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Knowledge, attitude and practices on HIV/AIDS among students of Bahir Dar University

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Abstract: Background: Students of higher education are more likely to be at risk of HIV/AIDS. Insufficient knowledge, less favorable attitudes and risky sexual practices are the major hindrances to prevent the spread of HIV. Thus, the aim of this study was to assess HIV related knowledge, attitude and practices (KAPs) of University students in Bahir Dar. Methods: A cross sectional study was conducted from January to March/ 2013. A structured questionnaire was used to collect sociodemographic variables and KAPs of students. Mean score and percentage were used to determine the level of KAP. Bivariate analysis was used to compute P- value, odds ratio and Confidence interval. Multivariate analysis was done to correlate KAPs with sociodemographic variables. Authors guided self-administered data collection technique was used. Results: From 817 participants, 45.7% were knowledgeable towards HIV/AIDS. The majority (82.8%) had favorable attitude. Knowledgeable students had more favorable attitudes compared to not-knowledgeable students (87.6% vs 78.6%). Good practices towards HIV/AIDS were observed among 41.7% of respondents. The majority (80.5%) of participants were not confident to discuss about condom use by demonstration. Students who were Knowledgeable and had favorable attitude had a better preventive practices towards HIV/AIDS compared to students who are not-knowledgeable and those who had unfavorable attitudes respectively. Differences in level of education, sex and religion were among the sociodemographic variables that showed statistically significant association with the one or more of the outcome variables. Conclusion: The majority of participating University students were not knowledgeable, had favorable attitude and poor practices towards HIV/AIDS. The study highlighted misconceptions about preventive methods of HIV transmission and risky sexual practices which need to be addressed. Therefore, specified, focused, continued and strengthened education on HIV/AIDS-related issues to bring change in practices, along with knowledge and attitudes has to be given.

Keywords: Knowledge, Attitude, Practices, HIV/AIDS, Students, University, BahirDar

1. Introduction

Acquired immunodeficiency syndrome (AIDS) caused by the human immunodeficiency virus (HIV) is a major health problem in many parts of the world, and is considered as a pandemic disease [1, 2]. Sub-Saharan Africa remains the most heavily affected region by HIV. In 2010, about 68% of all people living with HIV resided in sub- Saharan Africa. It is also accounted for 70% of new HIV infections, in 2010. Young people ages 15–24 represent 45% of all new HIV infections. In sub-Saharan Africa, nearly 3.3 million youths are living with HIV [1].

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 [3, 4].

Adolescence is a transitional phase between childhood and adulthood characterized by physiological, cognitive and emotional changes. The most common changes include developed sexual characteristics, abstract thought, fantasized role in different situations, increased sexual interests and peer influences [2]. HIV/AIDS affects young members of the societies especially adolescents between the age of 15 to 24 who are vulnerable and at risk of the disease. It is also estimated that most regular undergraduate university students lie within the age group of 18 to 24 years (4, 5). Over half of the new infections worldwide were among young people between the ages of 15 and 24. Every day, 6,000 young people become infected with HIV- more than five every minute [1].

Risky sexual behaviors like unprotected sex, multi partnership, no or inconsistence use of condoms and drug abuse are extremely determinate to the health of adolescents putting them at high risk to HIV/AIDS and other sexually transmitted diseases (STDs) [2].

It is reasonably possible to think that University students are educated, inspired, able to practice upon the information they receive and as a result, they are among a low risk population (4). Nevertheless, results of previous studies showed that most sexual risk behaviors among college and University students might have been acquired through a period of campus life [4, 6] and hence they are likely to be arisk of HIV/AIDS. Therefore, preventing the transmission and the acquisition of HIV must focus upon behavior and behavioral changes.

