

KNOWLEDGE ON HIV/AIDS AMONG NURSING STUDENTS IN BANGLADESH

*ABM Alauddin Chowdhury¹, Shewly Khatun¹, Md. Imdadul Haque¹, Faisal Muhammad¹, Abul Hasan BakiBillah¹, Ching Soong Khoo², Tze Yuan Tee², Moniruddin Chowdhury³

¹Department of Public Health, Faculty of Allied Health Sciences, Daffodil International University, Dhanmondi, Dhaka 1207, Bangladesh

²Department of Medicine, Universiti Kebangsaan Malaysia Medical Centre, Cheras, Kuala Lumpur 56000, Malaysia

³Department of Medicine, Faculty of Medicine & Health Sciences, University Tunku Abdul Rahman (UTAR), Sungai Long campus, 43000 Kajang, Selangor D.E, Malaysia

Abstract: Study shows that understanding regarding HIV/AIDS among the Bangladeshi nursing students is not up to the mark. This investigation planned to evaluate the knowledge of student nurses with regards to AIDS in Bangladesh. The study was a cross-sectional descriptive study conducted among the students of 1st year, 2nd year and 3rd year in Nursing Institute, Mitford Dhaka, Bangladesh in 2014. Hundred and fifty nursing students were selected following systematic sampling technique and data were collected with a self-administered semi-structured questionnaire under specific guidance, who met the inclusion criteria. Knowledge of the nursing students regarding the HIV/AIDS was not satisfactory. More than two-fifth of the participants didn't know that the proper use of a male condom could prevent transmission of the HIV/AIDS virus through sexual contacts. Only 4.7% of the respondents reported that they receive knowledge on HIV infection from school. This study found strong association between level of knowledge on HIV and attendance of nursing students to training program on HIV infection. Although the level of awareness is expected to be high, misunderstandings about the means of disease spread were common among the nursing students.

Keywords: HIV, AIDS, Nursing Students, Bangladesh

INTRODUCTION

Human Immunodeficiency Virus (HIV) is the viral agent that weakened immune system of attacked person. This ensues to a life-threatening illness called AIDS (Acquired Immune Deficiency Syndrome).^[1,2] HIV/AIDS was first acknowledged for its existence in 1981, since then above 25 million have lost their lives. It is an expanding general medical issue of the people in the world.^[3] In Sub-Saharan Africa the prevalence of HIV is 5.9%, while in prevalence in India and Indochinese Peninsula is less (0.7%).

WHO report 2011 reported that an annual account of 210 000 new HIV diseases, resulting into 575 people becoming plagued every day and an expected 230 000 AIDS-related mortalities consistently every year. Of the 11 countries, highest cases of HIV-1 problem is amassed in five countries, namely India, Indonesia, Myanmar, Nepal and Thailand and these countries especially need prevention, care and treatment services.^[4]

*Corresponding author: ABM Alauddin Chowdhury, Department of Public Health, Daffodil International University, Birulia, Savar, Dhaka-1216, Bangladesh. Email address: dralauddin@daffodilvarsity.edu.bd

Bangladesh has the seventh largest population in the world with an estimated 161.3 million inhabitants. The first case of HIV/AIDS in Bangladesh was identified in 1989; since then, there were 2088 cases of HIV-1 and 850 cases of AIDS. Among them, 241 deaths have been reported in December, 2010.^[2,4] Bangladesh has an estimated 20,000 to 40,000 people who infuse drugs with needle. It makes the country a high – risk zone for HIV/AIDS spread through injection. According to UNAIDS 23.0% of the total populations in Bangladesh are young people who are devoid of sufficient knowledge about HIV/AIDS due to social obstruction.^[5]

