

## HIV and AIDS Related Knowledge and Awareness among Dental Students in Mangalore, India: A Cross Sectional Survey

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### Abstract

The primary aim of this study was to evaluate and assess the knowledge of undergraduate students towards treating HIV/AIDS patients in a dental college and the secondary objective was to evaluate the willingness of the students to provide dental treatment to the patients suffering from HIV/AIDS.

A cross sectional prospective study was conducted on 300 undergraduate students based on a study questionnaire which consisted of 3 parts to assess their knowledge and willingness to treat HIV/AIDS patients. Part 1 consisted of questions on general knowledge and awareness about HIV and AIDS. Part 2 had questions about the oral manifestations seen/ present in AIDS and the third part assessed the student's attitude and awareness to treat patients with AIDS. The responses were recorded, and the collected data was subjected to statistical analysis.

No statistically significant difference in knowledge was found between the students belonging to the different academic years . In our study the students didn't show any inhibition to treat HIV/AIDS patients.

According to the results of our study incorporation of HIV/AIDS related teaching material in to the undergraduate curriculum is very important as the clinical exposure begins from the third year onwards considering that the undergraduate students will be responsible for clinical decision making of such medically compromised patients it is imperative that they do so on the basis of sound technical knowledge.

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### Introduction

HIV was first reported in the literature as early during the 1980s. The estimated prevalence of AIDS in India is between 0.91% - 0.22%.<sup>1</sup> The risk of transmission of HIV is generally through direct contact via blood or body fluids. Recently, saliva has also been shown to transmit the disease if contaminated with blood, however the possibility is as low as 0.03%. This has therefore led to the focus on the risk of cross infection in dental setup.<sup>2</sup>

The risk of transmission of virus from patient to health care staff has been estimated at 0.3%, following the single percutaneous exposure to blood infected with HIV.<sup>3</sup> This brings in the importance of knowledge about the universal precautions to be undertaken in case of treating such patients. The stigma associated with treatment of HIV affected individuals refrains them from getting proper oral health care.

Various Methods have been used to evaluate and improve the knowledge and attitude of students about HIV according to the literature.<sup>4</sup>

Hence, as future healthcare providers, it is of paramount importance that all dental students have adequate knowledge, awareness and skills to diagnose, manage and take precautions required to avoid transmission of HIV in the dental set up along with providing timely dental care to HIV/AIDS patients.

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Therefore, a cross sectional study was designed to assess the knowledge and awareness of dental students by interviewing them through a study questionnaire. Based on this it also determined their willingness to provide dental treatment to such patients.

### Materials and methods

A cross sectional prospective questionnaire study was conducted among 300 undergraduate dental students studying in the third year, final year and interns at the Manipal College of Dental Sciences, Mangalore, Karnataka. These students were selected as they were treating patients in their clinical postings.

The ethical clearance was obtained from the Institutional Ethics Committee for conducting the study. The survey questionnaire which was originally used by Sadeghi M and Hakimi was modified and was adapted for this study<sup>5</sup>.

The first part consisted of 6 closed-ended questions concerning the general knowledge and awareness about HIV and AIDS. The second part had 9 questions about the oral manifestations seen/ present in HIV/AIDS. The third section included 6 questions regarding the student's attitude and awareness to treat patients with HIV/AIDS. The response was rated on 5-point Likert scale using option of strongly agree, agree, neutral, disagree and strongly disagree.

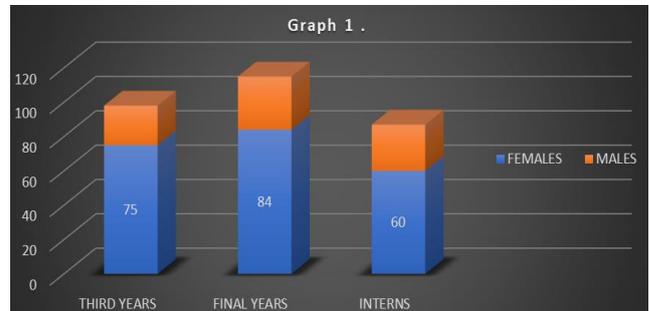
The questionnaire was distributed to the students and ample time was given to the students to fill the questionnaire. Before filling the questionnaire, all the participants were also provided with an informed consent form to give their consent for the study.

The collected data was subjected to statistical analysis. Statistical analysis was carried out using SPSS (statistical package for social sciences) version 20. Descriptive statistics are reported. P value was set at <0.05. Chi-Square test was applied to check the association between groups. The study was carried over a period of 6 months.

