

## Research Article

# Knowledge, Attitude, and Preventive Practices towards Sexually Transmitted Infections among Preparatory School Students in West Gojjam Zone, Ethiopia

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**Background.** Sexually transmitted infections are major public health concerns that mostly affect adolescents and young people. Hence, the aim of this study was to assess students' knowledge, attitude, and preventive practice towards sexually transmitted infections and the associated factors. **Methods.** A school-based cross-sectional study was conducted from October 24 to November 4, 2018. A sample size of 845 was calculated and a 1-stage sampling technique was employed. Data were collected through a self-administered questionnaire. The data were entered into Epi-Info 7.2 and analyzed using IBM SPSS version 25 software. The descriptive result was presented in text, figure, and tables. Also, bivariate and multivariable logistic regression analyses were done to identify associated factors. Then the adjusted odds ratio and its 95% confidence interval were computed. And a  $p$  value of  $<0.05$  was considered to assert statistical significance. **Results.** Half of the respondents (50.5%) had good knowledge on sexually transmitted infections. Also, 46.4% of students had a good preventive practice. However, only 38.4% of students had an appropriate attitude towards sexually transmitted infections. Being a male (AOR: 1.58 (95% CI: (1.19, 2.09))) and having employed father (AOR: 1.97 (95% CI: (1.18, 3.30))) predicted good knowledge. Similarly, secondary and above level of paternal education (AOR: 2.16 (95% CI: (1.28, 3.64))) and having a farmer father (AOR: 1.77 (95% CI: (1.04, 3.02))) predicted appropriate attitude. Predictors of preventive practices included elder age (AOR: 2.33 (95% CI: (1.27, 4.28))), never had sexual intercourse (AOR: 1.44 (95% CI: (1.07, 1.94))), and having good knowledge on STIs (AOR: 1.53 (95% CI: (1.16, 2.02))). **Conclusion.** The proportion of students that had good knowledge, appropriate attitude, and good preventive practice towards STIs were low. Personal and parental factors predicted students' knowledge, attitude, and preventive practices. Hence, creating awareness need to be strengthened.

## 1. Background

Sexually transmitted infections (STIs) are major universal public health concerns. The infections cause an acute illness, infertility, disability, and death [1]. Young people and adolescents are among the vulnerable groups for sexually transmitted infections (STIs). In a global report, there was an annual estimate of 357–376 million curable new cases of STIs that were diagnosed among adolescents and adults [2].

Adolescents, particularly students in developing countries, travel far away from their families and stay away for a long time when they attend secondary education. In their stay, they usually live in rented homes and come in contact with people from different sociocultural and behavioral background. Coupled with a lack of knowledge and available services about STIs, adolescents are more likely to practice unprotected sex and have multiple sexual partners and thereby have a higher chance of getting infected with STIs [3].

Most people in general and adolescents in particular might be aware of HIV/AIDS since the awareness created by media and government programs played a role. This, in turn, resulted in lower knowledge about STIs other than HIV/AIDS and the knowledge could be much lower in developing countries [4]. In most cases, sexually transmitted infections are asymptomatic and that makes it difficult to diagnose [5]. In addition, most adolescents, those particularly from a rural society, might not have access to the required information and services to prevent STIs [3]. So, such a condition coupled with syndromic management of STIs in resource-limited countries, could further facilitate the transmission of infection. As a result, particularly females who were infected with STIs could experience acute symptoms, chronic infection, and serious delayed consequences such as ectopic pregnancy, infertility, and cervical cancer [6].

Working on prevention is an ideal level to control STIs. Therefore, this study was aimed to assess knowledge, attitude, preventive practice, and associated factors towards sexually transmitted infections including HIV/AIDS among preparatory school students in West Gojjam zone.

