

Knowledge, Attitude And Stigma of Dental Students Towards Hiv/Aids Patients



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BACKGROUND: In most areas of the world there is a decrease of the HIV/ AIDS epidemic can be observed from international literature. Data from the Asian region recommends increasing incidences. Understanding knowledge levels and attitudes and relate them toward willingness to treat and stigma regarding HIV/AIDS is a significant constituent to project acceptable and culturally appropriate awareness and prevention programs.

OBJECTIVES: To evaluate level of knowledge, attitudes, willingness to treat and stigma associated with HIV/AIDS of dental students and house officers of Dow Dental College.

METHODOLOGY: A cross-sectional questionnaire survey was conducted among a total of 196 dental students of 1, 2, 3, 4 professional years and house officers of 2015-2016 academic session. Using a self-administered, structured questionnaire to examine their knowledge, attitudes and behavior towards HIV/AIDS. The descriptive indices such as percentages were used to express the knowledge level among the students. Independent t test was used to evaluate the attitude and stigma of these students towards HIV/AIDS with SPSS 17.0.

RESULTS: A total of 196 questionnaires were completed and returned, with response rate of 96.5%. Overall, the knowledge of the students was adequate except first year and second year students. The attitude of the students toward people living with HIV/AIDS was positive. House officers discriminate and stigmatize most among all the students.

CONCLUSION: Despite their adequate level of knowledge majority of students have negative attitude and willingness towards treatment of patients with HIV/AIDS.

KEY WORDS: HIV/AIDS, Knowledge and attitude of dental students.

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INTRODUCTION

In this contemporary era, Human Immunodeficiency (HIV) and the Acquired Immune Deficiency Syndrome (AIDS) is a most significant public health challenge.¹ It becomes a major health issue worldwide after recognition in 1981. By the end of 2014, approximately 1.2 million people had died from AIDS-related infections and 34.3-41.4 million people were living with HIV infection.² In Pakistan, first case of HIV was diagnosed in 1986 and was reported in 1987.³ According to the national estimates, in Pakistan

there are 102,000 people infected with HIV.⁴ In Pakistan it is now classified into concentrated phase of the epidemic because of its high prevalence.⁵ The mode of transmission is mainly because of heterosexuals (52.55%) which is followed by (11.73%) blood transfusion.⁶ In Asia region Pakistan is among 12 countries which account for more than 90% of the infected people living with HIV.⁷ Globally, during last decade new HIV infections have dropped by 0.7%. But in Pakistan the disease burden and incidence of HIV is rising at disturbing pace. In Pakistan there is a 17.6% increase in annual incidence of HIV compared to 2.2% for the rest of the world according to Global disease burden (GBD).⁸ The condition is becoming more poorer as there is very low coverage (5.87%) of antiretroviral treatment (ART) in Pakistani patients.⁹

Fear of HIV infection creates major health concerns among health care personnel. This produces a barrier to

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effective educational efforts about AIDS and related awareness. The consequences of this fear might lead to unwillingness to treat AIDS infected patients.¹⁰ It has been observed that health care staff are lacking in appropriately managing and counseling HIV and AIDS patients. A huge knowledge gap has been notified among health care personnel regarding diagnosis and treatment of HIV and AIDS.¹¹

In a study conducted by Crossley Mat al¹² the author found that there were lacking in the knowledge regarding transmission routes of HIV and AIDS but found good knowledge about oral manifestations associated with HIV and AIDS. Lack of knowledge was found among Tanzanian health care workers regarding treatment procedures related to HIV and AIDS. This was result in unwillingness to provide care for HIV patients.¹³ In Pakistan a study conducted by Shaikh FD et al concluded in their study there is a need for further education regarding knowledge, symptoms and modes of transmission of HIV and AIDS.¹¹ Similar findings have been reported among nurses, dentists and health care personnel in Kenya, Brazil, Singapore, South Africa and Iran.¹⁴⁻¹⁶ Due to the alarmingly increasing spread of HIV in the Pakistan, the present study aimed to address the suspected deficiency in the level of understanding and awareness of this disease among clinical and nonclinical dental students at the Dow University of Health Sciences. The study was planned to assess the students' knowledge of HIV/AIDS and its transmission and attitudes about related issues such as ethical obligations, infection control regulations, willingness to treat HIV-positive patients, fear of contracting HIV occupationally, and feelings about HIV-positive patients.

