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Research Article

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Awareness of HIV/AIDS infection and ethical concerns amongst dentistry students and auxiliary staff in a hospital setup in Kashmir, India

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ABSTRACT

Background: Human immuno virus infection/ acquired immuno deficiency syndrome (HIV/AIDS) continues to be a major public health issue. HIV/ AIDS may particularly manifest in the oral cavity in the form of oral candidiasis, oral ulcers, non-tender bilateral swelling of the parotid glands and nodular tumours or Kaposi's sarcomas. These oral manifestations are often among the first symptoms of HIV/AIDS which can prove beneficial in the early detection of the disease. The aim of the present study was to assess the awareness of HIV/AIDS infection and related ethical concerns amongst dentistry students and auxiliary staff in a hospital setup in Kashmir.

Methods: This cross sectional survey was conducted among 213 dental health care personnel, which included 34 third year BDS students, 35 Final year BDS Students, 106 Inters and 38 Dental Auxiliary staff comprising of nursing staff and lab technicians. A self-administered questionnaire/ survey instrument consisting of 15 close-ended structured questions to assess knowledge and attitude regarding HIV/AIDS was administered.

Results: The results showed that 70.96% of 3rd year BDS students, 75.75% of Final year BDS students, 71.15% of Interns and 42.10% of dental auxiliaries had knowledge about HIV infection.

Conclusions: The results of the present study suggest that there is a need of spreading awareness about AIDS among health care provider's including dentists and auxiliary staff for clearing the misconceptions and beliefs regarding the routes of transmission of HIV/ AIDS with the help of CDE/CME Programs and also revising the present syllabus in the curriculum during professional training of Dental graduates and auxiliary staff.

Keywords: Dental, HIV/AIDS, Knowledge, Positive attitude

INTRODUCTION

Human immuno-deficiency virus (HIV) infection is a major public health endemic which is intensely growing and affects every aspect of health care. HIV has claimed more than 36 million lives worldwide so far. In 2009, the estimated worldwide prevalence of HIV/AIDS was 0.91% with an estimated 2.5 million people affected in India.^{2,3} HIV/AIDS most commonly manifests in the oral cavity in the form of oral candidiasis, oral ulcers, nontender bilateral swelling of the parotid glands.⁴ The

classical presentation of oral lesions is in the form of oral candidiasis followed by herpes simplex virus, ulcerative stomatitis, salivary gland disease, oral hairy leukoplakia, necrotizing gingivitis and Kaposi's sarcoma.⁵

Oral manifestations are the first symptoms of HIV/AIDS and thus can aid in the early detection of the disease. Thus it is a professional and ethical responsibility of every dentist to provide treatment to such patients with HIV infections. The health care professionals are expected to address themselves the critical issues of

creating community awareness and counseling for HIV infection. Health care sector is perhaps the most obvious perspective for HIV/AIDS related discrimination, stigmatization and denial. Even today, a small proportion of practitioners and dental students continue to harbour irrational fears regarding occupational risks and actively discriminate against HIV positive patients. It is unethical and unlawful for dental professionals' to refuse to treat HIV positive patients.

The primary prevention for HIV is through health education programs and creating awareness among public. ¹⁰ It is therefore necessary for dental professionals and auxiliary staff to have adequate knowledge to identify these oral lesions which shall aid in early diagnosis and treatment of HIV infection. Every health care professional has an important role to play in detection and referral of suspicious patients to physicians for an early management not only to increase the lifespan of the patient but also to prevent its spread.

However, there are limited studies that have explored the knowledge and attitude of dentists and dental auxiliary staff, particularly in North India. To the best of our knowledge, this is the first study on the knowledge and attitude of dental students toward HIV in Jammu and Kashmir till date. Thus, the aim of the study was to assess the knowledge and attitude of dental students and related ethical concerns toward HIV/AIDS in a government hospital in Kashmir.

METHODS

This cross sectional survey was conducted among 213 dental health care personnel, which included 34 third year, 35 Final year BDS Students, 106 students doing their post BDS Internship and 38 Dental Auxiliary staff which included nursing staff and lab technicians of Government Dental College and Hospital, Srinagar. Ethical approval was obtained from Institutional Review Board of the concerned dental college and an informed verbal consent was acquired from all the subjects who were willing to participate. The participation was voluntary after the aim of the present study was communicated to the participants.

