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The choice of a career undertaken by a secondary school student should be done with great care and considering many factors. Of prime importance is the fact that the choice is made by the student from his or her interest in the course, knowing the details of what it involves, and how this will impact on the student’s future. Such an interest and choice may be as a result of certain events, role models, career guidance, parental and social interactions.

The chosen career in health sciences may be medicine, dentistry, pharmacy and nursing at the degree level. The institution for training must be chosen with due care in terms of feasibility of access, financial and other relevant considerations.

The importance of the knowledge of the chosen degree course content at various levels, the intricacies of training, time, self commitment and efforts needed to achieve the goal must be very clear before undertaking the chosen career. This should be linked with an awareness of the implications of the practice of the career.

In training of all these professions, adequate communication skills, oral and written are critical, knowledge of information and communication technology is required to keep up with the new learning methods and data base on the internet.

The health profession students at first level study the preclinical basic sciences which include the anatomical organization of the body at the cellular, developmental and gross level studied by dissection of human cadavers. This is done in tandem with medical physiology, biochemistry, immunology and nutrition. All along, the clinical aspects are integrated regionally and systematically. Studies at second level include the preclinical medical sciences which include microbiology, parasitology, pathology, pharmacology, behavioral sciences and others.

The different professions then have specific training programmes with additional 2, 3 or 4 years. These are different for medicine where much of the clinical training is patient, bedside, theatre for and hospital specialty wards. For dentistry, the clinical training needs equipment such as dental unit, dental materials, and dental technology training to prepare the dentures and oral appliances. The training also requires good manual dexterity. The pharmacist trains in the school on the specialized courses and the aspects of pharmacy career. Nursing training has a broad based course which includes basic and clinical sciences with patient care and special needs.

There is limited career guidance available to high school students in Kenya1. A study on choices of health profession made by high school students in Tanzania were medicine and pharmacy as more information was available compared to others2. Often student’s choice is done with the perception one is ‘easier’ than ‘other’, there is no night calls, that “demand “is more or has better market value. Many of the students lack knowledge on the depth of anatomy course or oral biology which is an additional subject for BDS degree in basic sciences. Some of the students are not aware of that dissection of human cadaver is study of gross anatomy. In the clinical years, the importance of patient care, ethics and dedication should be known.

The career paths of the students in health profession are largely dependent on the human resource for health needs in the country. This implies that students need to be aware of the opportunities to practice after completing the course. This may be with the Ministry of Health, urban or rural, private practice, research institutes, academic, postgraduate specialization and training abroad. The facility for practicing may be different for each of the health professions in terms of infrastructure, rural, urban etc. Many factors affect career paths of final year medical students to specialized courses.3 For dental profession, the financial implications of the equipment for starting a practice is of major consideration.

Essentially, the student needs self interest and good career guidance in the chosen career so as to adjust and prepare for the studies. If career guidance is inadequate, there may be conflict of interest amongst parents/teachers and learners in terms of
career choice. Career guidance helps to assure adequate choice, with positive attitude to learning. Choice of favored institution with entry requirements leads to a career that the person truly wants to pursue in relation to the ability, interest and value. The Kenya Dental, Medical, Pharmacy and Nursing Associations individually or together need to have adequate career guidance protocol and information material that can be used by the schools and stakeholders to prepare students well as they undertake their chosen course.

Prof. Jameela HassanAli

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3. Factors affecting career preferences of final year medical students at a medical school in Kenya. Dr. Hussein Dossajee, MPH thesis James P. Grant School of Public Health, BRAC University, Bangladesh. (2014)
CASE REPORT

Burning Mouth Syndrome presenting with Oral Lichen Planus – Case Report


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Abstract

The burning mouth syndrome (BMS) remains an enigmatic condition with regard to its associated aetiological factors. This condition is often most distressing yet its effective management remains elusive. We present a concurrent case of lichen planus and BMS whose symptoms appear to have been precipitated by the wearing of a chrome-cobalt denture.

Introduction

Pain of a burning nature is a common occurrence in the oral cavity and masquerades under terms such as burning lip syndrome, scalded mouth syndrome, stomatodynia, glossodynia and glossopyrosis. There is no agreement on the aetiopathogenesis of burning mouth pain. However, it is recognized to be associated with predisposing factors which are both local and systemic in nature. Local factors include candidiasis, lichens planus, erythema migrans, parafunctional habits, gastro-oesophageal reflux disease, denture problems and xerostomia.

