



Family Functioning of People Living with HIV/AIDS Accessing Care at a Nigerian Tertiary Health Centre

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Authors' contributions

This work was carried out in collaboration among all authors. Authors SAA, IOA and DAO designed the study. Authors SAA and IOA wrote the first draft of the manuscript. Authors SAA and IOA managed the literature searches. Authors OTA, AA and LOO did a critical revision of the manuscript. All authors read and approved the final manuscript.

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ABSTRACT

Aims: To assess the family functioning and identify its determinants among adult PLWHA at Bowen University Teaching Hospital, Ogbomoso.

Study Design: The study is a descriptive cross-sectional study.

Place and Duration of the Study: The study was conducted in the Antiretroviral (ARV) Clinic of the Bowen University Teaching Hospital, Ogbomoso, Nigeria from January 2014 to March 2014.

Methodology: Sixty-one HIV-infected patients aged 18 years and older were selected using the systematic random sampling. Data were collected using a pre-tested, structured, researcher-administered questionnaire which had a section on respondents' socio-demographic characteristics and incorporated the General Functioning scale of the Family Assessment Device to assess their family functioning. The data were analysed using SPSS and presented as descriptive and inferential statistics.

Results: The mean age of the 61 respondents was 37.1±8.1 years and 43 (70.5%) of them were females. Most of the respondents were married (65.6%) and the proportion of those with primary education (37.7%) was highest. A mean General Functioning (GF) score of 1.8±0.6 indicated an overall healthy family functioning. The proportion of respondents with healthy family functioning was highest for the married among all marital categories and decreased with increasing level of education. These associations of marital status and level of education with family functioning were statistically significant ($P = 0.02$ and 0.04 , respectively) based on the result of Fisher's exact test.

Conclusion: The fact that larger proportions of the respondents were married and had low education level was found to have influenced the finding of a high rate of healthy family functioning in this study. Therefore, regular family functioning assessment as part of routine evaluation of PLWHA is suggested, and interventions that can temper the dysfunctional influences of formal education on family functioning should be incorporated into HIV/AIDS care.

Keywords: Sociodemographic determinants; family functioning; HIV/AIDS; Nigerian.

1. INTRODUCTION

The epidemic of HIV/AIDS remains one of the world's most serious health challenges, with 34 million people living with HIV at the end of 2011 globally. The burden of the epidemic continues to vary considerably between countries and regions, but Sub-Saharan Africa which accounted for 69% of the people living with HIV worldwide in 2011, remains the most severely affected [1]. Nigeria has an expanding population of people living with HIV/AIDS (PLWHA) and the disease continues to contribute significantly to public health problems, having now permeated all strata of the population [2]. Previous studies have shown that HIV/AIDS profoundly affects the family and not just the individual, since there is almost always a family that is also impacted for every person infected with HIV [3,4].

Family functioning encompasses family communication styles, traditions, roles and boundaries, and the degree of fusion, flexibility, adaptation, and resilience. It is a measurable index which describes the way in which members of a family interact, react to, and treat other family members [5]. When a family unit effectively copes with cultural, environmental, psychosocial and socioeconomic stresses throughout the family life cycle, the functioning is reckoned to be healthy [6]. Healthy functioning families strive to maintain stability and continuity within the family system while adapting to various life events, including adverse ones. Unhealthy functioning families, on the other hand, are unbalanced, or extreme in cohesion, communication, flexibility or adaptation to life events [5].

The PLWHA have to cope with a number of challenges, including physical health symptoms, problems with medications, stigma and fear of

AIDS-related death, and might thus find it difficult to perform their family roles. Such limitations may negatively affect their children, partners or extended families who must take up some added responsibility with consequent potential to severely impact their family relationships and functioning. Nevertheless, the family represents concentric circles of an individual's social surroundings and hold immense potential for strength and support during times of need and crisis, like HIV-infection presents [7]. The support offered by a well-functioning family may help a HIV-infected member cope better with the scourge of the disease such that his/her general well-being and quality of life improve. This in turn possesses the power to transform the infected person from a despondent dependant to a positively motivated member of the family and economically productive citizen in the community. Hence, family functioning has the potential to influence multiple areas of HIV-infected persons' life and mitigate the negative effect of the disease on the society at large.

