



## Original Research Article

## Assessment of awareness and knowledge regarding HIV/AIDS among first year MBBS students in a Medical College in Maharashtra India

Bipinchandra Khade<sup>1</sup>, Nisha Yadav<sup>2,\*</sup>, Anurag Yadav<sup>3</sup>

<sup>1</sup>Chirayu Medical College & Hospital, Bhopal, Madhya Pradesh, India

<sup>2</sup>Dept. of Anatomy, U.P. University of Medical Sciences, Etawah, Uttar Pradesh, India

<sup>3</sup>Dept. of Radiology, U.P. University of Medical Sciences, Etawah, Uttar Pradesh, India



## ARTICLE INFO

## Article history:

Received 12-04-2020

Accepted 21-04-2020

Available online 27-06-2020

## Keywords:

Awareness

Knowledge

HIV/AIDS

## ABSTRACT

AIDS is a complex of illnesses caused by HIV. AIDS is the most advanced stage of HIV infection. According to recent reports by NACO, as many as 21.40 lac people are living with HIV (PLHIV) in India. Prevention of new HIV infections continues to be the mainstay of India's national AIDS response. The lack of awareness and misconceptions about HIV/AIDS in the general population is mostly responsible for rapid spread of the disease and also with the social stigma attached with PLHIV in our country. Hence the present study was conducted to assess awareness regarding HIV/AIDS in newly admitted (First Year) medical students.

**Materials and Methods:** This was a cross-sectional study done on 122 First Year MBBS students of Shri Bhausaheb Hire Govt. Medical College, Maharashtra. Data was collected by pretested questionnaires and analyzed using percentage.

**Results:** All students (100%) mentioned unsafe sex and infected blood transfusion as a risk behavior. Most of the respondents believed HIV infection can be transmitted from: HIV infected pregnant woman to her baby (93%), breast feeding (62%), contaminated syringes, needles and razors (98%), tattooing (64%) and IV drug abuse (66%). Students were aware that it does not spread through wearing clothes of HIV-infected persons (92%), mosquito bite (77%), hugging and shaking hands with an infected person (97%), sharing common toilets (81%), sharing common utensils like plates, cups and spoons (84%), saliva (81%), contact with urine (48%) and feces (51%), coughing and sneezing (75%) and sharing a meal (93%). Awareness regarding prevention of HIV/AIDS was also found to be high with percentage of students responding for oral contraceptive pills (84%), IUCD (61%), condoms(98%), health education(99%), avoiding untested blood transfusion(100% boys and 95% girls), use of disposable syringe (85%), avoiding breastfeeding (44%) and use of latex gloves (41%). 82% of respondents are willing to assist with the delivery of a baby born to a mother with HIV/AIDS. All students believed that a separate educational programme for awareness and sensitization towards HIV/AIDS for people engaged in healthcare is needed.

**Conclusion:** The present study shows that the medical students have somewhat better awareness and knowledge regarding HIV/AIDS than the general population. Still, there is a need for specific educational modules for imparting positive attitudes in medical students and healthcare providers in relation to people living with HIV/AIDS.

© 2020 Published by Innovative Publication. This is an open access article under the CC BY-NC license (<https://creativecommons.org/licenses/by-nc/4.0/>)

### 1. Introduction

AIDS, which is also known as Acquired Immunodeficiency Syndrome, is a complex of illnesses caused by a retrovirus

known as human immunodeficiency virus (HIV). HIV destroys the CD4 T lymphocytes (CD4 cells) of the immune system, leaving the body vulnerable to life-threatening infections and cancers. Acquired immunodeficiency syndrome (AIDS) is the most advanced stage of HIV infection. To be diagnosed with AIDS, a person with HIV must have

\* Corresponding author.

E-mail address: [dr.nishayadav@gmail.com](mailto:dr.nishayadav@gmail.com) (N. Yadav).

an AIDS-defining condition or have a CD4 count less than 200 cells/mm<sup>3</sup> (regardless of whether the person has an AIDS-defining condition).<sup>1</sup>

According to an estimation by UNAIDS, since the first cases of HIV were reported more than 35 years ago, 78 million people have become infected with HIV and 35 million have died from AIDS-related illnesses. In 2018, there were 37.9 million [32.7 million–44.0 million] people living with HIV, out of which, 36.2 million [31.3 million–42.0 million] were adults and 1.7 million [1.3 million–2.2 million] were children (<15 years). 79% [67–92%] of all people living with HIV knew their HIV status. About 8.1 million people did not know that they were living with HIV.<sup>2</sup>