### Results

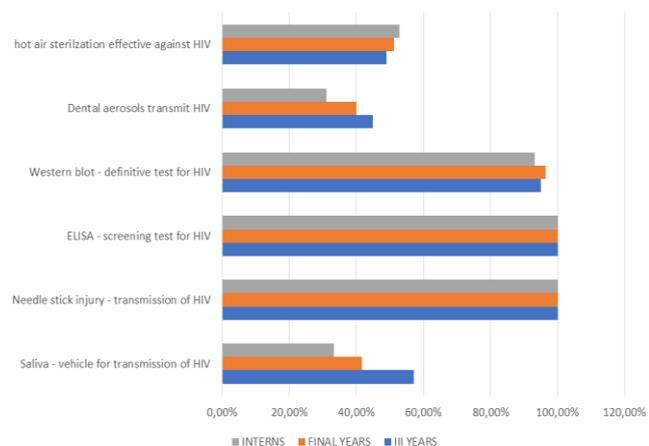
The questionnaire was distributed to 300 students out of which 98 were third years, 115 were final years and 87 were interns. The age of the participants ranged from 20 -26 years and the

male to female ratio is 1:4. The gender and year wise distribution of the students is given.(Graph 1)



**Graph 1.** Distribution of dental students according to gender and year of study.

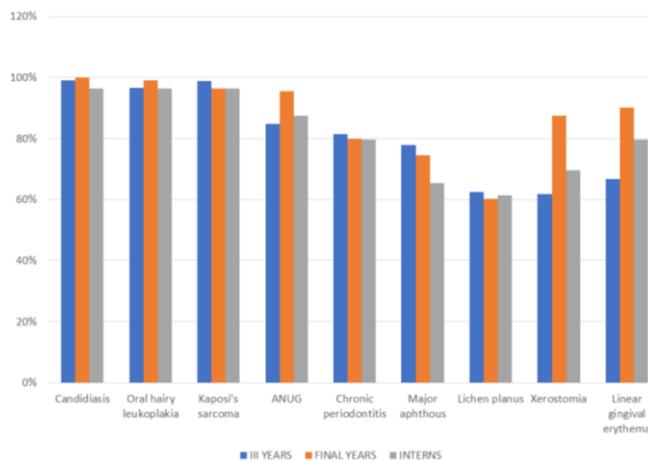
On subjecting the recorded responses to statistical analyses, it was observed that for the first part of the questionnaire which was about the basic knowledge regarding HIV and AIDS, third year students seemed to have unclear details about the disease. When asked if saliva can be vehicle for transmission around 57.10% third years, 41.70% final years and 33.30% interns have answered yes. If dental aerosols can transmit HIV, 44.90% third years, 40% final years and 31% interns have answered yes. Around 50% students from all years answered to hot air sterilization being effective against HIV (Graph 2). Overall, the year of study affected the level of knowledge with the finals years or interns having more idea about the disease process, similar to a finding by Raghavendra et al.<sup>6</sup>



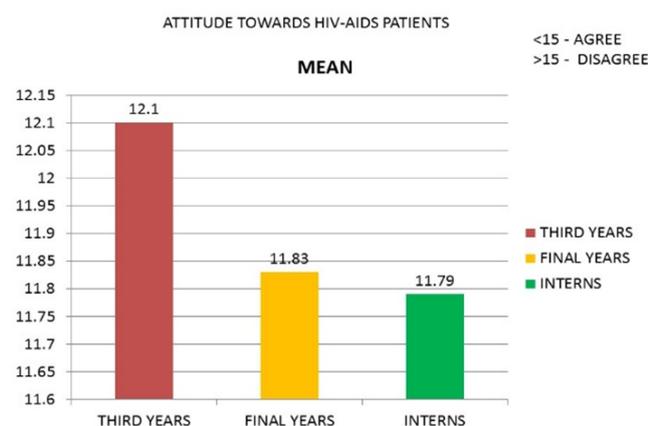
**Graph 2.** Knowledge and awareness about HIV/AIDS.

The second part of the questionnaire was about the oral manifestations seen in AIDS. More

than 90% of the students have correctly identified manifestations such as candidiasis, oral hairy leukoplakia, Kaposi's sarcoma, ANUG and chronic periodontitis, similar to a study done on Nigerian dental students by Oberoi et al<sup>7</sup> and Ajayi et al.<sup>8</sup> Around 62% third years have answered yes about common manifestations like lichen planus, xerostomia and linear gingival erythema being seen. Around 40% said that these diseases are not visible in AIDS patients. Amongst final years and interns, it was seen that 40% students believe lichen planus is not seen in AIDS. Around 20-30% students have answered no for some of the common oral manifestations like lichen planus and xerostomia. (Graph 3).



