

## ORIGINAL RESEARCH

# Awareness toward AIDS: A Dental Perspective

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## ABSTRACT

**Background:** HIV/AIDS (human immunodeficiency virus/acquired immunodeficiency syndrome) constitute not only a pathological entity but also have a social implication which not only affects the general quality of life but also of those who are related to him/her. So, it becomes imperative to facilitate the spread of awareness among the dental professionals to build a stronger foundation against this social taboo.

**Aims and objectives:** To assess the awareness of dental fraternity of Bhopal on HIV/AIDS and to assess and compare the differences and similarities between various groups of dental fraternity.

**Materials and methods:** The study population included 200 individuals. It was divided into three categories as undergraduate (UG) students, postgraduate (PG) students, and dental practitioners. Standardized questionnaire was prepared including open- and close-ended objective type questions. The questionnaire consisted of 17 questions. Questions were based on three groups, i.e. knowledge and awareness, clinical manifestations of HIV and diagnosis and prognosis. Data collected was then transferred to Microsoft excel work sheet and evaluated by SPSS 20.0 version software.

**Results:** From our study we deduced that basic knowledge about HIV is 75.5% in dental practitioners as compared to 64 and 36% of UG and PG. Knowledge about diagnosis of HIV in dental fraternity is 35% in UG as compared to 26 and 33% in PG and dental practitioners, knowledge about symptoms and treatment is 70% in UG as compared to 68 and 62% of PG and dental practitioners, awareness about HIV/AIDS is 90% in PG as compared to 80% of UG and dental practitioners.

**Conclusion:** From our study we can safely conclude that the overall knowledge of dentists about HIV/AIDS is adequate, but there are certain gray areas, such as diagnosis and treatment which need our attentions. It becomes imperative for us to know and be aware of the HIV/AIDS threat. This article attempts to assess and reflect how much we need to improve our education system so as to be foolproof against this virus of mass destruction because forewarned is forearmed.

**Keywords:** HIV, AIDS, Immune system, Awareness, Practitioner.

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## INTRODUCTION

AIDS stands for acquired immunodeficiency syndrome. It is a pattern of devastating infections caused by the human immunodeficiency virus or (HIV), which attacks and destroys certain white blood cells that are essential to the body's immune system.<sup>1</sup> It constitutes not only a

clinicopathological entity but also have social implications affecting the general quality of life of an individual, but also of those who are related to him/her.

AIDS is one of the most dreaded entities that modern medicine has ever had to tackle. Adult HIV prevalence in India is approximately 0.36%, which corresponds to an estimated 2 to 3.1 million people living with HIV in India.<sup>2</sup>

It is also reported that everyday between 5,000 and 6,000 young people (aged: 15-24) contract HIV. In HIV education, awareness is very important. However studies of researchers like Diclement et al have also reported a poor correlation between knowledge and sexual behavior.<sup>3</sup>

HIV-related stigma and discrimination remains an enormous barrier to effectively fighting the HIV and AIDS epidemic. Stigma is increased when the disease concerned is thought to be acquired entirely by the patient's fault, for example, immoral behavior.<sup>4</sup> Stigma and discrimination can result in people living with HIV/AIDS being shunned by family and the community, poor treatment in health care and educational settings, an erosion of rights, and psychological damage. Stigmatization would make people hesitant to get the test done. There are several reasons for the stigma toward HIV-infected individuals among the general population, one of them could be inaccurate information about the transmission of HIV; creating irrational behavior and misperceptions of personal risks that leads to unnecessary delay in reporting to doctor, making treatment further difficult.<sup>5</sup>

Dental therapeutic procedures frequently involve blood and saliva that may contain a variety of blood borne pathogens and microorganisms, such as HIV. Though, the possibility of HIV transmission in the oral health care setting is very low;<sup>2</sup> this environment has become a helpful setting for early detection because most lesions of HIV infection present orally during the first stages of the disease.<sup>6,7</sup>

