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HIV/AIDS



KNOWLEDGE ATTITUDE PRACTICE

Among Secondary School Students in Arba Minch Town, Southern Ethiopia



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BACKGROUND

Worldwide HIV/AIDS has created an enormous challenge to the survival of mankind and many populations continue to be left behind. In particular, young people aged between 10–24 years are not only at high risk of contracting HIV infection, but already constitute a significant percentage of people living with HIV/AIDS. Globally, two-thirds of young people do not have the correct and comprehensive knowledge of HIV. The main objective of this study was to assess knowledge, attitude, and practice regarding HIV/AIDS among students in Arba Minch Town, Southern Ethiopia.

METHODS

A cross-sectional study was conducted among secondary school students. The collected data were entered into SPSS version 20 for data analysis. Binary logistic regressions analysis was applied to identify the significant factors on the knowledge, attitude, and practice (KAP) regarding HIV/AIDS. A statistical significance test was declared at p -value <0.05 and odds ratios (OR) with 95% confidence intervals (CI).

CONCLUSION

Knowledge of HIV/AIDS prevention methods was low, and more risky behaviour was observed in males and those that abuse alcohol and/or drugs. Students' age variation, and family monthly income and education level were major contributing factors on students KAP on HIV/AIDS. Thus, HIV/AIDS health education efforts should be intensified to change attitude and behaviours among students.

RESULTS

Among the 264 study participants, over 80% of students had knowledge and a positive attitude towards HIV/AIDS. Students age (>20 years) (OR=3.4; 95% CI:1.18, 9.84) and mother's education (diploma and above) (OR=5.6; 95% CI:1.52, 20.35) were significantly associated with students' knowledge on HIV/AIDS transmission and prevention, and students from families with a high monthly income (OR=3.9; 95% CI:1.16, 12.88) was directly associated with a positive attitude towards HIV/AIDS and patients with HIV/AIDS. About 29% of students have at least one risk behaviour related to unprotected sexual exposure and students age (≤ 15 years) (OR=3.8; 95% CI:1.32, 10.62) was significantly associated with students that practice risky behaviour on HIV/AIDS.

KEYWORDS

HIV/AIDS; adolescents; knowledge; attitude; practice; risk behaviours; Ethiopia

AUTHOR BIOGRAPHY

Nuredin Nassir Azmach has been a senior statistician and lecturer at the Department of Statistics at Arba Minch University, Ethiopia since 2011. He received his MPH in Epidemiology and Biostatistics from Arba Minch University in 2015. He has been a frequent participant in the Supportive and Independent Monitoring Program on Neglected Tropical Disease among Soil-transmitted helminths and Schistosomiasis at the Ethiopian National School Based Deworming Program since 2015. He is also a participant in health related research works. Nuredin currently lives in Ethiopia.

“ALL IN! To End Adolescent AIDS”

Acquired Immuno-Deficiency Syndrome (AIDS) is the greatest health problem in the world with its rapid spread, extent and the depth of impact since 1981 (Joint United Nations Program on HIV/AIDS, 2014). Enormous progress has been made and millions of lives have been saved since 2000. However, there are still important milestones to reach, barriers to break and frontiers to cross. This needs to be done with a fast-track strategy to end the AIDS epidemic as a public health threat (Joint United Nations Program on HIV/AIDS, 2016a).

Globally, at the end of 2015, there were an estimated 36.7 million people living with human immunodeficiency virus (HIV), 2.1 million people were newly infected, and 1.1 million lost their lives due to AIDS. The regions of Eastern and southern Africa carries 52% of the global total HIV burden (19 million people), which is an inordinate share next to the Western and Central Africa regions (6.5 million); they had a total of 96,000 new HIV infections and 470,000 AIDS-related deaths (Joint United Nations Program on HIV/AIDS, 2016a). In Ethiopia, the national adult (≥ 15 years) HIV prevalence is 1.0% with a higher prevalence among women (1.3%) than men (0.8%) reported in 2016. In addition, there were 740,251 people living with HIV, among which there were 11,479 new cases, and 20,354 annual AIDS deaths (Ethiopia Federal Ministry of Health, 2016).

