

# HIV/AIDS Related Knowledge and Attitude among Health Science Student of Debre Markos University, North West Ethiopia, 2014

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## Abstract

**Introduction:** Acquired Immuno Deficiency Syndrome (AIDS) is caused by the human immunodeficiency virus (HIV) which damages a person's ability to fight off disease, leaving the body susceptible to secondary and opportunistic infections. Youths are among the risky populations for HIV/AIDS, so equipping them with appropriate level of knowledge and attitude and behavioral change towards HIV/AIDS is one of the important strategies to prevent the HIV/AIDS. So, this assessment was conducted to assess HIV/AIDS related knowledge and attitude among health science students in Debre Markos University (DMU), North West Ethiopia, 2014.

**Methods:** Cross-sectional study design was conducted among DMU, college of medicine and health science 3<sup>rd</sup> and 4<sup>th</sup> year students. A total of 197 students were enrolled in the study. Data was entered using Epi data version 3.1 and it was exported to SPSS version 16 for further analysis. The collected data were analyzed using descriptive analysis, and it was presented with frequency, percentage, mean and standard deviation (SD).

**Results:** More than three fourth (78.5%) of study participants were male. The mean age of study participants were 22.42 with SD and range of 1.77 and 19 to 35 years old. Mean of correct answer for knowledge related questions was 18.8 with SD of 1.99. More than one third (36.2%) of respondents have poor knowledge while 104(63.8%) have good knowledge towards HIV/AIDS. In addition, 84(51.5%) of respondents have favorable attitude while 79(48.5%) of respondents have unfavorable attitude towards treating and working with HIV/AIDS patients.

**Conclusion:** Almost half of the respondents had unfavorable attitude towards HIV/AIDS, specifically towards HIV/AIDS patient support and care. Even if majority of respondents have good knowledge towards HIV/AIDS, almost half of the respondents had unfavorable attitude towards treating and working with HIV/AIDS patients, which shows that they did not extend their knowledge to the stigma and reservations identified around working with and treating people with HIV/AIDS. This calls the need for health courses to address not only the medical aspects of HIV but also the social components, related with stigma and discrimination against HIV/AIDS patients.

**Keywords:** HIV/AIDS; Knowledge; Attitude; Debre Markos University; Students

## Introduction

Acquired Immuno Deficiency Syndrome (AIDS) is caused by the human immunodeficiency virus (HIV) which damages a person's ability to fight off disease, leaving the body susceptible to secondary and opportunistic infections [1].

Since first evidence of the HIV epidemic was detected in Ethiopia in 1984, AIDS has claimed the lives of millions and left behind an estimated 744,100 orphans. Ethiopia is one of the sub-Saharan countries highly affected by the HIV/AIDS pandemic. The adult prevalence of HIV infection in Ethiopia was estimated to be 2.4% in which most of the burden occurring among younger age groups [2-4].

Ethiopian Demographic and Health Survey (EDHS) 2011 report showed that knowledge of AIDS is almost universal in the country; with 97% of women and 99% of men have heard of AIDS. 19% of women and 32% of men have knowledge on HIV/AIDS transmission and prevention methods. The report also showed that men have relatively favorable attitude towards HIV/AIDS patients than females [1].

Results of several studies showed that most sexual risk behaviors among University students might have been acquired through a period of campus life [2,4] and hence they are likely to be at risk of HIV/AIDS. Therefore, equipping students with appropriate level of knowledge and attitude and behavioral change towards HIV/AIDS one of the important

strategies to prevent the incidence of HIV/AIDS [4-6].

## Methods

### Study area, population and sample size

The study was conducted in Debre Markos University. The study populations for this study were all DMU, college of medicine and health science 3<sup>rd</sup> and 4<sup>th</sup> year students in 2014 academic year. All of 3<sup>rd</sup> and 4<sup>th</sup> year nursing, midwifery and public health students were included in the study.

Sample size for the study was calculated by using single population proportion formula, considering a proportion of 50%, 95% CI and 5%

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margin of error. But, since the total number of source population during the study period was less than 10,000 correction formula was also used giving a final sample size of 197. Non regular students and those who cannot fill the questionnaire due to serious illness were excluded from the study.

