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Original Research Article

Awareness and willingness to use oral HIV self-test and associated factor among Wollo University Health Science student in North East Ethiopia, 2023

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ABSTRACT

Background: Use of oral HIV self-test is integral part of quality improvement of HIV prevention, care and treatment. There is no evidence related to awareness and willingness to use oral HIV self-test. The aim of the study was to assess awareness and willingness to use oral HIV self-test and associated factors.
Methods: Cross-sectional study was conducted among Wollo University student. The data collection instrument was self-administered questionnaire. Simple random sampling technique was used to select the participant's proportional to sample size. The final sample size was 373 medical students. SPSS version 26 was used to analyze data and the results were presented by using tables, Pie charts, and histograms. The study was analyzed using binary logistic regression and p value less than 0.25 was entered in Multi-variable logistic regression. Finally, p value less than 0.05 in multi-variable logistic regression was considered as statically significant. Odd ratio measured magnitude of association at 95% confidence interval.
Results: A total of 370 health science student were participated, at response rate of 98%. Prevalence of awareness and willingness among health science student toward use oral HIV self-test were 53 (14.32%) and 253 (68.38), respectively. Factors such as participating in HIV program (AOR=3.27; CI: 1.30-8.21) and who had recent HIV risk (AOR=3.16; CI; 1.40-7.12) were more likely to had awareness toward oral HIV self-test. Male student (AOR=1.74; CI; 1.02-2.82), who had recent HIV risk (AOR=3.36; CI: 1.40-8.08), recently tested for HIV (AOR=2.84; CI: 1.17-6.89) and who had STI (AOR=9.02; CI: 2.82-32.12) were more likely to be willingness to use oral HIV self-test in the future.
Conclusions: This study showed that willingness to use HIV self-test in future was high. But awareness of HIV self-test is low. It is crucial to prioritize willingness and awareness activities particularly among sex of respondent, recent HIV risk, tested for HIV and STI client.

Keywords: Ethiopia, HIV self-test, Willingness, Awareness, Student

INTRODUCTION

In developing country, HIV pandemic is still a growing problem. Ethiopia contributes highest levels of HIV prevalence in Africa.[1] Various factors affect HIV testing service such as perception of high HIV risk, HIV related stigma, difficult to access HIV services and financial shortage for delivering HIV services.[2] Oral HIV self-testing helps to reduce these barriers. Since, oral HIV self-testing is an appropriate opt in increase coverage of HIV testing when compared to conventional methods of testing.[3] The WHO as well endorses countries the use of HIVST as one part of current a differentiated and comprehensive approach to HIV testing modality.[4] HIVST are available by buying from pharmacy and clinic. HIVST is a simple, suitable and easy available test.[5-7] WHO

defined oral HIVST as a process of collects own oral fluid and then performs an HIV test and the result of interprets in a private set. HIVST is antibody test which can be get results within 20 minutes.[8] HIVST has a crucial role in preventing of HIV infection in community.[9,10] HIVST is selected by many people because of easy to use. It encouraged people to take a test at home before visiting health facility. It is important in bringing margined people in earlier diagnosis.[9] Now day, HIVST is consider as effective, acceptable and feasible approach.[11] HIVST role as a key approach to improve uptake testing among people missed by existing services, particularly key populations in all regions and young people.[12] Majority university student is young age group. Currently, many young people were not take HIV test.[8] HIVST empowers young people to find out their HIV status wherever and whenever they want.[12]

Globally, the number of HIV infected people reach 38.4 million and every year about 1.5 million people was infected with HIV.[13] In sub-Saharan Africa country 50% of people were infected with HIV. Particularly in Ethiopia, 610,000 people were living with HIV in 2021.[14-16] But WHO set target of HIVST service to 95%. So, HIVST has great contribution in achieving this target.[17] HIV diagnostic strategies expand HIV testing in to person-centered treatment and prevention services in addition to healthcare facilities.[4] HIVST is a key entry point to HIV care and prevention services. But people not attend HIV testing and counseling because of fear of stigma, discrimination and difficult to access HIV testing services.[9,18]

