

# Determination of knowledge, attitudes and practices on prevention of sexually transmitted infections among seto semero high school students

## Abstract

**Back ground:** Sexually transmitted infections (STIs) are illnesses that have a significant probability of transmission between humans by means of human sexual behavior including vaginal intercourse, oral and anal sex. Sexually transmitted diseases (STDs) are major public health problem affecting mostly young people in both developing countries and developed countries.

**Objective:** This study aims to assess knowledge, attitude and practice of STIs among Seto Semero high school students, Jimma town, Ethiopia.

**Methods:** A cross sectional descriptive study was conducted. A total of 324 participants completed Pre-tested, structured self-administered questionnaires in April 2014. The Statistically Packages for Social Sciences (SPSS) version 16 was used for the statistical description and ANOVA analysis and results were presented in numbers, percentages, means and standard deviations. The cut-off 5% level of significance was taken to see the difference between groups.

**Results:** Three hundred and twenty four students participated in the study. Students making a response rate of 98.2% of which 189(58.3%) were males and the remaining 135(41.7%) were females. Most of (88%) of the participants were between 15-19 years of age and 274(84.6%) were single. The majority of 287(88.5%) had ever heard about STIs. Radio/TV was the most frequently source of information for STIs.

**Conclusion:** Practice of respondents towards condom use is low. Educational level of respondents and parents had significant association with knowledge level. We recommended that Setosemero high school administration body to organize and strengthen anti-STIs club in school to raise awareness among students.

**Keywords:** sexually transmitted infections, knowledge, attitude, practice, radio/ tv, gonorrhoea, syphilis, chancroid, lymphogranulomavenerum, chlamydia, viruses, parasite, protozoa

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**Abbreviations:** STIs, sexually transmitted infections; STDs, sexually transmitted diseases; VD, venereal disease; SPSS, statistically packages for social sciences

## Introduction

Sexually transmitted infections (STIs) also referred to as sexually transmitted diseases (STDs) and venereal disease (VD) are illnesses that have a significant probability of transmission between humans by means of human sexual behavior including vaginal intercourse, oral and anal sex.<sup>1,2</sup> Sexually transmitted infections (STIs) are recognized as a major public health problem in most of the world. STDs include not only the common classical disease like Gonorrhoea, Syphilis, Chancroids and Lymphogranuloma venerum but also about twenty infections often referred to as "second generation" STDs caused by bacteria, viruses, parasite, protozoa and fungal agents. STDs can be recognized as curable and incurable. The common curable STDs are Gonorrhoea, Syphilis, Chancroid, Lymphogranulomavenerum, Chlamydia, and Trichomoniasis and lymphogranuloma Donovan's. The STDs that are preventable but not curable are the viral STDs which include HIV, HPV, Hepatitis B virus and herpes simplex virus. Syndromic case definitions are important in situations where clinical examination and laboratory are not options. STDs present themselves

mainly in seven syndromes; these are genital ulcer, urethral discharge, vaginal discharge, lower abdominal pain, inguinal bubo, neonatal conjunctivitis and scrotal swelling.<sup>3,4</sup> According to North America extrapolated statistic annual report of STI in 2012/13, Number of the STI infected person in North America was greater than 10 million, above 48 million in Western Europe, greater than 11 million in Central Asia, 7,881,783 in Kenya, 1,984,555 in Somalia, 6,306,495 in Uganda and 17,047,342 in Ethiopia.<sup>5,6</sup> In some part of the developing world, over 90% of the population was infected with STI. Despite long standing control efforts, it is estimated that more than 500 million people still are at high risk of infection; over 140 million persons are infected and about 6 million are in Africa Middle East, central and south-east Asia and countries in Latin America.<sup>7</sup> An estimated 340 million new case of syphilis, gonorrhoea and Chlamydia occurred throughout the world since 1999. However, in sub Saharan Africa bears the largest burden of these new cases and it response from 11 to 35% of this new case of curable STIs.<sup>8</sup> In 2001, more than one million of people were being infected daily. Meanwhile, about 60% of young people whose age between 14-19 is infected with STIs and females who are at age of 20 prone to this case.<sup>8</sup> According to 2012 WHO annual report of STIs close to 333 million people worldwide contracts sexually transmitted infections (STIs) yearly. Ranking

among the top five diseases for which adults in developing countries seek health care.<sup>9</sup> In Ethiopia during a national review meeting on STIs in 2003, a total of 451,686 cases of STIs were reported from all regions except SNNP for the period 1990-1994.E.C (1998-2002). In addition, According to 2002 quarterly report 27,947 STI cases are reported from all regions.<sup>10,11</sup>

