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A Study on Knowledge and Attitude towards HIV/AIDS among first year College students of Siliguri sub-division, Darjeeling: A Cross-sectional study

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Abstract

Introduction: *Students of higher education are more likely to be at risk of HIV/AIDS. Insufficient knowledge and less favourable attitudes are the major hindrances to prevent the spread of HIV.*

Objectives: *The aim of this study was to assess HIV/AIDS related knowledge and attitude of first year college students in Siliguri sub-division of Darjeeling district.*

Materials & Methods: *An Institutional based cross-sectional study was conducted among 460 first year college students during November and December 2016. A self-administered structured questionnaire was used to collect Socio-demographic variables, Knowledge and Attitude of students. Authors guided self-administered data collection technique was used to collect data. Mean score and percentage were used to determine the level of Knowledge and Attitude. Interpretation and analysis of the data was done using IBM SPSS version 20.*

Results: *Out the 460 students, who participated, 126 were males and 334 were females. All the students had heard about HIV/AIDS. Majority (61.7%) of students participated in this study had information on the difference between HIV and AIDS. There was statistically significant difference among males and females about their knowledge and attitudes towards HIV/AIDS.*

Conclusion: *Though the general level of knowledge of students about HIV/AIDS was not poor, they had a number of misconceptions about it, which need to be addressed.*

Keywords: *College students, Knowledge, Attitude, HIV/AIDS.*

Introduction

Acquired immunodeficiency syndrome (AIDS) is a fatal illness caused by the retrovirus known as the human immunodeficiency virus (HIV), which

breaks down the body's immune system. It is a major health problem in many parts of the world, and is considered as a pandemic disease.¹

Globally, in 2017, it was estimated that, there were 36.9 million people living with HIV and about 1.8 million people became newly infected with HIV.² In sub-Saharan Africa, three in four new infections are among girls aged 15–19 years and young women aged 15–24 years are twice as likely to be living with HIV as men.²

India has the third largest HIV epidemic in the world. In 2016, HIV prevalence in India was an estimated 0.3% and about 2.1 million people living with HIV.³ In the same year, an estimated 62,000 people died from AIDS-related illnesses.³ Among the States/UTs, in 2015, Manipur has shown the highest estimated adult HIV prevalence of 1.15%, whereas, West Bengal have shown an estimated adult HIV prevalence in the range of 0.21– 0.25%.⁴ The route of transmission in India is still predominantly heterosexual (88.2%) followed by parent to child (5%), injecting drug users (1.7%), homosexual (1.5%) and blood & blood products (1%).⁵

HIV/AIDS is affecting mainly young people in the sexually active age group. The HIV prevalence in the age group of 15-49 years was 0.26%.¹ In India people in the age group of 15-29 years comprise almost 25% of the country's population and most regular undergraduate university students lie within the age group of 18 to 24 years; however, they account for 31% of AIDS burden. This clearly indicates that young people are at high risk of contracting HIV infection.⁶ Most of the young adults indulge in risky sexual behaviours like unprotected sex, multi partnership, no or inconsistency use of condoms and drug abuse that extremely determinate their health and putting them at high risk to HIV/AIDS and other sexually transmitted diseases.⁷

Knowledge is very important for acquiring optimum health. Attitude formation is not essentially a function of the amount of information one receives but a function of how that information was acquired.⁸ Moreover, increasing knowledge of HIV/AIDS can be a

powerful means of fostering positive attitudes and building safe practices among young population.

Various studies conducted in different parts of India to assess the knowledge of and attitude towards HIV/AIDS reveal a widespread ignorance and misconceptions about the disease among young adults. Hence, this study was undertaken to assess the extent of knowledge and beliefs of first year college students, who have just entered in the degree level of education, along with the attitude toward this disease.

