HIV Infection among Individuals at the University of Dschang: Prevalence, Awareness, and Sexual Practices

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ABSTRACT
Between September 2009 and October 2010 we conducted a study to determine the HIV prevalence, level of awareness, and sexual practices among students of the University of Dschang, so as to recommend a practical approach to prevention at the institution. HIV testing was carried out using the Determine and Oraquick Diagnostic tests Kits, (Method: As described by the manufacturer) and each respondent completed a questionnaire. Of the 659 respondents, 389 (59%) were males and 270 (41%) females; of these, 7 (1.1%) were confirmed positive by the two tests. All who responded to the questionnaire were aware of the different modes of acquiring HIV-infection, and 137 (56.6%) respondents reported heterosexual practice. Compared with the general population, HIV prevalence in this student population is still low and offers an opportunity to develop targeted intervention strategies.

Key Words: HIV Infection, Prevention, University of Dschang

INTRODUCTION

On June 5, 1981, the United States Centre for Disease Control (CDC) reported the first cases of the Acquired Immunodeficiency Syndrome (AIDS) caused by the Human Immunodeficiency Virus (HIV) (CDC, 1981).
As the World "celebrates" in 2011 the 30th anniversary of the recognition of HIV/AIDS, one would expect that increasing knowledge, based on science, technology and innovation would have found solutions to the HIV/AIDS pandemic. Unfortunately, rather than abate, the crisis is deepening.Prevention of infection and caring for HIV/AIDS victims (patients and children orphaned by the killer disease) remains crucial in the fight against the scourges.
As of 2011, the UNAID and WHO reported that an estimated 40 million persons were infected with HIV/AIDS worldwide, over 80% of whom residein Africa. In HIV/AIDS has had its most devastating impact in Sub-Saharan Africa, with an estimated 67% of people living with HIV/AIDS, 70%, new HIV infections and 70% of all AIDS-related deaths. This region accounts for only about 12% of the world's population (UNAIDS, 2008; UNAIDS, 2009; Kaiser Family Foundation, 2009). In Cameroon, a 2004 Demographic and Health Survey (DHS, 2004) estimated that 5.5% of the adult population (15 -49 years) was HIV-infected with a female HIV prevalence rate of 6.8%, and 4.1% for males. This gives an infection ratio of 1.7% between women and men in Cameroon.Unfortunately, a policy of denial, fear and prejudice, which characterized the behavioural responses of many policy makers, tended to hone rather than halt the spread of the disease. According to the National Institute of Statistics (2006:25), 20.4% of the Cameroonian population is aged between 15 and 24 years that is the age bracket most vulnerable to the HIV/AIDS pandemic,this is also corresponds to the Secondary School and University school-age.Cameroon does not seem to have asystematic, well-coordinatedpolicy on HIV/AIDS in the educational sector (Basic, Secondary and Tertiary levels).The University of Dschang is one of the eight Public Universities in Cameroon. It is located in the touristic city of Dschang on the Western highlands, a University town *par excellence* with a population of 87,000 in 2011 with an estimated student population of 16,000 in 2009, the University of Dschang accounts for 17.23% of the city's population. No systematic studies on HIV/AIDS have been conducted at the University of Dschang in particular or the Cameroon University community in general. This study was designed to determine the prevalence, level of HIV awareness, and sexual practices among university students at the University of Dschang.
With a predominantly youthful population, Cameroon University students are more likely to be adolescents and young adults with a high potential for sexual experimentation. The academic and non-academic staffs of the university have been included in the study because they are members of the community exposed to the possibility of trading off sexual relationships.

Study Population and Methods

Between March and October 2011 we conducted a cross-sectional, unlinked and anonymous study among students of the University of Dschang. During this period, we established free HIV screening to all members of the University community on the campus

of the University of Dschang. The age range of those screened was 17 – 49 years inclusive. After consent, blood samples were drawn from voluntary respondents and they completed a questionnaire on HIV awareness, sexual practices and attitudes towards prevention, and underwent a pre-test counselling. Respondents returned on appointment for post-test counselling and to receive their results. Individuals who were found HIV positive were eventually referred for antiretroviral treatment through the University Health Service.

The questionnaire was designed to collect information on the HIV/AIDS awareness, sexual practices and attitudes towards prevention. It consisted of 22 questions: 17 multiple-choice questions, and five open ended questions.