In Africa, although studies that directly assessed the family functioning of HIV/AIDS patients are scarce, it is not out of place to expect that the way a family functions will impact individual members' life either positively or negatively, considering that African family systems are fundamentally characterised by strong emotional ties binding members together and promoting sharing and mutual dependence. A cross-sectional survey of 160 HIV/AIDS patients in Nigeria showed better quality of life among married than unmarried women [8]. Physical, emotional, and social support (received by the married women from their husbands), which the authors adduced for this difference are all indices of a well-functioning family. Similarly, Odili and colleague [9] opined that the family is the most

important component of the immediate environment of the HIV/AIDS patient and that a good and supportive home environment can help the patient feel better.

Iwelunmor et al. [10] from a study of 204 participants made up of both PLWHA and their family members in South Africa found that family functioning can make or mar the life of an infected members. Supportive strong families are the first and best approach to caring for infected family members and their support makes multiple levels of positive impact on both PLWHA and family relationships. On the other hand, the family can be a source of stress if members react to the diagnosis with disbelief, shock, and confusion, or succumb to stigma and HIV-related discrimination. Stigma often leads to social isolation and loneliness not only for the PLWHA, but also for the household caregivers, inhibiting families from providing adequate support [10].

The family system's concept of interdependency supports the link between family experience and individual well-being. Therefore, this study seeks to assess the family functioning of adult PLWHA at Bowen University Teaching Hospital, Ogbomoso. The information thus gathered could then be of immense usefulness in the proactive advocacy for the development and incorporation of HIV-specific family interventions and policies into the care of PLWHA. This in turn could improve outcomes in family functioning and relationships of PLWHA and, by extension their overall well-being.

2. METHODOLOGY

The study was carried out in the Antiretroviral (ARV) Clinic of the Bowen University Teaching Hospital, Ogbomoso located about 86 kilometres north of Ibadan, south-western Nigeria. The hospital is a referral centre for many other hospitals in and around Ogbomoso. The patients were mainly from Ogbomoso and nearby cities and towns. The ARV clinic runs once a week and caters for a total of about 395 HIV-infected adults according to the hospital record at the end of June 2013.

The study was a hospital-based cross-sectional study conducted between January 2014 and March 2014. The study population consisted of male and female HIV-infected adults aged 18 years and above who attended the ARV clinic of the study centre within the study period and also satisfied the inclusion criteria. The patients

enrolled into the clinic are those who were found to be HIV-positive based on the recommended serial immunoassay-based rapid HIV testing, using Determine™ HIV-1/2 kit (Alere Medical Co., Ltd, Japan), Uni-Gold™ HIV kit (Trinity Biotech Plc, Ireland) and/or HIV 1/2 STAT-PAK® kit (Chembio Diagnostic Systems, Inc, USA) [11].

The sample size was calculated to be 61 using the formulae[12]:

$$n = \frac{Z^2 pq}{d^2}$$

and

$$n_f = \frac{n}{1 + \left(\frac{n}{N}\right)}$$

After obtaining their informed consent and the requisite ethical approval, these 61 participants were selected using the systematic random sampling technique as follows: The study lasted three months in which there were 12 clinic days. To arrive at the average number of patients to be recruited into the study per clinic day, the sample size of 61 was divided by 12, giving 5. Therefore, 61 patients who satisfied the inclusion criteria were selected at an average of 5 patients per clinic day using the systematic random sampling technique. Excluding the newly diagnosed attendees and those with co-morbidities, the average daily clinic attendance was about 30 patients, giving a sampling interval of $30/5 = 6$. On every clinic day, the patients' folders were serially assigned a number code from 01-30 in order of their arrival at the clinic. One random number, β was selected by picking one out of squeezed pieces of papers numbered 1 to 6. The patient whose folder had the serial number corresponding to β was then recruited as the first subject. Subsequently, the owners of folders with serial number $\beta + 6$, $\beta + 12$, $\beta + 18$, and so on were recruited for the study until the required sample size was obtained for the day. If the selected patient did not meet the inclusion criteria, the very next patient was selected. This procedure was repeated every clinic day until the required total sample size was obtained. An identification sticker was placed on each of all recruited patients' folders to avoid a repeat selection.