Since the later half of 1990, combination Antiretroviral therapy (cART) has played a significant role in dramatic decline of HIV related morbidity, extend survival and counteract HIV transmission.^[6-9] Perinatal use of cART have reduced vertical transmission of HIV-1 from mother to infant by 20 fold.^[10] Between the time period of 2009 and 2011, cART use during gestation had averted more than 40,000 cases of childhood HIV infection.^[5] The depth of awareness of the population is thus a critical parameter for understanding the extent of the difficulties faced by Government and Non-government organizations.^[10] New HIV infection are concentrated among the young college students within 24 years of age, accounted for 40.0% of new HIV-1 infections in 2009 around the world.^[2,3] Research from around the globe showed gaps in students' knowledge about HIV transmission and treatment accessibility. Nursing students in the Dhaka city were vulnerable to HIV/AIDS they face unfamiliar situations related to personal autonomy, peer relationships and sexuality.^[12] They are also at high risk of work related exposure to HIV/AIDS due to close contact with patient's blood and other body fluids, while they are giving care to different kinds of patients.^[13] The probability of health professionals encountering HIV/AIDS patients obliges them to have both adequate and right knowledge. At present, not enough data is available that reports the knowledge of HIV/AIDS in the context of Bangladesh especially those working in the healthcare sector. The aim of this study, therefore, was to assess the knowledge about HIV/AIDS among nursing students of an institution in Dhaka.

Methods

Study design and type:

A cross-sectional descriptive research design was utilized to collect data from Bangladeshi nursing students using a self-administered and semi-structured questionnaire. Data was collected between June 2014 and October 2014. Pre-testing was done to ensure validity & reliability of the questionnaire with five students of diploma in nursing course in other than this study location.

A total of 150 nursing students were selected by a systematic sampling technique, who were students of 1st year, 2nd year and 3rd year in Nursing Institute of Sir Salimullah Medical College and Mitford Hospital in Dhaka City. At the beginning, the study team gathered the list of all students from the nursing institute record. Equal numbers of respondents were selected from among 1st, 2nd and 3rd year students. However, if a listed student was physically or mentally unable, unwilling or unavailable in the given study period, the team considered next one from the list for data collection.

After obtaining verbal informed consent from the participants, questionnaires were distributed during the nursing classes. Student took about 30 minutes to complete the questionnaire and then returned it to data collectors.

Data collection instruments:

The data collection tool was built on the framework based on study objectives and the variables of interest. The questionnaire was divided into two parts. Part1 was developed to collect demographic information and Part 2 was divided into 2 sections. In section -1, participants were inquired about their basic knowledge on HIV/AIDS, its consequences and prevention and respondents' sources of

information. In section - 2 participants were asked to respond to questions pertaining to their knowledge on HIV/AIDS, which was subsequently used to derive their knowledge score. HIV/AIDS knowledge of the participants was scored by True/ False and Correct/Incorrect dichotomous answering options and each individual's scores reflected their overall level of knowledge/understanding. Data screening was done on the spot. Any missing information was corrected on the spot before data was entered in the computer.

Data Analysis

The data were analyzed using the software program Statistical Package for Social Science (SPSS). Descriptive statistics was used according to the variables as fitting. Replies from participants were composed and written as per conversation. Chi-square tests were employed to compare different groups for categorical data. P-value less than 0.05 were considered as significant.

Ethical approval and Consent

Ethical clearance was collected from Faculty of Allied Health Sciences, Daffodil International University Dhaka-1207 Bangladesh. Permission was obtained from Nursing Institute and informed consent from the participant was also taken before administration of the questionnaire.

Results

Table 1 shows that the age-range of the participant's was 18- 23years. Above 86.0% of the respondents was female and 13.3% was male. Two thirds (67.0%) of the respondents was Muslim. According to the residing place and source of money of the respondents, it was depicted that 91.0% were residing in dormitory or hostel and 86.7% sourced their money from their parents and 4.0% sourced their money through part time jobs.

Table 1: Distribution of respondents according to socio-demographic characteristics.