Systemic conditions associated with burning and painful sensation (Burning mouth syndrome-BMS) include use of anticholinergic medication, iron and vitamin B complex deficiencies, diabetes mellitus, menopause and psychogenic conditions such as phobia, depression and hypochondriasis which are linked to stress and anxiety. BMS appears to be a common condition and often of spontaneous onset with no precipitating factors and once it starts persists for many years. In most cases of BMS, the burning sensation occurs in more than one oral sites with the anterior hard palate and mucosa of the lower lip most frequently involved and is associated with lack of sleep, mood changes, anxiety and depression. In this article a case of BMS occurring concurrently with lichen planus is presented.
Case Report

A 62-year-old man presented with a history of a burning and painful sensation which was mostly localized in the tongue, palate, buccal mucosa and lower lip. The patient attributed the onset of the burning sensation and pain to a mandibular chrome-cobalt partial denture he had worn for six months previously. On clinical examination, the nature and oral distribution of the pain was confirmed in addition to the mucosal ulceration. Further clinical findings included submental and cervical lymphadenopathy and a raised ESR. Based on the evaluation of the clinical findings a provisional diagnosis of BMS associated with erosive lichen planus was made following which an incisional biopsy of the tongue and buccal mucosa tissues was done and histological examination confirmed the diagnosis of lichen planus. Thereafter, the patient was managed with a course of prednisolone; 30mg in divided doses weekly for four weeks with some remarkable success of symptom control. The patient also underwent a prosthetic review to ensure adequate fitting of the denture. He did not have any restorations. The alleviation of symptoms restored oral function, so psychological support was not required.

Discussion

The present case gives further credence to the existing evidence that the use of chrome-cobalt based prostheses may precipitate BMS. Main and Basker have reviewed cases of BMS and indicated that faulty denture designs could precipitate this disorder. Such faulty designs of prostheses with ill-fitting flanges that impinge on the oral mucosa and underlying musculature, among other factors, may provoke adverse sensation over time. However, other investigators have shown that cases of BMS whose denture abnormalities were corrected still had persistent symptoms indicating that other denture related factors could be more important than the design. In fact, mercury which is a major component of the amalgam dental restorative material amalgam has been shown to be a BMS provoking factor. It is also well known that denture base materials such as the methyl methacrylate monomer induce allergic responses when in contact with the skin. In the oral mucosa, therefore, a similar reaction could be associated with the pathogenesis of BMS among denture wearers. Except for its galvanism, the role of chrome-cobalt effects in the emergence of BMS is not well understood. Remarkably, the present case did not demonstrate any other salient BMS associated factors including xerostomia, candidiasis and dysgeusia. The apparent concurrent existence of BMS and lichen planus may have compounded the heightened symptoms in this patient. The erosive form of lichen planus, especially, causes symptoms of burning and pain. Other conditions in which BMS has been recognized include the menopausal state, iron and vitamin B complex deficiency. In addition, diabetes mellitus often presents with glossodynia, xerostomia and candidiasis which may all amplify the characteristics of BMS. However, it remains debatable as to whether glucose control may resolve symptoms of BMS in diabetic patients.

Other BMS associated pathogenetic factors include personality and mood changes suggesting a psychogenic component of this disorder. Browning et al. showed that 44% of BMS patients had an associated psychiatric disorder. In another study psychological factors and anxiety were difficult to control in most patients with BMS. Evidently, BMS remains a complex disorder for which comprehensive reporting of emerging case and specific analysis any associated aetiological factors must be encouraged.

Acknowledgements

We wish to acknowledge the administrative organs of the School of Dental Sciences, University of Nairobi for their permission to execute this case study. Our gratitude is also due to Miss Sally Musinde for meticulously preparing this manuscript.

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Dermatol, 1995;34, 483-487
Cephalometric changes after treatment with a twin block appliance-case report
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1. General dentist
2. Consultant Orthodontist, Lecturer UON Dental Hospital
3. General dentist

Abstract
A case report illustrates effective orthopedic and dentoalveolar changes on pre and post treatment cephalograms.