HIVST allow a people to test themself confidentially and privately. HIVST has been inclusive which include people far from testing services.[6,19,20] In order to use HIVST as a potential tool for reducing HIV transmission, members of the general population must be aware of the test.[21] Studies indicated that half of participants had heard HIVST and willingness to use it.[22] Similarly studies also support more than 55-77% of at-risk populations were aware of HIVST.[23-25] Awareness of HIVST is essential to optimize coverage of HIVST and to close the gaps in HIV testing.[16] Awareness related to HIVST varies among demographic characteristics.[13] Awareness towards HIVST was high among those who were female, married, higher education, and previously HIV tested.[13,18] Knowledge ,attitude and willingness to use HIVST is high among those high risk groups.[24] To develop effective public health programs it is vital to understand existing awareness and the level of willingness to use HIVST.[26,27]

Awareness about HIV status can be addressed by increased coverage of HIVST. Global HIV epidemic control has plan to differentiating HIV testing modalities to achieve its target in 2030.[25] Differentiating HIV testing modalities help to increase access to HIV diagnosis, treatment, and prevention services.[28,29] To increase HIV self-testing it is important to identify population groups that may have lower awareness of self-testing and willingness to use it. Investigating the level HIVST awareness and willingness to use HIVST is crucial to prioritized future interventions.[30] HIVST awareness was increase over time in many countries. WHO recommendations global scale-up HIVST awareness and willingness in 2016.[23] HIVST has been increase interest among people because of reliability, discreetness and suitability.[31] Many countries have not been fully endorsed and implemented HIVST yet. Moreover, some government concerns about a shifting of HIV testing activities to self-care in addition to its cost-effectiveness concern in developing countries. Hence, countries not embraced HIVST as a standard public health practice in many countries.[3,32]

Ethiopia has been striving to achieve the 95-95-95 target to improving access to HIV testing services to meet.[33] HIVST has a great promise in improving HIV testing service in resource limited area.[34] In Ethiopia, there is recent introduction of HIVST in HIV testing and counseling guideline.[35] Health professional also has been trained about HIVST service. But in general population little knew about the awareness and the use of HIVST. HIVST service is not integrated in health system despite many potential benefits.[30,35] Major population segment were young people in Ethiopia. Medical students fall under the age group of 15-24 years. Young people face many challenge related to HIV testing. Young people are particularly vulnerable to both acquiring and transmitting HIV and more than 50% of all new infections worldwide are among young people between within this age group.[3] High levels of awareness and willingness to use HIVST have been stated among student in some sub-Saharan Africa countries.[23,25]

However, in study area there is no evidence indicated HIVST awareness and willingness to use among medical student. Therefore, this study will indicate awareness of HIVST and willingness to use HIVST among medical student and factor affect it. This study will also provide input information in developing effective HIVST programs and promoting HIVST in Ethiopia.[23,25]

METHODS

Study area, period and design

The study area was Dessie city administration. Dessie is a town of south Wollo with a distance of 401 km from the capital city of the country, Addis Ababa. Dessie is 471 km far from Bahir Dar, which is capital city of the Amhara regional state. Wollo University is one of the federal universities built among a group of 2nd generation Universities in Ethiopia. The University is currently located in Dessie city administration**.** University has more than 7000 students with six colleges. The study period was from February 15, 2023 to March 15, 2023 during regular working time from two colleges (college of public health and nursing) and three department (pharmacy, medical laboratory and environmental health) trainees. The study design was Institution based cross-sectional study among health science student attending in Wollo University 2023 academic year.

Sample size and sampling technique

Single population proportion formula was used to estimate the sample size for determining level of among Wollo university medical student in north east Ethiopia, 2023. This study takes assumptions of: 95% confidence level ($Z_{\alpha/2}$=1.96) and absolute precision or margin of error to be 5% (d=0.05). Population proportion was taken from previous study done in Tanzania which indicated the level of awareness and willingness to use oral HIV self-test was 0.67.[26] The sample size was 339 participants. Final sample size was 373 after 10% for non-respondent rate was considered. The final sample size for each category of departments calculated. The number of health science student was selected proportionally in each department. In the study, simple random sampling was used to select the final study participants. In simple random sampling, study participants was selected using lottery method by computer generate random list (Figure 1).