Material and Methods

This study was an Institutional-based, observational study with cross-sectional study design conducted among the first year college students at Government general Degree College in Siliguri sub-division of Darjeeling district, West Bengal, during November and December 2016. This Government College is also known as Bagdogra College, established in 1998.⁹ It offers undergraduate courses in arts, science and commerce and affiliated to University of North Bengal.¹⁰ A total of 2100 students had enrolled in the first year in 2016. The objectives of this study was to assess the HIV/AIDS related knowledge and attitude of first year college students and the socio-demographic factors related to it.

The sample size was estimated on the basis of a single proportion design. Assuming that 50% of the students lacked Knowledge & Prevention Practice towards HIV/AIDS, 95% level of confidence, 5% margin of error and using single population proportion formula ($N = Z^2 p (1-p) / d^2$), a sample size of 384 was calculated. Since the questionnaire was self administered, 20% non-response rate was considered. Thus, the minimum sample size obtained was 461. However, it was rounded off to 460. The study populations for this study were the first year college students. Unwilling students, who refused to give their consent to participate and those who were absent on the day of study, were excluded from the study. Convenient sampling technique was applied to

select 460 students (both male and females) of aged ≥ 16 , years for this study.

Data Collection

After getting permission from the Institutional ethics committee, the Principal of the selected college was informed about the study and permission for the visit to the college was sought personally. A pilot testing of the questionnaire was done among a small sub-sample of the first year college students, to check for consistency. However, it was not included during analysis. The study instrument was a pre-designed, self-administered structured questionnaire which comprised of three parts. Part I related to students’ socio-demographic background, Part II on students’ knowledge regarding HIV/AIDS, Part III students’ attitude towards HIV/AIDS and Part IV on students’ knowledge about treatment & prevention. The participants were briefed about the purpose of the study and informed consent was obtained from them after assuring confidentiality and anonymity. Author guided self administered data collection technique was used to collect the data.

Scoring

For knowledge, each right response was given a score of 1 while a wrong response was scored 0. Total knowledge scores was ranged between 0.17 - 1. Knowledge scores from 0 to 0.68 were considered as not- knowledgeable while knowledge scores more than 0.68 was considered as knowledgeable regarding HIV/AIDS. Attitude towards HIV/AIDS was assessed using seven-item questionnaire. Attitude scores between 0.25 to 0.79 were considered as unfavourable attitude, and scores ranged from 0.8 to 1 were considered as favourable attitude.

Data Analysis

Collected data was checked for completeness, coded and entered into Microsoft Excel (2007) data sheet and then it was exported to the IBM Statistical Package for Social Sciences version 20 for analysis. It was organized and presented using

the principles of descriptive statistics. All analysis was done with the test of significance (*P* value, chi-square). The level $P < 0.05$ was considered as the cut-off value for significance.

Result

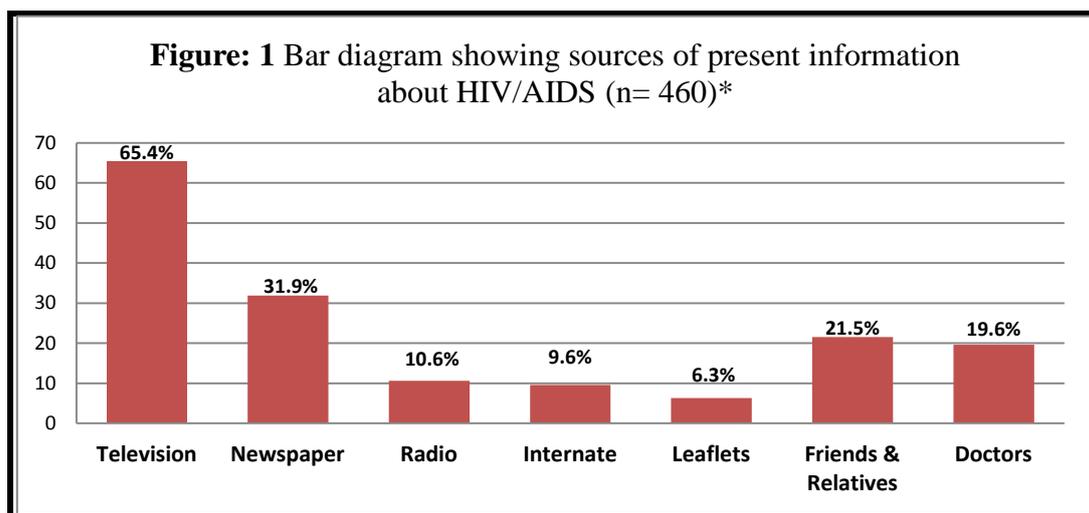
A total of 460 students took part in the study. Of whom, 334 (72.6%) were females and 126 (27.4%) were male. Majority 415 (90.2%) of the students were in the age group below 20 years. The mean age of participants was 18.33 (± 1.016) years. By religion, the majority 363 (78.9%) were Hindu followed by Christian 71 (15.4%), Islam 16 (3.5%) and others 10 (2.2%). In terms of occupation of participants’ father, 154 (33.5%) were farmers followed by business 126 (27.4%) and tea garden worker 100 (21.7%). while in terms of Socio-economic class, majority 376 (81.7%) were in social class V [Table 1].

