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Sociodemographic Correlates of Quality of Life Among HIV Positive Support Group and Non-Support Group Members at Comprehensive Health Centers in a South-Eastern State in Nigeria

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ABSTRACT

Background: Quality of life (QoL) is a multidimensional concept, influenced by several factors in different ways. Exposure into clients' sociodemographic and support group membership statuses, could inform efficient management strategies. Objective: To compare HIV positive support and non-support group memberships for sociodemographic determinants of QoL in comprehensive health centers in a South-eastern State in Nigeria. Methods: This was an institution based comparative study of 482 HIV positive clients selected using a two-stage sampling. Data collection was by interview using WHOQOLHIV-Bref and a semi-structured questionnaire. Chi-square test was used to identify statistically significant associations between variables. The significance level was set at the p value of < 0.05.Results: The mean age ± SD of respondents was 41.5 ± 9.84 years. Differences between QoL and support group membership include: age group (p=0.001), marital status (p=0.038), occupation (p=0.034), support sources (p=0.002) in physical domain; gender (p<0.001), home ownership (p =0.026) in psychological domain; age group (p=0.001), level of education (p=0.003), support source (p=0.002) in level of independence domain; marital status (p=0.024), support sources (p=0.001) in social relationship domain; marital status (p=0.020), occupation (p=0.026), home ownership (p=0.044), support sources (p= 0.007) in environment domain and sources of support (p=0.002) in spirituality domain. Conclusions: The modal age group of respondents was 40-49 years, while the majority were females, married and self-employed. These factors, domains cum support group memberships influence QoL. We recommend that these findings be factored in planning care for clients.

1. INTRODUCTION

The World Health Organization (WHO) has defined Quality of Life (QoL) as 'Individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, standards, expectations, and concerns.'[1] Health-Related Quality of Life (HRQoL) is a client reported outcome which is usually measured with carefully designed and validated instruments. It includes the physical, functional, social and emotional well-being of an individual.[2] Assessment of HRQoL has been shown to be useful for documenting the perceived burden of chronic diseases from the client's point of view, tracking changes in health over time and quantifying returns on healthcare investment. [3]

The Human Immunodeficiency Virus (HIV)/ Acquired Immune Deficiency Syndrome (AIDS), has continued to impact on the health of populations.[4,5,6,7] In the year 2016, an estimated 36.7 million persons living with HIV/AIDS (PLWHA) was reported worldwide.[8] Nigeria contributes substantially to the global burden of HIV/AIDS. According to the United Nations Programme on HIV /AIDS (UNAIDS), Nigeria is ranked the country that has the second-highest number of PLWHA globally, with an estimated HIV prevalence of 3.1%.[9] Anambra state has the highest prevalence (8.7%) of HIV/AIDS in South-eastern Nigeria [10]

A peer support group as defined by the African Medical and Research Foundation (AMREF) is ''a group of individuals with a common need who come together to share experiences while supporting one another." [11] Peer support has the main objective of enabling group members to deal better with their issues by providing support based on the sharing of information and experience, and mutual counselling among peers.[11,12] Peer support as a strategy is increasingly employed in managing chronic diseases in healthcare environments in resource-limited settings. It has been widely used to improve physical, emotional and psychological health, and to promote behaviour change and self-care across diverse conditions and population groups.[12] Research reports reveal that participation in peer support groups assists PLWHA to deal with stigma and isolation, provides emotional support, improves HIV knowledge and promotes positive living.[13] This suffices that participation in support groups may also have a positive effect on their QoL.

Several studies in Nigeria and elsewhere, have reported the influence of various sociodemographic characteristics on QoL in HIV positives. These include, age and marital status;[7,14,15,16,17,18,19,20,22] gender;[!6] highest educational level attained;[19,21,22,23,24] employment status, occupation and income;[7,14,15,16,17,18,19,21,22,24] living in flats and other bigger apartments,[23] self-

esteem,[22] spirituality and availability of social and family support.[7,14,15,16,17,18,19,25,26,27,28] Razera *et al.*, in assessing the significant factors affecting HRQoL in PLWHA in Brazil, reported that most of these factors were socioeconomic.[29]

There is still the paucity of data in our study setting, on the QoL of this group of clients and on how membership of peer support groups and sociodemographic characteristics affect their QoL. This study has become timely, especially in this era of health sector reform. It is expected that the findings of the index study would help to address the knowledge gaps presently existent in QoL studies especially in Nigeria, guide recommendations and serve as a basis for policy formulation on appropriate interventions towards the use of peer support groups in the management of this special group in the State and beyond. It is against this backdrop that this comparative study is designed to determine sociodemographic factors that affect QoL among HIV positive clients who are members of a peer support group and those who are not in Comprehensive Health Centers of a tertiary hospital in a South-eastern State in Nigeria.

