



ATTITUDE AND MISCONCEPTION TOWARDS HIV/AIDS AND ASSOCIATED FACTORS AMONG EARLY ADOLESCENT STUDENTS IN NORTH ETHIOPIA

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ABSTRACT

Background: Human Immunodeficiency Virus (HIV) has emerged as a major health and development concern worldwide. Today, more than half of all new infections strike people under the age of 25 years. In Ethiopia, information on attitude towards HIV/AIDS among these early adolescents is a little known. Therefore, this study aimed to assess attitude and misconception towards HIV/AIDS and associated factors among early adolescent students in Mekelle city, North Ethiopia. Methods: A school based cross sectional study was conducted among early adolescent students in Mekelle City from February 1 to 30, 2014. A total of 845 students were included in this study using a multi-stage sampling technique. Descriptive, binary and multiple logistic regression analyses were performed using SPSS version 16 and a variable having $p < 0.05$ was considered as statistically significant variable in all tests. Results: A total of 845 students were included in the study and making a response rate of 97.6%. Of these, 480 (58.2%) were females. Five hundred ninety four (72%) of respondents had positive attitude towards HIV/AIDS, People living with HIV/AIDS (PLWHA) and AIDS orphans. Students grade [AOR=0.60, 95%CI (0.38, 0.94)] and peer discussion [AOR=1.70, 95%CI (1.23, 2.37)] were identified as a positive predictor of attitude towards HIV/AIDS, PLWHA and AIDS orphans. Conclusion: This study showed that, there is negative attitude towards PLWHA, HIV/AIDS and AIDS orphans. So, strengthening the current HIV/AIDS education program and further revising strategies for AIDS risk reduction in early adolescents should be considered.

KEYWORDS: Early adolescents, HIV/AIDS, Attitude, North Ethiopia.

INTRODUCTION

Human Immunodeficiency Virus (HIV) has emerged as a major health and development concern worldwide. Today, more than half of all new HIV infections strike people under the age of 25 and 14 million children are now orphans because of the disease and at the end of 2010, 34 million people were living with HIV of these 3.4 million were children less than 15 years.^[1] Furthermore, Sub-Saharan Africa (SSA), which contributes 10% of the world's population, however, has continued to be a home to more than 60% of all people living with HIV/AIDS. In 2008, Africa accounted for 72% of HIV infections worldwide, of these, 1.7 million were adults and 280,000 were children under the age 15 years.^[2]

In Ethiopia HIV/AIDS has become a major public health concern, in 2011; adult HIV/AIDS prevalence in Ethiopia was estimated at 1.5 percent. In 2010, an estimated 79,871 children under age 15 were living with HIV, and 804,184 children under 18 had lost at least one

parent to AIDS.^[3] In Northern Ethiopia, an estimated 9, 614 children aged less than 15 years were living with HIV and HIV prevalence of 3.6% at the end of 2010. Care for orphans falls primarily on their extended family or the community, yet grandparents and other extended family often lack the capacity to care for these children. In many cases, stigma and discrimination force orphans to live on the street.^[3] In addition, information on attitude towards HIV/AIDS among early adolescent students is now considered as a major problem from medical, legal, social and public health standpoints because in Ethiopia there is lack of research assessing the level of attitude towards HIV/AIDS among 10-14 year-old children in primary schools. Although various surveys have been done to assess attitude towards HIV/AIDS in the country, most of these studies were conducted in the age groups of 15 years and above. Attitude is one of the main factors that promote healthy behaviors and reduce risk-taking.^[4] Therefore, this study aimed to assess attitude on HIV/AIDS and associated factors among early adolescent students in Mekelle city, North Ethiopia. The

findings of this study might be useful in designing health education programs that are targeted at primary school considering their attitudes, and beliefs pertaining to HIV/AIDS. It will also help for policy makers working on HIV/AIDS among adolescents and also important as background or baseline information for researchers who are interested in this area.

MATERIALS AND METHODS

The Study was conducted among general primary school students in Mekelle city, Northern Ethiopia. According to the projected census of 2007, by the Central Statistical Agency of Ethiopia (CSA), Mekelle city had a total population of 251,104 in 2011, out of these the total number of people aged 10-14 years were 32,644.^[16] According to the report of Mekelle city education office (2012), there were 18,946 students attending from grade five up to eight and 46 primary schools. Data collection period was conducted from February 1 to 30, 2014.

