



## ATTITUDE AND PRACTICE TOWARD CONDOM USE AMONG MIZAN-AMAN POLYTECHNIC COLLEGE STUDENTS IN BENCH SHEKO ZONE, SOUTHWEST ETHIOPIA

Tewodros Yosef \*, Tadesse Nigussie

*Department of Public Health, College of Medicine and Health Sciences, Mizan-Tepi University, Mizan Teferi, Ethiopia.*

### ARTICLE INFO

#### Received:

29 Oct 2019

#### Received in revised form:

07 Feb 2020

#### Accepted:

17 Feb 2020

#### Available online:

28 Feb 2020

**Keywords:** Attitude, Practice, Condom use, Polytechnic, Mizan-Aman

### ABSTRACT

**Background:** Unsafe sexual behavior among adolescents still represents a public health challenge. To have safe sex effective condom utilization may be needed. Condom use remains relatively low among adolescents in Sub-Saharan Africa. Despite, adolescents have good knowledge about condom use, they are still engaged in risky sexual behavior in Ethiopia. **Objective:** To assess attitude and practice toward condom use among Mizan-Aman polytechnic college students in southwest Ethiopia, 2018. **Methods:** An institutional-based cross-sectional study was conducted among 453 systematically selected students at Mizan-Aman Polytechnic College in southwest Ethiopia. Data were collected using a structured self-administered questionnaire. To enter the data, the EPI-DATA version 4.2.0.0, cleaned was used. The SPSS version 20 statistical software for windows. Binary logistic regression was computed. Independent variables with a p-value of less than 0.05 in the multivariable logistic regression model were considered significant. **Results:** Of the 453 respondents, the proportion of positive attitude toward condom use was 53.4% and the mean attitude score for condom use was 28.6 ( $\pm 9.99$  SD) ranged from 10 to 50. Out of 180 sexually active students, 119 (66.1%) used condoms in their last sexual intercourse. The study also found that being male (AOR = 1.77, 95% CI [1.19-2.65], P = 0.006), rural resident (AOR = 2.20, 95% CI [1.47-3.30], P < 0.001), ever had sex (AOR = 1.87, 95% CI [1.23-2.85], P = 0.004), and knowledge of STIs (AOR = 1.66, 95% CI [1.10-2.51], P 0.016) were factors associated with a positive attitude toward condom use. **Conclusion:** The level of attitude and practice toward condom use was not significant enough among polytechnic college students. Therefore, strengthening information, education, and communication (IEC) on condom self-efficacy, providing condoms on campuses, and encouraging the discussion of sexually transmitted infections with adolescents are central to improving condom use and attitudes toward condom use.

Copyright © 2013 - All Rights Reserved - Pharmacophore

**To Cite This Article:** Tewodros Yosef, Tadesse Nigussie, (2020), "Attitude and Practice toward Condom Use among Mizan-Aman polytechnic college students in Bench Sheko Zone, Southwest Ethiopia", *Pharmacophore*, 10(2), 122-128.

### Introduction

Sexually transmitted diseases (STDs) are current public health concerns [1, 2] and are considered a major global cause of acute illness, infertility, long-term disability, and death, with serious psychological and medical consequences for millions of men and women. Its prevalence is high in developing countries, resulting in substantial losses of productivity among individuals and communities, where the majority of the population is less than 40 years of age [3, 4]. Sexually transmitted diseases are associated with increased transmission of Human Immune deficiency Virus/Acquired Immuno Deficiency Syndrome (HIV/AIDS), which is a leading life-threatening infection caused by HIV [5, 6], and also poor reproductive and sexual health [7].

Globally, a condom is considered an important method for the prevention of sexually transmitted infections, especially HIV/AIDS, and a means to prevent unwanted pregnancy [8-10]. Condom use among young people has been increasing over the past two decades. However, its magnitude varies from more than 80% in some Latin American and European countries to less than 30% in some African countries [11]. STIs are mostly transmitted through sexual intercourse through unsafe sex [12]. Unsafe sexual behavior among adolescents still represents a public health challenge [13, 14]. To have safe sex needs effective condom utilization [15]. Condoms have to be used continuously and consistently in order to be effective. Condom use remains relatively low among adolescents in Sub-Saharan Africa, even though there are various promotion methods [16-18].