Data were collected using a pretested questionnaire administered by the researchers. The questionnaire included sections on sociodemographic characteristics (age, gender,

religious affiliation, marital status, occupation, level of education and ethnicity) and family functioning measured with the General Functioning (GF) scale of the Family Assessment Device [13]. Data entry and analysis were done using the statistical package for social science (SPSS) software, version 16.0 (SPSS Inc., Chicago, Illinois, USA).

The standard occupational classification system designed by the Office of Population Census and Surveys, London (OPCS 1991) [14] and modified for Nigeria [15,16] was used to classify respondents into socio-economic classes 1 to 3 as follows:

- Class 1:** Skilled worker e.g. professionals and managerial officers and retirees of this cadre.
- Class 2:** Unskilled workers e.g. Artisans and traders.
- Class 3:** Dependants. e.g. Retirees of class 2, those not on pensions, house wives of class 2 cadre, students.

The General Functioning (GF) scale is a 12-item questionnaire which constitutes part of the larger Family Assessment Device [13]. It consists of six positive items/statements (e.g., in times of crisis we can turn to each other for support) and six negative items/statements (e.g., we don't get along well together). Family members rate how well each statement describes their family by selecting from among four alternative responses: strongly agree, agree, disagree and strongly disagree. The questionnaire is designed to be completed by family members over the age of 12 years. The responses strongly agree, agree, disagree and strongly disagree to the positive items (statements 2, 4, 6, 8, 10 and 12) were scored 1, 2, 3 and 4 respectively but 4, 3, 2 and 1, respectively for the negative items (statements 1, 3, 5, 7, 9 and 11). The scores of the 12 items were added together and divided by 12 to calculate the total score, such that the total score ranged from 1 to 4. The higher the total score, the less healthy the family functioning. The GF scale has been used alone as a brief measure of overall family functioning, possessing a good reliability and well-proven validity. It is brief and easy to administer, and has been recommended as a global assessment of family functioning [17,18]. Total scores of <2 on the GF scale was taken as healthy family functioning, and scores ≥ 2 as unhealthy family functioning [13].

Data were presented in tables. Means for continuous variables and proportions for categorical variables were calculated to describe the respondent population. A further comparison was drawn through cross-tabulation of the variables. The statistical significance of the differences between the means of more than two groups was tested using one-way ANOVA (analysis of variance) whereas the statistical significance of associations among categorical variables was tested with Fisher's exact test [19,20]. All *p* values were two-tailed and the level of significance was set at $P < 0.05$ for all statistical comparisons.

3. RESULTS

The information displayed in Table 1 shows that the proportion (41.0%) of respondents within age group 40- 49 years was highest (mean age was 37.1 years) and more than two-thirds (70.5%) of them were females. The majority (68.9%) were Christians while the rest (31.1%) were Muslims. Most respondents were married (65.6%) and the proportion of those with primary education (37.7%) was highest. The overwhelming majority (85.3%) of the respondents belonged to socioeconomic class 2 and almost all of them were Yoruba (90.2%). Three-fifth (60.7%) of the respondents had healthy family functioning. A mean GF score of 1.8 indicates overall healthy family functioning.

The cross-tabulation presented in Table 2 reveals that the proportion of respondents with healthy family functioning rose with increasing age, higher for males than females, and for Muslims than Christians. It was highest for the married among all marital categories and for class 2 among the Socio-economic classes, decreased with increasing level of education up to tertiary education (levels higher than secondary but lower than university) but had no regular pattern for the ethnic groups since majority of the respondents were Yoruba. However, the association was statistically significant only for marital status ($P = 0.02$) and level of education ($P = 0.04$) based on the result of Fisher's exact test.

