

PREVALENCE OF VOLUNTARY COUNSELING AND TESTING SERVICE UTILIZATION AND ITS ASSOCIATED FACTORS AMONG PREPARATORY SCHOOL STUDENTS IN GONDAR TOWN, AMHARA REGION, ETHIOPIA

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ABSTRACT

Objectives: The objective of this study was to assess the prevalence of voluntary counseling and testing (VCT) services utilization and associated factors among preparatory school students in Gondar town, Amhara region, Ethiopia.

Methods: Institutional based cross-sectional study design was employed. Multistage sampling procedure was conducted. Data were collected using pre-tested self-administered questionnaire and the data were entered, clean, and analyzed using SPSS software. Descriptive, bivariate, and multivariate analysis were employed. Multivariate analysis with 95% CI was computed to identify factors associated with VCT service utilization at $p < 0.05$.

Results: The study included a total of 654 study participants, with a response rate of 97%. According to the research, 48.3% of adolescents used VCT services (95% CI: 44.5–52.1). The results of multivariate analysis revealed that age, site of birth, mother education, and discussion with parents were all substantially associated with the use of VCT services.

Conclusions: The majority of those who took part in the survey did not use VCT services. Only a small percentage of respondents have ever taken a VCT test and discussed it with their parents. The primary barrier for adolescents in the study area was cultural taboos, which they did not discuss with their parents. As a result, it will take an endless amount of effort from all relevant parties to promote teenage service use, as well as family life education, to encourage students and parents to use VCT.

Keywords: Adolescents, Youth, Voluntary counseling and testing, Gondar town and Ethiopia.

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INTRODUCTION

The World Health Organization defines adolescents as people aged 10–19 years old and young people aged 10–24 years old [1]. Adolescents make up about 1.2 billion people on the planet, accounting for the fifth-largest population, with 80 percent of them living in poor countries [2]. Out of a total population of 7.3 billion people, there are little under 1.8 billion young people in the world today [3]. Accessible, acceptable, and suitable reproductive health care for young people is referred to as youth-friendly reproductive health care. Among the services offered are family planning, volunteer counseling, and testing and treatment for sexually transmitted diseases (STDs) [4].

Voluntary counseling and testing refer to those who seek HIV counseling and testing in a private context. The services are delivered in a private setting. The primary focus is on preventing HIV acquisition by risk assessment, risk reduction, and testing [5]. HIV counseling and testing clients are typically sexually active, of reproductive age, and have been disproportionately affected by the infection [6]. HIV/AIDS is a human group disease with demographic and social consequences that spread from infected individuals to the entire group. Because it mostly affects young and middle-aged adults, this epidemic has a significant impact [7].

Young people in Sub-Saharan Africa are more likely to have sexual and reproductive health difficulties than young people in other regions of the world [8]. Youth in this region are at the highest risk of sexually transmitted infections, accounting for more than half of all new HIV infections [8]. Young persons aged 15–24 years account for more than half of new HIV infections in developing countries [9]. With 110 million new cases per year, Africa has the highest frequency of STDs, particularly in Sub-Saharan Africa [10].

Ethiopian adolescents and young people aged 10–24 account for one-third of the population (31,426,691), with about half of them (15,485,880) being teenage girls and young women aged 10–24 [11]. Infection with HIV affects 0.2% of adolescent females and males between the ages of 15 and 24. In adolescent girls and young women aged 15–24, HIV prevalence is three times higher than in boys of the same age (female 0.3% and male 0.1%). In Somalia, HIV prevalence among young women and male's ranges from <0.1% to 1.3% [12]. According to an Ethiopian demographic and health survey, educated persons are more likely than uneducated people to test positive for HIV. HIV testing was 14% among non-educated women compared to 44% among women with at least a secondary education, and 13% among non-educated males compared to 39 percent among men with at least a secondary school [13].

In a vicious spiral, AIDS' vulnerability, danger, and impact are all connected. Vulnerability can be reduced by providing young people with education, encouraging safe family settings, and increasing population-wide access to health and support services. HIV testing in conjunction with prevention intervention is used in a variety of HIV/AIDS prevention, care, and support strategies [14]. HIV/AIDS prevention and additional services, such as MTCT prevention, prevention and clinical management of HIV-related illnesses, and psychosocial and legal assistance, all begin with voluntary counseling and testing (VCT). VCT is in high demand, and it benefits people who test positive as well as those who test negative. VCT helps to reduce anxiety, enhance client knowledge of their HIV vulnerability, motivate behavioral change, enable early referral for care and support, including antiretroviral therapy, and remove stigma in the community [15]. Ethiopia's government has developed policies, strategies, initiatives, and institutional arrangements to combat HIV/

AIDS and reduce its catastrophic effects [16]. VCT is one of the key techniques set by the Ethiopian government to prevent and control HIV/AIDS, according to several control and preventative methods.

