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ORIGINAL RESEARCH

Consistent Condom Use and Associated Factors among sexually active Military Personnel in Eastern Ethiopia: Cross-Sectional Study Design

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Background: A condom is a latex-based device used to prevent pregnancy and sexually transmitted infections (STIs). Despite condom availability and promotion for use in STI prevention, consistent condom use remains too low in Ethiopia. A significant proportion of Ethiopian military personnel had multiple sexual partners, with lower rates of condom use with non-regular sexual partners. As a result, determining the pattern of condom use and the factors associated with it among military personnel is critical.

Objective: The purpose of this study was to evaluate consistent condom use and associated factors among sexually active military personnel in Eastern Ethiopia from February 1 to 28, 2020.

Methods: A cross-sectional study was conducted among 327 sexually active military personnel. To select the study participants, a systematic sampling technique was used. The data were entered into EpiData and exported to the Statistical Package for Social Sciences version 20 for analysis. To identify factors associated with condom use, bivariate and multivariable logistic regression analysis were used, and the strength of the association was measured using odds ratio and 95% confidence interval (CI), with P-values less than 0.05 considered statistically significant.

Results: The overall prevalence of consistent condom uses over one year by the respondents was 59.9% (95% CI: 54, 65). Study participants with an age of 30–35 years old (AOR = 3.12; 95% CI: 1.43, 11.38), above 35 years old (AOR = 2.42; 95% CI: 1.83, 9.30), college and above in educational status (AOR = 1.52; 95% CI: 1.20, 5.43), Officer in military rank (AOR = 3.12; 95% CI: 1.14, 10.15) and other military ranks (AOR = 3.08; 2.33, 8.52) were factors facilitate the use of condom consistently.

Conclusion: In this study, two in every five military personnel use condoms inconsistently. Designing appropriate intervention and behavioral change strategies, as well as increasing the accessibility and availability of condoms around military camps, will undoubtedly have a significant impact on consistent condom utilization.

Keywords: consistent condom utilization, military personnel, eastern command, associated factors, Ethiopia

Introduction

Globally, it has been demonstrated that both male and female latex condoms are highly effective and efficient in reducing HIV and other sexually transmitted infections. Male condoms, by far the most common, are made of a disposable one-time-use tube-shaped piece of thin latex rubber or lambskin.[1] In addition, other barrier prevention methods, such as a latex barrier or a dental dam, a thin, flexible piece of latex that prevents direct mouth-to-genital or mouth-to-anus contact during oral sex are pivotal in reducing the risk of sexually transmitted infections (STIs) while still allowing for clitoral or anal stimulation.[2,3]

Although condoms are very important, their use is one of the most important issues to address when designing prevention programs and People's failure to use condoms regularly can exacerbate the HIV/AIDS infection epidemic and

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lead to re-infection with new drug-resistant viral strains.[4] However, when used correctly and consistently, male and female condoms are effective barrier methods against HIV, STIs, and unintended pregnancies.[5]

Sub-Saharan Africa bears the greatest burden of HIV/AIDS, accounting for an estimated 71% of the global total. In Ethiopia, an estimated715404people were infected with HIV in 2015, rising to722248in 2017.[6] Ethiopia remains one of the hardest-hit areas by the HIV/AIDS pandemic, with the Harari regional state (Eastern Ethiopia) having the third-highest (3.5%) HIV prevalence.[6]

Studies pointed out that the prevalence of HIV among military personnel differs across the globe. For instance, the prevalence of HIV among the personnel was Congo,[7] Cameroonian Armed Force,[8] Sierra Leone Armed Forces.[9] Military members are more likely to be male, younger, and to travel away from their primary sexual partners than the general population in low- and middle-income countries, all of which may increase their risk of contracting HIV.[8] Risky sexual behaviors such as unprotected sex, multiple partnerships, no or inconsistent condom use, and drug abuse are extremely detrimental to adolescents' health, putting them at high risk for HIV/AIDS and other sexually transmitted infections (STIs).[10,11]