2. MATERIALS AND METHODS

The study area, period and design: This health facility based cross-sectional comparative study was conducted between January and June 2016 at two comprehensive health centers (CHCs) of a federal tertiary health institution, the Nnamdi Azikiwe University Teaching Hospital (NAUTH) at Ukpo and Neni. The NAUTH is a multi-complex made up of the main site at Nnewi, Guinness Eye Center Onitsha, Trauma center Oba, Staff annex at Awka and three CHCs at Ukpo, Neni, and Umunya. The Nnewi site and the CHCs offer comprehensive HIV/AIDs services under the FHI360 Strengthening Integrated Delivery of HIV/AIDS Services (SIDHAS).

Each of the center's hosts about 35-bed facility, which has the various cadre of health workers on its staff list, runs HIV clinic twice a week and receives referrals from surrounding towns, cities and states. At the time of this study, the first facility has an average monthly attendance of 392 clients and has 779 registered PLWHA accessing care. The center also runs a peer support group for the clients, with 162 registered members. The second facility operates a linkage system with the first CHC, as both facilities are manned by the same group of doctors on a rotational basis. This center has an average monthly attendance of 264 clients and has 689 registered PLWHA accessing care. The peer support group run in this center has 114 registered members. Membership, decline or withdrawal from these support groups is voluntary.

Study population and sampling technique: The target population comprises all registered HIV positive clients accessing care at the CHCs Ukpo and Neni. All HIV positive clients who are accessing care for at least six months, as well as those of age 18 years or older at the commencement of this study, met the inclusion criteria. Terminally ill clients and those with gross cognitive dysfunction were excluded because they were not able to respond to the questions. Pregnant women were also excluded as other factors associated with pregnancy e.g. vomiting, excessive tiredness may affect their responses.

The minimum sample size (*n*) to determine a difference in the mean quality of life scores between two groups of HIV positive clients that are significant at 5% level and with 90% chance of detecting a difference (power) was calculated using the formula for comparison of two means stated thus;[30] $n = \frac{(u+v)^2(\sigma_1^2+\sigma_0^2)}{(\mu_1-\mu_0)^2}$, where $\mu_1 - \mu_0$ = Difference between means; σ_1, σ_0 = Standard deviations; *v* = Percentage point of the normal distribution (standard normal deviate) corresponding to the two-sided significance level set at 1.96; *u*= One sided percentage point of the normal distribution (standard normal deviate) corresponding to 100%− power (1−β) ; power = 80%, therefore *u* = 1.28. These assumptions were made: That this study is in peer support groups, a form of social support, so the social domain of the WHOQoLHIV BREF was considered the primary endpoint for the purpose of the sample size calculation.[31] Secondly, that the size of difference between the HRQoL mean scores that are to be detected was derived from the formula to determine effect size;[31] $\Delta = \mu_{ns}-\mu_{z/}\ \sigma$, where Δ = effect size; μ_{ns} =social domain mean of nonmembers of support group =16.09 (from a study "QOL of Nigerians living with HIV" conducted by Adeolu *et al.*, in Osun State, Nigeria);[32] μ=social domain means of support group members =13.6 (from a study by Akpan *et al*., on 'QoL of people living with HIV/AIDS in Cross River State, Nigeria,'[33] σ = pooled SD = 2.91.[32,33]

$$= \frac{16.09 - 13.6}{2.91} = 0.86$$

Therefore, $\mu_1 - \mu_0$ = 0.86, and the standard deviations of the social domain scores in each group. σ_1 = 2.81[105], σ_0 =3.01.[112]

Calculating $n = \frac{(1.96 + 1.28)^2 (2.81^2+3.01^2)}{(0.86)^2}$ = 240.6 = 241 per group

Because the study compared two groups (support group members and non-support group members), 2 to obtain the total sample size for the study multiplied the figure obtained above: 241 × 2 =482. Thus, the minimum sample size required for the study =482 clients.

Based on the average attendance over 3 consecutive months and the total monthly attendance over the 3 months, the sample size calculated was proportionately allocated to the two study centers using the formula:

$$\frac{\text{Average monthly clinic attendance for the health facility}}{\text{Total monthly clinic attendance for both facilities}} \times 480$$

For CHC Ukpo, the average monthly attendance was 392, therefore the minimum number of clients to be interviewed = 392/656 x 480 =286. For CHC Neni, the average monthly attendance was 264, therefore the minimum number of clients interviewed =264/656 x 480 =194.

For each center, the number of clients to be interviewed was split equally into those who belong to a support group and those who do not belong to a support group. A minimum number of clients interviewed per data collection day was obtained by dividing the total number of clients to be interviewed from the center by the number of weeks scheduled for data collection. For CHC Ukpo =286/8 = 36 clients per data collection day = 18 clients per group, while for CHC Neni =194/8 =24 clients per data collection day = 12 clients per group.