## 2. Methods

**2.1. Study Design.** School-based cross-sectional study was employed among 845 preparatory school students.

**2.2. Study Area and Period.** The study was conducted in West Gojjam zone, Amhara region, Northwest Ethiopia from October 24 to November 4, 2018. West Gojjam zone is one of the administrative zones in Amhara regional state and based on a projected population of the 2007 Census [7], the Zone has a total population of 2,422,296 people, and 273,620 of them were urban inhabitants. West Gojjam zone had 13 woredas and 1 administrative town and a total of 14 preparatory schools found in the zone. Preparatory schools in the country provide education for two years at the level of 11<sup>th</sup> and 12<sup>th</sup> grade. The schools in the study area enrolled 22,728 students in the year 2018 in both 11<sup>th</sup> and 12<sup>th</sup> preparatory classes.

**2.3. Population.** The source population for this study was all regular preparatory school students in West Gojjam zone public schools who were registered at the academic year of 2018, whereas students who were attending their class at 4 of 14 randomly selected schools during the study period were study population.

**2.4. Sample Size Determination.** The sample size was determined by using single population proportion formula by considering 95% confidence level, 5% margin of error, and prevalence of respondents who had good knowledge on STIs from the previous study which was 50.83% [8], 10% non-response rate, and the design effect of 2. Then the final sample size of 845 was calculated.

**2.5. Sampling Procedure.** A one-stage random sampling technique was used to select four woredas (districts), namely, Finoteselam, Degadamot, Adet, and Gonij kolela, randomly with the assumption that all woredas in the zone are homogenous regarding knowledge of STI. Each selected district has 1 preparatory school and a total of 6576 students were enrolled in 2018 academic year in four selected districts. Then, the sample size was distributed to each school based on the number of students in 11<sup>th</sup> and 12<sup>th</sup> grades. Finally, we used students' list of each grade as a sampling frame, and a total of 845 students were selected by lottery method.

### 2.6. Study Variables

**2.6.1. Dependent Variable.** It is the level of students' knowledge, attitude, and preventive practices towards sexually transmitted infections.

#### 2.6.2. Independent Variable

(1) **Sociodemographic Factors.** They include age, sex, religion, ethnics, living with a friend or with a parent, family's education, family's occupation status, family's income, and student's pocket money.

(2) **Inducing Factors.** They include peer pressure, drinking alcohol, watching porn movies, chat chewing, and sexual desire.

**2.7. Data Collection Procedures.** Data were collected using pretested and semistructured self-administered questionnaire. The questionnaire was developed in English by reviewing literature and then translated into local language Amharic and was retranslated back to English in order to check the consistency. The tool comprised of four parts: part one was a sociodemographic background of students and their parents, part two focused on the knowledge of students regarding STIs, part three focused on the attitude of the students towards STIs, and the fourth part was on the preventive practice of the students on STIs. Data collection was done by three diploma nursing professionals, and two BSc nurses supervised the data collection process.

**2.8. Data Quality Control.** The tool was evaluated by investigators and a pretest was conducted on 5% of the sample size among students in the schools not selected for the study. Based on pretest result, some modification was done on the tool. Moreover, one-day training was given for data collectors and supervisors on the objectives of the study, data collection methods, and the contents of the tool. Furthermore, the collected questionnaires were checked for completeness and on-spot corrective measures were taken both by data collectors and supervisors.

**2.9. Data Processing and Analysis.** The collected data were checked for completeness before the analysis. The data were

entered in to Epi-Info version 7.2 and then exported to SPSS version 25 for analysis. Outcome variables were dichotomized and measured as follows:

**Knowledge:** for fifty items used to measure knowledge on the STIs, each right answer was given 1 and wrong or uncertain answer was scored 0. Students who scored above the mean score for knowledge were considered as having a good knowledge regarding STIs [8].

**Attitude:** the 8 questions on the five-level Likert scale that had positive and negative responses were arranged from strongly disagree to strongly agree. Each question was then categorized as 0 = strongly disagree, disagree, and neutral and 1 = strongly agree and agree for statements requiring agreement. Whereas, “neutral” considered as agreement, the reverse category was used for statements requiring disagreement. Then, students who scored 50% and above were considered as having favorable/appropriate attitude towards STIs [9].

**Preventive practice:** students who answered above the mean score for 8 preventive practice questions were taken as having a good preventive practice [8].

