

# Improving the Quality of Life of People Living with HIV/AIDS: A Cross-Sectional Study of the Role of Religion

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**ABSTRACT**

**Background:** Previous studies have found religion as a useful tool in coping with chronic medical conditions including HIV/AIDS. **Aim:** This study assessed how religiosity and religious coping are associated with quality of life (QOL) among people living with HIV/AIDS (PLWHA). **Patients and Methods:** This was a cross-sectional study of 140 HIV clinic attendees of a Nigerian tertiary health facility. Religiosity, religious coping and QOL were measured with religious orientation scale-revised (ROS-R), Brief Religious Coping (Brief RCOPE) and World Health Organization Quality of Life-Bref (WHOQOL-BREF), respectively. Correlation analysis assessed the relationship between ROS-R, Brief RCOPE and WHOQOL-BREF. **Results:** Intrinsic religiosity (IR) scores had a moderate positive correlation with psychological health domain of QOL ( $r = 0.4$ ,  $N = 140$ , and  $P 0.001$ ), and a weak positive correlation with physical health domain of QOL ( $r = 0.2$ ,  $N = 140$ , and  $P 0.05$ ). Extrinsic religiosity (ER) scores moderately correlated positively with the psychological health domain of QOL ( $r = 0.03$ ,  $N = 140$ , and  $P 0.002$ ), but weakly correlated positively with the physical health domain ( $r = 0.2$ ,  $N = 140$ , and  $P 0.02$ ). Positive religious coping (PRC) scores moderately correlated positively with the psychological health domain ( $r = 0.03$ ,  $N = 140$ , and  $P 0.05$ ) and weakly correlated positively with physical health domain of QOL ( $r = 0.2$ ,  $N = 140$ , and  $P 0.02$ ). Extrinsic religiosity social (ERS) scores had a moderate positive correlation with the social relationships domain ( $r = 0.4$ ,  $N = 140$ ,  $P 0.001$ ). **Conclusion:** Increased ER, IR orientations and Positive Religious Coping appear to improve the psychological and physical health domains of QOL. Therefore, religiosity should be encouraged among PLWHA to improve QOL.

**KEYWORDS:** HIV/AIDS, quality of life, religiosity, religious coping

## INTRODUCTION

Recent advances in research and treatment have shown that patients whose Human Immunodeficiency Virus (HIV) infection have been well managed with combined Antiretroviral therapy (cART) have improved longevity and a life expectancy approaching that of the general population, in high-, middle- and low-income countries.<sup>[1]</sup> However, people living with HIV/AIDS (PLWHA) doing well on cART have a significantly reduced health-related quality of life (HRQOL) compared to the general population, and even among other chronically ill

patients with type 1 and type 2 diabetes mellitus and rheumatoid arthritis.<sup>[2,3]</sup>

According to data from the United Nations-World Population Prospects, the life expectancy for Nigeria in 2020 was 54.81 years, a 0.58% increase from

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2019 (54.49 years), and in 2017 it was 53.73 years.<sup>[4]</sup> This is low compared to South Africa's 63.54 years (2017) and the United Kingdom's 81.16 years (2017).<sup>[5]</sup> Nigeria's low life expectancy rate has been attributed to numerous health challenges facing a nation with a weak health infrastructure and various non-communicable and communicable diseases including the HIV/AIDS epidemic, affecting young people in their productive age.<sup>[6]</sup> A study in Kano, North West Nigeria, a decade and a half ago, showed the mean age of participants living with HIV/AIDS to be  $33.8 \pm 8$  years.<sup>[7]</sup> Efforts have been made particularly by Non-Governmental Organizations (NGOs) and some donor countries to improve the life expectancy of Nigerians by combating communicable and non-communicable diseases, for instance, the Bill and Melinda Gates Foundation is committed to the eradication of polio in Nigeria,<sup>[8]</sup> and the United States President's Emergency Plan for AIDS Response (PEPFAR) has been effective in fighting the AIDS epidemic in Nigeria.<sup>[9]</sup> However, indicators of diseases have been expanded from morbidity and mortality to include such measures as quality of life (QOL).