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 [7]. Moreover, increasing knowledge of HIV/AIDS can be a powerful means of fostering positive attitudes and building safe practices among population. Hence, a clear understanding about knowledge, attitude and practices (KAPs) among any population is very important for planning to control or prevent the spread of HIV. So it is prudent to conduct this study among Bahir Dar University (BDU) students in order to ascertain their knowledge, attitude and practices (KAPs) regarding HIV/AIDS. Thus, this study intends to examine students' knowledge, attitude, and practices on preventive measures against HIV/AIDS among students of Bahir Dar University.

2. Methods

2.1. Study Design, Period and Area

A cross sectional study was conducted from January to March/ 2013 among regular undergraduate students of Bahir Dar University, Northwest Ethiopia. BDU is found in Bahir Dar city which is a special zone in the Amhara region being the regional capital located 565 Kms away from Addis Ababa [8]. Bahir Dar lies an altitude 1830 meters above sea level, with an average temperature ranging from 12-180c and rainfall between 400-2000 mm [9].

Bahir Dar University was inaugurated on May 6, 2000. It is now among the largest Universities in the Federal Democratic Republic of Ethiopia, with more than 35,000 students in its 57 undergraduate and 39 graduate programs. Currently it has four campuses with four Colleges, three Institutes, three Faculties and one School [10]. The academic units of the University include College of Science, College of Agriculture and Environmental Science, College of Medicine and Health Sciences, College of Business and Economics, Institute of Technology, Institute of Textile, Garment and Fashion design, Institute of Land Administration, Faculty of Humanities, Faculty of Social Sciences, Faculty of Education and Behavioral Sciences and School of Law

2.2. Study Population

The study population includes all undergraduate regular students of BahirDar University. Students attending in non-regular program and those who are not under graduate were excluded from the study since they are different from the regular ones with respect to their age, maturity and employment status.

2.3. Variables

Knowledge, attitude and practices towards HIV/AIDS were the dependent variables. Age, sex, religiosity, ethnicity, year of education, place of residence and VCT status were an independent variables.

2.4. Sampling Technique

Assuming that 50% of the students lacked KAP towards HIV/AIDS, 95% level of confidence, 5% margin of error and using single population proportion formula ($N = z2\ p\ (1-p)\ /d2$) a sample size of 384 was calculated. Since the questionnaire was self administered, 13% non-response rate was considered. Considering multistage sampling technique, 2 % design effect was also considered. A total of 817 students was participated. Multistage stratified simple random sampling technique was used. All the Colleges, Faculties and Institues of Bahir Dar University were included and the numbers of study participants were allocated proportionally to each college. Year of study, campus difference, and male to female ratio proportion were also maintained.

2.5. Data Collection

The study instrument was a self-administered questionnaire which comprised of four parts. Part I related to students' sociodemographic background, Part II on students' knowledge regarding HIV/AIDS, Part III on the attitude scale towards HIV/AIDS and Part IV on students' preventive practice towards HIV/AIDS. Author guided self administered data collection technique was used.

Knowledge of HIV/AIDS was assessed using 12 item questions which includes knowledge on the difference between HIV and AIDS, curability of the disease AIDS, the relationship between genital sores and rate of HIV transmission, HIV can be transmitted through sharing of meals, clothes and latrines, correct order of condom use and removal of condom from penis after sexual intercourse and protective effect of: correct use of condom, abstainism, being faithful to a partner, not having sex with commercial sex workers from HIV transmission, signs and symptoms of HIV infection and duration of anti retroviral treatments (ART).

Attitude towards HIV was assessed using an 8 item questionns including attitude : towards their importance to prevent HIV infection, towards their beliefs in the prevention of HIV, towards the chance of acquiring the virus if his/her sexual partners had multiple partners, towards use of condom is an insult for their partners, towards willingness

to live in one dormitory with HIV positive students, towards any body's chance to be infected by the virus and towards accessibility of condom when needed.

Participants practice on HIV/AIDS was addressed by 10 item questions which includes practices to see condom, confident to hold condom on their hand, confident to discuss about condom use by demonstration, unprotected sex, habit of washing genitals after sex, having sex with multiple sexual partners, sex with commercial sex workers, sex after drinking alcohol and after watching porno videos.