Table-1: Socio-Demographic Characteristics of the Respondents (n=460)

Characteristics	Frequency	%
Age (In years)		
Below 20	415	90.2
20 & above	45	9.8
Mean age = 18.33 (± 1.016)		
Gender		
Male	126	27.4
Female	334	72.6
Religion		
Hindu	363	78.9
Islam	16	3.5
Christian	71	15.4
Others*	10	2.2
Occupation of Father		
Govt. Service	43	9.3
Private Job	37	8.1
Business	126	27.4
Farmer	154	33.5
Tea garden worker	100	21.7
Social Class according to Modified B.G.Prasad’s Scale		
I	00	00
II	19	4.1
III	37	8.1
IV	28	6.1
V	376	81.7

* Sikh & Buddhist

Majority of the students 301 (65.4%) got the information about the HIV/AIDS through Television, followed by News paper 147 (31.9%), Friends & relatives 99 (21.5%), Doctor 90 (19.6%), by Radio 49 (10.6%), by Internet 44 (9.6%) and through Leaflets 29 (6.3%) [Figure 1].



*Multiple responses

The mean knowledge score of study participants about HIV/AIDS was (0.75). More than fifty percent of participants scored greater than or equal to the mean and considered as knowledgeable. All the first year students who participated in the study had heard about HIV/AIDS. Among the total, 284 (61.7%) participants knew that there is difference between HIV and AIDS, 364 (79.1%) of participants knew that the HIV can be transmitted by sex with a prostitute. Three hundred and eighty seven (84.1%) knew that the

HIV can be transmitted through infected mother to the baby. Moreover, 412 (89.6%) of participants knew that getting injection with a used needle can transmit the HIV. About (32.7%) of participants responded that HIV can be transmitted through sharing of common toilets, food, clothes and shaking hands with HIV infected person. Statistically difference was found between males and females about the knowledge regarding the mode of transmission of HIV/ AIDS [Table 2].