General objectives of the study

The general objective of the study was to assess the prevalence of VCT services utilization and its associated factors among preparatory school students in Gondar town, Amhara Region, Ethiopia.

The specific objectives of this study are listed below

- To determine the prevalence of VCT service utilization among preparatory school students in Gondar town
- To identify factors associated with VCT services utilization among preparatory school students in Gondar town.

RESEARCH METHODS AND PROCEDURES

Study area, design and data source

The study took place in Gondar, Ethiopia. The overall population of Gondar town is 302,539, with male and female populations of 142,821 and 159,718, respectively, according to the 2018/2019 population projection for the central Gondar region. In the total population, the age groups 10–14 (12%), 15–19 (16.1%), and 20–24 (14.1%) are adolescents and youth. According to the Administrative Education Office of Gondar Town, there are seven (7) public and three (3) private preparatory schools in the town, of which 4728 students are enrolled in the 2019 academic year. An institution-based cross-sectional study design was carried out with students from public and private preparatory schools. The main source of data for this study was primary data. The primary data source were collected through a questionnaire.

Source and study population

All Gondar town preparatory school students were used as a source of population. The study population consisted of students from public and private schools in the study area who attended selected preparatory schools.

Inclusion and exclusion criteria

Preparatory school students from both public and private institutions were included in the study, although students who were ill or unable to talk, as well as nocturnal students, were excluded.

Sample size determination and techniques

The sample size was calculated using the single population proportion calculation with the following assumptions in mind. The sample size was determined using a 95% level of confidence, a 0.05 value ($Z/2 = 1.96$ on the standard normal distribution curve), a 5% margin of error ($d = 0.05$), a proportion of 29.8% taken from a previous study in Woreta town among adolescents aged 10–19, a 5% contingency, and two design effects.

$$n = \frac{(Z\alpha/2)^2 p(1-p)}{d^2}$$

$$n = \frac{(1.96)^2 * 0.298(1-0.298)}{(0.05)^2} = 321$$

The sample was increased to 337 by adding 5% contingency. To increase the sample size and choose the first sampling unit, a multistage sampling procedure was utilized. The sample of 337 was multiplied by two design effects, resulting in a final sample size of 674. The primary sampling unit was chosen and the sample fraction for each school was determined using a multi-stage sampling technique. In the research area, there were seven public and three private preparatory schools. The secondary sampling unit was chosen using a basic random sampling procedure. A total of six schools were chosen by lottery from among the ten preparatory schools: Four public schools and two private institutions. The systematic sampling approach was carried out by compiling a list of all pupils from each grade's roster.

Study variables

The outcome variable was the use of VCT services, whereas explanatory variables included demographic, socioeconomic, and individual factors, as well as health system aspects.

Data collection, quality control and analysis

The questionnaire was written in English first, then translated into Amharic and then re-translated into English by a second translator to ensure consistency. The data were then obtained using a self-administered questionnaire. The survey asks about demographic, socioeconomic, and individual variables, as well as healthcare system characteristics.

To assure data quality, one school facilitator was assigned to each of the selected preparatory schools, who supervised the students while they filled out the data. The goal of the study, protocols and data gathering methodologies were all covered in detail throughout the

Table 1: In Gondar town, percentage distribution of study population by fundamental socioeconomic and demographic factors, 2019

Variables	Frequency (n)	Percent (%)
Sex		
Male	251	38.4
Female	403	61.6
Age		
<18 years	414	63.3
>18 years	240	36.7
Religion		
Orthodox	506	77.4
Muslim	88	13.4
Others	60	9.2
Place of birth		
Rural	161	24.6
Urban	493	75.4
Marital status		
Single	636	97.2
Married	18	2.8
Personal monthly pocket money		
Yes	156	23.9
No	498	76.1
Father's educational level		
Illiterate	63	9.6
Read and write	183	28
Primary school	122	18.7
Secondary and above	286	43.7
Mother's educational level		
Not formal education	306	46.8
Primary school	110	16.8
Secondary and above	238	36.4
Family monthly income		
150–1400 ETB	184	28.1
1401–3550 ETB	224	34.3
>3550 ETB	246	37.6
Mother's occupation		
Government employed	160	24.5
Merchant	163	24.9
House wife	291	44.5
Others	40	6.1
Father's occupation		
Government employed	254	38.8
Farmer	177	27.1
Merchant	189	28.9
Daily laborer	34	5.2
Living status		
With both parents	488	74.6
With mother only	86	13.1
Others	80	12.2

Source: Field Survey, 2019

Table 2: In Gondar Town, percentage distribution of study population by sexual history; 2019

