

AIDS and college students in Addis Ababa: A study of knowledge, attitude and behavior

Beyene Petros¹, Solomon Belayneh² and Yared Mekonnen³

Abstract: To assess the knowledge, attitude and behavior of college students towards acquired immunodeficiency syndrome (AIDS), 1214 students from six colleges in Addis Ababa were interviewed by means of a questionnaire. The results indicated that, although college students in general are well informed about AIDS, there are gaps in their knowledge of some vital information. A relatively low level of awareness about some vital information about the risk factors and the modes of transmission of AIDS was revealed by the study. Similarly, poor attitude and practice towards protection from AIDS was also documented. However, their attitude towards the disease and their protective behaviors did not match the relatively high level of knowledge they have about the disease. Sex, religion, or being in one faculty or another did not show significant difference. But, knowledge about AIDS was found to increase with age. The results of this study were almost similar to the studies conducted on college students of other countries. Four hundred seventy four (39%) students considered themselves as a high risk group and 219 (18%) believed that AIDS is not their problem. More than 315 (30%) admitted that they have one or more lovers and the highest proportion 802 (66%), reported that they did not use condom at all. Radio and television, followed by the print media were the students' best sources of information on AIDS. It is concluded that although college students would have a relatively better access to information on AIDS, compared to the general population, this does not seem to have brought about the necessary behavioral changes required for protection against AIDS. Therefore, the need for offering a more focused AIDS education to college students, much more than what is being currently done through general public information, is justifiable. [*Ethiop. J. Health Dev.* 1997;11(2):115-123]

Introduction

World wide there are several studies on knowledge, attitude and practice of college students towards the Acquired Immuno-Deficiency Syndrome (AIDS). College students are often viewed as being at high risk for Human Immunodeficiency Virus (HIV) infection due to their propensity to engage in exploratory behaviour and their needs for peer social approval and their sense of nonvulnerability (1).

A survey conducted among highschool students in Addis Ababa had shown that 48% of the students knew AIDS and only about 15% of them were informed about the various types of STDs (2). A study conducted to assess the prevalence of HIV among highschool and college students attending clinics for STDs, in Addis Ababa, had shown a 19% seropositivity (3). That report had shown that there is a serious cause for concern about protecting this sector of the population from AIDS.

¹ Department of Biology, Addis Ababa University, P. O. Box 1176 Addis Ababa, Ethiopia,

²Institute of Curriculum Development and Research, Ministry of Education, ³Ethiopian Health and Nutrition Research Institute.

The few earlier studies conducted among freshman college students in Ethiopia at the Gondar College of Medical Sciences revealed that their knowledge of AIDS was more than average (4, 5). This study reported 40% of the students to have practiced sexual intercourse

and half of that sexual contact to have been with prostitutes or with casual individuals. Among these, most (75%) did not use condoms. A more recent study involving the general student population of Gondar College of Medical Sciences reported about 23% sexual contact with prostitutes and about 48% condom use (5).

Eventhough a high risk sexual behaviour with an insufficient knowledge of AIDS was found among college students (6,7,8), most studies show that college students are reasonably well informed about AIDS but are reluctant to change their sexual behavior unless the threat of infection is personalized (7-14).

Although there is no adequate information about the situation among Ethiopian college students, one study from a Western culture has indicated that college students fit into either of three sexual subcultures : celibacy, monogamy, or free experimentation (15). Since widespread compliance with an extreme position such as celibacy is unlikely, prevention of sexual transmission of HIV requires either abstinence from unprotected sexual intercourse or modification of relevant behaviors, with proper knowledge and attitude as prerequisites for such changes.

In Ethiopia, currently, there is some modest effort, mostly supported by external funding, to disseminate information and provide general education on HIV/ AIDS. Therefore, as part of the literate sector of the population that would be expected to access some of this information and benefit from the general education being provided on AIDS, it was hypothesized that college students would be better informed about the disease and would adjust their behavior towards its prevention accordingly. In light of this, the objective of the present study was to assess the knowledge, attitude and behavior of college students in Addis Ababa about HIV/AIDS. Based on the outcome of the assessment, possible AIDS intervention methods that might bring about the desired changes in the attitude and behavior of college students will be recommended. This work constitutes part of a larger study on the impact of educational intervention on AIDS awareness among college students in Addis Ababa.