### Study design, Data collection tool and procedure

Institutional based cross sectional study design was conducted. Data were collected on March, 2014 using self-administered structured questionnaire. The questionnaire was derived and modified from several researchs which were done on knowledge, attitude and risk perceptions of healthcare workers [1,2,5,6]. The data collection procedure was assisted by three data collectors and two supervisors after providing necessary training for the data collectors and supervisors on confidentiality, data collection process, objectives of the study and its significance.

### Operational definitions

- Adequate Knowledge-If respondents correctly answer above the mean (18.8) of knowledge towards HIV/AIDS related questions.
- Inadequate knowledge-If respondents answer below above the mean (18.8) of knowledge towards HIV/AIDS related questions.
- Attitude: Attitudes of health science students towards treating and working with people with HIV/AIDS
- Favorable attitude to treat and work HIV/AIDS patients: If respondents correctly answer above the mean (56.7) of attitude towards treating and working with HIV/AIDS patients related questions. A five score Likert scale was used to measure respondents willingness, (strongly agree=1, agree=2, neutral=3, disagree=4, strongly disagree=5).
- Unfavorable attitude to work with HIV/AIDS patients: If respondents answer below the mean (56.7) of attitude towards treating and working with HIV/AIDS patients related questions.

### Data analysis and quality assurance methods

Data was entered using Epi data version 3.1 and it was exported to SPSS version 16 for further analysis. The collected data were analyzed using descriptive analysis, and it was presented with frequency, percentage, mean and SD. The collected data was checked every day on its completeness and clarity by the supervisors.

### Ethical considerations

Ethical clearance was obtained from Debre Markos University, college of medicine and health science ethical review committee. Informed consent was obtained from study participants, after explaining the purpose of the study.

### Results

From a total of 197 students, 163 respondents complete the questionnaire giving a response rate of 83%. More than three fourth (78.5%) of study participants were male. The mean age of study participants were 22.42 with SD and range of 1.77 and 19 to 35 years old. Majority, 150(92%), of respondent were within the age range of 19 to 24 years old. most of the study participants were married accounting 156(95.7%), while 7(4.3%) were married. Regarding the previous residence, 119(73%) were from rural origin, while 44(27%) were from

Variables		Frequency	Percentage
Age, mean 22.42, SD 1.77, Median 22	19-24 years old	150	92
	25-35 years old	13	8
Sex	Male	128	78.5
	Female	35	21.5
Marital status	Single	156	95.7
	Married	7	4.3
Living condition	Campus	147	90.2
	Out of campus	16	9.8
Religion	Orthodox	153	93.9
	Muslim	4	2.5
	Protestant	5	3.1
	Catholic	1	0.6
Family home	Rural	119	73
	Urban	44	27
Year of study	3 <sup>rd</sup> year	100	61.3
	4 <sup>th</sup> year	63	38.7
Ethnicity	Amhara	141	86.5
	Oromo	7	4.3
	Tigre	10	6.1
	Others	5	3.1
Department	Public health	45	27.6
	Nursing	85	52.1
	Midwifery	33	20.2

**Table 1:** Socio demographics Characteristics of the respondents among health science students of Debre Markos University, 2014.

urban origin. Eighty five (52.1%) of respondents were nursing students, 45(27.6%) were public health and 33(20.2%) were midwifery students (Table 1).

### Knowledge towards HIV/AIDS

There were 22 knowledge related questions, with a minimum of 11 and 22 knowledge score. Mean of correct answer for knowledge related questions was 18.8 with standard deviation (SD) of 1.99. Mean of correct answer was taken as a base of reference to categorize knowledge in to adequate knowledge (if respondents answer above the mean) and inadequate knowledge (if respondents answer below the mean). Accordingly, 59 (36.2%) of respondents have poor knowledge while 104(63.8%) have good knowledge towards HIV/AIDS (Table 2).