The analysis of data was carried out using the SPSS data analysis tool.

This protocol was reviewed and approved by the Cameroon Ethical Committee.

RESULTS

A total of 659 students offered for voluntary HIV screening. Of these, 59% were male and 41% female; 98.6% were students, and 1.1% were married workers. Some of respondents did not answer all the questions in the questionnaire. The data analysed provided information on: reasons for participating in the HIV screening survey, level of information provided on campus on HIV/AIDS, perception of methods of contracting HIV, recommended sexual practices and prevalence rate within the university.

Reasons advanced for HIV screening

Respondents were asked closed ended question why they volunteered to do HIV screening.

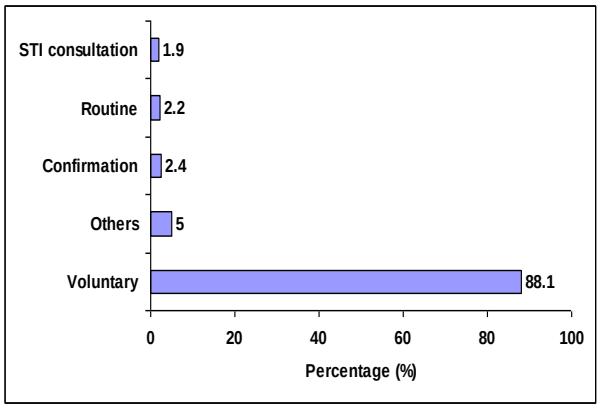

Figure 1: Reasons given by respondents for HIV

According to the responses, 581 (88.1%) offered to be testetd on their own volition just know their HIV status, while 16(2.4%) requested testing to confirm previous HIV screening results and another 15(2.2%) participated as a routine HIV checkup. Another small group 13(1.9%) participated to determine the state of health regarding sexually transmitted infections.

Respondents were asked to rank six HIV/AIDS awareness creation methods commonly used in Cameroon by order of effectiveness. As figure 3 shows, the respondents preferred posters, adverts and seminars to tracts, documentaries and bill boards as effective methods of to convey information on HIV/AIDS and other sexually transmitted diseases. It suggests that more posters, seminars and workshops should be used to inform students about HIV/AIDS.

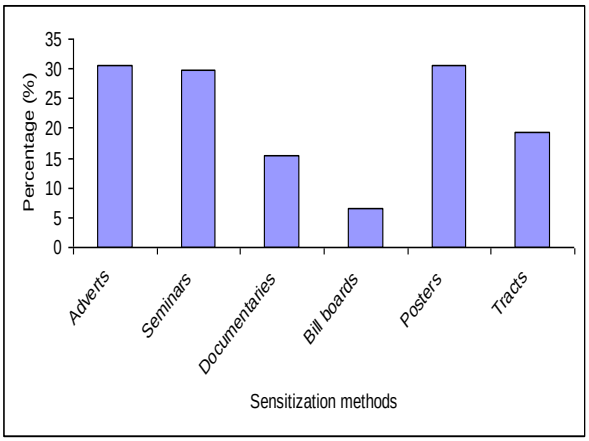

Figure 2 : Preferred information dissemination methods for HIV/AIDS

Perceived level of information provided on campus on HIV/AIDS

Respondents were asked to rank the quality and amount of information provide on campus on HIV/AIDS. The results are given in figure 4.

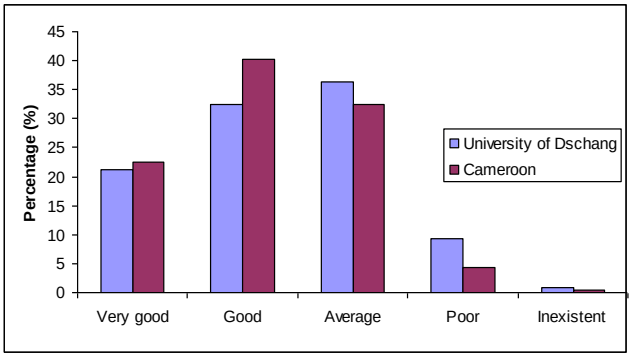

Fig. 4. Perceived level/amount of information provided on campus on HIV/AIDS

According to the respondents, the level of awareness creation at the university of Dschang is just slightly lower than what is done at the national level (from the survey data). Approximately 22% qualified as "very good" the amount of information disseminated in Cameroon and at the University of Dschang.