A self-administered, pretested questionnaire was taken which comprised of 15 questions which were according to the WHO, Knowledge, Attitude, Behaviour and practices (KABP) questionnaire, to assess the knowledge and attitude of the participants.¹¹

The survey instrument was a close-ended, structured questionnaire to assess knowledge and attitude regarding HIV/AIDS. The questions were related to the modes and routes of transmission, precautions of AIDS and most of the questions were bipolar questions, having options as Yes/No and the remaining questions were multiple choice questions. After obtaining informed verbal consent, the questionnaire was distributed amongst all the dental

students and the dental auxiliary staff which were to be filled and returned to the investigator after completion on the same day. The respondents were ensured that anonymity will be maintained for the responses at all times. Only completely filled questionnaires were selected for the analysis which included responses from 31 third year BDS students, 33 Final year BDS Students, 104 Interns and 38 Dental Auxiliary staff. The remaining 7 questionnaires were incompletely filled and were rejected and not included for the analysis.

The data collected was entered in Microsoft excel sheet and analyzed for simple statistics as mean and percentage.

RESULTS

The results are comprehensively presented in Table 1. Overall, 70.96% of 3rd year BDS students, 75.75% of Final year BDS students, 71.15% of Interns and 42.10% of auxiliaries had knowledge about HIV infection. Sixty seven percent intern respondents have mentioned blood as the modes of transmission for HIV. Ninety one percent intern respondents were of the opinion that Dentists can get infected from HIV patients. Majority of interns (71.15%) believed that HIV infected patients can be treated in a Dental setting and 63.46% of the interns were of the belief that there was no ethical right to reject treating an HIV patient. Majority of 3rd year BDS students (78.78%) as well as interns (80.76%) believed that it was important to uphold the confidentiality of a patient with HIV positive status.

DISCUSSION

The chances of acquiring HIV infection in the dental setting during dental treatment is high as most of the HIV infected patients are unaware of their disease status. It is necessary for dental professionals and supporting staff to have adequate knowledge about HIV infection/ AIDS. They have an important role to play in early detection and referral of suspicious patients for their early management. It is the ethical and moral responsibility of all dental professionals to treat HIV positive patients in the same way that treat all other patients. The present cross sectional survey was conducted to assess knowledge and attitude of dental students and auxiliaries toward HIV/AIDS and the related ethical concerns in a government hospital setup in Jammu and Kashmir.

The present study showed that among all dental students, a total of 72.02% were having fair knowledge about AIDS. Amongst these, Final year BDS students 75.75% were having a better knowledge than the other two groups. The reason might be attributed to the existence of topics related to AIDS in their curriculum. The results of present study were conflicting to a study conducted in Delhi, where majority (96.3%) of health care providers had correct knowledge regarding AIDS and 69.7% respondents could tell correctly about HIV.¹² In the

present study, less than half of the dental auxiliaries were unaware about HIV/AIDS. This could be attributed to

the absence of related topics in their curriculum during their study course.

Table 1: Attitude and practices of the participants towards HIV/AIDS.