Introduction
Twin block appliances are bite blocks that are worn full time to achieve functional correction of malocclusions of a skeletal nature. This appliance was developed over 30 years ago by Dr. William J. Clark. Favourable occlusal forces are transmitted through inclined planes at 700 in full closure covering the posterior teeth. It is an orthopedic appliance that promotes good occlusion by altering the muscle environment around developing dentition. The treatment duration is 18 months, 6-9 months active phase, 3-6 months support phase and 9 months retention. ¹, ² The twin block appliance has gained popularity as a functional appliance in the correction of Angle’s class II malocclusions. ³

Patients and methods
A 12 year old male patient presented to the University of Nairobi Dental Hospital seeking correction of his bad bite. Clinically he had an Angle’s class II malocclusion with an overjet of 8mm and 50% deep bite. The cephalometric tracing showed a skeletal class II base, the patient was also in the active growth phase of adolescence. The treatment plan was to use a functional appliance to correct the skeletal malocclusion and fixed mechanotherapy to correct the dental problem. Due to financial constraint the patient opted to have functional treatment and later have fixed appliances to align the teeth. The patient was however advised that the fixed mechanotherapy was mandatory to complete treatment and achieve optimum function, stability and aesthetics.
Appliance design

The appliance design was a modification of Clark’s twin block. It had Adam’s clasps on the maxillary and mandibular first molars. It had a labial bow on the maxillary labial segment and ball ended clasps on the mandibular labial segment. The inclined planes were constructed at 700 to the occlusal plane. The maxillary appliance did not have a midline expansion screw. The bite registration was taken with the mandible in an over corrected position. This resulted in the patient biting in an edge to edge incisor position. The height of the blocks was made such that it was more comfortable for the patient to position the mandible forward than in centric relation.

Lateral cephalograms before and after twin block treatment were taken by the same person. They were hand traced at a single sitting and in the same manner by one investigator and landmark location was verified by a second one. Any disagreements were resolved by retracing the structure or landmark to the satisfaction of both investigators. Regional superimposition was done by hand along the SN and plane and the values assessed using Steiner’s analysis. The treatment involved 12 months of active treatment, a 3 month support phase and retention with an anterior inclined plane for 4 months.

Results

The cephalometric data before and after treatment of the case and the regional superimposition of the two cephalograms were as follows:
Table 1. Descriptive cephalometric data before and after the twin block treatment

<table>
<thead>
<tr>
<th></th>
<th>Before</th>
<th>Normal</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNA(°)</td>
<td>75</td>
<td>82</td>
<td>77</td>
</tr>
<tr>
<td>SNB(°)</td>
<td>65</td>
<td>80</td>
<td>69</td>
</tr>
<tr>
<td>ANB(°)</td>
<td>10</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Max I to NA (°)</td>
<td>28</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>Max I to NA (mm)</td>
<td>6</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Mn I to NB (°)</td>
<td>38</td>
<td>25</td>
<td>43</td>
</tr>
<tr>
<td>Mn I to NB (mm)</td>
<td>13</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>I to I (°)</td>
<td>103</td>
<td>131</td>
<td>107</td>
</tr>
<tr>
<td>Gogn To SN (°)</td>
<td>51</td>
<td>32</td>
<td>48</td>
</tr>
</tbody>
</table>

Fig 3: Pre treatment (blue) and after twin blocks (red)

Discussion

Functional appliances achieve treatment objectives by growth modification. The twin block appliance protracts the mandible thus stimulating growth of condylar cartilage which alters the morphology of the mandible and thus the occlusion. This treatment provided favourable changes in the anteroposterior growth of the mandible and as a result the facial profile. Two phase treatment has been found to be costly with low patient compliance. The same study however showed that some patients were pleased with occlusion after the functional phase and declined further treatment. Our patient was pleased with the change in facial form facial form and reduction in overjet and agreed to have fixed mechanotherapy to complete treatment.

Conclusion

Twin block appliance can be used to achieve useful skeletal growth movements in the correction of Angle’s class II malocclusions with a skeletal base.
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5. Image courtesy of Orthodent Laboratory, Inc.
Knowledge and awareness of first year bachelor of dental surgery students on the basic sciences courses and career

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Abstract

Aim: To assess the knowledge and awareness of First Year BDS students on basic sciences courses and career as they started the academic year

Study design: Cross-sectional survey through administration of a structured questionnaire between weeks 3 and 8 in 2008, 2009 and 2011.