QOL conveys "a sense of wellbeing, including aspects such as happiness and satisfaction with life as a whole".<sup>[10]</sup> The World Health Organization (W.H.O.) defines it as "individual's perceptions of their position in life in the context of the culture and value systems in which they live in relation to their goals, standards, expectations and concerns".<sup>[11]</sup> HRQOL indicates "an individual's feeling of wellbeing, controlled autonomy, a positive self-perception and a sense of belonging, participation in enjoyable and meaningful activity, and a positive view of life".<sup>[12]</sup> Assessing HRQOL in PLWHA helps in documenting the patient's perceived burden of the chronic HIV disease, tracks changes in health over time and assesses treatment efficacy.<sup>[10]</sup>

People ageing with HIV have comorbidities and a host of other psychosocial issues such as substance use disorder, depression, anxiety, financial stresses, domestic violence and experiences of or apprehension about HIV-related discrimination and stigma.<sup>[13,14]</sup> The psychosocial issues have a hugely detrimental impact on patients' emotional well-being and ultimately on their QOL. Severe depression from stigma, loss of self-esteem and family support may have serious consequences including deliberate refusal of treatment, suicide, and killing the patient even before the physical complications of AIDS set in.

It is believed that PLWHA who are coping well with their condition may achieve a balance of longevity and HRQOL, religion being a useful coping resource.

Religious coping and social support played important roles in reducing depressive symptoms and improving the psychological well-being of the participants in the study.<sup>[15]</sup> It has been indicated that whereas negative religious coping (NRC) was associated with low levels of QOL while controlling for socio-demographic and clinical variables, positive religious coping (PRC) was associated with positive domains of outcome measures, positive affect and life satisfaction.<sup>[16]</sup>

Resilience in PLWHA correlated positively with PRC, while it negatively correlated with NRC showing that PRC improves resilience and ability to withstand the complications of HIV and better outcomes.<sup>[17]</sup> With respect to disease progression, those with a positive view of God have a slower rate, while those with a negative view of God have a faster HIV disease progression,<sup>[18]</sup> because PRC may buffer the negative effects of stress, reduce HIV-related stigma effect on well-being, improve medication adherence and encourage larger social networks, better mood and lesser depression leading to higher self-reported health outcomes.<sup>[19]</sup>

It has been shown that the chronic nature of HIV/AIDS requires that significant lifestyle adjustments including increased religiosity, PRC and consistent adherence to cART are necessary for survival and maintenance of good immune health, a CD4+ count less than 200 in PLWHA has been associated with a lower QOL.<sup>[20]</sup> But religion can play a dual role as a facilitator for or a barrier to HIV prevention, diagnosis and treatment, PRC being a major facilitator and NRC, being a barrier.<sup>[14]</sup> It is remarkable that despite the availability of this cheap but important resource in Africa, enough work has not been done to fully harness and exploit the usefulness of religion in the management of HIV/AIDS patients in the continent. With the growing population of ageing PLWHA, there is a need for more research on how to plan care interventions that enhances the HRQOL of PLWHA, thus balancing longevity with QOL.

## MATERIALS AND METHODS

### Study design

This was a cross-sectional study of outpatient clinic attendees with HIV/AIDS. Patients were recruited from the HIV clinic of the University of Nigeria Teaching Hospital (UNTH), located at the permanent site at Ituku-Ozalla, 21 km from the Enugu metropolis.

### Ethics

The study protocol was approved by the Ethics and Research Committee of the University of Nigeria Teaching Hospital, Ituku-Ozalla, Enugu, where the Principal Investigator is affiliated. The research

procedure was interview-based and non-invasive. Written informed consent was obtained from willing participants. Participants were free to withdraw from the study at any time, even after having consented initially, and that did not affect their medical care in the hospital.

## Measurements

### *Socio-demographic and clinical profile questionnaire*

This questionnaire had two parts that show the socio-demographic profile and the clinical profile of the study participants. The questions in the socio-demographic profile assessed the educational attainment and occupational status of the study group.

The clinical profile part of the questionnaire provided a brief summary of the participants' clinical history of their illness.