The following sampling technique was then employed: *Stage 1*: For each data collection day, a list of clients booked for appointment was determined from the Records Department. Based on information from their case notes, stratified sampling technique was used to split this list into two- those that belong to a support group and those that do not. *Stage 2:* Systematic random sampling technique was then employed as follows: From the frame of each stratum, a sampling fraction was determined by dividing the number of clients booked for appointment on each data collection day by the minimum number of clients to be interviewed in each group. Then, every n^{th} eligible consenting client presenting for care was recruited for an interview until the sample size for each center was obtained.

Data collection and analysis: An interviewer-administered semi-structured questionnaire was used to obtain data on sociodemographic characteristics of clients. The QOL was assessed using the WHOQOL HIV-Bref Instrument.[34] The WHOQOLHIV-Bref consists of 31 items with each item using a five (5) point Likert scale where one (1) indicates high positive perceptions. Higher

scores depict better QOL. These items are distributed in six domains: *Domain I Physical domain* – comprises four (4) items that assess areas such as presence of pain and discomfort, energy and fatigue, dependence on substances or treatments, sleep and rest and symptoms related to HIV; *Domain II Psychological well-being* – This comprises five (5) items that assess areas such as patient's affect, both positive and negative, self-concept, concentration, and body image; *Domain III Level of independence* consists of four (4) items which measure mobility, activities of daily living, dependence on medication and perceived working capacity; *Domain IV Social relationships* – comprises four (4) items that assess areas personal relationship, social support, sexual activity, and social inclusion. *Domain V: Environment* – comprises eight (8) items that assess aspects such as freedom, quality of home environment, physical safety and security and financial status, involvement in recreational activity, and accessibility and quality of health and social care, opportunities for acquiring new information and skills and transport; *Domain VI: Spirituality* measures forgiveness and blame, concerns about the future and death and dying. It contains four (4) items.

Four (4) research assistants carefully recruited from Community health extension workers at the CHCs collected data. All who gave consent and whose appointment fell within the study period were interviewed. To ensure data quality, training of data collection team, pre-data collection training and regular field monitoring of data collection were done. There was spot-checking and reviewing of the completeness of questionnaires during and at the end of each data collection day.

The HRQoL among HIV/AIDS clients can be affected by factors which for purposes of this study were categorized into the community (membership or not of peer support groups) and socio-demographic (age, sex, educational attainment, etc.). The dependent /outcome variable for this study is the QoL score, while the independent variables are support group membership and sociodemographic factors. The domain scores are scaled in a positive direction with higher scores denoting better QoL, however, some questions are not scaled in a positive direction and as such, higher scores here did not denote higher QoL. The scores of negatively phrased items were reversed so that higher scores denote higher QoL. The mean scores of items within each domain were multiplied by four (4) in order to make the domain scores comparable with the scores in the full version of World Health Organization Quality of Life instrument (WHOQOL-100).[35] In the WHQoL -100, facet scores are multiplied by four so that, in the case of a question that has not been answered, the score of a facet compensates the invalidation of the question by multiplication with the number of valid questions that the facet should have.[36]The scores thus range from four

(4) to 20. Domains that had one missing score were replaced with the mean of scores of other questions in the domain.[37]

The data were reviewed and entered into the computer. The data were cleaned by checking for any data collection or coding errors. Data entry and analysis was carried out with International Business Machines –Statistical Package for the Social Sciences (IBM-SPSS) Windows version 22.0.[38] Continuous and categorical variables are displayed as means ± standard deviation (SD), frequencies and percentages respectively. Bivariate analysis with Chi-square test was conducted with age, sex, while p values $\leq$ 0.05 were considered as statistically significant.

Ethical consideration: The study has been examined and approved by the University Teaching Hospital Ethics Committee. A written informed consent was obtained from each participant for the conduct and publication of this research study and assurance of confidentiality given. Study participants were free to refuse or withdraw from the study at any time without any penalty. The study's purpose and objectives were explained to each participant prior to the interview. All authors hereby declare that the study has therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

3. RESULTS

486 questionnaires were distributed out of which 482 were filled and thus analysed. This gives a response rate of 99.2%. The mean age of the participants was 41.5 ± 9.84 years. Variables such as age, gender, marital status, the level of education, occupation, homeownership, and sources of support were comparable for support and non-support group members.

Table 1 summarizes the association between sociodemographic characteristics of respondents with QoL in the physical domain. There were statistically significant differences between QoL among support group members, with respect to age group (p = 0.001), marital status (p = 0.038), occupation (p = 0.034) and support sources (p = 0.002). Among non-support group members, the only association was between QoL and marital status (p = 0.043). **Table 2 summarizes the association between sociodemographic characteristics of respondents with QoL in the psychological domain.** There were associations between QoL within support group members and gender (p<0.001), home ownership (p =0.026). Among nonsupport group members, associations were found between QoL and age group (p = 0.028) cum gender (p = 0.003)

Table 3 summarizes the association between sociodemographic characteristics of respondents with QoL in the level of independence domain. There were associations between QoL within support group members and age group (p =0.001), level of education (p = 0.003) and support source (p = 0.002). Among non-support group members, associations were found between QoL and age group (p = 0.045) and level of education (p = 0.002).