Bivariate analysis was used to identify factors associated with outcome variables. Then multivariable logistic regression model was fitted to control the possible effect of confounders. Variables that had a *p* value less than 0.2 in the bivariate analysis were fitted to multivariable logistic regression model. Then, adjusted odds ratio (AOR) and its 95% confidence interval were reported, and a *p* value <0.05 was used to determine statistically significant association.

### 3. Results

**3.1. Sociodemographic Characteristics of the Respondents.** A total of 828 out of 845 preparatory students completed and returned the questionnaire. The age of respondents ranged from 16 to 29 with a mean age of 20.0 years and standard deviation of 2.3. About 461 (55.7%) respondents were male and the majority of the respondents, 701 (84.7%), were orthodox Christians. Nearly two-thirds, 547 (66.1%), of students were 11<sup>th</sup> grade. Most of the students were living with their parents and, in more than two-thirds of cases, parents of students didn't attend formal education (Table 1).

**3.2. Knowledge of Preparatory School Students about STIs.** Of the total of 828 participants, 698 (84.3%) had heard about STIs. The source of information was from school for 479 (68.7%), from TV/radio for 276 (39.6%), from friends for 105 (15.1%), from families for 54 (7.7%), and from other sources such as books and internet for 2 (0.3%).

Concerning the causes of STIs, 350 (42.3%) identified bacteria as a primary cause for STIs, 306 (37%) virus, and 150 (18.1%) fungus. However, bad hygiene of women or men, 127 (15.3%), using unclean water, 93 (11.2%), and sex during menstruation, 135 (16.3%), were mentioned as a cause for STIs and 107 (12.9%) didn't know the cause of STIs.

TABLE 1: Sociodemographic characteristics of preparatory school students in selected West Gojjam zone schools, Northwest Ethiopia, 2018.

Variable	Frequency (n = 828)	Percent
Age		
16–19	374	45.1
20–24	402	48.6
25–29	52	6.3
Sex		
Male	461	55.7
Female	367	44.3
Religion		
Orthodox	701	84.7
Muslim	127	15.3
Grade		
Grade 11	547	66.1
Grade 12	281	33.9
Marital status		
Single	719	86.8
Married	109	13.2
Cohabitant		
Family	569	68.7
Friend in rental home	160	19.3
Myself in rental home	94	11.4
With my relatives	5	0.6
Original resident		
Rural	514	62.1
Urban	314	37.9
Educational level of mother		
No formal education	615	74.3
Primary (1–8)	88	10.6
Secondary (9–12)	69	8.3
College and above	56	6.8
Educational level of father		
No formal education	549	66.4
Primary (1–8)	117	14.1
Secondary (9–12)	64	7.7
College and above	98	11.8
Mather's occupation		
Farmer	343	41.4
House wife	288	34.8
Merchant	106	12.8
Private org employee	28	3.4
Government employee	63	7.6
Father's occupation		
Farmer	443	53.5
Merchant	215	26.0
Private org employee	54	6.5
Government employee	116	14.0
Earning monthly pocket money		
Yes	585	70.7
No	343	29.3

For the question asked to identify different types of STIs, 129 (15.6%) of the respondents didn't know any types of STIs, whereas 55 (6.6%) of respondents had mentioned TB as one of the causes of STIs.

Students were also asked to point out curable STIs. Accordingly, 422 (51%) of them identified syphilis, 336 (40.6%) gonorrhoea, and 282 (34.1%) candidiasis. On the contrary, 16 (1.9%) participants replied erroneously HIV/

AIDS as curable STIs, while 159 (19.2%) of respondents didn't know curable STIs.

More than three-quarters, 640 (77.3%), of students mentioned sexual intercourse as a mode of transmission for STIs. Seven hundred sixteen (86.5%) declared that STIs can be prevented and all of the respondents pointed out at least one possible preventive method. One hundred twenty-nine (15.6%) of respondents didn't know the signs and symptoms of STIs, and 201 (24.6%) also didn't know complications of STIs (Table 2).