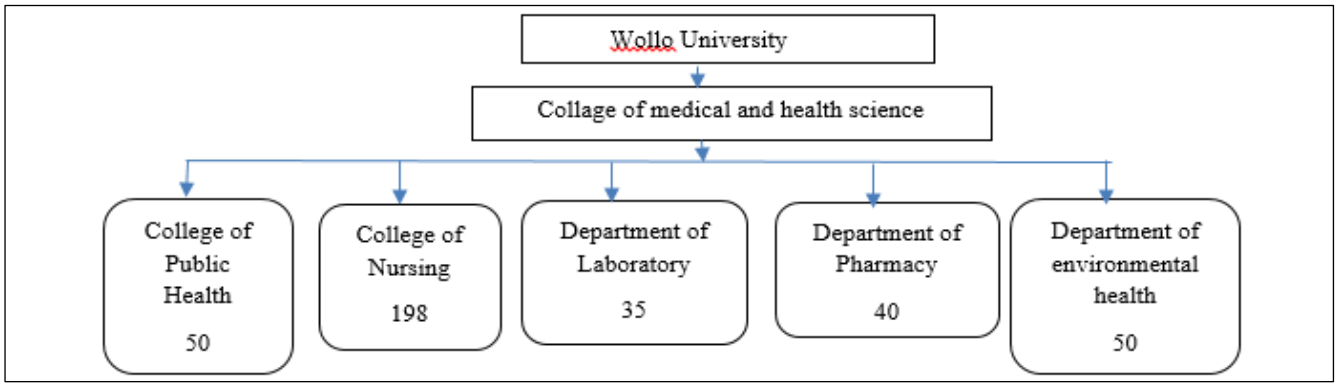

Figure 1: Schematic diagram represents respondent sample size in each department of health science among Wollo university students in North East Ethiopia, 2023.

Inclusion and exclusion criteria

The study was included all generic regular health science students attending in Wollo University in academic the 2023 academic year. T

he study was excluded health science students who were critically ill and unable to respond to during data collection period and first year student.

Study variable

The dependent variables are (a) awareness of oral HIV self-test (yes, no);and willingness to use oral HIV self-test (yes, no)

Independent variable

Socio-demographic factor

It includes age, sex, academic level, marital status, religion, academic year, source of income, resident and department.

HIV testing related factor

It includes recent HIV related training, history of occupational exposure, HIV test recently.

Sexual behavior

It includes ever had sex, age first sex, number of sexual partner, ever had STI, Frequent condom use and alcohol use.

Health seeking behavior

It includes visit hospital last 3 month, ordinary checkup, chronic disease and family HIV status.

Data collection tool and procedure

Self-administered questionnaire was developed directly adopted through reviewing different evidence. A self-administered questionnaire was distributed to student and student filled questionnaires by themselves. The tool consists of different part. The first part consists socio-demographic factor includes age, sex, academic level, marital status, religion, academic year, source of income, resident, department after searching relevant literature related to awareness to use oral HIV self-test.[24,36,37] The second part consist HIV testing related factor includes recent HIV related training, history of occupational exposure, HIV test recently,concern related to of HIVST, HIVST convenience, HIVST accessed through more outlets, HIVST costly, and HIVST results accuracy.[7,24,36]

The third part consist HIV testing related factor includes ever had sex, age first sex, number of sexual partner, ever had STI, frequent condom use and alcohol use. The fourth part health consist visit hospital last 3 month, ordinary checkup, chronic disease, and family HIV status.[24,36,38] The final part consist of outcome variable measured by questions; the first questions relating to HIVST awareness by asking (1) have you heard of an oral HIV self-test?, it followed by a definition of HIVST. If answer is 'yes' it will be labeled as '1' and in other hand the answer is no it will be labeled as '0'. The second questions asses HIVST

willingness to use, Would you willing to use HIVST. If answer is 'yes' it will be labeled as '1' and in other hand the answer is no it will be labeled as '0'.[24,36]

Operational definition

Awareness is understanding of a situation or subject at the present time based on information or experience. If they heard of about oral HIV self-test and define it as a test that can do themselves at home using their saliva and receive the results in 20 min then it will be recorded as yes otherwise it recorded as number.[24]

Willingness is willing to use HIVST kit. The result was 1=yes or 2=no.[36] Oral HIV self-testing (HIVST) is a type of test whereby a person can perform test and know his or her HIV status by collecting a specimen, and interprets the test result in private.[39]

Data analysis procedure

Collected data was cleaned, checked for completeness and consistency. The collected data was and questionnaires with missing variable were managed. The questioner was entered using Epi Data version 4.6. After data was managed it was analyzed using statistical package for social sciences (SPSS) statistical software package version 26. Data was described using mean, standard deviation and frequencies.

