

SPIRITUALITY AND ADHERENCE TO ANTIRETROVIRAL DRUGS AMONG HIV POSITIVE PATIENTS AT FEDERAL MEDICAL CENTER, KEFFI, NIGERIA.

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Contribution of authors

Barminas RA conceived the study and selected the study design. He collected, analyzed and interpreted the data. The manuscript was also drafted and critically reviewed by the author.

Yohanna S was involved in the conception of the study and selection of the study design. This author also reviewed the collection, analysis and interpretation of the data. He supervised the drafting, critical revision of the paper and final approval of the version to be published.

Key words: spirituality, adherence, antiretroviral drugs, HIV positive

ABSTRACT

Background to the study: Adherence to Antiretroviral Treatment (ART) is a major determinant of successful treatment outcomes among People Living with HIV/AIDS (PLWHA). Poor drug adherence is a major problem in the care of HIV patients on antiretroviral treatment. Spirituality is one of the several factors that affects drug adherence among HIV positive patients. The link between spirituality and drug adherence has been found to differ among several studies. This study aimed to determine the association between spirituality and adherence to antiretroviral drugs among PLWHA at Federal Medical Centre, Keffi to improve treatment outcomes among them.

Method: It was an observational, longitudinal study in which 215 consenting HIV positive patients aged 18 to 65 years who were on antiretroviral drugs were recruited through systematic random sampling technique. Socio-demographic characteristics, clinical history and physical examination findings were documented for each participant. The Functional Assessment of Chronic Illness Therapy- Spirituality (FACIT-Sp) tool was used to determine their level of spirituality. Participants were classified as having high or low spirituality. They were all followed up for three months during which they received routine care at the antiretroviral clinic. At the end of the study period, the level of adherence to antiretroviral drugs was assessed using the Morisky Medication Adherence Scale (MMAS).

Results: Most of the study participants were between 36 and 45 years old. Majority were females, married, Christians and unskilled workers with no formal education who earned less than 20,000 naira per month. Majority (69%) of the study participants also had a high level of spirituality. 46.7% of them had a high level of medication adherence while 27.6% and 26.3% had medium and low adherence respectively. There was a statistically significant association between level of spirituality and adherence to ARVs (χ^2 : 5.928, p: 0.015). A higher level of spirituality was associated with better levels of medication adherence.

Conclusion: High level of spirituality is a significant predictor of high level of adherence to antiretroviral medications. It is therefore recommended that spirituality should be routinely assessed as part of the initial evaluation of patients being enrolled for antiretroviral treatment.

INTRODUCTION

Since the beginning of the Human Immune Deficiency Virus and Acquired Immune Deficiency Syndrome (HIV/AIDS) pandemic, more than 15 million Africans have died from AIDS-related illnesses.¹ Nigeria has the largest number of HIV/AIDS cases in West Africa, harboring more people living with HIV than any other country in the world, except South Africa and India.² Over three million people live with HIV in Nigeria while about 200,000 new infections occur annually. HIV also causes an average of 200,000 deaths in Nigeria annually.²

Only one out of three Nigerians living with HIV receives antiretroviral treatment. Adherence to treatment is a major determinant of successful ART.³ Suboptimal adherence to medication leads to inadequate viral suppression, drug resistance, increased morbidity and ultimately death.

Spirituality is an important and often overlooked determinant among the many variables associated with adherence. Studies relating spirituality to medication adherence are limited. In particular, studies on spirituality and adherence to ART in Africa are quite few and near-absent in Nigeria. This study therefore aimed to determine the link between spirituality and adherence to antiretroviral drugs among HIV positive patients on ART at FMC, Keffi to improve treatment outcomes in them.

METHOD

The study was conducted from October 2014 to January 2015 at the antiretroviral clinic of the Federal Medical Centre, Keffi, Nasarawa State in North Central Nigeria. About 6000 out of the 9000 HIV/AIDS patients registered at the clinic are on antiretroviral drugs, and 600 of them are seen in the clinic weekly. Ethical approval for the study was obtained from the institution's Health Research

Ethics Committee.