In terms of behavioral variables, many men have sex while under the influence of alcohol or other drugs. These substances are sometimes consumed before sexual intercourse, and in other cases, they are consumed during sexual activity.[12] As a result, several studies have found a strong link between drug use and inconsistent condom use,[13] despite the fact that the strength of this correlation varies depending on the type of drug.[14] Sexual sensation seeking and sexual compulsivity also constitute two intrinsically linked and significant predictors of risk behavior.[15] Generally, men with high levels of compulsivity and sensation-seeking engage in relationships with multiple partners,[16] have sex under the influence of alcohol,[17] do not use condoms during vaginal or anal intercourse,[18] and have higher STI incidence rates.[19] The study clearly demonstrated a weak but positive relationship between condom knowledge and use. There was also significant mediation of the relationship between condom knowledge and use by condom use attitude. Knowledge of condom use correlated mildly with attitude and attitude with condom use.[20]

In Ethiopia, the use of condoms was inconsistent and large number of Ethiopians, including military and police personnel, did not use condoms during sex with non-regular partners[21] According to the study, a significant proportion of Ethiopian military personnel had multiple sexual partners, with lower levels of condom use with non-regular sexual partners.[22] Despite condom availability and promotion for use in STI prevention, condom use remains too low in Ethiopia[23] As a result, it is reasonable to consider assessing condom use and associated factors among sexually active military personnel in Eastern Ethiopia.

Methods and Materials

Study Design, Area, and Period

The cross-sectional study design was conducted, in the eastern military command; Harar and Dire Dawa base camp, eastern Ethiopia from February 1 to 28 2020. Dire Dawa and Harar are two major towns located about 500 kilometers from Addis Ababa, Ethiopia's capital city. They live next to each other and are only 50 kilometers apart. There is one referral hospital, one primary hospital, one level three army hospital, 15 health centers (seven in rural areas and eight in urban areas), 32 health posts, three private hospitals, two higher clinics, and 32 mid-level clinics in Dire Dawa. There is one specialized hospital, one public hospital, one police hospital, one health-care military center, one private hospital, and five health centers in Harari regional state.

Population and Eligibility Criteria

The survey was conducted among military staff members of the eastern command present during the study period and willing to participate. The single population formula was used to determine the sample size. Accordingly, the formula for sample size determination uses is: n = (Zα/2) 2 *[(p1q1)/(d) 2]; where n denoted military staff members sample size, Zα/2 is the reliability coefficient of standard error at 5% level of significance = 1.96, p = prevalence rate of 73.6% military personnel in eastern Ethiopia utilizing condoms regularly when having sex with non-regular sexual partners (73.6%).[24] and d refers to the level of standard error tolerated (5%). Hence, the calculation yielded a sample size of 298 military personnel. By considering a 10% non-response rate, the final sample size is 327.

Sampling Technique/ Procedure

During the study period, a total of 3650 military staff members were present in the eastern command primary at the Diredawa (1320) and Harari (2330) sites. A total of 314 study subjects were selected. A systematic sampling technique was used to select a representative sample of respondents from the study population by using the list of military staff from the eastern command for both sites as the sampling frame. A total of 3650 military personnel were assigned to the Harar and Dire Dawa camps in proportion. As a result, every 12th were enrolled in the study to provide study participants (Diredawa, N = 118; Harar, N = 209). The first participant was chosen at random using a lottery method. To avoid repetition, each participant was assigned a unique identification number.

Data Collection Method and Quality Control

The data was collected using a self-administered interview method with a properly designed and pre-tested questionnaire tool that was adapted and modified from various guidelines.[22,25]

The questionnaire included questions about socioeconomic factors, behavioral factors, knowledge and attitude factors, sexual behavior, and availability. The questionnaire was written in English, translated into Amharic, and then translated back into English by different language experts to ensure consistency. A pretest was done on 5% of the sample out of the study area to check the sequence of questions, lingering questions, and time taken for questionnaires.