Independent factors of awareness and willingness to use oral HIV self-test among medical students was identified using Binary logistic regression analysis. Binary logistic regression analysis was performed to identify predictor of awareness and willingness to use oral HIV self-test. In bi-variable logistic regression analysis, all predictor variables associated with awareness and willingness to use oral HIV self-test (p value less than 0.25) were entered into multi-variable logistic regression analysis.

All candidate variable p value less than 0.25 in multi-variable logistic regression was entered and p value less than 0.05 was reported as associated factor for awareness and willingness to use oral HIV self-test among health student. Associated factor interpreted in Odd ratio in 95% confidence interval. Model fitness was checked by Hosmer-Lemeshow test of goodness of fit and the model fitted when p value>0.05. In this study, Hosmer-Lemeshow test was 0.8 and 0.4. Multi-collinearity was checked by variance inflation factor, and large value is 2.5.

Data quality management

Data collected assure data quality by control information on the questionnaires properly collected, recorded and checked for completeness of data.

Ten data collectors was selected and trained for two days. The final version of the questionnaire was translated into the local language of the respondents (Amharic language). Pre-tested was done at North Wollo (Weldia Universty), on 5% of the total sample size. Pre tested was to assess questionnaire and to make any necessary changes before the main study began.

Ethical consideration

Before any attempt to collect data, approval to conduct the study was obtained from Amhara Public Health Institution (APHI).

Participants of the study were asked for consent before participating in the study.

During the consent process, they were provided with information regarding the purpose of the study; they can withdraw from the study at any time. Confidentiality was maintaining throughout the process of data collection.

RESULTS

Socio demographic factor

A total of 370 health science student were participated in this study, at response rate of 98 %. The age of respondents was 23±0.08 years.

More than half of respondent were male. More than one third of the respondent was tested for HIV. Most of student had no regular partners within the last 3 months. In this study, the majority of participants were single (Table 1).

Prevalence of awareness and willingness to use oral HIV self-test

Prevalence of awareness among health science student toward use oral HIV self-test was 53 (14.32%). Prevalence of willingness among health science student to use oral HIV self-test was 253(68.38) (Figure 2).

Awareness toward oral HIV self-test

More than one third of respondent who were ever tested for HIV were awareness about oral HIV self-test. More than two third of male respondents (75.47) were awareness about oral HIV self-test. Nearly half of nurse respondents (39.62) were awareness about oral HIV self-test (Table 2).

In bi-variable logistic regression variable such as sex of respondent, residence, department, religious, visit hospital in 3 month, HIV test in 3 month, live with spouse, chronic disease, multiple sexual partner, recent HIV risk, family history of HIV, alcohol drink and HIV training were candidate for multilevel logistic regression.

Willingness to use oral HIV self-test

Nearly half of respondent (45.5%) who were ever tested for HIV were willingness to use oral HIV self-test. More than half of male respondent (64.82) were willingness to

use oral HIV self-test (Table 3). In bi-variable logistic regression variable such as age of respondent, sex of respondent, recent HIV risk, STI, year of study, HIV test in 3 month, multiple sexual partner, family history of HIV, and alcohol were candidate for multilevel logistic regression.

Factor affecting of awareness oral HIV self-test

In this study factor such as student who participates in HIV program (AOR=3.27; CI: 1.30-8.21) and who had recent HIV risk (AOR=3.16; CI; 1.40-7.12) were more likely to had awareness toward oral HIV self-test (Table 4).

Factor affecting of willingness to use oral HIV self-test

In this study factor such as being male student (AOR=1.74; CI; 1.02-2.82], who had recent HIV risk (AOR=3.36; CI: 1.40-8.08], recently tested for HIV (AOR=2.84; CI: 1.17-6.89] and who had STI (AOR=9.02; CI: 2.82-32.12] were more likely to be willingness to use oral HIV self-test in the future (Table 5).

Table 1: Socio-demographic distribution of health science student in North East Ethiopia, 2023.