The problem of STIs in Ethiopia is generally believed to be similar to that of other Developing countries. But to dates, there are no studies on students in this country indicating the Current magnitude of STIs. Eighty six percent of the world's burden of STIs occurs in the developing world, the biggest burden being in the poorest countries, many of which are in sub-Saharan Africa, where identification and management of STIs is limited. Adolescent especially in developing countries are exposed to unsafe and early sex, poverty and lack of appropriate information, which is very common in developing countries makes adolescent more vulnerable to STIs including HIV/AIDS. For some STIs such as Chlamydia and trachoma is adolescent females may have increased susceptibility for infections because of increased cervical ectopic. Globally more than half of all new HIV infections are among 15-24years of age. In Ethiopia among men of age 15-19 and 20-24 nearly 5% and 2% had experienced STIs or associated symptoms has got treatment or medical advice but the rest did not get treatment because of lack of health insurance or ability to pay, lack of transportation, discomfort with facilities and services designed for adults and concern about confidentiality.<sup>12-14</sup> With the advent of STIs for which curative therapy is not available, primary prevention has assumed greater importance. Modifying selection of sexual partners, avoiding certain sexual practices theoretically and designing effective behavioral change intervention reduces the risk of infection. In Ethiopia, studies on Sexually Transmitted Infections (STIs) among high school students are very few; therefore, conducting research on STIs in general and among High school students in particular is an important input to design policy and strategy aimed at preventing and controlling the infections. No previous research conducted on assessment of KAP towards STIs in Setosemero high school students makes me to conduct a research .This study aims to assess the knowledge, attitude and practice among Setosemero high school students towards STIs.

## Methodology

### Study area and period

The study was conducted in Seto semero High School located in Jimma Town, South West Ethiopia, Oromia Regional State from April 01-03/2014. Jimma town is the capital city of Jimma zone which is located at 346 Km to the south west of Addis Ababa. The area lies between a latitude of 7°41'N and longitude of 36°50'E and has an elevation of 1704 meters above sea level, with a total population of 159,009 of whom 80,897 were males and 78,112 were females.<sup>25</sup> There is a university (Jimma University), ten colleges (eight private and two government colleges), six high schools, and seventeen elementary schools in the town. Seto Semero is one of the high schools in Jimma town which is located 350 Km away from Addis Ababa and 3km away from Jimma University main campus. The School was built in 1953 with elementary and upgrade to high school in 1996E.C. Currently According to the statics obtained from the school offices a total of 1381 students were enrolled during 2013/14 academic year. From the total students of 1381(649=grade 9<sup>th</sup> and 732=grade 10<sup>th</sup>) out of which 787(57%) of them were female and 594(43%) were male students. The school had total of 32 sections with 16 in grade 9<sup>th</sup> with average of 40 students in each class and 16 in grade 10<sup>th</sup> with average of 45

students in each class.

### Study design

A descriptive quantitative cross sectional study design was employed.

### Population

#### A. Source population

All grade 9<sup>th</sup> and grade 10<sup>th</sup> students of Seto Semero high school.

#### B. Study population

All Sample students of Seto Semero high school who were selected by the study.

Sampling Frame: List of students from the school registrar.

### Sampling criteria

#### Inclusion criteria

- Seto Semero high school students who attend the class during data collection period and Volunteers.
- When the sample was absent the students before or after the sample was selected.

#### Exclusive criteria

- Involunteers
- Those who weren't available during data collection period.
- Those who were physically and mentally not capable to be interviewed.

### Sample size determination and sampling procedure

#### Sample size determination

Sample size was determined using the formula for a single population proportion for cross sectional study with the following assumptions. By assuming that 50% of students has knowledge, attitude and practice about STIs to obtain maximum sample size at 95% certainty and a maximum discrepancy of  $\pm 5\%$  between the sample and the population, the size of the sample was determined by the formula:

$$n = \frac{(Z_{\alpha/2})^2 p(1-P)}{d^2} = \frac{(1.96)^2 * 0.5(1-0.5)}{(0.05)^2} = 384$$

Where n=minimum sample size needed

p=proportion (50%)

Z=significance level at confidence interval of 95%

d=margin of error (0.05)

Z  $\alpha/2$ =value of standard normal distribution corresponding to significant level of alpha ( $\alpha$ ) 0.05 which is 1.96.

