

ORIGINAL ARTICLE

Perception of HIV/AIDS among preclinical dental students

H.O. OBORO, C.C. AZODO*, M.A. SEDE**

Department of Restorative Dentistry, University of Benin Teaching Hospital, Benin City; * Department of Periodontics, University of Benin Teaching Hospital, Benin City; ** Department of Restorative Dentistry, University of Benin, Benin City, Nigeria

Key words

HIV • Perceptions • Preclinical dental students

summary

Objective. To determine the knowledge, attitude and willingness of preclinical dental students to treat HIV/AIDS patients in the future.

Method. The sample comprised 150 students of both genders drawn from the third and fourth year dental students of the University of Benin, Benin City. One hundred and fifty questionnaires were self-administered, with 139 (92.6%) retrieval. The parameters measured were knowledge, status, immunization against hepatitis B virus, willingness to treat, knowledge of post exposure prophylaxis (PEP) and its protocol in the of University of Benin Teaching hospital (UBTH).

Results. Data analysis showed that 100 (71.9%) students rated their knowledge of HIV/AIDS as high and very high. Sixty-three (45.3%) students thought that HIV was a contagious disease while 46 (33.1%) felt HIV was more infectious than tuberculosis or any of the strains of hepatitis virus. Only 59 (42.4%) students

knew their HIV status. One hundred and twenty seven (91.4%) students felt that professional oral health care will be beneficial to HIV/AIDS patients; while fifty-one students (36.7%) are not prepared to administer dental care to HIV/AIDS patients in future. Majority of respondents adjudged health workers to be more at risk than sex workers. Forty students comprising 28.8% of the study population had been immunized against Hepatitis B. Ninety-four (67.7%) students had no knowledge of PEP while 122 (87.8%) students did not know the PEP protocol in UBTH.

Conclusion. Although a large number of these students claim to be knowledgeable about HIV/AIDS. It is obvious that a true understanding is lacking. Concerted effort should be made to change their perception by implementing a curriculum designed to enhance the knowledge of dental students; if we hope to save HIV/AIDS patients from the discrimination of future healthcare givers.

Introduction

Human immunodeficiency virus (HIV) and Acquired immunodeficiency syndrome (AIDS) have continued to create significant health concerns as their prevalence expand in scope and magnitude [1]. The first clinical evidence of HIV/AIDS was reported in United States of America over two decades ago and has spread to every corner of the world. The epidemic is reversing gains in development, robbing millions of their lives, widening the gap between rich and poor, shattering young people's opportunities for healthy adult lives, and undermining social and economic security [2]. Since the first case of AIDS was reported in Nigeria in 1986, it has attained an epidemic status with Nigeria accounting for the highest proportion of people living with HIV in the West Africa sub-region and home to 1 in 11 of the 40 million people living with HIV/AIDS worldwide [3].

The care of people with HIV/AIDS is challenging due to its multidisciplinary nature, its medical complexity, physical manifestations, the need for infection control procedures and the associated stigma and discrimination [4]. International Dental Federation (FDI) policy statement on HIV states that dental and medical practitioners at all times should develop multidisciplinary,

co-operative approaches for patient care, in order to deliver optimal health care for patients with HIV and other blood borne infections [5].

Oral health problems just like in the past continues to remain a significant feature of the AIDS epidemic today [6]. Oral health care is essential for the patients living with HIV/AIDS, because of its relationship to good nutrition. Discomfort and pain associated with oral ulceration adversely affects the ability of AIDS patients to eat; thereby limiting their intake of the much needed nutrients. Good nutrition and the intake of high calorie diet help individuals with HIV/AIDS to meet their daily body requirements due to their increased metabolic activity. There is a reduced incidence of some oral health conditions in patients on highly active antiretroviral therapy (HAART), but has been associated with increased incidence and frequency of other problems. HAART is therefore no panacea for poor access to oral health care. Oral health care and access to dental services have consistently remained an unmet need of people living with HIV/AIDS [7, 8] because of poverty and discrimination by dental personnel who express unwillingness to treat them. Dentists and other dental personnel have a professional and ethical responsibility to provide treatment to patients with HIV/AIDS; since oral lesions such as

hairy leukoplakia, candidiasis and Kaposi's sarcoma, are commonly found in HIV-infected patients [9]. HIV/AIDS patients are not also immune against other conditions routinely seen in dental patients.