Variables	Category	Frequency	Percent
Age (years)	<25	293	79.19
	≥2	77	20.81
Sex of respondent	Female	150	40.54
	Male	220	59.46
Marital status	Single	346	93.52
	Married	15	4.05
	Others	9	2.43
Departments	Health officer	50	13.51
	Nurse	156	42.16
	Midwives	42	11.35
	Pharmacy	40	10.81
	Laboratory	33	8.92
	Evt	49	13.24
Religious	Orthodox	213	57.57
	Muslim	113	30.54
	Protestant	38	10.27
	Other	6	1.62
Residence	Rural	197	53.24
	Urban	173	46.76
Year of study	2nd	181	48.92
	3rd	100	27.03
	4th	77	20.81
	5th	12	3.24
Currently living with your spouse/partner?	No	294	79.46
	Yes	76	20.54
Have you ever been diagnosed with STI	No	318	85.95
	Yes	52	14.05
Have you ever tested for HIV?	No	204	55.14
	Yes	166	44.86
Have sex within the last 3 months?	No	336	90.81
	Yes	34	9.19
Do you use condoms consistently	No	356	95.68
	Yes	16	4.32
Have you ever drunk alcohol?	No	308	83.24
	Yes	62	16.76
Do you visit hospital last 3 months?	No	264	71.35
	Yes	106	28.65
Do you have ordinary check up	No	331	89.46
	Yes	39	10.54
Chronic disease	No	344	92.97
	Yes	26	7.03
Family history of HIV	No	354	95.68

Continued.

Variables	Category	Frequency	Percent
	Yes	16	4.32
Do you take recent HIV related Training	No	338	91.35
	Yes	32	8.65
History of occupational exposure	No	341	92.16
	Yes	29	7.84
Do you test HIV recently	No	315	85.14
	Yes	55	14.86

Table 2: Awareness of oral HIV self-test among Wollo University health science student in North East Ethiopia, 2023.

Variables	Category	Awareness	
		No [N (%)]	Yes [N (%)]
Age (years)	<25	250 (78.86)	43 (81.13)
	≥2	67 (21.14)	10 (18.87)
Sex of respondent	Female	137 (43.220)	13 (24.53)
	Male	180 (56.78)	40 (75.47)
Marital status	Single	296 (93.38)	50 (94.34)
	Married	13 (4.10)	2 (3.77)
	Others	8 (2.52)	1 (1.89)
Departments	Health officer	39 (12.30)	11 (20.75)
	Nurse	135 (42.59)	21 (39.62)
	Midwives	36 (11.36)	6 (11.32)
	Pharmacy	38 (11.99)	2 (3.77)
	Laboratory	30 (9.46)	3 (5.66)
	Evt	39 (12.30)	10 (18.87)
Religious	Orthodox	187 (58.99	26 (49.06)
	Muslim	92 (29.02)	21 (39.62)
	Protestant	34 (10.73)	4 (7.55)
	Other	4 (1.26)	2 (3.77)
Residence	Rural	164 (51.74)	33 (62.26)
	Urban	153 (48.26)	20 (37.74)
Year of study	2nd	155 (48.90)	26 (49.06)
	3rd	85 (26.81)	15 (28.30)
	4th	66 (20.82)	11 (20.75)
	5th	11 (3.47)	1 (1.89)
Currently living with your spouse/partner?	No	246 (77.60)	48 (90.57)
	Yes	71 (22.40)	5 (9.43)
Have you ever been diagnosed with STI	No	274 (86.44)	44 (83.02)
	Yes	43 (13.56)	9 (16.98)
Have you ever tested for HIV?	No	175 (55.21)	29 (54.72)
	Yes	142 (44.79)	24 (45.28)
How many regular partners have you sex within the last 3 months?	No	290 (91.48)	46 (86.79)
	Yes	27 (8.52)	7 (13.21)
Do you use condoms consistently	No	303 (95.58)	51 (96.23)
	Yes	14 (4.42)	2 (3.77)
Have you ever drunk Alcohol?	No	267 (84.23)	41 (77.36)
	Yes	50 (15.77)	12 (22.64)
Do you visit hospital last 3 month	No	231 (72.87)	33 (62.26)
	Yes	86 (27.3)	20 (37.74)
Do you have ordinary check up	No	284 (89.59)	47 (88.68)
	Yes	33 (10.41)	6 (11.32)
Chronic disease	No	298 (94.01)	46 (86.79
	Yes	19 (5.99)	7 (13.21)
Family history of HIV	No	306 (96.53)	48 (90.57)

Continued.

