

## KNOWLEDGE AND ATTITUDES RELATED TO HIV/AIDS AMONG MEDICAL AND ALLIED HEALTH SCIENCES STUDENTS

Abhimanyu Singh Chauhan<sup>1</sup>, Dr. Mohammad Akhtar Hussain<sup>2</sup>, Dr. Sanghamitra Pati<sup>3</sup>, Srinivas Nallala<sup>4</sup>, Jayanti Mishra<sup>5</sup>

<sup>1</sup>Programme Associate, <sup>2</sup>Senior Lecturer, <sup>3</sup>Associate Professor, <sup>4</sup>Assistant Professor Indian Institute of Public Health, Bhubaneswar. <sup>5</sup> Professor, Department of Physiology, Kalinga Institute of Medical Sciences, Bhubaneswar.

### ABSTRACT

**Title:** Knowledge and attitude related to HIV/AIDS among medical and allied health sciences students

**Background:** India estimates third highest number of HIV infections in the world, with about 2.4 million people currently living with HIV/AIDS. Adequately trained and sensitized healthcare professionals can play a vital role in combating this epidemic. Limited studies have explored knowledge and attitudes of medical students relating to HIV/AIDS, particularly in the eastern part of India.

**Methods:** The present cross sectional study explored knowledge and attitudes of first year MBBS, BDS & BPT students of Kalinga Institute of Medical Sciences (KIMS), Bhubaneswar, Odisha on HIV/AIDS using a self-administered questionnaire. Data thus collected were analyzed and relevant statistics were calculated. Knowledge and attitude scores were determined and analysis of variance (ANOVA) test was used to examine the equality between the groups.

**Results:** All students scored low on the overall knowledge scale (<10/15). Specifically, knowledge was low on modes of transmission and treatment. Attitudinal scores in the areas of precautions and need for training on HIV was low for all the three streams. The willingness to treat HIV/AIDS patient was found to be high amongst study participants.

**Conclusion:** There is a need and scope to provide correct and detailed information on HIV/AIDS for new entrants in medical and allied health sciences to help them acquire adequate knowledge and develop appropriate attitudes towards HIV/AIDS.

**Key words:** Awareness, Attitudes, Medical students, Dental students, Physiotherapy students, Odisha

### INTRODUCTION

*Human immune-deficiency virus (HIV)* is a major public health challenge with an estimated 2.24 million persons living with HIV (PLHIV) in India. On the Asian sub-continent, an estimated 4.87 million people were living with HIV in 2009<sup>(1)</sup>. Health education, particularly Information Education & Communication (IEC) and *Behavior Change Communication (BCC)* are the key strategies for controlling this epidemic. In the light of evidence that HIV/AIDS cases are continuously increasing in the developing countries like India, healthcare professionals are required to be adequately trained, so that they can play a vital role in combating this pandemic. Even though it is widely accepted that healthcare professionals play a crucial role in prevention and control of HIV/AIDS, less attention has been given to assess knowledge and attitude of the healthcare professionals.

A study conducted by the Asia Pacific Network of people living with HIV/AIDS (APN+) in the South Asian region (India, Indonesia, Thailand and Philippines) reported stigma & discrimination by healthcare professionals when treating HIV- positive patients. Results of the study revealed that about one sixth of HIV- positive patients were denied treatment<sup>(2)</sup>. Similarly, lack of knowledge about transmission of HIV was observed among the healthcare professionals in private and government hospitals in India. That study had identified serious knowledge gaps among medical practitioners leading to refusal of treatment to persons living with HIV (PLHIV).<sup>3</sup> There are reports of reluctance by dentists to treat patients, including denial of treatment<sup>(4)</sup>. In another study, dentists reported fear of contracting the infection, resistance of support staff and perceived-lack of clinical skills as barriers to treating HIV positives<sup>(5)</sup>. A study on MBBS students has shown certain misconceptions among them such as urine is being potential source of infection and tattooing can spread HIV. About 90% students stressed for HIV testing for patients before admission, 60% were not willing for mouth-to-mouth resuscitation and 40% were unwilling to assist in surgical procedures on HIV/AIDS patients<sup>(6)</sup>.