Almost all, 162(99.4%), know that HIV can be transmitted through sexual contact, and 161(98.8%) of respondents know that HIV can be transmitted by blood contact. Ten (6.1%) of respondents said that HIV can be transmitted through casual contact, and 23(14.1%) said that tattooing cannot spread HIV. In addition 39(23.9%) of respondents said that spermicidal jelly, foam and cream are effective in reducing HIV transmission. Similarly, 66(40.5%) said that diaphragm is effective means of reducing HIV transmission. Sixteen (9.8%) of the study participants said that mosquitoes can transmit HIV, and 7(4.3%) said that HIV spread through coughing and sneezing. Four (2.5%) respondents said that HIV can be transmitted through air (Table 2).

### Attitude towards HIV/AIDS

There were 15 questions related to attitude towards HIV/AIDS, response to each of the questions contain a 1 to 5 point score, with a total of 75 point score. Respondents scored a minimum of 38 and maximum of 70 with mean, and SD of 56.7 and 6.26 points respectively. Mean of attitude was used as a reference to categorize the attitude in to favorable and unfavorable attitude to work and treat HIV/AIDS

Variables		Frequency	Percentage
Transmission of HIV through unprotected sexual contact	Yes	162	99.4
	No	1	0.6
Transmission route of HIV/AIDS	Oral	1	0.6
	Anal	7	4.3
	Vaginal	4	2.5
	All	151	92.6
Transmission of HIV/AIDS by blood contact	Yes	161	98.8
	No	2	1.2
Transmission of HIV/AIDS from mother to child	Yes	162	99.4
	No	1	0.6
Transmission of HIV/AIDS through casual contact	Yes	10	6.1
	No	153	93.9
Tattooing can spread HIV/AIDS	Yes	130	79.8
	No	23	14.1
	Don't know	10	6.1
All people who test positive for HIV antibody show visible symptoms	Yes	8	4.9
	No	154	94.5
	Don't know	1	0.6
Peoples develop HIV antibody within one week exposure	Yes	15	9.2
	No	140	85.9
	Don't know	8	4.9
Spermicidal jelly, foam and cream are effective in reducing HIV transmission	Yes	39	23.9
	No	105	64.4
	Don't know	19	11.7
Diaphragm is effective means of reducing HIV transmission	Yes	66	40.5
	No	78	47.9
	Don't know	19	11.7
Mosquitoes can transmit HIV	Yes	16	9.8
	No	141	86.5
	Don't know	6	3.7
HIV spread through swimming pools	Yes	6	3.7
	No	153	93.9
	Don't know	4	2.5
HIV spread through coughing and sneezing	Yes	7	4.3
	No	155	95.1
	Don't know	1	0.6
HIV spread through infected semen	Yes	147	90.2
	No	15	9.2
	Don't know	1	0.6
Vaccination can protect HIV/AIDS	Yes	3	1.8
	No	158	96.9
	Don't know	2	1.2
HIV/AIDS only affects IV drug users, prostitutes, and homosexuals	Yes	8	4.9
	No	152	93.3
	Don't know	3	1.8
HIV can be transmitted through air	Yes	4	2.5
	No	159	97.5
HIV is less easily transmitted than hepatitis B virus	Yes	81	49.7
	No	70	42.9
	Don't know	12	7.4
<b>Summary index:</b> Knowledge towards HIV/AIDS (Mean=18.8, SD=1.99)	Adequate knowledge	104	63.8
	Inadequate knowledge	59	36.2

**Table 2:** Knowledge of respondents towards HIV/AIDS among DMU health science students, North West Ethiopia, 2014.

patients. Accordingly 84(51.5%) of respondents have favorable attitude while 79(48.5%) of respondents have unfavorable attitude to treat and work with HIV/AIDS patients (Table 3).

Seventy five (46%) of respondents strongly agree and agree with the idea that their chance of becoming infected with HIV is very high due to their work condition. In addition, 19 (11.7%), strongly agree and agree that emergency medical service should be refused to known HIV/AIDS patients. Eight (4.9%) and 7 (4.3%) of respondents strongly agree and agree if they prefer not to care for HIV positive patients. Thirteen (8%) of study participants were not willing to assist with the delivery of baby born from a mother with HIV/AIDS. In a similar situation, 14(8.6%) of respondents also said that they are not willing to assist with the operation on HIV/AIDS patients. Forty (24.6%) of the health science students also said that they will end their friendship if their friend has HIV/AIDS. Thirty one (19%) of study participants feel that providing health services to peoples with HIV/AIDS is a waste of resource since they are all going to die (Table 3).

