

## RESEARCH ARTICLE

**KNOWLEDGE OF HIV/AIDS AMONG MEDICAL STUDENTS IN A TERTIARY CARE TEACHING HOSPITAL IN EASTERN INDIA: A CROSS-SECTIONAL STUDY**Roy Soumita<sup>1</sup> \*Dalai Chanchal Kumar<sup>2</sup>, Ghosh Abhishek<sup>3</sup>, Ghosh Abantika<sup>4</sup><sup>1</sup>3<sup>rd</sup> Prof (Part 1) MBBS Student, College of Medicine & JNM Hospital, West Bengal, India<sup>2</sup>Assistant Professor, Department of Pharmacology, College of Medicine & JNM Hospital, West Bengal, India<sup>3</sup>Demonstrator, Department of Pharmacology, College of Medicine & JNM Hospital, West Bengal, India<sup>4</sup>2<sup>nd</sup> Prof MBBS Student, College of Medicine & JNM Hospital, West Bengal, India\*Corresponding Author's Email: [chanchal.dalai8@gmail.com](mailto:chanchal.dalai8@gmail.com), Mob-9474550728**ABSTRACT****Objective:** To evaluate the knowledge of HIV/AIDS among medical students in a tertiary care teaching hospital in Eastern India.**Materials and Methods:** Open level, cross sectional, observational and unicentric clinical trial was done among medical students of College of Medicine & JNM Hospital, Kalyani, Nadia, West Bengal, India. All the students (201) who were attending their scheduled lecture classes were given the questionnaire form, and all queries about the trial/questions were explained thoroughly. The form was filled up by each student separately, references like books, internet etc were not allowed. Forms submission box was placed in the table of lecture theatre. After 15 minutes, and students were asked to submit their forms in that box individually. Filled up forms were collected from the all attending students of all semester batch in the same day. Statistical analysis was done in Department of Pharmacology.**Result & Analysis:** 100% students have heard the terms HIV, AIDS, STD. Female students know better than male students about the differences between HIV and AIDS, sign and symptoms of HIV. Although there is no difference about knowledge of mode of transmission of HIV, but female students are more awarded the vertical transmission from mother to child ( $p=0.006$ ). Female students know better than male students about precaution to protect health worker dealing with an AIDS patient ( $p=0.0001$ ).**Conclusion:** Although, majority of students have the basic knowledge of HIV/AIDS, but periodical academic activities (Seminars, CME etc) are required to upgrade the informations about HIV/AIDS.**INTRODUCTION**

AIDS, the acquired immune-deficiency syndrome is a fatal illness caused by a retrovirus known as human immuno-deficiency virus (HIV) which breaks down the body's immune system, leaving the victim vulnerable to a host of life-threatening opportunistic infections, neurological disorders, or unusual malignancies. Strictly speaking, the term, AIDS refers only to the late stage of HIV infection.<sup>1</sup>

HIV/AIDS has emerged as the single most formidable challenge to public health, human rights and development in the new millennium.<sup>2</sup>

Acquired Immunodeficiency Syndrome (AIDS) has become one of the most serious health problems in the world. (Global Journal of Health Science) According to the current estimates from UNAIDS, there were 34.2 million people living with HIV in 2011. The global prevalence rate (percentage of people aged 15-49 years who are infected) was 0.8% in 2011.<sup>1</sup>

In India, overall HIV prevalence among different population groups continues to reflect the concentrated epidemic situation in the country with 2.3 million people living with HIV/AIDS and estimated adult prevalence of 0.27%.<sup>1</sup>

Medical students, the future doctors, must have adequate knowledge about AIDS, the signs & symptoms of AIDS, the mode of transmission and preventive measures of HIV as it will make them aware during examination on patients in the course of their clinical studies and they will be able to educate the society about this issue better.

On this background, the study was conducted to evaluate the knowledge of HIV/AIDS among medical students in a tertiary care teaching Hospital in Eastern India.

**MATERIALS & METHODS****STUDY DESIGN** -Open level, cross sectional, observational and unicentric clinical trial.**STUDY TYPE**- Observational**STUDY AREA:**

The study was done among medical students of College of Medicine & JNM Hospital, Kalyani, Nadia, West Bengal.

**DURATION OF THE STUDY**

The total time including questionnaire preparation, distribution among students, filled up form collection, statistical analysis took one month.

**SUBJECT SELECTION CRITERIA**

All medical students of College of Medicine & JNM Hospital, Kalyani, interested to participate in this trial were included in this study.

**SAMPLE SIZE**

The filled up form were collected from 201 students.