Importantly, HIV/AIDS-related deaths and annual number of new infections among adolescents (age 15 to 19) have increased over the past decade while decreasing among all other age groups; this can be largely attributed to a generation of children (age < 15) infected with HIV perinatal who are growing into adolescence (UNICEF, 2017). In fact, in 2015, there were 1.8 million children living with HIV, 150,000 children were newly infected and 110,000 AIDS-related deaths (Joint United Nations Program on HIV/AIDS, 2016a). Accordingly, adolescents and young people also represent a growing share of people living with HIV worldwide. In 2016 alone, 610,000 young people (age 15 to 24) were newly infected with HIV, of whom 260,000 were adolescents. A sub-Saharan Africa country, which is an inordinate share, was most affected by HIV (UNICEF, 2017). In addition, young women aged 15–24 years are at particularly high risk of HIV infection, accounting for 20% of new HIV infections among adults globally in 2015, despite accounting for just 11% of the adult population. In sub-Saharan Africa, young women accounted for 25% of new HIV infections among adults, and women accounted for 56% of new HIV infections among adults (Joint United Nations Program on HIV/AIDS, 2016b).

In 2015, a new global strategy was launched that aims to end the AIDS epidemic by 2030; this included the “ALL IN! To End Adolescent AIDS” agenda. This strategy established 2020 targets to better position the global AIDS response to end the AIDS epidemic among adolescents and young people by 2030 (UNICEF, 2017). This is in addition to the Ethiopian HIV-related programme that is focussed on the provision of preventive, support, care and treatment services. So, the Federal HIV/AIDS Prevention and Control Office (FHAPCO) has organised these activities since 2002; in addition, the Federal Minister of Health (FMH) is working on the launched strategy and target (Ethiopia Federal Ministry of Health, 2012). Therefore, it is critical to accelerating efforts to address the epidemic among young people, and especially adolescents, to achieve the intended targets.

Of these, increasing HIV/AIDS-related awareness, knowledge of prevention, and behaviour among adolescents and young people are the main critical issues. Knowledge of HIV prevention includes knowing that both condom use and limiting sexual intercourse to one uninfected partner are HIV prevention methods, knowing that a healthy-looking person can have HIV, knowledge of how HIV is transmitted is crucial to enable people to avoid HIV infection; this is especially true for young people, who are often at greater risk because they may have shorter relationships with more partners or engage in other risky behaviours (UNICEF, 2017; Central Statistical Agency, 2016). Therefore, before formulating public health policies for the prevention of HIV, it is vital to obtain information about the prevalent knowledge, attitude and practice (KAP) regarding HIV/AIDS transmission and prevention methods among adolescents and young people. This is because the spread of HIV in any community is in part determined by the knowledge of attitudes towards sexuality of its members and by their actual sexual practices (Central Statistical Agency, 2016).

Generally, in many parts of the world, especially in sub-Saharan Africa, young people in the age group of 15–24 years, which is school age people, are at particularly high risk of HIV/AIDS infection related behaviours from unprotected sex, multi-partnership, no or inconsistent use of condoms, active substance use and illegal drugs. This is because of the very high prevalence rates frequently found amongst people who engage in these behaviours (Joint United Nations Program on HIV/AIDS, 2016b; Uddin et al., 2010). Similarly, in Ethiopia, the majority of secondary school students are between the ages of 15 and 24, which are adolescents and young age students; in this age group is starved of the information and the freedom to make free and informed decisions about their sexual health, with most lacking the knowledge necessary to keep them from contracting HIV/AIDS (Joint United Nations Program on HIV/AIDS, 2016b; Central Statistical Agency, 2016). Therefore; the aim of this study was to assess students' knowledge, attitudes

and practices regarding HIV/AIDS at Cecha Secondary School, Arba Minch, Southern Ethiopia.

METHODS

Study Design and Setting

A cross-sectional study was conducted in Cecha Secondary School¹ in March 2017. The total population of the town is estimated to be 100,355. The town is located 505km south of the national capital (Addis Ababa) and about 275km from the regional capital (Hawassa). Its elevation ranges from 1,200 metres above sea level at the northern end and 1,320 metres above sea level at the southern end. The town has an average temperature 30°C and rainfall of 575mm. There are also two lakes; Lake Abaya at the East and Lake Chamo at the South East of the town.

