

**Knowledge and attitude among students towards HIV/AIDS patients at a dental college, Suraram, India****Vibha Rani<sup>1</sup>, Suguna Dumpala<sup>2\*</sup>, R. Shyamala<sup>3</sup>**

<sup>1</sup>Department of Pharmacology,  
<sup>2</sup>Department of Community  
Medicine, <sup>3</sup>Department of  
Microbiology, Malla Reddy  
Medical College for Women,  
Suraram, Telangana, India

**Received:** 28 August 2017**Accepted:** 25 September 2017**\*Correspondence to:**

Dr. Suguna Dumpala,  
Email: [reachsuguna.dumpala@gmail.com](mailto:reachsuguna.dumpala@gmail.com)

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**ABSTRACT**

**Background:** Clinical training is a part of curriculum for the dental students. They are trained in dental procedures, where there is a chance of exposure to HIV infection. Hence this study was conducted with an objective to assess their knowledge, attitude to treat these patients.

**Methods:** An institutional based study was carried out among 145 dental students at Malla Reddy Dental College for Women. A questionnaire with 29 questions on knowledge, attitude and willing to treat the HIV/AIDS patients which was already used in other study was adapted. Primary outcome- knowledge and attitude was measured in percentages, proportions using SPSS version 20 and Chi-square.

**Results:** Total subjects who had good knowledge were 71 (48.9%) and 137(94.5%) viewed needle stick injury can transmit HIV virus. 138 (98.1%) agreed that it is their moral responsibility to treat HIV/AIDS patients and risk of HIV transmission is high, hence special precautions have to be followed to treat them. Positive attitude towards HIV/AIDS patients was reported among 129(89%) of students. Chi square test showed an association between knowledge and attitude among study subjects which was statistically significant at  $p < 0.05$  level.

**Conclusions:** Active student's collaboration for treatment compliance of HIV/AIDS patients should be directed towards comprehensive training in the dental colleges which forms a basis for provision of appropriate, optimal dental care improving oral health related quality of life in people living with HIV.

**Keywords:** Attitude, Dental students, HIV/AIDS, Knowledge

**INTRODUCTION**

Human Immunodeficiency Virus (HIV) is a retrovirus that leads to immune deficiency in humans, now considered as a chronic condition but still remains a serious concern.<sup>1</sup> Global HIV epidemic in 2016 showed that a total number of 36.7M people living with HIV/AIDS, out of which adults are 34.5M (women 17.8M, men 17.7M), children <15yrs are 2.1M and 1.8M people became newly infected with HIV.<sup>2</sup> The total number of people living with HIV (PLHIV) in India in 2015 is estimated at 21.17 lakhs and undivided Andhra Pradesh and Telangana have the highest estimated number of PLHIV i.e. 3.95 lakhs.<sup>3</sup> Oral

manifestations of HIV infection are a fundamental component of disease progression. They may be in the form of dental caries, hairy leukoplakia, oral candidiasis, necrotizing ulcerative periodontitis, oral ulcers, linear gingival erythema, parotid swelling, Kaposi sarcomas.<sup>4,5</sup> This special sub-group population seek treatment, which involves oral dental procedures (extractions, orthognathic surgery, periodontal therapy, endodontics, prophylaxis, scaling, root planning and dental implants) as compared with similar patients without HIV/AIDS. Infection can occur during exposure to the blood of an infected patient via needle stick or a splash to exposed mucous membranes. Invasive oral procedures frequently involve contact with saliva and blood that may contain HIV.<sup>6,7</sup> Those who seek

dental procedures may be asymptomatic or undiagnosed, so dental health care providers are anxious of getting infected with HIV. Most lesions of HIV/AIDS present orally during the initial stages of the disease, so dentists fall into the high risk category for cross contamination.<sup>7</sup> A major concern among dentists is cross-infection, from an infected patient to the dentist and further from the dentists to other patients in case of an accidental needle stick injury. It is unethical to deny treatment by a dental student or dentist to anyone infected with HIV.<sup>8</sup> Despite the guidelines by Dental Association of India, ignorance, lack of knowledge on transmission led to refusals to treat HIV/AIDS patients.<sup>9, 10</sup> The study subjects are the future dentists who will come across PLHV with oral problems. The false beliefs, negative attitude which they might come across during their study period may result in negative impact during their dental practice. There are several studies on knowledge and attitudes of dental students towards HIV/AIDS patients in India but such studies are limited in Telangana state, India.<sup>11-13</sup> With an increasing number of PLHV, who seek dental care at any given point of time, this study was conducted with an objective to assess knowledge and attitude among students towards HIV/AIDS patients at a dental college.