METHODOLOGY

This cross-sectional survey was conducted from August to December 2015 at Dow Dental College, Dow University of Health Sciences Karachi on all dental students who were enrolled in Dow Dental College, Dow University of Health Sciences Karachi in the academic year 2015-2016. The survey instrument was a self-administered anonymous questionnaire in the English language. The study included a convenience sample comprising dental students of all basic and clinical year (1, 2 3, 4 professional years and house officers) Permission for study was also taken from Dean of Dentistry of Dental Faculty of Dow University of Health Sciences. The purpose of the study was explained clearly and, a written consent was obtained from the students. All the questions were anonymous, participant's voluntary took part in the study, and consent was taken from them and no incentive was given for completing the survey. The questionnaire was made up of four parts.

1. Part I focused on the socio-demographic characteristics

of the respondents, including age gender and education level. 2. Part II includes close-ended questions related to knowledge and awareness of HIV/AIDS.

3. Part III contained questions about the attitude towards the willingness to treat HIV/AIDS patients, stigma and discrimination against HIV/AIDS patients.

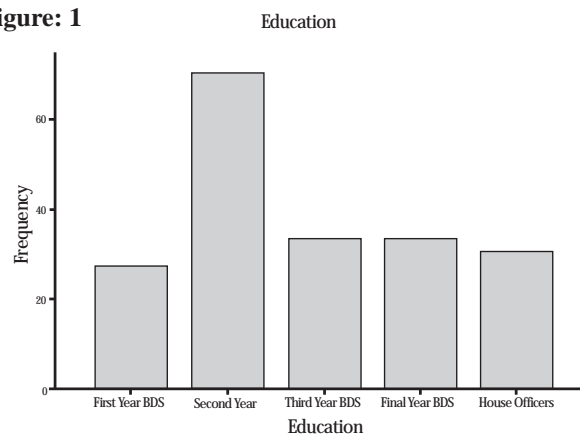
The answer to each question about attitude was rated on a five point Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree).

SPSS software version 17.0 was used for statistical analysis. Frequency and percentages were used to describe gender, level of education. The descriptive indices such as percentages were used to express the knowledge level among the students. Independents t test was used to assess attitude and stigma of the students and house officers regarding HIV/AIDS.

RESULTS

Out of 200 students who were sent the survey, a total of one ninety three completed the survey. Therefore the respond rate was 96.5% .These participants were from first, second, third, final professional year and house officers (Figure 1)

Figure: 1



Knowledge of Dental Students regarding HIV/AIDS: Table 1

On question 1 (HIV is same as AIDS), majority of students have inadequate knowledge and were not aware of the fact that HIV is same as AIDS.

Regarding question 2 (saliva act as a vehicle of transmission), students from all the professional years and house officers have enough knowledge that saliva can act as vehicle of transmission.

For question 3 (needle stick injury can transmit AIDS/HIV), all the students and House officers have remarkable knowledge.

Regarding question 4 (Aerosol from hand piece can cause HIV) in adequate knowledge were found among first

Table 1: Knowledge among Dental Students Regarding HIV/AIDS

Knowledge and awareness of HIV/AIDS	First year (%)			Second year (%)			Third year (%)			Final year (%)			House officer (%)		
	C	IC	DN	C	IC	DN	C	IC	DN	C	IC	DN	C	IC	DN
HIV is the same as AIDS	29.6	70.4	0	41.4	55.7	2.9	18.2	81.8	0	3	97	0	60	40	0
Saliva can be vehicle of transmission of HIV infection	81.5	18.5	0	77.1	18.6	4.3	54.5	45.5	0	18.2	15.2	66.7	63.3	30	6.7
Needle stick injury can transmit HIV virus	93.6	3.7	0	94.3	2.9	2.9	81.8	9.1	0	93.9	3	0	96.7	3.3	0
Aerosols from hand piece can cause HIV transmission	29.6	25.9	44.4	41.4	22.9	37.5	54.5	36.4	9.1	87.9	12.1	0	70	6.7	23.3
Dental and dental auxiliary are more prone for infection	37.0	3.7	59.3	51.4	8.6	40.0	84.8	15.2	.000	33.3	66.7	0	76.7	13.3	10
Treatment of HIV/AIDS require special dental clinics	40.7	33.3	25.9	57.1	30.0	12.9	63.6	36.4	0	39.4	36.4	12.2	66.7	33.3	0
HIV/AIDS patient can be suspected of oral manifestations	51.9	18.5	29.6	52.9	5.7	41.4	100	0	0	69.7	12.1	18.2	83.3	6.7	10
Sharing a tooth brush who has HIV/AIDS can cause HIV/AIDS	82.5	11.1	3.7	77.1	17.1	5.7	84.8	15.2	0	100	0	0	70	30	0

C=Correct, IC=Incorrect, DN=Don't Know

students but second, third, final year students and house officers present sufficient knowledge.