	Variables	Frequency	Percent
Age	20 or less	125	83.3
	Above 20	25	16.7
Gender	Female	130	86.7
	Male	20	13.3
Religion	Muslim	100	67.0
	Hindu	45	30.0
	Christian	5	3.0
Residence	Dormitory or Hostel	137	91.0
	Others	13	9.0
Source of incomes	Parents	130	86.7
	Scholarship	11	7.3
	Part-time jobs	6	4.0
	Others	3	2.0

Table 2 shows that 54.7% respondents believed that they had some knowledge on HIV/AIDS, while 44.0% believed they had a lot of knowledge about it. More than half (52.7%) of the respondents received information on HIV/AIDS, from public media and 32.7% received the information from public health facilities. Other sources of information were school and nursing institutes. Regarding the question of who was accountable among partners for HIV transmission, 68.7% of the respondents agreed that both were responsible, while 28.7% reported that male partners were responsible. Responding to the query regarding HIV-test; 52.0% opined that they wanted to test and the rest did not. In respect of educational session, 93.0% of the respondents reported that they attended the educational session and only 7.0% did not.

Table 2: Distribution of respondents according to knowledge on HIV/AIDS, source of information and attendance at education session.

Variables	Frequency	Percent
How much would you say you know about HIV/AIDS		
A lot	66	44.0
Some	82	54.7
A little	2	1.3
Sources of information about HIV/AIDS		
Public media	79	52.7
Public health facilities	49	32.7
School	7	4.7
Nursing Institute	15	10.0
Responsible person to spread HIV/AIDS		
Male partner	43	28.7
Female partner	3	2.0
Both partner	103	68.7
Don't know	1	0.7
Do you want test for HIV/AIDS		
No	72	48.0
Yes	78	52.0
Attendance of HIV/AIDS educational session		
Attended	139	93.0
Did not attend	11	7.0

Table 3 shows that 97.3% of the respondents said that the premature death was the consequence of HIV/AIDS, 90.0% said decreasing the immunity of the body was consequence of HIV/AIDS, easy entrance of any disease was the response by 48.7% participants and only 42.7% said weak immunity of the body was the consequence of HIV/AIDS. Above eighty six percent (86.7%) respondents stated that treatment can only be offered for HIV/AIDS patients but can not be cured completely. Regarding the preventive methods of HIV/AIDS, 98.7% of the respondents reported that avoiding unprotected sexual intercourse was the best preventive measure while 20.7% said that blood has to be properly screened before transfusion and 85.3% considered practicing social and religious rules as the preventive measures of HIV/AIDS.

Table 3: Distribution of the respondents by consequences and prevention of HIV/AIDS

Variables	Frequency	Percent
The consequence of HIV/AIDS		
Premature death	145	97.3
Decrease immunity of the body	135	90.0
Easy entrance of any disease	73	48.7
Instable immunity of the body	64	42.7
Do not cure completely but treatment can be offered	130	86.7
Cure with people/drug treatment	1	0.7
How HIV/AIDS can be prevented		
Avoid free sexual intercourse	148	98.7
Screening of blood before transfusion	31	20.7
Not be pregnant by HIV/AIDS infected person	23	15.3
Blood test for Hb % before transfusion	138	92.0
Practicing social and religious rules	128	85.3

Table 4 shows that 57.0% respondents mentioned that the proper use of a male condom can prevent getting the HIV/AIDS virus infection through sexual contacts. All the participants agreed that HIV/AIDS can be transmitted through sexual contacts, 69.0% agreed that kissing the lips of infected persons does not transmit HIV. Almost all the participants (99.0%) correctly answered that using public toilet was also not a way of getting HIV/AIDS and 96.7% correctly reported that sharing needles with infected person was the riskiest way of HIV/AIDS virus transmission

Table 4: Distribution of the respondents according to knowledge score about HIV/AIDS