**Corresponding Author:** Tewodros Yosef, Department of Public Health, College of Medicine and Health Sciences, Mizan-Tepi University, Mizan Teferi, Ethiopia. Email: [tewodrosyosef47@mtu.edu.et](mailto:tewodrosyosef47@mtu.edu.et)

Different studies conducted globally regarding the prevalence of condom use and reported that 53% and 50.3% in Tanzania [14, 19], 24% in the Democratic Republic of Congo [20], 38.6% in Nigeria [9], 68.3% in Ethiopia [21], 16.6% in Kenya [22], 12% in Iraq [8], 74.2% in Bangladesh [23], and 51% in Spain [24] participants used condoms during their last sexual intercourse.

Having good knowledge about condoms does not guarantee its utilization. Young adults with good knowledge about condoms are more engaged in risky sexual behavior (unsafe sex) [16]. Condom use for safe sex is mainly influenced by attitudes toward condom use [24]. Studies conducted worldwide regarding attitudes toward condom use and reported that 91% of female sex workers and 82% of truckers in Kenya [25], 52% in the Democratic Republic of Congo [20], 68.8% in Iraq [8] had positive attitudes toward condom use. The factors associated with the attitude towards condom use are diverse and may include age, sex, residence, marital status, religion, educational status, and knowledge of STIs [16, 17, 19, 26-29].

A dramatic increase in human immunodeficiency virus (HIV) infection among young people's become alarming in Ethiopia [30]. Despite, premarital sex relationships are widely discouraged in Ethiopia, young people in colleges become highly engaged in risky sexual behaviors [31, 32] due to a sense of independence from restrictions and parental impact. Studies were done previously regarding the magnitude of condom use [21] and the descriptive nature of attitude towards condom use [33] in Ethiopia. But no study has clearly shown the attitude towards condom use and its associated factors in these populations. Therefore, this study aimed to assess the level of attitude and practice toward condom use among Mizan-Aman polytechnic college students in Southwest Ethiopia.

## Methods

### Study Design, Setting, and period

An institutional-based cross-sectional study was conducted at Mizan-Aman Polytechnic College (MAPtC) students from April 01 to 30, 2018, which is 585 km southwest of Addis Ababa, the capital city of Ethiopia. The college was established in 2005 at Mizan-Aman Town. The college teaches students in ten departments, with five/four levels for each department. The departments included are garment and textile, automotive, road construction, water and sanitation, ICT, building electrical installation, electrotechnology, masonry construction, general metal fabrication, and surveying technology. It has total students of 1810 from these about 920 males and 890 females were studied at the time of data collection. The students were not in dormitories (live outside of the college). We followed the methods of Yosef T. et al. 2019 [34].

### Populations

The source of the population was all regular Mizan-Aman polytechnic college students, who were attending their class during the study period. The study population was randomly selected students who studied during the study period. All regular students who attended the class were included. Students who were ill and unable to respond were excluded.

### Sample Size Determination and Sampling Technique

The sample size was determined using a single population proportion formula ( $n = \frac{(Z \alpha/2)^2 p(1-p)}{d^2}$ ). With the input of  $p =$  expected proportion of positive attitude toward condom use, Ethiopia (83.6%) [33], precision level (5%), 95% confidence interval, 10% for non-response compensation, and a design effect of 2. The computed sample size was 464. A stratified random sampling technique was used to select 464 regular students. In polytechnic Colleges, there were ten departments with five/four levels for each department. The departments were stratified based on levels (level I-V). For each level, the sample size is proportionally allocated. Potential participants were selected using systematic random sampling.