For question 5 (Dental and dental auxiliary are more prone) Inadequate knowledge were found among first year and second year students.

Regarding question 6 (Treatment of HIV/AIDS require special dental clinics) insignificant knowledge were obtained from first year and second year students.

On question 7 (HIV/AIDS patient can be suspected of oral manifestations) inadequate knowledge was observed among first year and second year students.

For question 8 (Sharing a tooth brush who has HIV/AIDS can cause HIV/AIDS) all the students have the adequate knowledge that AIDS/HIV can be transmitted if a person used toothbrush of AIDS/HIV patients.

Attitude of Dental students to treat HIV/AIDS patients: Table 2

On question 1 (One can safely treat HIV patients) when first year students compared with second year, third year and final year students highly insignificant results were found among all the students. (Independent t test were used to assess attitude of the students).

On question 2 (It is my moral responsibility to treat HIV/AIDS patient) significant differences were found among the attitude of the students of the first year when compared with the students of third year. Second year students when compared with third year, final year and house officers, it was found that statistically significant differences were found in attitude of third year students. All these students have negative attitude towards realization that this is their moral responsibility as health care staff to treat HIV patients.

On question 3 (Patients with HIV can lead normal life)

Table 2: Attitude of Dental Students to Treat HIV/AIDS Patients

STUDENTS	One can safely treat HIV patients		It is my moral responsibility to treat HIV/AIDS patient		Patients with HIV can lead normal life		I will treat HIV patients for my electives	
	Mean(SD)	P VALUE	Mean(SD)	P VALUE	Mean(SD)	P VALUE	Mean(SD)	P VALUE
1 st year(mean.sd)	2.52(1.087)		1.48(.753)		2.59(.931)		2.63(1.182)	
2 nd year(mean.sd)	2.43(1.187)	.031	2.43(1.187)	.390	2.74(1.32)	.004	2.71(1.276)	0.766
	1.88(1.686)	.055	1.88(1.386)	.012	2.59(.931)	.254	2.06(1.321)	0.087
	2.52(1.087)	.031	1.91(1.042)	.132	2.73(.977)	.589	3.21(1.386)	0.089
	2.00(1.017)	.068	1.73(.868)	.961	2.77(1.223)	.032	2.87(1.137)	0.444
2 nd year(mean.sd)	2.43(1.187)		1.77(.966)		2.74(1.326)		2.71(1.276)	
	1.88(1.386)	.040	1.09(3.84)	.000	3.24(1.458)	0.087	2.06(1.321)	0.018
	1.91(1.042)	.034	1.52(.566)	.971	2.73(.977)	0.952	3.21(1.386)	0.075
3 rd year(mean.sd)	2.00(1.017)	.088	1.73(.868)	.383	2.77(1.223)	0.933	2.87(1.137)	0.573
	1.88(1.386)		1.09(.584)		3.24(1.458)		2.06(1.321)	
4 th HO	1.91(1.042)	.920	1.52(.566)	.389	2.73(.977)	.097	3.21(1.386)	0.001
	2.00(1.017)	.696	1.73(.868)	.025	2.77(1.223)	0.168	2.87(1.137)	0.012
4 th year(mean.sd)	1.91(1.042)		1.52(.566)		2.73(0.977)		3.21(1.386)	
	2.00(1.017)	.728	1.73(.868)	.325	2.77(1.223)	0.888	2.87(1.137)	.287

among all the students only second year students and house officers have the attitude that the patient with AIDS/HIV cannot lead to normal life.

On question 4 (I will treat HIV patients for my electives) significant results were found regarding the question among students of second year when compared with third year students and third year students when compared to final year and house officers.