This can be easily described as a pandemic of the modern world. India has also been affected by this global pandemic. According to recent reports by National AIDS Control Organization (NACO), there was an estimated 21.40 [15.90 - 28.39] lac people living with HIV (PLHIV) in India. There was an adult (15-49 years) HIV prevalence of 0.22%. Slightly more than two fifths (42%) of the total estimated PLHIV were females. Around 87.58 [36.45 - 172.90] thousand new HIV infections and 69.11 [29.94 - 140.84] thousand AIDS-related deaths occurred in 2017. Meanwhile, an estimated 22,677 [10,927-40,605]<sup>3</sup> pregnant women needed ART to prevent mother-to-child transmission of HIV.<sup>4</sup>

Prevention of new HIV infections continues to be the mainstay of India's national AIDS response and has resulted in significant reductions in HIV incidence. HIV incidence per 1000 uninfected population is estimated to have declined from 0.64 in 1995 to 0.07 in 2017. However, the pace of decline in HIV incidence has been slow of late, dropping from 0.10 in 2010 to 0.07 in 2017.<sup>4</sup>

The most common mode of HIV transmission in India is heterosexual and homosexual intercourse, with commercial sex workers, long distance truck drivers and migrant labour acting as the pool carrying virus from one place to other. An exceptions being North Eastern states where Intravenous (IV) drug abusers are common and the virus spreads due to their use of unsterile syringes and needles. Other less common modes of spread of infection are transfusion of blood and blood products and transplacental transmission.<sup>5</sup>

The lack of awareness and misconceptions about HIV/AIDS in general population is mostly responsible for rapid spread and also with the social stigma attached with PLHIV in our country. Hence the present study was conducted to assess awareness regarding HIV/AIDS in First Year MBBS students. This opportunity was also used to educate and remove misconception about HIV/AIDS.

## 2. Materials and Methods

This was a cross-sectional study done on 122 First Year MBBS students of Shri Bhausaheb Hire Govt. Medical

College, Maharashtra. All the students who were willing to participate were included in the study. Those who were not willing to participate were excluded from study. After taking their informed consent, total of 122 students present on the day of data collection were included in the study. Data was collected by pretested questionnaire and analyzed using percentages.

## 3. Results

**Table 1:** Awareness about HIV/ AIDS

Question	Boys	Girls	Total
Have you ever heard, watched or read about HIV/AIDS in the past?	46(100%)	76(100%)	122(100%)
What is full form of HIV?	31(67%)	43(57%)	74(61%)
What is full form of AIDS?	45(98%)	69(91%)	114(93%)
What is the difference between HIV positive and AIDS?	20(43%)	33(43%)	53(43%)
Which of the following day is celebrated as worlds AIDS day?	36(78%)	52(68%)	88(72%)
Red ribbon is the Symbol of HIV/ AIDS awareness	40(87%)	68(89%)	108(89%)
Following is the mode of acquiring HIV infection	22(48%)	32(42%)	54(44%)
Following is the Causative agent of AIDS	46(100%)	75(99%)	121(99%)

All students (100%) mentioned unsafe sex and infected blood transfusion as a risk behavior. Most of the respondents believed HIV infection can be transmitted from: HIV infected pregnant woman to her baby (93%), breast feeding (62%), contaminated syringes, needles and razors (98%), tattooing (64%) and IV drug abuse (66%).

Students were aware that it does not spread through wearing clothes of HIV-infected persons (92%), mosquito bite (77%), hugging and shaking hands with an infected person (97%), sharing common toilets (81%), sharing common utensils like plates, cups and spoons (84%), saliva (81%), contact with urine (48%) and feces (51%), coughing and sneezing(75%) and sharing a meal (93%).

A number of students were also aware that people of age groups 15-29 years are at a higher risk of contracting HIV/AIDS than those of age group 5-15 years (80%), HIV/AIDS status can be confirmed by a blood test (70%), HIV/AIDS can be cured if diagnosed early(55%), treatment available(40%), HIV infected persons can stay asymptomatic for many months or even many years(96%).