2.6. Scoring

For knowledge, each right response was given a score of 1 while a wrong or doubt 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 an 8-item questionnaire. Attitude scores between 0.25 to 0.79 were considered as unfavorable attitude, and scores ranged from 0.8 to 1 were considered as favorable attitude. Practice towards prevention of HIV/AIDS and risk of HIV infection was assessed using a 10-item questionnaire where the score were ranging from 0.22 - 1.00. Scores < 0.75 was considered as poor practice where as practice scores of ≥ 0.75 was considered as good practice.

2.7. Data Management and Analysis

Data were analyzed using SPSS version 20 statistical soft ware. Descriptive statistics such as mean score and percentage were computed to determine the magnitude of KAPs and back ground variables. Bivariate analysis was carried to measure association between variables. P. value < 0.05 was considered as statistical significant in all cases. Multivariate analysis was carried out to correlate KAPs with sociodemographic variables.

2.8. Ethical Consideration

The study was ethically approved by research ethical committee of College of Medicine and Health Sciences of Bahir Dar University. Written consent, after explanation about the study, was obtained from the study participants. Confidentiality of results was also maintained.

3. Results

3.1. Sociodemographic Characteristics

A total of 817 students took part in the study. Of whom, 66.7% were males giving a male to female ratio of 2:1. The mean age of participants was 18 years. By ethnicity, the majority (57%) were Amhara followed by Oromo (18%). In terms of religion, 76.4% were orthodox while in terms of residence 80.9% were in campus dwellers. Concerning other sociodemographic factors, year I and II students were the dominant group (each accounted 31%) and the majority (86.2%) of participants were unmarried.

3.2. Knowledge towards HIV/AIDS

The mean knowledge score of study participants about HIV/AIDS was 0.69. About, 371 (45.7%) of participants scored greater than or equal to the mean and considered as knowledgeable. Among the total, 668 (81.9%) of participants had information on the difference between HIV and AIDS. Seven hundred thirty seven (90.3%) knew that the disease (AIDS) is non curable. Moreover, 763 (93.5%) of participants knew that genital sores increases the transmission rate of HIV. The majority (98.2%) of participants responded that HIV cannot be transmitted through sharing of meals, clothes and latrine. Sixty eight point five percents of participants were correctly describing the order of condom use. In addition, 87.4% of participants also had know the correct way of removing a condom from penis after sexual intercourse (Table 1).

Knowledge about the degree of method of prevention of HIV was high for some factors and relatively low for other factors. For instance, 33.1%, 57.2%, 89.7% and 32.5% of the participants knew about the protective degree of not having sex with commercial sex workers, condom use, and abstainism and being faith full to a partner respectively. In terms of signs and symptoms of HIV infection, 136 (16.7%) of participants responded with the correct answers. Seventy seven percent of participants knew correctly about the duration of taking antiretroviral treatment by AIDS patients (Table 1).

3.3. Attitude towards HIV/AIDS

Of the total 8 questions asked to address the students' attitude towards prevention of HIV infection, the scores were ranging from 0.25 - 1 (Mean score = 0.83). Accordingly, 675 (82.8%) of the respondents had a favorable attitude while 140 (17.2%) participants were classified as having a less favorable outlook. The majority (92.8%) of participants had a favorable attitude towards their importance to prevent HIV infection. In terms of their believe to prevent the spread of HIV, the majority (90.5%) had favorable attitude. One hundred sixty (19.6%) of participants believes that the use of condom during sexual intercourse is an insult to their partner (Table 2).

The students would exhibited favorable attitude to taking care of their HIV-positive friends if they were ill and 754 (92.4%) of them believed to live in one dormitory together with HIV-positive students. Moreover, the majority (87.6%) of participants believed that if an individual have multiple partner, the chance of acquiring the virus will be high (Table 2).