Questions	Options	n= 206			
		3 rd year	Final Year	Interns	Dental Auxiliaries
		n= 31	n= 33	n= 104	n= 38
Do you know about HIV infection?	Yes	22 (70.96%)	25 (75.75%)	74 (71.15%)	16 (42.10%)
	No	9 (29.03%)	8 (24.24%)	30 (28.84%)	22 (57.89%)
Is the curriculum enough for	Yes	15 (48.38%)	19 (57.57%)	63 (60.57%)	14 (36.84%)
management of HIV patient?	No	16 (52.61%)	14 (42.42%)	41 (39.42%)	24 (63.15%)
What is the main mode of	Blood	12 (38.70%)	15 (45.45%)	70 (67.30%)	10 (26.31%)
transmission of HIV infection?	Saliva	5 (16.12%)	2 (6.06%)	5 (4.80%)	5 (13.15%)
	Breast Milk	1 (3.22%)	1 (3.03%)	3 (2.88%)	2 (5.26%)
	Mucous	2 (6.45%)	1 (3.03%)	4 (3.84%)	3 (7.89%)
	Tears	1 (3.22%)	2 (6.06%)	6 (5.76%)	3 (7.89%)
	Genital Secretions	10 (32.25%)	13 (39.39%)	16 (15.38%)	15 (39.47%)
What is the route of transmission of	Injection	5 (16.12%)	3 (9.09%)	8 (7.69%)	6 (15.78%)
HIV infection?	Blood transfusion	4 (12.90%)	2 (6.06%)	1 (0.96%)	8 (21.05%)
	Sexual intercourse	8 (25.80%)	3 (9.09%)	2 (1.92%)	5 (13.15%)
	All of the above	14 (45.16%)	25 (75.75%)	93 (89.42%)	19 (50.00%)
Do you think Dentists can get	Yes	19 (61.29%)	24 (72.72%)	95 (91.34%)	15 (39.47%)
infected from HIV patients?	No	12 (38.70%)	9 (27.27%)	9 (8.65%)	23 (60.52%)
Can Dentists prevent HIV infection	Yes	23 (74.19%)	27 (81.81%)	90 (86.53%)	20 (52.63%)
following proper barrier techniques?	No	8 (25.80%)	6 (18.18%)	14 (13.46%)	18 (47.36%)
What has the possibility of	Kissing	2 (6.45%)	3 (9.09%)	3 (2.88%)	6 (15.78%)
transferring HIV infection?	Hand Shaking	2 (6.45%)	2 (6.06%)	4 (3.84%)	3 (7.89%)
	Using public	1 (3.22%)	1 (3.03%)	3 (2.88%)	2 (5.26%)
	toilets	16 (52.61%)	20 (60.60%)	88 (84.61%)	18 (47.36%)
	Sharing razors	2 (6.45%)	1 (3.03%)	1 (0.96%)	1 (2.63%)
	Sharing Utensils None	8 (25.80%)	6 (18.18%)	5 (4.80%)	8 (21.05%)
Can aerosols produced during dental	Yes	21 (67.74%)	24 (72.72%)	81 (77.88%)	15 (39.47%)
treatment on HIV infectious patients transmit HIV?	No	10 (32.25%)	9 (27.27%)	23 (22.11%)	23 (60.52%)
Oral manifestations of HIV include:	Kaposi Sarcoma	2 (6.45%)	1 (3.03%)	8 (7.69%)	3 (7.89%)
	Candidiasis	2 (6.45%)	3 (9.09%)	4 (3.84%)	6 (15.78%)
	ANUG	3 (9.67%)	2 (6.06%)	12 (11.53%)	6 (15.78%)
	Hairy leukoplakia	4 (12.90%)	3 (9.09%)	4 (3.84%)	4 (10.52%)
	Herpetic Infections	2 (6.45%)	1 (3.03%)	2 (1.92%)	11 (28.94%)
	All of the above	18 (58.06%)	23 (69.69%)	74 (71.15%)	8 (21.05%)
Do you think an HIV infected patient	Yes	18 (58.06%)	21 (63.63%)	74 (71.15%)	15 (39.47%)
can be treated in a Dental setting?	No	13 (41.93%)	12 (36.36%)	30 (28.84%)	23 (60.52%)
Knowing that a patient is HIV	Yes	23 (74.19%)	21 (63.63%)	60 (57.69%)	12 (31.57%)
infected, will you be willing to treat the patient?	No	8 (25.80%)	12 (36.36%)	44 (42.30%)	26 (68.42%)
Do you think patients should give	Yes	24 (77.41%)	26 (78.78%)	88 (84.61%)	24 (63.15%)
proper medical history of HIV?	No	7 (22.58%)	7 (21.21%)	16 (15.38%)	14 (36.84%)
Do you think HIV positive dentist/	Yes	19 (61.29%)	23 (69.69%)	77 (74.03%)	15 (39.47%)
Health Care professional shall inform his patient about his health state?	No	12 (38.70%)	10 (30.30%)	27 (25.96%)	23 (60.52%)
Does a dentist have an ethical right to	Yes	19 (61.29%)	17 (51.51%)	38 (36.53%)	29 (76.31%)
reject treating an HIV patient?	No	12 (38.70%)	16 (48.48%)	66 (63.46%)	09 (23.68%)
Do you think it is important to uphold	Yes	22 (70.96%)	26 (78.78%)	84 (80.76%)	19 (50.00%)
the confidentiality of a patient with HIV positive status?	No	9 (29.03%)	8 (24.24%)	20 (19.23%)	19 (50.00%)

The results were contradictory with another study conducted in Nigeria, where it was reported that 80.3% registered nurses had knowledge about HIV/AIDS. 13 The results were also conflicting to the previous studies where less number of dentists, nurses, lab technicians and Class IV employees had excellent knowledge about the modes of transmission of HIV/AIDS. 14-17 While similar findings were observed in Japanese dental students who had an average knowledge about this. 18 The results are also conflicting with a previous study among Iranian dental students, who were found to have excellent knowledge. 19

When asked about whether the curriculum related to the management of HIV/AIDS, the poor response amongst almost all the groups was observed. It is recommended that curriculum should be revised and included focusing on the clinical management of HIV for both BDS as well as Dental auxiliary courses.