**METHODOLOGY**

All the students who were attending their scheduled lecture classes were given the questionnaire form, and all

queries about the trial/questions were explained thoroughly. The students were encouraged to give their opinion frankly, as their identity would not be disclosed in future. All students were informed that their name should not be written in this form. The form was filled up by each student separately, references like books, internet etc were not allowed. Forms submission box was placed in the table of lecture theatre. After 15 minutes, and students were asked to submit their forms in that box individually. Filled up forms were collected from the all attending students of all semester batch in the same day.

All filled up forms were then accumulated and analyzed in the Department of Pharmacology.

### STATISTICAL ANALYSIS

Data was processed and analyzed at the Department of Pharmacology, C, Kollege of Medicine & JNM Hospital, Kalyani. Statistical analysis was performed using graph pad-instat-3 software.

Dichotomous events were analyzed by using the Person's two sided Chi-square comparison. Statistical significance was defined as P-value < 0.05.

### RESULT AND ANALYSIS

A total of 201 respondents were submit their questionnaire, among which 101 students were male (50.25%) and 100 students were female (49.75%).

The general knowledge on HIV/AIDS is presented in table 1.

**Table 1: General knowledge about HIV/AIDS**

Questions	Male (N=101)		Female (N=100)		p value
	Yes	No	Yes	No	
Have you heard about HIV	101(100%)	0 (0%)	100 (100)	0 (0%)	
Have you heard about AIDS					
Have you heard about STD					
Full form of HIV	81 (80.19%)	20 (19.81%)	92 (92%)	8(8%)	0.023
Full form of AIDS	88 (87.12%)	13 (12.88%)	94 (94%)	6 (6%)	0.1
Full form of STD	81 (80.19%)	20 (19.81%)	90 (90%)	10 (10%)	0.023
Causative agent of HIV					
Virus	96 (95.05%)	0	100 (100%)	0	0.06
Bacteria	0	0	0	0	
Fungus	1 (0.99%)	0	0	0	
Protozoa	0	0	0	0	
Don't know	4 (3.96%)	0		0	
Difference between HIV & AIDS	73 (72.77%)	28 (27.73%)	90 (90%)	10 (10%)	0.001
Symptoms of HIV infection	60 (59.40%)	41(40.60%)	78 (78%)	22 (22%)	0.006

**Table 2: sources of information about HIV/AIDS**

Sources of information about HIV/AIDS	Male (N=101)		Female (N=100)		p value
	Yes	No	Yes	No	
Text book	58 (57.43%)	43 (42.57%)	60 (60%)	40 (40%)	0.77
Internet	80 (79.20%)	21(20.80%)	89 (89%)	11 (11%)	0.08
Television	92 (91.08%)	9 (8.92%)	90 (90%)	10 (10%)	0.81
Radio	58 (57.42%)	43 (42.58%)	60 (60%)	40 (40%)	0.77
News paper	84 (83.16%)	17 (16.84%)	85 (85%)	15 (15%)	0.84
Hoarding	66 (65.34%)	35 (34.66%)	69 (69%)	31(31%)	0.65
Family	42 (41.58%)	59 (58.42%)	49 (49%)	51 (51%)	0.32
Friends	84 (83.16%)	17 (16.84%)	75 (75%)	25 (25%)	0.17

**Table 3: Knowledge about mode of transmission of HIV/AIDS**

Questions about mode of transmission of HIV/AIDS	Male (N=101)		Female (N=100)		p value
	Yes	No	Yes	No	
Unprotected sex	97 (96.04%)	4 (3.96%)	100 (100%)	0 (0%)	0.12
Unsafe blood transfusion	97 (96.04%)	4 (3.96%)	100 (100%)	0 (0%)	0.12
Sharing of needles/blades	97 (96.04%)	4 (3.96%)	100 (100%)	0 (0%)	0.12
Mother to child	93 (92.07%)	8 (7.93%)	100 (100%)	0 (0%)	0.006
Through breast feeding	78 (77.22%)	33 (32.68%)	66 (66%)	34 (34%)	0.55

Table 4: Knowledge about misconceptions of other mode of transmission of HIV/AIDS

