

*Full Length Research Paper*

# Comparison of knowledge, attitudes and behaviour of dental and nursing students towards HIV/AIDS

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## Abstract

HIV/AIDS, a social disease took pandemic form within a short span of time affecting 40 million people throughout the globe. Adults of the developing countries are the main victim of the disease contributing to 95% of the total world's HIV infection and 90% death. In the absence of effective cure to this disease, it can be very easily prevented by IEC (information, education, communication) activities regarding behavioral changes. With increasing numbers of HIV/AIDS patients, dentists and nurses taking care of these patients should have sufficient knowledge of the disease, and their attitude and behavior should be proper. In our study, we aimed to examine the level of knowledge about HIV/AIDS among dental students including UG- PG and nursing students and to investigate attitudes and behavior, and differences of knowledge between dental and nursing students. This study comprised of a total 300 dental and nursing students of our university'. A questionnaire was administered to all the students, 150 from dental (undergraduates and post graduates) 150 from nursing. Then we generated knowledge and attitude scores from the student responses. All the students in our sample had heard about AIDS. Thirty percent (30%) of dental students thought that treatment is present for AIDS while ten percent (10%) of dental students thought that cure is present for AIDS. Forty percent (40%) of nursing students thought that treatment is present for AIDS and five percent (5%) of nursing students thought that cure is present for AIDS. In our study 98.9% answered unprotected sex and blood products is major cause of HIV transmission. Fifteen percent (15.8%) reported casual kissing as a route of transmission and 2.5% answered that food sharing can be a mode of HIV transmission. Both dental and nursing students had very good attitude regarding the known patient of HIV/AIDS. About ninety five percent (95%) of students said that there'll be no change in their attitude when they knew that there is a friend with HIV/AIDS. Finally when we compare the knowledge between dental and nursing students, the results showed that dental students have greater knowledge than nursing student with the significant p value of 0.026. The knowledge of the study group was quite satisfactory for most of the variables like vulnerable age, modes of transmission, sexual and behavioral practices and common symptoms of the disease. However, misconceptions were also there among both dental and nursing students.

**Keywords:** HIV/AIDS, Knowledge, Attitude, Behaviour, Dentistry, Nursing.

## INTRODUCTION

Infection with human immunodeficiency virus type 1 (HIV-1) and the resultant acquired immune deficiency syndrome

(AIDS) is a major public health challenge of modern times. (Ozge et al., 2010) The HIV/AIDS pandemic continues its expansion across the globe with approximately 1600 new cases occurring every day. More than 95% of all HIV infected people now live with developing world Africa alone is home to 70% of the HIV infected people and 90% of all deaths due to HIV/AIDS largely among the adults have occurred in the developing

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world (Singh et al., 2007). Oral health issues have been identified as a significant health issue in HIV-infected individuals. Oral manifestations of HIV/AIDS, such as thrush, warts, periodontal diseases and rapidly progressing dental decay, occur in a very high percentage of people living with HIV/AIDS (Azodo et al., 2007). HIV/AIDS is a chronic disease because the virions contain an enzyme that enables the integration of the viral DNA into the host cell genome where it can persist. All HIV infected people that express symptoms that indicate AIDS will be killed by the disease. The human immunodeficiency virus weakens the host immune system and with a weakened immune system the host is then more susceptible to opportunistic infections and other pathogens, e.g. tuberculosis and malaria (Södertörn University College School of Life Sciences Biology Programme Bachelor's Thesis 15 ECTS, Provide year).

So far, no cure or vaccine has been discovered that could aid in the eradication of HIV/AIDS. The therapies that do exist are antiretroviral therapies. The retroviral treatment does not eradicate the virus; it merely inhibits the virions from replicating. Due to the high replication rate and mutation rate of the virus, resistance towards the anti retroviral treatment can occur (Södertörn University College School of Life Sciences Biology Programme Bachelor's Thesis 15 ECTS, 2009)

Physicians, dentists and nurses make up the bulk of healthcare workers. Knowledge, attitude and behaviour of the students of these professions about infectious diseases like HIV/AIDS is very important as they will take care of HIV/AIDS patients in the future (Oboro et al., 2010).