Source and Study Population

The target population of the study was all Grade 9 and 10 students in Cecha Secondary School. The sampling frame was the list of all Grade 9 and 10 in this particular school. The study population was the total numbers of all randomly selected Grade 9 and 10 students.

Sample Size

The sample size was calculated using Epi-Info software version 7; based on the proportion results of the study conducted in Gondar city, using 85.5, 93.5, and 26.3 proportions of knowledge, attitude and practice regarding HIV/AIDS, respectively (Shiferaw et al., 2011), with 95% confidence level. From this, the sample size of 165, 88 and 240 was obtained according to the proportions. As a result, taken into account the largest sample size and considering 10% non-response rate, a total of 264 respondents were used.

¹This school is in Arba Minch Town, Gamo Gofa Zone, Southern Nation Nationalities and People's Region of Ethiopia (SNNPR).

Sampling Procedures

In Cecha Secondary School, during the study period among a total of 1,248 students, questionnaires were distributed among 701 students from Grade 9 and 547 students from Grade 10. The number of students between sections varied between 50 and 70. Assuming homogeneity in academic status among students in the same grade, a total of 264 students were recruited for the study. As to the sampling procedure, the stratified proportionate allocation was used to select study participants. A list of students was obtained from student registration books and the sampling frame was the list of all Grade 9 and 10 students. Based on proportional allocation, the respondents were stratified into grades level and 148 and 116 students from Grade 9 and 10, respectively, were selected.

Data Collection Procedure and Tools

Primary data were collected from randomly selected students using a self-administered questionnaire. The questionnaire was adapted from different literature and a WHO/AIDS questionnaire that was used for data collection purposes; it was designed comprising of four different parts.

- Part I: related to socio-demographic background and family-related characteristics;
- Part II: on knowledge regarding HIV/AIDS transmission and preventive methods;
- Part III: on students' attitude regarding HIV/AIDS and HIV patient; and
- Part IV: on high-risk behaviour related to HIV/AIDS.

Measurements

For knowledge of transmission and prevention of HIV/AIDS and other related questions, each correct response was given a score of 1 while an incorrect or unsure response was scored 0. Total knowledge scores can range between 0–31. If the respondent answered more than 15 questions correctly, they were considered as having “good knowledge” otherwise considered as “poor knowledge” regarding HIV/AIDS transmission. Attitude

towards HIV/AIDS patients was assessed using a 10 item questionnaire; attitude scores between 0–5 were considered as a negative attitude, and scores 6–10 were considered as a positive attitude. High-risk behaviour or practice was assessed using an 11 item questionnaire; a report of at least one negative behaviour related to HIV transmission was considered as having high-risk behaviour (Shiferaw et al., 2011; Namaitijiang et al., 2010).

Data Quality Control

The English questionnaire was translated into simple Amharic (local language) and back-translated into English. Pre-testing was done on 24 students (10% of the sample size) in Chamo School; these were chosen to ensure that the questions were easily understood and collected the intended information. The result of the pre-test was used to improve the phrasing and modification of questions in the questionnaire. The validation tests of the questionnaire showed that the Alpha Cronbach was 0.88 for knowledge, 0.72 for attitude and 0.73 for risk behaviours.

Data Analysis

Data were entered and coded into SPSS-for Windows version 20, and statistical analysis of the data was performed. Frequency distribution tables were used to quantify socio-demographic variables, family-related characteristics, and knowledge, attitude and practice of respondents regarding HIV/AIDS transmission and prevention. A Chi-square test and Bivariate logistic regression analysis were carried out to determine the presence and degree of association between KAP and socio-demographic and family-related determinants. Odds Ratios (OR) with 95% confidence intervals (CI) were calculated. Variables having the p -value < 0.05 were treated as showing a statistically significant association with KAP.

Ethical Consideration

The study protocol was reviewed and approved by Arba Minch University Ethical Clearance Commit-

tee. Written informed consent was obtained from each respondent before data collection.