## METHODS

An institutional based study was conducted to assess knowledge, attitude of students towards PLHV at Malla Reddy Dental College for Women (MRDCW), Suraram, Rangareddy district, Telangana state, which is in the southern part of India. MRDCW has an intake of 100 students every year. The study subjects comprised of II and III year undergraduates dental students. Data was collected on 19<sup>th</sup> January 2017. The sample size 168 (88 II year and 80 III year) was calculated based on the number of students on roll. A total of 145 subjects (all women), out of which

70 from II year and 75 from III year participated in the study. Exclusion criteria were: students who were not willing to participate and those who were absent on the day of study. The study subjects were briefed by the principal investigator about the purpose of the study and also took their oral consent. The study was approved by Institutional Ethics Committee. A structured questionnaire was adapted from survey questionnaire used by Patil et al, and Deepak et al, to record the data.<sup>12,13</sup> It comprised of 29 questions, with two sections. First section of 14 questions was on knowledge of HIV/AIDS, modes of HIV transmission, screening tests, lab diagnosis and oral manifestations. Students were asked to mark answer for each question as Yes/No. Correct answer was given a score of 2 and zero for wrong answer or no response.

The correct responses were summed up, maximum 28 and minimum score was 0. Study subjects were categorized as follows - score of >75% - Excellent, 50-75% - Good, 25-50% - Moderate and < 25% - Poor knowledge. Second section consisted of 15 questions on attitude and ready to treat HIV/AIDS patients. Attitude response was rated on five point Likerts scale with option of Strongly agree (SA), Agree (A), Neutral, Disagree (D) and Strongly Disagree (SD). The scores were computed from five to one for a positive attitude and inversely from one to five for negative attitude. Attitude was then categorized as score of  $\geq 75\%$  - positive, <75% - negative. The questionnaire was administered at a time to all study subjects to avoid bias. The primary out-come in this present analysis was knowledge and attitude. A Chi-square test was done to compare overall knowledge and attitude. All statistical analysis was performed using Statistical package for Social Sciences (SPSS Inc, Chicago and III) 20<sup>th</sup> version.  $P < 0.05$  was considered as significant.

## RESULTS

**Table 1: Distribution of study subjects by knowledge and awareness on HIV/AIDS.**

S. no.	Question	Correct response	
		Number	%
1.	HIV infection can spread by touching, kissing, sharing food and drinks	126	86.9
2.	Saliva can be a vehicle for transmission of HIV infection	78	53.8
3.	HIV/AIDS patients can be identified by physical appearance	119	82
4.	Needle stick injury can transmit HIV virus	137	94.5
5.	Aerosols from hand pieces can be a vehicle for transmission of HIV infection	68	46.9
6.	ELISA test is screening test for HIV infection	134	92.4
7.	Western blot test is a confirmative test for HIV infection	108	74.5
8.	A negative ELISA test rules out HIV infection	107	73.8
9.	Medical and paramedical staff is more prone for HIV infection	86	59.3
10.	Treatment of HIV/AIDS patients requires special dental clinics	100	69
11.	HIV/AIDS patients can be suspected from oral manifestations	98	67.6
12.	HIV/AIDS patients can contaminate dental workers	89	61.4
13.	Dentists can act as an intermediary for transmission of HIV	90	62.1
14.	Now, AIDS is the most important health problem in the world	136	93.8

As shown in Table 1, 137 (94.5%) of subjects had the knowledge and awareness on transmission of HIV through needle stick injury, which got the highest score followed by 136 (93.8%) on AIDS as an important health problem in the world, next 134 (92.4%) knew ELISA test is a screening test, 126 (86.9%) answered correctly the first question about spread of HIV by touching, kissing, sharing food and drinks, 119 (82%) said correctly about identification of HIV/AIDS by physical appearance. For questions 2,5,7,8,9,10,11,12 and 13, the range of responses was from 68 to 108 (46.9% to 74.5%). However the lowest correct response was Q.5 - for aerosols from hand pieces be a vehicle for transmission of HIV infection (46.9%).

