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ABSTRACT

Objective: To describe the living conditions of rural based people living with HIV/AIDS (PLWHA) and their clinical presentations

Design: Descriptive cross-sectional study

Setting: University College Hospital, Ibadan

Subjects: PLWHA on anti-retroviral therapy

Results: One hundred and fifty PLWHA participated. The mean age of the respondents was 28.7 ± 8.9 years. Majority of the respondents visited had advanced disease (97%), were poor (75%) and presented with opportunistic infections such as oral candidiasis (92%), chronic diarrhoea (70%) and pulmonary tuberculosis (46%). Majority were treated for malaria (72%) and anaemia (61%). All respondents lived in homes predisposed to these opportunistic infections. They drink unsafe water and had poor disposal of their domestic wastes.

Conclusion: PLWHA visited lived in homes that predispose them to various opportunistic infections. Improved living conditions and economic empowerment will improve the health conditions of PLWHA.

INTRODUCTION

The Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome ((HIV/AIDS) has spread to all the regions of the world and poses significant challenges to residents of developing countries, particularly in sub-Saharan Africa (1). The sub-Saharan African region remains the most heavily affected by HIV worldwide, accounting for over two thirds (67%) of all people living with HIV/AIDS (PLWHA) and also for nearly three quarters (72%) of AIDS-related deaths in 2008 (1). While the rate of new HIV infections in the sub-Saharan region has slowly declined, the number of people living with HIV has increased slightly in 2008 (2). About 2.98 million people are living with HIV/AIDS in 2009 with a total AIDS death of 220,000 people in Nigeria, (3).

The HIV/AIDS epidemic has tremendously reduced the life expectancy. In 1991 when the disease was just beginning to manifest in Nigeria the average life expectancy was 54 years for women and 53 years for men. By 2009 when HIV had diffused into the population, the life expectancy had fallen to 48 for women and 46 for men (4). If this trend continues in Nigeria, it will pose a serious threat to the survival chances of the entire populace hence making realisation of Millennium Development Goals and the vision to make Nigeria one of the top twenty industrialised countries in year 2020 a mirage. However due to availability and scale up of highly active anti-retroviral therapy, PLWHA are living longer (2).

Most Nigerians lived in the rural areas (64% of men and 62% of women) which lack basic amenities

such as electricity, drinkable water and good roads among other services (5). The places where people living with HIV/AIDS live affect their health. Tropical diseases including HIV/AIDS and other common illnesses are often exacerbated by environmental and household living conditions (4,6). This is because filthy environmental conditions predisposes PLWHA to opportunistic infections which they were more predisposed to because of their lower immune status (7). Furthermore the interaction between HIV/AIDS, malaria, tuberculosis, diarrhoea diseases, other opportunistic infections and poverty causes high morbidity and mortality among these patients (7,8). People diagnosed with HIV in malaria infested areas such as sub-Saharan Africa had poorer quality of life and more rapidly progress from HIV infection to AIDS (7,8).

A recent study carried out at the clinic where the respondents in this survey were recruited revealed a total mortality rate of 3.2% among the PLWHA and identified wasting disease as the major determinant of mortality (9). The policy implication of the study outcome included provision of day care treatment, home based care and creation of support groups in the adult clinic. In order to explore the effectiveness of these programmes, the homes of PLWHA receiving care at the HIV/AIDS Treatment (ARV) Clinic were visited to assess their living conditions and determine factors predisposing them to opportunistic infections and develop strategies for improvement in quality of care provided.

MATERIALS AND METHODS

The study clinic: The study was carried out among HIV positive rural dwellers who were receiving care at the ARV Clinic, University College Hospital Ibadan. The ARV Clinic is one of the 25 clinics established by the Federal Government of Nigeria in 2002 to provide qualitative support to PLWHA (10). Since 2004, President Emergency Plan for AIDS Relief (PEPFAR) had provided immense support for the scale up of the anti-retroviral treatment programme. Since then, free care and treatment are given to HIV Positive patients. The ARV Clinic opens daily from

8:00 a.m. to 5:00 p.m. Monday through Thursday (10). PLWHA were usually given monthly appointment to pick up drugs in the clinic (10).