Awareness regarding prevention of HIV/AIDS was also found to be high with percentage of students responding for oral contraceptive pills (84%), IUCD(61%), condoms(98%), health education(99%), avoiding untested blood transfusion(100% boys and 95% girls), use of disposable syringe (85%), avoiding breastfeeding (44%)

**Table 2:** Knowledge about modes of transmission

Question	Answer	Boys			Girls			Total		
		Right	Wrong	Not sure	Right	Wrong	Not Sure	Right	Wrong	Not sure
<b>HIV/AIDS can be transmitted by</b>										
HIV-infected pregnant woman to her baby	Y	44 (96%)	0 (0%)	2 (4%)	69 (91%)	4 (5%)	3 (4%)	113 (93%)	4 (3%)	5 (4%)
Breast feeding	Y	31 (67%)	6 (13%)	9 (20%)	45 (59%)	22 (29%)	9 (12%)	76 (62%)	28 (23%)	18 (15%)
Infected blood transfusion	Y	46 (100%)	0 (0%)	0 (0%)	76 (100%)	0 (0%)	0 (0%)	122 (100%)	0 (0%)	0(0%)
Unsafe Sexual Contacts	Y	46 (100%)	0 (0%)	0 (0%)	76 (100%)	0 (0%)	0 (0%)	122 (100%)	0 (0%)	0 (0%)
Contaminated Syringe, needles & razors	Y	45 (98%)	0 (0%)	1 (2%)	75 (99%)	0 (0%)	1 (1%)	120 (98%)	0 (0%)	2 (2%)
Tattooing	Y	28 (61%)	11 (24%)	7 (15%)	50 (66%)	17 (22%)	9 (12%)	78 (64%)	28 (23%)	16 (13%)
IV drug abuse	Y	30 (65%)	5 (11%)	11 (24%)	50 (66%)	7 (9%)	19 (25%)	80 (66%)	12 (10%)	30 (25%)

**Table 3:** Misconception about modes of transmission

Question	Answer	Boys			Girls			Total		
		Right	Wrong	Not sure	Right	Wrong	Not Sure	Right	Wrong	Not sure
<b>HIV/AIDS can be transmitted by</b>										
Wearing clothes of HIV-infected persons	N	43 (93%)	1 (2%)	2 (4%)	69 (91%)	4 (5%)	3 (4%)	112 (92%)	5 (4%)	5 (4%)
Mosquito bite	N	41 (89%)	4 (9%)	1 (2%)	53 (70%)	10 (13%)	13 (17%)	94 (77%)	14 (11%)	14 (11%)
Hugging and shaking hands with the infected person	N	43 (93%)	2 (4%)	1 (2%)	75 (99%)	1 (1%)	0 (0%)	118 (97%)	3 (2%)	1 (1%)
Sharing common toilets	N	41 (89%)	2 (4%)	3 (7%)	58 (76%)	8 (11%)	10 (13%)	99 (81%)	10 (8%)	13 (11%)
Saliva	N	18 (39%)	24 (52%)	4 (9%)	25 (33%)	39 (51%)	12 (16%)	43 (35%)	63 (52%)	16 (13%)
Sharing common utensils like plates, cups & spoons	N	38 (83%)	3 (7%)	5 (11%)	65 (86%)	7 (9%)	4 (5%)	103 (84%)	10 (8%)	9 (7%)
Contact with urine	N	25 (54%)	5 (11%)	16 (35%)	33 (43%)	14 (18%)	29 (38%)	58 (48%)	19 (16%)	45 (37%)
Coughing and sneezing	N	37 (80%)	5 (11%)	4 (9%)	55 (72%)	14 (18%)	7 (9%)	92 (75%)	19 (16%)	11 (9%)
Contact with feces	N	26 (57%)	3 (7%)	17 (37%)	36 (47%)	11 (14%)	29 (38%)	62 (51%)	14 (11%)	46 (38%)
Sharing a meal	N	44 (96%)	2 (4%)	0 (0%)	69 (91%)	3 (4%)	4 (5%)	113 (93%)	5 (4%)	4 (3%)

and use of latex gloves(41%).

HIV infected person should be isolated (13% boys and 5%girls), pre-marriage HIV testing should be done (98%), HIV positive couples can have children (60%), double gloves should be worn while treating HIV patients (29%), heat sterilization /autoclaving can kill HIV (20%), dental instruments should be washed with disinfectant every time after use (90%). 95% girls and 78% boys believed that doctors, nurses should be allowed to refuse to care for

people with HIV/AIDS.