S/N	HIV/AIDS Knowledge Score	Frequency	
		TRUE	FALSE
1	The HIV/AIDS virus can be transmitted through unprotected sexual contacts	150	0
2	A man with the HIV/AIDS virus can pass it on to same sex partner through sexual contact.	150	0
3	HIV vaccine are available to the public that protects a person from getting infection.	4	146
4	A person who has HIV/AIDS virus can look well and healthy	8	142
5	The proper use of a male condom can prevent getting the HIV/AIDS virus through sexual contacts	85	65
6	Contraceptive pill can prevent getting the HIV/AIDS virus.	0	150
7	Health personnel should be allowed to refuse care to a person who has the HIV/AIDS virus.	0	150
In general, a person will get the HIV/AIDS virus from			
1	Kissing on the lips	104	46
2	Using public toilet	2	148
3	Sharing plates or forks with someone who has the HIV/AIDS virus	3	147
4	Sharing needles with someone who has the HIV/AIDS virus	145	5
5	Being coughed or sneezed on by someone who has HIV/AIDS virus	3	147
6	Attending educational institution with a student who has the HIV/AIDS virus	0	150

Table – 5 shows that attending HIV/AIDS related training was associated with the participant's (Nurses) increased knowledge and awareness regarding the HIV/AIDS

Table 5: Relationship between Attending Training on HIV/AIDS and knowledge source of respondents on selected variables

HIV/AIDS Knowledge Score	Training on HIV/AIDS			p value
	Attended	Did not Attend	Total	
There is a vaccine available to the public that protects a person from getting the HIV/AIDS virus				
Correct	138	8	146 (97.3)	<0.001
Incorrect	1	3	4 (2.7)	
A person who has HIV/AIDS virus can look well and healthy				
Correct	137	5	142 (94.7)	<0.001
Incorrect	2	6	8 (5.3)	
The proper use of a male condom can prevent getting the HIV/AIDS virus through sexual contacts				
Correct	112	27	85 (57)	<0.001
Incorrect	27	38	65 (43)	

Discussion

The proportion of Human Immunodeficiency Virus (HIV) and acquired immunodeficiency syndrome (AIDS) has been expanding worldwide. Present study was an attempt to evaluate the level of knowledge and awareness of nursing students regarding the HIV/AIDS. In the study nursing students were found deficient in expected knowledge on HIV/AIDS and misconstructions about the ways of transmission, were common among them, where 43% nursing students don't know that proper use of condom can prevent HIV/AIDS virus through sexual contacts. Similar findings were observed in Madagascar, which showed that 68.0% of members in the investigation did not realize that vaginal sex with an appropriately utilized condom is generally safe.^[3] The findings of the present investigation are somehow similar to the results of other knowledge-assessment studies previously conducted among Bangladeshi adolescents.^[20,21] Prevention is the most essential way to deal with control and diminish the HIV/AIDS infection.^[14,15] Nurses of our country are considered as an imperative media to provide health care. Therefore, knowledge of nurses should be increased through training;

The study found that 54.7% of the responding students had some awareness on HIV/AIDS. This finding is observed to be lower than the findings of similar studies done in different countries; a study found that 89% of students in Israel knew about the significant courses of spread of HIV.^[17] Results of a study at four doctor's facilities in Tanzania demonstrated that 96% of medical attendants had agreeable information on HIV/AIDS.^[18] A study on professional nurses to evaluate their insight and comprehension of HIV/AIDS infection at the University of Natal, South Africa, uncovered great learning of general information, including method of transmission.^[19]

In the current study found that more than half (52.7%) of the respondents received the information regarding HIV/AIDS from public media. This is similar to the findings of a study done in Sri Lanka among University students, where majority of the respondents received the information on HIV/AIDS through Public media.^[16] Age range of our study was similar to the study of Sri Lanka. Above eight-tenth (86.7%) of the study participants mentioned that HIV/AIDS could only be offered treatment but

could not be cured completely. These findings can be compared with another similar study, which found that 18.1% believed that AIDS can be treated, and just 69.8% reported that HIV/AIDS had no cure.^[22]