RESULTS

Socio-Demographic and Family Characteristics

A total of 264 Grade 9 and 10 students participated in the study; this gives a response rate of 100%. Of the respondents, 136 (51.5%) were male, and 158 (59.8%) were in the age group 16–20 years; the mean (SD) age of the respondents was 17.39 (± 4.67), ranging from 13 to 25 years. Among the study respondents, one female student was married and the remaining students were single. Of the total, 182 (68.9%) were living with both parents, 67 (25.4%) with a single parent, 13 (4.9%) alone in a rented house and 2 (0.8%) were living with relatives. In addition, 92 (34.8%) of the students were orthodox by religion followed by protestant 81 (30.6%). In the study, the majority of students' family education status, 96 (36.4%) of fathers had gained a diploma and above, and 60 (22.7%) of mothers only had primary education. With regards to socio-economic factors (family monthly income in Ethiopian birr, ETB), 112 (42.4%) of students came from households with a family monthly income in the range of 1,550.00 to 2,000.00 Birr. The minimum family monthly income was 300.00 Birr while the maximum was 9,000.00 Birr (TABLE 1).

Knowledge about HIV/AIDS Transmission and Prevention

All the study participants had heard about HIV/AIDS before they responded. The sources of information were the television (56.3%), radio (21.4%), newspapers (18.6%), parents (17.1%), teachers (16.8%), youth club (15.2%), and health professions (11.9%); more than one source was common. A summary result of the knowledge revealed that most of the students, 225 (85.2%) had a good level of knowledge about HIV/AIDS with total scores of more than 15. Generally, the respondents were well informed about select aspects of

HIV/AIDS transmission and prevention methods (TABLE 2). An average of 86.2% of male and 85.4% of female students were familiar with the major modes of transmission of HIV. In addition, about 60% and 83% of the students knew that HIV can be transmitted from pregnant mothers to children during pregnancy and through breastfeeding, respectively.

Among the selected questions (TABLE 2), a low proportion of students, an average 65.8% and 63.2% of male and female students respectively, were conversant with the majority of prevention methods of HIV/AIDS. Approximately half the students knew that limiting sexual intercourse to one faithful and uninfected partner can reduce the chances of contracting HIV, and a mother with HIV can reduce the risk of transmission to her baby by taking certain drugs during pregnancy. There were two most common local misconceptions about HIV transmission: that HIV can be transmitted by mosquito bites (4.2%) or by sharing toilet, clothes, swimming, and food with a person who has HIV (2.3%). In general, more boys than girls have knowledge about HIV/AIDS transmission and prevention methods.

Attitudes towards HIV/AIDS

More than 80% of the respondents had a positive attitude towards HIV/AIDS and HIV patients. TABLE 3 shows that 246 (93.3%) of the respondents thought their friends would not avoid them if they were found to someone where either one or both of his/her parents died due to HIV/AIDS. However, 230 (87.0%) of students were willing to help HIV/AIDS patients. About 88% and 93% of students reported they will be eating together and comfortable to study with students who are HIV positive, respectively. Fifty percent of students felt it will be easy for them to tell their families and/or friends if they are HIV positive; 67.7% thought they will not go far away from the current position if they were found to be HIV positive. Generally, more girls have a positive attitude about HIV/AIDS and HIV patients as compared with boys.

1**TABLE****Socio-demographic and Economic Characteristics of the Study Participants**

<i>Variables</i>	<i>Categories</i>	<i>Frequency</i>	<i>%</i>
Sex			
	Male	136	51.5
	Female	128	48.5
Age			
	≤15	21	8.0
	16–20	158	59.8
	>20	85	32.2
Religion			
	Orthodox	92	34.8
	Muslim	49	18.6
	Protestant	81	30.6
	Catholic	21	8.0
	Other	21	8.0
Mother education status (n=258 ^a)			
	No formal education	67	26.0
	Primary education	72	28.0
	Secondary education	58	22.5
	Diploma and above	61	23.5
Father education Status (n=255 ^b)			
	No formal education	47	17.8
	Primary education	60	22.7
	Secondary education	52	19.7
	Diploma and above	96	36.4
Family Income in ETB ^c (n=258 ^d)			
	<1000	47	18.0
	1000–1500	64	25.0
	1500–2000	112	43.4
	>2000	35	13.6