Since the total populations were less than 10,000 the final sample size was determined by using the correction formula:

$$nf = n / 1 + n / N = 384 / 1 + 384 / 1381 = 300$$

where n= minimum sample size

N = source population

nf= final corrected sample size

Taking in consideration the non-response rate, 10% of the sample size was added and the final total sample size of the study was 330.

### Sampling procedure

**A.First:** Through obtaining student list from the school, students were stratified in two strata (grade 9 and 10) based on grade level difference.

**B.Second:** The total calculated sample was proportionally allocated to each grade based on the size of students.

**C.Finally:** systematic sampling method was used to select the sample student in the class by every  $k^{\text{th}}$  interval according to students roll number in the class and the first student was selected by lottery method.  $K=N/nf=1381/330=4$ , so every 4 individual were selected until the sample size was completed (Figure 1).

$$\text{Sample size from each grade} = \frac{\text{Number of students from each grade} \times \text{final sample size}}{\text{Total number of source population}}$$

$$\text{Sample size from grade } 9^{\text{th}} = \frac{649 \times 330}{1381} = 155 \text{ Respondent were selected}$$

$$\text{Sample size from grade } 10^{\text{th}} = \frac{732 \times 330}{1381} = 175 \text{ Respondent were selected}$$

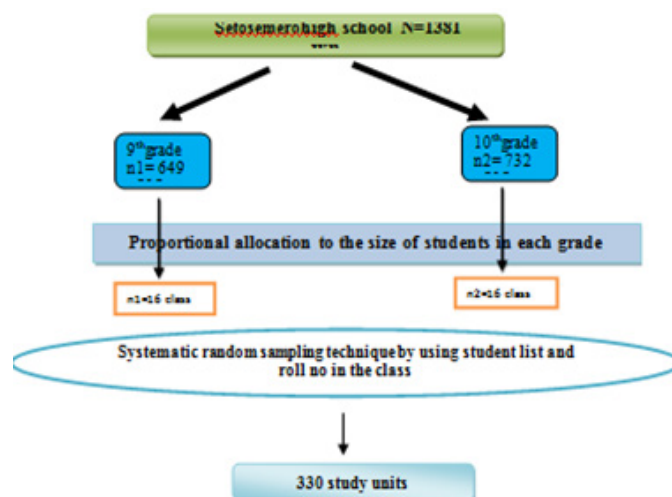


Figure 1 Schematic presentation of sampling procedure.

### Study variables

#### Dependent variables

- i. Knowledge towards STIs
- ii. Attitude towards STIs
- iii. Practice towards STIs

#### Independent variables

Age, Sex, Religion, Educational status of respondents and parents, Marital status, Ethnicity

### Data collection tool and procedure

#### Data collection tool

The questionnaire was prepared in English language, during preparation we try to follow the logical order from simple to complex and put sensitive questions at the end. A structured, pre-tested and self-administrated questionnaire was used for data collection. The questionnaire was initially prepared in English language and then translated in to Afan Oromo and Amharic language by data collectors. It had four sections: Socio demographic information, Knowledge on STIs, Attitude on STIs and Practices on STIs.

#### Data collection procedure

For the sampled students the purpose of the study and importance of participation was informed and verbal consent was ensured. Based on their willingness to participate in the study, a pre tested, structured, standardized self-administered questionnaire which was modified contextually was distributed to collect the data by three trained 4<sup>th</sup> year regular nursing students who spoke both Afan Oromo and Amharic language.

#### Data processing and analysis

After data collection each questionnaire was checked for completeness and consistency. The statistically Packages for Social Sciences(SPSS) version 16 was used for the statistical description and ANOVA analysis and results were presented in numbers, percentages, means and standard deviations. The cut-off 5% level of significance was taken to see the difference between groups.

#### Ethical considerations

The proposal of the study was first submitted to Jimma university department of nursing for ethical approval. After approval formal official letter was written to Seto Semero high school administrative office to get permission and cooperation. The respondents were informed about the objective and purpose of the study and verbal consent was taken from each respondent and assured that all data was

confidential and only analyzed as aggregates.

### Data quality control

Training was given for data collectors on the objectives of the study, the contents of the questionnaire, issues related to the confidentiality of the responses and the rights of respondents. A structured questionnaire developed was pre tested on 5% of the study population in Jiren high school students that were not include in the main survey, to ensure clarity of questions and required amendment was done. Follow up and supervision was conducted by the investigator during data collection period and support was given to students at the time of difficulty. The collected data was checked by principal investigator and data collectors every day at the end of each data collection day.