All the participants agreed that HIV can be transmitted through sexual contacts and 69.0% agreed that kissing on the lips of infected persons will not be the way to get the HIV/AIDS, almost all the participants (99.0%) correctly answered that using public toilet was also not a way of getting HIV/AIDS and highest majority of them (96.7%) correctly reported that sharing needles with infected person was the way of becoming infected with the virus. Our findings are inconsistent to the findings of the studies in Iran^[23], China,^[24,25] among young people in Mongolia^[26] and Turkey^[27] and in some Arab countries^[28]. The findings of those investigations showed that half of the sample believed that HIV can be spread through kissing with tongue, using indoor swimming pools and through mosquito and insect's stings. New investigations from across the globe has demonstrated that by far most of youngsters have no clue how HIV/AIDS is transmitted or the most effective method to shield them from the illness.”^[12] Most studies have missed looking at the knowledge level related to the role of unprotected anal sex practice among partners which is as risky as sharing of needles. The anus and bowel have HIV-1 receptors and thus HIV is more easily passed from an HIV-positive incentive partner to his receptive partner.^[29]

CONCLUSION

Knowledge of the nursing students regarding the HIV/AIDS was not satisfactory. More than two-fifth of the participants didn't know that the proper use of a male condom could prevent transmission of the HIV/AIDS virus through sexual contacts. Only 4.7% of the respondents reported that they receive knowledge on HIV infection from school. This study found strong association between level of knowledge on HIV and attendance of nursing students to training program on HIV infection.