3.4. Preventive Practices for HIV/AIDS

The overall practice of University students towards prevention and control of HIV/AIDS are illustrated in Table 3. Of the 8 questions that were asked to measure practice to-

wards HIV/AIDS, the scores were ranging from 0.22 to 1.00 (Mean score = 0.64). A total of 340 (41.7%) of students had good sexual practices having an equal or greater than the mean score of 0.64. The majority, 767 (93.8%) of the participants had seen condom before. Sixty three percent of students were confident to hold condom with their hands. The greater parts of students (80.5%) were not confident to discuss about condom use by demonstration. Unprotected sex, sex with commercial sex workers, having multiple sexual partners, sex after drinking alcohol and watching porn videos were practiced by 184 (22.5%), 23 (2.8%), 127 (15.5%), 102 (12.5%) and 73 (8.9%) of the respondents respectively. In terms of practice on voluntary counselling and testing (VCT), 535 (65.6%) had tested for HIV before the time of data collection. The majority (68.2%) of students washed their genitals after sexual intercourse (Table 3).

3.5. Sociodemographic Variables VS KAP

Among the socio demographic variables, male by gender, religion and year of study difference had a statistically significant association with Knowledge of students towards HIV/AIDS. Males were 1.5 times more knowledgeable than females (AOR = 1.47, CI = 1.1-2.0) (Table 5).

Religion difference was strong enough to yield statistical significance (P=0.04). Muslims followed by orthodox Christian participating students were more knowledgeable when compared to other religion followers. Moreover, senior students were more likely knowledgeable compared to fresh man students and the difference was also statistically significant (P=0.013). Even though the difference was not statistically significant, married students were more knowledgeable than other group of students ((Table 5).

Female by gender, year of study and knowledge differentials showed a statistically significant association with attitudes of students towards HIV/AIDS on multivariate analysis. Female students had more favorable attitude compared to males (AOR =0.65, CI =0.43-0.99). Moreover, senior students had more likely good practices than fresh students. The difference was also statistically significant (P < 0.01) (Table 5). Furthermore, knowledgeable students had more favorable attitude compared to not-knowledgeable participants. The difference was also statistically significant (AOR=0.54,CI=0.36-0.79). However, statistical significant association between religion, ethnic and place of residence difference with level of attitude had not been observed (Table 5).

Among the sociodemographic variables sex diference (P-value = 0.006), had a statistically significant association with practices of students towards HIV/AIDS. Ethnics, religions and knowledge difference had no statistical significant association with practices of students towards HIV/AIDS on multivariate analysis (Table5).

Multivariate analysis showed that level of knowledge significantly contributed to level of attitudes as shown in Table 5. We found that knowledgeable respondents were more likely to have favorable attitude (AOR = 0.5, CI = 0.36 – 0.79) compared to not-knowledgeable students.

Table 1. *Knowledge of Bahir Dar University students towards HIV/AIDS, 2013.*

Knowledge question items	**Responses N (%)**
There is no difference between HIV and AIDS	
True	148 (18.1)
False	668 (81.9)
AIDS is a curable disease	
True	79 (9.7)
False	737 (90.3)
HIV can be transmitted through sharing of meals, clothes and latrines	
True	7 (0.9)
False	809 (99.1%)
Genital sores increases the rate of HIV transmission	
True	763 (93.5)
False	51 (6.2)
Description of the correct order of condom use	
Correct	558 (68.5)
incorrect	257 (19.6)
Description of the correct order of removing a condom from penis after sexual intercourse	
Correct	712 (87.4)
Incorrect	103 (12.6)
Not having sex with commercial sex workers reduces the transmission rate of HIV	
Yes	270(33.1)
No	546(66.9)
Correct use of a condom during sex is a very good preventive method of HIV transmission	
True	467 (57.2)
False	349 (42.8)
Abstainism from sex is a very good preventive method of HIV transmission	
True	732 (89.7)
False	84 (10.3)
Being faith full to a partner is an excellent preventive method of HIV transmission	
True	265 (32.5)
False	550 (67.5)
HIV/AIDS patient may or may not show sign and symptom	
True	136(16.7)
False	679(83.3)
ART should be taken throughout the life of the patient	
Yes	628 (77)
No	188 (23)
Overall knowledge status	
Knowledgeable	371 (45.7)
Not knowledgeable	440 (54.3)
Mean knowledge score (0.69, Min = .17, Max = 1.00)	