Notes: a and b= number of mothers and fathers education states, respectively; c: 1,000ETB=42.96 US dollar, d=number of families with income

Source: Devised by author

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TABLE

Percentage of Correct Answers Regarding Knowledge about HIV/AIDS Transmission and Prevention

Question	Correct responses according to Sex			
	Correct Response	Male (%)	Female (%)	Total (%)
Knowledge about HIV/AIDS transmission				
HIV spread through mosquito bites	False	132 (97.1)	121 (94.5)	253 (95.8)
HIV spread from sharing toilet, clothes, swimming, and food, with a person who has HIV	False	133 (97.8)	125 (97.7)	258 (97.7)
Having sex with more than one partner can increase a person's chance of being infected with HIV	True	131 (96.3)	119 (92.9)	250 (94.7)
HIV spread by sharing unsterile sharp instrument	True	135 (99.3)	124 (96.8)	259 (98.1)
HIV spread by using HIV infected or unscreened blood for transfusion	True	126 (92.6)	121 (94.5)	247 (93.6)
HIV spread through sexual intercourse	True	129 (94.9)	126 (98.4)	255 (96.6)
HIV spread from pregnant mother to child	True	85 (62.5)	72 (56.3)	157 (59.5)
HIV can be transmitted by breastfeeding	True	111 (81.6)	110 (85.9)	221 (83.7)
AIDS is a curable disease, if diagnosed in early stage	False	74 (54.4)	66 (51.6)	140 (53.0)
Knowledge about HIV/AIDS preventions				
Avoid sex with commercial sex workers	True	55 (40.4)	47 (36.7)	102 (38.6)
Avoiding sharing toilet, clothes, swimming, and food with a person who has HIV	False	132 (97.1)	125 (97.7)	257 (97.3)
Avoid active substance uses/drugs	True	19 (13.9)	12 (9.4)	31 (11.7)
Abstinence from sex	True	114 (83.8)	109 (85.2)	223 (84.5)
Limiting sexual intercourse to one faithful and uninfected partner can reduce the chances of contracting HIV	True	77 (56.6)	71 (55.5)	148 (56.1)
Using condoms prevents HIV/AIDS	True	108 (79.4)	96 (75)	204 (77.3)
Avoiding sharing unsterile sharp instrument like blade, syringe and needle	True	135 (99.3)	124 (96.9)	259 (98.1)
Risk of MTCT can be reduced by mother taking special drugs during pregnancy	True	76 (55.9)	63 (49.2)	139 (52.3)

Source: Devised by author

3

TABLE

Percentage of Positive Attitudes Regarding HIV/AIDS

Question	Positive attitude regarding to Sex		
	Male (%)	Female (%)	Total (%)
I believe that I would continue being friends with someone if either one or both of his/her parents died due to HIV/AIDS	124 (91.2)	122 (95.3)	246 (93.2)
I am willing to help an HIV positive person	109 (80.1)	121 (94.5)	230 (87.1)
If HIV positive student was in a classroom, I am willing to sit with him/her	125 (91.9)	122 (95.3)	247 (93.6)
I would eat with an HIV positive person if I know his /her HIV status	104 (76.5)	113 (88.3)	217 (82.2)
I would permit a student who was HIV positive to kiss me	97 (71.3)	102 (79.6)	199 (75.4)
I am willing to buy food from a shop keeper or food seller who had HIV virus	117 (86.1)	123 (96.1)	240 (90.9)
I believe that students with HIV should be allowed to learn in my classroom	134 (98.5)	127 (99.2)	261 (98.9)
I would permit a teacher with HIV but not sick to continue teaching in the school	134 (98.5)	127 (99.2)	261 (98.9)
If I am infected with HIV, I would inform my family and/or friends	72 (52.9)	61 (47.7)	133 (50.4)
If I am infected with HIV, I will not go far away	97 (71.3)	82 (64.1)	179 (67.8)

Source: Devised by author

Risk Behaviours and Practice

Among the respondents, 20.8% of students had at least one risk behaviour related to HIV/AIDS: 73 (27.3%) of study participants already initiated sexual intercourse. Of these, 76.7% undergo sexual intercourse in unusual route; 48.0% of sexually active students had more than one sexual partner; 43.8% reported having unprotected sex (sex without condom and/or occasional); 25.5% reported having sex under the influence of alcohol; 6.8% shared sharps (blade, syringe and/or needle), and 2.8% reported having sex with commercial sex workers (TABLE 4).