Participants were recruited by systematic random sampling technique. The study protocol was then explained to them as a group after which informed consent was obtained. A structured questionnaire was used to obtain the socio-demographic and clinical data of participants. The level of spirituality was assessed using the Functional Assessment of Chronic Illness Therapy- Spiritual assessment (FACIT-Sp) Tool. Scores for answered questions were grouped under three subscales (Meaning, Peace and Faith). Participants with scores greater than 20 were classified as having high spirituality while those with scores of 20 or below were classified as having low spirituality. The tool was administered only at the beginning of the study. All the participants were followed up for 3 months during which they received routine care and antiretroviral drugs at the ART clinic.

At the end of the three months, the Morisky Medication Adherence Scale (MMAS) was used to determine the level of medication adherence in all

participants. The items were scored 0, indicating high adherence, 1 or 2 indicating medium adherence, and greater than 2 for low adherence. For this study, participants were classified as being adherent to ARVs (Scores of 0-2) or non-adherent (Scores >2) At the end of the study, patients with low levels of adherence were given adherence counseling.

Data was analysed using Statistical Package for Social Sciences (SPSS) version 21. The association between categorical variables was tested using the Chi square and Fisher's exact test. The Student t test was used to determine association between continuous variables. A p value of less than 0.05 was considered significant for all analyses.

RESULTS

Socio-demographic characteristics

Most of the study participants were aged between 36 and 45 years. Majority were females, married and Christians. They were mainly unskilled workers with no formal education who earned less than 20,000 naira per month. Details are shown in Table 1.

Table 1: Socio-demographic characteristics of the study participants (N = 215)

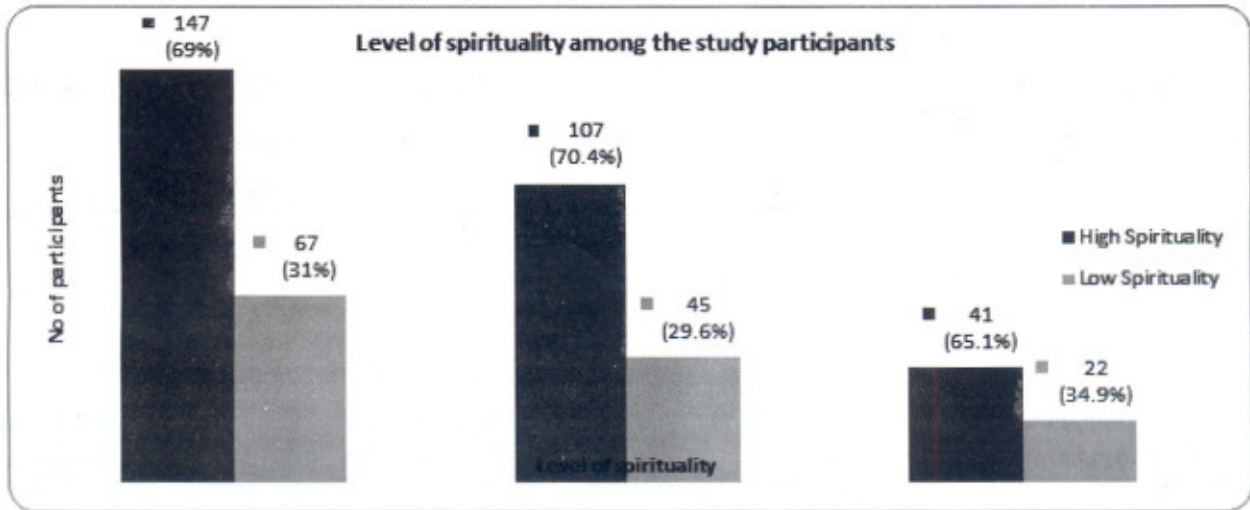
Characteristic	Frequency	Percentage (%)
Age group (years)		
< 25	24	11.2
26-35	69	32.1
36-45	70	32.6
46-55	36	16.7
56-65	16	7.4
Gender		
Male	57	26.6
Female	158	73.4
Marital status		
Single	30	14.0
Married	132	61.4
Separated	14	6.5
Widow	39	18.1
Occupation		
Unskilled	146	67.9
Skilled	53	24.7
Unemployed	14	6.5
Retiree	2	0.9
Religion		
Christianity	152	70.6
Islam	63	29.4
Highest educational qualification		
None formal	64	29.4
Primary	61	28.5
Secondary	55	25.7
Tertiary	35	16.4
Average monthly wage (Naira)		
< ₦ 20,000	160	74.4
₦ 20,000 - N59,999	42	19.5
₦ 60,000 - N100,000	9	4.2
> ₦ 100, 000	4	1.9