**3.3. Attitude of Preparatory School Students towards STIs.** In an attitude response, 496 (60%) students disagreed on the vulnerability of adolescents for STIs. On the other hand, about 45% of students agreed on the presence of curable and noncurable STIs. Six hundred twenty-seven (75.7%) of respondents also agreed on the idea "person infected with STIs can go to health institution for treatment," whereas 446 (54%) disagreed on the concept "by treating an individual who had STIs, spread of the disease can be prevented" (Table 3).

**3.4. Preventive Practice of Preparatory School Students on STIs.** From the total of 828 participants, 277 (33.5%) had a history of sexual intercourse in the period of the last six months. Thirty-six (12.9%) of those who had sex had sex with their teachers and 9 (3.2%) had sex with commercial sex workers.

More than half of the students were practicing abstinence and faithfulness as a means of preventive practice. Nearly one-tenth of the students practiced washing genitalia before and after sexual intercourse as a preventive measure for STIs (Table 4).

**3.5. Proportion of Knowledge, Attitude, and Preventive Practice of STIs.** This study revealed that 50.5% (95% CI: (47.1%–53.9%)) of students had a good knowledge of STIs. The proportion of appropriate attitude towards STIs among preparatory school students was 38.4% (95% CI: (34.9%–41.7%)). Less than half, 46.4% (95% CI: (43.0%–50.0%)), of the students in this study also had a good preventive practice for STIs (Figure 1).

**3.6. Factors Associated with Knowledge, Attitude, and Preventive Practice of Students towards STIs.** The results of multivariable logistic regression analysis showed that sex of students and fathers' occupation were significantly associated with students' knowledge of STIs. Accordingly, male students were more likely to have good knowledge (AOR: 1.58 (95% CI: (1.19, 2.09))) than female students. Likewise, students whose fathers were employed were also more likely to have good knowledge (AOR: 1.97 (95% CI: (1.18, 3.30))) than farmers.

Regarding the attitude of students, fathers' level of education and occupation found to predict the attitude of students towards STIs. Consequently, students of fathers who attended secondary and above level education (AOR: 2.16 (95% CI: (1.28, 3.64))) and whose occupation was farmer (AOR: 1.77 (95% CI: (1.04, 3.02))) had the appropriate attitude towards STIs.

In this study, the preventive practice of STIs among students was predicted by students' age, history of ever practice of sexual intercourse, and knowledge of students on STIs. Students aged 25–29 years had more than two times the odds of good preventive practice (AOR: 2.33 (95% CI: (1.27, 4.28))). Similarly, those students who never practiced sexual intercourse had good preventive practice for STIs (AOR: 1.44 (95% CI: (1.07, 1.94))). Likewise, students who had good knowledge of STIs were more likely to have good preventive practice (AOR: 1.53 (95% CI: (1.16, 2.02))) (Table 5).

## 4. Discussion

This study revealed that about half of the students had a good knowledge of STIs. And 46% of students had a good preventive practice for STIs. However, only about 38% of students had an appropriate attitude towards STIs.

The proportion of students who had good knowledge about STIs in this study is comparable with a study conducted at Arsi Negelle; the use of equivalent items to measure knowledge and similar categorization could be an explanation for the similarity [8]. A different classification with fewer items which has shown a wide variation in proportion could further support this elucidation [10]. Concerning attitude, the Jimma town study [9] showed a higher proportion of appropriate attitude among students than the current study. Though similar categorization was used to measure attitude, students from a single urban school could have a better understanding of each item. The higher proportion of preventive practice of STIs among students in the current study with that of Arsi Negelle study [8] which used related measurement and items could be attributed to using all students in our case versus those who are sexually active in their study.

Male students are more likely to have a good level of knowledge than females in this study. This finding is in line with the finding from Arsi Negelle town study [8], in which males were nearly two times more likely to have good knowledge about STIs than females. Males in Ethiopian society in most cases spend much of their time outdoor than females. This could increase the exposure of males to different information including STIs. Likewise, the association of father's occupation as an employee with STIs knowledge among students in this study might play a key role in students' level of knowledge as employed parents could have better exposure to information.