However, this factor is rated "good" at the level of the University of Dschang by 33% of the respondents whereas 40% believe that the level of information at the national level is good. However, a total of 47% rate the information level as from average to poor at the University level and 37% at the national level. These ratings suggest very strongly that more has to be done

to provide information on HIV/AIDS on the campus of the University of Dschang.

Perceptions on methods of contracting HIV/AIDS

The study sought to determine the extent to which the respondents were aware of the various channels of HIV/AIDS infection. We consider this important on the assumption that the effectiveness of HIV/AIDS education will largely depend on the level of understanding of the population with regard to the potential channels of HIV/AIDS infection. A close-ended question with twelve possible responses was asked to tap the respondents' perceptions on the various vehicles or channels of HIV/AIDs infection. These responses are presented in figure 5.

Table 1. Perceived means of HIV/AIDS infection by respondents (N= 242)

Perceived Vehicle/Channel of HIV/AIDS infection	Percentage Responding
All forms of sexual intercourse	82.3
Blood transfusion	74.3
Shared use of shaving blade	36.1
Shared injections and needles	43.3
Scarification	32.7
Circumcision	32.4
Heterosexual practices	56.6
Homosexual practices	13.0
Oral sex	5.3
Anal sex	3.0
Group sex	3.1
Sex during menses	4.0

Source: Survey data

Respondents were also questioned on what they believed to be the best sexual practices. The responses are reported in figure 5. As table 1 show, sexual practices were seen as the main route to HIV infection, followed with blood transfusion. The use of sharp objects on the body is also a known source of contamination. Although oral, anal and group sex were also reported as perceived sources, these perceptions were not pursued further to deepen understanding of these sexual preferences.

Yet, by citing "group sex", oral sex, and intercourse during menstrual periods and homosexual practices, the respondents reveal such forms of sexual expression are either practiced by some of the respondents or are known sexual behaviours in their community.

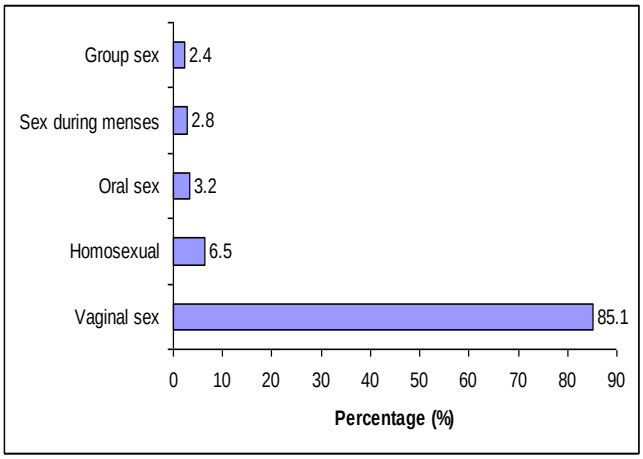

Figure 3 Sexual practices recommended by respondents

Fig. 5. Sexual practices recommended by respondents

Because of the pervert nature of some of the sexual practices in the community of study, we decided to differentiate the responses by gender. The results are presented in Table 2.

Table 2: Recommended sexual practices by gender (with percentage in brackets)

Gender	Sexual practices				
	Homo-sexual	Vaginal	Oral	Group	During menses
Female	8(53.3)	115(55.8)	5(62.5)	4(66.7)	4(57.1)
Male	7(46.7)	91(44.2)	3(37.5)	2(33.3)	3(42.9)
Total	15	206	8	6	7

Prevalence Rate on the University Campus

Of the 659 voluntary cases screened, 7 were tested positive by the tests. _This represents about 1.1% of the number of students who reported for voluntary screening, and between the ages of 17-49. Although this prevalence rate is happily low, we cannot say that the rate can be generalized to the entire university population of 14,811. In fact, the volunteers represent only 4.4% of the entire University population.

Meanwhile, 72.4% of the respondents believe that

important, and 7.4% did not give their opinion on this. Yet, 53% of the respondents reported that they subject themselves to voluntary screening once or twice a year, and27% have never performed an HIV test before, while 10% did not express their opinion.