### Data Collection Instrument and Procedures

Data were collected through face-to-face interviews using a structured and pre-tested questionnaire. The questionnaire composed of three sections: socio-demographic factors, attitude questions regarding condom use, and behavioral factors. The questionnaire was developed by reviewing relevant literature in English and then translated into the local language (Amharic), and back-translated into English to check the consistency by an independent translator. The training was given to data collectors and supervisors that are concerned with the objective and process of data collection so that they can discuss the presence of an ambiguous question in the questionnaire.

### Study Variables

Dependent variable: Attitude toward condom use

Independent variables were age, sex, residence, marital status, academic level, ever had sex, the number of sexual partners, knowledge about STIs, and condom use were independent variables.

### Operational Definitions

**Ever had sex (Sexually Active)** was defined as a study subject who had at least one sexual intercourse before the study.

**Multiple sexual partners** were defined as having more than one sexual partner. **Practice condom use** was defined as using a condom by respondents in their last sexual intercourse. **A positive attitude toward condom use** was defined as when

respondents scored above the mean value of attitude toward condom related questions. A **negative attitude toward condom use** was defined as when respondents scored below the mean value of attitude toward condom related questions.

### Data processing and Analysis

The completeness and consistency of the data were checked, coded, and double entered into Epi Data 4.2.0.0. The data were exported to SPSS version 20 statistical software for further analysis. Descriptive and summary statistics were carried out. The results were presented in tables using frequencies and proportions. Bivariate and multivariable logistic regression analyses were used to identify variables associated with attitude toward condom use. Independent variables with a p-value of less than 0.25 in bivariate logistic regression were included in the multivariable logistic regression model. Finally, variables with a p-value < 0.05 in the multivariable logistic regression model were considered as significantly associated with the dependent variable. Multicollinearity between independent variables in the model was checked, and the variance inflation factor (VIF) was found acceptable (less than 2). The Hosmer-Lemeshow goodness-of-fit test indicated (P = 0.740) that the model was good enough to fit the data well.

## Results

### Socio-demographic characteristics of respondents

Of the 464, 453 students filled the questionnaire with a response rate of 97.6%. The mean age of respondents was 19.95(±2SD) ranges from 18 to 30 years. The majority of the respondents were male (53.6%), single (88.1%), and orthodox Christian followers (54.7%). More than half of the study participants were from an urban area (57.6%), and 52.1% were in the age group of 19 years and above (Table 1).

**Table 1:** Sociodemographic characteristics of respondents at MAPtC, southwest Ethiopia.

Variables	Category	Frequency	Percent
Sex	Male	243	53.6
	Female	210	46.4
Age	≤19 years	217	47.9
	> 19 years	236	52.1
Religion	Orthodox	248	54.7
	Protestant	144	31.8
	Muslim	61	13.5
Marital status	Single	399	88.1
	Married	46	10.2
	Divorced	8	1.7
Residence	Rural	192	42.4
	Urban	261	57.6
Year of the study	First-year	51	11.3
	Second-year	98	21.6
	Third-year	180	39.7
	Fourth-year	124	27.4

### Behavioral Characteristics of the Respondents

Almost one-tenth (10.4%) were cigarette smokers. One hundred seven (23.6%) and 172 (38%) of the respondents were alcohol drinkers and watching pornography at least once a time in life respectively. Among sexually active respondents, 119 (66.1%) and 82 (45.6%) used condoms in their last sexual intercourse and had multiple sexual partners, respectively, (Table 2).

**Table 2:** Behavioral characteristics of respondents at MAPtC, southwest Ethiopia.

Variables	Category	Frequency	Percent
Cigarette Smoking (n=453)	Yes	47	10.4
	No	406	89.6
Drinking Alcohol (n=453)	Yes	107	23.6
	No	346	76.4
Condom Use (n=180)	Yes	119	66.1
	No	61	33.9
Watching Pornography (n=453)	Yes	172	38
	No	281	62

Number Sexual Partner (n=180)	< 2	98	54.4
	≥ 2	82	45.6

### Attitude Towards Condom Use

The mean attitude score of respondents was 28.6 ( $\pm 9.99$  SD) with a range of 10 to 50. Two hundred forty-two (53.4%) respondents had a positive attitude toward condom use. Two hundred twenty-three (49.2%) of participants agreed with “condoms as an effective method of preventing pregnancy”. One hundred ninety-one (42.2%) of the study subjects agreed that “condom reduces sexual pleasure”. The majority of 212 (46.8%) study subjects agreed that “feeling protected while using a condom”. One hundred fifty-nine (35.1%) of study subjects agreed that “condoms are too expensive to buy”. Ninety-six (21.2%) and 133 (29.9%) respondents disagreed with “condoms are suitable for casual sex” and “condoms are suitable for steady relationships” respectively (Table 3).