### Limitation of the study

Since the questions focus on sensitive issue the respondent might not give genuine information even if confidentiality was assured. Thus, it could affect the reliability of the information in this study.

### Operational definitions and definition of terms

Knowledge=level of educational difference about the mode of

transmission, sign and symptoms and way of prevention as well as control.

Attitude=the value of adolescent to ward STDs

Practice=activities towards STIs, either for prevention or control.

Knowledge: Those respondents who appropriately answered  $\geq 75\%$  of total knowledge question were labeled as

**Knowledgeable:** those answered 51-74% of knowledge question were labeled as fairly knowledgeable and those answered  $\leq 50\%$  of total knowledge question are considered as not knowledgeable.<sup>14</sup>

## Result

### Socio demographic characteristics of the respondents

Three hundred and twenty four students were participated in the study making a response rate of 98.2%. Of which 189(58.3%) were males and the remaining 135(41.7%) were females. Most of (88%) of the participants were between 15-19years of age and 274 (84.6%) were single. More than half 173(53.4%) of them were attending grade 10<sup>th</sup> level whilst 151(46.6%) were grade 9<sup>th</sup> level students (Table 1).

**Table 1** Socio-demographic characteristics of respondents among Setosemoro high school students, Jimma, Ethiopia, April, 2014

Characteristics	Category	Number	Percent
Sex	Male	189	58.3
	Female	135	41.7
	Total	324	100
Age	15-19	285	88
	20-24	36	11.1
	25-29	3	0.9
	Total	324	100
Ethnicity	Amhara	105	32.4
	Oromo	158	48.8
	Tigre	22	6.8
	SNNP	39	12
	Total	324	100
Religion	Orthodox	109	33.6
	Muslim	97	29.9
	Protestant	79	24.5
	Other	39	12
Marital status	Total	324	100
	Single	274	84.6
	Married	41	12.6
Grade (class)	Divorced	9	2.8
	Total	324	100
	9 <sup>th</sup>	151	46.6
	10 <sup>th</sup>	173	53.4
	Total	324	100

Table Continued..

Characteristics	Category	Number	Percent
Resident area	Urban	245	75.6
	Rural	79	24.4
	Total	324	100
Place of living	Relative house	43	13.2
	In rental house	54	16.7
	In family house	227	70.1
Who support you	Total	324	100
	Parents	281	72.2
	Bro/sister	67	17.2
Educational Status of father	Other relative	32	8.3
	Self	9	2.3
	Total	324	100
Educational status of mother	Literate	243	75
	Illiterate	14	4.3
	Only writing and reading	67	20.7
Father's occupation	Total	324	100
	Literate	226	69.7
	Illiterate	10	3.1
Mother's occupation	Only writing and reading	88	27.2
	Total	324	100
	Farmer	47	14.5
Transmission methods	Merchant	67	20.7
	Government employee	189	58.3
	Daily labor	21	6.5
Prevention methods	Total	324	100
	Farmer	61	18.8
	Merchant	85	26.2

### Knowledge towards STIs

A Majority 287 (88.5%) of respondents had ever heard about STIs. Meanwhile, 37(11.5%) didn't heard about STIs (Figure 2).

### Source of information about STIs

A majority 249(82.6%) of participants were using radio/Television as most frequently source of information about STIs transmission methods and its treatments followed by 234(77.4%) by school and 176(58.2%), 15(4.8%) were used parents and others respectively (Figure 3).

### Participant's knowledge

#### Sign and symptoms of sexual transmitted infection

The findings based on the responses of the participants regarding their knowledge on the STIs sign and symptoms were 245(89.4%)

answered urethral discharge among males and 243(88.6%) answered vaginal discharge among female respondents (Table 2).

### Transmission methods

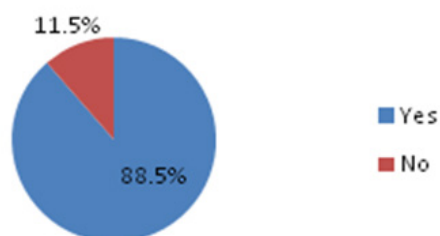
A majority of 274 (84.6%) respondents were identified a single transmission methods of STIs. Of which like sexual intercourse 237(42.5%), contact with contaminated blood and needle 202(36.3%), breast feeding 32(5.7%), and genetics 75(13.5%) where more than one answer were common (Figure 4).

