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Knowledge and Awareness About Oral Lesions in HIV Patients Among Dental Students

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ABSTRACT

Infection with Human Immunodeficiency Virus Type 1 (HIV-1) and the resultant Acquired Immune Deficiency Syndrome (AIDS) is a major public health challenge in modern times. The oral health care setting has become a helpful environment for the early detection of HIV infection because most of its lesions present orally during the first stages of the disease. The aim of the study is to assess knowledge and awareness about oral lesions in HIV patients among dental students. It is an online based questionnaire study in which 10 questions were circulated through an online forum through google forms and results were analysed using SPSS. In this study nearly 78% of the dental students are aware that HIV patients can be suspected from oral lesion and about 78% of the dental students are aware that pseudomembranous candidiasis is the common oral manifestation seen in HIV patients and 89% of the students are aware that oral examination is an essential component for early diagnosis of HIV. Nearly 78% of the dental students are aware of oral lesions in HIV patients and still 22% of them are unaware of the oral lesions. Hence, it is important to create awareness among dental students.

KEY WORDS: ORAL LESIONS, CANDIDIASIS, HIV, AIDS, LYMPHOCYTES.

INTRODUCTION

Human immunodeficiency virus (HIV) was discovered in 1981 since then an epidemic infection has been spread all over the world. HIV is the virus that causes AIDS. HIV attacks the CD4 positive T cells, destroys the immune system. The acquired immunodeficiency syndrome (AIDS) is the end stage of HIV infection. The management of AIDS is based on monitoring the disease progression and involves the administration of antiretroviral drugs. The health care workers are at high risk of disease transmission through body fluids. Some infectious diseases have extended incubation periods or window periods during which antibodies cannot be detected(Alanazi and Alharbi, 2019). It may take 10 to 15 years for an HIV positive person to develop AIDS. According to the CDC guidelines every patient is considered to be infected with a blood borne pathogen irrespective of the known serostatus of the same('Corrections: Guideline for Infection Control in Healthcare Personnel, 1998', 1998).

Infection can occur during exposure of the blood of an infected patient through needle sticks or splash to exposed mucous membranes. Invasive oral procedures more involve contact with blood and saliva that may contain HIV(Erasmus, Luiters and Brijlal, 2005). Dental health care situations implement specific strategies to prevent the disease transmission among oral health care workers, and from patient to patient(Ogunbodede,

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Folayan and Adedigba, 2005). Health care workers should have satisfactory knowledge about HIV/AIDS and their behavior should be proper to take care of such patients(Singh et al., 2017).

Many oral lesions have strong association with HIV infection. Along with the HIV infected individuals T helper cell count, they show the severity of immunosuppression. It is important for dental professionals to identify these lesions early and allow them to receive appropriate treatment for their HIV infection and related oral infection(Jones, 1994).

Dental expertise is necessary for proper management of oral manifestations of HIV infection, but many patients do not receive proper dental care. Common HIV related oral conditions include xerostomia, candidiasis, oral hairy leukoplakia, periodontal diseases such as linear gingival erythema and necrotizing ulcerative periodontitis, Kaposi's sarcoma, human papillomavirus associated warts, and ulcerative conditions including herpes simplex virus lesions, recurrent aphthous ulcers, and neutropenic ulcers(Cecaro, 2015).

Oral lesions can be associated with acute pain, difficulty to swallow, difficulty in eating. They may also change facial appearance. In immunocompromised patients Candida species can create a variety of oral lesions such as localized and disseminated candidiasis(Moniaci et al., 1990; Kolokotronis et al., 1994). Oral candidiasis is the most common feature of AIDS in the mouth, with a prevalence of 70% to 90%(Berberi, Noujeim and Aoun, 2015). Hairy leukoplakia, non-Hodgkin's lymphoma, and Kaposi's sarcoma have a strong association with HIV infection and are denoted as AIDS defining conditions(Holmes and Stephen, 2002; Ramírez-Amador et al., 2003; Berberi and Noujeim, 2015). In some cases, enlargement of the parotid glands and adenopathy can be observed during head and neck examination of HIV infected patients(Vigneswaran and Williams, 2014; Bunn and van Heerden, 2015). The aim of the study is to assess knowledge and awareness about oral lesions in HIV patients among dental students.