To carry out effective clinical management, dental students need to be aware of and understand the significance of HIV/AIDS.<sup>8,9</sup> Willingness to treat patients with HIV/AIDS appears to be related to knowledge of the disease process, recognition of oral manifestations, and understanding of modes of transmission.<sup>10,11</sup> Increased knowledge of issues concerning HIV has led to dental professional's increased willingness to treat HIV-positive patients.<sup>7,8,12</sup> Appropriate knowledge may also instill confidence in students about their own ability to manage HIV-positive patients.<sup>13</sup> Thus, gaining insight into student

perceptions and management of HIV/AIDS patients is essential for assessing the adequacy of HIV/AIDS education in the dental curriculum.

Dental faculties can play an important role as a model for dental students (as dentists of the future) regarding HIV/AIDS.<sup>10,14</sup> It is imperative that dental students develop their knowledge, attitudes and skills adequately to diagnose and manage HIV/AIDS patients.<sup>11</sup>

This questionnaire survey is an attempt to assess the level of awareness among the undergraduates (UG), postgraduates (PG) and dental practitioners working in various dental colleges of Bhopal regarding the threat and possible potential implications of HIV infection.

## MATERIALS AND METHODS

Cross-sectional study was conducted utilizing questionnaire survey format among 200 participants belonging to five different dental colleges of Bhopal.

The custom formulated questionnaire was objective type including open- and close-ended questions.

The survey was designed, keeping in mind that the participant group population is equally distributed among all five colleges wherever possible.

Study samples were divided into three groups which were chosen as representatives of the strata of hierarchy in dental education. Subjects were selected randomly keeping in mind the ratio of their respective population in college.

- Group A – Interns–105
- Group B – PG students–50
- Group C – Private practitioners–45

Questions were based on three categories for evaluation of different aspects of AIDS/HIV:

1. Basic knowledge and awareness
2. Diagnosis and prognosis
3. Prevention and treatment

General awareness and knowledge section included the questions about awareness of the disease in general, modes of transmission, etc. Diagnosis and prognosis includes questions of oral manifestations of HIV/AIDS. Whereas treatment and prevention section had questions about postexposure prophylaxis and referral of HIV patients.

Participants were instructed to attempt all the questions and were asked to indicate one answer per question. Responses were then transferred to Microsoft Excel sheet and evaluated for results. We applied percentage analysis instead of statistical analysis because of number of variables involved, large sample size, number of permutation possible and most importantly the complexity of statistical analysis will somehow overshadow the picture that we intended to project.

The idea was to assess the awareness of dental practitioners/PG/UG regarding AIDS/HIV. The study was carried out by the same administrator and anonymity was maintained regarding the name, age, sex and religion of an individual.

## RESULTS

Of the total number of respondents which participated in survey, 17 were excluded from the final analysis as they either did not complete the survey form or indicated more than one choice per question.

The question regarding HIV/AIDS being the same entity or different was correctly responded by 41% of the group A members who thought that they are indeed the two stages of same entity. It was less than 58% among group B and 64% in group C members. The response to question on the type of HIV virus most prevalent in India showed a poor response. Approximately 14% group A members, 36% of group B and 18% among group C could correctly answer it as HIV type I.

The question regarding the routes of transmission of HIV was correctly answered by 87% group A, 92% group B and 96% group C respondents (Table 1). When a question regarding fate of needle after injection was asked, only 40% of group A participants were found aware of the fact that ideally the needle should be incinerated after use compared to 74% of group B and 72% of group C participants.

The awareness about the rapid HIV antibody test being the screening test for HIV was found to be about 25% in group A, 40% in group B and 32% in group C. When posed with the question on confirmatory test post screening, the result was no different as only 26% of group A compared to 36% group B and 50% group C gave correct response as Western blot. When confronted with the critical CD4 count we found a different trend contrary to the educational qualification, 60% group A posted correct answer compared to 40% group B and 30% group C respondents. When made to indicate commonest opportunistic infection, again majority of group A, i.e. 72% answered candidiasis opposed to 66% group B and 58% group C members (Table 2).