Table 2 presents total knowledge score among second and third year dental students. Majority 51 (68%) of 3<sup>rd</sup> year students against 17 (24.2%) of 2<sup>nd</sup> years had an excellent knowledge of  $\geq 75\%$ , while majority of 2<sup>nd</sup> year students

47 (67.1%) against 24 (32%) of 3<sup>rd</sup> year had good knowledge, only 6 (8.5%) of 2<sup>nd</sup> years had moderate against zero from 3<sup>rd</sup> year students. While none of them were in weak category. While looking at total knowledge together for both 2<sup>nd</sup> and 3<sup>rd</sup> yrs, good 71 (48.9%) was maximum, followed by 68 (46.8%) excellent and 6 (4.1%) moderate.

**Table 2: Distribution of study subjects by total knowledge score.**

Knowledge category	Second BDS 70 (%)	Third BDS 75 (%)	Total knowledge score N (%)
Excellent	17(24.2)	51(68)	68(46.8%)
Good	47(67.1)	24(32)	71(48.9%)
Moderate	6(8.5)	0	6(4.1%)
Weak	0	0	0

**Table 3: Distribution of study subjects by attitude and willingness to treat HIV/AIDS patients.**

Question	SA [N (%)]	A [N (%)]	N [N (%)]	D [N (%)]	SD [N (%)]
It is my moral responsibility to treat HIV/AIDS patient	99 (68.3)	39 (26.9)	2 (1.4)	4 (2.8)	1 (0.7)
One can safely treat HIV/AIDS patients	68 (46.9)	47 (32.4)	24 (16.6)	5 (3.4)	1 (0.7)
I will treat HIV/AIDS patients	82 (56.6)	46 (31.7)	15 (10.3)	-	2 (1.4)
Risk of HIV contagion is high, hence special precautions have to be followed to treat HIV/AIDS patients	100 (69)	38 (26.2)	5 (3.4)	1(0.7)	1 (0.7)
Patients with HIV infection can lead a normal	65 (44.8)	52 (35.9)	14 (9.7)	11(7.6)	3 (2.1)
Patient's status of HIV infection should be disclosed to all the family members of the patient	46 (31.7)	42 (29)	18(12.4)	17(11.7)	22 (15.2)
All dental patients should be considered as potentially infectious	58 (40)	28 (19.3)	8 (5.5)	37(25.5)	14 (9.7)
If I know my friend has HIV infection, I will end the relationship	3 (2.1)	2 (1.4)	4 (2.8)	42 (29)	94 (64.8)
If my colleague is HIV infected, I will stop working with him/her	2 (1.4)	4 (2.8)	4 (2.8)	43 (29.7)	92(63.4)
Treatment of HIV/AIDS patients means wasting national resources	4 (2.8)	3 (2.1)	4 (2.8)	41 (28.3)	93 (64.1)
Supporting HIV/AIDS patients improves community health	75 (51.7)	48 (33.1)	11 (7.6)	9 (6.2)	2 (1.4)
I will deliver emergency care to HIV/AIDS patients if need arises	73 (50.3)	61 (42.1)	9 (6.2)	2 (1.4)	-
I worry about being infected with HIV by my patients	27 (18.6)	43 (29.7)	32 (22.1)	30 (20.7)	13 (9)
It is my right to know if my patients are infected by HIV	76 (52.4)	55 (37.9)	7 (4.8)	5 (3.4)	2 (1.4)
Dentists with HIV/AIDS should not be allowed to practice	6 (4.1)	11 (7.6)	12 (8.3)	44 (30.3)	72 (49.7)

SA: Strongly Agree A: Agree N: Neutral D: Disagree SD: Strongly Disagree

Table 3 shows attitude and willingness to treat HIV/AIDS patients among the dental students. Out of 15 questions,

maximum students 138 (98.1%) strongly agreed/agreed (SA/A) that it is their moral responsibility to treat

HIV/AIDS patients and risk of HIV contagion is high, hence special precautions have to be followed to treat them; 134 (92.4%) SA/A to deliver emergency care; 131 (90.3%) considered their right know the HIV status of their patients; 128 (88.3%) said that they will treat them; 123 (84.8%) SA/A that improvement of community health is linked with supporting them; 117 (80.7%) said that HIV patients can lead a normal life; 115 (79.3%) felt that HIV patients can be safely treated; 88 (60.7%) strongly agreed that their HIV status to be disclosed to family; 136 (93.8%) strongly disagreed/disagreed (SD/D) that if friend has HIV, will end relationship; 135 (93.1%) SD/D to stop working with a colleague with HIV infection; 134 (92.4%) SD/D with treating HIV is waste of resources; 116 (80%) SD/D that dentists with HIV/AIDS should not be allowed to practice.