Students from medical, dental and allied health professions are strategically placed to be sensitized on the factual knowledge pertaining to HIV/AIDS transmission and prevention. It is also necessary that these future healthcare workers should inculcate healthy attitude towards persons living with HIV/AIDS. However, there are limited studies which have explored knowledge and attitudes of healthcare students pertaining to HIV/AIDS, particularly in the eastern part of India. Keeping this in view, a study was conducted to assess the knowledge & attitudes related to HIV/AIDS among medical and allied health sciences students.

### METHODS

The present cross sectional study was conducted out in Kalinga Institute of Medical Sciences, Bhubaneswar, Odisha during January - February 2011. The first year students admitted to Bachelor of Medicine and Bachelor of Surgery (MBBS), Bachelor of Dental Surgery (BDS) and Bachelor of Physiotherapy (BPT) were selected as study participants. The study included all 205 students enrolled into these courses. To assess knowledge and attitudes, a self-administered questionnaire was developed in line with *WHO KABP* questionnaire<sup>(7)</sup>. The questionnaire was pretested and modified. It comprised three sections exploring socio-demographic characteristics, knowledge regarding HIV/AIDS and attitude towards treating HIV-positive patients respectively. The knowledge section had 17 questions about modes of transmission, treatment, risk of acquiring HIV infection (occupational risk), sources of information and whether they had received any training on HIV/AIDS or not. Responses were recorded in terms of "true", "false" or "don't know". The attitude scale consisted of 13 questions on students' attitude, such as willingness to treat HIV-positive persons, ethics while treating the HIV-positive patients, adoption of precautionary measures (using protective attire) and training needs pertaining to HIV/AIDS. Responses were recorded on a six point Likert scale, strongly disagree (=1) to strongly agree (=6). Students were explained in detail regarding the purpose of the study; informed consent was obtained and questionnaires were distributed. Necessary steps were taken to maintain anonymity. Ethical clearance for the study was obtained

Address for Correspondence:

Dr. Mohammad Akhtar Hussain, Senior Lecturer, Indian Institute of Public Health, Bhubaneswar

Email ID: akhtar.hussain@iiphb.org, Contact No : +91-94370-786-30

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from institutional ethical committee. Information thus obtained from the above questionnaire was entered in MS excel spreadsheet and analyzed using SPSS 16.0 version. Results were presented in terms of mean, 95% Confidence Intervals (CI) and percentages. Analysis of Variance (ANOVA) test was used to measure difference between study groups and if F-statistics was found to be statistically significant, post-hoc test was applied further.

**RESULTS**

All the 205 students gave consent to participate in the study with a 100% response rate. Of total study participants, 85 were from MBBS, 60 each from BDS and BPT streams. Thirty percent of the total respondents were females (Figure 1).

The mean age of the study participants was 19 with a range from 17.5 years to 20 years. The source of information about HIV/AIDS was television (92%), family and friends (78%), internet and lecturers (Figure 2). Magazines were the least reported source of information.

The overall knowledge score of the participants on HIV/AIDS was 8.6 ± 2.1 with a range of minimum score 2 to maximum of 14. There was no significant difference between the knowledge scores of male and female participants. Though most of the participants had correct knowledge regarding modes of transmission, asymptomatic nature of infection, tests for detection, at-risk age groups, still they had misconceptions pertaining to availability of vaccine, non-curable nature of the disease, possibility of transmission through saliva (Table 1).

The mean attitudinal score of the study participants was 4.48 ± 1.2. There was a significant difference in attitude among three different streams (Table 2). Attitudinal scores did not differ significantly by gender. Though the felt need for undergoing training on HIV/AIDS was higher among BPT students compared to BDS and MBBS counterparts, it was statistically not significant.