Awareness that the place where first referral of HIV patients is made after confirmation of HIV-positive status is antiretroviral therapy (ART) center was known to only 18% group A members compared to 34% group B and 42% group C counterparts. Postexposure prophylaxis is available free of cost in Hamidia Hospital, Bhopal and was known to 25% group A, 42% group B and 50% group C members (Table 3).

Only 35% of the total survey population claims to have attended HIV/AIDS awareness program.

**Table 1:** Results of data collected from knowledge and awareness section indicating correct response

Knowledge and awareness	Group A	Group B	Group C
HIV is different from AIDS	42 (41%)	29 (58%)	32 (64%)
HIV virus A is commonest in India	13 (14%)	18 (36%)	9 (18%)
Needle should be incinerated after use	42 (40%)	37 (74%)	32 (72%)
Correct mode of transmission of HIV	92 (87%)	46 (92%)	48 (96%)

**Table 2:** Results of data collected from diagnosis and prognosis section indicating correct response

Diagnosis and prognosis	Group A	Group B	Group C
HIV screening test is rapid HIV antibody test	26 (25%)	20 (40%)	16 (32%)
HIV confirmatory test is western blot	27 (16%)	18 (36%)	25 (50%)
Critical value of CD4 count is below 200 cells/mm <sup>3</sup>	63 (60%)	20 (40%)	15 (30%)
Candidiasis is commonest infection in HIV	75 (72%)	33 (66%)	29 (58%)

**Table 3:** Results of data collected from treatment and prevention section indicating correct response

Treatment and prevention	Group A	Group B	Group C
HIV patients are first referred to ART centers	12 (18%)	18 (34%)	21 (42%)
PEP against HIV is available at Hamidia hospital	24 (25%)	21 (42%)	25 (50%)

## DISCUSSION

As the number of people infected with HIV/AIDS is on a rise, the need of these individuals for medical care and dental care will increase. So the dental practitioners will be required to enhance their knowledge about the disease, its oral manifestations and management. In our study, the mean of student's knowledge about HIV/AIDS patients was excellent, but the findings of this study should be interpreted with caution. Dentists receiving postgraduate training at dental colleges of Bhopal were surveyed on a few general and relevant topics such as basic knowledge, diagnosis, prognosis and treatment. Thus, the applicability of the findings to postgraduate students or practicing dentists in other geographical locations is unknown. The results thus appear to interpret the mentality and attitudes of dental fraternity of Bhopal and a larger study is needed to make the study results general.

## Transmission

The question regarding the routes of transmission of HIV was correctly answered by 87% group A, 92% group B and 96% group C respondents in our study which was significantly higher than the study conducted in South Africa, where only 48.9% of the students responded correctly.<sup>15</sup> In another study conducted in Western Cape by Erasmus et al more than half the students thought that some transmission routes were not possible, indicating that the transmission routes of the disease are not fully understood.<sup>10</sup>

A study done among slum dwellers in another metropolitan city of India (Chennai), showed that 67% males

and 55% females were aware of the sexual mode of transmission, as compared to 90% in our study population. In the same study, 45% males and 62% females thought AIDS could spread through mosquito bites.<sup>16</sup>

It is noteworthy that only 48% of study population from coastal Karnataka knew about HIV transmission through breast feeding, but 94% were aware of HIV transmission through needle sharing.<sup>17</sup>

This proves that knowledge regarding how HIV/AIDS is not spread is less than the knowledge about how it is spread. Moreover, even when a person rightly knows that one will not get infected by a mere touch, the natural instinct of fear for one's safety still rules over the correct knowledge they have. Also, there was a disparity in the awareness regarding spread by mosquito bite, breastfeeding and kiss on cheek as modes of transmission.