Level of spirituality among study participants

Most of the participants, 147 (69%), had a high level

of spirituality while 67 (31%) had low levels of spirituality. Details are shown in the Figure 1 below:

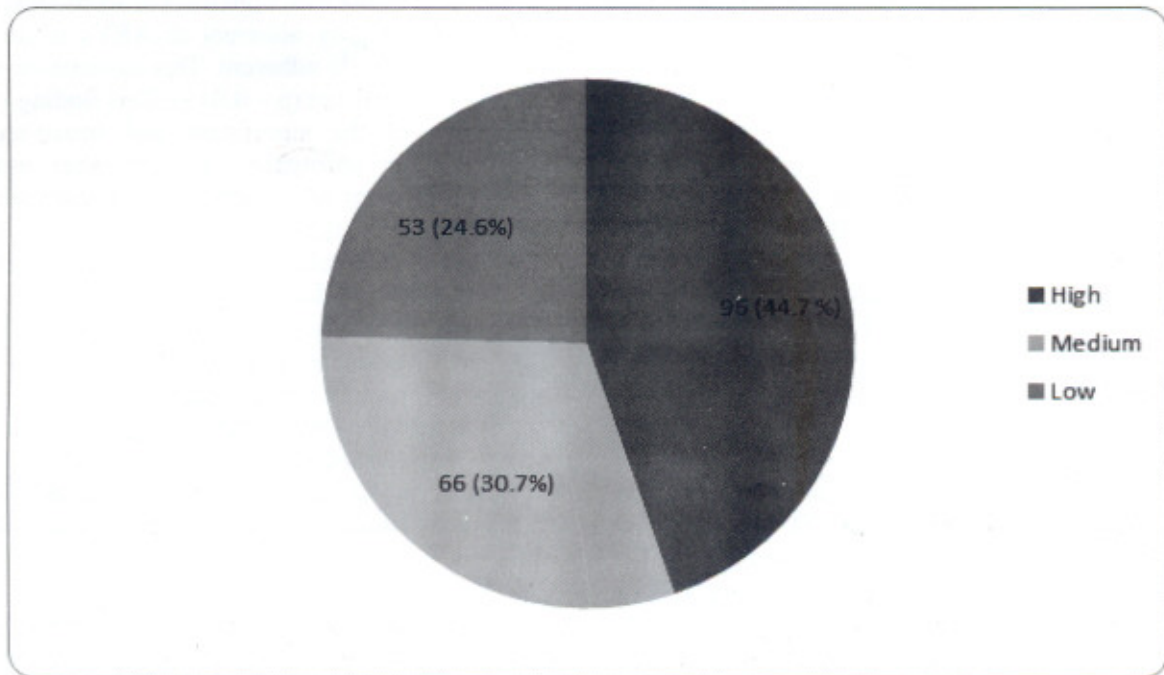
Figure 1: Level of spirituality among study participants (N= 215)



Level of medication adherence among study participants

Ninety-six (44.7%), had a high level of medication adherence compared with 53 (24.6%) who had low medication adherence. Details are shown in Figure 2 below:

Figure 2: Level of adherence to antiretroviral drugs among the study participants (N= 215)



Association between spirituality and medication adherence

Among participants with high level of spirituality, majority 75 (50.7%) had high adherence to ARVs while among those with low level of spirituality,

only 22 (32.8 %) had high adherence to ARVs. There was a statistically significant association between level of spirituality and medication adherence among all the study participants ($\chi^2 = 5.928, p = 0.015$). Further details are shown in Table 2 below:

Table 2: Association between spirituality and adherence to antiretroviral drugs (N= 215)

Level of Spirituality	Level of Medication adherence		Total No. (%)	Chi-square (χ^2)	p-value
	Adherent No. (%)	Non adherent No. (%)			
High	75 (50.7)	73 (49.3)	148 (100.0)	5.928	0.015
Low	22 (32.8)	45 (67.2)	67 (100.0)		

Logistic regression analysis showed that participants with higher spirituality were significantly more likely to be adherent to antiretroviral medication than those with lower spirituality. This difference was also found to be statistically significant ($p= 0.018$; 95% CI= 1.134 – 3.792).