Table 4 summarizes the association between sociodemographic characteristics of respondents with QoL in the social relationship domain. The associations between QoL and marital status (p=0.024) cum support sources (p=0.001) respectively were statistically significant among support group members while in non-support group members, there were associations between QoL and marital status (p < 0.001, a level of education (p < 0.001) and support sources (p = 0.006).

Table 5 summarizes the association between sociodemographic characteristics of respondents with QoL in the environment domain. The associations between QoL and marital status (χ^2 = 7.849, p=0.020), occupation (χ^2= 7.316, p=0.026), home ownership (χ^2=4.075, p=0.044, support sources (χ^2= 7.318, p = 0.007) among support group members were statistically significant. Among non-support group members, the association between QoL and level of education (χ^2 =15.647, p = <0.001) and occupation (χ^2 = 12.350, p = 0.006) were statistically significant.

Table 6 summarizes the association between sociodemographic characteristics of respondents with QoL in the spirituality domain. There was an association between sources of support and QoL (χ^2 =9.286, p = 0.002) within support group members. Among nonsupport group members, associations were observed between QoL and marital status (χ^2 = 13.294, p = 0.001) and sources of support (χ^2 = 8.013, p = 0.005).

4. DISCUSSION

This cross-sectional study determined and compared sociodemographic factors affecting QoL among HIV positive clients who are members and non-members of peer support groups in Anambra State, Nigeria. A high response rate (99.2 %) was obtained from this study and is consistent with the rates obtained in studies by Nozaki *et al.*, [39] in Zambia, Anaekwe *et al.*, [40]and Nnebue *et al.*, [41] in Nigeria.

From our study, sociodemographic characteristics were shown to affect QoL to varying degrees depending on the domain being assessed. In this study, differences were found between QoL among support group members with respect to age group, marital status, occupation, support sources in the physical domain; gender, homeownership in the psychological domain; age group, level of education, support source in the level of independence domain; marital status, support sources in the social relationship domain; marital status, occupation, homeownership, support sources in the environment domain and sources of support in the spirituality domain. This finding corroborates the findings in Nigeria and other parts of the world. Though these researchers did not classify the factors found to affect QoL based on domains, socio-demographics were reported to affect QoL in their clients.[16,20,21,22,23,24,25,27,32,42] This could stem from the improved access to free antiretroviral medication for all persons diagnosed with HIV. Though Munsawaengsub *et al.*, used the Thai version of the WHO QoL Bref to assess QoL, and among a purposively selected sample of HIV clients in Bangkok and also did not categorise these factors according to the different domains, they found that age, level of education, presence of family relationships and social support were associated with QoL.[19]

From this study, the mean age of respondents was 41.5 ± 9.84 years. Though there was no statistical significance in the difference in age between support and non-support group members, this finding is consistent with the mean ages of respondents reported in studies by Odili *et al.*, in Edo State south-south Nigeria, [21] Samson-Akpan *et al.*, in Cross River State south-south Nigeria[33] and Akinyemi *et al.*, in Ogun State southwest Nigeria [23]

In the index study, the modal age group was the 40 – 49 years (34.2%). According to the 2012 National HIV AIDS and Reproductive Health Survey, the highest prevalence of HIV is among those aged 35-39.[37] In a study by Adedimeji and Odutolu among HIV support groups members from low socioeconomic background in southwest Nigeria, the modal age group of the participants was 31 - 35 years.[44] Akinyemi *et al.*, whose participants were drawn from adults living in Oro community Ogun State southwest Nigeria, the modal age group was the 25- 34 years.[23] These variations in study methodologies could account for the differences in the modal ages observed in these studies.

In the current study, there were generally more females (63.5%) than males (36.5%), with no statistically significant difference in gender comparing support and non-support group memberships. However, this female predominance could be because of the feminization of HIV/AIDS, a phenomenon that has been used to explain the increasing burden of HIV in females