Factors Associated with KAP on HIV/AIDS

In Bivariate logistic regression analyses, students aged above 20 years (OR=3.4; 95%CI: 1.18, 9.84) and students from mothers having a diploma and above (OR=5.6; 95%CI: 1.52, 20.35) were significantly associated with students' knowledge on HIV/AIDS transmission and prevention meth-

ods. Students from the wealthiest households (OR=3.9; 95%CI: 1.16, 12.88) had a significantly more positive attitude towards those with HIV/AIDS. Students aged less than 20 years (OR=9.8; 95%CI: 5.20, 18.40) were significantly associated with less risky behaviour on HIV/AIDS (TABLE 5).

DISCUSSION

A very important finding of the study indicated that all students who participated in the survey had heard about HIV/AIDS. This finding was consistent with the studies conducted among school adolescents (Shiferaw et al., 2011; Andargie et al., 2007). The study showed that 77.7% of students were informed about HIV/AIDS through television and radio, whereas 15.2% of students obtained information through youth clubs, and 16.8% from their teachers; however, these results were very low as compared with previous studies in Ethiopia (Shiferaw et al., 2011). These findings emphasise

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TABLE

Risk Behaviour and Practices that Predispose Students towards HIV/AIDS

<i>Risk behaviour and practice</i>	<i>Responses</i>	<i>Frequency</i>	<i>%</i>
At least one risk behaviour and practice	Yes	78	29.5
	No	186	70.5
Sexual initiation	Yes	73	27.7
	No	191	72.3
Condom use during sexual intercourse	Always	41	56.2
	Sometimes	23	31.5
	Never	9	12.3
Sexual partner during sexual initiation	Fixed friend	29	39.7
	Casual friend	42	57.5
	With commercial sex workers	2	2.8
Number of sexual partner	Single	38	52.0
	Multiple	35	48.0
Sex under external influence*	Alcohol	13	25.5
	Smoking	1	12.5
	Chewing 'Kcat'	2	8.6
Place of use sexual intercourse	Usual anatomical sites	56	76.7
	Un usual anatomical sites	17	23.3

(*more than one answer is possible)

Source: Devised by author

the need for schools to make a concerted effort to improve their teachers' knowledge about HIV/AIDS transmission and prevention methods in order that they can educate their students more. This is important because educating school-age children (15–24 years) about safe sex is one of the most important ways of postponing the onset of sexual activity among them (Short, 1998). Furthermore, intervention programmes providing sex education in schools have been reported to result in a marked improvement students' knowledge regarding HIV/AIDS, and have been significantly associated with a positive change in their attitude towards the disease (Agrawal et al., 1999).

Among the study participants, 85.5% of students have good knowledge of HIV transmission and prevention methods, which was consistent with a study conducted in Mekele city, Ethiopia (Abraham and Berhanu, 2013). Commonly, students were well informed about select aspects of knowledge

of how HIV is transmitted as compared with students' knowledge of HIV prevention methods. Thus, about 65% and 63% of male and female respondents have knowledge about HIV prevention, respectively. This was higher than another survey report that showed 24% of young women and 39% of young men age 15–24 have knowledge about HIV prevention (Central Statistical Agency, 2016). According to the Joint United Nations Program on HIV/AIDS (UNAIDS) report, two-thirds of young people do not have correct and comprehensive knowledge of HIV (Joint United Nations Program on HIV/AIDS, 2016b).

