Original Article

# Prevalence and pattern of utilization of voluntary counseling and testing services and HIV infection in Ogbomoso, southwestern Nigeria

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## Abstract

**Objective:** Human immunodeficiency virus, HIV, infection has been a major problem across the globe with a high socioeconomic burden. Voluntary Counseling and Testing (VCT) is a measure put in place to encourage people to know their HIV status with essential counseling support to help them cope with a positive or a negative test result. This study was carried out to determine the utilization of VCT services, prevalence of HIV among VCT attendees, and the distribution of the viral infection based on gender and age in Ogbomoso, an urban community, southwestern Nigeria. **Materials and Methods:** The health records of patients in Adebayo Alata Primary Health Centre, Ogbomoso South, Nigeria, between 2008 and 2011, were used. **Results:** A total of 1,490 patients used the VCT services during the period of study, out of which 271 (18.19%) were males and 1,219 (81.81%) were females. A consistent number of people used the VCT service throughout the period of study. HIV infection was higher in females (2.15%) than males (0.54%). The viral infection was more prevalent in people above 14 years of age (2.62%). However, none of these differences observed in gender and age were statistically significant ($P < 0.05$). **Conclusion:** It was concluded that HIV infection has neither gender nor age bias. Efforts should be made to increase the provision of VCT services and ensure its continued utilization in an attempt to maintain a healthy social and reproductive health culture, improve maternal and child health in the context of HIV transmission, and improve global child survival.

**Key words:** Age, human immunodeficiency virus, Nigeria, sex, Voluntary Counseling and Testing

## INTRODUCTION

Human immunodeficiency virus (HIV) is one of the most prominent public health-care problems especially in Africa where HIV-1, the commoner HIV serotype, is endemic.[1] Although HIV is a global phenomenon, it is more severe in Africa, Asia, and probably South America. It has been documented that South Africa carries the highest burden of infection in the world followed by Nigeria and India.[2-4] Some traditions and socioeconomic factors have contributed to the spread of HIV infection in these regions, such as the subordinate position of women, poor social services, rapid urbanization and modernization, and wars and conflicts.[1] However, Bautista *et al.*[5] reported a higher prevalence of the viral infection in White (15.7% per year) than in African-Americans (10.0% per year).

Voluntary Counseling and Testing (VCT), also known as HIV Counseling and Testing (HCT), was introduced to reduce the spread of HIV infection. It is a crucial step to life-sustaining care for people living with HIV (PLWH). Client-initiated VCT has helped millions of people know their HIV status. Nevertheless, global coverage of VCT programs remains low; hence, the World Health Organization (WHO) and Joint United Nations Programme on HIV/Acquired Immune Deficiency Syndrome (UNAIDS) issued guidance on provider-initiated HIV testing and counseling (PITC) in health-care facilities to increase uptake and improve access to HIV health-care services in 2007.[6]

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This study consequently assessed the utilization of VCT services, prevalence of HIV infection among VCT users, and disparity of the infection across different age groups and genders.

## MATERIALS AND METHODS

This is a descriptive retrospective study in which the health records of VCT service users in Adebayo Alata Primary Health Centre, Ogbomoso South, Nigeria between June 2008 and April 2011 were used. This health-care center serves as the major primary health-care provider in Ogbomoso South, and other primary health-care providers in the area submit their reports here.

Data obtained were analyzed for statistical significance of differences by Chi-square using Primer of Biostatistics, Version 4 (McGraw Hill); *P* values <0.05 were reported as statistically significant.[7]

## RESULTS

Within the period of study, a total number of 1,490 patients used the VCT services [Figure 1]. Of them, 271 (18.19%) were males and 1,219 (81.81%) were females. A steady utilization of VCT services was observed during the period of study. Data obtained showed that females had a higher seroprevalence of the viral infection (2.15%) compared to males (0.54%) [Table 1]. Also, a higher prevalence was seen in people older than 14 years (2.62%) when compared to the younger age groups. No HIV-positive case was seen below age 2 [Table 2]. Statistical analyses revealed that none of these gender and age disparities observed in HIV infection in VCT service users were statistically significant.

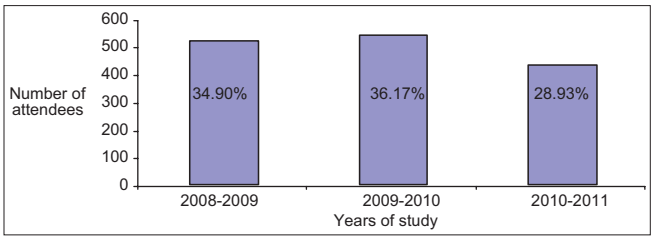


**Figure 1:** Voluntary counseling and testing attendance during the study period

**Table 1: Prevalence of HIV infection in both sexes among VCT attendees**

| | HIV+ve (%) | HIV-ve (%) | Total (%) |
|---|---|---|---|
| Male | 8 (0.54) | 263 (17.65) | 271 (18.19) |
| Female | 32 (2.15) | 1187 (79.67) | 1219 (81.81) |
| Total | 40 (2.69) | 1450 (97.32) | 1490 |
| | +ve: Positive | -ve: Negative | |
| | $X^2$=0.009 | *P*=0.926 | |