The barriers hindering oral healthcare delivery to HIV/AIDS patients include ignorance, lack of appropriate facilities and fear of contagion, stigma and discrimination [10]. The stigmatization of individuals caring for and treating patients with HIV/AIDS poses a significant barrier to successful educational efforts about AIDS. This is easily attributed to the fear of contagion amongst the uninformed public. Prejudice against HIV/AIDS patients appears to be widespread in Nigeria. Such attitude among health care workers has been identified as one of the core reason many people living with HIV/AIDS in Nigeria are denied access to treatment [3]. A study among medical students in the United States of America shows that over half the students interviewed believed that treating AIDS patients might be hazardous [11]; this might lead to unwillingness to treat HIV/AIDS patients in future [12].

The objective of this study is to determine the knowledge, attitude and the willingness of preclinical dental students to treat HIV/AIDS patients in the future.

Materials and methods

The University of Benin dental school is one of the first generation dental schools in Nigeria. It is located in Benin City, Edo State, where a anti-HIV seroprevalence rate of 11.8% has been reported in adolescents [13]. The duration of undergraduate training for a Dentist in Nigeria is five to six academic sessions, depending on the entrants' qualification. The first two and half sessions of the six academic sessions are devoted to the study of subjects in science and basic medical sciences while the third and fourth sessions deals with preclinical dental subjects (oral biology, pharmacology, pathology, prosthetics and operative technique). The clinical years are in the fifth and sixth sessions of the curriculum.

The choice of third and fourth year students as sample in this study was because the curriculum at the level; is expected to prepare them for the academic and clinical challenges of delivering optimal care to HIV infected individuals.

A cross-section of 150 consenting preclinical (3rd and 4th) year dental students, officially registered in the School of Dentistry, University of Benin were studied using a 16-item self-administered, closed-ended type questionnaire. The questionnaire, reported in Appendix, was designed to ascertain their demographic characteristics, HIV-related knowledge and status, Hepatitis B immunization status, willingness to treat HIV/AIDS patients in future, knowledge of post exposure prophylaxis (PEP) and its protocol in the University of Benin Teaching hospital within a six weeks period.

Age, sex and year of study were the demographic data assessed. The HIV knowledge was assessed in two ways. First, HIV knowledge was assessed by a self rating scale

as very high, high, moderate or low. The specific knowledge was assessed by questions on commonest mode of HIV transmission in Nigeria, whether HIV is contagious and if they think HIV is more infectious than hepatitis or tuberculosis.

Knowledge of HIV status was assessed by a single question: "Have you undergone HIV testing in the last 12 month?" Some questions that assessed attitude towards HIV testing, professional oral care for HIV patients and people living with HIV/AIDS were "Are you willing to eat from the same plate with an individual that is HIV positive?" What do you think about professional oral care for HIV patients? - With the respond options as "it is a waste of time", "it is waste of resources" and "it is beneficial to the patients". Readiness to undergo HIV screening and the Hepatitis B status of the respondents was also assessed using a single question.

The willingness of the students to treat HIV infected patients was assessed by a single question: "Are you willing to treat and care for HIV infected patents?" The question on the risk of contracting HIV; assessed the knowledge of risk of contracting HIV among different professions.

The awareness of PEP and its protocol in the University of Benin Teaching Hospital was also assessed.

The data obtained were coded and entered into a personal computer and analyzed using the Statistical Package for Social Science (SPSS), windows version 15.0. As appropriate, data were categorized and analyzed using descriptive statistics based on the total number of respondents. Graph was plotted using Microsoft Excel.

Results

Out of the 150 questionnaires distributed to the third and fourth year dental students, a total of 139 questionnaires were returned and analyzed indicating a response rate of 92.6%. The male and female respondents accounted for 71.2% and 28.8% (a ratio of 2.5:1) of the study population respectively. More than half of the participants, 79 (56.8%), were in the age range 21-25 years (Tab. I). Respondents from the fourth year were 71.2% of the study population while those from the third year constituted 28.8% (Tab. II).

Table III, showed the self rated HIV/AIDS knowledge of the respondents. One hundred (71.9%) students rated their knowledge of HIV/AIDS as high and above while those that rated their knowledge of HIV/AIDS as moderate and low accounted for 25.9% and 2.2% respectively. Also shown is the specific HIV/AIDS knowledge of the respondents. There was a 100% agreement amongst the respondents that sexual intercourse is the commonest mode of HIV transmission in this environment, while 45.3% of the respondents believed that HIV was a contagious disease. About a third (33.1%) of the study population claimed that HIV was more infectious than tuberculosis or any of the strains of hepatitis virus.