Training on the study's purpose, instruments, and data collection procedures were given. Daily, the data was cleaned and checked for consistency. The entire data collection process was overseen by the research team. Finally, trained data collectors collected information at a military camp.

Operational Definition and Measurement

Consistent Condom Use

Those military staff that use condoms at every single sexual intercourse in the past 12 months. The options were always/ all the time, sometimes, rarely, and not sure. In this study, those participants who used condoms all the time they had sex in the last 12 months were classified under the category of consistent condom use.[26]

The knowledge of condom utilization was assessed by nine questions measuring knowledge was asked for the respondents to measure their knowledge level of respondents and the mean score was calculated to use as a cut point. Those who scored less than or equal to the mean were considered to have poor knowledge and those who scored greater than the mean value were considered as having good knowledge.

The attitude towards condom utilization was assessed by eleven questions measuring the attitude asked of the respondents and the mean score was calculated to use as a cut point. Those who scored less than or equal to the mean were considered as having a negative attitude and those who scored greater than the mean value were considered as having a positive attitude.

Data Analysis and Processing

Data were coded and entered and analyzed by using SPSS version 20 software packages. Each completed questionnaire was checked for completeness and cleaned. Each completed questionnaire was cleaned and checked for completeness. A descriptive analysis of the patients was performed, with the mean, standard deviation, and proportion of the studied variable. Percentages were used to represent dichotomous variables. To assess factors associated with condom use, bivariate and multivariable logistic regression analyses were performed. A binary logistic regression model was fitted to check for the association between independent variables and the outcome variable. The model fitness was checked by Hosmer–Lemeshow statistics and Omnibus tests. All variables with $p < 0.25$ in the bivariate analysis were included in the final multivariate analysis to identify the true predictors of the outcome variable. A multi-collinearity test was carried out to check the presence of correlation between independent variables using the standard error and collinearity statistics. The direction and strength of statistical association were measured by odds ratio (OR) along with the 95% confidence interval (CI). P value <0.05 was used to declare statistical significance.

Results

Sociodemographic Characteristics

A total of 327 participants were involved with a 100% response rate. The age range of the study participant was from 18 to 49 years with a mean age of 30.8 (SD=± 6.825) years. Among the study participants, 270 (82.57%), 171 (52.29%), 181 (55.35%), 168 (51.38%), and 164 (50.15%) were male in sex, single in marital status, with monthly incomes ranging from 2000 to 4000 birrs, secondary in educational status, and Soldier in military rank, respectively (Table 1).

Behavioral Characteristics of Participants

Among the participants, 133 (59.33%) have consumed alcohol at some point in their lives, with 110 (89.4%) taking it on occasion. Among the respondents, 13 (33.64%) have chewed Khat in their lifetime, with 7 (53.8%) chewing it in the last 12 months (Table 2).

Table 1 Socio-Demographic Characteristics of Sexually Military Personnel in Eastern Ethiopia, 2020

Characteristics	Category	Frequency	Percentage (%)
Gender	Male	270	82.57
	Female	57	17.43
Age (in years)	18–24	69	21.10
	25–30	98	29.97
	31 −35	57	17.43
	>35	103	31.50
Marital status	Single	171	52.29
	Married	149	45.57
	Others*	7	2.14
Ethnicity	Oromo	113	34.56
	Amhara	89	27.22
	Tigray	40	12.23
	Others***	85	25.99
Educational status	Unable to read and write	6	1.83
	Primary	48	14.68
	Secondary	168	51.38
	College and above	105	32.11
Profession/rank	Soldier	164	50.15
	Officers	70	21.41
	Other rank****	93	28.44
Professional experience (in year)	<5	55	16.8
	5–10	120	36.7
	≥10	152	46.5

Notes: *Single or divorced, ****Gurage, Wolaita ***Crop, Sergent, Lieutenant, and Captain.