ART: Antiretroviral treatment

Table 2. *Attitudes of Bahir Dar University students towards HIV/AIDS, 2013.*

Attitude item questions	Responses N (%)
You are one of the important people to prevent HIV infection	
Agree	758 (92.6)
Disagree	58 (7.1)
It is difficult to prevent HIV/ AIDS transmission	
Agree	76 (9.3)
Disagree	739 (90.7)
Having multiple sexual partners, increases the chance of acquiring the virus	
Agree	715 (87.6)
Disagree	101 (12.4)
Use of a condom is an insult for your partner	
Agree	160 (19.6)
Disagree	656 (80.4)
Willingness to live in one dormitory with HIV positive student	
Willing	755 (92.4)
Not willing	61 (7.5)
Anybody has the chance of acquiring the virus	
Agree	561(68.8)
Disagree	255 (31.2)
Even if I do have only one partner I would be infected by the HIV virus	
Agree	619 (75.9)
Disagree	197(24.1)
Anybody can get condom simply when needed	
Agree	588(72.1)
Disagree	228(27.9)
Overall attitude status	
Favorable attitude	675(82.8)
Unfavorable attitude	140(17.2)
Mean score =0. 83 (Min = 0. 25, Max =1. 00)	

Table 3. *Practices of BahirDar University students towards the risk of HIV infection, 2013.*

Practice question items	Responses N (%)
Have you ever seen condom previously	
Yes	767(93.9)
No	50(6.1)
Are you confident to hold condom on your hand	
Yes	514 (62.9)
No	303 (37.1)
Are you confident to discuss about condom use by demonstration	
Yes	159 (19.5)
No	652 (80.5)
Have you practiced unprotected sex	
Yes	184 (22.5)
No	633 (77.5)
Habit of washing genitals after sexual intercourse	
Yes	557 (68.2)
No	260 (31.8)
Voluntary counseling test	
Tested	535 (65.6)
Not tested	281 (34.4)
Had multiple sexual partners	
Yes	127 (15.5)
No	690(84.5)
Had sex with commercial sex workers	
Yes	23(2.8)
No	793(97.2)
Had sex after drinking alcohol	
Yes	10 (12.5)
No	715(87.5)
Had sex after watching porn videos	
Yes	73(8.9)
No	744 (91.1)
Overall practice	
Good practice	340(41.7)
Poor practice	475 (58.3)
The mean score of practice = 0.75 (Min = 0.22, Max =1. 00)	

Table 4. *Effect of sociodemographic variables on Knowledge, Attitude and Practices of Bahir Dar University students towards HIV/AIDs, 2013.*

Variables	Knowledge			Attitude			Practices		
	Knowledgeable N (%)	Not knowledgeable N (%)	P	Favorable N (%)	Unfavorable N (%)	P	Good N (%)	Poor N (%)	P
Sex									
Male	264 (48.8)	277 (51.2)	0.014	443 (81.4)	101 (18.6)	0.14	299 (55)	245 (45)	0.006
Female	107 (39.6)	163 (60.4)		232 (85.6)	39 (14.4)		176 (64.9)	95 (35.1)	
Ethnicity									
Amhara	234 (54.4)	230 (49.6)	0.016	387 (83.2)	78 (16.8)	0.98	284 (60.9)	182 (39.1)	
Oromo	56 (38.1)	91 (61.9)		120 (81.6)	27 (18.4)		72 (49)	75 (51)	0.07
Tigray	36 (43.4)	47 (56.6)		69 (83.1)	14 (16.9)		47 (56.6)	36 (43.4)	
Other	45 (38.5)	72 (61.5)		99 (82.5)	21 (17.5)		72 (60.5)	47 (39.5)	
Religion									
Orthodox	294 (47.6)	324 (52.4)	0.02	519 (83.3)	104 (16.7)	0.89	356 (57.1)	267 (42.9)	0.23
Muslim	41 (50)	41 (50)		66 (80.5)	16 (19.5)		53 (66.3)	27 (33.8)	
Catholic	1 (12.5)	7 (87.5)		6 (75)	2 (25)		3 (37.5)	5 (62.5)	
Protestant	29 (32.2)	61 (67.8)		74 (83.1)	15 (16.9)		55 (61.8)	34 (38.2)	
Other	6 (46.2)	7 (53.8)		10 (76.9)	3 (23.1)		6 (46.2)	7 (53.8)	
Marital status									
Single									
married	317 (45.2)	385 (54.8)	0.53	584 (83.2)	118 (16.8)	0.89	414 (59)	288 (41)	0.69