### *The religious orientation scale-revised*

The Religious Orientation Scale – Revised (ROS-R) is a 14 items Intrinsic/Extrinsic (I/E) scale scored on a 5-point Likert ranging from 'I strongly disagree' (1) to 'I strongly agree' (5). Eight items with three reversed scores (scale items 3, 10 and 14) tap the intrinsic orientation whereas six items, three items each measure the personal and social categories of extrinsicness. Extrinsic religiosity (ER) is defined as religious activities involving at least 2 people and includes attendance at the place of worship, volunteer activities related to religion and church socialization activities. Intrinsic religiosity (IR) involves solitary activities such as praying, Bible reading, personal belief in God and meditation. The intrinsically religious person 'lives' his religion while the extrinsically religious person 'uses' his religion.<sup>[21]</sup> Three single items for each of the 3 orientations (item 12 for intrinsic, item 8 for extrinsic personal and item 13 for extrinsic social (ES)) were identified. The score of each subscale is determined by summing its items responses resulting in a range of 8–40 for the Intrinsic (IR)-revised, 3–15 for each of the two Extrinsic -revised (ER) subscales, that is, Extrinsic religiosity personal (ERP) and ERS or 6–30 for Extrinsic--revised (ER). Reliability estimates for Intrinsic (I)-revised was 0.83, for Extrinsic personal (ERP)-revised is 0.57, Extrinsic social (ERS)-revised is 0.58 and Extrinsic (ER)-revised is 0.65.<sup>[22]</sup> It has been used in a study in Nigeria.<sup>[23]</sup>

### *The brief RCOPE (brief religious coping scale)*

The Brief RCOPE, a 14-item measure of religious coping with life stressors, was generated through a factor analysis from the larger 63-item, 21 subscales, Full RCOPE. Items are scored on a 4-point Likert ranging from '0 = not at all' to '3 = a great deal'. The Brief RCOPE has two subscales: positive and negative.

Whereas the PRC method reflects a secure relationship with a transcendent force, a sense of connectedness with others and a benevolent world view, the NRC method reflects underlying spiritual tensions, conflicts and struggles within oneself, with others and with the divine.<sup>[23]</sup> Both positive and NRC subscales have high degrees of internal consistency (Cronbach  $\alpha$  level of 0.90 and 0.81, respectively).<sup>[24]</sup> It has been used in a study in Nigeria.<sup>[23]</sup>

### *WHO quality of life – BREF (WHOQOL-BREF)*

WHOQOL-BREF is an abridged version of the WHOQOL-100. It is an instrument developed by the WHOQOL Group (working in 15 international field centres simultaneously), attempting to measure QOL that is acceptable cross-culturally. It may help physicians make decisions about the areas/domains that are most affected by the disease and changes (care outcome/prognosis) over the course of the clinical intervention. It is based on a 4-domain structure consisting of physical health, psychological health, social relationships and environment. It consists of a total of 26 items that tap into the four domains of QOL. It can be self-administered or interviewer-assisted/administered. The foy domain scores denote the individual's perception of QOL in each particular domain. The domain scores are scaled in a positive direction (higher scores denote higher QOL). The mean score of items within each domain is used to calculate the domain score (for that particular domain). Mean scores are then multiplied by four in order to make domain scores comparable with the scores used in the WHOQOL-100.<sup>[11]</sup> The Cronbach's alpha coefficients for the four domains of the WHOQOL-BREF have been reported to be 0.79, 0.78, 0.76 and 0.87 for physical health, psychological health, social relationships and environment, respectively.<sup>[25]</sup> It has been used in a study in Nigeria.<sup>[26]</sup>

## Procedures

A total of 140 participants were consecutively recruited for this study, from the HIV/AIDS care unit of UNTH, Ituku-Ozalla. The clinical team consists of a multidisciplinary team of consultants and residents in the infectious disease unit of UNTH (Internal Medicine), Community Health Physicians, Consultation-Liaison Psychiatrists, Clinical Psychologists, Counsellors, Nurses and Pharmacists.