VCT: Voluntary counseling and testing

**Table 2: Prevalence of HIV infection across different age groups among VCT attendees**

| Age groups | HIV+ve (%) | HIV−ve (%) | Total (%) |
|---|---|---|---|
| <2 | 0 (0.00) | 8 (0.54) | 8 (0.54) |
| 2-14 | 1 (0.07) | 43 (2.89) | 44 (2.95) |
| >14 | 39 (2.62) | 1399 (93.90) | 1438 (96.51) |
| Total | 40 (2.68) | 1450 (97.32) | 1490 |
| | +ve: Positive | −ve: Negative | |
| | $X^2$=0.253 | *P*=0.881 | |

VCT: Voluntary counseling and testing

## DISCUSSION

The data obtained in this study shows that though a consistent number of people used the VCT services during the period of study, females utilized the services more than their male counterparts. This observation is in tandem with our previous study[4] that showed that females (73.40%) used the VCT services more than males (26.6%) in the North Central part of Nigeria. The better response of females to VCT could be due to the lackadaisical attitude of males toward HIV testing and health care in general. A large portion of the population is HIV-negative despite the endemicity of the infection in the tropics. Hence, knowing that one's status is HIV-negative could motivate one to remain negative, whereas VCT services would provide treatment options, care and support, and preventive measures against the spread of the virus to HIV-positive patients. It is popularly believed that individuals living with HIV who are aware of their status are less likely to transmit the infection to others, and are more likely to access treatment, care, and support that can help them to stay healthy.

The 2.684% HIV seroprevalence seen in the total population of VCT service users in the study is similar to those of other studies.[4,8] However, higher values were reported in eastern and southern Africa.[9] This is in keeping with the report of UNAIDS[10] that documented a lower prevalence of HIV infection in western Africa compared with the eastern and southern parts of the continent. The variance in the transmission of the infection can be associated with the interplay of sexual behavior and biological factors that affect the chances of the transmission of the virus per sex act.[4,8]

This study also confirms the common perception that females carry a higher percentage of HIV burden compared to males. This is possibly due to the opinion that young women in developing countries have little control over how, when, and where sex takes place.[11] Also, the high social pressure on young unmarried women to retain

their virginity in the developing countries can lead to risky sexual practices such as anal sex[11-13] which consequently leads to increased susceptibility to contract the virus. Social pressure on girls to be submissive to boys,[14] dominant versions of masculinity,[12] gender inequality and violations of women's rights, and economic dependency and unequal power relations[15] also increase the vulnerability of females to HIV. However, the data obtained from this study about gender discrepancy in the distribution of HIV infection was not statistically significant. This is in agreement with previous studies[4,16] that reported equal burden of the infection in both sexes. Interestingly, this is in conflict with the study of Bautista *et al*.[5] that reported a higher prevalence of HIV infection in males (12.40% per year) than in females (7.10% per year). The marginal gender preference in the prevalence of HIV seen in females in this study is due to a higher number of the gender utilizing the VCT service, as also reported in our previous study.[4]

This study also showed that though there was no statistical difference in the distribution of HIV infection based on age, a higher prevalence was seen in people older than 14 years. Findings from this study confirm previous reports which documented that people, especially women, in their reproductive ages are more likely to contract the virus.[17-20] This is due to the fact that at this age, they become sexually proactive with possibly less tendencies to resist the hormonal drive. It is also due to sexual experimentation which usually begins between the ages of 13 and 19, drug abuse, low use of condoms, and other risky sexual behavior associated with the transmission of sexually transmitted infections (STIs) which increase the chance of contracting HIV.[17]

Prevention of Mother to Child Transmission (PMTCT) is an intervention that provides essential drugs, counseling, and psychological support to prevent HIV transmission from HIV-positive women to their infants in an attempt to achieve the sixth goal of the United Nations – an AIDS-free generation. A regimen of zidovudine (AZT) has been reported to reduce the transmission of HIV by 67% in resource-rich countries.[21] When combined with elective cesarean section and avoidance of breastfeeding, these interventions were reported to reduce the risk of HIV infection to about 1-2%.[22] The observation in this study that children below two years of age were all HIV-negative might suggest that the PMTCT intervention is yielding positive results.

We therefore conclude that though marginal differences were observed in HIV distribution across the sexes and age groups possibly due to gender disparity-induced pressure and biological rhythm, respectively, the infection has equal prevalence in both sexes and across all age groups. It is thus recommended that adequate measures be taken to promote gender equality, healthy reproductive and sexual health behavior, and the use of VCT services in both sexes and across all age groups to limit the spread of HIV further.

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