Variables	Knowledge			Attitude			Practices		
	Knowledgeable N (%)	Not knowledgeable N (%)	P	Favorable N (%)	Unfavorable N (%)	P	Good N (%)	Poor N (%)	P
Divorced	49 (50.5)	48 (49.5)		81 (80.2)	20 (19.8)		55 (54.5)	46 (45.5)	
Others	2 (28.6)	5 (71.4)		6 (85.7)	1 (14.3)		3 (42.9)	4 (57.1)	
	3 (60)	2 (40)		4 (80)	1 (20)		3 (60)	2 (40)	
Year of study									
Year I	104 (41.6)	146 (58.4)		186 (73.2)	68 (26.8)		153 (60.2)	101 (39.8)	0.73
Year II	108 (42.4)	147 (57.6)	0.864	215 (84)	41 (16)	0.03	141 (55.1)	115 (44.9)	
Year III	94 (47.7)	103 (52.3)	0.197	173 (87.8)	24 (12.2)	< 0.001	115 (58.4)	82 (41.6)	
Year IV	39 (60)	26 (40)	0.009	62 (96.9)	2 (3.1)	< 0.001	38 (59.4)	26 (40.6)	
Year V	26 (59.1)	18 (40.9)	0.033	39 (88.6)	5 (11.4)	0.04	28 (63.6)	16 (36.4)	
Residence									
In campus	364 (45.7)	432 (54.3)		663 (82.9)	137 (17.1)		467(58.4)	333 (41.6)	0.69
Rented	7 (46.7)	8 (53.3)	0.94	12 (80)	3 (20)	0.73	8(53.3)	7 (46.7)	
Knowledge									
knowlegeable				324 (87.6)	46 (12.4)	0.001	226 (60.9)	145 (39.1)	0.14
Not-knowegeable	NA			346 (78.6)	94 (21.4)		245 (55.8)	194 (44.2)	
Attitude									
Favourable				NA			395 (58.6)	279 (41.4)	0.75
Unfavourable							80 (57.1)	60 (42.9)	

NA: Not applicable

Table 5. *Multivariate analysis showing the associated risk factors of knowledge, attitude and practices on Bahir Dar university students towards HIV/AIDS, 2013.*