A further examination revealed that students have substantial misconceptions on knowledge of HIV/AIDS transmission and prevention in certain key areas; these include mosquito bites, and sharing a toilet, clothes, swimming and food with a person who has HIV. These misconceptions were also reported in the studies conducted in Ethiopia

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TABLE

Bivariate Analysis of Knowledge, Attitude, and Practice with Socio-Demographic and Socio-Economic Characteristics

Variables	Knowledge Status		OR(95%C.I.)	X ²	p-value
	Good (%)	Poor (%)			
Age					
≤15	13 (5.8)	8 (20.5)	1		
16–20	140 (62.2)	18 (46.2)	4.8 (1.75–13.11)	10.65	0.00
>20	72 (32)	13 (33.3)	3.4 (1.18–9.84)	5.50	0.01
Mother's education status (n=258)					
No formal education	52 (23.1)	15 (38.5)	1		
Primary education	60 (26.7)	12 (30.8)	1.4 (0.61–3.35)	0.72	0.39
Secondary education	52 (23.1)	6 (15.4)	2.5 (0.89–6.90)	2.15	0.07
Diploma and above	58 (25.8)	3 (7.8)	5.6 (1.52–20.35)	5.60	0.00
Family income (n=258)	Attitude				
	Positive	Negative			
<1000	32 (14.9)	16 (32.7)	1	2.42	0.11
1000–1500	51 (23.7)	13 (26.5)	1.9 (0.83–4.60)		
1500–2000	96 (44.7)	16 (32.7)	3.0 (1.34–6.67)	7.60	0.00
>2000	31 (14.4)	4 (8.2)	3.9 (1.16–12.88)	5.31	0.02
Age	At least one risk behaviour				
	No	Yes			
≤15	15 (8.1)	6 (7.7)	3.8 (1.32–10.62)	6.69	0.00
16–20	137 (73.7)	21 (26.9)	9.8 (5.20–18.40)	60.2	0.00
>20	34 (18.2)	51 (65.4)	1		

Source: Devise by author

(Shiferaw et al., 2011; Andargie et al., 2007; Abraha and Berhanu, 2013), and China (Namaitijiang et al., 2010). About 55% of participants know that limiting sexual intercourse to one faithful and uninfected partner can reduce the chances of con-

tracting HIV. However, other studies have reported above 70%, which was 70.3% females and 78.6% of males (Central Statistical Agency, 2016). Increasing students' knowledge about the prevention of HIV from mother to child and reducing the risk of

transmission using antiretroviral drugs (ARVs) are critical issues in reducing mother-to-child transmission (MTCT) of HIV. In this study, 83.8% and 59.4% of students know that HIV can be transmitted through breastfeeding, and that HIV is spread from pregnant mother to child respectively. However, almost half the respondents did not know that the risk of mother-to-child transmission can be reduced if the mother takes special drugs during pregnancy. Similarly, other reports indicate that about 43% of young people aged between 15 and 24 years did not know that mothers with HIV can reduce the risk of MTCT by taking certain drugs during pregnancy (Central Statistical Agency, 2016).

Among socio-demographic and family-related indicators, the age of students, and mothers' education were a statistically significant association with knowledge of HIV transmission and prevention methods. Students aged above 20 years were more than three times more knowledgeable than students aged below 15 years. In contrast, the study conducted in Gondar city reported that the overall knowledge status of the study participants was insignificantly influenced by socio-demographic characteristics (Shiferaw et al., 2011); this discrepancy may be due to the levels of grade variation among study participants. In addition, respondents whose mothers' educational level was at diploma and above were about five times more likely to be students who were knowledgeable on HIV than respondents whose mothers had no formal educational status. This finding indicates that mothers' education level is an indirectly determinant factor regarding students' knowledge of HIV/AIDS.

Over 80% of respondents' had a positive attitude towards HIV/AIDS and patients with HIV/AIDS, but this finding was higher than that found in another study (38.8%) (Joint United Nations Program, 2014). Nonetheless, only half the students believed that it would be easy for them to tell their families and/or friends if they were HIV positive: this finding is also higher than another study (24.3%) (Namaitijiang et al., 2010). The study showed that 93.3% of the respondents thought their friends

will not avoid them if either one or both of his/her parents died due to HIV/AIDS, whereas 87% of students were willing to help HIV patients. The study also showed that more girls than boys had a positive attitude towards HIV/AIDS. Family monthly income was significantly associated with the attitude towards HIV/AIDS.