Questions about any chances of transmission of HIV/AIDS	Male (N=101)		Female (N=100)		p value
	Yes	No	Yes	No	
Sharing of Public toilet & swimming pool	33 (32.67%)	68 (67.33%)	28 (28%)	72 (72%)	0.54
Sharing of comb towel etc	23 (22.77%)	78 (77.23%)	29(29%)	71(71%)	0.33
By hugging	25 (24.75%)	76 (75.25%)	26 (26%)	74 (74%)	0.87
By social kissing	23 (22.77%)	78 (77.23%)	26 (26%)	74 (74%)	0.62
By Hand shake	27 (26.73%)	74 (73.27%)	25 (25%)	75 (75%)	0.87
Playing with AIDS/HIV patients	24 (23.76%)	77 (76.24%)	25 (25%)	75 (75%)	0.87
Talking with AIDS/HIV patients	24 (23.76%)	77 (76.24%)	25 (25%)	75 (75%)	0.87
Mosquito bite	29 (28.71%)	72 (71.29%)	27 (27%)	73 (73%)	0.87

Table 5: Knowledge about Risk Category Population of HIV/AIDS

Questions about risk category population for HIV/AIDS	Male (N=101)		Female (N=100)		p value
	Yes	No	Yes	No	
Doctors	50 (49.5%)	51 (50.5%)	68 (68%)	32 (32%)	0.009
Nurses	52 (51.48%)	49 (48.52%)	68 (68%)	32 (32%)	0.02
Health worker	60 (59.4%)	41(40.6%)	67 (67%)	33 (33%)	0.30
Medical students	50 (49.5%)	51(50.5%)	58 (58%)	42 (42%)	0.26
Sex worker	91(90.09%)	10 (9.91%)	98 (98%)	2 (2%)	0.03
Truck driver	81(80.19%)	20 (19.81%)	70 (70%)	30 (30%)	0.10

Table 6: Knowledge about Prevention of HIV Transmission

Questions about knowledge of prevention of HIV/AIDS transmission	Male (N=101)		Female (N=100)		p value
	Yes	No	Yes	No	
Abstinence	84 (83.16%)	17 (16.84%)	64 (64%)	36 (36%)	0.002
Use of gloves	93 (92.07%)	8 (7.93%)	96 (96%)	4 (4%)	0.37
Faithfulness to sexual partners	80 (79.2%)	21(20.8%)	76 (76%)	24 (24%)	0.61
New syringes/needle	90 (89.1%)	11(10.9%)	97 (97%)	3 (3%)	0.04
Safe blood transfusion	94 (93.06%)	7 (6.94%)	97 (97%)	3 (3%)	0.33

Table 7: Knowledge about Precaution to Protect Health Worker Dealing With an AIDS Patient

Questions about knowledge of prevention of HIV/AIDS transmission	Male (N=101)		Female (N=100)		p value
	Yes	No	Yes	No	
Boil used syringe & needle	74 (73.26%)	27 (26.74%)	96 (96%)	4 (4%)	0.0001
Use gloves when handling specimen	80 (79.2%)	21(20.8%)	98 (98%)	2 (2%)	0.0001
Label personal belongings	70 (69.3%)	31(30.69%)	28 (28%)	72 (72%)	0.0001
Avoid accidental wound	83 (82.17%)	18 (17.83%)	53 (53%)	47 (47%)	0.0001

Table 8: Knowledge about Prevention, Chances Of Opportunistic Infection and Antiretroviral Therapy (ART)

Questions	Male (N=101)		Female (N=100)		p value
	Yes	No	Yes	No	
Post-exposure prophylaxis (PEP) can terminate the HIV transmission, if prescribed within schedule time	49 (48.51%)	52 (51.49%)	57 (57%)	43 (43%)	0.26
Good nutritional status is very important from the time a person is infected with HIV	46 (45.54%)	55 (54.46%)	77 (77%)	23 (23%)	0.0001
HIV/AIDS patients are more prone to opportunistic infection-	86 (85.14%)	15 (14.86%)	84 (84%)	16 (16%)	0.85
Is it possible to maintain normal life with antiretroviral therapy?	58 (57.42%)	43 (42.58%)	64 (64%)	36 (36%)	0.39

A cross-sectional descriptive study was undertaken amongst MBBS students of a medical college in eastern India to determine level of HIV/AIDS awareness.

In our study, 100% students have heard the terms HIV, AIDS, STD.

However higher proportions of female students (92 %) have written the full form of AIDS correctly (95.8 %) in comparison to male students (80.19 %) with a statistically significant difference ( $p=0.023$ ). It is also seen that higher proportion of female students (90 %) could write correctly the full form of STD than male students (80.19 %) that is statistically significant ( $p=0.023$ ).