Setting: University of Nairobi, Department of Human Anatomy.

Participants: First year Bachelor of Dental Surgery (BDS) students

Results: Out of a total of 103 respondents, 39% were males and 61% females. 53.3% of respondents had received some career guidance prior to joining BDS course. 55% were however not aware of the depth of courses and subjects in BDS 1 at the beginning of the year.

Conclusions: There is a need to further evaluate how the student’s knowledge, awareness and attitudes may impact o the career choice and the performance in the first and subsequent levels of the BDS course.

Key words: Basic science course, knowledge, awareness, first-year dental students

Introduction

Course content of the Bachelor of Dental Surgery (BDS) at the University of Nairobi (UON), has undergone reviews in relation to current trends in dental education, since the inception of the degree course in 1974. The depth of knowledge given and needed on the basic sciences such as Anatomy, Physiology, Biochemistry and Oral Biology in the First/Second year of the course has undergone evaluation as per Dental Education Curriculum1. The training of dental professionals has an impact on dental health care delivery, with respect to dental diseases and advances in the dental sciences.

The dental health care delivery, with respect to dental diseases and advances in the dental sciences has an impact on the training of dental professionals 2. The Ministry of Education overview on career guidance and counseling, following a survey of 2006 has identified lack of adequate career guidance, student motivation for the course, awareness of its scope and ability of the individual as key factors 3, 4.

At UON, until 2012, the BDS course duration has been of 4 years, the period when the assessment was carried out. Each academic year was of 44 weeks duration, for teaching and examinations. In the year 1, basic sciences; anatomy, physiology, biochemistry and oral biology are taught and examined. Basic medical sciences are the main courses in year 2 followed by the clinical dental sciences in years 3 and 4 1, 5.
Students who are admitted to the BDS course in University of Nairobi, Kenya come from diverse secondary school backgrounds, rural and urban, national, provincial and private high cost schools. Majority of students have undergone the Kenyan secondary school curriculum (8:4:4) and have achieved at least grade B- in the core subjects, which are Biology, Chemistry and Mathematics or Physics, required for admission. Students selected on merit would normally have higher grades (A). Since the inception of Module 2 in 1998, students who have GCE A level or IB or Diplomas with good grades in core subjects have been admitted as private fee paying students. More females have chosen to do BDS over the years and the trend has remained the same. The students are not interviewed prior to admission.

The knowledge on amount of career guidance, BDS course awareness and career opportunities of dental students as they join the University has not been assessed \(^5\). There is no data on level of student awareness of the BDS course subjects when they join, especially on the first year basic sciences, the relevance of these courses to the BDS training and courses in subsequent years.

The general impression that seems to prevail from interaction with students in general is that dentistry relates to the oral cavity and teeth, and at the most with head and neck region of the body. The BDS students may not be aware that they are required to dissect whole human body and do an in-depth study of gross, microscopic, and developmental anatomy including the nervous system.

The concept of whole body holistic approach in the study of basic sciences for BDS students includes a horizontal integration with physiology and biochemistry together with clinical aspects. In addition, dental students are required to undergo a course in Oral Biology which integrates the anatomy, physiology and biochemistry of the oro-facial region. Oral biology course consists of detailed anatomy, physiology and biochemistry of the oral and dental structures, functions and their clinical aspects \(^1\).

At UON, medical and dental students learn gross anatomy of the whole body by dissecting the cadavers. Students’ reactions to dissection of the human body have not been evaluated at UON. In Kenya, there are some cultural aspects to dealing with the cadaver and may influence students reactions to dissecting the body.

A visit to the Dental school is included in the program for clinical orientation.

The awareness of course subjects in BDS years 1, 2, 3 and 4 when the students join first year and the knowledge of career opportunities in clinical, postgraduate and research is not known.

The present study aimed to assess the knowledge and awareness of first year dental students to the basic science courses in anatomy and oral biology and overall BDS training and career opportunities as they begin the year. This may enable career guidance prior to coming for BDS Degree, and enhance preparedness of students to the challenges of basic and clinical sciences courses during their training.

**Students and method of assessment**

**Subjects**

The study was conducted with year I BDS students in the Department of Human Anatomy, University of Nairobi, in the years 2008, 2009 and 2011. One hundred and three students (40 male, 63 female) were included. There were 34, 33 and 29 students over the three academic years respectively (Table 1).