Tab. I. Demographic characteristics of the respondents.

Characteristics	Male		Female		Total	
	N	%	N	%	N	%
Age						
15- 20	18	58.1	13	41.9	31	22.3
21-25	59	74.7	20	25.3	79	56.8
26-30	21	75.0	7	25.0	28	20.1
31-35	1	100	-	-	-	10.7
Total	99	71.2	40	28.8	139	100

Tab. II. Distribution of respondents by gender and year of study.

Characteristics	Male		Female		Total	
	N	%	N	%	N	%
Year of study						
3 rd Year	25	17.9	15	10.8	40	28.8
4 th Year	74	53.3	25	17.9	99	71.2
Total	99	71.2	40	28.8	139	100.0

Less than half (42.4%) of the respondents were aware of their HIV status while 78.4% of those studied were disposed to undergoing HIV test. Fifty-one students (36.7%) were not prepared to administer care to HIV/AIDS patients in the future. A slightly higher number 53 (38.1%) of students indicated their unwillingness to share a meal from the same plate with people living with HIV/AIDS (PLWHA) (Tab. IV). Majority (39.6%) of the respondents perceived health workers to be more at risk of contracting HIV/AIDS than other professionals including sex worker (Tab. V). Table VI shows that more than 90 students had no knowledge of PEP while over 120 (86.3%) of the same population were ignorant of the PEP protocol in UBTH. Majority (91.4%) of the respondents felt that professional oral healthcare would be beneficial to the patients (Fig. 1).

Tab. III. Knowledge of HIV among the respondents.

Parameter	Response			
	Yes		No	
Self rated knowledge of HIV	N	%	N	%
Low	3	2.2		
Moderate	36	25.9		
High	75	54.0		
Very high	25	17.9		
Specific knowledge about HIV	Yes		No	
	N	%	N	%
Commonest mode of HIV transmission	139	100.0	0	0.0
HIV is a contagious infection	63	45.3	76	54.7
HIV is more infectious than tuberculosis or hepatitis	46	33.1	93	66.9

Tab. IV. Knowledge of HIV status among the respondents and their attitude towards people living with HIV/AIDS (PLWHA).

HIV status and attitude towards PLWHA	Yes		No	
	N	%	N	%
Knowledge of HIV status	59	42.4	80	57.6
Readiness to undergo HIV screening	109	78.4	30	21.6
Willingness to eat from the same plate with PLWHA	76	61.9	53	38.1
Willingness to treat HIV infected patients	88	63.3	51	36.7

Tab. V. Perceived risk of contracting HIV and AIDS amongst individual professions/individuals.

Profession	N	%
Health worker	55	39.6
Barbers	13	9.4
University students	12	8.6
Sex workers	53	38.1
Tailors	4	2.9
Bricklayers	2	1.4

Tab. VI. Knowledge of Post Exposure Prophylaxis (PEP) and immunization against Hepatitis B virus

Parameter	Response			
	Yes		No	
	N	%	N	%
Awareness of PEP	45	32.4	94	67.6
Awareness of UBTH PEP protocol	17	12.2	122	87.8
Hepatitis B immunization	40	28.8	99	71.2

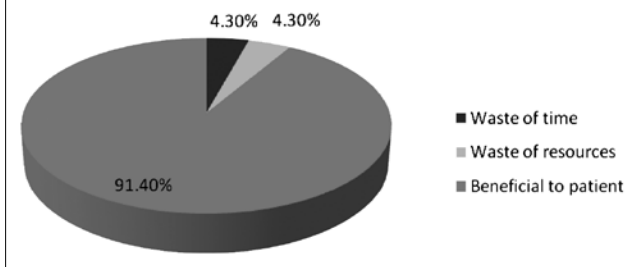
Discussion

Inadequate information on HIV/AIDS will continue to thwart efforts at the prevention of the disease, deprive PLWHA the much needed care and support; while encouraging stigmatization and discrimination against them. This trend will portend a great danger to the well-being of PLWHA.