In the current study, those students whose fathers had attended secondary and above level of education had two times more likely odds of having an appropriate attitude towards STIs. As reported in some studies, parental education [11] found to increase adolescent-parent communication on reproductive health issues and such communication also keeps them from risky sexual behavior [12]. Similarly, students whose fathers are farmers were about two times more likely to have an appropriate attitude towards STIs than those having employed fathers. A study [12] identified that authoritarian parenting style and parental monitoring found to protect from risky sexual

TABLE 2: Knowledge on the mode of transmission, prevention methods, signs, and symptoms and complication of STIs among preparatory school students in West Gojjam zone, Northwest Ethiopia, 2018.

Variable ( <i>n</i> = 828)	Frequency	Percent
Modes of transmission of STIs (multiple responses possible)		
Sexual intercourse	640	77.3
Sharing needle	259	31.3
Blood transfusion	163	19.7
Sharing clothes	74	8.4
Mosquito bits	68	8.2
Kissing	252	30.2
STIs are preventable		
Yes	716	86.5
No	112	13.5
Prevention methods of STIs (multiple responses possible)		
Abstinence	435	63.7
Condom	256	37.5
Not having multiple sexual partners	118	17.3
Signs and symptoms of STIs (multiple responses possible)		
Lower abdominal pain	165	19.9
Discharge from penis and vulva	278	33.6
Itching on the genital area	319	38.5
Failure to urinate	218	26.3
Loss of weight	169	20.4
Weakness	139	16.8
Pain during intercourse	191	23.1
Genital ulcers or open sores	269	32.5
Don't know	129	15.6
Complications of STIs, if untreated (multiple responses possible)		
Infertility	311	37.6
Premature birth	199	24.0
Stillbirth	201	24.3
Ectopic pregnancy	155	18.7
Miscarriage	180	21.7
Cervical cancer	261	31.5
Don't know	201	24.6

TABLE 3: Attitudes of preparatory school students towards STIs, West Gojjam zone, Northwest Ethiopia, 2018.

STIs attitude items	Scale				
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Adolescents are more vulnerable to STIs	99 (12.0%)	134 (16.1%)	85 (10.3%)	247 (29.8%)	263 (31.8%)
STIs can cause social stigma and discrimination	144 (17.4%)	237 (28.6%)	129 (15.6%)	179 (21.6%)	139 (16.8%)
Patients with STIs are easily identified in the community	189 (22.8%)	277 (33.5%)	131 (15.8%)	156 (18.8%)	75 (9.1%)
There are both curable and noncurable STIs	89 (10.7%)	180 (21.7%)	182 (22.0%)	267 (32.3%)	110 (13.3%)
Anybody can get condom simply when the need arises	111 (13.4%)	169 (20.4%)	175 (21.1%)	207 (25.1%)	166 (20.0%)
Person infected with STIs can go to health institution for treatment	30 (3.6%)	65 (7.9%)	106 (12.8%)	327 (39.5%)	300 (36.2%)
By treating an individual who has STIs, spread of the disease can be prevented	232 (28.0%)	214 (26.0%)	110 (13.3%)	197 (23.6%)	76 (9.1%)
Being infected with one of STIs other than HIV can increase the risk of acquisition of HIV	179 (21.6%)	190 (23.0%)	101 (12.0%)	171 (20.6%)	187 (22.8%)

behavior. This nature could be more practiced by rural families mostly among farmers, so that children might be more normative.

Students who had good knowledge of STIs in this study were more likely to have good preventive practice for STIs. This finding is also supported by a study done in Arsi

TABLE 4: Sexual practice and prevention practices for STIs among preparatory school students, West Gojjam zone, Northwest Ethiopia, 2018.