### Prevention methods

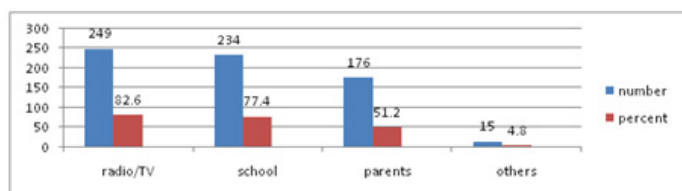
Regarding prevention methods of STIs, more than two third 269(83.1%) were knew prevention methods of STIs, the remaining 55(16.9%) of the participants did not knew any prevention methods of STIs. From those who were positive respondents about prevention methods of STIs they were chosen using condom (107), faithfulness

(124) and abstinence (183) (Figure 4). Furthermore, for knowledge questions we were used scoring of  $\geq 9/12$ =knowledgeable, scoring  $\geq 7/12$ =fairly knowledgeable and scoring  $\leq 6/12$ =not knowledgeable. Regarding the overall knowledge level, from a total of participant 102 (31.5%), were knowledgeable, 154 (47.5%) were fairly knowledgeable and the rest 68(21%) were not knowledgeable (Table 5).

### Heard about STIs



**Figure 2** Frequency distribution of respondents heard about STIs among Setosemoro high school students, Jimma, Ethiopia, April, 2014.



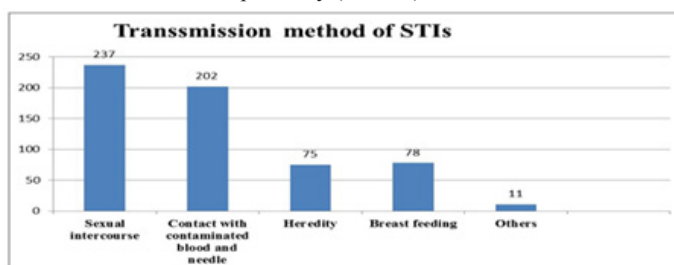
**Figure 3** Frequency distribution of source of information for STIs among Setosemoro high school students, Jimma, Ethiopia, April, 2014.

\*\* Others=friends, newspaper, anti AIDS-club

### Attitudes towards STIs

According to participants' attitudes towards STIs, more than two third 237(73.2%) were believed that STIs are a diseases which can transmitted through sexual methods, the remaining 29(8.9%) STIs as a curse and 58(17.9%) as a syndrome. Regarding their perception towards vulnerability, the majority 284(88.7%) of participants were perceived that adolescents are more vulnerable to STIs infections than others. Almost all 288 (88.9%) of them considered STIs as preventable diseases (Table 4). Regarding the overall attitudes/believe  $\geq 6/8$ =good attitude, scoring  $5/8$ =favorable attitude and  $\leq 4/6$ =unfavorable attitude.

Regarding their overall attitude level, 145(44.7%), 114(35.2%) and 65(20.1%) had favorable attitude, fairly favorable attitude and unfavorable attitude respectively (Table 5).



**Figure 4** Frequency distribution of Transmission Methods of STIs among Setosemoro high school students, Jimma, Ethiopia April, 2014.

\*\*Others= blood transfusion, contact with body secretions.

### Practices towards STIs

Among the respondents who were participated in the study, 17(5.3%) had history of STIs. Of those individuals who had had history of STIs, 5 (29.4%) of them treated at home, 11(64.7%) treated at health institution and the remaining 1(5.9%) treated by religious based practices (holy water). From those study participants 64(19.7%) of them had history of sex. Among those who performed sex 42(65.6%) of them performed sex at age between 20-24years. Those students were also asked about factors that initiated them to perform sex, boy/girlfriend 44(68.8%) and peer pressure 8(12.5%) were the major factors. From the total 64 students 29(45.3%) were used condom during sexual intercourse and the rest 35(54.7%) didn't used condom during sexual intercourse (Table 6). Regarding their plan for the future to prevent STIs, 170(52.5%), 98(30.3%) and 56(17.2%) said abstinence, being faithfulness and using condom respectively. Statistically significant association was observed between grade level, father & mother level of education and knowledge about sign & symptom of STIs ( $p<0.05$ ) (Table 7). Statistically significant association was observed between grade level, father & mother occupation and knowledge about prevention method of STIs ( $p<0.05$ ) (Table 8). Furthermore, statistically significant association was observed between grade level, sex and knowledge about prevention method of STIs ( $p<0.05$ ) (Table 9).