compared to males. Though this trend has been linked with the natural biological susceptibility of females to HIV, of even greater importance are the man made elements, which have been shown to contribute to the trend. [43] These man made elements include cultural norms that limit women's access to information about HIV prevention, fear of violence and economic dependence among women and inter-gender power imbalance that makes it difficult for women to negotiate safe sexual practices with their partners. The 2012 National HIV/AIDS and Reproductive Health Survey (NARHS) conducted by the Nigerian Federal Ministry of Health (FMOH) also reported a higher prevalence of HIV in females.[43] Higher care seeking behaviour reported among women compared to their male folks could proffer an alternative explanation for this finding. This is consistent with findings of a study among HIV positive clients accessing care in a tertiary health facility in Enugu State southeast Nigeria, which reported 65.6% of their respondents as females,[45] that by Adeolu *et al*.. in a tertiary health facility in Osun State southwest Nigeria, which recorded 71 % of their study participants as female,[32] and several other studies in Nigeria.[16,20,27,3346,] On the contrary, the study by Akinyemi *et al.*, in a community survey which utilized the WHO QoL Bref among a general population, and not specific to PLWHA had more male respondents than female.[23] The preponderance of males in this study may have resulted from differences in methodologies such as populations (a general population rather than a population of PLWHA), subject characteristics and sampling methods.

The majority of the respondents in this study were married (61.0%). Adeolu, [20] Akpan *et al.*, [32] and Bello *et al.*, [33] also reported a preponderance of married women in their studies in the States of Osun southwest, Cross River south-south and Kwara northcentral Nigeria respectively This higher proportion of married respondents may be because married HIV positive individuals that are concordant may feel less stigmatized accessing care compared with their never married counterparts, who may feel more stigmatised because of the fear of losing possible partners. On the contrary, the 2010 National HIV seroprevalence sentinel survey reported that the prevalence of HIV was higher among the never married women than the married.[47] It should be noted that the National HIV seroprevalence sentinel survey studied only pregnant women attending the antenatal clinic.

The majority of the respondents in the current study had a secondary education (51.2%). This finding is similar to the finding of studies conducted in Enugu, Kogi, Cross River and Ogun States Nigeria.[23,24,33,45] However, in a cross-sectional study, carried out by Odili *et al*., among clients attending the medical outpatient clinic in a tertiary health care center in Edo State Nigeria,

majority of the respondents had at least a tertiary education.[21] In yet another cross-sectional study though conducted in a secondary health care facility in Kwara State, the majority of respondents had primary education at the highest level of education attained.[20] Further studies are suggested in this area.

In this study, a majority of the respondents were self-employed (64.9%). This finding is consistent with the findings of studies by Agu *et al*.,[48] in a secondary care facility in Abuja and Ndu *et al*., [45] in a tertiary health facility in Enugu South East Nigeria. This could be a reflection of the paucity of government jobs and the self-employment initiative being encouraged by the government. In accordance with the cultural norms and strong extended family linkages in Igbo land where this study was conducted, families usually consider it an obligation to take care of their own. This could explain the finding from the index study, that majority of the respondents among support and non-support group members reported the presence of family support (80.5%). This finding is similar to that by Odili *et al.*, in which 81.6% of respondents reported the presence of family support.[21] It is the view of the researchers that the extent to which family members are willing and able to provide emotional and financial support to their sick family members may affect their QoL.

A study assessing the association between support group membership, socio-demographic and HIV related factors in Southwestern Nigeria, documented that compared to those who did not belong to a support group (45 %), those who did (55%) were more knowledgeable about HIV related issues (p=0.00) and had more favourable attitudes toward the illness and its treatment (p=0.005) and thus the QoL.[49] These findings thus suggest that several other factors need to be taken into consideration in efforts towards improving QoL of PLWHA.

Limitations of the study

While our study maintained its internal validity with standardized HIV tests and well-structured validated data collection instruments-pretested questionnaires and WHOQOL-HIV BREF, its findings should be cautiously generalized because of the sampling of two out of four health centers. The WHOQOL-BREF instrument measures QoL within two weeks prior to the interview, the information provided by respondents may be influenced by recall bias. The self-reporting options we used in data collection is prone to bias, which can lead to reporting errors. However, participants were given enough time to reflect and think through a sequence of events in their life before answering.

CONCLUSIONS

This study found that the mean age and modal age group of respondents were 41.5 ± 9.84 and 40-49 years respectively. The majority of the respondents in this study were females, married, self-employed and had a secondary education. Sociodemographic characteristics were shown to affect QoL to varying degrees depending on the domain being assessed. Support group membership was associated with QoL

We recommend that health workers should target early integrated cum continued HIV counselling (more rigorous among females, married and self-employed) and health education on the role of participation in support group activities on QoL. We strongly suggest that the Government, Non-Governmental Organizations, and support groups ensure use of multiple channels of communication in sensitizing people on myths concerning HIV as a way of reducing stigmatization and discrimination among PLWHA and promoting campaigns that increase utilization of HIV counselling and testing services, especially among this group. The PLWHA should be empowered to enable them to attain financial self-sufficiency via avenues such as the provision of accessible loans through the support groups.

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Table 1: Association of sociodemographic characteristics with QoL in the physical domain HIV positive support group and non-support group members in comprehensive health centers in Anambra state, Nigeria from January to July 2016.