Methods

The study was conducted in 1993 in six colleges/faculties in Addis Ababa with a total student population of approximately 10,000. These were the Faculty of Social Science, Faculty of Science, Faculty of Technology, Building College, Commercial college and Kottebe College of Teacher Education. The faculty of Medicine was excluded from the study with the aim of avoiding introduction of possible selection bias from the most likely formal educational exposure to information relating to HIV/AIDS.

The sample size for the study was determined by using the standard statistical procedure. The assumptions made for sample size calculations were, a 95% confidence level, an expected frequency (knowledge about AIDS) of 90% and an expected deviation from the true prevalence of +/- 0.58%.

This resulted in a sample size of 1216. However, due to incomplete information on two students, 1214 subjects were included in the study. A multistage sampling, with primary clusters being the six colleges and the secondary clusters being the selected classes from each college, was adopted to select the students to be included in the study. The number of secondary strata, that is the number of classes, in each faculty was determined according to the weighted proportion of the student population. The given number of classes to be included in the study from each faculty was randomly selected and all students from the selected classes were included in the study. A precoded and pretested self-administered questionnaire, prepared in English, was used to collect information on the students' knowledge, attitude and practice about HIV/AIDS.

Data from the questionnaire were entered into a computer system using DBASE III PLUS software. All the necessary coding, data validity checking, data cleaning and analysis were performed using SPSS PC+ statistical software. Statistical analysis included a univariate and

bivariate analyses. In the bivariate analysis association between a given variable and a given background characteristic of students was assessed by using the chi square test. P values were used to decide whether observed differences are statistically significant or not. Among the 1214 study subjects that filled out the questionnaire, some who did not specify the background characteristics (that is, age, sex, religion, etc.), used in the study, were excluded from data analysis.

Results

Table 1 shows the responses of students according to selected background characteristics on the modes of transmission of AIDS. The largest proportion of students (1135 or 93.7%) responded by indicating sexual intercourse to be the major mode of AIDS transmission, followed by blood transfusion (1052 or 86.7%) and sharing tooth brush (684 or 56.5%). Only few students considered air borne droplets (1.2%), skin contact (4.7%), passionate kissing (18.6%), lice and mosquito bites 100 (8.3%) and feeding together (2.6%) as the routes of transmission of the disease. Among a number of harmful traditional practices, ear piercing was reported by the majority (462 or 38.2%) of students as a possible route of transmission of HIV. This was followed by circumcision (26.1%), tattooing (13.5%) and ritual scarring (13.2%). Among the harmful traditional practices, the students' knowledge about circumsission and ritual scarring, as possible modes of transmission of HIV, was significantly different ($P < 0.05$) across the age range; the best informed being in the age group of 30 years and above (Table 2).

Table 1: Percentage of college students in Addis Ababa who named various modes of transmission of AIDS according to selected background characteristics, 1993.

Background Characteristics	Modes of Transmission										
	Sexual Intercourse		Blood Transfusion		Sharing Toothbrush		Vaccination		Shaving at Barber		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	
Age											
15-19	461	94.8	420	86.4	258	53.0	196	40.4	219	45.0	486
20-24	605	93.4	566	87.3	385	59.4	294	45.4	315	48.6	648
25-29	48	87.3	43	78.2	28	50.9	24	43.6	29	52.7	55
30 +	22	88.0	23	92.0	14	56.0	12	48.00	10	40.0	25
Sex ^a											
Male	945	93.8	881	87.5	574	57.0	442	43.9	470	46.7	1007
Female	182	92.4	162	82.2	104	52.8	79	40.1	97	49.2	197
Religion ^b											
Christian	965	94.4	885	86.6	576	56.4	442	43.2	481	47.1	1022
Mulslim	94	93.1	91	90.1**	58	57.4	79	42.6	48	47.5	101
Other	9	81.8	8	72.7	7	63.6	4	36.4	4	36.4	11
Total											
No.	1136		1052		685		526		573		1214
%	93.6		86.7		56.4		43.3		47.2		100.0

** P < 0.001 ^a10 students did not specify their sex.

^b80 students did not specify their religion.

Table 2: Percentage of college students in Addis Ababa who reported various Harmful Traditional Practices as modes of transmission of AIDS according to selected background characteristics, 1993.