Knowledge on HIV/AIDS	Male N (%)		Female N (%)		Total N (%)		
	Yes	No	Yes	No	Yes	No	
Is there a difference between HIV & AIDS?	80 (17.4)	46 (10.0)	204 (44.3)	130 (28.3)	284 (61.7)	176 (38.3)	X ² =0.226 df=1 P=0.635
Do you think a person can get infected with HIV by having sex with Prostitute?	103 (22.4)	23 (5.0)	261 (56.7)	73 (15.9)	364 (79.1)	96 (20.9)	X ² =0.719 df=1 P=0.397
Do you think HIV can be transmitted from a mother to child?	99 (21.5)	27 (5.9)	288 (62.6)	46 (10.0)	387 (84.1)	73 (15.9)	X ² =4.017 df=1 P=0.045*
Do you think a person can get infected with the HIV by sharing a toilet seat with a person who has HIV/AIDS?	48 (10.4)	78 (17.0)	125 (27.2)	209 (45.4)	173 (37.6)	287 (62.4)	X ² =0.018 df=1 P=0.895
Do you think a person can get infected with the HIV by shaking hands with a person who has HIV/AIDS?	38 (8.3)	88 (19.1)	72 (15.7)	262 (57.0)	110 (23.9)	350 (76.1)	X ² =3.720 df=1 P=0.054
Can a person get HIV by sharing food with a person who has HIV/AIDS?	62 (13.5)	64 (13.9)	106 (23.0)	228 (49.6)	168 (36.5)	292 (63.5)	X ² =12.04 df=1 P=0.001*
Can a person get HIV by sharing cloths with a person who has HIV/AIDS?	49 (10.7)	77 (16.7)	103 (22.4)	231 (22.4)	152 (33.0)	308 (67.0)	X ² =2.680 df=1 P=0.102
Can a person get infected with the HIV by getting injection with a used needle?	114 (24.8)	12 (2.6)	298 (64.8)	36 (7.8)	412 (89.6)	48 (10.4)	X ² =0.154 df=1 P=0.695

Figures in parenthesis shows row percentage *statistically significant difference at p-value < 0.05

Out the total seven questions asked to address the students' attitude towards prevention of HIV infection, the scores were ranging from 0.25 - 1 (Mean score = 0.76). The majority 314 (68.3%) of participants had a favourable attitude towards the isolation of HIV infected person. In terms of their believe to treat HIV patient differently, the majority 380 (82.6%) had favourable attitude. Four hundred twenty four (92.2%) of participants believes that the screening of HIV before should be done. About 389 (84.6%) students exhibited

favourable attitude to taking care of their HIV-positive relatives. 286 (62.2%) of them believed that the HIV infected couple should not have their children. Almost fifty percent of students had a mixed response to share same class/group together with HIV-positive students. Moreover, the majority 372 (80.9%) of participants had favourable attitude towards HIV infected shopkeeper. Statistically difference was found between males and females regarding attitude towards HIV/ AIDS infected person [Table 3].

Table-3: Attitude of respondents towards HIV/AIDS infected person (n=460)

Attitude towards HIV/AIDS infected person	Male N (%)		Female N (%)		Total N (%)		
	Agree	Disagree	Agree	Disagree	Agree	Disagree	
HIV infected person should be isolated.	52 (11.3)	74 (16.1)	94 (20.4)	240 (52.2)	146 (31.7)	314 (68.3)	X ² =7.276 df=1 p=0.007*
Treat HIV patient differently.	34 (7.4)	92 (20.0)	46 (10.0)	288 (62.6)	80 (17.4)	380 (82.6)	X ² =11.115 df=1 P=0.001*
Screening of HIV/AIDS in community before marriage should be done.	118 (25.7)	8 (1.7)	306 (66.5)	28 (6.1)	424 (92.2)	36 (7.8)	X ² =0.525 df=1 P=0.469
HIV infected couple can have their children.	54 (11.7)	72 (15.7)	120 (26.1)	214 (46.5)	174 (37.8)	286 (62.2)	X ² =1.868 df=1 P=0.172
If a relative of yours has the HIV/AIDS would you be willing to care him/her in your household.	108 (23.5)	18 (3.9)	281 (61.1)	53 (11.5)	389 (84.6)	71 (15.4)	X ² =0.176 df=1 P=0.675
Would you accept to attend the same class/group in college with a person that you know is infected with HIV	51 (11.1)	75 (16.3)	177 (38.5)	157 (34.1)	228 (49.6)	232 (50.4)	X ² =5.735 df=1 P=0.017*
If you knew that a shopkeepers or food sellers is infected with HIV, would you buy food from them.	86 (18.7)	40 (8.7)	286 (62.2)	48 (10.4)	372 (80.9)	88 (19.1)	X ² =17.852 df=1 P=0.001*