Variables	Category	Awareness	
		No [N (%)]	Yes [N (%)]
	Yes	11 (3.47)	5 (9.43)
Do you take recent HIV related Training	No	295 (93.06)	43 (81.13)
	Yes	22 (6.94)	10 (18.87
History of occupational exposure	No	293 (92.43	48 (90.57)
	Yes	24 (7.57)	5 (9.43)
Do you test HIV recently	No	276 (87.07)	39 (73.58)
	Yes	41 (12.07)	14 (26.42)

Table 3: Willingness to use oral HIV self-test and associated factor among Wollo University health science student in North East Ethiopia, 2023.

Variables	Category	Willingness	
		No [N (%)]	Yes [N (%)]
Age (years)	<25	87 (74.36)	206 (81.42)
	≥2	30 (25.64)	47 (18.58)
Sex of respondent	Female	61 (52.14)	89 (35.18)
	Male	36 (47.86)	164 (64.82)
Marital status	Single	108 (92.31)	238 (94.07)
	Married	5 (4.27)	10 (3.95
	Others	4 (3.42)	5 (1.98)
Departments	Health officer	14 (11.97)	36 (14.23)
	Nurse	51 (43.59)	105 (41.50
	Midwives	16 (13.68)	26 (10.28)
	Pharmacy	12 (10.26)	28 (11.07)
	Laboratory	11 (9.40)	22 (8.70)
	Evt	13 (11.11)	36 (14.23)
Religious	Orthodox	65 (55.56)	148 (58.50)
	Muslim	40 (34.19)	73 (28.85)
	Protestant	10 (8.55)	28 (11.07)
	Other	1 (1.71)	4 (1.58)
Residence	Rural	62 (52.99)	135 (53.36)
	Urban	55 (47.01)	118 (46.64)
Year of study	2nd	61 (52.14)	120 (47.43)
	3rd	26 (22.22)	74 (29.250
	4th	28 (23.93)	49 (19.37)
	5th	2 (1.71)	10 (3.95)
Currently living with your spouse/partner?	No	92 (78.63)	202 (79.84)
	Yes	250 (21.37)	51 (20.16)
Have you ever been diagnosed with STI	No	114 (97.44)	204 (80.63)
	Yes	3 (2.56)	49 (19.37)
Have you ever tested for HIV?	No	66 (56.41)	138 (54.55)
	Yes	51 (43.59)	115 (45.45)
How many regular partners have you sex within the last 3 months?	No	112 (95.73)	224 (88.54)
	Yes	5 (4.27)	29 (11.46)
Do you use condoms consistently	No	110 (94.02)	244 (96.44)
	Yes	7 (5.98)	9 (3.56)
Have you ever drunk alcohol?	No	102 (87.18)	206 (81.42)
	Yes	15 (12.82)	47 (18.58)
Do you visit hospital last 3 months?	No	87 (74.36)	177 (69.96)
	Yes	30 (25.64)	76 (30.04)
Do you have ordinary check-up?	No	105 (89.74)	226 (89.33)
	Yes	12 (10.26)	27 (10.67)
Chronic disease	No	107 (91.45)	237 (93.68)
	Yes	`10 (8.55)	16 (6.32)

Continued.

Variables	Category	Willingness	
		No [N (%)]	Yes [N (%)]
Family history of HIV	No	115 (98.9)	239 (94.47)
	Yes	2 (1.71)	14 (5.53)
Do you take recent HIV related training	No	230 (90.91)	108 (92.31)
	Yes	9 (7.69)	23 (9.09)
History of occupational exposure	No	107 (91.45)	234 (92.49)
	Yes	10 (8.55)	19 (7.51)
Do you test HIV recently	No	110 (94.02)	205 (81.03)
	Yes	7 (5.98)	48 (18.97)

Table 4: Factor affecting of awareness oral HIV self-test and associated factor among Wollo University health science student in North East Ethiopia, 2023.