Table 4 shows total attitude score among dental students. 89% of students showed a positive attitude against 11% with negative attitude.

**Table 4: Distribution of study subjects by total attitude score.**

Attitude category	N (%)
Positive	129 (89)
Negative	16 (11)
Total	145 (100)

Table 5 shows the association between overall knowledge and overall attitude which was statistically significant at  $p < 0.05$ .

**Table 5: Association between knowledge and attitude among study subjects.**

		Overall knowledge		Total	X <sup>2</sup>
		<50%	>50%		
Overall attitude	>75%	7	122	129	*17.941
	<75%	6	10	16	
Total		13	132	145	

\*P < 0.001

## DISCUSSION

Overall knowledge and awareness on HIV/AIDS among study subjects ranged from 68 to 137 (46.9 % to 94.5%). About 134 (92.4%) knew ELISA is a screening test, suggesting good knowledge about diagnostics. However the figures are on higher side when compared to study done by Reshma et al, and Sadeghi et al, 98 (67.6%) of students agreed that HIV/AIDS patients can be suspected from oral manifestations, which is lower in comparison to similar study done by Sadeghi et al, where the response was 95.2%.<sup>14</sup> 137 (94.5%) of students said that transmission of HIV can occur through needle stick injury which are slightly on lower side when compared to studies conducted by Patil et al and Awad et al.<sup>12,15</sup> About AIDS

as an important health problem in the world, 136 (93.8%) responded correctly which was higher in comparing to study conducted by Deepak et al, and Awad et al.<sup>13,15</sup> However the lowest correct response was for aerosols from hand pieces be a vehicle for transmission of HIV infection was stated by 68 (46.9%), which is higher when comparing to a study conducted by Awad et al, where the response rate 48.8%.<sup>15</sup>

Around 126 (86.9%) answered correctly the question on spread of HIV by touching, kissing, sharing food and drinks which is similar to studies conducted by Manish et al.<sup>16</sup> When asked whether saliva can be a vehicle for transmission of HIV infection, 78 (53.8%) responded correctly, which is similar to a study done by Abhimanyu et al.<sup>17</sup> While looking at total knowledge together for both 2<sup>nd</sup> and 3<sup>rd</sup> years, good 71 (48.9%) was maximum, followed by 68 (46.8%) excellent and 6 (4.1%) moderate. There was dramatic increase in knowledge of 34% in excellent category in third year group when compared to second year students, which may be due to better teaching, training and clinical exposure in third year.

An encouraging finding where maximum 138 (98.1%) strongly agreed/agreed (SA/A) that it is their moral responsibility to treat HIV/AIDS patients and risk of HIV transmission is high, hence special precautions have to be followed to treat them is higher in comparison to similar study conducted by Patil et al.<sup>12</sup> Some questions like if you know your friend has HIV infection, you will end the relationship, if your colleague is HIV infected, you will stop working with him/her and treatment of HIV/AIDS patients means wasting national resources, got a good attitude score of 93.8%, 93.1% and 92.4% respectively.

Though these attitude scores are encouraging, there are still some number of dental students who still have fear of HIV contagion and AIDS phobia from their friends and colleagues. These findings are higher in comparison to a study done by Deepak et al, where the response was 86.7%, 86.2% and 88.2% respectively.<sup>13</sup> Overall 89% of students showed a positive attitude against 11% with negative attitude. The finding is similar to studies conducted by Ara et al, Peeran et al, where positive attitude was reported and differs from previous studies done by Azodo et al, and Neeraj et al, were overall negative attitude was reported among students towards HIV/AIDS patients.<sup>18-21</sup>

## CONCLUSION

From the present study, we conclude that overall students have a good knowledge and a positive attitude towards HIV/AIDS patients. Active student's collaboration for treatment compliance of HIV/AIDS patients should be directed towards comprehensive training in the dental colleges which forms a basis for provision of appropriate, optimal dental care improving oral health related quality of life in people living with HIV.



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