82% of respondents are willing to assist with the delivery of a baby born to a mother with HIV/AIDS. 98% of students did not agree when asked if they would not prefer to take care for patients with HIV/AIDS. 87% of them believed that it is necessary to take extra infection control precaution for patients with HIV/AIDS. 63% of the participants responded that refraining from multiple sex partners prevents HIV infection. All students believed that HIV/AIDS educational

**Table 4:** Knowledge about treatment or prevention of HIV/ AIDS

Questions	Answers	Boys			Girls			Total		
		Right	Wrong	Not sure	Right	Wrong	Not sure	Right	Wrong	Not sure
HIV/AIDS status can be confirmed by blood test	Y	33 (72%)	7 (15%)	6 (13%)	53 (70%)	9 (12%)	14 (18%)	86 (70%)	16 (13%)	20 (16%)
HIV/AIDS can be cured if diagnosed early	N	22 (48%)	19 (41%)	5 (11%)	45 (59%)	23 (30%)	8 (11%)	67 (55%)	42 (34%)	13 (11%)
Treatment for HIV/AIDS is available	Y	18 (39%)	20 (43%)	8 (17%)	31 (41%)	38 (50%)	7 (9%)	49 (40%)	58 (48%)	15 (12%)
Treatment for HIV/AIDS is available free of cost at government centers.	Y	31 (67%)	2 (4%)	13 (28%)	47 (62%)	10 (13%)	19 (25%)	78 (64%)	12 (10%)	32 (26%)
Vaccine for HIV/AIDS is available	N	31 (67%)	9 (20%)	6 (13%)	46 (61%)	14 (18%)	16 (21%)	77 (63%)	23 (19%)	22 (18%)
People of age group 15-29 years are at a higher risk of contracting HIV/AIDS than those of age group 5-15 years.	Y	38 (83%)	6 (13%)	2 (4%)	59 (78%)	6 (8%)	11 (14%)	97 (80%)	12 (10%)	13 (11%)
HIV infected persons can stay asymptomatic for many months or even many years	Y	45 (98%)	0 (0%)	1 (2%)	72 (95%)	0 (0%)	4 (5%)	117 (96%)	0 (0%)	5 (4%)
Is there any test to detect HIV in the blood?	Y	40 (87%)	3 (7%)	3 (7%)	65 (86%)	1 (1%)	10 (13%)	105 (86%)	4 (3%)	13 (11%)
Is there known cure for AIDS?	N	32 (70%)	5 (11%)	9 (20%)	56 (74%)	9 (12%)	11 (14%)	88 (72%)	14 (11%)	20 (16%)
There are intra-oral signs of HIV infection.	Y	10 (22%)	13 (28%)	23 (50%)	17 (22%)	16 (21%)	43 (57%)	27 (22%)	29 (24%)	66 (56%)
Hepatitis B is much more infective than HIV	Y	14 (30%)	20 (43%)	12 (26%)	32 (42%)	20 (26%)	24 (32%)	46 (38%)	40 (33%)	36 (30%)
Latex gloves can provide protection against HIV.	Y	19 (41%)	7 (15%)	20 (43%)	31 (41%)	7 (9%)	38 (50%)	50 (41%)	14 (11%)	58 (48%)

program is needed.

51% of the participants responded that patients of HIV/AIDS should be kept isolated and treated separately. Media (85.53% girls and 76.09% boys) was found to be the most common source of information regarding HIV/AIDS. Most (96% of the boys and 95% of the girls) of them knew that weight loss is a common symptom. 29% of the boys and 33% of the girls knew persistent diarrhoea as a symptom. 46% of the boys and 62% of the girls knew about persistent fever as a symptom.

**Table 5:** Knowledge about prevention of HIV/ AIDS

Questions	Answers	Boys			Girls			Total		
		Right	Wrong	Not sure	Right	Wrong	Not sure	Right	Wrong	Not sure
OCP (oral contraceptive pills)	N	40 (87%)	3 (7%)	3 (7%)	62 (82%)	7 (9%)	7 (9%)	102 (84%)	10 (8%)	10 (8%)
IUCD (Intrauterine contraceptive devices)	N	26 (57%)	16 (35%)	4 (9%)	49 (64%)	17 (22%)	10 (13%)	75 (61%)	33 (27%)	14 (11)
Condom	Y	45 (98%)	0 (0%)	1 (2%)	74 (97%)	0 (0%)	2 (3%)	119 (98%)	0 (0%)	3 (2%)
Health education	Y	46 (100%)	0 (0%)	0 (0%)	75 (99%)	0 (0%)	1 (1%)	121 (99%)	00 (0%)	1 (1%)
Change in behavior	Y	25 (54%)	13 (28%)	8 (17%)	39 (51%)	25 (33%)	12 (16%)	64 (52%)	38 (31%)	20 (16%)
Avoiding untested Blood transfusion	Y	46 (100%)	0 (0%)	0 (0%)	72 (95%)	3 (4%)	1 (1%)	118 (97%)	3 (2%)	1 (1%)
Use of disposable syringe	Y	36 (78%)	6 (13%)	4 (9%)	68 (89%)	6 (8%)	2 (3%)	104 (85%)	12 (10%)	6 (5%)
Avoiding breast feeding	Y	23 (50%)	13 (28%)	10 (22%)	31 (41%)	26 (34%)	19 (25%)	54 (44%)	39 (32%)	29 (24%)

