

Incidence and Demographic Distribution of Human Immunodeficiency Virus (HIV) in BIU, Borno State- Nigeria

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Abstract

The growing concern over the increasing epidemics of HIV/AIDS in the country as well as the non quantified disease burden in Biu, Borno State necessitated this study, which established the incidence and demography factors associated with the disease using a survey conducted between July and December, 2010. A total of 487 sera collected from patients attending Abott Medical Centre were screened using rapid Chromatographic immunoassay and the concurrent administration of structured questionnaires during specimen collection were analysed. Out of the total patients screened, 201 (41.3%) were HIV positive, 63 (13.3%) were men, 138 (68.7%) were females and the highest infection rate (46.8%) occurred in patients between age 21 and 40. These age and sex distribution was statistically significant ($P > 0.01$) by Chi-square test. This finding confirm endemicity of HIV and the associated social, economic and cultural factors contributing to the spread of HIV which identified socio-professional, marital types and levels of education as most significant attributes. Active surveillance through HIV counselling, screening and testing of all patients visiting any health centre should be intensified, in addition to empowering women to negotiate for safer sex.

Keywords: Incidence, Human Immunodeficiency Virus, Chromatographic immunoassay, demography, Biu, Borno State.

Introduction

Human Immunodeficiency Virus (HIV), the causative agent of Acquired Immunodeficiency Syndrome (AIDS) is found in pandemic proportion globally [1]. HIV is a burden and scourge, progressing and causing devastation to lives and the healthcare system worldwide [2]. This virus is transmitted through several route and accounted for 38.6million infection worldwide at the end of 2005. In 2003, there were about 5.8million people

infected with HIV in Nigeria, giving a national prevalence rate of 5.8% [3]. By the end of 2009, 3.3million people are living with HIV in Nigeria and approximately 220,000 people died from AIDS in 2009 [4]. Currently, in Nigeria it is estimated that 3.6% of the Nigerian population are living with HIV and AIDS [5]. HIV and AIDS is still claiming so many lives, with high morbidity and economic burden despite the considerable achievement recorded in the advent of education, enlightenment and campaign programmes. Factors associated with

occurrence and spread of HIV includes problems of health and health; related services, poverty, socio-cultural, and political will power on the part of government [15, 16]. Hence, the need to maintain active and continuous surveillance of the virus and its occurrence for appropriate disease intervention strategies. The availability of sparse documented update information dynamics of HIV/AIDS status in the study area motivated this investigation. This study established through a 6-month prospective survey (July –December, 2010), the incidence of HIV and associated demographic factors amongst patients attending Abott Medical Centre, Biu, one of the major health facilities in Biu Local Government Area (LGA) of Borno State, Nigeria.

Methodology

Sample collection

Random venous blood specimens were collected after cleaning with an alcohol swabs from patients using a 5ml syringe and needle. The blood is transferred into centrifuge tubes and kept at room temperature for sera collection.

Sera

Specimens were immediately processed by separating serum from blood products using a centrifuge and only non-haemolysed blood samples were used for the screening process.

Virological Procedure

All procedure were performed in accordance to the guideline described [6] and the safety precautions as provided by [7], [8]. HIV screening was performed using the rapid chromatographic immunoassay for the qualitative detection of HIV antibodies (Inverness Medical, Japan) rapid test strips. About 3 drops of serum were dropped onto the specimen pad and held vertically such that the serum is allowed to move upward via capillary force and after 15minutes, results were read. Double lines were visible for positive samples (Control and Test line) while for negative samples, only single line appeared (Control line).

Data Collection

Demographic information associated with HIV was gathered using structured questionnaire. Non English speaking patients were assisted to complete the questionnaire. All responses in Hausa were translated and documented in English.

Data Analysis

All obtained results were recorded and analysed using descriptive statistics while Chi-square was employed to evaluate the association of demographic information with the occurrence of HIV/AIDS.