The assessment was carried out with a structured questionnaire that was given to the students to fill between weeks 3 and 8 in 2008, 2009 and 2011. Questionnaires were given to the students to fill and enter student number, sex, level of education and if career guidance had been given, reasons for choosing dentistry, period of waiting before coming to dental school and perception and challenges of training were assessed.

Knowledge and awareness of the depth of anatomy and oral biology courses related to their contents, students’ attitude towards the course, reaction to dissection and time taken to adjust to the schedule were assessed. Awareness on study of anatomy and oral biology to basic medical and dental clinical sciences was also assessed. Benefit of a visit to the dental school during the course was evaluated.

Whether the students were aware of courses to be covered in years 2, 3 and 4 as well as career opportunities and career focus for future were included.

**Results**

Responses of one hundred and three (103) (40 male, 63 female) first year dentistry students from Department of Human Anatomy, University of Nairobi over three years (2008, 2009 and 2011) were analyzed.
Looking at the trends, there has been a progressive increase in the female admission into the BDS course taking the greater proportion in all the years (Table 1).

Seventy three (71%) had undergone the 8-4-4 education system, 18 (17%) A levels whereas 3% had done GCE, IB and Diploma.

About half of the students (53.3%) had been given some career guidance.

Ninety percent waited at least one year before joining BDS course in the university while 10% students joined in less time.

More than half of the students (55%) were however not aware of the course’s subjects in BDS 1 at the beginning of the year.

At the beginning of the year, the number of students who expected the course to be challenging (29%) was more than those who expected it to be manageable (22.3%). About (37.9%) however expected the course to be both challenging but at the same time manageable.

Majority (74; 71.8%) of students were not aware of the depth of anatomy course in terms of the thematic units, gross anatomy, histology and embryology. The trend of this over the years is as shown in Figure 1.

For time to adjust, 50% were able to do that in 8 weeks, 39% in 4 weeks and 11% in 12 weeks. Reaction to gross anatomy dissection was acceptable in more than half of the students (59.2%) and 40.8% students apprehended or feared dissection.

At the beginning of the year about half of the students 52.4% thought that the basic sciences were not relevant to the BDS course.

Forty students (38.8%) were not aware of the oral biology course at the beginning of the year. This trend improved over the years as seen in Table 2.

Visit to the dental school was perceived to be benefiting for 48 students, very beneficial, 36 students and of no benefit for the remaining 9 students. Visiting the school at the beginning of the year was favored by 26.2% of the students. Twenty two (16.4%) and 12 (11.9%) students however preferred the visit to be at the end and middle of the year respectively.

About 60% of the students in year 1 were not aware of the BDS course subjects of years 2 to 4.

Table 1: Trends of male and female admission into the BDS course in the University of Nairobi

<table>
<thead>
<tr>
<th>Year</th>
<th>Male N (%)</th>
<th>Female N (%)</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>16 (47)</td>
<td>18 (53)</td>
<td>34</td>
</tr>
<tr>
<td>2009</td>
<td>14 (42)</td>
<td>19 (58)</td>
<td>33</td>
</tr>
<tr>
<td>2011</td>
<td>10 (38)</td>
<td>16 (62)</td>
<td>26</td>
</tr>
<tr>
<td>Totals</td>
<td>40 (39)</td>
<td>63 (61)</td>
<td>103</td>
</tr>
</tbody>
</table>

Figure 1: showing the depth of awareness of anatomy course

Figure 2: showing time to adjust
Reason for choosing BDS were core interest (48.5%), market value 42.4%) whereas in 9.1% it was due to role models.

Most students (80%) were aware of career opportunities in dentistry. Career focus of choice in majority of the students was postgraduate studies, which has shown increasing trend over the years.

Fifty nine (57.3%) students were presently not aware of the BDS course levels II- IV. Most students (76.74%) were aware of career opportunities in dentistry.

Discussion

The present study assesses the knowledge and awareness of the basic sciences subjects of the students coming to do the Degree of Bachelor of Dental Surgery (BDS) at the University of Nairobi. This data may help career guidance and preparedness of the students as they embark on the course. Majority of the students come from the secondary school teaching and learning modality where there is a lot of teacher tuition, and core or rote learning with limited student assimilation of the information. The large volume of course content may be intimidating for some students not prepared for self-learning 3, 4.