Table 2 Behavioral Characteristics and Knowledge of Condom Utilization Among the Sexually Active Military Personnel in Eastern Ethiopia, 2020 (n=327)

Characteristics	Categories	Frequency	Percentage (%)
Have you ever used alcohol	Yes	133	59.33
	No	194	40.67
Have you used alcohol from time to time	Yes	110	89.4
	No	23	10.6
Have you ever chewed Khat	Yes	13	33.64
	No	314	66.36
Have you chewed Khat in the last one month	Yes	7	53.8
	No	6	46.2
In the last one month how frequently did you have used (chewed) Khat? (Times)	10 to 20	3	42.85
	>20	4	57.15
Have you ever used a tobacco product (cigarette)	Yes	20	2.14
	No	320	97.86
Have you used cigarettes (tobacco products) in the last one week	Yes	17	85
	No	3	15
In the last one week, how many packets of cigarettes (tobacco products) did you use? (In Packet)	5 to 10	13	76.85
	>10	4	23.53.
Have you ever used shisha	Yes	2	0.62
	No	325	99.38
Have used shisha in the last one month	Yes	1	50.00
	No	1	50.00
Knowledge of Condom Utilization			
Method of contraception Condom use is an effective way to prevent pregnancy/	Yes	313	95.7
	No	14	4.3
Condom use is an effective way to prevent STIs and HIV	Yes	315	96.3
	No	20	3.7
Condom use is important for multiple sexual partners	Yes	249	76.2
	No	78	23.8
Before using a condom always important to check the expiry date	Yes	298	91.1
	No	29	8.9
Using water-based lubricants is safe for condom lubrication	Yes	75	22.9
	No	252	77.1
Female condom is equally protected	Yes	250	76.5
	No	77	23.6

(*Continued*)

Table 2 (Continued).

Characteristics	Categories	Frequency	Percentage (%)
One condom can be used more than one times	Yes	34	10.4
	No	293	89.6
Using condoms has some harmful effects	Yes	40	12.2
	No	287	87.8
It is recommended to use oil or oil-based to use for condom lubrication	Yes	10	3.1
	No	317	96.9
Overall knowledge	Good	282	86.2
	Poor	45	13.8

Knowledge of Condom Utilization

Overall, 86.2% (95% CI: 82, 89) of the study participants have good knowledge about condom utilization. The majority of participants were aware that using condoms is an effective way to prevent pregnancy/method of contraception (95.7%), to prevent STI and HIV (96.3%), important in multiple sexual partners (76.2%), important to check the expiry date (91.1%), and one condom cannot be used more than once (89.6%) (Table 2).

Sexual Behavior of the Participants

All 327 (100%) of study participants had had sexual intercourse at some point in their lives; of these, 275 (84.1%) and 104 (31.8%) had more than one sexual partner in the previous twelve months, and last month, respectively. One hundred and sixty-six (50.76%) of the participants had acquired a sexually transmitted infection at some point in their lives (Table 3).

Table 3 Behavioral Characteristics and Condom Utilization of Sexually Active Military Personnel in Eastern Ethiopia, 2020 (n = 327)

Characteristics	Categories	Frequency	Percentage (%)
Have you ever had any kind of sex?	Yes	327	100
In your lifetime, with how many sexual partners have you had any kind of sex? (Number of partners)	1	52	15.9
	≥2	275	84.1
The number of sexual partners you had sex in last 12 months (Number of partners)	1	223	68.2
	≥2	104	31.8
Have you practiced sex with unknown partners in the last 3 months (with a person that you never had sex with before)	Yes	48	14.65
	No	279	85.35
How many times have you practiced sex in the past 3months	Never	205	62.88
	Rarely	33	10.12
	Sometimes	66	20.25
	Usually	4	1.23
	Not sure	18	5.52

(*Continued*)

Table 3 (Continued).