School based cross-sectional study design was conducted among 845 students age 10 to 14 years who were attending 5th to 8th grade in ten general primary schools in the city. All students aged 10-14 years old registered as 5th–8th grade in 2013/14 were included in the study. Students who were critically ill with visual impairment and/ absent during the study period were excluded from the study.

Sample size was computed using single population proportion formula with the estimated population parameters of prevalence 50%, level of confidence 95% and margin of error 5%. Since there were no study with similar findings, prevalence of 50% was considered to get maximum sample size of 845 students were sampled for the study and design effect of two was used to narrowing of confidence interval and decreasing sampling error.

Multi-stage sampling technique was used to select the study participants. From the total of twenty eight primary schools in the city, ten- primary schools were selected using lottery method. The ten primary schools had a total of 163 classrooms, out of, these; 34-classrooms were selected using lottery method. After getting students list from each school registrar, sampling frame were developed. Accordingly, the total sample size was proportionally allocated to the size of classes and finally study subjects were selected using systematic sampling technique by calculating interval (k^{th}).

Measurements

The outcome variable for the study is attitude towards HIV/AIDS among early adolescent students who are aged 10-14 years. Structured and pre-tested questionnaire, using self-administered was used to collect the information. It was first prepared in English and then translated to Tigrigna and then translated back for consistency. Information collected included socio-demographic characteristics of children, parental status,

discussion with their parents and peers on HIV/AIDS, source of information on HIV/AIDS, willingness to learn about HIV/AIDS in the future. The questionnaires were adapted by reviewing different literatures and considering the local situation of the study subjects.^[4-7] Six diploma clinical nurses who speak local languages were employed in the data collection process. Three BSc nurse was selected as a supervisor. Training was given to the data collector and supervisor for two consecutive days on the objectives of the study, the contents of the questionnaire, and particularly on issues related to the confidentiality of the responses and the rights of respondents. Five days prior to the data collection, a pre-test was conducted at mayliham school in 42 (5%) of the sample size. After data collection, data was stored in a secured place to maintain confidentiality and backup of the data was stored in different areas not to lose the data. Each questionnaire was coded separately before analysis.

Statistically Analysis

The collected data was coded, entered, cleaned and analyzed using SPSS version 16.0. Descriptive statistics were used to describe attitude and misconception towards HIV/AIDS. Frequencies and percentages were used to present categorical data. Mean (\pm standard deviation) was used for normally distributed continuous data. The scores were summed up to generate an overall score for each participant's attitude towards HIV/AIDS, PLWHA and AIDS orphans. Then, the mean score was calculated and it was 5.92 from a total score of eight attitude questions.^[7] To determine the attitude of the students for each attitude questions, one point was given for correct response and zero point was given for incorrect response. So, levels of attitude related questions were then re-categorized depending on their mean. Regarding on this issue, participants who scored less than the mean score were categorized as having "Negative Attitudes" and those who scored points equal to and more than the mean score were categorized as having "Positive" Attitudes.

Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated using a logistic regression model to determine association levels of predictors to the outcome variables. Crude ORs of predictors with attitude towards HIV/AIDS among students with in the window of opportunity were estimated using bivariate logistic regression analysis.

A multivariate logistic regression analysis was used to estimate the adjusted OR of predictors and to control confounding factors. A variable having $p < 0.05$ was considered as statistically significant variable in all model. Before inclusion of predictors to the final logistic regression model, the multicollinearity was checked using VIF/Tolerance tests. The goodness of fit of the final logistic model was tested using Hosmer and Lemeshow test. Finally the results of the findings were presented by using text, graphs and tables.

Ethical Consideration

The study protocol was approved by the institutional ethical committee of Mekelle University, College of health Sciences (MUCHS). Support letters were also received from Mekelle Regional Educational Bureau and local Office to conduct the study in the area. The schools willingness to participate in the study was discussed with officials of all the schools and permission was obtained at each level. The respondents were told that the study offers an opportunity for students to get more information about attitude and misconception towards HIV/AIDS and associated factors among them. Informed written assent and consent were obtained from the respondents and their parents respectively before data collection. The respondents' privacy and right to anonymity and confidentiality was respected at all times.