**Table 2** Frequency and percentage distribution of knowledge among Setosemoro high school students towards STIs, Jimma, Ethiopia, April, 2014

Variable	Categories	Number	Percent
Do you know sign and symptom of STIs?	Yes	274	84.6
	No	50	15.4
	Total	324	100
Sign and symptom occur in female	Vaginal discharge	243	88.6
	Burning pain on Urination	208	75.9
	Redness & swelling in genital area	198	72.3
	Loss of weight	189	68.9
	Lower abdominal pain	179	65.3
	Other	12	4.4

Table Continued..

Variable	Categories	Number	Percent
Sign and symptom occur in male	Burning pain on urination	223	81.4
	Urethral discharge	245	89.4
	Readiness& swelling in genital area	194	70.8
	Loss of weight	187	68.2
	Lower abdominal pain	171	62.4
	Other	17	6.2
Do you know type of STIs	Yes	252	77.7
	No	72	22.3
Type of STIs you know	Total	324	100
	Gonorrhoea	192	76.2
	Syphilis	189	75
	Genital warts	187	74.2
	Trichomoniasis	112	44.4
	Candidacies	101	40
	Genital herpes	108	42.8
	HIV/AIDS	224	88.8
	Chancroids	145	44.7
	Yes	247	76.2
Do you know any curable STIs?	No	77	23.8
	Total	324	100
Curable STIs you know	Gonorrhoea	189	58.3
	Syphilis	162	50
	Trichomoniasis	102	31.5
	Candidacies	98	30.2
	Chancroids	137	42.3

**Table 3** Frequency and percentage distribution on level of knowledge among Setosemoro high school students towards STIs, Jimma, Ethiopia, April, 2014

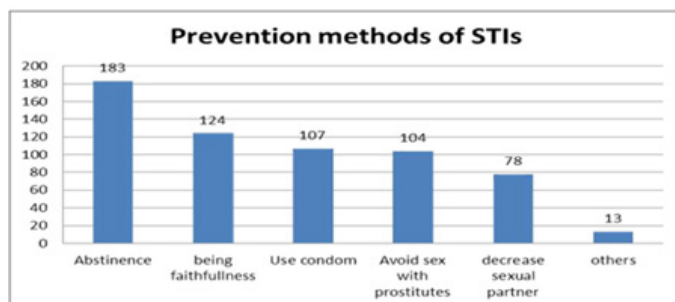
Level of Knowledge	Number	Percent
Knowledgeable	102	31.5
Fairly knowledgeable	154	47.5
Not knowledgeable	68	21
Total	324	100

**Table 4** Frequency and percentage distribution of Attitude among Setosemoro high school students towards STIs, Jimma, Ethiopia, April, 2014

Variable	Categories	Number	Percent
What do you think about STI?	It is diseases	237	73.2
	It is a curse	29	8.9
	It is a syndrome	58	17.9
	Total	324	100
Do you think that STIs can transmit through methods other than sexual intercourse?	Yes	253	78.1
	No	71	21.9
	Total	324	100
Do you agree that adolescents are more vulnerable to STIs?	Yes	245	75.6
	No	79	24.4
	Total	324	100

Table Continued..

Variable	Categories	Number	Percent
Do you think that STIs are preventable	Yes	288	88.9
	No	36	11.1
	Total	324	100
Do you think person with STIs can be easily identified from community	Yes	87	26.9
	No	237	73.1
	Total	324	100
Do you think that health education can reduce STIs transmission	Yes	292	90.1
	No	32	9.9
	Total	324	100
Do you think person with STIs can go to health institution for treatment	Yes	289	89.2
	No	35	10.8
	Total	324	100
Do you think that STIs can cause social stigma & discrimination	Yes	102	31.5
	No	222	68.5
	Total	324	100



**Figure 5** Frequency distribution of Prevention methods of STIs among Setosemoro high school students, Jimma, Ethiopia, April, 2014.  
 \*\*Others= avoid contact with body fluids, avoid homosexual.

**Table 5** Frequency and percentage distribution on level of attitude among Setosemoro high school students towards STIs, Jimma, Ethiopia, April, 2014

Level of attitude	Frequency	Percentage
Favorable attitude	145	44.7
Fairly favorable attitude	114	35.2
Unfavorable attitude	65	20.1
Total	324	100

**Table 6** Frequency and percentage distribution on practice among Setosemoro high School students towards STIs, Jimma, Ethiopia, April, 2014

Variables	Categories	Frequency	Percentage
Did you practice sex?	Yes	64	19.7
	No	260	80.3
	Total	324	100
What was your age at that time	15-19	22	34.4
	20-24	42	65.6
	Total	64	100
With whom you perform a sex?	Girlfriend/boyfriend	41	64.1
	Class fellow student	14	21.9
	Prostitute	9	14
What was the cause?	Total	64	100
	Peer pressure	8	12.5
	Boy/girlfriend pressure	44	68.8
What was the cause?	Sexual initiation because of age	10	15.6
	Economical and educational gain	2	3.1
	Total	64	100



Table Continued..