**Table 3:** Attitude toward condom use of respondents at MAPtC, southwest Ethiopia.

Questions	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
Condoms are an effective method of preventing pregnancy	68(15%)	37(8.2%)	125(27.6%)	108(23.8%)	115(25.4%)
It's embarrassing for me to ask my partner to use a condom	87(19.2%)	57(12.6%)	111(24.5%)	98(21.6%)	100(22.1%)
Condoms are suitable for casual sex	66(14.6%)	30(6.6%)	120(26.5%)	105(23.2%)	132(29.1%)
Condoms are suitable for steady relationships	73(16.7%)	60(13.2%)	138(30.5%)	85(18.8%)	97(21.4%)
It would be too embarrassing for me to buy or obtain condoms	99(21.9%)	52(11.5%)	119(26.3%)	70(15.5%)	113(24.9%)
Condom reduce sexual pleasure	76(16.8%)	31(6.8%)	155(34.2%)	104(23%)	87(19.2%)
I feel protected while using a condom	82(18.1%)	33(7.3%)	126(27.8%)	110(24.3%)	102(22.5%)
Condoms are too expensive to buy	101(22.3%)	60(13.2%)	133(29.4%)	83(18.3%)	76(16.8%)
Condoms affect the mood in a negative way	102(22.5%)	44(9.7%)	160(35.3%)	91(20.1%)	56(12.4%)
It's hard to tell my partner to use a condom if he/she don't want to use it	103(22.7%)	69(15.2%)	151(26.7%)	89(19.6%)	71(15.7%)

### Factors Related to Attitude towards Condom Use

To test the association of each independent variable on attitude toward condom use, the binary logistic regression analysis. In the bivariate analysis, the independent variables were found statistically significant at  $P < 0.25$  and they were included in the multivariable binary logistic regression model. Finally, being a male, rural resident, ever had sex and knowledge of STIs were significantly associated with a positive attitude toward condom use (Table 4).

**Table 4:** Factors associated with positive attitudes toward condom use of respondents at MAPtC, southwest Ethiopia.

Variables	Categories	Attitude towards Condom use		COR (95% CI)	AOR (95% CI)	P-value
		Negative	Positive			
Age group	≤19 years	110	107	1	1	
	>19 years	101	135	1.37(0.95-1.99)	1.06(0.70-1.59)	0.788
Sex	Male	92	151	2.15(1.47-3.13)	1.77(1.19-2.65)	<b>0.006*</b>
	Female	119	91	1	1	
Residence	Rural	69	123	2.13(1.45-3.12)	2.20(1.47-3.30)	<b>&lt;0.001*</b>
	Urban	142	119	1	1	
Marital status	Single	180	190	1	1	
	Married	16	33	2.38(1.22-4.65)	1.70(0.82-3.52)	0.151
	Divorced/widow	15	19	0.56(0.13-2.38)	0.40(0.09-1.73)	0.217
Ever had sex	Yes	63	117	2.20(1.49-3.24)	1.87(1.23-2.85)	<b>0.004*</b>
	No	148	125	1	1	
Knowledge of STIs	Good	147	129	2.01(1.37-2.96)	1.66(1.10-2.51)	<b>0.016*</b>
	Poor	64	113	1	1	