Operational definitions

Early Adolescent: Students who are in the age group of 10- 14 years. **General Primary School:** Refers to people (students) attending from grade five to eight. **Positive attitude:** those study participants who had positive outlook towards HIV/AIDS, PLWHA, AIDS orphans and who scored points equal to and more than the mean score out of eight items of attitude questions. **Negative**

attitude: Those study participants who had negative outlook towards HIV/AIDS, PLWHA and AIDS orphans who scored less than the mean score out of eight items of attitude questions. **School source of information:** Those study participants who obtain information about HIV/AIDS from AAC (Anti AIDS Club), teacher, SMM (School Mini-Media), and text. **Mass-media source of information:** Those study participants who obtain information about HIV/AIDS from television/radio and drama. **Community sources of information:** Those study participants who obtain information about HIV/AIDS from health worker, parent, brother/sister and peer discussion.

RESULTS AND DISCUSSION

Socio-Demographic and Economic Characteristics

A total of 845 early adolescents were enrolled in the study and making a response rate of 97.6%. Of these, 480(58.2%) were females and the mean age of the respondents was 12.68(\pm 1.108) ranging from 10 to 14 years. Seven hundred forty two (89.9%) of the respondents were Orthodox religion. Three hundred seventy nine (45.9%) of the respondents were grade 5 up to 6 (Table-1).

Table-1. Socio-demographic and economic characteristics of early adolescent students who are in the age group of 10-14 years (n=825), Mekelle city, North Ethiopia, June, 2014

Variables	Frequency	Percent
Sex		
Male	345	48.1
Female	480	58.2
Age		
10-12	328	39.8
13-14	497	60.2
Grade		
5-6	379	45.9
7-8	446	54.1
Religion		
Orthodox	742	89.9
Muslim	77	9.3
Others	6	0.7
Parental alive		
Both father and mother alive	655	79.4
Only Mother alive	128	15.5
Only Father alive	17	2.1
Both died	25	3
currently living with		
Both father and mother	497	60.2
Mother only	33	4
Father only	211	25.6
Relatives	54	6.5
Others	30	3.6
Paternal occupation		
Government employee	224	27.2
Self employed	219	26.5
Employed in private work	204	24.7
Not applicable	145	17.6
Others	33	4
Maternal occupation		
Government Employee	120	14.5
Employed in private work	156	18.9

House wife	452	54.8
Self employed	40	4.8
Not applicable	41	5.0
Others	16	1.9

Based on the educational status of parents, 237 (28.7%) and 152(18.4%) of the respondents mother and father were unable to read and write respectively (Figure-1).

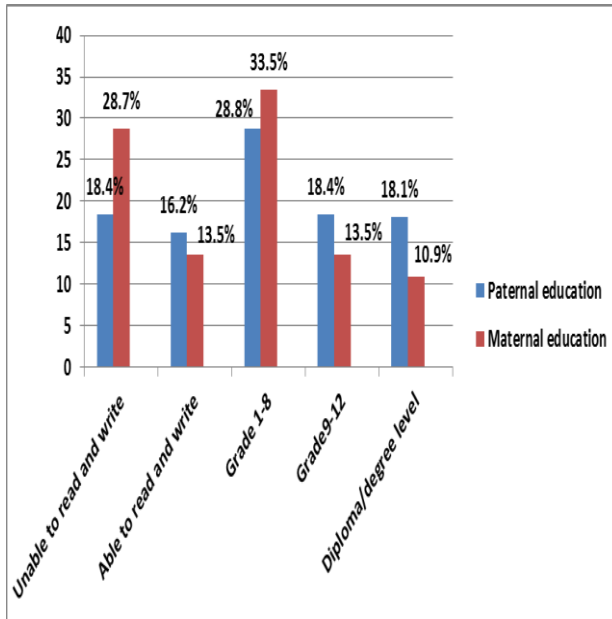


Figure:1 Educational status of early adolescent students' parent who are in the age group of 10-14 years (n=825), Mekelle city, North Ethiopia, June, 2014

Awareness of students towards HIV/AIDS

Seven hundred seventy six (94.1%) of the respondents had heard about HIV/ AIDS. Three hundred sixty nine (44.7%) of the respondents said that HIV/AIDS has no cure or vaccine.