MATERIAL AND METHODS

The study was initiated after receiving ethical approval from the scientific review board of Saveetha Dental College and Hospitals I.t is a descriptive cross sectional study it consisting of 10 questions which was circulated among 100 population of dental students in chennai and the responses was collected through google forms and the data was analysed statistically and the result was obtained. Analysis software used was SPSS version 23. An online platform known as google forms was used. The questionnaire was uploaded on this site and the data was verified by an external viewer. Data was reported to excel and later exported to SPSS for analysis. The results were analysed and the responses were tabulated in the form of bar charts.

Figure 1: Bar chart depicting the awareness about oral manifestation in HIV of the participants. Shows 78% of them were aware that HIV patients can be suspected from oral manifestations and 22% of them were unaware of it.

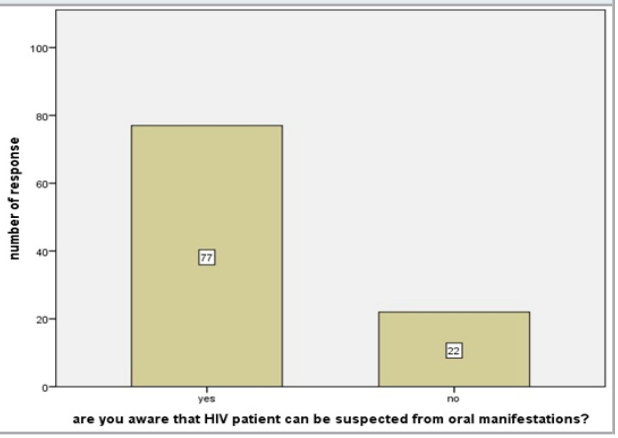
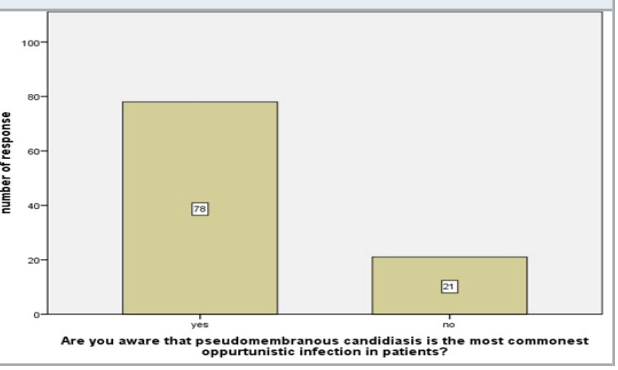


Figure 2: Bar chart depicting the awareness about common common opportunistic infection in HIV of the participants. Shows 78.7% of the students are aware that pseudomembranous candidiasis is the most common opportunistic infection seen in HIV patients and 21% of them were unaware of it.



RESULTS AND DISCUSSION

By the results tabulated, it is seen that the level of awareness and knowledge about oral lesions in HIV patients among dental students is good. In this study the participants were 57.5% of them were undergraduates and 42% of them were postgraduates. Nearly 78% of them were aware that HIV patients can be suspected from oral manifestations and 22% of them were unaware of it (figure 1). About 78.7% of the students are aware that pseudomembranous candidiasis is the most common opportunistic infection seen in HIV patients and 21% of them were unaware of it (figure 2). In this study 83.8% of them are aware about periodontal diseases associated with HIV and 16% of them are not aware of it. In this study 72.7% of the students say tongue, 9% of them say buccal mucosa, 5.5% of them say floor of the mouth, is the most commonly affected site for pseudomembranous candidiasis. In this study 83% of the students are aware

that destruction of CD4 lymphocytes causes oral lesions in HIV patients, 16% of them were unaware of it (figure 3). About 73.7% of the students say Kaposi Sarcoma, Non Hodgkin lymphoma, Hairy leukoplakia are the other oral lesions seen in HIV patients (figure 4).

Figure 3: Bar chart depicting the awareness about cause of oral lesions in HIV of the participants. Shows 83% of the students are aware that destruction of CD4 lymphocytes causes oral lesions in HIV patients, 16% of them were unaware of it.