### Discussion

This study aimed to assess attitude and practice toward condom use among Mizan-Aman polytechnic college students in southwest Ethiopia. The proportion of positive attitude toward condom use was found to be 53.4% (48.8%-58%). This study was in line with 52% in the Democratic Republic of Congo [20]. It was lower than 91% among female sex workers and 82%

among truckers in Nairobi, Kenya [25], and 68.8 % in Iraq [8]. As a result, the proportion of condom use was found to be 66.1% (61.7%-70.5%). This study was in line with 68.3% in Ethiopia [21]. It was higher than 53% and 50.3% in Tanzania [14, 19], 24% in Democratic Republic of Congo [20], 38.6% in Nigeria [9], 16.6% in Kenya [22], 12% in Iraq [8], and 51% in Spain [24]. But it was lower than 74.2% in Bangladesh [23]. The variation observed compared to other studies could be due to the differences in sample size, the operational definition used, and methodology in general. Also, socioeconomic, behavioral/lifestyle, cultural, religious, and educational profile of the study population may create a significant variation.

In this study, sex was associated with an attitude toward condom use. Being male was associated with a positive attitude toward condom use. Males were 1.8 times increased odds of having a positive attitude toward condom use than females. This could be due to the greater utilization of condoms by males (77.3%). Repeated condom use may create adaptation and a positive attitude to condom use. This study was consistent with a study conducted in Tanzania [16, 19]. But a study conducted in Croatia suggests that women expressed a more positive attitude toward condom use than men [26].

Respondents who were from rural were 2.2 times increased odds of having a positive attitude toward condom use than from urban. Being from rural was associated with a positive attitude toward condom use. This finding was consistent with a study in Ethiopia [27].

Those who ever had sex were 1.9 times more likely to have a positive attitude toward condom use than those who did not. To have sex was correlated with a positive attitude of using a condom. This finding was consistent with a study [17, 28]. This could be due to previous exposure to condom helps them to develop a positive attitude toward condom use.

Those who had good knowledge of STIs were 1.7 times more likely to have a positive attitude toward condom use than poor knowledge of STIs. Good knowledge about STIs was associated with a positive attitude toward condom use. This finding was consistent with studies conducted in Kenya, Croatia, and Thailand [16, 26, 29]. But another study revealed that knowledge of sexually transmitted diseases, including HIV/AIDS and condoms, was not associated with more positive attitudes toward condom use or intention to use condoms with either steady or casual partners [17].

## **Conclusion**

The level of attitude and practice toward condom use was not significant enough among polytechnic college students. Therefore, strengthening information, education, and communication (IEC) on condom self-efficacy, providing condoms on campuses, and encouraging the discussion of sexually transmitted infections with adolescents are central to improving condom use and attitudes toward condom use.

## **Limitations**

- ✓ The nature of the study (cross-sectional study) may not show a cause-and-effect relationship.
- ✓ Social desirability bias

## **List of abbreviations**

AOR: Adjusted Odds Ratio, CI: Confidence Interval, COR: Crude Odds Ratio, SPSS: Statistical Package for the Social Sciences, SD: Standard Deviation, STIs: Sexual Transmitted Infections

## **Declarations**

### **Ethics approval and consent to participate**

Ethical clearance was obtained before conducting this research from the College of Medicine and Health Sciences, Mizan-Tepi University-Institutional Review Board (MTU-IRB). Before the study, the study participants were informed about why the study was conducted. They were given rights to not participate, anonymity, and confidentiality of personal information was assured. The confidentiality of the response was maintained. Personal privacy and cultural norms were respected properly. Written informed consent was obtained from participants who participated in the study.

### **Consent for publication:**

Not applicable.

### **Availability of data and material:**

The data set is handled by the corresponding author and can be provided upon request.

### **Conflict of interest:**

The authors declare no conflicts of interest.

### **Funding:**

Not applicable

**Authors' contributions:**

All authors involved in the conception, design, acquisition of data, analysis, and interpretation of the results. Tewodros Yosef drafted the manuscript, and then all authors approved it for publication.

**Acknowledgment**

We would like to thank all study participants and academic and administrative staff at Mizan-Aman polytechnic college who gave us full collaboration during the study.