Characteristics	Categories	Frequency	Percentage (%)
Have you a doctor or other health care professional ever told you that you had STIs	Yes	166	50.76
	No	161	49.24
Have you ever traded sex (have sex for any exchange of goods, money, and other advantages)?	Yes	32	9.78
	No	295	90.22
Condom Utilization			
Have you had ever used a condom	Yes	327	100
Have you had used it in the last 12 months	Yes	275	84.1
	No	52	15.9
Have you had used condoms consistently in the last 12 months	Always/all the time	196	59.9
	Sometimes	79	24.2
	Rarely	38	11.6
	Not sure	14	4.3
Have you had used a condom in the last 1 month	Yes	240	87.3
	No	35	12.7
Have you ever used a condom during the last time you had sex	Yes	186	77.5
	No	54	22.5
With whom have you had sex last time you have a condom?	Spouse/ Wife	3	1.6
	Regular partner	87	46.8
	Non-regular partner	96	51.6
For the last time you had sex with a condom, why did you use a condom?	For HIV/STI prevention	84	45.2
	For pregnancy prevention	6	3.2
	Both for STI protection and pregnancy prevention	88	47.3
	Other reason	8	4.3
Where did you get a condom	Pharmacy	19	17.1
	Health center	60	54.1
	Hotel	21	18.9
	Friends	2	1.8
	Other	9	8.1
How did you get a condom	Purchase	32	32.7
	Free	66	67.4

(*Continued*)

Table 3 (Continued).

Characteristics	Categories	Frequency	Percentage (%)
The costs to buy a condom by ETB	2	2	4.3
	5	14	29.8
	6	1	2.1
	10	28	59.6
	12	2	4.3
Have you ever faced a shortage of condom	Yes	16	14.6
	No	94	85.5

Condom Utilization

The overall consistent condom utilization over one year was 59.9% (95% CI: 54, 65). According to this study, all study participants (100%), 275 (84.1%), 240 (87.3%), and 186 (77.5%) had used condoms in their lifetime, in the last 12 months, in the last one month, and the last sexual practice, respectively (Table 3). When asked why they did not use condoms, they said it was due to a lack of satisfaction, the cost of purchasing condoms, and a lack of condoms near their camp. Some also mentioned a lack of shops and health centers in remote areas where troops could stay.

Attitude Towards Condom Utilization

Overall (54.4%) (95% CI: 47%, 58%) of the study participants have a positive attitude toward condom utilization. Among the participants, the majority have a positive attitude toward using condoms for the care of their partners (91.4%), that they are effective in preventing HIV/STI infections (92.3%), that a married woman can ask her husband to use a condom (78.3%), and that a married man can use a condom with his wife (83.5%) (Table 4).

Table 4 Attitude Towards Condom Utilization Among Sexually Active Military Personnel in Eastern Ethiopia, 2020 (N = 327)

Attitude Related Characteristics	Categories	Frequency	Percentage (%)
Using a condom shows you care for your partner	Agree	299	91.4
	Disagree	28	8.6
It is alright for a married woman to ask her husband to use a condom	Agree	256	78.3
	Disagree	71	71.7
It is alright for a married man to use a condom with his wife	Agree	273	83.5
	Disagree	54	16.5
Condoms are effective in preventing HIV/STI infections	Agree	302	92.3
	Disagree	25	7.7
Your utilization increases if you have a free condom	Agree	120	36.7
	Disagree	207	63.3
Condoms are quite convenient to use	Agree	197	60.24
	Disagree	130	39.76

(*Continued*)

Table 4 (Continued).

