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Undergraduate Preclinical and Clinical Dental Students' Perception of Teaching Received, Knowledge and Attitude with Regards to HIV/AIDS

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Authors' contributions

This work was carried out in collaboration between both authors. Author EMA designed the study, wrote the protocol and revised the manuscript critically for important intellectual content. Author RSA performed data collection and statistics, acquisition and interpretation of result and wrote the first draft of the manuscript. Both authors read and approved the final manuscript.

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ABSTRACT

Objectives: To evaluate undergraduate students' perception of teaching received with regards to HIV/AIDS. Also to compare between preclinical and clinical, male and female students in their knowledge toward potential routes of transmission, associated lesions, infection control procedures and attitude of either to refer or treat these patients.
Materials and Methods: Descriptive cross-sectional institutional based study among 279 undergraduate dental students; preclinical were 154 and clinical were 125. Participants were selected by systematic random sampling from eight dental schools in the Khartoum State. Self administered questionnaire including questions regarding demographic data, perception, knowledge and attitude toward HIV/AIDS virology, associated lesions, and route of transmission, sterilization and infection control measures. Comparison between variables by Ch-Squire test with the level of statistical significance set at P value ≤ 0.05.
Results: The response rate was 91.3%. The majority (87.7%) believed that AIDS is a real problem

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in Sudan. More than half of the participants recognized the lesions associated with HIV and 61.3% knew that T-lymphocytes are primarily the host defense cells which are affected in AIDS. Less than half (44.4%) answered that they do not have any previous knowledge regarding the average time interval between contracting HIV and the production of antibodies. The majority thought; that AIDS patients should be treated at any dental center but felt special precautionary measures were necessary during treatment. Some thought they should be referred to other specialized centers. The fear of treating HIV-infected patients was further revealed by the inadequate knowledge of HIV transmission routes.

Conclusion: Overall knowledge about HIV/AIDS oral manifestations was satisfactory, the majority felt they can treat patients with AIDS, but thought special precautions were needed. No difference was found between preclinical and clinical, male and female regarding perception of teaching received on HIV/AIDS.

Keywords: Knowledge HIV/AIDS; attitude HIV/AIDS; oral manifestation of AIDS; undergraduate dental students; virology of AIDS; Sudan.

1. INTRODUCTION

Patients with HIV/HIDS with dental complaints will seek treatment by a dentist or dental student. Dental health care workers including undergraduate students have a professional and ethical responsibility to provide treatment to patients with HIV and AIDS [1,2]. All dental students should have a complete knowledge about the universal precautions. The preclinical and clinical students' knowledge of HIV infection, virology, routes of transmission and cross infection methods is of par important for safe management of AIDS for both community and health care workers. The transmission of HIV requires contact with body fluids such as blood, semen, vaginal secretions, breast milk, saliva or secretions from wounds or skin lesions [3]. Clinical dental students in particular may encounter a number of incidents where infections, including AIDS, from patient's body fluids may occur [4,5]. Many dentists are reluctant to treat patients infected with HIV [6], but some researches indicate that; with increase knowledge of HIV, willingness to treat HIV positive may increase [7,8]. Male students were reported to have significantly stronger negative attitudes towards patients at risk for or with HIV infections/AIDS than female students [9]

Sudan is located in sub-Saharan region bordered by 6 countries; some having a high prevalence of HIV/AIDS. The first case of HIV and AIDS was reported in 1986 and in 2002 the total number of cases reported was increased to 4004 [10] Accurate understanding of the epidemiological features of the HIV epidemic in the Sudan has been slow due to difficulties inherent to a relatively low HIV prevalence in the total population. Sudan is recognized by WHO [11] to be a country with an intermediate HIV and AIDS prevalence and according to recent data it has an estimated HIV prevalence in the general population below 1%, with either low-level epidemics or HIV epidemics concentrated in populations most at risk of HIV, and limited spread to the general population [12].

In Sudan a study done in 2008 revealed that Students attending privately funded dental schools were more knowledgeable about various HIV related issues, than students from publicly funded schools. It also showed that they were not adequately prepared for treating patients with HIV infection and AIDS [13] No previous data available about perception of teaching virology related to HIV among undergraduate dental students.

The main objective of this study was to evaluate and compare perception of teaching received regarding HIV among preclinical and clinical Sudanese dental students. While specific objectives were to assess and compare their knowledge regarding potential transmission routes, lesions associated with HIV and attitude toward HIV/AIDS patients among male and female students.

2. MATERIALS AND METHODS

2.1 Study Design, Area and Duration

A descriptive cross-sectional institution based study among undergraduate dental students from eight dental schools in the Khartoum State, Sudan (three public and five private). The study was conducted throughout the academic year 2013- 2014; from February to May 2014.

2.2 Study Population

Male and female, preclinical and clinical students were included. Students who repeated in any year or irregular attendees were excluded.