Variables	Categories	Frequency	Percentage
Did you use condom during sexual intercourse	Yes	29	45.3
	No	35	54.7
	Total	64	100
Do you have history of STIs?	Yes	17	5.3
	No	307	94.7
	Total	324	100
Where did you treated	Home	5	29.4
	Health institution	11	64.7
	Holy water	1	5.9
	Total	17	100

**Table 7** Association of socio demographic factors & knowledge on sign & symptoms of STIs among Setosemoro high school students, Jimma, Ethiopia, April, 2014

Variables	Knows sign & symptom of STIs		Total	X <sup>2</sup>	Df	P-value
Current grade level				5.63	1	0.018
9 <sup>th</sup>	120	31	151			
10 <sup>th</sup>	154	19	173			
Total	274	50	324			
Father level of education				14.5	2	0.001
Literate	212	31	243			
Only reading & writing	55	12	67			
Illiterate	7	7	14			
Total	274	50	324			
Mother level of education				10.8	2	0.004
Literate	197	29	226			
Only reading & writing	72	16	88			
Illiterate	5	5	10			
Total	274	50	324			

**Table 8** Association between socio demographic factors & knowledge on prevention methods of STIs among Setosemoro high school students, Jimma, Ethiopia, April, 2014

Variables	Know prevention method of STIs		Total	X <sup>2</sup>	Df	P-value
Current grade level				7.72	1	0.005
9 <sup>th</sup>	116	35	151			
10 <sup>th</sup>	153	20	173			
Total	269	55	324			
Father occupation				17.1	3	0.001
Farmer	37	10	47			
Merchant	56	11	67			
Gov't employee	165	24	189			
Daily labor	11	10	21			
Total	269	55	324			
Mother occupation				15.5	3	0.001
Farmer	50	11	61			

Table Continued..

Variables	Know prevention method of STIs		Total	X <sup>2</sup>	Df	P-value
Merchant	73	12	85			
Government employee	135	22	157			
Daily labor	11	10	21			
Total	269	55	324			

**Table 9** Association between socio demographic factors & condom use during sexual intercourse among Setosemero high school students, Jimma, Ethiopia, April, 2014

Variables	Use of condom during sexual intercourse		Total	X <sup>2</sup>	Df	P-value
Sex				4.64	1	0.031
Male	21	16	37			
Female	8	19	27			
Total	29	35	64			
Grade level				5.36	1	0.021
9 <sup>th</sup>	6	17	23			
10 <sup>th</sup>	23	18	41			
Total	29	35	64			

## Discussion

The study assessed the knowledge, attitude and practice of sexually transmitted infections among Setosemero high school students in Jimma town, Jimma zone, Oromia regional state, South West of Ethiopia. In this study 88.5% of the respondents were heard about STIs. This result was lower than the study conducted in Tanzania and Wolaita Sodo University in which 99% and 96.4% of the respondents heard about STIs respectively.<sup>15,16</sup> This might be because of the educational difference between the students since the study conducted in university students and some respondents in this study were from rural area 24.4% and have no access to mass media. In this study the most frequent source of information for STIs was radio/TV 82.6% followed by school 77.3% and parents 51.2%. This finding was slightly higher than the survey conducted in Gondar, Ethiopia regarding source of information on STIs, respondents got information from radio/TV 78%, school 45%, parents 21.7% and youth club 11.7% where more than one source were common.<sup>17</sup> This difference might be because of currently media and at curriculum level emphasis was given about STIs. In this study 84.6% of respondents were aware about sign and symptoms of STIs but the rest 15.4% didn't know any sign and symptoms of STIs. This finding was closely similar to survey conducted in Hawassa, Ethiopia at which 79.69% of respondents knew the sign and symptoms of STIs.<sup>18</sup> This might be because of the same educational level of students. Concerning Route of transmission of STIs, 84.6% knew route of transmission of STIs and from this 73.2% were answered unsafe sex, 62.3% contact with contaminated needle and blood.<sup>19</sup> This result was lower than the study conducted in Wolaita Sodo University in which 91.9% reported unsafe sex as mode of transmission. This difference might be due to educational difference and awareness about STIs is higher in university students than high school students. Concerning the overall knowledge on STIs, 31.5% had good knowledge, 47.5% had fair knowledge and the rest 21% had poor knowledge. This result was lower than Wolaita Sodo University in which, 36.0% had good knowledge and the rest had Poor knowledge on STIs. This might be because of educational difference between the study subjects.<sup>20</sup> From study participants, majority of respondents 83.1% aware prevention