## AIM AND OBJECTIVES

- ✓ To know what are the levels of knowledge about HIV/AIDS among dental and nursing student
- ✓ To investigate how will their behaviours and attitudes be about HIV/AIDS patients?
- ✓ To know is there any differences in the knowledge, behaviour and attitudes related with HIV/AIDS between the dental and nursing students
- ✓ To know do the students of these university consider HIV/AIDS as an important disease for India and for the world

## MATERIAL AND METHOD

### Study group

This study comprised dental and nursing students of our university'. A questionnaire was administered to a total of 300 students, 150 from dental (undergraduates and post

graduates) 150 from nursing and all students were accessed.

### Data collection

During data collection, questionnaires about knowledge and attitude were asked to be filled by the students. The students answered the questions under the supervision of the person responsible for the questionnaire in the classroom. The questionnaire consisted of three parts. First part consisted of 10 questions with single choices; second part consisted of 20 questions with multiple choices. In the first part and second part, 30 questions were asked to determine the level of knowledge about HIV/AIDS among students. Third part consisted of questions regarding attitude of dental and nursing students regarding HIV. The correct response was scored as one and incorrect or no responses as zero. The highest possible score was 20. Grading of knowledge was 1-4 – score 1 (Average), 4-8- score 2 (Good), 8-10- score 3 (Excellent) for single choice answers and 0-8 (Average), 8-16 (good), 16-20 (excellent) for multiple choice answers.

Participation was voluntary, participants were educated on the aim of the survey, assured of strict confidentiality of their responses, and informed consent was obtained prior to questionnaire administration. The survey was undertaken between March 2011 and June 2011. Data analysis was done by t test and chi square test.

## RESULTS

### Sample Characteristics

300 students participated in the survey, of whom 150 were dental and 150 were nursing students. All the students were taken from our university (Tables 1 and 2).

### Knowledge of HIV/AIDS

The analysis of data revealed that most of the students had an average to excellent knowledge about most questions pertaining to HIV/AIDS. The total HIV knowledge score ranged from 0-10 in the PART A questionnaire of single choice and 0 - 20 of multiple choice.

The host defense cells primarily affected in AIDS were CD4<sup>+</sup> T lymphocytes according to ninety eight point six percent (98.6%) of dental students and ninety eight percent (98%) of nursing student.

Sixty percent (60%) of dental students thought that both treatment and cure is present for AIDS. Thirty percent (30%) of dental students thought that treatment is

**Table 1.** Group Statistics

	Stream	N	Mean	Std. Deviation	Std. Error Mean
<b>A</b>	<b>Dental</b>	150	7.10	1.263	.103
	<b>Nursing</b>	150	7.46	1.566	.128
<b>B</b>	<b>Dental</b>	150	13.26	3.735	.305
	<b>Nursing</b>	150	11.69	4.094	.334
<b>Total A + Total B</b>	<b>Dental</b>	150	20.36	4.397	.359
	<b>Nursing</b>	150	19.15	4.903	.400

**Table 2.** Independent test

	t-test for Equality of Means					
	t	Df	P-Value	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
						Lower Upper
<b>A</b>	-2.192	298	.029*	-.360	.164	-.683 -.037
<b>B</b>	3.462	298	.001**	1.567	.453	.676 2.457
<b>Total A+Total B</b>	2.244	298	.026*	1.207	.538	.148 2.265

Table 1 and table 2 showed that in part A questions nursing students have greater knowledge with the significant p value of 0.029 and in part B questions dental students have greater knowledge with a significant p value of 0.001. Interestingly when we combined the both questionnaire, the results showed that overall dental students have greater knowledge than nursing student with the significant p value of 0.026.

present for AIDS while ten percent (10%) of dental students thought that cure is present for AIDS. Fifty percent (50%) of nursing students thought that both treatment and cure is present for AIDS. Forty percent (40%) of nursing students thought that treatment is present for AIDS and five percent (5%) of nursing students thought that cure is present for AIDS. Interestingly five percent (5%) gave the answer that neither treatment nor cure is present for HIV.

Eighty percent (80%) of dental and nursing student thought that HIV contamination risk by penetration of a needle contaminated by a well-known HIV+ patient is 100%. Fifteen percent (15%) of students thought that it is 10%, only five percent (5%) knew the actual answer that it is 0.03%.

Fifty five percent (55%) of dental students gave the answer that HIV testing is done by ELISA, forty five percent (45%) thought that it is done by immunohistochemistry while sixty percent (60%) of nursing students gave the answer that HIV testing is

done by ELISA and only forty percent (40%) thought that it is done by immunohistochemistry

The most common symptom as stated by majority of the students ninety percent (90%) was repeated fever, weight loss and least common symptom was enlargement of glands forty seven (47%) percent.