Stigma and Discrimination of Dental Students against HIV/AIDS patients: Table 3

On question 1 (If my colleague or assistant is HIV infected I will stop working with him or her) when stigma

Table 3: Stigma and Discrimination of Dental Students against HIV/AIDS

STUDENTS	If my colleague or assistant is HIV infected I will stop working with him or her		If a member of your family became ill with HIV, the virus that causes AIDS, would you want it to remain secret?		DENTISTS WITH HIV/AIDS SHOULD ALLOWED TO PRACTISE		SHARE A MEAL WITH AIDS/HIV PATIENTS	
	Mean(SD)	P VALUE	Mean(SD)	P VALUE	Mean(SD)	P VALUE	Mean(SD)	P VALUE
1 st year(mean.sd)	4.00(1.000)		3.41(1.047)		3.33(1.240)		3.41(1.010)	
2 nd year(mean.sd)	3.84(1.30)	.574	2.86(1.447)	.075	3.09(1.359)	.412	3.03(1.404)	.204
	3.70(1.511)	.384	2.94(1.784)	.234	2.39(1.248)	.005	2.67(1.190)	.013
	2.24(1.226)	.000	2.39(1.54)	.005	3.15(1.503)	.616	2.88(1.219)	.077
	1.13(.730)	.000	1.13(.730)	.000	1.13(0.730)	.000	1.13(.730)	.000
2 nd year(mean.sd)	3.84(1.30)		2.86(1.447)		3.09(1.359)		3.03(1.404)	
	3.70(1.551)	.619	2.94(1.784)	.804	2.39(1.248)	.015	2.67(1.190)	.204
	2.24(1.22)	.000	2.39(1.54)	.141	3.15(1.503)	.825	2.88(1.219)	.600
3 rd year(mean.sd)	1.13(.730)	.000	1.13(.730)	.000	1.13(0.730)	.000	1.13(.730)	.000
	3.70(1.551)		2.94(1.784)		2.39(1.248)		2.67(1.190)	
4 th HO	2.24(1.226)	.000	2.39(1.54)	.188	3.15(1.503)	.029	2.88(1.219)	.477
	1.13(.730)	.000	1.13(.730)	.000	1.13(.730)	.000	1.13(.730)	.000
4 th year(mean.sd)	1.13(.730)	.000	2.39(1.540)		3.15(1.503)		2.88(1.219)	
HO			1.13(.730)	.000	1.13(.730)	.000	1.13(.730)	.000

regarding the question is compared between first year students with the rest of professional years it was found that significant difference was observed in fourth year students and house officers. When second year students were compared with other students and house officers significant differences were observed in the stigmatization of final year and house officers.

On question 2 (If a member of your family became ill with HIV, the virus that causes AIDS, would you want it to remain secret?) Highly insignificant results were obtained in this regard as only house officers among all the students were maintained the secrecy.

On question 3 (Dentists with HIV/AIDS should allowed to practice). According to house officers only in comparison with all other students that dentists should allowed to practice if he/she is suffered from AIDS/IV.

On question 4 (Share a meal with AIDS/HIV patients) highly insignificant results were obtained in this regard as only house officers among all the students were responded that they can share meal with AIDS/HIV patients.

DISCUSSION

This study investigated dental students' knowledge of AIDS/HIV and attitude towards infected patients and stigma to treat these infected patients. Dental and Medical workers are at high occupational risk during their professional training period for developing these infections. In this regard a survey has been conducted on dental students about different parts of knowledge and awareness of HIV/AIDS.

In our survey, excellent knowledge was observed about HIV/AIDS patients, but unfortunately this knowledge was not meaningfully related with the willingness to treat HIV/AIDS patients. In a study conducted on 174 dental students from Japan, the majority of respondents have more than average knowledge about HIV/AIDS. Regarding attitude to treat HIV-positive and negative patients 22% percent reported that they would have the same attitude toward treating both.¹⁷ Where as in this study it was found that there were no difference in the attitude of the students to treat HIV/AIDS patients from first year to final year.

During dental operation procedures it is possible to transmit HIV/AIDS.¹⁶ HIV/AIDS can be transmitted through saliva or blood contaminated instruments and equipments. It can also be transmitted by inhalation of aerosol emitted from hand pieces.¹⁸ However, in previous studies very few students have the knowledge HIV/AIDS can transmit through inhalation of aerosol emitted from hand pieces. The results were similar with our study as majority of first year students don't know that HIV/AIDS can be transmitted through aerosol inhalation. But their results were in contrast with results of our study as second, third final year students and house

officers have the enough knowledge in this context.^{18,19} In one previous study, it was found that more than half of the students participants believed that there is no such route of transmission exist.²⁰ There is statistically significant difference in the knowledge of the participants when asked that aerosols from hand piece can cause HIV transmission among first, second and final year students. Statistically significant results were observed in the present study regarding concerns that aerosols from hand piece can cause HIV transmission. According to CDC guidelines²¹ dental health care personnel should position patients properly and make appropriate use of barriers e.g., surgical masks, face shields, high-volume evacuators, rubber dams and gowns. This will prevent the dentists and assistant from contact with splashes and spatter. As these splashes and spatter creates a visible spray that is released from rotary surgical instruments and dental equipments e.g air-water syringes, handpieces and ultrasonic scalers. This spray contains mainly a large-particle spatter of blood, microorganisms, aerosol, water, debris and saliva.