Attitude Related Characteristics	Categories	Frequency	Percentage (%)
Condom own and buying is the responsibility of the male	Agree	34	10.40
	Disagree	293	89.60
Buying condoms is shameful	Agree	90	27.52
	Disagree	237	72.48
Condom affects sexual satisfaction	Agree	56	17.13
	Disagree	271	82.87
For a man telling someone to use a condom is unrespectful	Agree	28	8.56
	Disagree	299	91.44
For a female telling someone to use a condom is unrespectful	Agree	36	11.01
	Disagree	291	88.99
Overall attitude	Positive	178	54.4
	Negative	149	45.6

Factors Associated with Consistent Condom Utilization

In bivariate analysis variables like gender, age, marital status, educational status, work experience, rank, cigarette smoking, alcohol drinking, and overall attitude were statistically significant at a p-value less than 0.25 and considered as a candidate for multivariable analysis. In multivariable analysis, being female, being married, educational status of college and above, and military ranks of officer and above, being an alcohol drinker and negative attitude remains statistically significant at a p-value less than 0.05 (Table 5).

Table 5 Bivariate and Multivariate Analysis of Factors Related to Condom Use at Eastern Command, Ethiopia, 2020

Variable	Category	Consistent Condom Use /Utilization		COR (95% CI)	*P*-valve	AOR (95% CI)	*P*-valve
		Yes N (%)	No N (%)				
Gender	Male	177 (65.6)	93 (34.4)	1		1	
	Female	19 (33.3)	38 (66.7)	0.26 (0.14, 0.0.48)	0.001	0.42 (0.17, 0.92)	0.034
Age	18–24	10 (14.5)	59 (85.5)	1		1	
	25 −30	42 (42.9)	56 (57.1)	4.43 (2.02, 9.65)	0.02	1.38 (0.32, 5.97)	0.479
	31 −35	42 (73.7)	15 (26.3)	16.52 (6.76, 40.33)	0.010	3.12 (1.43, 11.38)	0.024
	>35	102 (99.0)	1 (1.0)	17.8 (14.20, 98.38)	0.012	2.42 (1.83, 9.30)	0.031
Marital Status	Single	152 (88.9)	19 (11.1)	1		1	
	Married	42 (28.2)	107 (71.8)	0.05 (0.02, 0.08)	0.001	0.22 (0.05, 0.91)	0.021
	Other*	2 (28.6)	5 (71.4)	0.05 (0.01, 0.27)	0.001	0.19 (0.08, 0.87)	0.003

(*Continued*)

Table 5 (Continued).

Variable	Category	Consistent Condom Use /Utilization		COR (95% CI)	*P*-valve	AOR (95% CI)	*P*-valve
		Yes N (%)	No N (%)				
Educational status	Illiterate	5 (83.3)	1 (16.7)	1			
	Primary	8 (16.7)	40 (83.3)	0.04 (0.08, 1.23)	0.021	0.02 (0.001, 1.06)	0.289
	Secondary	85 (50.6)	83 (49.4)	0.20 (0 0.04, 5.15)	0.022	0.14 (0.45, 2.68)	0.089
	College and above	98 (93.3)	7 (6.7)	2.8 (1.63, 7.56)	0.001	1.52 (1.20, 5.43)	0.041
Work exprance (In Years)	2–10	71 (37.2)	120 (62.8)	1		1	
	>11	125 (91.9)	11 (8.1)	19.20 (9.70, 38.01)	0.021	2.53 (0.98, 5.77)	0.342
Rank	Soldier	52 (31.7)	112 (68.3)	1		1	
	Officer	68 (97.1)	2 (0.9)	7.32 (17.27, 31.35)	0.001	3.21 (1.14, 10.15)	0.011
	Other Rank**	76 (81.7)	17 (18.3)	9.62 (5.17, 17.90)	0.001	3.08 (2.33, 8.52)	0.021
Cigarette Smoking	No	181 (57.6)	126 (42.4)	1		1	
	Yes	15 (75)	5 (25)	2.20 (1.21, 6.57)	0.031	1.75 (0.87, 3.41)	0.761
Chat chewing	No	189 (58.6)	125 (41.4)	1		1	
	Yes	7 (53.8)	6 (46.2)	0.82 (0.38, 1.96.01)	0.421	1.43 (0.93, 2.96.01)	0.636
Alcohol drink	No	98 (50.5)	96 (49.5)	1		1	
	Yes	36 (27.1)	97 (72.9)	0.36 (0.06, 0.87)	0.022	0.47 (0.03, 0.71)	0.041
Overall attitude	Positve	149 (83.7)	29 (16.3)	1		1	
	Negative	102 (68.5)	47 (31.5)	0.422 (0.05, 0.15)	0.001	0.52 (0.06, 0.97)	0.023
Overall knowledge	Good	168 (59.6)	114 (40.1)	1		1	
	Poor	28 (62.2)	17 (37.8)	1.12 (0.42, 3.96)	0.324	1.45 (0.56, 2.56)	0.563