Several studies have focused on the knowledge and attitude of clinical dental students [12, 14-16] towards PLWHA, but there appears to be no such study on pre-clinical dental students. The study population is representative of the student population in the third and fourth year classes which the University records shows to be 150 students. The male to female ratio of the participants similarly reflects the distribution of both sexes at every level in the dental school.

Majority (71.9%) of the respondents rated their HIV knowledge above average with regards to their specific knowledge of HIV/AIDS and the risk of contracting HIV/AIDS amongst various professionals and individuals. The finding is consistent with the report of studies among final year dental students of the University of Lagos, Nigeria [14], a Sudanese study amongst clinical dental students [12] and a study of clinical level dental students from the four premier dental schools in Nigeria [15]. The respondents in 4th year class rated their HIV knowledge higher than the respondents in 3rd year class, although the difference was not statistically significant. The exposure to lectures in pathology on HIV may have contributed to the little difference in the rating of the knowledge.

Fig. 1. Attitude of the respondents to professional oral healthcare to HIV patients.



More specific knowledge among the respondents about the HIV appears deficient; wherein 33.1% reported HIV to be more infectious than Hepatitis B and tuberculosis while 45.3% reported HIV as contagious. This confirms the existence of some misconception among the respondents and a pointer that true understanding of the disease is lacking. This observation is similar to the finding of surveys among University undergraduates in Nigeria [17] and college students in India [18]. Similarly, a Latin America study [19] revealed that a substantial numbers of dental students had incomplete knowledge of HIV and Hepatitis and often lacked confidence on infection control and procedures.

Fifty-nine (42.4%) respondents knew their HIV status while 78.4% including those that already knew that HIV status expressed their willingness to undergo voluntary HIV screening. Above 75% of the study population showed a positive attitude toward HIV testing; similar to the observation in a dental nursing student's study [20]. Although hepatitis B virus poses a serious threat to the career of the dental student they expressed more worry about HIV/AIDS. This scenario, perhaps explains why only 40 (28.8%) of the respondents were immunized against Hepatitis B virus. A study on students from four Nigeria dental school [21] shows their immunization profile against Hepatitis B virus as 37.9% and that on the final-year dental students in Mexico City [22] was 20%. However it was lower than the reported prevalence vaccinated against hepatitis B virus among dental students in Saudi Arabia [23] and students of Texas dental schools [24]. This finding poses a challenge to academic institutions and hospitals in ensuring appropriate preclinical immunization for undergraduates and other trainees; to protect their future careers and patients.

Nasir et al. [12], have attributed the reluctance of health care personnel and perhaps dental students to treating HIV sero-positive patients to the fear of HIV contagion. In this study, willingness to treat HIV infected persons was expressed by 63.3% of the respondents which was higher than 58.8% reported among final year dental students from the same dental school [16], 51% reported

among Taiwanese dental students [25] and 24.1% reported among Iraqi dental students [26]. The highly prevalent information on HIV and reasonable proportion of population that are HIV infected in our environment today appears to have influenced the willingness. This level of willingness needs to improved and sustained before entry into clinical level to achieve optimal oral healthcare for HIV infected in Nigeria.

Two Nigerian studies [10, 27] on the willingness of dentists to treat HIV patients reported 63% and 78.4% respectively while China healthcare professionals [28] and Iraq dental students [26] showed more preference for treating hepatitis patients than HIV patients. This can only be attributed to misconceptions surrounding both diseases; which is apparent in the response of respondents to the specific knowledge of HIV. This diverse attitude of health professionals towards care for patients with viral diseases may be linked to their knowledge of the disease and traditional practices or teaching within their environment.

Majority of the respondents (91.4%) were of the opinion that professional oral care will be beneficial to HIV infected patients; in contrast to another Nigerian study³ wherein 80% of health workers studied considered it a waste of time. This latter view may not be unconnected with the perception of HIV disease as a death sentence and therefore a hopeless case. HIV sero-positive people are entitled to the same dignity and respect as those who are suffering from other illnesses [29].

The use of anti-retroviral drugs as post-exposure prophylaxis in cases of actual or potential exposure [30] has become the standard of care after occupational exposure to HIV. Studies on occupational exposure of healthcare worker to HIV suggest that PEP may be effective in preventing HIV transmission [31]. About one in every two of the respondent had no knowledge of PEP while 87.8% of the respondents were unaware of the PEP protocol in their training institution. The reluctance of more than a third of the participants to treat HIV/AIDS patients in the future might be attributed to their ignorance of PEP which can reduce the risk of infection by 79%, when implemented within 2 hours of exposure [32].

