

# Cross-infectivity of HIV Infection: Assessment of Behaviour of Patients Attending a University Dental Centre

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## Abstract

The study aimed to assess the attitude of respondents toward oral health care and providers on account of cross-infectivity of HIV infection in dental practice. This cross-sectional study was conducted in the outpatient clinics, Dental Centre, University College Hospital, Ibadan using a self-administered structured anonymous questionnaire as instrument for data collection. The formula  $n = z^2pq/d^2$  was employed to determine the sample size. A total of 465 respondents participated in the study. Twenty eight point two percent of the respondents were reluctant to receive oral health care because of fear of HIV cross-infection. Fear of contracting HIV/AIDS also affected the choice of dental clinics in 53.1% of cases, and 49.1% of the respondents ask questions about the sterility of dental instruments. Most of the respondent (63.6%) keenly watched their dentists' hygiene practices. A cross-section of the respondents was reluctant to receive oral health care and showed keen interest in the hygiene practices of their dentists.

## INTRODUCTION

HIV/AIDS has recognizable risks not only to dental professionals, but also to their patients (1). HIV/AIDS is related to dentistry in various ways: there is possibility of cross-infectivity in dental clinical practice (2); the disease as well as its medications/ antiretroviral therapy have oral manifestations (3). Also, detection of the virus in saliva has been reported and its use in the diagnosis of the infection has been postulated (4). Occupational transmission of HIV infection is rarely reported; one case involving a dentist has been publicized (5). The dentist was said to have admitted that he frequently practiced without gloves and that his hands contain breaks in the skin (6). As at 2003, a total number of fifty-seven health care workers with evidence of occupationally acquired HIV infection has been documented and reported in America (7). The Center for Disease Control and prevention (CDC) had previously reported a case of HIV infected dentist in Florida who apparently infected some of his patients while carrying out dental procedures (8). Studies of viral DNA sequence linked the dentist to six of the patients who were also HIV infected, but the CDC could not establish how the transmission took place (8).

Adebamawo et al. 2002 (9) reported that the concentration of infected patients in the Sub-Saharan region of Africa has led to a heightened concern in the surgical community. The level of concern among informed hospital patients is however,

rarely investigated. Utilization of dental services has been said to be generally less common than utilization of medical services (10). Hence, the consumption of oral health care could drop further down if patients develop negative attitudes to oral health care as a result of the reported cases of HIV transmission occurring in health care institutions (8, 11). Dentistry is a surgical specialty; infection may be transmitted from one patient to the other through the use of contaminated instruments or administration of unscreened blood and blood products. This study is therefore, aimed at assessing the attitude of informed dental patients towards oral health care and practitioners on account of cross-infectivity of HIV infection in dental practice.

## MATERIALS AND METHODS

### STUDY SETTING

This clinic-based cross-sectional study was conducted in the out-patient clinics of the Dental Centre University College Hospital, Ibadan. The hospital is the largest among three referral centers in South-Western Nigeria. The hospital is located in the metropolitan city of Ibadan and draws patients from adjoining cities and states as well as from other regions of the country.

### SAMPLE SIZE DETERMINATION

The sample size was calculated using the formula  $n =$

$z2pq/d2$ ; where  $n$ = the sample size,  $z$ = normal standard deviate, set at 1.96,  $p$ = the proportion in the target population, set at 50% (0.5),  $q=1-p$ ,  $d$ =degree of accuracy desired, set at 0.05 ( $n= 1.962(0.5) (0.5/ (0.05) ^2 = 384$  subjects). Ten percent (38 subjects) was added to compensate for attrition (i.e. inadequately filled and unreturned questionnaires). Sample size= 384+ 38=422. Four hundred and twenty two respondents were targeted.

## METHODOLOGY

The study protocol was approved by Oyo state research and ethical committee, and participants had to give consent to be involved in the study. Consecutive patients who were 17 years and above and who agreed to participate in the study were recruited into the study. Patients who were less than 17 years and those who were unwilling to participate in the study were excluded as well as those who claimed they were unaware of the HIV pandemic.

A close ended, self-administered, anonymous questionnaire was employed as the instrument for data collection. The information requested includes the gender, educational background, marital status and religion of the respondents. The questionnaire was also designed to determine the opinion of the respondents on a three-point Likert scale: (Yes; Not sure; No) (12) about fear of contracting HIV and willingness to receive oral health care, choice of dental clinics, request for the services of a specific dentist, request for clarification about the sterility of dental instrument and paying keen attention to the hygiene practice of their dentist. The questionnaire also requested for what the respondents would do if unprofessional hygiene practice is observed.

## DATA MANAGEMENT

Simple descriptive analysis was performed to generate and compare proportions, frequencies and measures of central tendencies using SPSS for windows, version 11.0, Chicago Illinois, USA.

## RESULTS

A total of 490 questionnaires were eventually administered. Out of this number, 465 respondents comprising 255 males (54.8%) and 210 (45.2%) females returned properly filled questionnaires giving a response rate of 94.9%. The age range of the respondents was 17-80 years and the median age was 33.1 years. Most of the respondents (66.9%) had post-secondary educational qualification, about half of them (50.5%) were single and most of them (69.0%) were Christians (Table 1).