**Table 6:** Attitudetowards HIV/AIDS person

Question	Answer	Boys			Girls			Total		
		Right	Wrong	Not sure	Right	Wrong	Not sure	Right	Wrong	Not sure
HIV-infected person should be isolated	Y	6 (13%)	37 (80%)	3 (7%)	4 (5%)	72 (95%)	0 (0%)	10 (8%)	109 (89%)	3 (2%)
Prior-marriage HIV testing should be done	Y	44 (96%)	1 (2%)	1 (2%)	76 (100%)	0 (0%)	0 (0%)	120 (98%)	1 (1%)	1 (1%)
HIV couple can have their children	Y	26 (57%)	16 (35%)	4 (9%)	47 (62%)	17 (22%)	12 (16%)	73 (60%)	33 (27%)	16 (13%)
Double gloves should be worn while treating HIV positive patients.	Y	12 (26%)	18 (39%)	16 (35%)	23 (30%)	35 (46%)	18 (24%)	35 (29%)	53 (43%)	34 (28%)
Heat sterilization (autoclaving) can kill HIV	Y	11 (24%)	21 (46%)	14 (30%)	13 (17%)	27 (36%)	36 (47%)	24 (20%)	48 (39%)	50 (41%)
Dental instruments should be washed with disinfectant every time they are removed from any patient.	Y	45 (98%)	0 (0%)	1 (2%)	65 (86%)	7 (9%)	4 (5%)	110 (90%)	7 (6%)	5 (4%)
I feel worried about caring for people with HIV/AIDS	Y	29 (63)	13 (28%)	4 (9%)	33 (43%)	41 (54%)	2 (3%)	62 (51%)	54 (44%)	6 (5%)
Doctors & nurses should be allowed to refuse to care for people with HIV/AIDS	Y	36 (78%)	10 (22%)	0 (0%)	72 (95%)	4 (5%)	0 (0%)	108 (89%)	14 (11%)	0 (0%)
I am willing to assist with the delivery of a baby born to a mother with HIV/AIDS	Y	36 (78%)	6 (13%)	4 (9%)	64 (84%)	4 (5%)	8 (11%)	100 (82%)	10 (8%)	12 (10%)
I would prefer not to care for patients with HIV/AIDS	N	46 (100%)	0 (0%)	0 (0%)	74 (97%)	1 (1%)	1 (1%)	120 (98%)	1 (1%)	1 (1%)
It is necessary to take extra infection control precaution for patients with HIV/AIDS	Y	42 (91%)	3 (7%)	1 (2%)	64 (84%)	9 (12%)	3 (4%)	106 (87%)	12 (10%)	4 (3%)
I am concerned that in the future we will find that HIV/AIDS can be transmitted in ways now thought safe	Y	21 (46%)	12 (26%)	13 (28%)	29 (38%)	15 (20%)	32 (42%)	50 (41%)	27 (22%)	45 (37%)
My professional education has provided me with enough information to work safely with AIDS patients	N	7 (15%)	32 (70%)	7 (15%)	13 (17%)	51 (67%)	12 (16%)	20 (16%)	83 (68%)	19 (16%)
I would inform an AIDS patient's sexual partner against the patient's wish	Y	34 (74%)	10 (22%)	2 (4%)	51 (67%)	17 (22%)	8 (11%)	85 (70%)	27 (22%)	10 (8%)
All surgical patients should be routinely tested for HIV/AIDS on admission to hospital	Y	35 (76%)	7 (15%)	4 (9%)	69 (91%)	2 (3%)	5 (7%)	104 (85%)	9 (7%)	9 (7%)
Doctors & nurses have a high risk of catching HIV/AIDS while treating patients	Y	16 (35%)	21 (46%)	9 (20%)	40 (53%)	28 (37%)	18 (24%)	56 (46%)	49 (40%)	27 (22%)
I am willing to perform mouth-to-mouth resuscitation on patients with HIV/AIDS	Y	10 (22%)	22 (48%)	14 (30%)	14 (18%)	30 (39%)	32 (42%)	24 (20%)	52 (43%)	46 (38%)
HIV/AIDS can happen to any person	Y	32 (70%)	11 (24%)	3 (7%)	57 (75%)	13 (17%)	6 (8%)	89 (73%)	24 (20%)	9 (7%)
HIV/AIDS ends to death.	Y	33 (72%)	6 (13%)	7 (15%)	48 (63%)	12 (16%)	16 (21%)	81 (66%)	18 (15%)	23 (19%)
Refraining from multiple sex partners prevents HIV infection	Y	28 (61%)	13 (28%)	5 (11%)	49 (64%)	12 (16%)	15 (20%)	77 (63%)	25 (20%)	20 (16%)
HIV/AIDS educational program is needed.	Y	46 (100%)	0 (0%)	0 (0%)	76 (76%)	0 (0%)	0 (0%)	122(100%)	0 (0%)	0 (0%)