The main basic science subjects require adequate preparedness by the students. In addition, the subject of Oral biology is treated as a separate examinable course at UON since the inception of BDS in 1974. In other universities, it is included as a special section in anatomy, physiology and biochemistry 1.

Essentially, BDS student needs to come with good career guidance and self interest in the chosen career so as to adjust and prepare for the studies. When there is inadequate career guidance, there may be conflict of interest amongst parents/teachers and learners in terms of career choice. Purpose of career guidance is to assure adequate choice, with attitude to learning, choice of institution, entry requirements and identify the career that the person wants to truly pursue in relation to the ability, interest and value 3.

In the present study, 60% had no problems with dissection, 40% initially feared dissection. Reactions to dissections have been assessed in Venezuela 6 13% finding it stressful. Studies in India showed that they need to prepare students priory to dissection and females are more vulnerable (7, 8).

More females choosing to do dentistry may be related to shorter course duration, not involving night calls, dealing with children and other reasons although this aspect has not been evaluated.

There is also need to make awareness and integration of basic sciences in postgraduate courses 9.

Perhaps doing an interview of the applicant prior to offering a place may bring out issues of student interest and preparedness for career in Dentistry 3.

There is further need to evaluate how the student’s knowledge, awareness and attitudes when they start the course may impact the performance in the first and subsequent levels of the BDS course.

Acknowledgements

Thanks to the Dental students for participating in the survey and Drs. S. Sinket, M Johnstone and O. Beda for data analysis.
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Willingness of dentists in Kenya to treat persons living with HIV/AIDS
Gathece LW, Mutave JR, Wangari VW, Matu NK, Mua BN

Department of Periodontology, Community and Preventive Dentistry, School of Dental Sciences, University of Nairobi.

Abstract

Objective: To determine the preparedness of Dentists in Kenya to treat Person Living With HIV/AIDS (PLWHA).
Design: This was a descriptive cross-sectional study
Study population: Practicing dentists in Kenya.
Materials and methods: A self-administered questionnaire was used to collect data among dentists who consented to the study.
Results: A total of 88 dentists responded to the questionnaire. There were equal number of males and females 44(50%). The knowledge on modes of transmission was good with over 90% giving the correct response. Majority 71(84.6%) and 57(73.1%) had changed professional and personal behaviour respectively due to HIV pandemic with 85(96.6%) considering themselves at risk of contracting HIV because of their profession. Most 86(98.9%) would willingly treat a PLWHA, however 72(83.7%) of these would give extra-care to the patient. Over a quarter 23(27.7%) said PLWHA should be treated at a referral hospital while 3(3.6%) said they should be treated at specialised clinic. Prior to the study, 85(97.7%) of the respondents had willingly treated a PLWHA with 24(27.9%) treating them differently from patients who did not disclose their HIV status. Only 45(52.9%) said the risk of HIV transmission when treating a PLWHA was between 0-1%, the rest said it was higher.
Conclusion: There is need to educate dentists on the risk transmission of HIV when treating PLWHA so as to reduce discrimination. Universal application of cross-infection control procedures cannot be overemphasized.
Key words: PLWHA, knowledge of modes of HIV transmission, willingness to treat PLWHA

Introduction and literature review

Oral health care providers have an ethical and professional obligation to treat PLWHA. Additionally, the possibility of HIV transmission in an oral health care setting is very rare. It has been reported that HIV/AIDS pandemic has been accompanied by fear, ignorance and denial leading to stigmatization and discrimination of PLWHA. The fear of HIV contagion generates major concerns among health care personnel and may produce a barrier to successful educational efforts about AIDS. This might lead to a variety of adverse outcomes such as unwillingness to treat AIDS patients altogether. A survey of dentists in Nigeria showed that 66% were willing to provide care to HIV infected person. However 79% of the females were unwilling to treat HIV positive patients when compared to 45% of the males. In a study in Texas, three quarters of the respondents said they would be willing to treat a patient with HIV. Even those willing to treat these patients reported to have experienced fear, anxiety, insomnia, tachycardia and migraine during treatment.