Figures in parenthesis shows row percentage *statistically significant difference at p-value < 0.05

The majority, 391 (85.0%) of the participants knew that HIV/AIDS can be prevented by use of condom. The greater parts of students (84.1%) knew that HIV/AIDS can be prevented by health education. About 65.2% of students knew that the treatment for HIV/AIDS is available. Only 19.6% of students responded that the disease is non curable, 41.7% of participants believed that HIV/AIDS can be prevented by the use of oral

contraceptive pills and thirty three percent of students knew HIV/AIDS vaccine is available. The findings suggest a major misconception about the prevention of HIV/AIDS by oral contraceptive pills, vaccine for HIV/AIDS and whether AIDS is curable or non curable. Statistically difference was found between males and females on knowledge about treatment & prevention of HIV/ AIDS [Table 4].

Table-4: Knowledge about Treatment & Prevention of HIV/AIDS (n=460)

Knowledge about Treatment & Prevention	Male N (%)		Female N (%)		Total N (%)		
	Yes	No	Yes	No	Yes	No	
Can HIV/AIDS be prevented?	108 (23.5)	18 (3.9)	261 (56.7)	73 (15.9)	369 (80.2)	91 (19.8)	$X^2= 3.304$ df= 1 $P= 0.069$
Can it be prevented by Oral contraceptive pill?	78 (17.0)	48 (10.4)	190 (41.3)	144 (31.3)	268 (58.3)	192 (41.7)	$X^2= 0.948$ df=1 $P= 0.330$
Can it be prevented by Condom?	119 (25.9)	7 (1.5)	272 (59.1)	62 (13.5)	391 (85.0)	69 (15.0)	$X^2= 12.140$ df= 1 $P= 0.001*$
Can it be prevented by Health education?	110 (23.9)	16 (3.5)	277 (60.2)	57 (12.4)	387 (84.1)	73 (15.9)	$X^2= 1.307$ df= 1 $P= 0.253$
Can it be prevented by change of behaviour?	102 (22.2)	24 (5.2)	223 (48.5)	111 (24.1)	325 (70.7)	135 (29.3)	$X^2= 8.879$ df= 1 $P= 0.003*$
Can HIV/AIDS be cured if diagnosed earlier?	89 (19.3)	37 (8.0)	281 (61.1)	53 (11.5)	370 (80.4)	90 (19.6)	$X^2= 10.590$ df= 1 $P= 0.001*$
Is treatment for HIV/AIDS available?	62 (13.5)	64 (13.9)	238 (51.7)	96 (20.9)	300 (65.2)	160 (34.8)	$X^2= 19.611$ df= 1 $P= 0.001*$
Is vaccine for HIV/AIDS available?	61 (13.3)	65 (14.1)	247 (53.7)	87 (18.9)	308 (67.0)	152 (33.0)	$X^2= 26.971$ df= 1 $P= 0.001*$

Figures in parenthesis shows row percentage *statistically significant difference at p -value < 0.05

Discussion

All the first year students who participated in the study had heard about HIV and AIDS. The majority (61.7%) of students participated in this study had information on the difference between HIV and AIDS. This result was not comparable to study done by Mulu *et al*¹¹ which reports (81.9%) of students had information on the difference. Most of the students knew that HIV/AIDS can be transmitted by sex with Prostitute, from an HIV-infected mother to her baby and by HIV infected needle. Similar results were shown by the study conducted among the college students in Kerala by Lal *et al*¹² and among university students in Punjab by Sandhu *et al*¹³ and in Ethiopia by Mulu *et al*.¹¹ Similar findings also reported from study conducted by Deb among nursing students of Kolkata,¹⁴ and among medical students by Udgiri *et al*¹⁵ in Bijapur, by Joshi *et al*¹⁶ in Karnataka and Shankar *et al*¹⁷ in Nepal. Another study conducted by Kuruvilla among medical students showed that the male students had better knowledge regarding the transmission of HIV/AIDS than female students.¹⁸ However; in our study female students had significantly higher knowledge about HIV/AIDS compared to male

students. The difference in the level of knowledge between male and female students might be due to difference in access to information, media and participation in different anti-HIV/AIDS programme.