DISCUSSION

The mean age of the participants in the study was 38.27 years. Most of them were females, as reported from a similar study in Benue State.⁴ Majority 132 (61.4%) of the study participants were married. Similarly, Hargreaves and Howe in Tanzania reported that HIV infection was more significantly associated with being married, divorced, separated or widowed than never being married.⁵ Furthermore, majority, 152 (70.6%) of the study participants were Christians, while 63 (29.4%) were Muslims. This finding may be because Keffi shares boundaries with the Federal Capital Territory and Benue and Kaduna States. These areas have a large proportion of Christians some of whom access care at Federal Medical Centre, Keffi.

Sixty nine percent of the participants in this study had a high level of spirituality. This agrees with findings by Damilda et al in the United States of America which showed high spirituality among black women living with HIV with as many as 95% considering it very important.⁶ People who acquire HIV commonly describe how their spiritual beliefs, practices or experiences changed because of their HIV, with most of them becoming closer to God, thus deepening their level of spirituality.⁶

The proportion of study participants with high medication adherence in this study (44.7%) was higher than the 31.2% earlier reported in 2012 by Pennep and others in this same study facility.⁷ Erah and Arute in Benin City, Nigeria also reported that 42% of HIV patients had 100% medication adherence while 26.5% had low adherence.⁸ The

finding in this study corroborates more with those in Benin possibly because of the similar (longitudinal) study designs used in both studies. Furthermore, adherence in Pennep's study was assessed based on simple patient self report of adherence over a one week period as opposed to the more reliable methods which involved correlating pharmacy records with pill counts as used in Benin and the use of the validated MMAS tool in this study.

Among participants with high level of spirituality, 75 (50.7%) were highly adherent to ARVs while 73 (49.3%) were poorly adherent. This association was statistically significant ($p = 0.015$). This finding may be because of the significant and broad-based positive impact spirituality has on other health indices which favor higher adherence. These include life satisfaction, functional health status, less psychological distress, increased energy, better mental well-being, less depression, better social functioning, improved CD4 counts and fewer HIV symptoms.⁹ Cotton et al in the United States of America for instance found that an increase in the level of spirituality over time among HIV positive patients was associated with increase in life satisfaction, social support, self-esteem, optimism and lower likelihood of having depressive symptoms.¹⁰

In contrast to the findings of this study, Peltzer et al in South Africa found higher medication adherence among those with lower scores in the spirituality/religious/personal beliefs domain of the assessment tool used in a mostly Christian population.¹¹ This was explained by the effect of religiosity which was inadvertently assessed simultaneously, as religiosity has been found to have a negative effect on ART adherence.

Ironson similarly studied the relationship between spirituality and disease progression among HIV patients most of whom were on ART. He not only found that spirituality generally increased following

HIV diagnosis, but also that for every unit of increase in spirituality, there was a preservation of 16 CD4 cells per year. Conversely, those who became less spiritual after the diagnosis lost CD4 cells 4.5 times faster than those who had increased in their spirituality. The overall effect was that the participants with higher spirituality had slower disease progression than their less spiritual counterparts.¹² Those findings suggest that increase in spirituality is associated with better treatment outcomes among HIV patients in general. Such outcomes include better medication adherence among those on ART.

Spirituality and adherence have also been correlated among patients with other chronic illnesses. Kretchy in 2013 in the United States of America showed that spirituality was associated with non-adherence to anti-hypertensive medications.¹³ This was explained by the premise that the spirituality of participants in the study potentially increased their trust in the expectation of divine healing instead of adhering adequately with their anti-hypertensive medications.

It was concluded from this study that high spirituality is significantly associated with high adherence to antiretroviral drugs among HIV patients on antiretroviral therapy. Spirituality assessment is therefore recommended as part of initial evaluation for patients eligible for antiretroviral therapy in order to improve treatment outcomes among them.

Conflict of interest: The authors declare no conflict of interest in the conduct of the study or analysis and interpretation of the results.

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