Knowledge of lesions associated with HIV/AIDS - the association of Kaposi sarcoma, oral candidiasis, and oral hairy leukoplakia with HIV was known by higher Proportion of dental students compared nursing students. Approximately one-third of dental students thought that Kaposi sarcoma is exclusive to HIV/AIDS.

Almost seventy percent (70%) of dental students knew that there is a difference in HIV and AIDS, however eighty five percent (85%) of nursing students were aware of the same.

Both dental and nursing students responded well and had full knowledge of the red ribbon as the internationally recognized symbol for AIDS/HIV awareness.

About seventy percent (70%) of dental students knew

**Table 3.** Group statistics

Stream		UG/PG	N	Mean	Std. Deviation	Std. Error Mean
Dental	A	UG	125	7.05	1.300	.116
		PG	25	7.36	1.036	.207
	B	UG	125	12.82	3.793	.339
		PG	25	15.44	2.518	.504
	Total A+Total B	UG	125	19.87	4.470	.400
		PG	25	22.80	3.055	.611

**Table 4.** Independent samples test

Stream		t-test for Equality of Means						
		T	df	P-VALUE	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Dental	A	-1.129	148	.261	-.312	.276	-.858	.234
	B	-3.301	148	.001**	-2.616	.792	-4.182	-1.050
	Total A+Total B	-3.128	148	.002**	-2.928	.936	-4.778	-1.078

Table 3 and 4 show that postgraduates in dental have greater knowledge about HIV /AIDS than the undergraduates with the significant p value of 0.002.

about the drug regime for AIDS and almost eighty percent(80%) of nursing students had knowledge for the same.

Mode of transmission (98.9%) answered unprotected sex and blood products is major cause of HIV transmission.(97.8%) sharing of sharp objects(needle) ,(96.6%)mother to child transmission,( 95.5%), body fluids (96.6%) unsterilized instrument.

Fifteen percent (15.8%) reported casual kissing as a route of transmission and 2.5% answered that food sharing can be a mode of HIV transmission.

When we asked the students about Protocol used for post exposure prophylaxis approx. Eighty percent (80%) of dental students answered that they should go for prompt reporting and wash the hand with soap and water while the seventy percent (70%) nursing students thought that they should go for immediate blood investigation.

Generally, the respondents' attitudes towards people living with HIV and AIDS were found to be accepting and positive. Table 3 illustrates that nobody held discriminating attitudes towards people with HIV/AIDS – sixty percent (60%) voiced strong willingness to live in the same community with HIV/AIDS people.

Most of the student's approximately ninety percent (90%)of total dental and nursing want to receive education in the same class-room with HIV/AIDS friends and stated that they would treat patients with HIV/AIDS in the future.

Both dental and nursing students had very good attitude regarding the known patient of HIV/AIDS. About ninety five percent (95%) of students said that there'll be no change in their attitude when they knew that there is a friend with HIV/AIDS

## DISCUSSION

The knowledge and attitude of health workers in relation to HIV/AIDS is an important determinant for their willingness to care and the quality of the care they will render to AIDS patients. Insufficient knowledge might cause negative attitude towards HIV-positive patients. The link between increased knowledge of the disease and improved attitudes towards patients with HIV/AIDS has been documented.HIV was first recognized in 1981 in Los Angeles, New York city and Sanfrancisco. Since

1981, AIDS has reached almost every part of the world. HIV infection was first detected in India in 1986 among prostitutes (Manoj et al., 2009). With an alarming increase of HIV/AIDS in developing countries (estimated prevalence in India-0.91%) there needs to be an increase knowledge and a positive attitude regarding HIV/AIDS (Raja et al., 2006).

In our study, it was found that knowledge regarding HIV/AIDS is deficient in developing countries like India. Increased knowledge may cause reduction in fear in caring for HIV infected patients. There are studies assessing knowledge and attitude of HIV/AIDS among oral health care workers in North India but no such study comparing the dental and nursing students on knowledge and attitude has been conducted so far. So we conducted this present survey and the aim was to assess HIV-related knowledge and attitude among dental and nursing students in the North Indian population.