Note: Other Rank **Crop, Sergent, Lieutenant, and Captain, Marital Other *Widowed and divorced.

When compared to their male counterparts, females were 58% less likely (AOR = 0.42; 95% CI: 0.17, 0.92) to use condoms regularly. Participants aged 30–35 years were 3.12 times (AOR = 3.12; 95% CI: 1.43, 11.38) more likely to use a condom consistently than participants aged 18–24 years. Participants aged 35 years and older were 2.42 times (AOR = 2.42; 95% CI: 1.83, 9.30) more likely to use a condom consistently. College and above in educational status was 1.52 times (AOR = 1.52; 95% CI: 1.20, 5.43) more like used consistently condoms compared to illiterate individuals. Married and others in marital status were 78% times (AOR = 0.22; 95% CI: 0.05, 0.91), 81% times (AOR = 0.19; 95% CI: 0.08, 0.87) less likely to utilize condom consistently, respectively, compared to single individuals. Being an officer in military rank was 3.21 times (AOR = 3.12; 95% CI: 1.14, 10.15) and other ranks were 3.08 times (AOR = 3.08; 2.33, 8.52) more likely to use consistently condom compared to Soldier participants. Being an alcohol consumer/drunker was 53% times (AOR = 0.47; 95% CI: 0.03, 0.71) less likely consistent use condom, and those who have a negative attitude was 48% times (AOR = 0.52, 95% CI: 0.06, 0.5) less likely consistent use of condom compared to their counterparts over one year (Table 5).

Discussion

This study assessed condom use and its associated factors among sexually active military personnel in Eastern Ethiopia. It revealed that one in every five military personnel use condoms inconsistently. Being female, being married, educational status of college and above, and military ranks of officer and above, being an alcohol drinker and having a negative attitude were significantly associated with the outcome variable.

According to our study, 59.9% (95% CI: 54, 65) of military personnel use condoms consistently. This is in line with a study conducted in the western command which was 59.4%.[27] This could be because they share the same military culture, which is constantly spreading among them. However, when compared to a study conducted among different groups of people in Ethiopia, including military personnel and police officers, 75% of them used condoms regularly.[21] The high mobility of military and police personnel from location to location may explain why a large proportion of respondents preferred condoms. In contrast to this, the finding of this study was higher than that of a study done in Axum,[28] Addis Ababa,[29] Nigeria,[30] and Botswana.[31] This difference might be due to the difference in the study area, study period, and source of population.

In this study, being female in gender was negatively associated with consistent condom utilization. Similarly, female military personnel in Cameroon used condoms less frequently.[32] Furthermore, studies conducted in Peru,[33] and Uganda[34] found that females were less likely to use a condom in their most recent sexual encounter. This may be exacerbated by the fact that male partners may have a greater influence on adolescent contraceptive decisions.[35] In addition, gender inequality may influence females' consistent use of condoms. This could be due to women's lack of empowerment and participation in decision-making, which results in a low female gender index.

This study further indicated that marital status was significantly associated with condom utilization. It pointed out that married military personnel uses condoms inconsistently when compared to their counterparts. This is in line with a study carried out in Cameroon[32] and Nigeria.[25] The possible reason is that married people rarely use condoms to protect against STIs and HIV infection unless there is a case of discordance.