**Table 7:** Awareness about management of patient in hospital

How should HIV/AIDS Patients be managed in hospital?	Boys	Girls	Total
a) With General Patients	18 (39%)	42 (55%)	60 (49%)
b) Should be Kept in isolation and treated separately	28 (61%)	34 (45%)	62 (51%)
c) Should be Kept in isolation without treatment	0 (0%)	0 (0%)	0 (0%)

**Table 8:** Source of information about HIV/AIDS

Source of present information regarding HIV/AIDS	Media	Friends	Family members	Teacher	Doctor	Health workers
Boys	35 (76.09%)	18 (39.13%)	10 (21.74%)	28 (60.87%)	27 (58.70%)	21 (45.65%)
Girls	65 (85.53%)	30 (39.47%)	24 (31.58%)	51 (67.11%)	44 (57.89%)	32 (42.11%)
Preferred source of getting information regarding HIV/AIDS						
Boys	28 (60.87%)	2 (4.35%)	0 (0%)	12 (26.09%)	17 (36.96%)	8 (17.39%)
Girls	52 (68.42%)	5 (6.58)	9 (11.84%)	18 (23.68%)	23 (30.26)	5 (6.58%)

**Table 9:** Awareness about Symptoms of AIDS

Symptoms of AIDS	Weight loss	Persistent diarrhea	Persistent fever	Enlargement of glands	Neck rigidity	Loss of vision
Boys	44 (95.65%)	13 (28.26%)	21 (45.65%)	7 (15.22%)	0 (0%)	0 (0%)
Girls	72 (94.74%)	25 (32.89%)	47 (61.84%)	12 (15.79%)	0 (0%)	2 (2.263%)

#### 4. Discussion

AIDS has become an important public health problem because of the complex emotional, behavioral and psychosocial complications that accompany the physical illness. The only way to combat a disease that has no effective treatment is by prevention. But due to the social stigmas, those suffering may avoid reaching the health centers for effective treatments. From the start of the AIDS epidemic stigma and discrimination have fuelled the transmission of HIV and have greatly increased the negative impact associated with the epidemic. HIV-related stigma and discrimination continue to be manifest in every country and region of the world creating major barriers to preventing further infection alleviating impact and providing adequate care support and treatment.<sup>6</sup>

It was found in this study that all students (100%) had heard about HIV/AIDS, which is similar to the results of the study done by Samir O in Iraq, Biradar et al. in Karnataka, Ravi Shankar et al. in Uttarakhand, Lal S et al. in Kerala, Choudhary et al. at IGIMS, Patna, but much higher than that reported by Orisatoki and Oguntibeju.<sup>3,5,7–10</sup> In a study in Jordan in 2007 involving High School students, 84.9% of students had ever heard of HIV/ AIDS.(11) Malaysian young adults in a study done in 2008 were found to have an awareness level of 95.7%(12), whereas only 43% Nigerian adolescents were found to be aware of HIV in a study done in 2005.<sup>11</sup>

This difference in the level of awareness may be attributed to various causes, like different age groups, different socioeconomic backgrounds and the difference in the time periods of the various studies, as people have now become more aware about various diseases including AIDS, higher penetration of Internet and mass-media may be one of the factors involved.

