIDS patients without TB and 144 HIV/AIDS co-infected with TB were
209 recruited for the study. They were made up of 156 (54.2%) females and 132 (45.8%)
210 males. The mean age of patients without TB was 35.69±10.28 years and those co-
211 infected with TB was 36.03±10.92 years. The majority of the patients, 66 (45.8%) fell
212 within the age category of 25-34 years among those HIV only and 54 (37.5%) among
213 those co-infected with TB. The patients with HIV-only were mainly single 66(45.8%), of
214 the Igbo ethnic group 52 (36.1%), and live in large households above 4 members
215 91(63.2%). Those with TB co-infection had similar characteristics with the majority also

217 single, 70 (48.6%), Igbo 68 (47.2%), and living in large family settings 83 (57.6%).

218 There was no significant difference in demographic characteristics in both groups.

219 [Table 1]

220 **Health-Related Quality of Life (HRQOL) of HIV-only and HIV/TB Co-infected** 221 **patients**

222 The highest mean score for HRQOL among HIV-only patients was self-rated health
223 (78.47±17.39), while the lowest score was in the environmental (61.89±14.28) domains.

224 The highest and lowest mean scores for HRQOL among co-infected patients followed
225 similar pattern of self-rated health (75.83±18.15), and environmental (60.20±14.31)
226 respectively [Table 2].

227 The global mean rating of QOL for HIV patients without TB (68.27±12.99) and those co-
228 infected with TB (64.74±14.36) were significantly different (t -test = 2.19; p = 0.029). The
229 co-infected patients had poorer mean scores of QOL in their physical health (t -test =
230 2.42; p = 0.016) and in their psychological health (t -test = 2.79; p = 0.006) than the HIV-
231 only patients. Other dimensions of quality of life, like the Self-rated health, Satisfaction
232 with Health, Social Relationship and Environmental health were similar in both groups
233 (p >0.05). [Table 2]

234 **The relationship between HIV, TB and Quality of Life of patients**

235 Three quarters, 109 (75.7%), of HIV patients (without TB) were satisfied with their
236 health, and 104 (72.2%) rated their health status as good. In all, more than half of them
237 had good QOL in the physical, psychological, environmental, social relationship and
238 global domains. Similarly, 106 (73.6%) of the HIV patients co-infected with TB, were
239 also satisfied with their health and 100 (69.4%) rated their health as good.

241 Nevertheless, less than half of the patients co-infected with TB, had good QOL in the
242 physical 68 (47.2%), psychological 71 (49.3%), social relationship 66 (48.5%),
243 environment 68 (47.2%) and global aspects 69 (48.9%).

244 The proportion of patients with good QOL was significantly higher in the HIV group than
245 in the group co-infected with TB. And this was also more pronounced in the physical
246 health ($\chi^2= 4.030$; $p= 0.045$) and psychological health domains ($\chi^2 = 5.644$; $p=0. 018$).

247 DISCUSSION

248 The overall mean score of QOL of the HIV patients with and without TB co-infection was
249 appreciable, which is a good omen for case management and treatment outcomes. The
250 result might signify a general sense of well-being among the patients, including aspects
251 of happiness and satisfaction with life as a whole and services received at the facility.

252 The highest scores were in the physical and psychological health dimensions, but
253 slightly lower in the social relationship and environmental health aspects. The findings
254 were similar to results obtained in comparable studies carried out in Kogi and Kwara
255 States in Nigeria,^{24,25} but significantly at variance from what was obtained in North
256 India,¹⁴ where the overall QOL mean score was much lower. The good scores in the
257 physical and psychological health may be partially linked with health workers'
258 comprehensive and consistent counseling on medication adherence and patients'
259 overall education on the nature and course of the diseases. It may also be a sign that
260 the various intervention efforts aimed at dispelling myths and misconceptions about the
261 HIV and TB as well as discouraging stigma and discrimination are beginning to yield
262 expected tangible results.