**References**

1. Reis M, Ramiro L, Matos MG, Diniz JA. Nationwide survey of contraceptive and sexually transmitted infection knowledge, attitudes and skills of university students in Portugal. *International Journal of Clinical and Health Psychology*. 2013 May 1;13(2):127-37.
2. Usman A, Ming LC, Khan TM. Drug-Resistant Sexually Transmitted Infections in Southeast Asia: Regional Challenges to Control. *Archives of Pharmacy Practice*. 2019 Jan 1;1:1.
3. Megersa ND, Ahmed SM, Gutema BT, Teshome GS, Melketsedik ZA, Tariku EZ. Knowledge, Attitude and Preventive Practices towards Sexually Transmitted Infection among Preparatory School Students of Arsi Negelle Town. *J AIDS Clin Res*. 2017;8(748):2.
4. Mengistu TS, Melku AT, Bedada ND, Eticha BT. Risks for STIs/HIV infection among Madawalabu University students, Southeast Ethiopia: a cross sectional study. *Reproductive health*. 2013 Dec;10(1):38.
5. Alsamarrai AS, Abdulla NH, Aldoori MK. Synthesis and Characterization of 2-((4R, 4aR, 5aS, 6S)-1, 3-dioxo-3, 3a, 4, 4a, 5, 5a, 6, 6a-octahydro-4, 6-ethenocyclopropa [f] isoindol-2 (1H)-yl)-N-(Substituted Phenyl) Acetamides Derivatives Anticipated to Inhibit HIV-1 Activity. *International Journal of Pharmaceutical and Phytopharmacological Research*. 2018 Oct 1;8(5):7-11.
6. Pinnamaneni R, Tanneru P, Vaddavalli N, Tatineni J, Tharani R. In silico Drug interaction studies on HIV Integrase. *Journal of Biochemical Technology*. 2019;10(3):34.
7. Francis SC, Mthiyane TN, Baisley K, Mchunu SL, Ferguson JB, Smit T, Crucitti T, Gareta D, Dlamini S, Mutevedzi T, Seeley J. Prevalence of sexually transmitted infections among young people in South Africa: A nested survey in a health and demographic surveillance site. *PLoS medicine*. 2018 Feb;15(2).
8. Ismael AS, Zangana JM. Knowledge, attitudes and practice of condom use among males aged (15-49) years in Erbil Governorate. *Global journal of health science*. 2012 Jul;4(4):27.
9. Ajayi AI, Ismail KO, Akpan W. Factors associated with consistent condom use: a cross-sectional survey of two Nigerian universities. *BMC public health*. 2019 Dec 1;19(1):1207.
10. Ali Abdulai M, Baiden F, Afari-Asiedu S, Gyabaa-Febir L, Adjei KK, Mahama E, Tawiah-Agyemang C, Newton SK, Asante KP, Owusu-Agyei S. The risk of sexually transmitted infection and its influence on condom use among pregnant women in the Kintampo North municipality of Ghana. *Journal of sexually transmitted diseases*. 2017;2017.
11. UNAIDS. Condoms: The prevention of HIV, other sexually transmitted infections and unintended pregnancies. *Meet Rep*. 2016.
12. World Health Organization. *Global strategy for the prevention and control of sexually transmitted infections: 2006-2015: breaking the chain of transmission*. 2007.
13. Onoja A, Bala A, Umar M. Awareness level of safe sex among students of the University of Maiduguri, Borno State, Nigeria. *African Journal of Nursing and Midwifery* 2017;5(3):704–12.
14. Kalolo A, Kibusi SM. The influence of perceived behaviour control, attitude and empowerment on reported condom use and intention to use condoms among adolescents in rural Tanzania. *Reproductive health*. 2015 Dec 1;12(1):105.
15. Adams LM, Balderson BH. HIV providers' likelihood to prescribe pre-exposure prophylaxis (PrEP) for HIV prevention differs by patient type: a short report. *AIDS care*. 2016 Sep 1;28(9):1154-8.
16. Wamaitha JE. Knowledge, attitude and practice of condom use among out of School Adolescent Girls and young women aged 15-24: a case study of Majengo slums, Nairobi county (Doctoral dissertation, University of Nairobi).
17. Morrison DM, Baker SA, Gillmore MR. Sexual risk behavior, knowledge, and condom use among adolescents in juvenile detention. *Journal of Youth and Adolescence*. 1994 Apr 1;23(2):271-88.
18. Kanda L, Mash R. Reasons for inconsistent condom use by young adults in Mahalapye, Botswana. *African journal of primary health care & family medicine*. 2018;10(1):1-7.
19. Njau B, Mwakalo V, Mushi D. Correlates of use of condoms among sexually active youth in Southern Highlands, Tanzania. *SAGE Open*. 2013 Jun 3;3(2):2158244013491406.
20. Masoda M, Govender I. Knowledge and attitudes about and practices of condom use for reducing HIV infection among Goma University students in the Democratic Republic of Congo. *Southern African Journal of Epidemiology and Infection*. 2013 Jan 1;28(1):61-8.
21. Fisseha G. Knowledge and misconception of young women toward sexually transmitted infection and condom use in Northern Ethiopia : Cross-sectional study. *J Public Heal Epidemiol*. 2015; 7(4):138–44.