Background Characteristics	Harmful Traditional Practices								
	Circumission		Tattooing		Ear piercing		Ritual scar		Total
	No.	%	No.	%	No.	%	No.	%	
Age									
15-19	109	22.4	66	13.6	192	39.5	63	13.0	486
20-24	187	28.9	86	13.3	248	38.3	90	13.9	648
25-29	11	20.0	8	14.5	12	21.8	1	1.8	55
30 +	10	40.0*	4	6.0	10	40.0	6	24.0*	25
Sex ^a									
Male	267	26.5	128	12.7	385	38.2	135	13.4	1007
Female	48	24.4	34	17.3	74	37.6	23	11.7	197
Religion ^b									
Christian	267	26.1	137	13.4	396	38.7	130	12.7	1022
Muslim	29	28.7	11	10.9	35	34.7	14	13.9	101
Other	3	27.3	2	18.2	5	45.5	3	27.3	11
Total									486
No.	317		164		462		160		1214
%	26.1		13.5		38.1		13.2		100.0

* P < 0.05 ^a10 students did not specify their sex. ^b80 students did not specify their religion.

Assessment of student knowledge about some of the preventive measures against AIDS, on the basis of identifying the most important measure among the three known types of preventive measures, showed the highest proportion of students (902 or 74.4%) to be aware of the advisability of monogamy (staying with a single sexual partner) as a means of avoiding AIDS. The next in order were condom use (35.7%) and AIDS education (32.0%). The responses to the three preventive measures have shown significant statistical difference across age. That is, the response rate for condom use and staying with single sexual partner ($P < 0.0001$) and for AIDS education ($P < 0.01$) was the highest for those students of age 30 years and above. On the other hand no significant statistical difference in knowledge about preventive measures was observed for the background characteristics of sex, religion and the college and the year in college the student belonged to. The highest risk groups (that is, the population that is more predisposed to HIV infection than the average probability of spread of the disease in the general population), that the students thought would contract AIDS included the street girls and street boys (75.8%). This was followed by prostitutes (74.1%); truck and bus drivers (60.8%) and soldiers (53.2%). Furthermore, about 474 (39%) of the students considered their own group as a high risk group. A statistically significant difference was observed between the sexes where most of the male students (77%) responded that prostitutes are at high risk of getting AIDS, while a lesser proportion of the female students (59.9%) considered prostitutes as a high risk group ($P < 0.001$).

Information on students' attitude towards the disease showed that about 1043 (88.7%) of the students agreed that AIDS is a terrible disease which must be feared and worried about. Among these, 888 (85.1%) indicated that AIDS is their problem as well. In addition, 489 (79.41%) of the

students who responded to the question on safe sexual practice agreed that practicing safe sex helps to avoid AIDS.

On the question of the number of lovers (that is, unpaid sexual partners), a student had over the past 10 months, the majority of those who responded (66.8%) reported that they did not have any lover. This response has shown a statistically significant difference across age and religion where a higher number of students aged 15 to 19 ($P < 0.0001$) and Muslim students ($P < 0.001$) reported no lovers.

Furthermore, about 267 (22.8%), 85 (7.3%) and 36 (3.1%) reported having one, two to four and more than five lovers, respectively. The prevalence of multiple lovers was highest among those students of age 30 years and above ($P < 0.05$) (Table 3).

Table 3: **Percentage of college students in Addis Ababa by number of lovers in the past 10 months according to selected background characteristics, 1993.**

Background Characteristics	Number of Lovers								
	None		1		2-4		5 +		Total
	No.	%	No.	%	No.	%	No.	%	
Age									
15-19	357	73.5***	94	19.3	20	4.1	14	2.9	486
20-24	414	63.9	155	23.9	58	9.0	21	3.2	648
25-29	29	52.7	19	34.5	5	9.1	2	3.7	55
30 +	11	44.0	9	36.0*	4	16.0*	1	4.0	25
Sex ^a									
Male	676	67.1	214	21.3	83	8.2	34	3.4	1007
Female	131	66.3	60	30.5	3	1.6	3	1.6	197
Religion ^b									
Christian	668	66.4	239	23.4	73	7.1	31	3.1	1022
Muslim	77	5.8**	16	16.2	7	7.1	1	1.0	101

Other	5	45.5	4	36.4**	2	18.2*	0	0.0	11
Total									
No.	811		277		87		38		1214
%	66.9		22.8		7.3		3.1		100.0

* P < 0.05 ^a 10 students did not specify their sex.

** P < 0.001 ^b 80 students did not specify their religion.

*** P < 0.0001

In general, the prevalence of condom use is very low among college students. As shown in Table 4, only 217 (17.9%) of the sexually active respondents reported that they always used condoms, whereas the highest proportion 802 (66%) reported that they did not use condoms at all. The prevalence of condom use showed a statistically significant increasing trend with age, ranging from 15% for those students of age 15 to 19 years to 32% for the age group 30 years and above ($P < 0.05$).