264 On the other hand, the slightly lower mean score in the social relationship domain could
265 be attributed to persisting pockets of societal stigma and discrimination in the society,
266 including self stigmatization which is a predominant feature among PLWHA. The
267 aftermath of such result is the negative impact on patients' family and personal lives,
268 including sexual relationships. This finding corroborates the results of similar studies in
269 Nigeria and China,^{16,27} but disagrees with results from India,¹⁴ and Sao Paulo, Brazil,²⁸
270 also developing countries, where the mean score was highest in the social relationship.
271 This latter result may be suggestive of better societal support and care for PLWHA in
272 these societies.

273 In comparing the Global mean rating of QOL for HIV patients with and without co-
274 infection, significant differences were observed. These were also in relation to the
275 physical and psychological health of the patients, but limited in with dimensions of
276 quality of life like the self-rated health, satisfaction with health, social relationship and
277 environmental health. HIV patients without TB had significantly higher QOL mean
278 scores than those co-infected with TB in the physical, psychological and overall QOL. It
279 is believed that the occurrence of two stigmatizing diseases like HIV and TB can
280 synergistically impact negatively on the QOL of the patients. It has been estimated that
281 a person with TB loses an average of about 20 to 30 percent annual household income
282 to the illness.²⁹ Such patients are more likely to be depressed and less likely to have
283 close partner support and sexual relationships. The duo of depression and lack of family
284 support have been found to be associated with poor QOL among co-infected patients.¹⁸
285 The result is in agreement with that of a study conducted in south-west Nigeria, which
286 reported that participants with HIV/TB had significantly lower QOL in the physical,

288 psychological and level of independence domains when compared with PLWHA without
289 TB. 30 This is also in agreement with another study conducted in Ethiopian, which
290 found that TB/HIV co-infected patients had a lower quality of life in all domains as
291 compared to HIV infected patients without active TB.¹⁸

292 Although the mean scores for self rated health and satisfaction with health in both
293 groups, it may be attributed to their positive outlook to life as a result of frequent and
294 consistent counseling programme under the elaborate HIV control programme in the
295 facility. The programme strategy also includes counseling on the effects of diagnosis
296 and treatment, quality and length of life, and positive living so that patients are better
297 able to adjust psychologically and socially.³⁰

298 The limitation of this study is the assessment of HRQOL which is a subjective measure,
299 and some respondents may overestimate or underestimate their QOL

300 **Limitations**

301 Using client self-report as a measure of QOL is limited by recall bias and the likelihood
302 of some study participants may overestimate or underestimate their QOL. Nevertheless,
303 studies have shown that self-assessed health status has provided a more powerful
304 predictor of mortality and morbidity than many objective measures of health.³¹ To
305 minimize this limitation, the study participants were allowed enough time to respond to
306 questions and to prod their memories. Where questions were not clearly understood,
307 they were explained in Pidgin English which is widely understood and spoken in Rivers
308 State.

CONCLUSION

The co-infection of HIV and TB impacts negatively on the health and well-being of the sufferers, significantly lowering their quality of life. More attention, therefore should be devoted to the medical management of such co-morbid patients to improve their physical health. There is also need to scale up psycho-social support for such patients and their treatment supporters through adherence counselling in order to minimize their stigmatization and rejection and improve their self-worth and positive attitude outlook to life.

Competing Interest

There are no competing interests.

Authors contributions

NEK conceived and designed the study, participated in data collection, carried out the data analysis and drafted the manuscript. CT reviewed the manuscript and participated in data analysis and interpretation of results. All authors read and approved the manuscript.