All the students were found to have correct knowledge of the causative agent which is similar to the studies by Biradar et al. and Ravi Shankar et al.<sup>5,8</sup>

70% of the boys and 74% of the girls correctly answered that the infection is incurable which is less than the study conducted by Biradar et al. (97.2%).(4) However, Lal S et al. found in a study that only 45% knew that AIDS is not curable at present.<sup>9</sup>

In our study all students (100%) knew about unsafe sexual contacts and infected blood transfusion as a risk factor for transmission of AIDS, whereas a study done by Goel N et al shows 98.94% of the students knew that HIV can be transmitted through blood transfusion while 97.89% of them knew that it could be transmitted through unsterilized needles and syringes.<sup>12</sup>

This study also demonstrated level of beliefs and misconceptions among the students regarding HIV/AIDS, like transmission through hugging and shaking hands with an infected person (93% of the boys and 99% of the girls responded correctly), sharing common utensils like plates,

cups and spoons (83% of the boys and 86% of the girls were correct), spread through mosquito-bites (89% of the boys and 70% of the girls were correct). A study on similar subjects from a Medical School on a Caribbean Island reported somewhat similar results.<sup>13</sup>

In the study done by Shankar R et al., students believed that the infection was transmitted by sharing of clothes (75%), food or utensils (86%), kissing and shaking hands (89%) and by insect bites (39%).<sup>8</sup>

In our study saliva was reported as a transmission route by 35%, which is similar to study conducted by Samant et al., where 34% of respondents reported similarly.<sup>14</sup> In another study comprising of 266 Health Care Workers from rural north India, a large proportion was not aware that, because of low viral load, saliva is not considered as a vehicle of HIV transmission, only 37.7% being correct in response.<sup>15</sup>

19% of students reported availability of a vaccine to prevent HIV. 12% of the participants reported similarly in a study done by Samant et al.<sup>14</sup> About 88% of participants in the study by Biradar et al had correct knowledge about unavailability of vaccines to prevent HIV infection.<sup>5</sup>

The present study revealed that the main sources of information about HIV/AIDS were the media (68.42% girls and 60.9% boys). These findings are in agreement with studies done in Iraq, Bangladesh and in India.<sup>7,16</sup> The second important source of HIV/AIDS information was doctors followed by teachers, family members (11.9% of the girls), friends and health workers, whereas study conducted by Samir et al shows similar findings, like teachers from school(49%), friends(43.7%) and family (parents/siblings) only30.4%.<sup>7</sup> Lal S et al reported comparable findings.<sup>9</sup>The high response to mass media as a source of information is better understood considering the impact that Internet and satellite television has had on India in the past decade. Similarly, in the study by Goel N et al., more than 60% of the students opined that TV is the best mode to impart awareness to the community followed by posters (90%), radio (78%), etc.<sup>12</sup>The current study showed that knowledge about HIV/AIDS was significantly associated with certain socio-demographic characteristics of students, and the results also showed that older and male students had higher level of knowledge about HIV/AIDS. The results of this study revealed that students having high socio-economic status had more knowledge about HIV/AIDS and these associations were somewhat in agreement with the findings of a study by Lal S et al. in Kerala, India and by Tee Y et al. in Malaysia.<sup>17</sup> This may be due to higher degree of exposure to mass media including television, newspapers and internet of such students.

Concerning their attitudes toward HIV infected people, Kermode et al reported 23% of the health care workers preferred not to treat HIV infected patients.<sup>15</sup> Similar findings were reported by Kubde et al, where 34% of nursing students in New Delhi, India reported unwillingness

to treat HIV infected people.<sup>18</sup> According to this study 95% girls and 78% boys believed that doctors and nurses should be allowed to refuse to care for people with HIV/AIDS. Several studies document the negative attitudes of Indian health professionals toward infected people.<sup>10,15,18</sup>

In our study about 13% of boys and 5% of girls believed that patients with HIV/AIDS need to be nursed separately from other patients. Sixty six percent (66%) of females were comfortable having HIV infected doctors and nurses (co-workers) in clinics and hospitals compared to 36% of males. 44% of the medical students preferred not being friends with HIV infected individuals. In the study conducted by Choudhari S et al., 92% of respondents answered affirmative for quarantine.<sup>10</sup>

98% of students believed that prior-marriage HIV testing should be done. 98% of respondents affirmed that use of condoms can prevent HIV/AIDS.

## 5. Conclusion

The present study shows that the medical students have somewhat better awareness and knowledge regarding HIV/AIDS than other groups when studied similarly. Still, there is a need of certain specific training modules for imparting positive attitude in medical students in relation to people living with HIV/AIDS. Role of media is undeniably huge in imparting proper knowledge and awareness, specially internet has to play important role.