The results shown in Table 3 reveal that married respondents had the lowest mean GF score while single (unmarried) respondents had the highest among all marital groups, indicating that they had the best and worst functioning families respectively. The last column in the table shows

Table 1. Sociodemographic characteristics and family functioning of respondents

Variables (N=61)		Frequency	Percentage
Age groups (years) (Mean = 37.1 ± 8.1 years)	20 – 29	12	19.7
	30 – 39	21	34.4
	40 – 49	25	41.0
	≥50	3	4.9
Gender	Male	18	29.5
	Female	43	70.5
Religion	Christianity	42	68.9
	Islam	19	31.1
Marital Status	Single	5	8.2
	Married	40	65.6
	Separated/Divorced	7	11.5
	Widowed	9	14.7
Level of Education	No formal education	7	11.5
	Primary	23	37.7
	Secondary	20	32.8
	Tertiary	5	8.2
	University	6	9.8
Socioeconomic Class	Class 1	8	13.1
	Class 2	52	85.3
	Class 3	1	1.6
Ethnicity	Hausa	1	1.6
	Yoruba	55	90.2
	Igbo	1	1.6
	Others	4	6.6
Family Functioning (Mean GF score = 1.8 ± 0.6)	Healthy	37	60.7
	Unhealthy	24	39.3

N = Total number of respondents; GF = General functioning

the level of significance (*P-value*) when the difference between the mean GF score for married respondents was compared with those of other marital groups using one-way ANOVA; the difference between married and single respondents was statistically significant.

4. DISCUSSION

This study demonstrated that larger proportion (60.7%) of the respondents had healthy family functioning. This is not too surprising as the study was done in a family-oriented African society where families are tightly knit by strong emotional ties that bind members together [10]. During difficult times such as HIV/AIDS presents, it becomes imperative for members of a family to stay close, and to help and support each other, with emphasis on mutual dependence and sharing. Thus many families in our setting are able to successfully overcome most of the challenges that are known from previous studies [3] to compromise family functioning of PLWHA

such as health-seeking demands, treatment adherence, stress, financial difficulties, and stigma, seeing in them the opportunity to improve their family's functioning.

It is also plausible that the social isolation, stigma and discrimination which the society often imposes on PLWHA will cause sufferers to seek solace within their family, and thereby improving the family functioning. Walsh [21] has noted that the concept of family resilience extends our understanding of healthy family functioning to situations of adversity; although some families are shattered by crisis or chronic stresses, it is remarkable that many others emerge strengthened and more resourceful. When HIV-affected families are ashamed of their association with the infected members, fearing that others will scorn them, their quest to uphold family pride can as well motivate close personal relationships within the family and promote mutual support among family members, thereby improving family cohesiveness and functioning.

Table 2. Association between family functioning and sociodemographic characteristics of respondents

Variable (N=61)	Categories	Healthy functioning [n(%)]	Unhealthy functioning [n(%)]	P-value
Age Group	20 – 29	6 (50.0)	6 (50.0)	0.43
	30 – 39	12 (57.1)	9 (42.9)	
	40 – 49	16 (64.0)	9 (36.0)	
	≥50	3 (100.0)	0 (0.0)	
Gender	Male	13 (72.2)	5 (27.8)	0.27
	Female	24 (55.8)	19 (44.2)	
Religion	Christianity	25 (59.5)	17 (40.5)	1.00
	Islam	12 (63.2)	7 (36.8)	
Marital status	Single	0 (0.0)	5 (100.0)	0.02
	Married	28 (70.0)	12 (30.0)	
	Separated/Divorced	4 (57.1)	3 (42.9)	
	Widowed	5 (55.6)	4 (44.4)	
Level of education	No formal education	6 (85.7)	1 (14.3)	0.04
	Primary	15 (65.2)	8 (34.8)	
	Secondary	13 (65.0)	7 (35.0)	
	Tertiary	0 (0.0)	5 (100.0)	
	University	3 (50.0)	3 (50.0)	
Socio-economic class	Class 1	3 (37.5)	5 (62.5)	0.15
	Class 2	34 (65.4)	18 (34.6)	
	Class 3	0 (0.0)	1 (100.0)	
Ethnicity	Hausa	1 (100.0)	0(0.0)	0.49
	Yoruba	34 (61.8)	21 (38.2)	
	Igbo	0 (0.0)	1(100.0)	
	Others	2 (50.0)	2 (50.0)	

N= Total number of respondents; n (%) = Number (Percentage) of respondents in a cell;
P-value = level of significance (for Fisher's exact test)

Table 3. Comparison of mean General Functioning (GF) score among marital groups (n=61)

Marital status	Mean GF score	P-value
Single	2.24	0.02
Married	1.67	–
Separated/Divorced	2.03	0.18
Widowed	2.03	0.74