Study Design: The study adopted a descriptive cross sectional study design. List of home addresses of rural dwelling PLWHA was retrieved randomly using the Microsoft Excel 2003 random number generator from the register with the list of daily clinic appointments. These patients were contacted. Majority (97%) of eligible respondents consented and participated in the study. An interviewer administered questionnaire containing socio-demographic information, income, living conditions, presence and type of opportunistic infections, was administered by the researchers when each patient was visited. WHO clinical stage classifications, immunological, virological status at baseline were retrieved from the patients' clinic records.

The data collected were checked and cleaned by the researchers for internal consistency and accuracy. Subsequent analysis was performed using SPSS version 16 software. Summary statistics using mean, median, standard deviation, range for continuous variables and frequency / percentages for categorical variables were generated.

Ethical Considerations: This included taking informed consent before visiting the respondents, using serial numbers instead of names and using unmarked vehicle while visiting to maintain confidentiality. Also permission to conduct the study was granted by the University of Ibadan/University College Hospital Ethics and Research Committee.

RESULTS

A total of 150 consenting rural dwelling PLWHA participated in the study. Their mean age was 28.7 ± 8.9 years with a range of 20-59 years. The respondents included females (74%) and males (26%). Also 45% of the respondents were married while 32% had secondary education. Seventy-five percent earned below 4500 naira (US\$1) while 31% were artisans (Table 1).

Table 1
Sociodemographic characteristics of study participants

Socio-demographic characteristic	Frequency (N=150)	%
Age group		
20-29	42	28
30-39	60	40
40-49	31	21
50-59	17	11
Sex		
Male	39	26
Female	111	74
Marital status		
Single	24	16
Married	68	45
Divorced	26	17
Widowed	32	22
Highest education level		
None	21	14
Primary	64	43
Secondary	48	32
Tertiary	17	11
Income		
High (> 4500/month)	38	25
Low (\leq 4500/month)	112	75
Occupation		
Trading	46	31
Artisan	38	25
Farmer	35	23
Civil servant	21	14
Unemployed	10	7

Table 2
Characteristics of residence of study participants

Characteristic	Frequency	%
Ownership		
Self	27	18
Rented	103	69
Family	20	13
Residence		
Outside Ibadan	104	69
Within Ibadan	46	31
Overcrowding		
Yes	112	75
No	38	25
Mosquito net		
Window only	51	34
Window and door	43	29
None	56	37
Drainage		
Clean	42	28
Dirty	82	55
None	26	17
Type of toilet		
Water closet	16	11
Latrine	49	33
None	85	66
Room ventilation		
Good	30	20
Poor	120	80
Refuse disposal		
Open dumping	123	82
Burn	27	18
Bush around the house		
Yes	119	79
No	31	21
Source of drinking water		
Untreated well water	78	52
Stream/river	32	21
Rain water	32	21
Others (pure/table water)	8	6

Table 3
 WHO Clinical Stage and Opportunistic Infections Diagnosed among the Study Participants

Variable	Frequency	%
WHO Clinical stage		
Stage 3/4 (advanced)	145	97
Stage 1/2 (early)	5	3
Opportunistic infections*		
Oral candidiasis	138	92
Oesophageal candidiasis	58	39
Pulmonary tuberculosis	69	46
Extrapulmonary tuberculosis	22	15
Chronic diarrhoea	105	70
Other diagnoses*		
Malaria	108	72
Anaemia	92	61

*Multiple Diagnoses are possible

Table 2 showed that majority lived outside Ibadan (69%), in rented apartments (69%), had no toilet facilities (66%), poorly disposed wastes (100%) and poorly ventilated (80%).