Variables	Category	Factors	
		COR (95% CI)	AOR (95% CI)
Sex of respondent	Female	1	1
	Male	2.51 (0.18-1.51)*	1.97 (0.93-4.14
Departments	Health officer	1	1
	Nurse	0.55 (0.24-1.24)	0.52 (0.20-1.28)
	Midwives	0.59 (0.19-1.76)	0.61 (0.17-2.17)
	Pharmacy	0.18 (0.03-0.89)	0.21 (0.03-1.12)
	Laboratory	0.35 (0.09-1.38)	0.87 (0.08-1.60)
	Environmental health	0.90 (0.34-2.38)	0.87 (0.29-2.57)
Religious	Orthodox	1	1
	Muslim	1.64 (0.88-3.04)	1.58 (0.77-3.27)
	Protestant	0.84 (0.27-2.57)	0.79 (0.23-2.67)
	Other	3.59 (0.62-20.61)	4.47 (0.61-32.37)
Residence	Rural	1	1
	Urban	0.64 (0.35-1.18)	0.64 (0.32-1.27)
Currently living with your spouse/partner?	No	1	
	Yes	0.36 (0.13-0.94)	0.37 (0.13-1.04)
How many regular partners have you sex within the last 3 months?	No	1	
	Yes	1.63 (0.67-3.97)	1.75 (0.65-4.73)
Have you ever drunk alcohol?	No	1	
	Yes	1.63 (0.67-3.97)	1.75 (0.65-4.73)
Do you visit hospital last 3 months?	No	1	1
	Yes	1.62 (0.88-2.99)	1.25 (0.60-2.62)
Chronic disease	No	1	1
	Yes	2.38 (0.95-5.99)	2.06 (0.68-6.28)
Family history of HIV	No	1	1
	Yes	2.89 (0.96-8.70)	3.44 (0.87-13.57)
Do you take recent HIV related training	No	1	1
	Yes	3.11 (1.38-7.03)	3.27 (1.30-8.21)
Recent HIV risk	No	1	1
	Yes	3.28 (1.63-6.58)	3.16 (1.40-7.12)
Do you test HIV recently	No	1	1
	Yes	3.28 (1.63-6.58)	2.02 (0.89-4.58)

Table 5: Factor affecting of willingness to use oral HIV self-test and associated factor among Wollo university health science student in North East Ethiopia, 2023.

Variables	Category	Factors	
		COR (95% CI)	AOR (95% CI)
Age (years)	<25	1	1
	≥2	0.66 (0.39-1.11)	0.54 (0.30-0.98)

Continued.

Variables	Category	Factors	
		COR (95% CI)	AOR (95% CI)
Sex of respondent	Female	1	1
	Male	2.00 (1.28-3.13)	1.74 (1.02-2.82)
Year of study	2nd	1	1
	3rd	1.44 (0.84-2.48)	1.26 (0.69-2.27)
	4th	0.88 (0.50-1.55)	0.75 (0.40-1.41)
	5th	2.54 (0.53-11.9)	1.64 (0.31-8.74
	Yes	0.36 (0.13-0.94)	0.37 (0.13-1.04)
	Yes	51 (43.59)	115 (45.45)
How many regular partners have you sex within the last 3 months?	No	1	1
	Yes	2.90 (1.09-7.69)	2.46 (0.87-6.92)
Have you ever drunk alcohol?	No	1	1
	Yes	1.55 (0.82-2.90)	1.77 (0.90-3.48)
Family history of HIV	No	1	1
	Yes	3.36 (0.75-15.06)	4.24 (0.87-20.66)
Do you take recent HIV related training	No	1	1
	Yes	3.67 (1.61-8.40)	2.84 (1.17-6.89)
Have you ever been diagnosed with STI?	No	1	1
	Yes	9.12 (2.78-29.94)	9.52 (2.82-32.12)
Recent HIV risk	No	1	1
	Yes	3.12 (1.36-7.19)	3.36 (1.40-8.08)

DISCUSSION

This study investigated awareness and willingness to use oral HIV self-test and associated factor among health science student. In Ethiopia, oral HIVST is not integrated in routine health system. This study is important for promotion and implementation of oral HIV self-test.