methods of STIs but 16.9% did not aware. From prevention methods abstinence was listed by 68% of respondents, followed by being faithfulness 46.1% and use condom 39.7%. This result was different from previous study which was conducted in Durban, South Africa; majority of the students mentioned condom 80.1% followed by zero gazing 46.4% and abstinence 19.9%.<sup>21</sup> But it was almost similar to study done in Debre Markose regarding knowledge respondents were answered individual preventive methods like abstinence 52.1%, and 70% said be faithful to one uninfected partner.<sup>22</sup> This difference might be the effect of cultural practice in which in our country there was negative attitude towards condom use but has positive attitude about abstinence and faithfulness. Concerned with their attitude towards risk of acquiring STIs most of students 75.6% said they were more vulnerable for STIs while 24.4% said they were not more vulnerable for STIs. This result was inconsistent with that of research conducted in Tanzania, 46% of students said they were not at risk of contracting STIs, while 38% said they were at risk.<sup>15</sup> This variation might be due to the difference between their levels of knowledge and attitude towards STIs. Concerning history of sexual intercourse, 19.7% had history of sex and the rest 80.3% had not history of sex. From this majority 65.6% were in the age group of 20-24years. From this 64.1% perform sex with his/her girl/boyfriend followed by class fellow student which accounts 21.9%. This result was lower than the study conducted in Wolaita Sodo University in which 35.3% reported to had sex; out of this 24.8% perform sex with girl/boyfriend.<sup>11</sup> This might be due to university students were more sensitive to sex and our study subjects were under the influence of parents. Among respondents 5.3% had history of STIs, out of this 29.4% of them treated at home, 64.7% treated at health institution and 5.9% treated by other religious based practices. This result was lower than the study conducted in Hawassa, Ethiopia from those students who had history of STIs 49.88% were treated at home, 40.09% were treated at health institution and 10.03% were treated at other places.<sup>18</sup> This difference might be due to currently health information was distributed by different media concerning to STIs and its importance of treating at health institutions. The knowledge about sign and symptom of STIs was better among students who had mothers and fathers with formal level of education (X<sup>2</sup>=10.8, P=0.004 and X<sup>2</sup>=14.5, P=0.001 respectively.). As well as

grade 10<sup>th</sup> students ( $\chi^2=5.63$  &  $p=0.018$ ) had better knowledge on sign and symptoms of STIs. Similarly on a research conducted in Addis Ababa the knowledge was better among students who had mothers with formal education [AOR=1.48 (95%CI: 1.09-2.94)] compared to their counterparts.<sup>22-25</sup> This indicates that educational level of students and parents had significant association with the knowledge level.

## Conclusion

This study revealed that, majority of respondents had ever heard about STIs. Radio/TV was the most frequently source of information for STIs. Most of the study subjects knew the sign and symptoms, Majority of respondents knew some of the transmission and prevention methods of STIs but even if they knew there were also respondents who didn't know. Most of the respondents who had history of STIs were treated at health institution but some respondent with STIs were treated at home. Majority of the students thought that health education reduces STIs transmission and STIs are preventable. But some students had negative attitude towards STIs in which they said patient should be stigmatized & discriminated. Practice of respondents towards condom use was poor. We recommended Setosemero high school director and other teacher members to organize and strengthen anti-STIs club in school that focus on reproductive health of youth to raise their attitude.

## Author's contributions

A D, have made substantial contributions to beginning and design, collection of data, analysis and interpretation of data and in drafting the manuscripts and correcting the comment given by the advisors.

D W have involved in revising the research paper and the manuscript critically for important intellectual context and approval of the final version to be published and participated in its design and coordination. They had also greater contribution in reviewing the manuscript English and topography. And helped to draft the manuscript, involved in revising the research paper and the manuscript critically for important intellectual context and approval of the final version to be published and participated in its design and coordination.

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## Conflict of interest

No any conflict regarding this manuscript. All authors have participated in this work.

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