Table 3 showed the WHO clinical stage and prevalence of opportunistic infections among the PLWHA visited. Majority (97%) of the PLWHA visited was classified into WHO stage 3/4. Common diagnoses presented by the respondents included oral candidiasis (92%), pulmonary tuberculosis (46%) and chronic diarrhoea (70%). Majority were treated for malaria (72%) and anaemia (61%). Majority (69%) lived more than 20km from the ARV Clinic.

DISCUSSION

The residence and prevailing living conditions of PLWHA remained one of the determinants of their quality of life and survival (11). Supportive homes certainly affect PLWHA care and support. A good supportive home will delay progression of the early stage of HIV infection to the late stage, AIDS while a home without support will mostly result in early appearance of opportunistic infections such as Tuberculosis, diarrhea diseases which lead to poor quality of life and high morbidity and mortality (12,13).

Most respondents (69%) lived outside Ibadan. The difficulty faced by these people can be reduced by decentralisation of services through establishment of satellite or mobile clinics and giving longer appointments for those PLWHA who are on follow up regimens. Community members can also be identified and trained as health visitors. Previous studies had showed that home care with community based treatment partners improve quality of life and could prolong survival of chronically ill patients (12,13,14).

The ARV clinic is located in sub-Saharan Africa, where endemic diseases such as malaria abound. PLWHA had compromised immune status hence are susceptible to malaria. Francesconi P. *et al* showed an association between HIV infection and clinical malaria (15). Malaria infection and fever rates are increased in areas of stable transmission, especially for those with low CD4 counts or high viral loads. In areas of unstable transmission, HIV is associated with more severe malaria and death. This malaria associated increase in viral load could lead to increased transmission of HIV and more rapid disease progression, with substantial public health consequences. In addition, HIV infection might reduce immunity to malaria resulting in more frequent and severe infections; conversely, malaria might enhance the progression of HIV infection to AIDS (7,8). This study showed that majority of PLWHA lived in homes where they were not well protected against mosquito bites, thereby predisposing them to become infected with malaria further worsening their health status. Efforts were made by the researchers to educate these patients on need to sleep on insecticide treated nets every night. These nets were procured and distributed free to the participants. Studies had showed the usefulness of these nets in preventing malaria (16,17,18).

In homes where potable drinking water is not available in the immediate vicinity, opportunistic infections that spread through faeco-oral route of transmission, such as diarrhoea easily increase morbidity and mortality (19). Majority of the people visited used untreated sources of water such as well and streams. This could explain the high percentage of diarrhoea diseases (29%) in another study among these clients (20). It has been established that improved sanitation has an impact on health and reduces diarrhoea morbidity by 32% (19,20). Sanitary facilities as barriers to transmission of faecal pathogens to

mouth, thereby interrupts the transmission of faecal diseases. Studies suggest that adequate and safe sanitation is at least as effective in preventing disease as improved water supply (20,21). Indiscriminate open defecation around living areas was found to be associated with an increased incidence of diarrhoea. The construction of latrines reduces diarrheal disease due to the safe disposal of human waste and good hygiene practices (20,21). Therefore, these PLWHA were susceptible to chronic diarrhoea, through their poor sanitary practices. This finding enabled the researchers to educate these patients on sanitary measures. They were provided with water treating reagent (water guard®) and bucket with cover. These patients were encouraged to change their sanitary habits.

The interaction between tuberculosis and HIV infection made it important that all HIV positive patients are clinically screened for tuberculosis infection while all tuberculosis patients must be screened for HIV (9,13). A previous study in the clinic reported that pulmonary tuberculosis was the major cause of death (48%) among these patients (20). These patients were therefore educated to improve cross ventilation of their home and advised to refer relatives and neighbours with suspected tuberculosis for HIV/AIDS screening and early treatment.

In conclusion, the study provided information about the socio-demographic characteristics and home conditions of PLWHA living in the rural areas. The clients lived in homes that predisposed them to various opportunistic infections. The need to train and equip health visitors to visit PLWHA regularly is very important in order to provide essential care for these patients.

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