2.3 Sample Size and Technique

The total number of students from each institute was obtained from the administration office of each faculty after permission. Eight dental schools were involved out of 14 from Khartoum State; the excluded ones were new (no clinical year yet). A total number was found to be 943 students (preclinical = 451 and clinical = 492). The representative sample size was calculated statistically as (269) and rounded to a number (279). The sample size for each school was calculated proportionally according to their total number. A systematic random sampling technique was used to select eligible ones. The first number for each class year was selected by a random sampling and then continued systematically.

2.4 Data Collection Tools and Methods

Self administered questionnaire was designed according to Gilbert and Nuttall [6]. Some modifications were made by addition of age and sex as variables. The Questionnaire was piloted among 20 students selected randomly from the researchers institute to ensure comprehensibility, reliability, relevance and accuracy in the Sudan context. Cronbach's alpha test showed the reliability coefficient of 0.87, which was found satisfactory for conducting the study. These 20 questionnaires were not included in the final study. Some words and sentences were translated to Arabic (by two experts in both English and Arabic language) as teaching dentistry in some schools is bi - lingual.

2.5 Survey Procedure

Questionnaires were distributed to the selected students during one of the morning lectures after permission from the relative teacher. For the participants to feel free and for anonymity the teacher was requested to wait outside the class until the selected students completed the questionnaire. The subjects were given between 10 and 15 minutes to complete the questionnaires. One of the researchers was standing in front of the class for any queries and the questionnaires were scrutinized at the time of collection. If questions were left unanswered the participant was asked to respond.

2.6 The Questionnaire was Composed of Five Parts

2.6.1 Part one

Perception of the adequacy of curriculum preparation on HIV/AIDS which included 5 items using 4 response categories ranging from more than adequate to no teaching received.

2.6.2 Part two

Knowledge on HIV included 4 items using 2-5 responses where there was only one correct response.

2.6.3 Part three

Knowledge about associated lesions included 8 items using 4 response categories ranging from the right answer to don't know.

2.6.4 Part four

Knowledge of potential transmission routes of HIV included 8 items using 2 responses either yes or no.

2.6.5 Part five

Students' attitude behavior which included one item using 2 responses of either to refer or treat these patients.

The analysis regarding the academic knowledge and the lesion associated with HIV were arranged according to correct answers into, poor (0-3), good (4-8) and excellent (9). Regarding the knowledge of the route of transmission, the range of poor when answering (0-4) correct answers, good (5-7) and excellent when scored (8).

2.7 Data Analysis

Data was cleaned, organized, and entered in a master sheet on a personal computer and analyzed using the Statistical Package for Social Sciences (SPSS, version 21; SPSS Inc., Chicago, IL, USA). The descriptive statistics portion of the data was presented in the form of percentages in the text and in figures using the Microsoft Excel program. Comparison between preclinical and clinical, male and female students

in regard to perception of teaching received, knowledge and Attitude with regards to HIV/AIDS was analyzed by chi-square test with the level of statistical significance difference set at P ≤ 0.05.

2.8 Ethical Consideration

The study was approved by Ethical Committee of the University of Medical Science and technology and permission from each university was received. Students were requested to participate voluntary and written informed consent was obtained before answering the questionnaire. Data was kept anonymous and confidential; no name or address or any information regarding students or specific faculties were shown.

3. RESULTS

Descriptive statistic of the result for both clinical and preclinical dental students regarding demographic data and knowledge about HIV/AIDS were displayed from (Figs. 1 - 3).

3.1 Epidemiology

The age of the studied population ranged from 18 to 27 with an average of 21 years. There was a distinctive gender predilection being 77% female and 23% male.

3.2 Knowledge on HIV

The majority (87.7%) believed that AIDS is a real problem in Sudan. More than half (61.3%) know that T-lymphocyte are primarily the host defense cells which are affected in AIDS. Less than half (44.4%) answered they don't know the average time interval between contracting HIV and the production of antibodies. The majority (78.6%) showed adequate knowledge of teaching virology and infection control measures as showed in Fig. 1.

Knowledge on potential transmission route of HIV and Knowledge of lesions and conditions associated with HIV are displayed in Figs. 2 and 3. About 60% had positive attitudes towards treating HIV individuals.

3.3 Comparison between Clinical and Preclinical Students

Preclinical students showed a 21% negative attitude whilst for clinical students was 18%. Regarding HIV being a problem in the Sudan clinical and preclinical dental students was almost the same believing that it is a problem with no statistical significant different (P>0.05). Regarding the academic knowledge and lesions associated with AIDS; was considered as poor and equally distributed between clinical and preclinical student with no statistical significant difference. The knowledge of potential transmission routes of HIV was poor in more than have of both clinical and preclinical, but a better knowledge amongst the final year students with no statistical significant difference (P>0.05).