	Support Group			Non-Support		
Variable	**Good QoL**	**Poor QoL**	**χ^2 p value**	**Good QoL**	**Poor QoL**	**χ^2 p Value**
Age group (years)						
<30	21(67.7)	10(32.3)	15.427	16(41.0)	23(59.0)	3.149
30 – 39	49(70.0)	21(30.0)	0.001	41(56.2)	32(43.8)	0.369
40 – 49	55(64.7)	30(35.3)		44(55.0)	36(45.0)	
>=50	21(38.2)	34(61.8)		23(46.9)	26(53.1)	
Gender						
Male	59(65.6)	31(34.4)	1.489	50(58.1)	36(41.9)	2.394
Female	87(57.6)	64(42.4)	0.222	74(47.7)	81(52.3)	0.122
Marital Status						
Never Married	26(76.5)	8(23.5)	6.540	19(57.6)	14(42.4)	6.313
Currently Married	89(61.4)	56(38.6)	0.038	83(55.7)	66(44.3)	0.043
Others	31(50.0)	31(50.0)		22(37.3)	37(62.7)	
Level of Education						
No Formal	3(42.9)	4(57.1)	6.190	4(36.4)	7(63.6)	1.188
Primary	42(51.9)	39(48.1)	0.103	37(52.9)	33(47.1)	0.756
Secondary	77(64.2)	43(35.8)		65(51.2)	62(48.8)	
Tertiary	24(72.7)	9(27.3)		18(54.5)	15(45.5)	
Occupation						
Self Employed	101(65.6)	53(34.4)	6.738	83(52.2)	76(47.8)	1.872
Salaried	22(61.1)	14(38.9)	0.034	25(56.8)	19(43.2)	0.392
Unemployed/housewife	23(45.1)	28(54.9)		16(42.1)	22(57.9)	
Home Ownership						
Rented	88(65.7)	46(34.3)	3.275	71(54.2)	60(45.8)	0.867
Owned	58(54.2)	49(45.8)	0.070	53(48.2)	57(51.8)	0.352
Support Source						
Family	129(65.2)	69(34.8)	9.708	100(52.6)	90(47.4)	0.500
Others	17(39.5)	26(60.5)	0.002	24(47.1)	27(52.8)	0.480

Table 2: Association of sociodemographic characteristics with QoL in the psychological domain among HIV positive support group and non-support group members in comprehensive health centers in Anambra state, Nigeria from January to July 2016.

	Support Group			Non Support		
	Good	Poor	χ^2	Good	Poor	χ^2
Variable			**p value**			**p Value**
Age group (yrs)						
<30	20(64.5)	11(35.5)	3.730	13(33.3)	26(66.7)	9.136
30 – 39	51(72.9)	19(27.1)	0.292	39(53.4)	34(46.6)	0.028
40 – 49	56(65.9)	29(34.1)		49(61.2)	31(38.8)	
>=50	31(56.4)	24(43.6)		22(44.9)	27(55.1)	
Gender						
Male	73(81.1)	17(18.9)	15.385	55(64.0)	31(36.0)	8.927
Female	85(56.3)	66(43.7)	<0.001	68(43.9)	87(56.1)	0.003
Marital Status						
Never Married	24(70.6)	10(29.4)	3.133	15(45.5)	18(54.5)	1.134
Currently Married	99(68.3)	46(31.7)	0.209	80(53.7)	69(46.3)	0.567
Others	35(56.5)	27(43.5)		28(47.5)	31(52.5)	
Level of Education						
No Formal	3(42.9)	4(57.1)	2.057*	5(45.5)	6(54.5)	1.183
Primary	55(67.9)	26(32.1)	0.561	39(55.7)	31(44.3)	0.757
Secondary	77(64.2)	43(35.8)		64(50.4)	63(49.6)	
Tertiary	23(69.7)	10(30.3)		15(45.5)	18(54.5)	
Occupation						
Self Employed	99(64.3)	55(35.7)	1.711	81(50.9)	78(49.1)	0.044
Salaried	27(75.0)	9(25.0)	0.425	23(52.3)	21(47.7)	0.978
Unemployed/housewife	32(62.7)	19(37.3)		19(50.0)	19(50.0)	
Home Ownership						
Rented	96(71.6)	38(28.4)	4.944	68(51.9)	63(48.1)	0.087
Owned	62(57.9)	45(42.1)	0.026	55(50.0)	55(50.0)	0.768
Support Source						
Family	143(72.2)	55(27.8)	21.814	101(53.2)	89(46.8)	1.616
Others	15(34.9)	28(65.1)	<0.001	22(43.1)	29(56.9)	0.204

*likelihood ratio chi square

Table 3: Association of socio demographic characteristics with QoL in the level of independence domain among HIV positive support group and non-support group members in comprehensive health centers in Anambra state, Nigeria from January to July 2016.