Various media were considered to be sources of information on AIDS. As shown in Table 5, most of the students 835 (68.8%) heard about HIV/ AIDS over the radio. Television 682 (56.2%), Newspapers and Magazines 546 (45%) were also reported to be the common sources of information about the disease. Among those students who heard about AIDS on television, the proportion of students in the age group 25 to 29 years was significantly low ($P < 0.001$).

Table 4: Percentage of college students in Addis Ababa by condom use according to selected background characteristics, 1993.

Background Characteristics	Condom Use								
	Always		Sometimes		Rarely				Not at all
	No.	%	No.	%	No.	%	No.	%	
Age	73	15.0	47	9.7	16	3.2	348	71.6	486
15-19	122	18.8	86	13.3	29	4.5	410	63.3	648
20-24	14	25.6	8	14.0	4	7.0	29	52.7	55
25-29	8	32.0*	2	8.0	0	0.0	15	60.0	25
30 +									
Sex ^a	201	20.0*	119	20.0	42	4.2	643	63.9	1007
Male	12	6.1	22	6.1	4	1.8	158	80.7	197
Female									
Religion ^b	169	16.5	128	12.5	41	4.0	683	66.8	1022
Christian	23	22.7*	5	5.3	3	2.7	70	69.3	101
Muslim	1	9.1	1	9.1	2	2.0	7	63.6	11
Other	73	15.0	47	9.7	16	3.2	348	71.6	486
Total									
No.	217		143		49		802		1214
%	17.9		11.8		4.0		66.1		100.0

* $p < 0.05$ ^a 10 students did not specify their sex. ^b 80 students did not specify their religion.

With regard to the peer group being a source of information on AIDS, a significant difference was observed between the sexes, whereby a higher proportion (19%) of the males heard of the disease from a friend as compared to only 9.1% of the females ($P < 0.05$). A significant number of Muslim students ($P < 0.05$) reported classroom instruction as an important source of information on AIDS. On the other hand, posters, leaflets and booklets on AIDS were rated as minor sources of available information about the disease. No significant difference in knowledge, attitude and practice among the freshmen, sophomore, junior and senior college students was determined through the study.

Discussion

It is to be assumed that the present study suffers from the limitations that are symptomatic of all self-administered questionnaires. In particular, because of the fact that the subject matter of investigation (AIDS) is a highly sensitive one, and information on personal matters such as

sexual practices are normally kept too secret in most Ethiopian societies, the issues addressed in the study would not be expected to be honestly responded to by every student. The social desirability

factor is likely to influence such information withdrawal behavior. It is with an appreciation of these limitations that the results of this study should be interpreted.

The results of the present study have shown that the level of general knowledge about HIV/AIDS among college students in Addis Ababa is relatively high. The majority of students did not believe in the various frequently encountered misconceptions (such as airborne viral droplets, feeding together, skin contacts, lice and mosquito bites, etc.) as risk factors for AIDS transmission. However, many (43%) considered vaccination as one of the modes of transmission, which probably is due to lack of confidence in the sterility of the needles and syringes in the health centres and hospitals.

Table 5: Percentage of college students in Addis Ababa by source of information on AIDS according to selected background characteristics, 1993.

Background Characteristics	Radio		TV		Class		Posters		Leaflets & Booklets		News Paper & Magazines		From a friend		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Age															
15-19	313	64.4	277	56.9	58	12.0	142	29.3	139	28.5	200	41.2	64	13.2	4
20-24	466	71.9	366	56.5	57	8.8	231	35.8	213	32.9	309	47.5	131	20.2	648
25-29	38	69.1	25	45.5**	8	14.5	21	38.2	17	30.9	24	43.6	11	20.0	55
30 +	18	72.0	14	56.0	0	0.0	8	32.0	9	36.0	13	52.0	4	16.0	25
Sex ^a															
Male	708	70.3	554	55.0	95	9.4	346	34.4	331	32.9	462	45.9	191	19.0*	1007
Female	121	61.4	122	61.9	28	14.2	54	27.4	42	21.3	78	39.6	19	9.1	197
Religion ^b															
Christian	714	69.9	583	57.0	93	9.1	352	34.4	319	31.2	458	44.8	173	16.9	1022
Muslim	64	63.4	47	46.5	20	19.8*	27	27.0	29	28.7	44	43.6	21	20.8	101
Other	6	54.4	6	54.5	1	9.1	29	29.1	4	36.4	4	36.4	2	18.2	11
Total															
No.	835		682		123		402		378		546		210		1214
%	68.8		56.2		10.1		33.1		31.1		45.0		17.3		100.0

* $p < 0.05$ ** $p < 0.001$ ^a 10 students did not specify their sex. ^b 80 students did not specify their religion.