Another study indicated that youths from the wealthiest households were more likely than other subgroups to have knowledge about HIV prevention (Central Statistical Agency, 2016). Many studies have indicated that good knowledge of HIV/AIDS but a negative attitude is still problematic (Abraham and Berhanu, 2013; Lal et al., 2000). Although students had good knowledge regarding HIV/AIDS, they still had a negative attitude towards HIV/AIDS and HIV positive patients. This indicates that knowledge alone is not enough to change attitudes towards people having HIV/AIDS, but deep-seated social and cultural factors, such as religion, attitude towards ill-health and risk behaviours especially sexual behaviours, can affect attitude to a high degree (Shiferaw et al., 2011).

In the study, about one-third of respondents admitted having at least one risk behaviour that predisposed them for HIV/AIDS. This finding was higher than other studies conducted in Ethiopia (25%) and China (15%) (Shiferaw et al., 2011; Namaitijiang et al., 2010). Among 73 sexual initiations students, 48% of respondents had multiple sexual partners including commercial sex workers (2.8%). In addition, only 56 respondents' always used a condom during sexual intercourse; this percentage was higher compared with other reported results, being 32% among young participants (15–25 years) (Central Statistical Agency, 2016). Furthermore, young people still had a problem with using condoms; this might be because sexually active students were ashamed to buy condoms because of socio-cultural norms related to youths and religion. Similarly, risky behaviours among college students were a significant association with condom utilisation (Lal et al., 2000; Fitaw and Worku, 2002). In addition, respondents aged above 20 years were

significantly associated with high-risk behaviours. Besides this, the findings indicated that having at least one risk behaviour was observed more in males, and active substance users compared to their counterparts. About 21% of sexually active students undergo sexual intercourse under the influence of active substance use. Similarly, a recent study suggests that people who inject drugs are 24 times more likely to acquire HIV than adults in the general population (Baral et al., 2013).

A school is a good place and time to apply different programmes and interventions such as mass drug administration, disease interventions, healthy sexual attitudes, peer education programmes, as well as being socially active, accepting and caring. Therefore, this study suggests that the information, communication, and education systems need to implement specific and focused educational programmes for secondary school students. This is because young people (15–24 years) are denied the information and the freedom to make free and informed decisions about their sexual health, with most lacking the knowledge required to protect themselves from HIV (Joint United Nations Program on HIV/AIDS, 2016b). It is important that school students understand HIV prevention and transmission, as well as building a positive attitude and good practice with regard to reducing risky behaviours. Also, the fact that not all students are sexually active, developing messages geared towards them while offering strategies that help students delay sex, refuse sex, or negotiate safer sexual practices should be included. This programme must give students an understanding of why it is more advantageous to abstain from sex without promoting unnecessary fear.

Furthermore, in Ethiopia getting back on track to reducing new infections among young people (especially school age children) by 2020 requires continued progress and intensive focus on five HIV/AIDS prevention pillars delivered through a young people-centred, combination approach. These prevention pillars are:

- combination prevention, including comprehensive sexuality education and access to sexual and reproductive health services for adolescent girls and their male partners;
- dedicated services and community mobilisation and empowerment;
- strengthened national condom programmes;
- voluntary medical male circumcision in priority areas that have high levels of HIV prevalence; and
- pre-exposure prophylaxis for population groups at higher risk of HIV infection (Joint United Nations Program on HIV/AIDS, 2016b).

PUBLIC HEALTH SIGNIFICANCE

The assessment of knowledge, attitudes, and practices regarding HIV/AIDS among school-age students will enable the identification of determinant factors. The study will also be supportive of programme managers, researchers, and policy and decision makers working in the HIV/AIDS area for proper designing and planning. In addition, necessary orientation and education about the impact of HIV/AIDS should be promoted among new students to strengthen their awareness and knowledge about HIV preventive methods.

CONCLUSIONS

In general, the students KAP regarding HIV/AIDS transmission and prevention was high compared with other studies. According to the study, age, mothers' education level, and family income were major contributing factors for students KAP on HIV/AIDS. More risk behaviour was observed in males and those with active substance/alcohol abuse. Thus HIV/AIDS-related health education efforts should be intensified to change the attitude and develop good behaviour among secondary school students, especially male students. In addition to health education, intervention strategies must focus on behavioural changes towards safer sex, and change the negative attitude towards HIV/

AIDS and those infected with HIV. This is to ensure the prevention of rapid transmission of HIV and early screening of exposed youths.

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