22. Ochieng MA, Kakai R, Abok K. Knowledge, attitude and practice of condom use among secondary school students in Kisumu district, Nyanza province. *Asian Journal of Medical Sciences*. 2011 Feb 25;3(1):32-6.
23. Kamruzzaman M, Hakim MA. Condom using prevalence and phobia on sexually transmitted diseases among sex-buyers in Bangladesh. *American Journal of Environmental and Occupational Health*. 2016;1(1):1-5.
24. Espada JP, Morales A, Guillén-Riquelme A, Ballester R, Orgilés M. Predicting condom use in adolescents: a test of three socio-cognitive models using a structural equation modeling approach. *BMC Public Health*. 2015 Dec 1;16(1):35.
25. Matovu JK, Ssebadduka NB. Knowledge, attitudes & barriers to condom use among female sex workers and truck drivers in Uganda: a mixed-methods study. *African health sciences*. 2013;13(4):1027-33.
26. Štulhofer A, Graham C, Božičević I, Kufrin K, Ajduković D. HIV/AIDS-related knowledge, attitudes and sexual behaviors as predictors of condom use among young adults in Croatia. *International Family Planning Perspectives*. 2007 Jun 1:58-65.
27. Agency CS. Ethiopia Demographic and Health Survey: Preliminary Report. 2011.
28. Pötsönen R, Kontula O. How are attitudes towards condoms related to gender and sexual experiences among adolescents in Finland?. *Health promotion international*. 1999 Sep 1;14(3):211-20.
29. Tipwareerom W, Weglicki L. Parents' knowledge, attitudes, behaviors, and barriers to promoting condom use among their adolescent sons. *Nursing & health sciences*. 2017 Jun;19(2):212-9.
30. Agency CS. Demographic and Health Survey : HIV Prevalence Report 2016. 2016.
31. Belay AS, Worku Y, Addisu T, Alemneh A. Assessment of Magnitude of Risk Sexual Behaviours among Mizan High School and Preparatory School Students, South West, Ethiopia, 2016: Descriptive Cross-Sectional Study. *Womens Health and Reproductive Medicine*. 2017;1(1):7.
32. Fetene N, Mekonnen W. The prevalence of risky sexual behaviors among youth center reproductive health clinics users and non-users in Addis Ababa, Ethiopia: A comparative cross-sectional study. *PloS one*. 2018;13(6).
33. Silassie AG, Giorgis MW, Kahsay N, Fisaha Y, Zerihun Z, Tadesse K, Gerense H, Malloy P. Knowledge, attitude and practice of condom utilization among Axum preparatory school students. *J AIDS Clin Res*. 2016;7(560):2.
34. Yosef T, Daniel A, Nigussie T, Girma Y. Sexual Behaviour among Technical Vocational and Educational Training (TVET) College Students at Mizan-Aman Town, South West Ethiopia, 2018. *J AIDS Clin Res*. 2019;10(803):2.