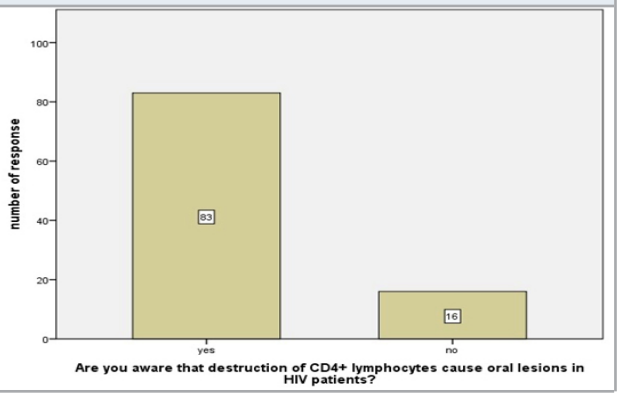
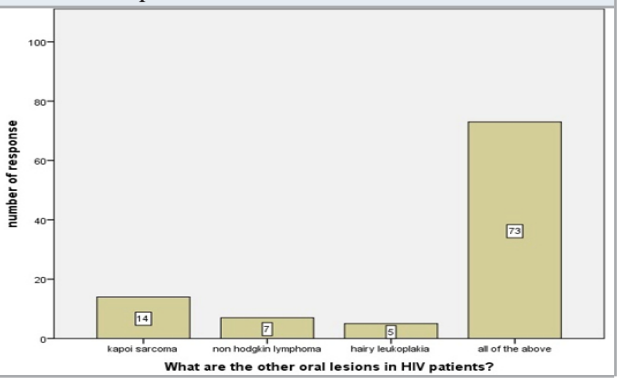


Figure 4: Bar chart depicting the distribution of response of the participants about oral lesions in HIV patients. 73.7% of the students say Kaposi Sarcoma, Non Hodgkin lymphoma, Hairy leukoplakia are the other oral lesions seen in HIV patients.



In this study 87.8% are aware that oral pseudomembranous candidiasis can represent in different clinical presentations and 12% of them were unaware of it. In this study 85.8% of students were aware about the treatment measure for candidiasis and 14% of them were unaware of it. In this study 89% of the students are aware that oral examination is an essential component for early diagnosis of HIV (figure 5). Undergraduates are more aware than postgraduate students about the diagnosis of HIV from oral manifestation (figure 6). Undergraduates are more aware than postgraduate students about the most common opportunistic oral infection in HIV patients (figure 7). Postgraduates and undergraduates said that Kaposi sarcoma, non Hodgkin lymphoma and hairy leukoplakia are that lesion commonly seen in HIV patients (figure 8). Undergraduate students are more aware than postgraduates about the importance of oral examination in early diagnosis of AIDS (figure 9).

Figure 5: Bar chart depicting the awareness about importance of oral examination in early diagnosis of AIDS. Shows 89% of the students are aware that oral examination is an essential component for early diagnosis of HIV and 10% of them were unaware of it.

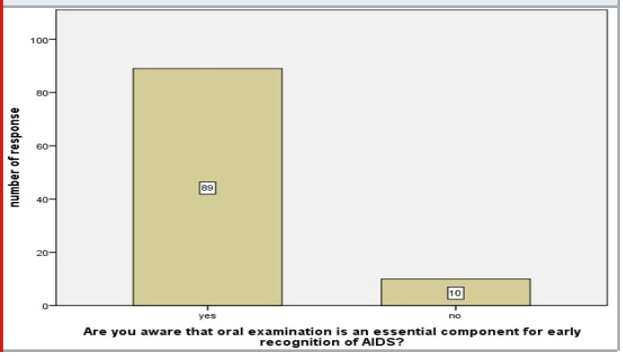
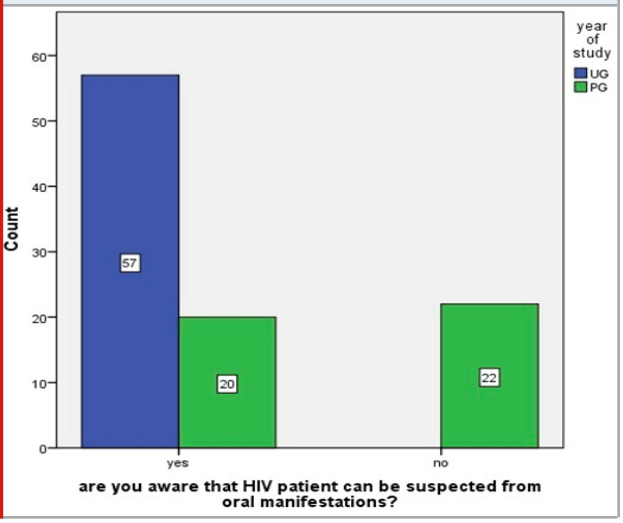