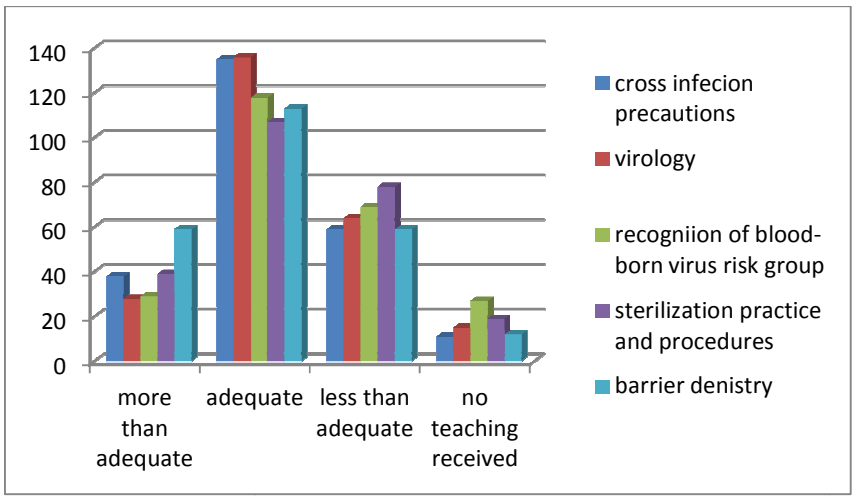

Fig. 1. Evaluation of teaching virology and infection control measures

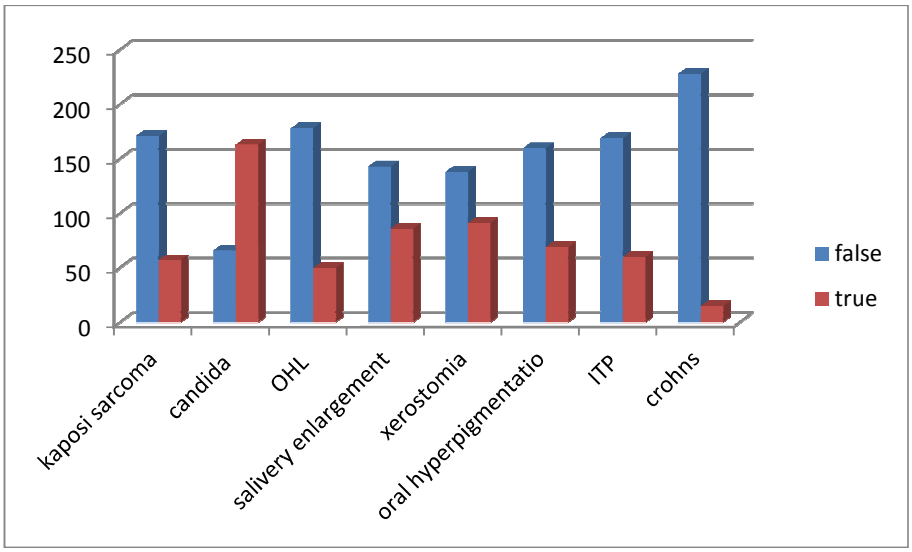

Fig. 2. Knowledge of lesions and conditions associated with HIV

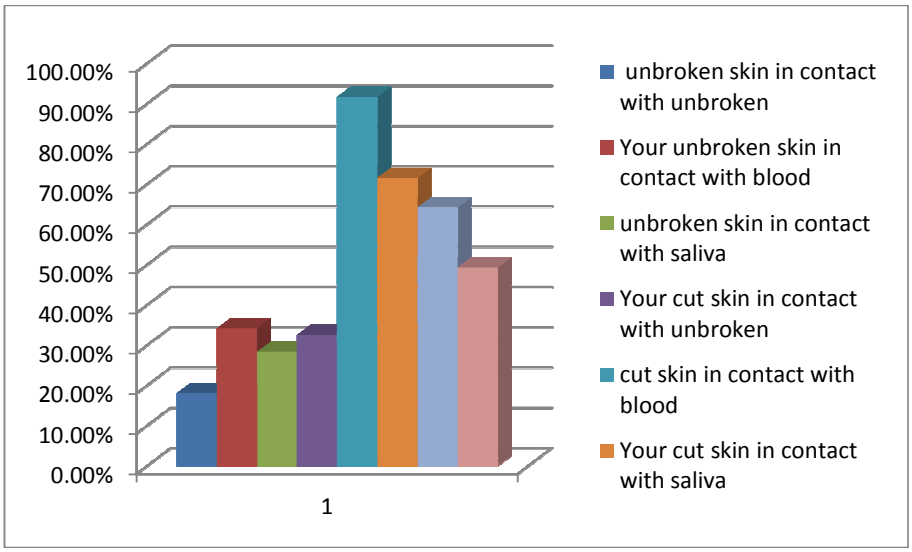

Fig. 3. Knowledge on potential route of transmission of HIV

4. DISCUSSION

Questionnaires have proven to be an effective method for capturing data related to educational issues. This study had a questionnaire response rate of 91.3%, which is adequate to provide meaningful data.