Nearly two third (64%) of the respondents reported that HIV/AIDS have a symptoms of weight loss followed by 302(36.6%) skin rash, 193(23.4%) diarrhea, 182(22.1%) fever and 73 (8.8%) herpes zoster. Seven (0.8%) of the respondents also reported that convulsion and cough are symptom of HIV/AIDS and one respondent replied that HIV/AIDS has no symptom. Majority (92.1%) of the respondents reported that a person with HIV could be identified by blood examination and the rest sixty one (7.4%) said that through physical examination and 38(4.6%) were not sure how it could be identified. Seven hundred eighty (94.5 %) of the respondents replied that HIV/AIDS is a dangerous /serious disease. The reason they mentioned for its seriousness was, 588 (75.4%) had no medicine, 186 (23.8 %) those who have the virus cannot be distinguished by naked eye and 106 (13.6 %) said that because of die after infected by the virus (Table- 2)

Table-2. Awareness of students towards HIV/AIDS who are in the age group of 10-14 years (n=825), Mekelle city, North Ethiopia, June, 2014

Variables	Frequency	Percent
Have you heard about HIV/AIDS		
Yes	776	94.1
No	49	5.9
Who can be infected by HIV/AIDS?		
Only children		
Yes	136	16.5
No	689	83.5
Only young people		
Yes	194	23.5
No	631	76.5
Only adults		
Yes	120	14.5
No	705	85.5
Anybody		
Yes	625	75.8
No	200	24.2
Commercial sex worker		
Yes	280	33.9
No	545	66.1
Heavy truck drivers		
Yes	98	11.9
No	727	88.1
Can a healthy looking Person has HIV?	548	66.4

Yes	24	2.9
No	253	30.7
I am n't sure		
HIV/AIDS transmit able disease		
Yes	811	98.3
No	811	1.7
HIV/AIDS prevented		
Yes	781	94.7
No	44	5.3
HIV/AIDS have cure or vaccine		
Yes	369	44.7
No	305	37.0
I don't know	151	18.3

Discussion on HIV/AIDS with their parents and peers

Four hundred sixteen (50.4%) of the respondents replied that they discussed about HIV/AIDS with their peers followed by 324(39.3%) discussed with both parents, 148(17.9%) with mother only, 98(11.9%) with father only and 36(4.4%) with teacher and 21(2.5%) others said that, they discussed with their class mates, sister and brother, health professionals and relatives.

Sources of information on HIV/AIDS

The most frequently mentioned sources of information on HIV/AIDS were 575(12.5%) teacher followed by 520(11.3%) AAC and 3(0.1%) others like female support, news paper and HIV patient used as a source of information (Figure-2).

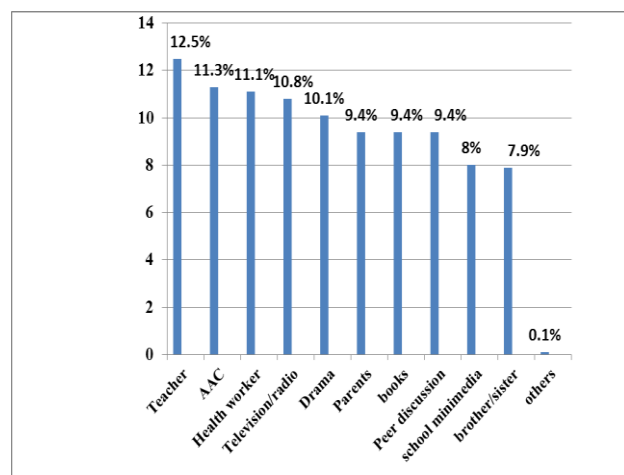


Figure-2. Source of information on HIV/AIDS among early adolescent students within the age group of 10-14 years (n=825), Mekelle city, North Ethiopia, June, 2014

Majority, 786 (95.3%) of the respondents replied that they had learned about HIV/AIDS in their class room/school. Seven hundred ninety seven (96.6%) of the respondents said that there was anti AIDS club (AAC) in their school. More than half, 520(65.2%) of the respondents were not a members of AAC. The reasons mentioned for not being membership of the school AAC were stated as 200(38.5%) did not want to be a member, 184(35.4%) did not have knowledge about the club, 64(12.3%) were not selected for the AAC, 38(7.3%) having other club, 14(2.7%) enough members of the club, 11(2.1%) had shortage of time to participate in the club, 5(1.0%) told that the school contained many students and 4(0.8%) others like had extra work and didn't talk with their parents.