It has also been reported that oral health care providers tend to take extra precautions when treating HIV/AIDS.
patients. In a study done in Singapore, 82.9% of the dentists said they took extra precautions when treating HIV/AIDS patients. It has also been reported that dentist have a different opinion in managing PLWHA with 84% of the dentist in a study in the USA reporting that willingness to treat a HIV positive patient should be a personal decision. A study among nursing dental students in Nigeria had 61.8% suggesting quarantine for HIV/AIDS patients to prevent spread of the disease.

Dentists have a professional and ethical responsibility to provide treatment to patients with HIV and AIDS, particularly since oral lesions, such as hairy leukoplakia, candidiasis and Kaposi’s sarcoma, are commonly found in HIV-infected patients. This type of discrimination may limit access to oral health care for HIV positive patients. At the same time, refusing to treat HIV infected has far reaching consequences such as delayed detection and treatment of oral lesions associated with HIV which can lead to serious compromise of the health of PLWHA. The refusal can also lead to failure by the patients to disclose their health status which leads to patients being deprived of the best care adapted to their state of health including screening for oral lesions associated with HIV, errors in diagnosis, inappropriate choice of treatment or risk of secondary infections related to certain treatment.

Cross-infection is an important factor in dental practices and can theoretically take place from patient to patient, from dentist to patient and vice versa. The estimated risk of HIV transmission from general practicing dentists to their patients is recognized to be minimal if infection control guidelines are strictly adhered to. About 90% of the HIV infections among health care workers occur in developing countries where occupational safety is a neglected issue.

Fear about contagion or AIDS phobia have among other things been attributed to lack of proper knowledge about HIV and its transmission routes. Health care workers are deficient in appropriately managing and counseling HIV and AIDS patients and lack sufficient knowledge of symptoms as well as how to diagnose and treat infected patients appropriately. While dentists demonstrated good knowledge regarding oral lesions associated with HIV and AIDS they were less familiar with HIV and AIDS transmission routes in a study done in the United Kingdom. In a Tanzanian study, health care workers showed inadequate knowledge of treatment procedures related to HIV and AIDS causing reluctance with respect to providing care for HIV-positive patients. Several studies have reported that accurate knowledge regarding symptoms of HIV and AIDS and modes of HIV transmission seems to be inadequate and there is need for further education.

In a Nigerian study, willingness to treat HIV infected persons was expressed by 63.3% of dental students with 51% reported among Taiwanese dental students while 24.1% of Iraqi dental students were willing to treat PLWHA. Other Nigerian studies on the willingness of dentists to treat HIV patients reported 63% and 78.4% respectively while in China, healthcare professionals indicated preference for treating hepatitis patients than PLWHA. In another Nigerian study, majority of the respondents (91.4%) were of the opinion that professional oral care will be beneficial to HIV infected patients.

The current study was undertaken to determine the level of knowledge and willingness of dentists to treat PLWHA in Kenya.

Materials and methods

This was a descriptive cross-sectional study conducted among 88 practicing dental surgeons in Kenya. A self-administered questionnaire was used to collect the data. The questionnaires were either hand-delivered to participants in Nairobi or mailed to those located outside Nairobi. Authority to conduct the study was given by the Kenyatta National Hospital and University of Nairobi ethical and standard committee. Data was analysed using SPSS version 11.5 computer program.

Results

Socio-demographic characteristics

Eighty eight dentists participated in the study. There were equal number 44(50%) of male and females. The age ranged between 23-53 years with a mean of 29.57+7.73SD. About a half 43(48.3%) worked in Nairobi while 46(51.7%) worked outside Nairobi. The respondents had practised dentistry for between 0-26 years with a mean of 4.87 years. Majority 80(89.9%) had qualified with a first degree while 8(10.1%) had a masters degree.

Knowledge on HIV transmission

The knowledge on the modes of HIV transmission was good with 95.5% saying that HIV can be transmitted by re-use of needles, 97.7% by sharing blades and another 97.7% through blood transmission. Other methods indicated included mother to child transmission 86(97.7%), breast feeding 71(80.7%) and sex with
many partners 83(94.3%). Most 85(96.6%) of the participants had known a person with HIV/AIDS. Fig 1 shows the dentists’ relationship with the infected person. The main relationship 68(80.0%) was a patient. Others included a relative, friend and a person from the community. About two thirds 66(84.6%) and 57(73.1%) had changed professional and personal behaviour respectively due to HIV/AIDS scare. By gender, more males 34(87.2%) than females 31(81.6%) had changed their behaviour professionally while proportionally more females 26(78.4%) than males 30(76.9%) said they had changed their personal behaviour.