The HIV Clinic opens every day (Monday to Friday) between the hours of 9 am to 12 noon. Because of the short period of consultation at the clinic, there was a high rate of decline of participation in the study as most patients especially the males were in a hurry to see their doctors and leave the premises as quickly as possible. This accounted for a larger number of female participants

than males in the study. The females were more willing to participate. Only patients who were willing and met the criteria for the study were recruited. Participants were recruited over a 10-week period, 14 per week. Willing participants were interviewed while waiting to be seen by the attending physicians at the clinic. Inclusion criteria were patients aged between 18 and 64 years, with an established diagnosis of HIV disease using the enzyme-linked immunosorbent assay (ELISA) confirmatory test in UNTH, Enugu, and diagnosis made at least 1 year prior to the study. Exclusion criteria were patients with significant cognitive impairment that was severe enough to affect the ability to participate in the research interview and give informed consent and those too ill to participate in the study. This included participants with AIDS disease complications who were physically weak and are to be admitted to the in-patient medical ward. During recruitment, adequate care was taken not to interview a single participant twice over the period by tagging the case note.

### Statistics

Data was analyzed with the International Business Machine-Statistical Package for the Social Sciences (IBM-SPSS-PC) version 20 for Windows. Basic descriptive statistics was used to present the socio-demographic and clinical profiles. The Spearman's coefficient correlation statistics was used to explore the relationship between the scores on the WHOQOL BREF (dependent variable) and the scores on religiosity and religious coping scales (independent variables). All tests of significance were two-tailed at the 5% level and confidence interval estimation of 95%.

## RESULTS

### Socio-demographic characteristics of participants

As shown in Table 1, the mean age of participants is  $42.8 \pm 10.0$  years, the mean age at diagnosis is  $33.6 \pm 10.5$  years and the average duration of illness is  $8.4 \pm 3.7$  years. Females are more in number (80.7%), majority of the participants (55.7%) are married, though 24.3% of the participants who were formerly married, had lost their spouses to the illness. Majority of the participants (47.1%) are secondary school leavers, 28% have tertiary education and 80% of participants are gainfully employed. All the participants are Christians, majority (56%) of the Christians are Catholics followed by Pentecostals (36.4%) and the Anglican Communion (7.1%).

The probable route of contact for most participants is thought to be unprotected heterosexual sex (54%), though 42% of the participants are either unsure or do not want to disclose the possible route of contact. Blood and blood

**Table 1: Socio-demographic and clinical characteristics of the participants**

Variables	Frequency (%)	Mean (SD)
Age (years)		42.80 (10.02)
Age at Diagnosis (years)		33.61 (10.55)
Duration of Diagnosis (years)		8.43 (3.71)
Gender		
Male	27 (19.3)	
Female	113 (80.7)	
Marital Status		
Married	78 (55.7)	
Single	23 (16.4)	
Separated	2 (1.4)	
Divorced	3 (2.1)	
Widowed	34 (24.3)	
Level Education		
No formal	4 (2.9)	
Primary	31 (22.1)	
Secondary	66 (47.1)	
Tertiary	39 (27.9)	
Employment Status		
Students	3 (2.1)	
Unemployed	25 (17.9)	
Employed	112 (80.0)	
Christian Denomination		
Catholic	79 (56.4)	
Anglican	10 (7.1)	
Pentecostal	51 (36.4)	
Possible Route of Contact		
Sexual Contact (unprotected)	75 (53.6)	
Blood/blood Products	3 (2.1)	
Sharp objects	3 (2.1)	
Not Sure	59 (42.1)	
Complications (past 6 months)		
Yes	2 (1.4)	
No	138 (98.6)	

products (2.1%) plus sharp objects (2.1%) make up the rest of the probable route of contact. In the last 6 months prior to the research interview, majority (98.6%) of the participants affirmed that they have not had any complications whether physical (opportunistic infections, AIDS-related cancers, AIDS-dementia complex, etc.) or psychological (depressive symptoms, suicidal behaviour or treatment refusal).