Overall, 67.30% of Intern respondents in the present study mentioned blood as the mode of transmission for HIV and 89.42% of the interns correctly mentioned injection, blood transfusion as well as sexual intercourse as the routes of transmission of HIV infection. These results were conflicting to a study conducted by Bishop et al where it was reported that 98% of doctors, dentists and nurses were of the opinion that sex and needle sharing were routes of transmission of HIV. Whereas Goel et al in a previous study on nursing professionals, had found that 96.1% of the respondents were knowledgeable about sexual intercourse, 87.8% about blood and blood products and 79% about needles, syringes and razors as a route of transmission. ²¹

In the present study it was observed that only negligible subjects from all the groups were of the opinion that HIV infection could be transmitted by sharing utensils. The reason could be attributed to the contact of saliva with mucus membrane which might lead to transmission of the infection. Also, less than 7% dental students believed that kissing, hand shaking and using public toilets could possibly transfer HIV infections.

In contrast more than 15% of dental auxiliary staff believed that these could transmit HIV infections showing the lack of knowledge in their group. It was also observed in the present study that less number of subjects believed that HIV infection could be transmitted through saliva which was opposing to a study conducted amongst 250 Nigerian dentists, where 40.8% mistakenly believed that HIV could be transmitted through saliva.²²

The present study found that majority of the dental interns believed that dentists could acquire infection from HIV patient. The results are similar to previous study conducted by McCarthy et al where it was seen that HIV infection transmitted mostly through needle stick injuries. ²³ More than 80 % of Final year students and Interns were of the opinion that dentists can prevent HIV infection following proper barrier techniques. The results

were similar to a study, where it was observed that both dental staff and patients can be protected best by their compliance with standard infection control precautions and using protective equipment and techniques ²⁴ and following the universal barrier precautions in the hospital setup.²⁵

The present study showed that 41.93% 3rd year BDS students, 36.36% Final year BDS students, 28.84% Interns and 60.52% of dental auxiliaries believed that HIV infected patient could not be treated in a Dental setting. While similar findings have been reported previously, where dentists were reluctant to and denied treatment of patients with HIV/ AIDS. The become compulsory for a dentist to have adequate knowledge about HIV/AIDS. The present study focused on assessing the knowledge and attitude of dental students, interns and dental auxiliaries. It is vital for dental students to have adequate knowledge about HIV, as it increases their confidence in approaching and handling of HIV patients.²⁷

There has been lack of knowledge about transmission of HIV among health care professionals in India. This has led to refusal of treatment to persons living with HIV. 28 inadequate knowledge can act as a barrier to appropriate treatment of HIV positive patients in healthcare settings. Similar findings have been published in other parts of the world. 14,29,30 The lack of knowledge regarding HIV/AIDS may hamper and limit the dentists and dental auxiliary staff from treating such patients. Even though it is widely accepted that health care professional play a crucial role in prevention and control of HIV/AIDS, attention is being given to assess knowledge and attitude of health care professionals for overcoming ignorance and spreading awareness. 31

The present study revealed that only about 70 % of final year BDS students and interns were aware about the correct oral manifestations of HIV/ AIDS. In contrast less number of dental auxiliaries was aware of it. Majority of 3rd year BDS students (78.78%) as well as interns (80.76%) believed that it was important to uphold the confidentiality of a patient with HIV positive status. The inclusion of topics like ethics, medical jurisprudence and ethical obligations of dentists towards the community should be included in the syllabi as Dentists have a professional and ethical duty to treat all patients alike including HIV patients.⁷

CONCLUSION

It was concluded that knowledge about the HIV/AIDS was not up to the satisfactory level among the students with poor level of knowledge regarding modes of transmission among the dental auxiliary staff.

It is thereby recommended that Continuing Dental Education Programs and Continuing Medical Education programs on management of HIV patients and ethical concerns and duties of Health Care providers to HIV/AIDS patients should be conducted on regular basis.

As health care providers and auxiliaries play an important role in the society for the spread of knowledge about routes of transmission of HIV, updated curriculum related to the modes of transmission, clinical manifestations, precautions, prevention and clinical management should be included in the syllabi for both dental and auxiliary courses.

Health education programs should help in spreading awareness about AIDS among health care provider's including dentists and auxiliary staff for clearing the misconceptions and beliefs regarding the routes of transmission which otherwise perpetuates wrong messages in community resulting in discrimination and stigmatization of such patients and denial in their treatment.

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Institutional Ethics Committee

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