HIV/AIDS has become one of the most serious health problems in the world.<sup>1</sup> Modes of transmission of HIV-1 infection may be by occupational exposure in the hospital setting as a result of needle stick injury, by transmission during surgery, in outpatient dental circumstances, or in other instances in which transmission-enabling contact may occur.<sup>2</sup>

In our study, the most common factor which was considered to be the mode of transmission of HIV/AIDS was sexual contact. Though the literature suggested the most common mode of transmission by needle stick injury. In our study it was concluded that most of dental and nursing students had incomplete knowledge regarding mode of transmission by needle stick injury, so dental and nursing education programs of dentists, and nurses who are at risk of transmission by needle stick injury, knowledge of HIV/AIDS should be complete, and positive attitudes and behaviours should be encouraged (Ozge et al., 2010).

Oral health care and access to dental services have consistently remained an unmet need of people living with HIV/AIDS because of poverty and discrimination by dental personnel who express unwillingness to treat them (Azodo et al., 2007).

In the present study, the dental and nursing personnel had a positive attitude towards treating HIV/AIDS patients. Dentists and other dental personnel have a professional and ethical responsibility to provide treatment to patients with HIV/AIDS; since oral lesions such as hairy leukoplakia, candidiasis and Kaposi's sarcoma, are commonly found in HIV-infected patients. HIV/AIDS patients are not also immune against other conditions routinely seen in dental patients (Oboro et al., 2010).

This reflects changing attitude and gaining of acceptance of HIV patients in regular dental and nursing cases.

HIV/AIDS is crucial for health care professionals because of the increasing prevalence of these infections. Occupational risk of these infections is well known in medical and dental workers especially during the professional training period. This accounts for one of the major reason for delivering knowledge about preventive measures and universal precautions (Qudsia et al., 2005). Adequate policies on the use of the Internet should be made since risky sexual practices among adolescents can now be linked to the Internet. (Hidayathulla and Shankar, 2011; Venu et al., 2011).

Students regarded blood transfusion, syringes and needles to be an important factor for transmission of these deadly infections in this study. Studies (Simonsen L, Kane A, Lloyd J, Zaffran M, Kane M., Sakowski P., Berry A.J.) suggest that accidental needle sticks are associated with the greatest risk for occupational transmission of blood-borne pathogens such as Hepatitis B and C viruses and HIV.

More than half of the nursing students in our study did not know about post exposure prophylaxis for HIV/AIDS, which mimics the results observed in an Indian study conducted by Qudsia Anjum, Hemna Siddiqui et al in Karachi in July 2005 (Qudsia et al., 2005). Though there have been a huge influx of HIV/AIDS patients, but the knowledge regarding post exposure prophylaxis has remained unsatisfactory.

There should be CDE/CME programs conducted for the undergraduate students so that they can get a common platform to exchange their views regarding knowledge, attitude and practice of various diseases to overcome the practical problems. Each dental institution should be attached to medical centre where HIV patients are treated so that dental students can overcome the fear of treating HIV/AIDS patient. Because of certain gaps in knowledge and infection control practices among responders a curriculum focussing on the management of HIV/AIDS should be included (Hidayathulla and Shankar, 2011; Venu et al., 2011).

Results from a study in West Bengal revealed subjects of any category of people in general were not aware and shows negative attitude towards AIDS. Significant differences were present among our educated group of categories which had awareness and a positive attitude towards AIDS (Hamzullah et al., 2008).

We, as health professionals are well aware of the dangers of the contaminated needles and the deadly diseases. The main information sources were T.V, educational booklets and own readings from books and magazines are effective sources for education of the students (Zahra and Narges, 2008).

Limitations of the study;

1. Sample size taken was too small
2. The sample was limited to a single area.
3. The participation was voluntary.

## SUMMARY

In conclusion, the importance of HIV/AIDS as a public health problem all over the world and in our country should be emphasized more, and awareness of all humanity should be augmented. In undergraduate and postgraduate education programs of physicians, dentists, and nurses who are at risk of transmission and are responsible for the care and treatment of the HIV carriers, knowledge of HIV/AIDS should be complete, and positive attitudes and behaviours should be encouraged.

Insufficient education is obvious among all two occupational groups in our study more in the nursing group. For this reason, we believe that, in addition to lectures increasing the level of knowledge in education programs of schools training health care providers, it would be useful to rearrange training in order to bring about positive changes in their attitudes and behaviors. It is obvious that a true understanding of the disease is lacking. A concerted effort should be made to change the uninformed perception amongst dental students and nursing by implementing curriculums that will enhance their knowledge of HIV/AIDS starting from preclinical stage which will be sustained in the clinical level (Hidayathulla and Shankar, 2011).