Furthermore, in the current study, military personnel with a college education or higher were more likely to use condoms regularly. This is in harmony with the study done in Addis Ababa[29] and Northwest Ethiopia.[36] This could be related to the fact that as people's educational levels rise, so will their awareness of the benefits of consistent condom use. However, this finding contradicts a study conducted among Nigerian soldiers, which found no significant relationships between the respondent's educational status and condom use.[30] Other factors, such as social and cultural factors, may influence condom utilization among educated people, which could explain the large disparity.

In this study, military rank including Crop, Sergent, Lieutenant, and Captain was positively associated with consistent condom utilization. This is in line with a study conducted in Cameroon[32] and Nigeria[25] This could be explained by the military staff receiving high military rank, which motivates them to give value and protect themselves and their partners from sexually transmitted infections by using condoms on a consistent basis. Another possible explanation is that as military personnel's ranks rise, their age rises as well, which plays a critical role in making them more mature and less susceptible to peer pressure.

Despite the fact that alcohol is commonly consumed by military personnel and predisposes them to risky sexual behavior.[24] However, in the current study, being an alcohol drinker was associated with a lower likelihood of using a condom regularly. This is supported by the previous studies done among Botswana Defense Force revealed that the odds of decreasing condom use were high among drinkers.[31]

In the current study, the overall positive attitude of participants toward the use of condoms was only about 54.4%, and individuals with negative attitudes were less likely to use condoms. This is supported by a study conducted in Cameroon, which also revealed that the main reasons for inconsistent condom use included condom use-related stigma among Cameroonian soldiers.[37] According to a study conducted among Addis Ababa military and police personnel, the perception was the main reason for condom nonuse.[29] Lower condom use was associated with the perception that condoms make sex less enjoyable, as well as negative attitudes toward condoms, according to a study conducted among the Republic of Congo Defense Force.[11] Personal factors such as aversion to the condom, as well as anxiety and depression, were also found to be negatively associated with condom use in a review study.[38]

Limitation of the Study

These findings have limitations that need to be addressed in future research. First, due to financial constraints, the questionnaire does not include some of the factors that must be addressed. As a result, it is recommended that professionals use the qualitative section of the questionnaire to assess the cognitive-affective characteristics of sexual risk behavior. Furthermore, because some of the variables are so sensitive, they are prone to social desirability bias. Furthermore, because the study was cross-sectional, it was unable to establish a cause-and-effect relationship between the outcome variable and the independent variables.

Conclusions and Recommendation

This study indicated that about two in every five military personnel use condoms inconsistently. Furthermore, those with a higher level of education, and a military rank (Crop, Sergent, Lieutenant, and Captain) were more likely to use condoms regularly. Being female, alcohol consumption, and married, on the other hand, were less likely to use condoms consistently. Thus, designing appropriate intervention and behavioral change strategies, and increasing the accessibility or availability of condoms around military camps will undoubtedly have a significant benefit for consistent condom utilization among military personnel, protecting or reducing the risk of acquiring sexually transmitted infections.

Data Sharing Statement

The data sets used for this study are available from the corresponding authors upon reasonable request.

Ethical Consideration

The study was carried out in accordance with the Helsinki Declaration, and ethical approval was obtained from Haramaya University College of Health and Medical Sciences Institutional Health Research Ethics Review Committee (IHRERC). Support letters from the College of Health and Medical Sciences were submitted to the Eastern commands where the study was conducted. After getting all permission letters from the responsible body, and informed voluntary, written, consent was signed by study participants. Confidentiality was maintained by using codes instead of the participants' names. Participants were also informed that they have full right to refuse participation or withdraw any time from the research.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis, and interpretation, or in all these areas; took part in drafting, revising, or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

The authors report no competing interests for this study.

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