The present study brought out some misconceptions about the transmission of HIV/AIDS. Few students (37.6%), (36.5%) and (23.9%) thought that HIV/AIDS can be transmitted through sharing common toilet, by sharing food and by shaking hands with HIV infected respectively. This indicates that students need more information and education about some points of preventive methods of HIV/AIDS and routes of transmission. These results were comparable with the study done by Basavayya,¹⁹ by Joshi *et al*, by Udgiri *et al*, and in contrast with the study done by Mulu *et al*. A total of 19.6% students responded that HIV/ AIDS cannot be cured, 33% students knew unavailability of vaccine for HIV/AIDS and 34.8% students were unaware of the availability of HIV/AIDS treatment. These results were not comparable with the study done by Joshi *et al* and Mulu *et al*, where the students had better knowledge than our study. Majority of participants (85%), (70.7%)

and (84.1%) reported that HIV/AIDS can be prevented by using condoms, by changing behaviour and by health education respectively. There was statistically significant difference found between males and females regarding the knowledge about HIV/AIDS prevention. Similar findings also reported from the study done by Joshi *et al*, Lal *et al* and Mulu *et al*. The difference in the level of knowledge between the present study and others might be due to the difference in the socio-demographic characteristics, especially the educational level of the study participants and the type of indicators used to measure the level of knowledge.

About (31.7%) of students responded that an HIV/AIDS patient should be isolated while (62.2%) participants thought that an HIV-infected couple should not have their own children. Majority (92.2%) of the students said that the screening of HIV/AIDS before the marriage should be done. Similar results was shown by the study conducted by Hansoon *et al.*, in Kazakhstan, (77%) of students were against the HIV-infected couple to have their own children.²⁰ However, the present finding was not comparable with findings reported by Joshi *et al*, where (11%) of the students said that an HIV/AIDS patient should be isolated while (23%) of participants thought that an HIV-infected couple should not have their own children. A study by Lal *et al*, reported that only (16%) of students thought that HIV/AIDS patient should be isolated.

Television (65.4%) was the leading source of information for participants regarding the present knowledge about HIV/AIDS followed by Newspaper (31.9%) and friends & relatives (21.5%). These results can be comparable to the study conducted by Joshi *et al*, Lal *et al*, McManus *et al*²¹ in Delhi and Bhalla *et al*²² in Gujrat.

These results were consistent with prior studies indicating gaps in knowledge between boys and girls and which suggests the need for targeting young adults in the national AIDS campaigns.

This emphasizes the need of spreading awareness about HIV and AIDS among college students.

Conclusion

Though the general level of knowledge of students about HIV/AIDS was not poor but they had a number of misconceptions about it. The study highlighted some misconceptions about knowledge on HIV/AIDS and prevention, which need to be addressed. There is also a necessity to stress upon attitudinal issues about sensitive diseases like HIV/AIDS in the undergraduate curriculum. Only correct knowledge and awareness about AIDS can help in dispelling the various misconceptions, myths and stigmas associated with it.