GF = General Functioning

In addition, awareness of the family of the HIV status of affected members can be the reason for the higher proportion of healthy family functioning we found. In our study as reflected in Table 1, the married (65.6%) and the widowed (14.7%) constituted the majority of the respondents. The latter were often accompanied to the clinic by their children who were aware of the parents' status while the former usually came in the company of their mostly seroconcordant spouses, or with the knowledge of the few serodiscordant ones. Previous studies have found that disclosure of HIV status to family members helps to cope with the disease, ensures family support for PLWHA, reduces the levels of aggressiveness and negative self-

esteem among the children of PLWHA, ensures fewer secrets between family members, and lowers the level of family conflict [3,10].

Furthermore, economic power contributes to the functionality of the family [22] and, financial difficulties and health-seeking demands are among the challenges that have been shown to compromise family functioning in families living with HIV [3]. However, HIV/AIDS treatment is free for the patients in this study, a vibrant support group helps patients with gifts, including fare for the very indigent, and follow up visits were only once in 4 to 8 weeks. Consequently, additional financial burden or distress imposed by health-seeking demands

which could have impaired family functioning is lessened.

Our study identified a number of variables that influence the family functioning of the respondent. Of the sociodemographic variables, marital status ($P = 0.02$) and level of education ($P = 0.04$) of the respondents had statistically significant association with family functioning. The proportion with healthy family functioning was highest for the married respondents (Table 2) and they also had the lowest mean General Functioning (GF) score of 1.67 (Table 3), indicating that they had the best functioning families among all marital categories. When further comparison was done between the mean GF score of married respondents and those of other marital categories using one-way ANOVA, a statistically significant difference was found between the scores of married and single respondents.

These findings could be explained by the earlier stated mutual dependence and sharing within the family as well as the physical, emotional, and social support enjoyed by the married respondents and which might not be readily available to other marital groups, especially the singles and the separated/divorced who happened to have the worse functioning families in this study. The fact that single (never married) respondents belonged to the worst functioning families (Table 3) may be a pointer to the reason they got infected with HIV in the first place since a significant negative association between family functioning and HIV risk behaviour has been reported in the literature [22,23].

This study further revealed that the proportion of respondents with healthy family functioning decreased in a statistically significant manner ($P = 0.04$) with rising level of education. This decrease was rather very sharp (65.0% to 0%) between secondary and tertiary education (higher than secondary but lower than university) levels (Table 2). Previous authors have noted that the family is an important social institution which has close connections with formal education. While it has served as a propitious ground to most people who have emerged literate and reasonably knowledgeable from an education system, it is also true that formal education has dysfunctional aspects which breed unhealthy family functioning [24].

First, the educated person may more likely to exhibit signs of disrespect to older people in the

family when his/her views, knowledge and advice are, as often happens, rated above those of the illiterate family members during important decision-making in the family. As such, formal education undermines age and experience as the cardinal determinants of authority, influence and respect, and by so doing weakens the traditional family authority structure and values. [24] Second, higher levels of education are associated with economic empowerment which has the tendency of reducing a person's dependency on the family for support. Thus, formal education may promote individualism and hampers the economic co-operation function of the family [24,25].

Additionally, higher levels of education make people more civilized and modernized and this has the tendency to affect the beliefs and practices of members of the family. For example, in many traditional African cultures, a young woman was taught the art of home making, motherhood, patience and submissiveness to her husband and in-laws such that she was able to settle down to a successful and stable marriage [26]. With increased education levels comes increased movement away from these traditional ways of life, with consequent marital instability and poor family functioning [26].

5. CONCLUSION

The proportion of respondents with healthy family functioning was high in this study, and the fact that larger proportions were married and had low education level was found to have influenced these findings. Regular family functioning assessment should be part of routine evaluation of PLWHA, and interventions such as family counselling that will temper the dysfunctional influences of formal education on family functioning and reinforce the positive traditional family practices and values should be incorporated into HIV/AIDS care.

CONSENT AND ETHICAL APPROVAL

A written approval of the hospital's sub-committee on ethics of human experimentation was obtained before subjects were recruited for the study. The subjects were adequately informed about the nature of the study before their consent was obtained. All ethical principles guiding a research of this nature were adhered to.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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