**Table 1.** Knowledge of study participants on HIV/AIDS

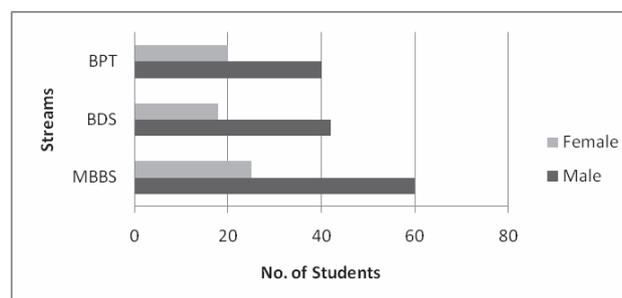
Sl.No	Items	Correct response	Correct Knowledge %		
			MBBS (85)	BDS (60)	BPT (60)
1.	Possibility of transmission via infected blood	True	87.1%	90.0%	90.0%
2.	Possibility of Salivary transmission	False	52.9%	58.3%	78.3%
3.	Females are more likely to be infected with HIV/AIDS than males.	True	52.9%	36.7%	53.3%
4.	People of age group 15-29 years are at a lower risk of contracting HIV/AIDS than those of age group 5-15 years.	False	78.8%	91.7%	86.7%
5.	HIV infected persons can stay asymptomatic for many months or even many years.	True	87.1%	88.3%	63.3%
6.	There is a vaccine to prevent HIV transmission.	False	80.0%	63.3%	51.7%
7.	There is no test to detect HIV in the blood.	False	98.8%	95.0%	95.0%
8.	There is known cure for AIDS.	False	64.7%	56.7%	66.7%
9.	There are no intra-oral signs of HIV infection.	False	37.6%	23.3%	41.7%
10.	Hepatitis B is much more infective than HIV.	True	43.5%	40.0%	30.0%
11.	Latex gloves cannot provide protection against HIV.	False	44.7%	46.7%	38.3%
12.	Double gloves should be worn while treating HIV positive patients.	False	40.0%	30.0%	35.0%
13.	Heat sterilization (autoclaving) cannot kill HIV	False	36.5%	23.3%	20.0%
14.	Dental impressions are need to be washed with disinfectant every time they are removed from any patient.	True	67.1%	70.0%	60.0%
15.	There is more than 1% risk of getting HIV from a needle stick injury.	False	65.2%	46.7%	38.3%

**Table 2.** Knowledge and Attitude Scores of MBBS (N=85), BDS (N=60), BPT (N=60) students.

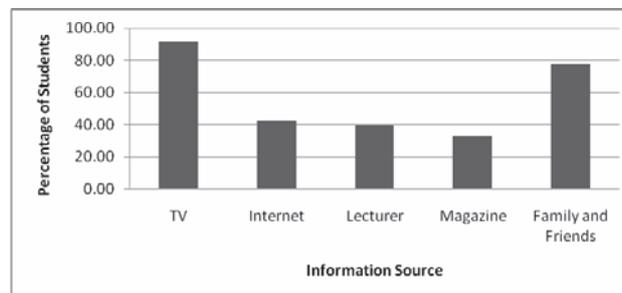
Variable	Mean	95% CI	Significance in post-hoc test (p-value)
<b>KNOWLEDGE</b>			
MBBS	8.89	8.46 - 9.32	
BDS	8.33	7.71 - 8.96	
BPT	8.35	7.75 - 8.85	
<b>ATTITUDE</b>			
<i>Willingness to treat HIV patient</i>			
MBBS	5.12	4.87-5.37	
BDS	4.88	4.71-5.12	
BPT	4.67	4.39-4.81	
<i>Adopting universal precautions during treatment<sup>#</sup></i>			
MBBS	3.74	3.45-4.05	0.000*
BDS	4.73	4.35-5.12	0.001***
BPT	3.73	3.36-4.11	
<i>Ethical responsibility to treat HIV patients<sup>#</sup></i>			
MBBS	5.65	5.46-5.89	0.001**
BDS	5.62	5.37-5.86	0.005***
BPT	4.93	4.50-5.36	
<i>Felt need to undergo training on HIV/AIDS<sup>#</sup></i>			
MBBS	3.96	3.67-4.26	0.058**
BDS	3.93	3.58-4.49	0.065***
BPT	4.50	4.13-4.87	

<sup>#</sup>= ANOVA results shows statistically significant difference (p<0.05)  
 \*= comparison between MBBS & BDS, \*\*= comparison between MBBS & BPT and  
 \*\*\*= comparison between BDS & BPT (all statistical test were calculated at a significance level of 5%)

**Figure 1.** Distribution of study participants according to gender



**Figure 2.** Participants' source of information about HIV/AIDS



**DISCUSSION**

Television was found to be the most important source of information as reported by the participants. Undoubtedly, media has always played a strong role in raising basic awareness on various health issues including HIV/AIDS. Limited use of technology in educational institutions could be one of the possible reasons for internet to be second least utilized source of information.