## Discussion

This study assessed knowledge and attitude of DMU, health science students towards HIV/AIDS. Accordingly, 36.2% of respondents have inadequate knowledge towards HIV/AIDS, and 63.8% have adequate knowledge. A study conducted in Taiwan among first year university students showed that the mean knowledge level towards HIV/AIDS was 87.02%. Another research on Knowledge, Attitude and Practice Regarding HIV/AIDS among University Students in Xinjiang also showed that 74.5% of the students had good level of knowledge. These findings are relatively high when compared with the current study. This difference could be due to the difference in the data collection tool and socio demographic characteristics of the study populations [7,8].

The knowledge level of the current finding (63.8%) is relatively higher when compared with study conducted in Bahir Dar University. The study conducted among students of Bahir Dar University showed that 45.7% of the study participants were knowledgeable towards HIV/AIDS. Possible reasons for such difference could be mainly due to the difference in study population. The study population for the study conducted in Bahir Dar University were all undergraduate regular students in the University, while the study population for the current study were only third and fourth year health science students, in which these students are believed to have relatively better knowledge towards HIV/AIDS when compared with the other undergraduate students in the university, due to several courses they took about HIV/AIDS. EDHS 2011 report also showed that knowledge of AIDS is almost universal in the country; in which 97% of women and 99% of men age 15-49 have heard of AIDS [1,6].

More than 93% of respondents of this study said that HIV virus is not transmitted through casual contact. This finding is higher when compared with study conducted in Khammam town, Andhra Pradesh, which showed that only 56.38% of participants knew that hugging and shaking hands with HIV/AIDS infected person will not transmit HIV virus. While the finding of this study is in comparable with study done in Gujarat, which showed that 90.8% of the study participants knew that shaking hands with HIV infected person will not transmit HIV virus [9,10].

Almost all, 99.4%, of participants in the current study knew that HIV can be transmitted through unprotected sexual contact. A literature review on Knowledge of HIV and AIDS in women in sub-Saharan Africa countries showed that the percentage of secondary students who

Variables	Strongly agree n(%)	Agree n(%)	Neutral n(%)	Disagree n(%)	Strongly disagree n(%)
My chance of becoming infected with HIV is high due to my work	15(9.2)	60(36.8)	16(9.8)	54(33.1)	18(11)
Emergency medical service should be refused to known HIV/AIDS patients	4(2.5)	15(9.2)	15(9.2)	68(41.7)	61(37.4)
It is necessary to take extra infection control precautions for HIV/AIDS patients	90(55.2)	57(35)	2(1.2)	10(6.1)	4(2.5)
Health care workers have high risk of catching blood born virus like HIV/AIDS while caring for patients	64(39.3)	76(46.6)	3(1.8)	17(10.4)	3(1.8)
I worry about catching HIV/AIDS at work	42(25.8)	63(38.7)	11(6.7)	40(24.5)	7(4.3)
Patients with HIV/AIDS needs to be nursed separately from others	16(9.8)	31(19)	6(3.7)	70(42.9)	40(24.5)
I would prefer not to care for patients with HIV/AIDS	8(4.9)	7(4.3)	10(6.1)	64(39.3)	74(45.4)
I am willing to assist with the delivery of baby born from a mother with HIV/AIDS	65(39.9)	82(50.3)	3(1.8)	7(4.3)	6(3.7)
I am willing to assist with an operation on patient with HIV/AIDS	50(30.7)	89(54.6)	10(8)	8(4.9)	6(3.7)
It is shame for someone to have HIV/AIDS	18(11)	17(10.4)	8(4.9)	55(33.7)	65(39.9)
I would end my friendship if my friend has HIV/AIDS	19(11.7)	21(12.9)	8(4.9)	54(33.1)	61(37.4)
I avoid performing any task at work on patients without wearing latex gloves	48(29.4)	48(29.4)	12(7.4)	35(21.5)	20(12.3)
I am comfortable assisting or being assisted by a co-worker who has HIV	43(26.4)	94(57.7)	9(5.5)	10(6.1)	7(4.3)
Health care workers who are HIV positive should be allowed to continue to provide care	43(26.4)	88(54)	13(8)	11(6.7)	8(4.9)
I feel that providing health services to people with HIV/AIDS is a waste of resource since they are all going to die	14(8.6)	17(10.4)	6(3.7)	39(23.9)	87(53.4)
Summary Index:	Favorable attitude			84(51.5%)	
Attitude of respondents to treat and working with HIV/AIDS patients ( Mean=56.7, and SD=6.26)	Unfavorable attitude			79(48.5%)	