In this study, comparisons were made between clinical and pre-clinical dental students regarding their perception, knowledge and attitude toward HIV/AIDS. One of the strengths of the study was that studied groups are homogenous in the context of ethnic and religious beliefs. Some limitations need to be addressed like; the questionnaire did not cover socio-demographic factors; as parent's educational level, socioeconomic status, place of birth, residency and living inside or outside the Sudan. Also being a cross sectional study and using self administered questionnaire inside the classroom might affect their real response and the students might answer the questions as if it was an exam and the possibility of bias cannot be overlooked; all these factors might have been associated with their knowledge and attitude regarding HIV/AIDS.

Our results agreed with the results of others; showed similarities to many studies which have been conducted to evaluate dental students' knowledge and attitude towards HIV/AIDS [2,6,13-21], where the results revealed adequate level of knowledge. Dentists and dental students have a responsibility to provide oral health education to the whole community. HIV-infections have serious and common oral manifestations that can be used conclusively as diagnostic for AIDS. It is obvious that having adequate knowledge about HIV/AIDS builds student's confidence and ability to manage infected patients.

From the review of the literatures about 90% of HIV infections among health care workers occur in developing countries [22,23]. Because there is negligence and less implementation of infection control measures and protocols. This may be duo to less time allocated to teaching and no clear course dealing with infection control subject. In contrast to [4]; the present study revealed that most of the clinical and pre-clinical dental students rated the teaching they received on infection control and recognition of blood-borne virus risk diseases as adequate. However, there was a lower degree of satisfaction expressed for precautionary instructions especially among pre clinical students. This result agreed with others [24,25]; as they concluded students when getting advanced in semesters they become more knowledgeable about HIV/AIDS and infection control measures.

Dissimilar to the results by Gilbert & Nuttall [6]; sterilization practice and procedures rated as less than adequate, but similar to other [13,17] which revealed poor knowledge about the time required for HIV sero – conversion. The reason may be due to inadequate or negligence of such information when teaching HIV/AID in their undergraduate curriculum.

Providing proper dental care to HIV/AIDS patients necessitate good knowledge in the recognition of the oral lesions associated with the disease. As many as 40 oral manifestations of HIV infection have been reported. Dissimilar to other [19,26], the results in this study showed more than half of the studied students recognized some lesions strongly associated with HIV/AIDS such as Kaposi sarcoma, hairy leukoplakia and Oral Candidiasis. However, the clinical and especially the pre clinical students revealed knowledge of other lesions less strongly associated with HIV such as Oral Melanotic Hyperpigmentation, Idiopathic Thrombocytopenic Purpura, salivary gland disease and Xerostomia. This may be due to the lack of information taught during the virology or oral medicine courses. Students should be taught that even the lesions strongly associated with HIV/AIDS are not exclusive to HIV/AIDS as Kaposi Sarcoma, Hairy Leukoplakia and oral Candidiasis might also be seen in patients not having HIV infection or AIDS. In this study the overall knowledge of the Sudanese undergraduate dental students about the oral manifestations of HIV/AIDS is considered unsatisfactory where more than half of the students didn't recognize the conditions which is a serious problem that needs to be dealt with and the need for deep knowledge is crucial.

Since oral lesions are common in HIV/AIDS patients, oral health care is an important component of their treatment plan. Although many dentists used to reject providing the dental treatment to AIDS patients, which have been changed in the recent years with a willingness to treat such patients [27], our result revealed these positive changes unlike others [14,15,28]. The fear of treating HIV-infected patients was further revealed by the inadequate knowledge of HIV transmission and the stigma around the syndrome. Generally the knowledge regarding the route of transmission is considered satisfactory, similar to [20,29]

Dissimilar to Brazlian study [19] where females showed more knowledge than males, our results showed no gender predilection. This may be because the students consider this knowledge as to be only useful for passing their exams.

5. CONCLUSION

Knowledge about route of transmission of HIV and lesion associated with AIDS was poor in both preclinical and clinical students. Overall knowledge about HIV/AIDS oral manifestations was satisfactory, the majority felt they can treat patients with AIDS, but thought special precautions were needed. No difference was found between preclinical and clinical, male and female regarding perception of teaching received on HIV/AIDS. Specific and focused course about HIV/AIDS to dental students should be added to the curriculum rather than to be taught as part of virology course. Practical implementation of knowledge and attitude toward HIV/AIDS should be assessed at the level of each institute or among all Sudanese undergraduate dental students.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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