STIs preventive practice items	Frequency (n = 828)	Percent
Have you had sexual intercourse in the last six months?		
No	551	66.5
Yes	277	33.5
If yes, whom with did you had sexual intercourse?		
Had no sexual intercourse at all	551	66.5
With my boy/girlfriend	140	16.9
With my classmate	89	10.7
With my teacher	36	4.3
With commercial sex workers	9	1.1
Wives/husbands	3	0.5
What measures did you take to prevent yourself from STIs ever? (multiple responses possible)	Yes response	
Abstinence	461	55.7
Being faithful	422	51.0
Use condom	198	23.9
Avoid sex with commercial sex workers	96	11.6
Wash genitalia before sex	745	90.0
Wash genitalia after sex	761	91.9
Decrease number of sexual partners	464	56.0
Not receiving unscreened blood	326	39.4

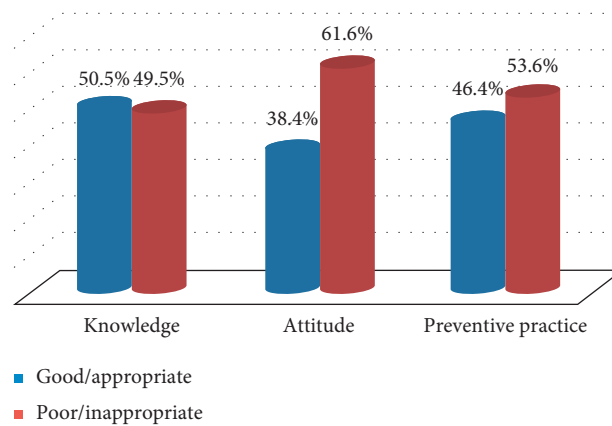


FIGURE 1: Proportion of knowledge, attitude, and preventive practice of preparatory school students on STIs, West Gojjam zone, Northwest Ethiopia, 2018.

TABLE 5: Factors associated with knowledge, attitude, and preventive practice on STIs among preparatory school students, West Gojjam zone, Northwest Ethiopia, 2018.

Variable	Knowledge		AOR (95% CI)	Attitude		AOR (95% CI)	Practice		AOR (95% CI)
	Good (%)	Poor (%)		Appropriate	Inappropriate		Good (%)	Poor (%)	
Age of students									
15-19 years						160 (42.8)	214 (57.2)		1
20-24 years						193 (48)	209 (52.0)		1.29 (0.96, 1.72)
25-29 years						16 (69.6)	7 (30.4)		2.33 (1.27, 4.28)
Sex of the students									NA
Male	254 (55.1)	207 (44.9)	1.58 (1.19, 2.09)			222 (48.2)	239 (51.8)		
Female	164 (44.7)	203 (55.3)	1			162 (44.1)	205 (55.9)		
Religion of students									NA
Orthodox christianity	346 (49.4)	355 (50.6)				303 (43.2)	398 (56.8)		

TABLE 5: Continued.