It is obvious that having adequate knowledge about HIV/AIDS enhances confidence in student's ability to manage infected patients. This is a good time to have a peer education program to address self esteem, healthy sexual attitudes, being human-accepting and loving (Xiaodong et al., 2007). A curriculum focusing on the management of HIV/ AIDS, including infectious diseases is recommended (Venu et al., 2011).

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**Questionnaire for study**

Age/sex Under-graduate Student/Post-graduate student

Studying in –Dental/ Nursing Married/Unmarried

1. Is it a:
 

Fungal	Bacterial	Viral	Protozoal	Infection?
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2. Is there a difference in HIV and AIDS?
 

Yes	No
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3. Is treatment present for AIDS/HIV?
 

Yes	No
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4. Is cure present for AIDS/HIV?
 

Yes	No
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5. Drugs given for HIV/AIDS infection are:
  - a. Nucleotide reverse transcriptase inhibitors
  - b. Non Nucleotide reverse transcriptase inhibitors
  - c. Protease inhibitors
  - d. All
6. HIV/AIDS contamination risk by penetration of a needle contaminated by a well-known HIV+ patient is:
  - a. 0.3%
  - b. 5.0%
  - c. 10%
  - d. 100%
7. Following cells are affected in AIDS/HIV:
  - a. CD2
  - b. IF5
  - c. CD4
  - d. IM3
8. HIV/AIDS testing is done by:
  - a. Immunohistochemistry
  - b. ELISA
  - c. CIC
  - d. VECTOR
9. Some of the common symptoms of AIDS/HIV are:
  - a) Repeated fever, loss of weight, persistent diarrhoea
  - b) Enlarged lymph nodes, unusual tiredness
  - c) Fever , weight loss, chest pain
  - d) a and b
10. What has become an internationally recognized symbol for AIDS/HIV awareness?
  - a. A white ribbon
  - b. A red hair band
  - c. A red ribbon
  - d. Smiling

**Part =2** : Please mark any number of answers:

11. People can get AIDS/HIV from:

- a) Blood And Blood Products
- b) Shaking hands with an infected person
- c) Body Fluids
- d) Sexual Transmission
- e) Kissing an infected person
- f) Mother To Child Transmission
- g) Intravenous Drug Use – Needle Sharing
- h) Sharing food together with an infected person

12. AIDS /HIV prevention methods

- a) Not sharing needles
- b) Reducing unnecessary blood transfusions and injections
- c) Using condoms during sexual intercourse
- d) Prevention mother to child transmission
- e) Not donating blood illegally
- f) Not sharing food with people living with HIV or AIDS
- g) Isolating people living with HIV or AIDS

13. Following manifestations may take place in AIDS/HIV patients:

- a. Candidiasis
- b. Kaposi's Sarcoma
- c. Leukoplakia
- d. Pneumonia
- e. Osteopetrosis
- f. Basal Cell Carcinoma
- g. Mumps
- h. Lymphoma
- i. Meningitis
- j. Ulcers
- k. OSMF
- l. Tuberculosis

14. Protocol used for post exposure prophylaxis:

- a) Wash with soap and water
- b) Wash with antiseptic/bleach
- c) Prompt reporting
- d) Post-exposure treatment should begin as soon as possible ( preferably within two hours)
- e) Basic regimen, duration is 4 weeks Zidovudine + Lamivudine Or Lamivudine + Stavudine
- f) Immediate blood investigations

**Part = 3**

15. Have you ever seen an AIDS/HIV patient?

Yes                      No

16. Is it more common in males than females?

Males                      females

17. Are you:

- a. Willing to live with people having HIV/AIDS in the same community
- b. Reluctant to live with people having HIV/AIDS in the same community
- c. Dislike having contact with HIV/AIDS people
- d. Feel empathetic towards people living with HIV and AIDS
- e. In Contact with people living with HIV as before



18. If there is a friend with known HIV/AIDS:

- a. There'll be no change in my attitude
- b. I get away from him/her as soon as possible
- c. I feel pity towards him/her

I will be uncomfortable around him/her

19. I shall agree to be educated in the same classroom with HIV/AIDS patient

Yes                  No

20. I shall treat a patient who's aware he/she has HIV/AIDS

Yes                  No

Consent

I am willing to take part in this survey and give my consent for the same.

Signature

Thank you for participating in this