	Support Group			Non Support		
Variable	**Good**	**Poor**	χ^2 **p value**	**Good**	**Poor**	χ^2 **p Value**
Age group(years)						
<30	24(77.4)	7(22.8)	16.709	19(48.7)	20(51.3)	8.040
30 – 39	53(75.7)	17(24.3)	0.001	38(52.1)	35(47.9)	0.045
40 – 49	67(78.8)	18(21.2)		41(51.2)	39(48.8)	
>=50	27(49.1)	28(50.9)		14(28.6)	35(71.4)	
Gender						
Male	64(71.1)	26(28.9)	0.002	36(41.9)	50(58.1)	1.144
Female	107(70.9)	44(29.1)	0.967	76(49.0)	79(51.0)	0.285
Marital Status						
Never Married	26(76.5)	8(23.5)	1.899	14(42.4)	19(57.6)	0.559
Currently Married	105(72.4)	40(27.6)	0.387	72(48.3)	77(51.7)	0.756
Others	40(64.5)	22(35.5)		26(44.1)	33(55.9)	
Level of Education						
No Formal	5(71.4)	2(28.6)	14.119*	2(18.2)	9(81.8)	14.570
Primary	45(55.6)	36(44.4)	0.003	24(34.3)	46(65.7)	0.002
Secondary	96(80.0)	24(20.0)		73(57.5)	54(42.5)	
Tertiary	25(75.8)	8(24.2)		13(39.4)	20(60.6)	
Occupation						
Self Employed	113(73.4)	41(26.6)	4.893	77(48.4)	82(51.6)	3.535
Salaried	28(77.8)	8(22.2)	0.087	15(34.1)	29(65.9)	0.171
Unemployed/housewife	30(58.8)	21(41.2)		20(52.6)	18(47.4)	
Home Ownership						
Rented	100(74.6)	34(25.4)	1.975	66(50.4)	65(49.6)	1.763
Owned	71(66.4)	36(33.6)	0.160	46(41.8)	64(58.2)	0.184
Support Source						
Family	149(75.3)	49(24.7)	9.948	89(46.8)	101(53.2)	0.049
Others	22(51.2)	21(48.8)	0.002	23(45.1)	28(54.9)	0.825

*likelihood ratio chi square

Table 4: Association of sociodemographic characteristics with QoL in the social relationship domain among HIV positive support group and non-support group members in comprehensive health centers in Anambra state, Nigeria from January to July 2016.

	Support Group			Non Support		
Variable	**Good**	**Poor**	χ^2 **p value**	**Good**	**Poor**	χ^2 **p Value**
Age (years)						
<30	20 (64.5)	11(35.5)	4.003	17(43.6)	22(56.4)	5.825
30 – 39	42 (60.0)	28(40.0)	0.261	45(61.6)	28(38.4)	0.120
40 – 49	40 (47.1)	45(52.9)		52(65.0)	28(35.0)	
>=50	30 (54.5)	25(45.5)		26(53.1)	23(46.9)	
Gender						
Male	48(53.3)	42(46.7)	0.120	55(64.0)	31(36.0)	1.888
Female	84(55.6)	67(44.4)	0.729	85(54.8)	70(45.2)	0.169
Marital Status						
Never Married	22(64.7)	12(35.3)	7.447	15(45.5)	18(54.5)	20.107
Currently Married	85(58.6)	60(41.4)	0.024	103(69.1)	46(30.9)	<0.001
Others	25(40.3)	37(59.7)		22(37.3)	37(62.7)	
Level of Education						
No Formal	4(57.1)	3(42.9)	4.521*	5(45.5)	6(54.5)	8.100*
Primary	39(48.1)	42(51.9)	0.210	41(58.6)	29(41.4)	0.044
Secondary	66(55.0)	54(45.0)		68(53.5)	59(46.5)	
Tertiary	23(69.7)	10(30.3)		26(78.8)	7(21.2)	
Occupation						
Self Employed	83(53.9)	71(46.1)	2.785	96(60.4)	63(39.6)	1.393
Salaried	24(66.7)	12(33.3)	0.248	25(56.8)	19(43.2)	0.498
Unemployed/housewife	25(49.0)	26(51.0)		19(50.0)	19(50.0)	
Home Ownership						
Rented	76(56.7)	58(43.3)	0.461	80(61.1)	51(38.9)	1.045
Owned	56(52.3)	51(47.7)	0.497	60(54.5)	50(45.5)	0.307
Support Source						
Family	118(59.6)	80(40.4)	10.425	119(62.6)	71(37.4)	7.602
Others	14(32.6)	29(67.4)	0.001	21(41.2)	30(58.8)	0.006

*likelihood ratio chi-square

Table 5: Association of sociodemographic characteristics with QoL in the environment domain among HIV positive support group and non-support group members in comprehensive health centers in Anambra state, Nigeria from January to July 2016.