Variable	Knowledge		AOR (95% CI)	Attitude		AOR (95% CI)	Practice		AOR (95% CI)
	Good (%)	Poor (%)		Appropriate	Inappropriate		Good (%)	Poor (%)	
Muslim	72 (56.7)	55 (43.3)					81 (63.8)	46 (36.2)	
Grade of students									NA
11 <sup>th</sup> grade							262 (47.9)	285 (52.1)	
12 <sup>th</sup> grade							122 (43.4)	159 (56.6)	
Cohabitant						NA			NA
With my parents or relatives				211 (36.8)	363 (63.2)		255 (44.4)	319 (55.6)	
With my friend in rental home				62 (38.8)	98 (61.2)		88 (55.0)	72 (45.0)	
Myself in rental home				45 (47.9)	49 (52.1)		41 (43.6)	53 (56.4)	
Original residence			NA						NA
Rural	250 (48.6)	264 (51.4)					227 (44.2)	287 (55.8)	
Urban	168 (53.5)	146 (46.5)					157 (50.0)	157 (50.0)	
Mother's level of education			NA						NA
No formal education	302 (49.1)	313 (50.9)					280 (45.5)	335 (54.5)	
Primary level of education (1 <sup>st</sup> -8 <sup>th</sup> grade)	50 (56.8)	38 (43.2)					44 (50.0)	44 (50.0)	
Secondary and above	66 (52.8)	59 (47.2)					60 (48.0)	65 (52.0)	
Father's level of education			NA						NA
No formal education	275 (50.1)	274 (49.9)		202 (36.8)	347 (63.2)	1	247 (45)	302 (55.0)	
Primary level of education (1 <sup>st</sup> -8 <sup>th</sup> grade)	51 (43.6)	66 (56.4)		42 (35.9)	75 (64.1)	1.18 (1.04, 3.02)	58 (49.6)	59 (50.4)	
Secondary and above	92 (56.8)	70 (43.2)		74 (45.7)	88 (54.3)	2.16 (1.28, 3.64)	79 (48.8)	83 (51.2)	
Mother's occupation			NA						NA
House wife	163 (47.5)	180 (52.5)					155 (45.2)	188 (54.8)	
Farmer	143 (49.7)	145 (50.3)					127 (44.1)	161 (55.9)	
Merchant	57 (53.8)	49 (46.2)					57 (53.8)	49 (46.2)	
Employee	55 (60.4)	36 (39.6)					45 (49.5)	46 (50.5)	
Father's occupation									NA
Farmer	207 (46.7)	236 (53.3)	1	178 (40.2)	265 (59.8)	1.77 (1.04, 3.02)	193 (43.6)	250 (56.4)	
Merchant	111 (51.6)	104 (48.4)	1.35 (0.95, 1.93)	72 (33.5)	143 (66.5)	1.14 (0.69, 1.89)	107 (49.8)	108 (50.2)	
Employee	100 (58.8)	70 (41.2)	1.97 (1.18, 3.30)	68 (40.0)	102 (60.0)	1	84 (49.4)	86 (50.6)	
Ever practiced sexual intercourse									
No							268 (48.6)	283 (51.4)	1.44 (1.07, 1.94)
Yes							116 (41.9)	161 (58.1)	1
Earning monthly pocket money									NA
No							116 (47.7)	127 (52.3)	
Yes							268 (45.8)	317 (54.2)	
Knowledge on STIs									
Poor							169 (41.2)	241 (58.8)	1
Good							215 (51.4)	203 (48.6)	1.53 (1.16, 2.02)

Negelle [8]. Also, older students were more likely to have good preventive practice than younger students. As revealed in a study [13], being older student had a significant association with good knowledge which could reflect that the more advanced the age, the better the

knowledge, and thereby the better the preventive practice. Further, good practice among students who never had sexual intercourse could be attributed to the higher proportion of abstinence in the current study as a component of preventive practice.

This study determined the proportion of knowledge, preventive practice, and attitude of students towards STIs. Further, the study identified some important factors that predicted students' knowledge, attitude, and preventive practice. However, some behavioral and sociocultural factors that had not been addressed here could seek a qualitative design.

## 5. Conclusion

The proportion of respondents that had good knowledge, appropriate attitude, and preventive practice of STIs among preparatory school students in this study were not satisfactory. Personal sociodemographic as well as behavioral and parental factors predicted students' knowledge, attitude, and preventive practices. Since youthhood, particularly at the end of preuniversity school, is a critical age, it is imperative to reinforce strategies which would improve adolescents' knowledge, attitude, and preventive practice towards STIs.

## Abbreviations

AOR: Adjusted odds ratio

STIs: Sexually transmitted infections

TB: Tuberculosis

## Data Availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

## Ethical Approval

Ethical clearance was obtained from the ethical committee of the School of Midwifery, College of Medicine and Health Sciences, University of Gondar. The committee is a delegate of the institutional review board of the university to provide ethical clearance for observational studies to masters and below level of students. After getting ethical clearance, support letter was written to West Gojjam zone educational office and the zone then wrote a support letter to selected preparatory schools.

## Consent

In case students under the age of 16 years are selected in the study, a written informed consent form was prepared to obtain approval from their parent or guardian. All study participants were clearly informed about the purpose of the study and, along with self-administered questionnaire, a written consent was attached to be signed if they agree to participate. Then students were assured that all data they offer will be confidential and none of the personal identifiers are part of the data. Students were also guaranteed that they have the right to not to respond to the questions they are not interested in and that they have the right to withdraw at any point from the study.

## Conflicts of Interest

The authors declare that they have no conflicts of interest.

## Authors' Contributions

AAK conceived and designed the idea, participated in data management, analysis, interpretation, and paper write-up. TWG and BMA participated in design, data analysis, and interpretation. Finally, all authors developed and approved the manuscript.

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