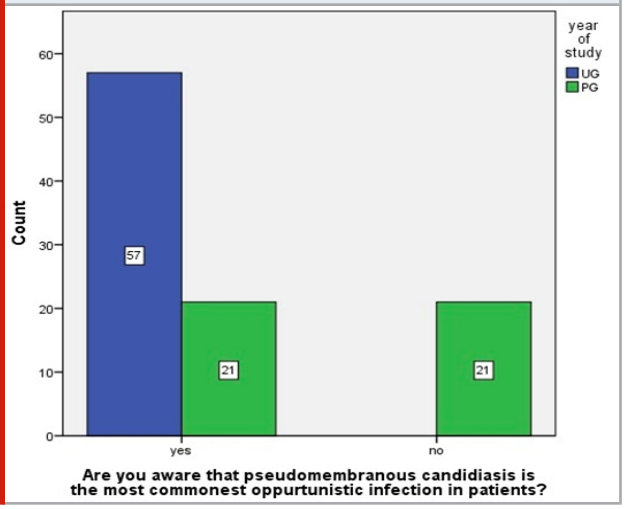
Figure 6: Bar chart represents the association of awareness of diagnosis of HIV from oral manifestation and year of study. Where the blue colour denotes undergraduates, green colour postgraduates The X axis represents the question "Are you aware that HIV patients can be suspected from oral manifestation?" and the Y axis represents the year of study. Undergraduates are more aware than postgraduate students about the diagnosis of HIV from oral manifestation. Pearson chi square value = 38.388, p=0.00<0.05, significant association.



Based on the results tabulated it is seen that dental students have good knowledge regarding oral lesions in HIV patients. In this study about 78% of the dental students are aware that HIV infection can be suspected from oral lesions. Less than half (42.6%) of the respondents had good knowledge, a finding far lower than the 72.7% reported in a study(Singh et al., 2017) and also about 82.1% were reported in(Sadeghi and Hakimi, 2009). Oral candidiasis, Kaposi Sarcoma and periodontal disease are the three most commonly

associated oral lesions by respondents in this study, finding similar to this study reported Kaposi's sarcoma, oral candidiasis and hairy leukoplakia, are three of the most common oral lesions in HIV patients (Lorosa et al., 2019) and another study that reported that most dental students were aware of the association of hairy leukoplakia, oral Kaposi's sarcoma, oral candidiasis and thrush are the clinical variant associated with HIV infection(M et al., 2015).

Figure 7: Bar chart represents the association of awareness of most common opportunistic oral infection in HIV patients and year of study. Where the blue colour denotes undergraduates, green colour postgraduates The X axis represents the question "Are you aware that pseudomembranous candidiasis is the most commonest opportunistic infection in patients?" and the Y axis represents the year of study. Undergraduates are more aware than postgraduate students about the most common opportunistic oral infection in HIV patients. Pearson chi square value = 36.173, p=0.00<0.05, significant association.



Participants are aware of different types of oral manifestations such as oral candidiasis, while their knowledge of the management of specific oral manifestations and the problems associated with oral manifestations was more limited(Kahabuka et al., 2007). Most participants (58.5%) were aware of predispositions towards the occurrence of oral lesions such as oral candidiasis (60.0%) in HIV and most of these (72.0%) are aware that these lesions are curable(Mwangosi, Ibrahim E A and Tillya, 2012). Some of these lesions may have a predictive value, warning of a progression from HIV seropositivity to clinically manifest as AIDS. They are often indicators for immune suppression and can be used for early diagnosis and management of patients with AIDS(Agbelusi and Wright, 2005; Arendorf et al., 2007). Oral lesions in HIV may also serve as markers for immune system destruction and disease progression and may also indicate poor prognosis(Adurogbangba et al., 2004).

Figure 8: Bar chart represents the association of oral lesion in HIV patients and year of study. Where the blue colour denotes undergraduates, green colour postgraduates The X axis represents the question "what are the other oral lesions in HIV patients?" and the Y axis represents the year of study. Postgraduates and undergraduates said that Kaposi sarcoma, non Hodgkin lymphoma and hairy leukoplakia are that lesion commonly seen in HIV patients. Pearson chi square value = 25.981, p=0.00<0.05, significant association.