### Religiosity, religious coping and QOL in HIV/AIDS

As shown in Table 2, IR orientation (defined as IR scores) has a moderate positive significant correlation with the psychological health domain of QOL ( $r = 0.4$ ,  $N = 140$ , and  $P 0.001$ ), a weak positive correlation with the physical health domain ( $r = 0.2$ ,  $N = 140$ ,

**Table 2: Relationship between religiosity, religious coping and quality of life among study participants n=140**

Religiosity/religious coping	Quality of life*			
	Domain 1	Domain 2	Domain 3	Domain 4
Intrinsic religiosity				
Spearman's Correlation coefficient ( <i>P</i> )	0.17 (0.05)	0.35 (0.001)	-0.48 (0.001)	-0.12 (0.15)
Extrinsic religiosity				
Spearman's Correlation coefficient ( <i>P</i> )	0.20 (0.02)	0.26 (0.002)	0.02 (0.81)	-0.02 (0.78)
Extrinsic personal				
Spearman's Correlation coefficient ( <i>P</i> )	0.22 (0.01)	0.37 (0.001)	-0.41 (0.001)	-0.11 (0.21)
Extrinsic social				
Spearman's Correlation coefficient ( <i>P</i> )	-0.07 (0.40)	-0.14 (0.11)	0.39 (0.001)	0.08 (0.34)
Positive religious coping				
Spearman's Correlation coefficient ( <i>P</i> )	0.17 (0.05)	0.26 (0.002)	-0.09 (0.27)	0.10 (0.23)
Negative religious coping				
Spearman's Correlation coefficient ( <i>P</i> )	0.03 (0.70)	-0.00 (0.98)	-0.16 (0.05)	-0.15 (0.08)

\*Quality of life: Domain 1=Physical health; Domain 2=Psychological health; Domain 3=Social relationships and Domain 4=Environment

and  $P$  0.05) and a moderate negative correlation with the social relationships' domain ( $r = -0.5$ ,  $N = 140$ , and  $P$  0.001). ER orientation (defined as ER scores) has a weak positive correlation with the physical health domain ( $r = 0.2$ ,  $N = 140$ , and  $P$  0.05) and a moderate positive correlation with psychological health domain ( $r = 0.3$ ,  $N = 140$ , and  $P$  0.001). ERP orientation (defined as EP scores) has a weak positive correlation with the physical health domain ( $r = 0.2$ ,  $N = 140$ , and  $P$  0.05), a moderate positive correlation with the psychological health domain ( $r = 0.4$ ,  $N = 140$ , and  $P$  0.001) and a moderate negative correlation with social health domain ( $r = -0.4$ ,  $N = 140$ , and  $P$  0.001). ES has a moderate positive correlation with the social relationships' domain of QOL ( $r = 0.4$ ,  $N = 140$ , and  $P$  0.001).

PRC has a moderate positive correlation with psychological health domain of QOL ( $r = 0.3$ ,  $N = 140$ , and  $P$  0.05), a weak positive relationship with physical health domain ( $r = 0.2$ ,  $N = 140$ ,  $P$  0.05). NRC has a weak negative linear correlation with the social relationships' domains of QOL ( $r = -0.2$ ,  $N = 140$ , and  $P$  0.05).

## DISCUSSION

### Socio-demographic characteristics of participants

In this study, the mean age of participants is  $42.8 \pm 10$  years with an age range of 18–64 years. When compared to a study in Kano, Northwest Nigeria, a decade and a half ago with a mean age of  $33.7 \pm 8$  years and an age range of 18–61 years,<sup>[7]</sup> it appeared the average age of Nigerians living with HIV/AIDS may be increasing. This trend may seem to add strength to the assertion that PLWHA is now living longer with the easier accessibility and availability of cART in the

country. All the participants are Igbo Christians, mostly Catholics (56.4%) and are educated, majority (75%) having at least a secondary school education. The Igbos of South East Nigeria are predominantly Christians and embraced education when the early Christian Missionaries came preaching the Gospel and educating its people.<sup>[27]</sup> With the increasing availability of counselling services in Enugu particularly at UNTH Ituku-Ozalla, participants living with HIV/AIDS are marrying themselves and those already married staying in their marriages accounting for the low separation and divorce rates (5% in total) among participants. It may appear remarkable to note that the majority of the study participants (80%) are gainfully employed. This may be indicative of increasing productivity/functionality and a possible reduction in social stigma/discrimination towards PLWHA as awareness through education among the general population about the disease increases.