**Graph 3.** Knowledge and awareness about oral manifestations of HIV/AIDS - (answered yes).



**Graph 4.** Attitude of students towards HIV/AIDS patients.

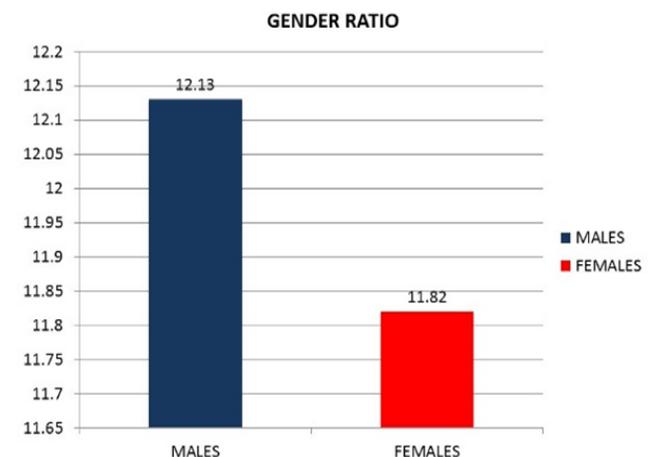
The third part of the questionnaire was to check their attitude towards patients. The overall attitude was positive response by the students as compared to a previous study by Fotedar et al

done in Shimla, India<sup>9</sup>. When asked how confident they feel on being able to safely treat a HIV/AIDS patient using universal precautions, around 90% males and 88% females said they feel confident in treating such patients. On asking if such patients can be assimilated into the society normally, 80% males and 74.22% females agreed. When asked their views on whether HIV patients should be treated in a separate ward, 40% males and females disagreed the fact whereas 34% males and 27% females agreed for the same. 33% males and 28% females responded neutral. 92% males and 88.44% females agreed that they were morally bound to treat HIV and AIDS patients (Table 1). A similar study in Nigeria by Azodo et al had shown low inclination of the dental students to treat HIV/AIDS patients in contrast to the positive results obtained in this study<sup>10</sup>.

	Agree		Neutral		Disagree	
	Males	Females	Males	Females	Males	Females
Dentist with HIV/AIDS cannot treat patients.	26.67%	25.78%	14.6%	15.11%	66.67%	56%
I can safely treat HIV/AIDS patients using standard precautions.	90.67%	88.44%	6.64%	5.78%	10.67%	3.10%
Patients with HIV infection can assimilate into society normally.	80%	74.22%	9.33%	12.44%	20%	10.22%
HIV/AIDS patients should be treated in a separate ward.	34.67%	27.11%	33.33%	28%	40%	42.22%
I am morally responsible to treat HIV/AIDS patients.	92%	88.44%	12%	5.78%	4%	3.11%

**Table 1.** Attitude towards treating HIV/AIDS patients.

Overall, the results showed that students agreed to treat such patients without any hesitation (Graph 4). Based on gender, no significant difference in the attitude was seen. Both male and female students were equally willing to treat HIV patients in clinics, similar to as reported by Agarwal<sup>11</sup> and Ahamed<sup>12</sup> (Graph 5).



**Graph 5.** Gender ratio in the study.

On subjecting the data to ANOVA, no statistical difference was found in knowledge and awareness between the students of three years (Table 2). When subjected to Chi square test no association was found between the knowledge and awareness of the students in turn affecting their willingness to treat HIV/AIDS patients (Table 3)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.456	2	2.728	.651	.522
Within Groups	1241.106	296	4.193		
Total	1246.562	298			

**Table 2.** ANOVA. P<0.05 = significant.

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.104 <sup>a</sup>	1	.747		
Continuity Correction <sup>b</sup>	.027	1	.869		
Likelihood Ratio	.103	1	.748		
Fisher's Exact Test				.754	.429
N of Valid Cases	287				

**Table 3.** Chi-Square Tests. P<0.05 = significant

## Discussion

HIV transmission is an important consideration in a dental set up, especially due to the risks involved to dentist's from accidental needle stick injuries. The results of the present study showed that the students had an agreeable positive attitude towards treating AIDS patients, however they lacked knowledge in certain specific areas<sup>13</sup>. Hence there is a need for reinforcement of the acquired knowledge through clinical presentation so that the students can diagnose the disease at an early stage and thereby treat the patient using appropriate universal precautions. Lack of proper knowledge about the disease may sometimes lead the student to refer the patient to another clinician due to the fear of cross contamination. There is no major correlation between the year of study and level of knowledge but as one progresses further through the curriculum, the acquired knowledge and concepts improve and become better and clearer which is in accordance to results reported by and Seacat et al<sup>14</sup> and differs from the study by Patil et al<sup>15</sup>.

## Conclusions

According to the results of our study incorporation of HIV/AIDS related teaching material in to the undergraduate curriculum is very important as the clinical exposure begins from the third year onwards considering that the undergraduate students will be responsible for clinical decision making of such medically compromised patients it is imperative that they do so on the basis of sound technical knowledge.

## Declaration of Interest

The authors report no conflict of interest.

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