**Table 3:** Attitude of respondents towards HIV/AIDS among Debre Markos University health science students, Northwest Ethiopia, 2014.

knew about HIV transmission through unprotected sexual contact was: 90% in Nigeria and 85% in Gonder, Ethiopia. Low level of knowledge were observed in Nigeria (85-88%), 80% in Gambella town, Ethiopia (80%), and 77% in Burkina Faso. The reason for high level of knowledge in the current study could be due to the reason that the current study assessed health science students, who took courses on HIV/AIDS route of transmission [11].

The risk of HIV transmission through tattooing, from mother to child, by blood contact and infected semen was not recognized by 23(14.1%), 1(0.6%), 2(1.2%) and 16(9.8%) of respondents. About 16 (9.8%), 6(3.7%), 7(4.3%) of respondents said that HIV can be transmitted through mosquitos, swimming pools, and coughing and sneezing respectively. Another misconception in this study was 66(40.5%) of participants said that diaphragm is effective means of reducing HIV transmission, and 39(23.9%) said spermicidal jelly, foam and cream are effective in reducing HIV transmission. This showed that additional education on HIV should be given to students. Similar findings were also observed in studies conducted in Gonder, Khammam town, Afghan university, Liberia, Khartoum State and Lao People's Democratic Republic [9,12-16].

More than half, 84(51.5%) of respondents have favorable attitude while 79(48.5%) of respondents have unfavorable attitude towards working and treating HIV/AIDS patients. The result of this study is lower when compared with study conducted in Addis Ababa University in which 65.5% of university students have favorable attitude towards HIV/AIDS. A study conducted in Bahir Dar University, also showed that 82.8% of the respondents had a favorable attitude. The difference in attitude could be due to the difference in the data collection tool. The study in Addis Ababa University and Bahir Dar University focused on attitude towards HIV Prevention, while the current study assessed the attitude of health science students towards treating and working with HIV/AIDS patients [6,17].

Although the health science students have good knowledge, almost half of them have unfavorable attitude towards HIV/AIDS. Nineteen (11.7%) of respondents said that emergency medical services should be refused to known HIV/AIDS patients, and 15(9.2%) prefer not to

give care for HIV/AIDS patients. In addition 13(8%) of respondents said that they are not willing to assist with the delivery of baby born from a mother with HIV/AIDS. This showed that only a high level of knowledge is not enough especially for health care providers in HIV/AIDS patient support and care. This finding is also consistent with study conducted in Gonder town [12].

## Conclusion

The level of knowledge among health science students in the current study area was high when compared with other similar studies. In addition some of respondents lack basic knowledge on HIV/AIDS prevention methods. Even if majority of respondents have good knowledge towards HIV/AIDS, almost half of the respondents had unfavorable attitude towards treating and working with HIV/AIDS patients, which shows that they did not extend their knowledge to the stigma and reservations identified around working with and treating people with HIV/AIDS. This calls the need for health courses to address not only the medical aspects of HIV but also the social components, related with stigma and discrimination against HIV/AIDS patients. In addition awareness creation on HIV/AIDS transmission route, prevention of HIV/AIDS, and strengthen the existing anti HIV/AIDS clubs with necessary training is also important.

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