Conclusion

Although a large number of these students claim to be knowledgeable about HIV/AIDS, it is obvious that a true understanding of the disease is lacking. A concerted effort should be made to change the uninformed perception amongst dental students by implementing curriculums that will enhance their knowledge of HIV/AIDS starting from preclinical stage which will be sustained in the clinical level.

References

- [1] Centers for Disease Control. *HIV/AIDS Surveillance Report*. CDC, Atlanta, GA: July 1995.
- [2] HIV/AIDS: Global crisis-global action. *United Nations Special Session on HIV/AIDS*. June 2001, 25-27.
- [3] Reis C, Heisler M, Amowitz LL, et al. *Discriminatory Attitudes and Practices by Health Workers toward Patients with HIV/AIDS in Nigeria*. PLoS Med. 2005;2:246.
- [4] Naidoo P. *Barriers to HIV care and treatment by doctors: a review of the literature*. S Afr Fam Pract J 2006;48:55-66.
- [5] World Medical Association / FDI World Dental Federation Joint Statement by Dato' Dr Ratnanesan, FDI President. WHO 111th Executive Board Meeting. January 2003, 20-28.
- [6] Centers for Disease Control Task force on Kaposi's sarcoma and opportunistic infections. *Epidemiologic aspects of the current outbreak of Kaposi's sarcoma and opportunistic infections*. N Engl J Med 1982;306:248-52.
- [7] Heslin KC, Cunningham WE, Marcus M, et al. *A comparison of unmet needs for dental and medical care among persons with HIV Infection receiving care in the United States*. J Public Health Dent 2001;61:14-21.
- [8] Reznik DA, Bednarsh H. *The role of the dental professional in managing patients with HIV/AIDS*. Dimension of Dent Hyg 2006;4:14-6.
- [9] Coogan MM, Greenspan JCS. *Oral lesions in infection with human immunodeficiency virus*. Bulletin of the World Health Organization 2005;83:700-6.
- [10] Uti OG, Agbelusi GA, Jeboda SO. *Are Nigerian dentists willing to treat patients with HIV infection?* Nig Dent J 2007;15:66-70.
- [11] Kapacz DR, Grossman LS, Klamen DL. *Medical students and AIDS: Knowledge, attitudes and implications for education*. Health Educ Res 1999;14:1-6.
- [12] Nasir EF, Astrøm AN, David J, et al. *HIV and AIDS related knowledge, sources of information, and reported need for further education among dental students in Sudan--a cross sectional study*. BMC Public Health 2008;8:286-94.
- [13] Offor E, Unuigbo E, Ogbeide O. *Adolescents and HIV/AIDS: an update of cases seen in Benin City, Nigeria*. J Med Biomed Res 2002;1:59-62.
- [14] Ajayi YO, Ajayi EO. *Dental students' knowledge of human immunodeficiency virus*. J Dent 2008;36:374-8.
- [15] Obuekwe ON, Osaiyiwu O, Onyeano CO, et al. *Knowledge and attitude of clinical level dental students concerning HIV/AIDS*. Nig Dent J 2007;15:3-8.
- [16] Azodo CC, Ehigiator O, Oboro HO, et al. *Nigerian dental students' willingness to treat HIV-positive patients*. J Dent Educ 2010;74:446-52.
- [17] Okeke MO, Fortune DA. *Survey of knowledge of attitude and perceived needs for effective AIDS education programme*. Oral presentation at the annual meeting of population association of America. Denver 1992.
- [18] Singh UD, Porterfield S, Thilakivathi M, et al. *Knowledge of HIV transmission and sexual behaviour of college students in India Pune*. J Acquir Immune Defic Syndr 1997;11:1519-20.
- [19] Acosta-Gio AE, Borges-Yáñez SA, Flores M, et al. *Infection control attitudes and perceptions among dental students in Latin America: implications for dental education*. Int Dent J 2008;58:187-93.
- [20] Azodo C, Umoh A, Ezeja E, et al. *A survey of HIV-related knowledge and attitude among dental nursing students in South Western Nigeria*. BJPM 2007;9:1-12.
- [21] Sofola OO, Folayan MO, Denloye OO, et al. *Occupational exposure to blood borne pathogens and managements of exposure incidence in Nigeria*. J Dent Edu 2007;71:832-37.
- [22] Maupomé-Carvantes G, Borges-Yáñez SA. *Attitudes and habits for the control of HIV and hepatitis B in dental students*. Salud Publica Mex 1993;35:642-50.
- [23] Al-Sarheed M. *Occupational exposures and hepatitis B vaccination statuses in dental students in Central Saudi Arabia*. Saudi Med J 2004;25:1943-6.
- [24] Rankin KV, Jones DL, Rees TD. *Attitudes of dental practitioners and dental students towards AIDS patients and infection control*. Am J Dent 1993;6:22-6.
- [25] HU S, Lai H, Liao P. *Comparing dental students' knowledge of and attitude towards Hepatitis B virus, Hepatitis C virus and HIV-infected patients in Taiwan*. STDs. 2004;18:587-93.
- [26] Al-Naimi RJ, Al-Saygh GD. *Knowledge, attitude and health behavior of dental students towards HIV patients*. Al-Rafidain Dent J 2009; 9:110-9.
- [27] Utomi IL, Onajole AT, Arotiba JT. *HIV/AIDS: Knowledge and attitudes of dentists in South-Western Nigeria*. Nig J Health Biomed Sci 2008;7:36-41.
- [28] Li L, Wu Z, Zhao Y, et al. *Using case vignettes to measure HIV-related stigma among health professional in China*. Int J Epi 2007;36:185-6.
- [29] Hartshorne JE, Carstens IL, Engelbrecht JJ, et al. *Dental and oral hygiene student's knowledge of HIV infection and AIDS*. J Dent Assoc S Afr 1994;49:161-7.
- [30] Körner H, Herndry O, Kippax S. *Safe sex after post-exposure prophylaxis for HIV: intentions, challenges and ambivalences in narratives of gaymen*. AIDS Care 2006;18:879-87.
- [31] Cardo DM, Culver DH, Ciesielski CA, et al. *A case-control study of HIV seroconversion in health care workers after percutaneous exposure*. Centers for Disease Control and Prevention Needlestick Surveillance Group. N Engl J Med 1997;337:1485-90.
- [32] Centers for Disease Control and Prevention. *Update: provisional public health service recommendations for chemoprophylaxis after occupational exposure to HIV*. MMWR Morb Mortal Wkly Rep 1996;45:468-72.