Up to 5.6% of the respondents declared that they have had sexual relations with commercial sex workers within the last 12 months and a stunning 19% declared having had unprotected sexual intercourse with occasional partners.Hence, the rate of HIV/AIDS spread could be attributed to exposure to risky sex practices.

RECOMMENDED CONTROL MEASURES

The data from this study shows that 95.4 % of the respondents recommended condom use as a control measure, while 54.5 % saw fidelity of regular partners as a means of curbing the spread of HIV infections.

DISCUSSION

This study carried out in the University of Dschang revealed a low prevalence (1.1%) of HIV infection. This result was based on a voluntary basis of participants and most of those who volunteered were most likely sure of being HIV negative and the other few wanted to confirm a previous result or know their status. This low prevalence may not represent a real situation in the university but has given us an inside into what obtains in the University of Dschang. HIV/AIDs cases have been identified in this community and it is therefore important to intensify prevention measures in order to check the further spread of infection in this population. With the advent of antiretroviral therapy some persons are blinded and the phobia for HIV/AIDS has greatly reduced in most individuals who believe there is a cure for HIV. This is risky because antiretrovirals do not cure HIV/AIDS but reduce viral replication. These drugs are produced in cognizance with subtype B virus and used in Cameroon, which has a complex HIV landscape. Cameroon is a country where all three groups of HIV-1, M, N, and O co-circulate. Almost all the known HIV subtypes A- H and many recombinants, including circulating recombinant forms such as (CRFs) CRF01_AE, CRF02_AG, CRF01A1, CRF04_CPX, CRF06_CPX, CRF09_CPX, CRF11_CPX, CRF_CPX13, CRF18_CPX, CRF19CPX, CRF26CPX, CRF36_CPX, CRF27_CPX, CRF37_CPX and numerous unique recombinants, have been described in individuals in rural villages as well as urban areas. (Burda *et al.,* 2004; Ndembi N *et al.,* 2004; Wilbe K, 2002; Carr, 2001; Powell et al., 2007). This broad HIV-1 group M genetic diversity in Cameroon is a puzzle to scientists and complicates HIV/AIDS management in this region. Reports have shown that, the rural villages of the West Region in which the University of Dschang is located, is a host to a very high level of divergent viruses. These viruses have been evolving overtime and are now dominated by CRFs. (Powell et al., 2010). Consequently these diverse viruses may be introduced at some point into the university community and continue to evolve and spread and may result in drastic implications on HIV diagnosis, treatment and vaccine trials.

Studies from Cameroon report HIV-1 group M mutations in viruses, which confer drug resistance to Reverse Transcriptase Inhibitors (RTIs), also known as Highly Active Antiretroviral Therapy (HAART) which are commonly used in Cameroon. These mutations have been identified in patients on HAART (Laurent et al. 2006) and drug naïve individuals (Burda et al., 2010). This shows that some HIV patients on HAART and some HIV-positive Drug naïve individuals already harbor genotypic drug resistant mutations which may result in the poor efficacy of HAART in HIV/AIDs patients, Individuals positive for HIV by the rapid test used in our study were placed on HAART. There was no drug resistance testing before HAART treatment for the patients. Despite the fact that HIV prevalence is low in our study population, complications may arise with the use of HAART resulting in transmitted drug resistance strains, which may be critical for the patients. A total of about 47% responded that the level of information was average to poor at the university level, which signifies that the university is not doing enough in preventive measures against HIV/AIDS. The population (17 to 49 years) of the university is the most active and the age range of students here is the age most hit by HIV in Cameroon. It is thus imperative for the University of Dschang to initiate or improve the institution specific HIV/AIDS prevention programs.

It should fill the gap in the availability of trained personnel by giving training to academic staff, students and support staff of the institution to work with their peers to reduce personal risk and to engage with families and communities to improve awareness and specific prevention programs. It should embark on various strategies to drive awareness and preventions to its community.

This study was based on rapid test to determine the prevalence of HIV in the University of Dschang. This diagnostic test does not reveal the various HIV strains circulating in the population. It is therefore important to carry out a more intensive study using other advanced diagnostic tests like PCR that to characterize the viruses in this community. Such diagnosis will identify subtypes and CRFs co-circulating in this population that can be used to monitor the epidemic.

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