Variables	Knowledge:	AOR (CI)	P	Attitude:	AOR (CI)	P	Practice:	AOR (CI)	P
Sex									
Male		1.47 (1.1 - 2.0)	0.014		0.65 (0.43 - 0.99)	0.046		0.65 (0.48-0.89)	0.006
Female		[1]			[1]			[1]	
Religion									
Orthodox		1.25(0.4-3.9)			1.22(0.3-4.9)			1.2(0.4-3.7)	
Muslim		1.4(0.4-4.6)			1.01(0.23-4.3)			2.1(0.6-6.9)	
Protestant		0.3(0.0-2.2)	0.04		0.79(0.1-6.8)	0.96		0.6(0.1-3.6)	0.13
Catholic		0.7(0.2-2.2)			1.16(0.3-5.0)			1.7(0.5-5.6)	
Other		[1]			[1]			[1]	
Ethnicity									
Amhara		1.5(0.9-2.3)			0.88(0.5-1.5)			1.1(0.7-1.6)	
Oromo		1.2(0.7-2.2)	0.18		0.89(0.5-1.7)	0.98		0.85(0.48-1.5)	0.066
Tigray		0.9(0.6-1.7)			0.88(0.4-1.9)			0.64(0.4-1.0)	
others		[1]			[1]			[1]	
Year of study									
Year I		1			[1]			1	
Year II		0.4(0.2-0.9)			0.8(0.3-2.3)	< 0.01		0.94(0.48-1.87)	
Year III		0.5(0.2-0.9)	0.013		0.4(0.2-1.1)			0.81(0.41-1.61)	0.93
Year IV		0.6(0.3-1.1)			1.1(0.4-3.2)			0.91(0.45-1.83)	
Year V		0.95(0.4-2.12)			4.6(0.8-24.9)			0.87(0.39-1.97)	
Knowledge									
Knowledgeable		NA			0.54 (0.36 - 0.79)	0.002		0.81(0.61-1.08)	0.15
Notknowledgeable									

OR: Odds ratio, CI: Confidence interval, NA: Not applicable , [1]: Reference category

4. Discussion

4.1. Knowledge

Valid knowledge, attitude and practices about HIV/AIDS are important in light of the increasing epidemic. This study was the first study on HIV/AIDS-related KAPs among University students in BahirDar. Students in BahirDar University have less knowledge, favorable attitude and poor practices towards HIV/AIDS. This indicates that despite the presence of favorable attitude there are some factors that might hinder practice towards HIV/AIDS.

Less than half percent of the respondents had knowledge on HIV/AIDS. A comparable report was found in Ethiopia from high school students [11,12]. However, the present finding was not comparable with findings in Gondar which stated that 86.3% and 85.4% of knowledgeable score towards HIV/AIDS in tertiary level [2] and high school students (1) respectively. Moreover, though the degree of awareness varies, reports from Nigeria [13] stated a good level of knowledge about HIV/AIDS among tertiary school students. The difference in the level of knowledge between the present study and others might be due to the difference in the sociodemographic characteristics, especially the educational level of the study participants and the type of indicators used to measure the level of knowledge.

The majority (81.9%) of students participated in this study had information on the difference between HIV and AIDs. Moreover, 90.3% of participants stated that AIDS as a non-curable disease. These findings are in line with the behavioral surveillance conducted in 2002 by the Ethiopian Ministry of Health (EMOH) [14]. Furthermore, similar comparable result also reported studies done in Gondar [2] and Ethiopian Civil Service College [15].

A further examination on the frequency distribution revealed substantial deficiencies in knowledge of HIV/ AIDS in certain key areas. The preventive role of not having sex with commercial sex workers, sexual abstainism and correct use of condom from HIV transmission were unrecognized by 66.9 %, 10.3% and 42.8% of participating students respectively. There were also misconceptions in this study where 1.8 % of study participants stated that sharing of meals, clothes and latrine with AIDs patients would transmit HIV. This indicates that students need more information and education about some points of preventive methods of HIV/AIDs and routes of transmission. Again, similar misconceptions have been reported in other studies [2, 12, 15].

While it is encouraging to note that most of the students knew the increasing role of genital sores for HIV transmission. It is disturbing that 31.5% and 12.6% of respondents incorrectly described the correct order of condom use and its removal from penis after sexual intercourse. This might be associated with lack of knowledge. Students in other parts of Ethiopia also reported similar misconceptions [1, 2].

Male students had significantly higher knowledge about HIV/AIDS compared to female students in the present study. A similar finding was reported from a study conducted in Nigeria [14], Kerala**,** India [16] and China [17] indicated that good knowledge in male compared to female.

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 club. In contrast to the present finding, study in Gondar [2] indicated knowledge was not affected by gender difference.