REFERENCES

1. HIV/AIDS: Medline plus, Medical Encyclopedia; Available at: <https://medlineplus.gov/ency/article/000594.htm> [Accessed on January 12, 2015].
2. AIDS (Acquired Immune Deficiency Syndrome): Institute of Human Virology; Available at: <http://www.ihv.org/education/AIDS.html> [Accessed on January 12, 2015].
3. Bharati M, Bharati L. A study on knowledge of HIV/AIDS among adolescents of higher secondary school in Jajarkot district of Nepal. *Journal of Chitwan Medical College*. 2014;4(3):43-5.
4. World Health Organization (WHO) report: HIV/AIDS in the South-East Asia Region-2007, WHO-Regional Office for South-East Asia Region.
5. World Health Organization (WHO) report: HIV/AIDS in the South-East Asia, Progress Report-2011, WHO-Regional Office for South-East Asia Region.
6. Antiretroviral Therapy Cohort Collaboration. Life expectancy of individuals on combination antiretroviral therapy in high-income countries: a collaborative analysis of 14 cohort studies. *The Lancet*. 2008 Jul 26;372(9635):293-9.
7. Mocroft A, Vella S, Benfield TL, Chiesi A, Miller V, Gargalianos PE et al. Changing patterns of mortality across Europe in patients infected with HIV-1. *The Lancet*. 1998 Nov 28;352(9142):1725-30.
8. Paella Jr FJ, Delaney KM, Moorman AC, Loveless MO, Fuhrer J, Satten GA et al, HIV Outpatient Study Investigators. Declining morbidity and mortality among patients with advanced human immunodeficiency virus infection. *New England Journal of Medicine*. 1998 Mar 26;338(13):853-60.
9. Vittinghoff E, Scheer S, O'Malley P, Colfax G, Holmberg SD, Buchbinder SP. Combination antiretroviral therapy and recent declines in AIDS incidence and mortality. *The Journal of infectious diseases*. 1999 Mar 1;179(3):717-20.
10. Cooper ER, Charurat M, Mofenson L, Hanson IC, Pitt J, Diaz C et al. Combination antiretroviral strategies for the treatment of pregnant HIV-1-infected women and prevention of perinatal HIV-1 transmission. *JAIDS-HAGERSTOWN MD*. 2002 Apr 15;29(5):484-94.
11. Sarkar P, Mostofa G, Rahman M. Knowledge of transmission routes & prevention ways of HIV/AIDS: Bangladesh context. *The Soc. Sci*. 2010;5:525-31.
12. Avert. Young people, HIV and AIDS, 2017. [Online] Available at: https://www.avert.org/professionals/hiv-social-issues/key-affected-populations/young-people#footnote16_mrlko6a [Accessed on August 11 2017]
13. Shivalli S. Occupational exposure to HIV: Perceptions and preventive practices of Indian nursing students. *Advances in preventive medicine*. 2014 Jan 1;2014.
14. Mahat G, Scoloveno M. An HIV/AIDS education intervention for Nepalese adolescent females. *Nursing Clinics*. 2006 Sep 1;41(3):409-23.
15. Mondal MN, Khan MA, Islam MR, Mamun AA. Commercial sex workers in brothels are hallmark of HIV epidemic in Bangladesh. *Pakistan Journal of Social Sciences*. 2005;3(9):1152-8.
16. Chowdhury AA. Knowledge, attitude and practices for HIV/AIDS among the university students with different religions in Sri Lanka. [Hokkaido igaku zasshi] *The Hokkaido journal of medical science*. 2012 Nov;87(6):233-42.
17. Brook U. AIDS-related knowledge and attitude of high school students in Holon, Israel. *J Trop Paediatr* 1993; 39:382-4.
18. Kohi TW, Horrocks MJ. The knowledge, attitudes and perceived support of Tanzanian nurses when caring for patients with AIDS. *International journal of nursing studies*. 1994 Feb 1;31(1):77-86.
19. Chamane NJ, Kortenbout W. Professional nurses' knowledge and understanding of AIDS/HIV infection. *Curationis* 1997; 20:43-6.
20. Uddin, M. A., Isaramalai, S., &Thassari, J. Knowledge and Attitude regarding HIV/AIDS Prevention among Adolescents in Bangladesh. Paper Presented at the 2nd International Conference on Humanities and Social Sciences, Faculty of Liberal Arts, Prince of Songkla University 2010. Available at: <http://tar.thailis.or.th/bitstream/123456789/911/1/002.pdf> [Accessed on August 11, 2017]
21. Huda MN, Amanullah A. HIV/AIDS-Related knowledge among secondary school students in Bangladesh: a cross-sectional study. *Advances in Infectious Diseases*. 2013 Dec 2;3(04):274.
22. Wong LP, Chin CK, Low WY, Jaafar N. HIV/AIDS-related knowledge among Malaysian young adults: Findings from a nationwide survey. *Journal of the International AIDS society*. 2008 Jun 1;10(6):148.
23. Shokoohi M, Karamouzian M, Mirzazadeh A, Haghdoost A, Raftarad AA, Sedaghat A, Sharifi H. HIV knowledge, attitudes, and practices of young people in Iran: findings of a National Population-Based Survey in 2013. *PLoS One*. 2016 Sep 14;11(9):e0161849.
24. Wu Z, Pingping Y. Research on knowledge, attitudes and practice about AIDS among university students in Fujian Province. *Journal of Fujian Medical University*. 2002;34(2):194-6.
25. Jichuan C. Investigation on knowledge, practice about STDs and AIDS among Ningde normal school students]. *Chinese Journal of Health Education*. 2003;19:853-854 [In Chinese].
26. Sodnompil TS, Director HM, Oyungeral N, Bulganchimeg B, Enkhtuya S. Knowledge, attitude and practice survey on STD/HIV/AIDS for young persons 15-25 years old in Mongolia. In 2nd International Conference on Primary Health Care Melbourne, Victoria, Australia 2000 Apr (pp. 17-20).
27. Ayranci U. AIDS knowledge and attitudes in a Turkish population: an epidemiological study. *BMC public health*. 2005 Dec 1;5(1):95.

28. Al-Owaish R, Moussa MA, Anwar S, Al-Shoumer H, Sharma P. Knowledge, attitudes, beliefs, and practices about HIV/AIDS in Kuwait. *AIDS education and prevention*. 1999 Apr 1;11(2):163.
29. Aidsmap.com. Risk - HIV risk levels for the insertive and receptive partner in different types of sexual intercourse 2017. [online] Available at: <http://www.aidsmap.com/HIV-risk-levels-for-the-insertive-and-receptive-partner-in-different-types-of-sexual-intercourse/page/1443490/> [Accessed 2 Aug. 2017].
30. Chowdhury AA. Knowledge, attitude and practices for HIV/AIDS among the university students with different religions in Sri Lanka. [*Hokkaido igaku zasshi*] *The Hokkaido journal of medical science*. 2012 Nov;87(6):233-42.