Results

Results of HIV screening of patients are shown in Table 1 and indicates that of the 487 specimens collected over a period of six months, 201/487 was positive, resulting to an overall incidence rate of 41.3%. And the highest positive cases were observed in July with incidence rate of 37.8% and the least in December with 4.0% occurrence rate. Table 2 shows the distribution of HIV according to sex and age which reveals that the highest HIV cases occurred in patients within the age bracket of 21-30 (37.8%), followed by those within the age group of 31-40(35.3%) and the least (9.0%) in those less than 20years. In Table 3 which shows the distribution of HIV in patients with respect to socio-economic status report, highest infection occurred in patients who were housewives- 79 (39.3%), soildiers-54 (26.9%) and the least in teachers 4(2.0%). Table 4 further showed the distribution of HIV with respect to marital types presenting the highest infection occurred in patients who are polygamist (57.2%) and the least in single patients (15.9%). Lastly, Table 5 compares the distribution of HIV with regard to level of education, showing the highest infection occurrence in stark illiterate (31.8%) and least (6%) in tertiary level of education trained patients.

Table 1: The percentage frequency of HIV infection from July- December, 2010

Months	No. Tested	No. Infected	% frequency
July	105	76	37.8
August	92	69	34.3
September	80	22	10.9
October	72	16	8.0
November	84	10	5.0
December	64	8	4.0
TOTAL	487	201	100

Table 2: Distribution of HIV infection in patients according to sex and age

Age-group	Males	Females	Total
Less than 20	6	12	18
21-30	18	58	76
31-40	29	42	71
41-50	10	26	36
TOTAL	63(31.3%)	138(68.7%)	201(41.3%)

Table 3: Socio-economic profession of HIV patients

Socio-profession	Frequency of occurrences	Percentage frequency (%)
Traders	18	9.0
Bike riders	41	20.4
Housewives	79	39.3
Teachers	04	2.0
Soldiers	54	26.9
Civil servant	05	2.5
TOTAL	201	100

Table 4: Distribution of HIV amongst patients according to marital types

Marital type	Frequencies of Occurrence	Percentage frequency (%)
Singles	32	15.9
Polygamy	115	57.2
Monogamy	54	26.9
TOTAL	201	100

Table 5: Distribution of HIV amongst patients according to level of education

Educational level	Frequencies of Occurrence	Percentage frequency (%)
Stark illiterate	64	31.8
Non-formal education	42	20.9
Primary	30	14.9
Secondary	53	26.4
Tertiary	12	6.0
TOTAL	201	100

Discussion

The present finding indicates an overall incidence of 41.3% and the highest infection rate of 37.8% was observed in July. This occurrence with regard to sex and age showed that women were more infected than men with incidence rate of 68.7% and 31.3% respectively, which was statistically significant at (P value 0.01). While, the highest infections occurred within 21-30 and 31-40 age-groups, this could probably be due to early age of marriage and some cultural practice and belief (female circumcision/wife inheritance) in the locality. This finding is similar to that which accounted for 56% of adult women infections reported in 2009 [11] and that which indicated majority adult women aged 15 and above living with the virus [9]. The frequency distribution showed that housewives were mostly affected with the disease, next were the soldiers and the least were teachers. This correlates with the analysis on the level of education of patients which indicates that highest infection occurred among stark illiterates and the least among tertiary level as most

housewives in this area are non literate. The economic status and education class is therefore proportional to the level of knowledge about the HIV infection. This is similar to reports, that the low and declining level of education is a major contributing factor to the spread of HIV and other reproductive health issues [5, 10]. While the slightly high incidence rate in soldiers may be due to migration/frequent change in duty station which is an essential component of their profession. This report is similar to that accounted for in the Niger-Delta region of Nigeria [11]. Marriage type indicates most of the HIV victims were polygamist, which was similar to other reports [12, 13]. Socio-cultural and religious practices, as in the situation where men do not wish to disclose their HIV status to their spouse and/or betrothing daughter to a man with undisclosed and confirmed HIV status are likely contributory reasons to the high incidence of HIV/AIDS in women in this study. However, other reports [9, 14] indicate that 34% of women in the North-east are polygamist and were closely associated with poverty. In conclusion, this study confirmed the presence of HIV/AIDS in these patients, the associated demographic reasons and disease impact in Bui, LGA. Therefore, the need for collaboration between local government authorities, community-based organisations (CBOs) and religious institutions to identify, implement, monitor, and evaluate specially designed HIV intervention strategy. This could include routine HIV screening at all health care levels, counselling, and referral of positive persons to appropriate social groups and hospitals, as well as public education and enlightenment campaigns to educate the masses on the disease.

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