The observation that there was an increase in the knowledge about the modes of transmission of HIV with increase in age was in agreement with the results of other workers from the United States (16), Greece (17) and Ivory Coast (18). This implies that knowledge about AIDS increases with increasing level of sexual activity which in turn is closely associated with multipartner sexual contacts of the older students (30 years and above).

Most of the students in this study considered being faithful to a single lover as the best preventive measure against HIV/AIDS. But, it has been observed that this is an inaccurate self perception of monogamy and may lead the students to assume falsely that they are safe from STDs, as they would never be absolutely sure about the compliance of their partner (1). This inaccurate perception about faithfulness to a single sexual partner as a preventive measure can be considered as one of the key issues to target in educating college students about AIDS. The requirement for the use of condoms must be emphasised as an adjunct to a monogamous sexual relationship.

Similar to the findings of the study on Freshmen's attitudes and knowledge of AIDS in Gondar (4), the number of students who reported using condoms as a method of protection against infection with HIV was very low indicating lack of regional difference in the behavior of college students in their response to HIV/AIDS. This again is similar to the report of surveys on heterosexually active college students from other parts of the world (19,20).

Lack of predictability of condom use by positive sexual attitudes, increased level of knowledge of AIDS and perceived vulnerability has remained a unique feature encountered in most societies. The increase in the prevalence of condom use with increasing age, observed in the present study and in Gondar (5), possibly indicates that the more sexually involved older students better understand the

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multifaceted protective value of condom use than the younger ones. This increase in the use of condoms with age may be an indication that efforts to popularize the use of condoms among the younger age group could be a promising strategy or method of intervention.

On the other hand, the report of the large proportion of younger age group students to have no lovers at all cannot be taken as an indication of their lesser risk of exposure to HIV/AIDS. It is possible that such a report may not have been real and may have been prompted by social desirability of abstinence from extramarital sexual involvement. Furthermore, as paid sex with prostitutes is common among males, the absence of lovers may not actually indicate whether or not they are involved in active sexual practice. This suggestion is supported by the findings of a study among Gondar college students where more than half of the Freshmen students had had sex with prostitutes (4) and more than 23% of the general student population also had similar experience (5).

In spite of the fact that the majority of students correctly listed the traditionally perceived high risk groups among the general population, and the majority had admitted high risk behaviors, only a small proportion considered themselves as among the high risk group. Given the current global epidemiological picture of HIV/AIDS, this is a misconception that necessitates a more focused educational intervention.

Furthermore, although most students indicated that safe sex practices (that is, a one-to-one sexual relationship combined with condom use) help avoid HIV/AIDS, their behavioral adjustment towards such attitude was found to be limited as demonstrated by the information on condom use, number of sexual partners, and behavioral responses. Such discrepancy between a relatively high knowledge-attitude on one hand, and poor practice on the other, in relation to HIV/AIDS has been demonstrated by various studies conducted among college students in different parts of the world (6-12). College students are not alone in the manifestation of such a discrepancy as revealed by a study in Adigrat (Tigray Region) on patients with sexually transmitted diseases (21).

That there is an inadequate effort to prepare and distribute posters, leaflets and booklets as sources of information on AIDS was evidenced by the fact that the students reported these materials as minor sources of information. Therefore, more informative posters and publications, that would appeal to college students must be prepared and distributed regularly. Such materials would serve as sources of reference and are amenable to further circulation within the peer group. AIDS education programs should continue using radio and TV much more intensively as these have been acknowledged as the best media that draw the attention of students as sources of information on AIDS (22).

AIDS education presently is neither in the curricula of secondary schools, where the college students come from, nor is it in the colleges. Thus, it is understandable that classroom instruction was considered the least available source of information on AIDS by the majority of students in the study. Therefore, the present effort to integrate AIDS education into the secondary school curricula by the Ministry of Education should be encouraged and made practical as soon as possible. Also, colleges should develop programs that will help fill the gap in knowledge about the essential aspects of AIDS epidemiology and that way make an attempt to bring about changes in the attitudes and behavior of their students towards the disease. This is justified by the fact that although education alone cannot be a panacea for the AIDS pandemic, it at present is the only hope for controlling it (6).

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