Inadequate knowledge can act as a barrier to appropriate treatment of HIV positive patients in healthcare settings. There is no vaccine available for prevention of HIV/AIDS; yet 34% students claimed the availability of a vaccine that can protect against HIV. The lack of awareness was more profound among the BPT students (48.3%). These findings are in congruence with that of Chatterjee *et al.*, 2001<sup>(8)</sup>. Correct knowledge about the non-curable nature of HIV/AIDS was not known to 35% of MBBS, 43% of BDS and 33% of BPT students. It is evident that knowledge scores are low in the most important component of HIV/AIDS because neither a cure nor a vaccine is available for HIV/AIDS. Similar findings were reported in study exploring knowledge of students regarding HIV/AIDS of a private medical university in Karachi, Pakistan<sup>(9)</sup>.

Lack of adequate knowledge on clinical signs of HIV infection could be one of the possible reasons of many undiagnosed HIV-positive cases. Thirty seven percent of BPT students were unaware of the fact that HIV infected person can stay asymptomatic for many months or even years. More than 60 % of the participants of each group did not know that there were intra-oral signs of HIV infections. More so, 74% of the BDS students were unaware of this fact. Knowledge levels on intra oral signs of HIV were found to be better in a study among dental students of Ahmadabad, India<sup>(10)</sup>.

Regarding precautionary measures, the overall knowledge of all the participants was found to be very low, more than 50% of the participants are unaware of the fact that latex gloves could provide protection against accidental exposure to HIV infection. Because of this knowledge gap, healthcare professionals might refrain from using protective measures while handling HIV cases and they may also avoid treating HIV patients.

Occupational risk of HIV infection is well known in medical and dental workers especially during the professional training period. Among the study subjects, 50% think that there is more than 1% occupational risk of HIV from the needle stick injury. This undue fear of contagion can negatively impact the attitudes and treatment practices of the students.

More than 50% of the study participants do not know that females are at higher risk of contracting HIV/AIDS. Biologically, women are more vulnerable to HIV/AIDS through sexual transmission than their male counterparts. It is understood that all these students would have undergone a basic level teaching on HIV/AIDS and sexual health during their high school and higher secondary education. However, the same is not getting reflected from the responses obtained. This necessitates reviewing of current educational components pertaining to HIV/AIDS and reproductive health during secondary education.

Overall attitudes demonstrated by participants were high towards issues concerning HIV/AIDS. The least positive attitude reported was towards using universal precautions in healthcare settings. The attitude score is low, which might be due to the fact that majority of these students indicated that they had not received any education and training related to HIV/AIDS. This necessitates delivering knowledge about preventive measures and universal precautions to the students. These observations are different from the results of a study conducted in Iran, which reported substantial intolerant attitude towards AIDS and HIV positive patients among general students<sup>(11)</sup>.

This study is first of its kind to be conducted in the state of Odisha to explore knowledge and attitude of the medical and allied health sciences students. However, the results of the study may not be generalized to students of different institutes as it was confined to one medical university. Being cross sectional study, using self administered questionnaire the possibility of information bias cannot be excluded. The questionnaire did not cover socio-demographic factors of participants like family income, religion, caste and nativity which might have an influence on their knowledge and attitude regarding HIV/AIDS.

Knowledge about HIV/AIDS is crucial for health care professionals because of increasing prevalence of this infection. Our study reveals lack of awareness among medical, dental and physiotherapy students entering into the profession. There is a strong need for HIV/AIDS related education from the very beginning of professional education. This can help to improve the student's knowledge and demystify misconceptions, if any. In addition to providing adequate knowledge, the medical colleges and allied health sciences schools must foster an environment that is conducive to the development of appropriate student attitude and behaviour.

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