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Reference

1. Park K. Epidemiology of communicable diseases. Park's textbook of preventive and social medicine. 24th ed. Jabalpur: M/s. Banarasidas Bhanot Publishers; 2017. p. 361-73.
2. UNAIDS (2017), Fact Sheet 2017, Global statistics-2016. [Retrieved from: <http://www.unaids.org/en/resources/fact-sheet>] [Last assessed on 2018 Sep 16]
3. UNAIDS (2017). [Retrieved from: http://www.unaids.org/sites/default/files/media_asset/20170720_Data_book_2017_en.pdf] [Last assessed on 2018 Sep 17]
4. NACO (2017) 'Annual Report 2016-2017'.
5. Govt. of India (2012), Annual Report 2011-12, NACO, Department of AIDS Control,

- Ministry of Health and Family Welfare,
New Delhi
6. National AIDS Control Organization/
MoHFW/GoI. [Retrieved from:
<http://www.naco.gov.in/youth>] [Last
assessed on 2018 Sep 16]
 7. Shiferaw Y, Alemu A, Girma A et al.
Assessment of knowledge, attitude and risk
behaviours towards HIV/AIDS and other
sexual transmitted infections among
preparatory students of Gondar town,
northwest Ethiopia. BMC Research Notes.
2011; 4(505):2-8.
 8. Agbedia C. knowledge, attitude and practice
(KAP) of sand witch undergraduate students
of delta state University, Abraka, Nigerion
condom use in the prevention of sexually
transmitted infections (STIs) and unwanted
pregnancy. IOSR-JHss. 2013; 7(4): 73-78.
 9. Colleges in West Bengal, University Grants
Commission. [Retrieved from:
<https://web.archive.org>]
 10. Colleges under University of North Bengal.
[Retrieved from: <https://web.archive.org>]
 11. Mulu W, Abera B, Yimer M: Knowledge,
Attitude and Practice on HIV/AIDS among
students of Bahir Dar University. Science
Journal of Public Health. Vol.2.2014.pp.78-
86.
 12. Lal SS, Vasan RS, Sharma PS, Thankappan
KR. Knowledge and attitude of college
students in Kerala towards HIV/AIDS,
sexually transmitted diseases and sexuality.
Natl Med J India 2000; 13:231-6.
 13. Sandhu P, Zarabi D: Awareness and
Knowledge about HIV/AIDS among Punjab
University Students. International Journal of
Education and Psychological Research.
Vol.4, Issue2, june 2015.
 14. Deb S. Attitude of nursing students of
Kolkata towards caring of HIV/AIDS
patients.IJCM 2004; 29:111-3.
 15. Udgiri R, Yadavannavar MC, Angadi MM,
Sharvanan E. Knowledge about HIV/AIDS
among first year medical students. Al-
Ameen J Med Sci 2011; 4:280-2.
 16. Joshi AV, Nikam K, Hungund BR, Viveki
RG, Nikam SV, *et al.* Knowledge about and
attitude towards HIV/AIDS among first year
medical students: A cross-sectional study. J
Sci Soc 2013; 40:155-8
 17. Shankar PR, Subish P, Paudel R, Alam K:
Perception and Knowledge about
HIV/AIDS among Students in a College in
Western Nepal. SAARC Journal of
Tuberculosis, Lung Diseases & HIV/AIDS.
2009 VI (2) 11-16.
 18. Kuruvila M. KAP study on HIV/AIDS
among first year MBBS students. Indian J
Dermatol Venerol Leprol 1997; 63:225-8.
 19. Basavayya GS. Awareness of HIV/AIDS
among medical students. Indian J Public
Health 2005; 49:31-2.
 20. Hansoon M, Stockfelt L, Urazalin M, Ahlm
C, Anderson R. HIV/AIDS awareness and
risk behavior among students in Semey,
Kazakhstan: A cross sectional survey. BMC
Int Health Hum Rights 2008; 8:14.
 21. McManus A, Dhar L. Study of knowledge,
perception and attitude of adolescent girls
towards STIs/HIV, safer sex and sex
education: (A cross sectional survey of
urban adolescent school girls in South
Delhi, India). BMC Womens Health 2008;
8:12.
 22. Bhalla S, Chandwani H, Singh D,
Somasundaram C, Rasanias SK, Singh S.
Knowledge about HIV/AIDS among senior
secondary school students in Jamanagar,
Gujrat. Health Popul 2005; 28:178-88.