Attitudes of the respondents to oral health care and practitioner on account of possible HIV cross infection during dental treatment is shown in Table 2. Most of the respondents (63.4%) indicated that they were not reluctant to receive dental treatment for fear of contracting HIV infection during treatment. However, about half of the respondents (53.1%) claimed that the choice of their dental clinic is influenced by their knowledge of HIV cross infectivity. In addition, most of the respondents (65.8%) indicated that they do not insist on the services of a particular dentist when they present themselves for treatment, and about half of the respondents (49.1%) also indicated that they do not ask questions about the sterility of the dental instruments being used for their treatment. However, most of the respondents (63.6%) claimed that they keenly watch their dentists when undergoing treatment to detect obvious lapses, and most respondents (75.5%) claimed that they would politely draw dentists' attention to such observed lapses.

**Figure 1**

Table 1: Socio-demographic variables of respondents

Variables	Frequency	Percentage N=465
<b>Gender</b>		
• Male	255	54.8
• Female	210	45.2
<b>Educational background</b>		
• No formal education	9	1.9
• Primary	25	5.4
• Secondary	120	25.8
• Post secondary	311	66.9
<b>Marital status</b>		
• Single	235	50.5
• Married	211	45.4
• Divorced/separated	9	1.9
• Widow	5	1.1
• Missing items	5	1.1
<b>Religion</b>		
• Christianity	321	69.0
• Islam	120	25.8
• Traditional	11	2.4
• Missing items	13	2.8

**Figure 2**

Table 2: Attitude of respondents to oral health care and practitioners on account of possible HIV cross infection during dental treatment

Questionnaire items	Response		
	Yes	No	Do not know
Are you reluctant to receive dental treatment because of possible HIV cross infection?	131 (28.2%)	295 (63.4%)	55 (11.8%)
Does the fear of contracting HIV infection affect the choice of your dental clinic?	247 (53.1%)	170 (36.6%)	56 (12.0%)
Do you normally request for the services of a particular dentist on account of HIV cross infection?	106 (22.8%)	306 (65.8%)	59 (12.7%)
Do you ask questions about the sterility of instruments being used for your dental treatment?	231 (49.7%)	187 (40.2%)	42 (9.0%)
During dental treatment do you keenly watch your dentist to detect obvious lapses?	293 (63.0%)	110 (23.7%)	56 (12.0%)
If your dentist suddenly becomes unhygienic during treatment, what will you do?			
• Politely draw his attention to it	351 (75.5%)		
• Harshly draw his attention to it	44 (9.5%)		
• Endure the procedure but decline further treatment	35 (7.5%)		
• Do not care	12 (2.6%)		

## DISCUSSION

The age distribution and marital status of the respondents suggest that about half of the respondents fall within the sexually and economically active high risk group. The severe epidemics of HIV/AIDS in Sub-Saharan Africa have been linked to prevalent unsafe sexual practices that facilitate HIV transmission in this region (13,14). Most of the respondents were Christians and had a post-secondary qualification. The educational background and religious inclinations of the respondents, therefore, may not allow for generalization of the results.

It is not surprising that some patients were reluctant to receive oral health care for fear of contracting HIV infection considering reports of transmitted cases in hospital environment (6-8). Though HIV transmission in clinical settings has been said to be extremely rare (8), McCarthy (2000) (15) reported that the evidence for viral transmission (HIV inclusive) in the dental office is based on the results of sero-prevalence studies, epidemiologic investigations and case reports. In a previous study (16), less than 7% of the

respondents were worried about contracting HIV in dental office. Dental surgeons, likewise, had expressed fears about the possibility of their acquiring HIV infection during their clinical practice (15-17).

Exposure prevention via strict adherence to universal precautions offers double protection; it protects the patient on one hand and the practitioner on the other hand. It is quite clear why the fear of contracting HIV infection affect the choice of where to receive oral health care by some of the respondents. Only about 14% of general practitioners were found to be compliant with an inventory of recommended infection control measures in a previous survey (18). Most of the respondents reported that they do not influence the choice of dentists who attend to them. This may be because this study was conducted in a government owned hospital where the patients do not always have the privilege of choosing which doctor attends to them. Cohen et al. (2007) (16) reported earlier that 35% of their studied sample indicated that they would change dentists if their dentist was treating AIDS patients. About half of our respondents do ask questions about the sterility of the instruments prepared for their treatment. This is reinforced by the fact that most of them also watch their dentist closely during procedures in order to detect obvious lapses. These behaviours and attitudes point to an underlying concern about their safety. However, most of the respondents would not decline further treatment, but would politely alert the dentist if he suddenly becomes unhygienic.

## CONCLUSION

A cross-section of the respondents was reluctant to receive oral health care for fear of contracting HIV infection and showed keen interest and positive attitude to the hygiene practice of their dentists.

Adoption of standard precautions and sustained rigorous health education in all health institutions and across different socio-economic groups will improve the confidence of the populace about the safety of dental clinical practice and encourage the people to seek dental treatment without fear of catching infection respectively.

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