Prevalence of awareness toward use oral HIVST was 53 (14.32%). It is in line with studies done in Kenya, Rwanda, Tanzania and Zimbabwe.[24,38,40,41] Study reported that factors such as lack of awareness, low utilization of testing services and unavailability of HIV self-test services were a reason for lower use oral HIV self-test.[22,38] In addition, the low level of HIVST awareness may be due to oral HIV self-test is a new intervention.[39] Additional reason includes lack of policies, regulatory systems, and quality of services.[42] Similar studies reported that low public awareness, availability HIVST, hard to access HIVST, limited access to resources and lack of information were factor affect oral HIV self-test.[40] Prevalence of willingness to use oral HIV self-test was 253 (68.38). It is in line with studies done in Kenya, 65 % Cote d'Ivoire and 69% in Tanzania.[24,41] This is due to oral HIV self-test is accurate and easy to use for student.[43] Overall, oral HIV self-test was preferred because it was the confidential, it allow testing in home or everywhere and easy to access in market or pharmacy.[26] Many people are willingness to use oral HIVST because it has advantages of convenience, speed, privacy and accessibility.[3,40]

Student who participates in HIV program and who had recent HIV risk were more likely to had awareness toward oral HIV self-test. Similar studies done in Rwanda et al and Kenya et al indicated that participating in HIV related program increase the exposure to HIV related information.[24,40] Available of local HIV related program increase the awareness of oral HIVST. Low availability of HIVST and lack of health care service program about HIV self-testing is affect awareness toward use oral HIV self-test.[44] Student who had recent HIV risk were more likely to had awareness toward oral HIV self-test. Previous studies in Rwand et al indicated that shown higher risk perception and desire to test for HIV. This is due to that those who had recent HIV risk have the probability to explore HIV related information. The possible reason also include highly perception of HIV risk need to identify the possible way of HIV self to select the easy and convenient method of diagnosis.[40]

Male student were more likely to be willingness to use oral HIV self-test in the future. This finding is supported by studies Uganda, Zimbabwe and sub-Saharan countries.[7,38,40] This is due to reason male were more eager to self-test for HIV and accept HIV self-test because of feeling embarrassed to ask for an HIV test at the clinic.[40] Self-test was related to convenience and privacy which is in line with previous study conducted in this setting. In contrast studies conducted in Kenya et al indicated that women were more likely to be willingness to use oral HIV self-test when compared to female respondents.[24]

Student who had recent HIV risk were more likely to be willingness to use oral HIV self-test in the future. This supported by evidence from Kenya and Rwanda et al.[24,40] This might be due to that students want to identify themselves through risk screening tools available easily.[40] Study also indicated that it has the potential to be an acceptable option for high risk populations who would not otherwise be tested using currently available HIV

counseling and testing (HCT) services for various reasons.[42,44]

Recently tested for HIV were more likely to be willingness to use oral HIV self-test in the future. This supported by evidence from Kenya et al.[24] It implies that HIV testing experiences may affect their desire to use HIVST.[44] Studies also shown HIV self-testing (HIVST) is emerging as an important tool to potentially increase the frequency of HIV testing in populations at increased risk for acquiring HIV.[45] Recently tested for HIV among key populations may avoid HIV testing services because of stigma and criminalization of their sexual practices, orientation, or occupation, or even the criminalization of HIV transmission.[43] Self-testing could help those who are very high risk to be more aware of their status and could facilitate frequent testing.[26]

Student who had STI were more likely to be willingness to use oral HIV self-test in the future. This study is consistence with studies done in Uganda.[7] The possible reason is student's risk perception which affects their desire to use HIVST. Sexual transmitted infections are among many factors influencing susceptibility to HIV. Moreover, it might be due to related to convenience and privacy. This might be due to the fact that STIs are highly stigmatized and fear of being interrogated with embarrassing questions.[46]

Study of strength

Study strength include was a cross-sectional study. So temporality is difficult to establish cause and effect relationship. Self-reported measures were subject to social desirability and recall bias.

Limitation of strength

One of the limitations of this study was small sample size. So, further research was recommended with larger samples to have higher reliability. Another limitation include the use of self-report questionnaires could have led the participants to apply the same biases. Self-report questionnaires may result over-estimation of the strength of relationships among variables.

CONCLUSION

In this study, factor associated with oral HIV self-test awareness includes participates in HIV program and recent HIV risk. In other hand, factor such as sex of respondent, recent HIV risk, recently tested for HIV and STI were more likely to be willingness to use oral HIVST in the future. This study also indicated low HIVST awareness among student. In other hand, this study finding shown that willingness to use HIV self-test in future was high among student. Willingness to use HIV self-tests is high because of easy to use, convenient, private, and trustworthy. HIVST were selected as result of autonomy, self-empowerment, privacy, confidentiality, convenience, opportunity to test, and ease of use.

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