Saliva can be a vehicle for the transmission of AIDS/HIV. In a study conducted by Askarian M at al, some students (24.5%) agreed that saliva can be a vehicle for the transmission. However, majority of students 72.5 % declared it is possible that a CPR giving to HIV/AIDS patients will might transmit the infection.¹⁴ In our study, first, second, final year and house officers did have the sound knowledge in this context.

According to Mostafa Sadeghi et al²² they found in their study that most of the students were aware of the major oral manifestations of AIDS: Kaposi's sarcoma, major aphthous and oral candidiasis similar results were found in the current study.

Similar results were observed in a study conducted in Peshwar Pakistan by H Khan at el²³ who concluded that there is a satisfactory awareness among the medical students entering into the profession. An acceptable difference was recorded among clinical, preclinical and 2 non-clinical students regarding their knowledge and attitude about HIV and AIDS.

Key factor in transmitting these contagious infections are contaminated needles. In our part of the world one of the significant modes of transmitting hepatitis B and C virus is through these needles pricks.^{24,25} The current study analyzed that majority of the students among all the professional years (1st, 2nd, 3rd and 4th) and house officers knew about needle safety. It is mandatory that Students should give the training in an environment where stressed should on both patient safety and on personal safety during their clinical training.^{26,27}

The results of this study found that dental students at Dow Dental College have positive attitudes towards treating HIV/AIDS patients. In this study, the general willingness to

treat HIV positive patients when first year compared with second year, third year and final year authors found that no significant difference in attitude was found among students in comparison with the results from the study of Hu et al.²⁸ However, our results regarding the attitude towards treating HIV/AIDS patients were not positive in comparison with the study conducted by Kuthy et al²⁹ and Seacat and Inglehart.³⁰

In the current study, there was a considerable negative attitude of the students towards AIDS and HIV positive patients. Almost about more than half of the students did not want to treat patients having HIV/AIDS as their electives. The same results were found by Brook.¹¹ In the study conducted in Grecian schools by Merakou et al found that only a small percentage of the students (5%) stated that they would reject their friends infected with HIV/AIDS.²¹ Approximately half of students in our study expressed that an infected student should not be allowed to enter an ordinary school. Similarly results were reported in study conducted by Agrawal et al in India.¹³ These are serious issues regarding attitude towards AIDS/HIV because of lack of awareness and education and they need to be addressed. Similar results were seen in a study conducted by FD Shaikh et al¹¹ in which researchers feel that it is essential to change the attitudes of medical students towards AIDS/HIV patients. There seems to be a high rate of anxiety and bias toward HIV-infected persons and the disease.

Statistically significant association should be observed regarding attitude towards their responsibility to treat patients having HIV/AIDS. Prashant B Patil et al³¹ in their study by using a five-point Likert scale found that students showed overall negative attitude towards HIV/AIDS patients. Similar results were found in the current study that students have negative attitude to treat HIV/AIDS patients. The finding differs from previous researchers, who found students having positive attitude about HIV/AIDS.^{22,32-34}

Stigma is frequently related with human rights and discrimination. According to Erving Goffman³⁵ stigma is an undesirable or discrediting attribute that an individual possesses, thus reducing that individual's status in the eyes of society. In our study when asked the participants that would they stop working with colleague if he/she had HIV/AIDS, majority of them replied affirmative to it. Parker and Aggleton et al, convincingly argue that stigma and stigmatization are central to establishing the prevailing social order as they function at the connection between power, culture, and difference.³⁶

The current study has numerous limitations. First, in our religious culture, the investigators are limited in asking questions concerning students' sexual beliefs and behaviors. Second, the honesty of students' responses may be questioned

due to self-report nature of the questionnaire. Third, the results of the study may not be applicable to adolescents who are not attending dental school. They only generalized to similar populations of students.

CONCLUSION

Under the limitations of the study following conclusion was drawn: There was insufficient knowledge among first and second year students. Among third, final year students and house officer's majority of them have sufficient knowledge regarding HIV/AIDS infection but majority of them were not willing to treat HBV/AIDS patients. Dental students appear to have a more negative attitude towards treating HIV/AIDS patients. Refusal to treat patients with HIV was primarily associated with lack of ethical responsibility and fears related to cross-infection.

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CONFLICT OF INTEREST

None declared.

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