Attitude and misconception towards HIV/AIDS, PLWHA and AIDS orphans

Majority, 594 (72.0%) of the respondents had positive attitude towards HIV/AIDS, PLWHA and AIDS orphans. Regarding attitude of students, 745(90.3%) of the respondents replied that they were willing to sit in the same classroom with a student living with HIV. Seven hundred thirty eight (89.5%) of the respondents said that they eat a meal together with known HIV positive person. Seven hundred twenty seven (88.1%) of the respondents replied that they could shake hands of an HIV positive person if you know his /her HIV status. Regarding their willingness to learn with these orphans in the same class, 681(82.5%) of them respond as they were willing. More than half, 434 (52.6%) of the respondents replied that they disagree PLWHA to keep their status secret from the community (Table-3).

Table-3. Attitude and misconception towards HIV/AIDS, PLWHA and AIDS orphans among early adolescent students within the age group of 10-14 years (n=825), Mekelle city, North Ethiopia, June, 2014

Variables	Frequency	Percent
Willingness to learn with an AIDS orphans student in the same class		
Yes	681	82.5
No	55	6.7
I am not sure	89	10.8
Sitting in a classroom with student		

living with HIV		
Yes	745	90.3
No	80	9.7
Eating a meal together with an HIV positive person		
Yes	738	89.5
No	87	10.5
Shaking hands of an HIV positive person		
Yes	727	88.1
No	98	11.9
Buying food from a shopkeeper or food seller who had HIV virus		
Yes	605	73.3
No	220	26.7
PLWHA should keep their status Secret to the community		
Agree	391	47.4
Disagree	434	52.6

Majority, 691 (83.8%) of the respondents replied that they feel sympathy towards PLWHA followed by 63(7.6%) disgust, 36(4.4%) emotional support, 26(3.2%) hatred and the least proportion of students 6(0.7%) said that they feel nothing.

Two hundred eighteen (26.4%) of the respondents reported that they can be infected by HIV and 266(32.2%) said "I am not sure" to be infected. The rest said that never, they will not be infected by HIV, because, 248(72.9%) said that they did not share unsterile sharp instruments followed by 204(60%) did not have contact with blood, 197(57.9%) will abstain from sex until you get married, 103(30.3%) too child, 70(20.6%) keep away from people living with HIV/AIDS and 4(0.5%) others reported that protect myself and being faithful to one uninfected partner.

Factors associated with attitude towards HIV/AIDS, PLWHA and AIDS orphans

Age, grade, peer discussion and source of information were the factors associated with attitude towards HIV/AIDS, PLWHA and AIDS orphans in the bivariate logistic regression analysis. The multivariate logistic regression analysis showed that, students in the lowest grade (grade 5-6) level were found to be 60% less likely to have positive attitude towards HIV/AIDS, PLWHA and AIDS orphans than in the highest grade (grade 7-8) [AOR=0.59, 95%CI(0.38,0.94), P=0.025]. Respondents who discussed about HIV/AIDS with their peer friends were found to be 70% more likely to have positive attitude than who did not discuss with their peer friends [AOR=1.70, 95% CI (1.23, 2.37), P=0.002] (Table-4).

Table-4. Factors associated with attitude towards HIV/AIDS, PLWHA and AIDS Orphans among early adolescent students within the age group of 10-14 years (n=825), Mekelle city, North Ethiopia, June -2014

	Variables Attitude		OR (95% C.I.)		P-value
	Positive	Negative	Crude	Adjusted	
Age					
10-12	210(64.0%)	118(36.0%)	0.52(0.39,0.71)	0.81(0.52,1.26)	0.354
13-14	384(77.3%)	113(22.7%)	1	1	
Grade					
5-6	240(63.3%)	139(36.7%)	0.45(0.33,0.61)	0.60(0.38,0.94)*	0.025*
7-8	354(79.4%)	92(20.6%)	1	1	
Peer discussion					
Yes	331(79.6%)	85(20.4%)	2.16(1.58,2.96)	1.70(1.23,2.37)*	0.002*
No	263(64.3%)	146(35.7%)	1	1	
Source of information					
School source					
Yes	316(80.6%)	76(19.4%)	2.32(1.64,3.06)	1.14(0.65,1.99)	0.646

No	278(64.2%)	155(35.8%)	1	1	
Mass media					
Yes	339(79.8%)	86(20.2%)	2.24(1.64,3.06)	1.16(0.67,2.01)	0.595
No	255(63.8%)	145(36.2%)	1	1	
Community					
Yes	295(81.3%)	68(18.7%)	2.37(1.71,3.28)	1.66(0.96,2.85)	0.068
No	299(64.7%)	163(35.3%)	1	1	