Like in other studies,<sup>[7,28,29]</sup> the major possible route of contact in this study appeared to be unprotected heterosexual sex (54%), although a sizeable number (42%) of the participants were either unsure or rather shy to admit that sex was the route of contact. This may suggest that interventions emphasizing the reduction of transmission through unprotected sex are still very relevant in our environment. The high proportion of participants without physical or psychological complications in the study may be suggestive of improved care outcomes with cART and other psychological interventions now readily accessible in the hospital.

### Religiosity, religious coping and QOL in HIV/AIDS

Religion has been found to be a useful coping resource for both physical and mental illnesses.<sup>[30,31]</sup> Increased IR orientation, particularly, has been shown to be associated

with quicker remission of depression and improvement in the low self-esteem usually associated with chronic illnesses (thus improving outcome),<sup>[32]</sup> although the effect of religion appear to be more apparent in mental than in physical illnesses.<sup>[30]</sup> In this study, IR orientation has also been found to have a moderate positive significant correlation with the psychological health domain and a weak positive correlation physical health domain of QOL indicating that although it may appear to improve both physical and psychological health, the psychological health domain seems to be more responsive to its effects than the physical health domain of QOL among PLWHA who are committed to their religion. The moderate negative correlation of IR with the social relationships' domain of QOL is probably because IR orientation involves mostly solitary activities such as personal belief in God, personal prayers and meditation<sup>[21]</sup> which are at variance with social relationships.

Like IR, ERP orientation involves a personal relationship with God, also accounting for the moderate negative correlation with the social relationships' domain of QOL. Predictably, ERS orientation has a moderate positive correlation with the social relationships' domain of QOL. Therefore, the effects of ERP) and the ERS on the social relationships domain of QOL appear to cancel out resulting in ER generally having no significant relationship with the social relationships domain part of QOL. However, ER orientation generally appears to be associated with improvement in the physical and psychological health of the participants because it has a significant positive correlation with both. Organized religion (ER) may be helpful in improving QOL because it appears to offer emotional support and practical assistance to individuals with such religious affiliations in times of difficulty.<sup>[33]</sup>

(PRC had a positive correlation with both the physical and psychological health domains of QOL. This may seem to mean that individuals with HIV/AIDS coping well with their conditions may have an improvement in their physical and psychological health. This has been affirmed by other studies.<sup>[15-17]</sup> The NRC method on the other hand had a weak negative correlation with the social relationships' domain of QOL seemingly implying a weak negative association with it. It has been noted previously that NRC methods among PLWHA may result in a faster HIV disease progression<sup>[18]</sup> and a lower overall QOL.<sup>[16]</sup>

There are some limitations to this study. The cross-sectional design of the study would not permit the demonstration of the impact of religiosity and religious coping on HRQOL. The study also involved only participants living with HIV attending the outpatient

HIV/AIDS clinics of the UNTH, Enugu; therefore, the study sample was selective rather than representative and may not be generalized to the entire country. The high rate of refusal among the male clinic attendees that were approached and whose characteristics are not known may have introduced selection bias. The study may, however, provide useful data for future county-wide studies.

## CONCLUSION

PLWHA are usually confronted by numerous psychosocial issues which impact negatively on their emotional well-being and HRQOL. In this study, religion has been shown to be associated with HRQOL. Increased religiosity and PRC style have been shown to be associated with improved QOL, particularly the psychological health domain of QOL, impacted most commonly by psychosocial distress. The NRC method appears unhelpful and has been associated with lower social relationships domain of QOL in this study. Therefore, to achieve an overall improvement in HRQOL, thus balancing the improved longevity already noted in PLWHA with improved HRQOL, efforts should be made to encourage religiosity and religious coping among PLWHA, enhancing PRC mechanisms while discouraging the NRC style. In UNTH Ituku-Ozalla where clergy/pastoral counselling is not part of the treatment process, efforts should be made to incorporate the clergy into the multidisciplinary team involved in the prevention, care and treatment of PLWHA in Enugu and Nigeria in general.

## Ethical approval

The study protocol was approved by the Ethics and Research Committee of the University of Nigeria Teaching Hospital, Ituku-Ozalla, Enugu, where the Principal Investigator is affiliated. The research procedure was interview-based and non-invasive.

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## Conflicts of interest

There are no conflicts of interest.

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