## 6. Source of Funding

None.

## 7. Conflict of Interest

None.

## References

1. Acquired Immunodeficiency Syndrome (AIDS) — Definition — AIDS info [Internet]; 2020. Available from: <https://aidsinfo.nih.gov/understanding-hiv-aids/glossary/3/acquired-immunodeficiency-syndrome>.
2. Global HIV & AIDS statistics — 2019 fact sheet — UNAIDS [Internet]. Available from: <https://www.unaids.org/en/resources/fact-sheet>.
3. Orisatoki RO, Oguntibeju OO. Knowledge and attitudes of students at a Caribbean offshore medical school towards sexually transmitted infections and use of condoms. *West Indian Med J.* 2010;59(2):171–6.
4. NACO. National Strategic Plan for HIV/AIDS and STI 207-2024 “Paving way for AIDS-Free India.” 2017.
5. Biradar S, Kamble V, Reddy S. Study to assess awareness about HIV/AIDS among medical students. *Int J Community Med Public Heal.* 2016;3(1):62–4.
6. Aggleton P, Wood K, Malcolm A, Parker R. HIV - Related Stigma , Discrimination and Human Rights Violations: Case studies of successful programmes. *Jt United Nations Program HIV/AIDS.* 2005;.
7. Othman SM. Knowledge About HIV/AIDS Among High School Students in Erbil City/Iraq. *Glob J Health Sci.* 2014;7(1):16–23.
8. Shankar R, Pandey S, Awasthi S, Rawat C. Awareness of hiv/aids among first year medical undergraduates in Nainital, Uttarakhand,



- India. *Prev Soc Med.* 2011;42(2).
9. Lal SS, Vasan RS, Sarma PS, Thankappan KR. Knowledge and attitude of college students in Kerala towards HIV/AIDS, sexually transmitted diseases and sexuality. *Natl Med J India.* 2000;13(5):231–6.
  10. Choudhary SK, Kumar S, Prasad N, Bharati DR, Sinha S, Sinha S. Knowledge and Attitude about Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome among First Year MBBS Students at Indira Gandhi Institute of Medical Sciences, Patna : A Cross-sectional Study. *Int J Sci Study.* 2019;7:176–83.
  11. Oyo-Ita AE, Ikpeme BM, Etokidem AJ, Offor JB, Okokon EO, Etuk SJ. Knowledge of hiv/aids among secondary school adolescents in calabar-nigeria. *Ann Afr Med.* 2005;4:2–6.
  12. Goel NK, Bansal R, Pathak R, Sharma HK, Aggarwal M, Luthra SC. Knowledge and awareness of nursing students about HIV/AIDS. *Heal Popul Perspect Issues.* 2010;33:55–60.
  13. Orisatoki R, Oguntibeju O. Knowledge and attitudes of students in an offshore Caribbean medical school towards HIV/AIDS; 2010.
  14. Samant Y, Mankeshwar R, Sankhe L, Parker DL. HIV-Related Knowledge and Attitudes among First Year Medical Students in Mumbai, India Adolescents. *Int Electron J Health Educ.* 2006;9:13–24.
  15. Kermod M, Holmes W, Langkham B, Thomas MS, Gifford S. HIV-related knowledge, attitudes & risk perception amongst nurses, doctors & other healthcare workers in rural India. *Indian J Med Res.* 2005;122(3):258–64.
  16. Huda MN, Amanullah A. HIV/AIDS-Related Knowledge among Secondary School Students in Bangladesh: A Cross-Sectional Study. *Adv Infect Dis.* 2012;3(4):274–80.
  17. Tee Y, Huang M. Knowledge of HIV/AIDS and attitudes towards people living with HIV among the general staff of a public university in Malaysia. *SAHARA J.* 2009;6(4):179–87.
  18. Kubde SS, Zodpey SD, Vasudeo ND. AIDS awareness among nursing students. *Indian J Public Health;*39(3):109–12.

### Author biography

**Bipinchandra Khade** Associate Professor

**Nisha Yadav** Assistant Professor

**Anurag Yadav** Senior Medical Officer

**Cite this article:** Khade B, Yadav N, Yadav A. Assessment of awareness and knowledge regarding HIV/AIDS among first year MBBS students in a Medical College in Maharashtra India. *Indian J Clin Anat Physiol* 2020;7(2):210-218.