Table 1: Socio-Demographic Characteristics of Study Participants

Variables	HIV n=144 (%)	HIV/TB n = 144 (%)	χ^2	<i>p</i> -value
Age Group (Years)				
≤ 24	12 (8.3)	18 (12.5)	3.157	0.532
25-34	66 (45.8)	54 (37.5)		
35-44	37 (25.7)	41 (28.5)		
45-54	22 (15.3)	21 (15.6)		
≥55	7 (4.9)	10 (6.9)		
Mean Age	35.69 ± 10.28	36.03 ± 10.92		
Sex				
Male	69 (47.9)	63 (43.8)	0.503	0.478
Female	75 (52.1)	81 (56.3)		
Marital Status				
Single	66 (45.8)	70 (48.6)	0.488	0.922*
Married	62 (43.1)	58 (40.3)		
Separated/Divorced	3 (2.1)	2 (1.4)		
Widowed	13 (9.0)	14 (9.7)		
Ethnicity				
Igbo	52 (36.1)	68 (47.2)	8.229	0.144*
Ikwere	24 (16.7)	23 (16.0)		
Ijaw	19 (13.2)	14 (9.7)		
Yoruba	9 (6.3)	2 (1.4)		
Hausa	3 (2.1)	5 (3.5)		
Others	37 (25.7)	32 (22.2)		
Religion				
Christianity	133 (92.4)	136 (94.4)	3.033	0.386*
Muslim	10 (6.9)	5 (3.5)		
Traditional Religion	1 (0.7)	2 (1.4)		
Family Type				
Monogamous	114 (79.2)	111 (77.1)	0.183	0.183
Polygamous	30 (20.8)	33 (22.9)		
Household Size				
≤ 4	53 (36.8)	61 (42.4)	0.929	0.335
> 4	91 (63.2)	83 (57.6)		
Mean Household Size	5.96 ± 4.0	5.88 ± 3.93		0.16**

*Fisher's exact *p*-value ** *t*-test

Table 2: Mean score of Health Related Quality of Life Dimensions of Participants

HQOL Dimensions	HIV Mean ± SD	HIV/TB Mean ± SD	T-Test	Students T- test p-value
Self-Rated QOL	78.47 ± 17.39	75.83 ± 18.15	1.26	0.209
Satisfaction with Health	76.67 ± 19.50	75.56 ± 17.45	0.51	0.611
Physical Health	74.82 ± 16.19	70.01 ± 17.52	2.42	0.016*
Psychological Health	71.09 ± 11.97	67.13 ± 12.15	2.79	0.006*
Social Relationship	65.28 ± 24.40	61.63 ± 27.19	1.20	0.232
Environmental	61.89 ± 14.28	60.20 ± 14.31	1.00	0.316
Global Domain	68.27 ± 12.99	64.74 ± 14.36	2.19	0.029*

*Statistically significant

Table 3: The relationship between HIV, TB and Quality of Life of patients

	HRQOL		X ²	p-value
	Good n (%)	Poor n (%)		
<i>Self-Rated QOL</i>				
HIV	104 (72.2)	40 (27.8)	0.269	0.604
HIV/TB	100 (69.4)	44 (30.6)		
<i>Satisfaction With Health</i>				
HIV	109 (75.7)	35 (24.3)	0.165	0.684
HIV/TB	106 (73.6)	38 (26.4)		
<i>Physical Health</i>				
HIV	85 (59.0)	59 (41.0)	4.030	0.045*
HIV/TB	68 (47.2)	76 (52.8)		
<i>Psychological Health</i>				
HIV	91 (63.2)	53 (36.8)	5.644	0.018*
HIV/TB	71 (49.3)	73 (50.7)		
<i>Social Relationship</i>				
HIV	69 (51.9)	65 (48.1)	0.308	0.579
HIV/TB	66 (48.5)	74 (51.5)		
<i>Environmental</i>				
HIV	80 (55.6)	64 (44.4)	2.002	0.157
HIV/TB	68 (47.2)	76 (52.8)		
<i>Global Domain</i>				
HIV	86 (59.0)	58 (41.0)	2.349	0.091
HIV/TB	69 (48.9)	75 (51.1)		

*Statistically significant

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Table 1: Socio-Demographic Characteristics of Study Participants