***Significantly associated variables at P<0.05**

Willingness to learn about HIV/AIDS in the future

Majority, 815 (98.8%) of the respondents reported that they were willing to learn about HIV/AIDS in the future. Among these respondents, 617(75.7%) wanted to learn in the future by healthworkers,505(62%)AAC,483(59.3%)teacher,444(54.5%)parent,380(54.5%)television,353(43.3%) radio and 338(41.5%)school mini-media. Thirteen (1.6%) of students also wanted to learn about HIV/AIDS in the future by books, brothers and sisters, drama and peers. The respondents also reported that they prefer the way of information or education about HIV /AIDS in the future to reach to them through 494 (60.6%) drama, 451 (55.3%) lecture, 303(37.2%) discussion, 213(26.1%) song, 204(25%) poster and 8(1%) also said that through books, media, news paper, poem and training.

DISCUSSION

This study showed that, 72% of study participants displayed positive attitude towards HIV/AIDS, PLWHA and AIDS orphans. This finding was almost consistent with a study conducted in Kombolcha, Ethiopia, 2005, (71.7%)⁶. This result was higher from a study conducted in China (39.8%).^[8] This higher result might be due to effective peer discussion by the student net work process, different lifestyle and technologies.

Despite the positive attitude in our study, 28% of students had negative attitude. These findings were also reported in Ethiopia (Kombolcha), Uganda, Iran and Canada.^[6,9-12] This kind of attitude might affect the success of HIV/AIDS control program.

In this study, the most frequently mentioned sources of information about HIV/AIDS were teacher, anti AIDS Club and health worker. This finding was also consistent to a study conducted in Uganda in which school/teacher were the source of information.^[11] This result was not the same with a study conducted in Iran, China and Japan, that mentioned television and radio were the main source of information.^[7,9,10,13-15] This finding show that, school source and health worker have played a great role in the provision of information and education on matter related to HIV/AIDS. This might shows that, even if the school source and health worker are not major source of information for HIV/AIDS to the students, television/radio presents a major opportunities for delivering messages that can be tailored to meet the needs of students at different age groups and situation, especially the proximity to the students knowledge and

attitude and contact make the teacher above all as an essential part of HIV/AIDS education.

Regarding the socio-demographic and economic factor, students grade [AOR=0.60, 95% CI (0.38, 0.94), P=0.025] were an independent predictor of students' attitude towards HIV/AIDS, PLWHA and AIDS orphans. This finding might be showed that, as students' educational level increases their attitude towards HIV/AIDS, PLWHA and AIDS orphans will increases. Basically, 59.6% of students in the highest grade level (grade7-8) had more positive attitude towards HIV/AIDS, PLWHA and AIDS orphans than students in the lowest grade (grade5-6) level (40.4%). As per discussion about HIV/AIDS, peer discussion [AOR=1.70, 95% CI (1.23, 2.37), P=0.002] were an independent predictor of students' attitude towards HIV/AIDS, PLWHA and AIDS orphans. This finding is not consistent with a study conducted in Kombolcha, Ethiopia, 2005, [AOR=1.59(0.99, 2.56)].^[6] The finding in Kombolcha might be due to the confounding of Community source might impart message about HIV/AIDS, PLWHA and AIDS orphans.

The strength of this study was large sample size unrelated to other studies, focusing in children during window of opportunity and the confounders were controlled using a multivariate logistic regression model to increase the validity. The limitation of this study could be institution based study, over or under estimation of prevalence may be happened due to the sensitivity issue of HIV/AIDS and being children at itself. so, in interpretation of this result, the above limitation should be considered.

CONCLUSION

some of the respondents had negative attitude towards HIV/AIDS, PLWHA and AIDS orphan. Majority of early adolescents discussed on HIV/AIDS with their peers. The most frequently mentioned sources of information were teacher followed by anti AIDS Club and health worker. Students grade and peer discussion were the factors identified in this study which determine their attitude towards HIV/AIDS, PLWHA and AIDS orphans. Therefore, using school source media must be strengthened and kept up sustainable and to equip them with positive attitude towards HIV/AIDS, PLWHA and AIDS orphans. Schools should collaborate and develop a regular program for PLWHA who are willing to publicize their sero- status in order to educate school children. Intervention in the schools on peers education approach is helpful to provide them a necessary skill how

to communicate and exchange correct information with each other and sensitize the parent on open communication between themselves and their children.

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Authors' Contributions

All authors read and approved the final manuscript.

Competing Interests

The authors declared that they have no competing interests exist.

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