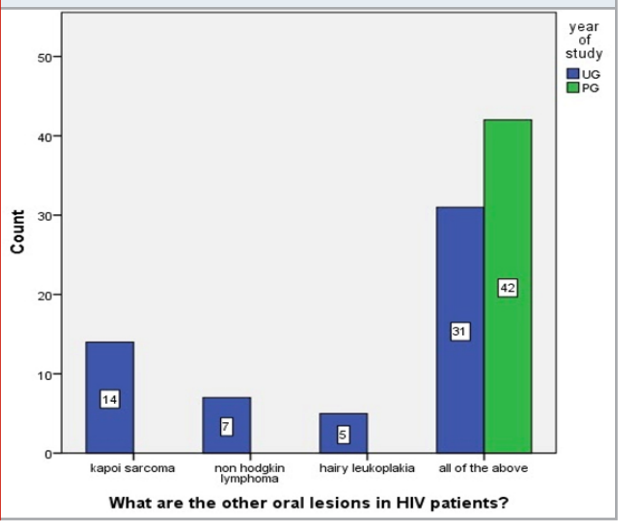
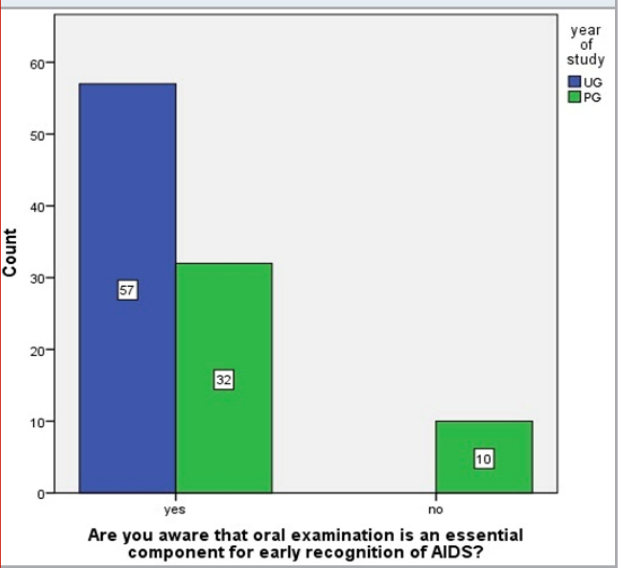


Figure 9: Bar chart represents the association of awareness about the importance of oral examination in early diagnosis of AIDS and year of study. Where the blue colour denotes undergraduates, green colour postgraduates The X axis represents the question "Are you aware that oral examination is an essential component for early recognition of AIDS?" and the Y axis represents the year of study. Undergraduate students are more aware than postgraduates about the importance of oral examination in early diagnosis of AIDS. Pearson chi square value = 15.096, p=0.00<0.05, significant association.



There was a much lower level of knowledge of awareness of the association of facial palsy, drug reactions, trigeminal neuralgia, thrombocytopenic purpura, and salivary gland disease with HIV infection. A finding similar to a previous study where there was a much lower level of knowledge of erythematous candidiasis, HIV associated salivary gland disease, oral melanotic hyperpigmentation and idiopathic thrombocytopenic purpura(Lorosa et al., 2019). However, students needed a broader knowledge of lesions strongly associated with HIV. Students should also be educated that even the lesions strongly associated with HIV are not exclusive to HIV. Kaposi's sarcoma, oral candidiasis, and hairy leukoplakia may also be seen in patients not infected with HIV.

The limitations of studies using cross-sectional data such as in our study are that it measures HIV knowledge and attitude towards oral lesions in HIV patients at only one point in time. This knowledge and attitude may evolve with changes or exposure to HIV related information and new situations. We have not analysed other factors which can influence the knowledge and attitude such as years of experience in clinics. Further longitudinal studies need to be carried out to address these limitations with larger sample sizes.

CONCLUSION

Within the limits of our study, , Nearly 78% of the dental students are aware of oral lesions in HIV patients and still 22% of them are unaware of the oral lesions. 89% of the students are aware that oral examination is an essential component for early diagnosis of HIV. Future dentists having good knowledge of HIV will be able to do prompt adequate diagnostic investigations for confirmation. Furthermore, this will enable proper recognition and accurate diagnosis of the oral lesions as well as early treatment with ultimate reduction in mortality of the HIV infected patient.

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Conflict of Interest: None Declared.

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