■ Received on September 3, 2010. Accepted on November 30, 2010.

■ Correspondence: Clement C. Azodo, Department of Periodontics, New Dental Complex, University of Benin Teaching Hospital, P.M.B 1111 Ugbowo Benin City, Edo State 300001, Nigeria - Tel. +2348034051699 - E-mail: clementazodo@yahoo.com

Appendix

PERCEPTION OF HIV/AIDS AMONG PRECLINICAL DENTAL STUDENTS

Dear students, please kindly answer the following questions. Your response will be strictly confidential.

1. Age (years) _____ 2. Gender Male [] Female [] 3. Level _____
4. How would you rate your knowledge of HIV? Low [] Moderate [] High [] Very high []
5. Do you know your HIV status? Yes [] No []
6. Have you undergone HIV testing in the last 12 month? Yes [] No []
7. Are you willing to go for HIV screening? Yes [] No []
8. Are you willing to eat from the same plate as a known HIV/AIDS person? Yes [] No []
9. Do you have any HIV positive relative? Yes [] No []
10. Which of the following disease is most infectious? HIV [] Tuberculosis [] Hepatitis B [] Hepatitis A []
Hepatitis C []
11. How would you describe HIV infection? Infectious [] Contagious []
12. Have you been immunized against Hepatitis B? Yes [] No []
13. What is the most common mode of transmission of HIV in our environment? Needle prick [] Blood transfusion []
Sexual [] Sharing needles [] Sharps injury []
14. What is your view on professional oral care of HIV patients? Waste of time [] Waste of resources [] Beneficial to
patients [] Others (specify) _____
15. Are you willing to care HIV/AIDS patient? Yes [] No []
16. Have you heard of post exposure prophylaxis? Yes [] No []
17. Do you know the UBTH protocol for it? Yes [] No []
18. Which of the following occupation has the highest risk for contracting HIV infection? Health worker [] Barbers []
University students [] Sex workers [] Tailors [] Bricklayers []