Most 85(96.6%) of the participants considered themselves at risk of contracting HIV because of their profession, while 8(9.1%) considered themselves at risk due to their sexual behaviour and 12(13.6%) because of their partners sexual behaviour. For those who said they were at risk because of their profession, 45(60.8%) said they are at risk on a daily basis, 22(29.7%) often, 6(8.1%) occasionally and 19(25.7%) rarely. Asked where PLWHA should be treated, about a quarter 23(27.7%) said they should be treated at KNH, 23(27.7%) at University dental school and 3(3.6%) said they should be treated at a specialised clinic.

On willingness to treat a PLWHA, 86(98.9%) said they would willingly treat a HIV positive patient. However, 72(83.7%) of these said they would give them extra care which include more drugs 41(47.1%), more nursing care 35(40.2%), psychological and emotional support 83(95.4%) and specialised investigations 24(27.6%).

Majority 85(97.7%) said they had knowingly treated a HIV positive patient. By gender, all males and 41(95.3%) of the females respondents said they had knowingly treated a HIV positive patient. However, 24(27.9%) said they did not treat the patient like other patients with 14(70%) taking extra-precautions, 4(20%) give antibiotic and 2(10%) referred them to the Comprehensive Care Centre. Table 1 shows the extra precaution that the respondents thought should be given to a HIV infected person.

**Table 1:** Extra care which should be given to the HIV positive persons.

<table>
<thead>
<tr>
<th>Extra precaution</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counselling</td>
<td>9</td>
<td>18.8</td>
</tr>
<tr>
<td>Extra precautions</td>
<td>22</td>
<td>45.8</td>
</tr>
<tr>
<td>Information on prevention</td>
<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td>Prophylaxis cover after surgery</td>
<td>6</td>
<td>12.5</td>
</tr>
<tr>
<td>Specialised treatment</td>
<td>2</td>
<td>4.2</td>
</tr>
<tr>
<td>Emotional/psychological support</td>
<td>11</td>
<td>23.0</td>
</tr>
</tbody>
</table>

Fig 2 shows the dentists response when asked about the risk of contracting HIV when treating a HIV positive person. More than half (52.9%) said the risk is 0-1% while 18% said the risk is more than 10%, 12% said the risk is between 5-10% and 17% said it is between 1-5%.

**Fig 2:** Dentists response to risk of contracting HIV when treating a HIV positive person

**Discussion**

The study explored the knowledge of practising dentists on HIV transmission during dental practice and their willingness to treat PLWHA. The information generated from this study will shed light on the feeling of dental surgeons in managing PLWHA. HIV infection has been reported to interfere with delivery of health care due to fear, stigma and discrimination which may lead to increased burden of disease and poor quality of life among this group of people.

In the current study, knowledge on modes of HIV transmission was high with over 90% giving the
correct responses. This could be due to the fact that HIV has been identified as a national disaster in Kenya with intense public media campaigns carrying messages on the modes of transmission aimed at the general population. However the knowledge on the probability of HIV transmission during dental treatment was inadequate with 53% saying it is between 0-1%. This could be due to the fact that, the messages on transmissibility during dental treatment has not been aggressively advocated for in Kenya. This lack of knowledge on risk of transmission of HIV during treatment could explain the fear the dentists have in treating PLWHA due to fear of contracting HIV.

Majority (97.7%) of the dentists said they had knowingly treated a PLWHA. However, 27.9% did not treat the patient like the other patients. Furthermore, 98.9% said they would willingly treat a HIV positive patient. This was higher than the proportion found in a study done in USA where 60% of the practicing dentist said they would willingly treat a HIV sero-positive patient. However, 83.7% of these willing to treat PLWHA would take extra precautions. In the current study, more than half of the dentists (59%) said that PLWHA should be treated in a specialised clinic. This demonstrates fear and discrimination when managing this group of people. Most 85 (96.6%) of the participants considered themselves at risk of contracting HIV because of their profession.

References

6. Bishop GD, Oh HML, Swee HY. Attitudes and beliefs of Singapore Health care professionals concerning HIV/AIDS.
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