Religion difference had also shown a statistically significant association with level of knowledge. The difference in the level of knowledge between religions might be associated with difference in the socio cultural characteristics among students that might have an effect on awareness about HIV/AIDs. Moreover, higher level of education was associated with increased levels of HIV knowledge. This study is in agreement with the study conducted in china (17). This might be associated with the increase in up taking of more information and experience from media, academics, students' gender club, the anti HIV/AIDS club and HIV/AIDs prevention and control office of the University and hence increased knowledge as they stay in the university is elongated.

4.2. Attitude

Although all students need to have a favorable attitude towards the prevention of HIV/AIDS, the participant's favorable attitude towards HIV/AIDS in students of Bahir Dar University is very high and appreciable. This was comparable with studies conducted in Gonder [1, 2].

The majority of respondents believed that students are very important to prevent HIV/AIDS and it is possible to prevent HIV/AIDS transmission. This is interesting and it should be encouraged as the involvement of youths especially students are very important components of the society that will create behavioral change to prevent HIV/AIDs in the community. We noted that students' attitude towards AIDs were combined with their willingness to live in one dormitory with HIV positive students. The majorities of the students were sympathetic towards AIDS patients and were against isolating AIDS patients from living in one dormitory. This was comparable with findings of Yitayal et al in Gonder [2].

Sex difference by gender showed a significant association with attitude of students towards HIV/AIDs. More females than male students had favorable attitude. The level of educational difference showed a significant association with attitude of students towards HIV/AIDS. The association on level of education may arise from the increase in knowledge of students and hence increased attitude as they stay in the university is elongated. The findings in this case go in line with a study from Addis Ababa University [4] and Gonder [2]. Knowledgeable students had a favorable attitude regarding HIV/AIDS compared to knowledgeable students. This showed that Knowledge is an important factor to build positive attitudes towards HIV/AIDS.

4.3. Practices

In this study, 41.7% of respondents had good practice towards HIV/AIDS. This was comparable to study done in Awassa, Ethiopia [4].In contrast, previous study from Gonder showed that only 25% of students had poor practice [2]. Our finding showed that over 15% of the respondents had sex without condom, had multiple sexual partners including sex with commercial sex workers (CSWs) indicate such risky behavior can predispose the students acquisition of HIV. Furthermore, there are also students still did not at all see condom, shy to buy and hold condom and not confident to discus about condom use by demonstration because of religious and socio-cultural norms related to youths. It is worth

noting that about 12.5% and 8.9% of students were undergoing sexual intercourse under the influence of alcohol and porn videos. In-line with this, risky sexual behavior among College students in association with their condom utilization had recently been reported from Gonder [2] and china [17].

We attempted to determine the association between knowledge and attitude levels with preventive practices for HIV/AIDs. Those participants who had good knowledge and favorable attitude showed good practices behavior compared to those who had less knowledge and unfavorable attitude.

5. Conclusions

The current study sought to explore the knowledge, attitude and practices on HIV/AIDS of tertiary school students in BahirDar University. KAPs is an important tool for HIV prevention and control. Despite the presence of favorable attitudes, the majority of participating university students had less knowledge and poor practice about HIV/AIDs. The study highlighted some misconceptions about HIV prevention, and risky sexual practices, which need to be addressed. Therefore, our investigation calls to implement specified, focused, continued and strengthened health education on HIV/AIDS-related issues to bring change in practices, along with knowledge and attitudes.

Variability of questions used to measure the knowledge, attitude and practices of students compared to other studies was the limitations of this study. However, including large number of student's representative of each college / faculty of the university was the main strength of the study.

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Competing Interests

The authors declare that they have no competing interests.

Authors' Contributions

WM contributed to the design of the study, collected and analyzed data and wrote the first draft of the manuscript. BA participated in the designing of the study, coordinating the data collection process and critically revising of the manuscript. MY critically reviewed the manuscript. All authors read and approved the final manuscript.

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