Although there is no statistical difference between female students and male students in respect of knowledge of the correct full form of HIV (94% vs. 87.12%,  $p$  value 0.1), female students (90%) are more aware than male students (72.77%) about the differences between HIV and AIDS, which is statistically significant ( $p=0.001$ ). Female students (78%) are much more aware about the signs & symptoms of HIV infection than male students (59.40%), which is statistically significant ( $p=0.006$ ), although the overall percentage of knowledge is comparatively less amongst both males and females.

Among the male students, the main source of information about the knowledge of HIV/AIDS is television (91.08%), followed by news paper and friends (83.16%). Whereas, the main source of information among female students is television (90%) followed by internet (89%).

All female students (100%) and majority male students (96.04%) know that HIV/AIDS can be transmitted through unprotected sexual contacts and unsafe blood transfusion. Whereas there is no difference in the knowledge amongst female and male students about the transmission of HIV/AIDS through unsafe blood transfusion, sharing of needles/blades (100% vs. 96.04%,  $p=0.12$ ) and through breast feeding (66% vs. 77.22%,  $p=0.55$ ). 100% female students know that there is a possibility of infected mother to child transfusion, whereas 92.07% male students are aware about that, which is statistically significant ( $p=0.006$ ).

Although majority of male and female students have no misconception about the transmission of HIV/AIDS by sharing of public toilet & swimming pool (67.77% vs. 72%,  $p=0.54$ ), sharing of comb towel (77.23% vs. 71%,  $p=0.33$ ), by hugging (75.25% vs. 74%,  $p=0.87$ ), by social kissing (77.23% vs. 74%,  $p=0.62$ ), by hand shake (73.27% vs. 75%,  $p=0.87$ ), playing with AIDS/HIV patients (76.24% vs. 75%,  $p=0.87$ ), talking with AIDS/HIV patients (76.24% vs. 75%,  $p=0.87$ ), or through mosquito bite (71.29% vs. 73%,  $p=0.87$ ).

Female students and male knew that doctors are the risk category population (68% vs 49.5%,  $p=0.009$ ), nurses (68% vs 51.48%,  $p=0.02$ ), health worker (67% vs 59.4%,  $p=0.30$ ), medical students (58% vs 48.9%,  $p=0.26$ ), sex

worker (98% vs 90.09%,  $p=0.03$ ), and truck driver (70% vs 80.19% , $p=0.10$ )

The knowledge about precaution to protect health worker dealing with an AIDS patient is more amongst females as compared to males. Amongst the students, 73.2% males are aware the disease can be prevented by boiling used syringe and needles while 96% of the females are aware of the same that is statistically significant ( $p=0.0001$ ). 79.2% of the males are aware that use of gloves while handling the specimens may help in prevention while 98% of females are aware of the same, which is statistically significant ( $p=0.0001$ ). 69.3% male students opine that labeling of personal belongings may prevent the disease while 28% females have the same opinion, which is statistically significant ( $p=0.0001$ ). 82.17% males are aware that avoiding accidental wound may alleviate the disease while 53% females are aware of the same that is statistically significant ( $p=0.0001$ ).

Knowledge about prevention, chances of opportunistic infection and antiretroviral therapy (ART) amongst the students shows a similar trend, with the females being more aware than the males. 48.51% males opine that Post-exposure prophylaxis (PEP) can terminate the HIV transmission, if prescribed within schedule time while 57% females are aware of the same ( $p=0.26$ ). 45.54% males are aware that Good nutritional status is very important from the time a person is infected with HIV as against 77% of females, which is statistically significant ( $p=0.0001$ ). HIV/AIDS patients are more prone to opportunistic infection- this fact is known to 85.14% males as against 84% female ( $p=0.85$ ). 57.42% males support the notion that it is possible to maintain normal life with antiretroviral therapy while 64% females have the same awareness ( $p=0.39$ ).

In a study among 1<sup>st</sup> year medical students of it is seen that that 100% of them are aware of HIV/AIDS. However some of them had incomplete knowledge about sign & symptoms, spread to health care personnel. <sup>3</sup>

## CONCLUSION

It is seen that majority of students have the basic knowledge of HIV/AIDS, although the overall percentage of knowledge is comparatively less amongst both males and females students. Female students know better than male students about the difference between HIV and AIDS, sign and symptoms of HIV. Although there is no difference about knowledge of mode of transmission of HIV, but female students are more awarded the vertical transmission from mother to child ( $p=0.006$ ). Female students know better than male students about precaution to protect health worker dealing with an AIDS patient ( $p=0.0001$ ).

Periodical academic activities (Seminars, CME etc) are required to upgrade the informations about HIV/AIDS, risk of transmission, methods of prevention and promoting good practices, (myths/misconception, opportunistic infection and availability of anti-retroviral therapy)

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