	Support Group			Non Support		
Variable	**Good**	**Poor**	**χ^2 p value**	**Good**	**Poor**	**χ^2 p Value**
Age (years)						
<30	19(61.3)	12(38.7)	0.989	17(43.6)	22(56.4)	7.235
30 – 39	44(62.9)	26(37.1)	0.804	41(56.2)	32(43.8)	0.065
40 – 49	52(61.2)	33(38.8)		55(68.8)	25(31.2)	
>=50	30(54.5)	25(45.5)		28(57.1)	21(42.9)	
Gender						
Male	50(55.6)	40(44.4)	1.274	53(61.6)	33(38.4)	0.537
Female	95(62.5)	56(37.1)	0.259	88(56.8)	67(43.2)	0.464
Marital Status						
Never Married	22(64.7)	12(35.3)	7.849	21(63.4)	12(36.4)	2.004
Currently Married	95(65.5)	50(34.5)	0.020	90(60.4)	59(39.6)	0.367
Others	28(45.2)	34(54.8)		30(50.8)	29(49.2)	
Level of Education						
No Formal	6(85.7)	1(14.3)	3.952*	4(36.4)	7(63.6)	12.350*
Primary	44(54.3)	37(45.7)	0.267	43(61.4)	27(38.6)	0.006
Secondary	73(60.8)	47(39.2)		67(52.8)	60(47.2)	
Tertiary	22(66.7)	11(33.3)		27(81.8)	6(18.2)	
Occupation						
Self Employed	96(62.3)	58(37.7)	7.316	94(59.1)	65(40.9)	15.647
Salaried	26(72.2)	10(27.8)	0.026	34(77.3)	10(22.7)	<0.001
Unemployed/housewife	23(45.1)	28(54.9)		13(34.2)	25(65.8)	
Home Ownership						
Rented	73(54.5)	61(45.5)	4.075	77(58.8)	54(41.2)	0.009
Owned	72(67.3)	35(32.7)	0.044	64(58.2)	46(41.8)	0.925
Support Source						
Family	127(64.1)	71(35.1)	7.318	113(59.5)	77(40.5)	0.346
Others	18(41.9)	25(58.1)	0.007	28(54.9)	23(45.1)	0.556

*likelihood ratio chi-square.

Table 6: Association of sociodemographic characteristics with QoL in the spirituality domain among HIV positive support group and non-support group members in comprehensive health centers in Anambra state, Nigeria from January to July 2016.

	Support Group			Non Support		
Variable	**Good**	**Poor**	χ^2 **p value**	**Good**	**Poor**	χ^2 **p Value**
Age						
<30	14(45.2)	17(54.8)	0.984	16(41.0)	23(59.0)	4.857
30 – 39	36(51.4)	34(48.6)	0.805	44(60.3)	29(39.7)	0.183
40 – 49	39(45.9)	46(54.1)		42(52.5)	38(47.5)	
>=50	29(52.7)	26(47.3)		30(61.2)	19(38.8)	
Gender						
Male	50(55.6)	40(44.4)	2.499	53(61.6)	33(38.4)	2.537
Female	68(45.0)	83(55.0)	0.114	79(51.0)	76(49.0)	0.111
Marital Status						
Never Married	15(44.1)	19(55.9)	3.525	15(45.5)	18(54.5)	13.294
Currently Married	78(53.8)	67(46.2)	0.172	95(63.8)	54(36.2)	0.001
Others	25(40.3)	37(59.7)		22(37.3)	37(62.7)	
Level of Education						
No Formal	4(57.1)	3(42.9)	0.676*	7(63.6)	4(36.4)	3.292*
Primary	37(45.7)	44(54.3)	0.879	39(55.7)	31(44.3)	0.349
Secondary	60(50.0)	60(60.0)		64(50.4)	63(49.6)	
Tertiary	17(51.5)	16(48.5)		22(66.7)	11(33.3)	
Occupation						
Self Employed	76(49.4)	78(50.6)	1.328	82(51.6)	77(48.4)	5.375
Salaried	20(55.6)	16(44.4)	0.515	31(70.5)	13(29.5)	0.068
Unemployed/housewife	22(43.1)	29(56.9)		19(50.0)	19(50.0)	
Home Ownership						
Rented	62(46.3)	72(53.7)	0.877	72(55.0)	59(45.0)	0.004
Owned	56(52.3)	51(47.7)	0.349	60(54.5)	50(45.5)	0.948
Support Source						
Family	106(53.5)	92(46.5)	9.286	113(59.5)	77(40.5)	8.013
Others	12(27.9)	31(72.1)	0.002	19(37.3)	32(62.7)	0.005

*likelihood ratio chi-square