Variables	HIV n=144 (%)	HIV/TB n = 144 (%)	χ^2	p -value
Age Group (Years)				
≤ 24	12 (8.3)	18 (12.5)	3.157	0.532
25-34	66 (45.8)	54 (37.5)		
35-44	37 (25.7)	41 (28.5)		
45-54	22 (15.3)	21 (15.6)		
≥55	7 (4.9)	10 (6.9)		
Mean Age	35.69 ± 10.28	36.03 ± 10.92		
Sex				
Male	69 (47.9)	63 (43.8)	0.503	0.478
Female	75 (52.1)	81 (56.3)		
Marital Status				
Single	66 (45.8)	70 (48.6)	0.488	0.922*
Married	62 (43.1)	58 (40.3)		
Separated/Divorced	3 (2.1)	2 (1.4)		
Widowed	13 (9.0)	14 (9.7)		
Ethnicity				
Igbo	52 (36.1)	68 (47.2)	8.229	0.144*
Ikwerre	24 (16.7)	23 (16.0)		
Ijaw	19 (13.2)	14 (9.7)		
Yoruba	9 (6.3)	2 (1.4)		
Hausa	3 (2.1)	5 (3.5)		
Others	37 (25.7)	32 (22.2)		
Religion				
Christianity	133 (92.4)	136 (94.4)	3.033	0.386*
Muslim	10 (6.9)	5 (3.5)		
Traditional Religion	1 (0.7)	2 (1.4)		
Family Type				
Monogamous	114 (79.2)	111 (77.1)	0.183	0.183
Polygamous	30 (20.8)	33 (22.9)		
Household Size				
≤ 4	53 (36.8)	61 (42.4)	0.929	0.335
> 4	91 (63.2)	83 (57.6)		
Mean Household Size	5.96 ± 4.0	5.88 ± 3.93		0.16**

*Fisher's exact p-value ** t-test

Table 2: Mean score of Health Related Quality of Life Dimensions of Participants

HQOL Dimensions	HIV Mean ± SD	HIV/TB Mean ± SD	T-Test	Students T- test p-value
Self-Rated QOL	78.47 ± 17.39	75.83 ± 18.15	1.26	0.209
Satisfaction with Health	76.67 ± 19.50	75.56 ± 17.45	0.51	0.611
Physical Health	74.82 ± 16.19	70.01 ± 17.52	2.42	0.016*
Psychological Health	71.09 ± 11.97	67.13 ± 12.15	2.79	0.006*
Social Relationship	65.28 ± 24.40	61.63 ± 27.19	1.20	0.232
Environmental	61.89 ± 14.28	60.20 ± 14.31	1.00	0.316
Global Domain	68.27 ± 12.99	64.74 ± 14.36	2.19	0.029*

*Statistically significant

Table 3: The relationship between HIV, TB and Quality of Life of patients

	HRQOL		χ^2	p-value
	Good n (%)	Poor n (%)		
<i>Self-Rated QOL</i>				
HIV	104 (72.2)	40 (27.8)	0.269	0.604
HIV/TB	100 (69.4)	44 (30.6)		
<i>Satisfaction With Health</i>				
HIV	109 (75.7)	35 (24.3)	0.165	0.684
HIV/TB	106 (73.6)	38 (26.4)		
<i>Physical Health</i>				
HIV	85 (59.0)	59 (41.0)	4.030	0.045*
HIV/TB	68 (47.2)	76 (52.8)		
<i>Psychological Health</i>				
HIV	91 (63.2)	53 (36.8)	5.644	0.018*
HIV/TB	71 (49.3)	73 (50.7)		
<i>Social Relationship</i>				
HIV	69 (51.9)	65 (48.1)	0.308	0.579
HIV/TB	66 (48.5)	74 (51.5)		
<i>Environmental</i>				
HIV	80 (55.6)	64 (44.4)	2.002	0.157
HIV/TB	68 (47.2)	76 (52.8)		
<i>Global Domain</i>				
HIV	86 (59.0)	58 (41.0)	2.349	0.091
HIV/TB	69 (48.9)	75 (51.1)		

*Statistically significant

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