## Needle

In our study we found some shocking facts, such as, when a question regarding fate of needle after injection was asked, only 40% of group A participants were found aware of the fact that ideally the needle should be incinerated after use compared to 74% of group B and 72% of group C. The statistics from a study conducted in Ahmedabad<sup>18</sup> revealed that 5% of the students exposed to the needle stick injury. This figure is much less than that reported in another study conducted in Iran<sup>19</sup> where almost 60% of needle stick injury occurred at the time of needle recapping. Handling of used needles or disposal of the same and unexpected patient movement each accounted for 20% causes of needle stick injury.

Overestimation of the transmission risk of HIV seemed to be the most important reason for fear in providing dental care to HIV/AIDS patients.<sup>12</sup> Universal precaution is adequate for prevention of HIV transmission in oral health care setting, yet 87.6% believe that extra infection control precaution is needed while treating HIV-positive patients. This response is an obvious revelation of deficiencies in HIV/AIDS knowledge and infection control among respondents. Earlier reports documented poor knowledge about universal precautions among nurses and also its poor observance in the course of their duty.<sup>20,21</sup> A study conducted in Bengaluru found that students showed moderate knowledge with respect to modes of HIV transmission and infection control practices. A similar finding was reported by Sadeghi<sup>15</sup> and among Iranian dental students, by Ryalat et al in Jordanian student.<sup>22</sup>

### Screening and Test

- In our study, the awareness about the rapid HIV antibody test being the screening test for HIV was found to be about 25% in group A, 40% in group B and 32% in group C.
- When confronted with the critical CD4 count we found a different trend contrary to the educational qualification, 60% group A posted correct answer compared to 40% group B and 30% group C respondents.

Stigma and discriminatory behavior hamper uptake of voluntary HIV screening, disclosure of status and dissuading people living with HIV/AIDS from seeking care thus promoting HIV spread. Stigma and discrimination felt by individuals are also major barriers to utilizing health services for prevention, diagnosis and treatment.<sup>23</sup>

The results of study conducted in Meerut by Prashant et al<sup>24</sup> revealed several startling facts regarding the knowledge, attitude and willingness of dental students to treat HIV/AIDS patients. Majority of 4th-year students and internees showed higher level of knowledge about HIV/AIDS as compared to the 3rd-year students. The level of knowledge was associated significantly with the year of study ( $p < 0.001$ ), a finding that differs from previous reports by Seacat et al,<sup>25</sup> and Shaikh et al.<sup>26</sup> This may be attributed to the improved knowledge acquired as one progresses through the curriculum.

In our study, when made to indicate commonest opportunistic infection, again majority of group A, i.e. 72% answered candidiasis opposed to 66% group B and 58% group C members.

Most respondents (77.9%) in our study had no previous professional contact with HIV/AIDS patients. This factor among dental students must be disconcerting to dental

educators because of increasing rates of HIV infection in the world. It is encouraging that most of the students were aware of the major oral manifestations of AIDS: Oral candidiasis, major aphthous and Kaposi's sarcoma.

Awareness that the place where first referral of HIV patients is made after confirmation of HIV-positive status is ART center was known to be only 18% of group A members compared to 34% group B and 42% group C counterparts. Postexposure prophylaxis is available free of cost in Hamidia Hospital, Bhopal was known to 25% group A, 42% group B and 50% group C members.

Majority (86.5%) will refer HIV-infected patient to medical hospital and HIV counseling center. This is acceptable and expected, as early commencement of HAART (highly active antiretroviral therapy) improves quality of life and reduces mortality in HIV patients.

### CONCLUSION

The AIDS epidemic is continuing to grow. Approximately 40 million individuals worldwide are living with HIV.<sup>27</sup> In India, increasing numbers of HIV-positive patients will be seeking dental care. It is important to ensure that practicing dentists' attitudes toward these patients are not a barrier to their receiving the best possible care and develop not only the necessary practical skills such as infection control rules, but also their attitudes about preparing themselves to treat HIV/AIDS patients. Stigma associated with AIDS undermines efforts to fight the epidemic. Therefore, it is important to ensure that dental education programs at all levels give consideration to interventions to address provider attitudes and potential biases.

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