Variables	Frequency (n)	Percent
Ever had girl/boyfriends		
Yes	182	27.8
No	472	72.2
Ever had girl friend		
Yes	71	39
No	180	38.1
Ever had boyfriend		
Yes	111	61
No	292	61.9
Ever had sexual intercourse		
Yes	170	26
No	484	74
Factors motivate to conduct sexual intercourse		
Drinking alcohol		
Yes	18	10.6
No	152	89.4
Peer influence		
Yes	63	37
No	107	63
Love relationship		
Yes	89	52.4
No	81	47.6
Faced RH problems		
Yes	27	4.1
No	627	95.9
Types of problems faced		
Un intended pregnancy		
Yes	10	37
No	17	63
Abortion		
Yes	4	14.8
No	23	85.2
Chlamydia		
Yes	13	48.1
No	14	51.9

Source: Field survey, 2019

Table 3: In Gondar town, the percentage distribution of the studied population based on their knowledge and sources of information regarding VCT, 2019

Variables	Frequency	Percent
Do you know about VCT		
Yes	534	81.7
No	120	18.3
Where you got source of information about VCT*		
From health professional	226	34.6
From radio	228	34.9
From television	367	56.1
From newspaper	99	15.1
From teachers	210	32.1
From friends	170	26
Discussed with parents on the issue of VCT in the past time		
Yes	213	32.6
No	441	67.4
Reasons not discussed about VCT*		
Cultural taboos	244	55.3
Not necessary	220	49.9
Fear	48	10.9

Source: Filed Survey, 2019 multiple responses*. VCT: Voluntary counseling and testing

Table 4: In Gondar Town, the percentage distribution of the studied population by the use of volunteer counseling and testing services, 2019

Variables	Frequency	Percent
Ever used VCT service		
Yes	316	48.3
No	338	51.7
The reasons undergo VCT*		
To know the status	282	89.2
For marriage	16	5.1
Self-suspicion	18	5.7
Where you got VCT services*		
From government hospital	96	30.4
From govt health center	130	41.1
From private health center	103	32.6
From FGAE	56	17.7
STI diagnosis and treatment		
Yes	88	13.5
No	566	86.5

Source: Field Survey, 2019 Multiple responses*. VCT: Voluntary counseling and testing

Table 5: χ^2 test analysis of factors associated with VCT service utilization among preparatory school students in Gondar town, 2019

Variables	VCT use				
	Yes	No	χ^2	df	p-value
Sex					
Male	131	120	2.202	1	0.138
Female	185	218			
Age					
<18	177	237	13.387	1	0.000
>18	139	101			
Place of birth					
Rural	94	67	8.141	1	0.004
Urban	222	271			
Marital status					
Single	303	333	3.308	1	0.069
Married	13	5			
Mothers educational level					
Not formal education	167	139	9.209	1	0.010
Primary school	49	61			
Secondary and above	100	138			
Ever had girl/boyfriends					
Yes	127	55	45.333	1	0.000
No	189	283			
Ever had sexual intercourse					
Yes	122	48	49.309	1	0.000
No	194	280			
Discussed with parents on the issue of VCT					
Yes	137	76	31.444	1	0.000
No	179	262			
Media exposure					
Yes	184	183	7.167	1	0.000
No	107	63			
High cost for VCT services					
Yes	52	61	2.122	1	0.145
No	75	128			
Waiting time before got VCT in health institution					
<60 min	113	179	2.787	1	0.095
>60 min	14	10			

Source: Field survey, 2019. VCT: Voluntary counseling and testing

one-day intensive training. Prior to the study, a 5% pretest structured questionnaire was administered to students at Merawi preparatory

Table 6: Bivariate and multivariate analysis of factors associated with VCT service utilization among preparatory school students in Gondar town, 2019

Variables	VCT use		Odds ratio (OR)		
	Yes	No	B	COR (95%CI)	AOR (95%CI)
Sex					
Male	131	120		1	1
Female	185	218	0.252 (0.218)	0.777 (0.567–1.066)	1.244 (0.855–1.810)
Age					
<18 years	177	237		1	1
>18 years	139	101	0.783 (0.443)	2.188 (1.519–3.153)	0.642 (0.453–0.909)*
Place of birth					
Rural	94	67		1	1
Urban	222	271	0.538 (0.579)	1.713 (1.195–2.455)	1.785 (1.090–2.921)*
Marital status					
Single	303	333		1	1
Ever married	13	5	1.050 (–0.895)	2.857 (1.007–8.109)	2.448 (0.754–7.949)
Mother's educational level					
Not formal education	167	139		1	1
Primary school	49	61	0.403 (0.482)	1.496 (0.965–2.318)	1.619 (0.846–3.098)
Secondary and above	100	138	0.506 (0.763)	1.658 (1.178–2.334)	2.144 (1.118–4.111)*
Ever had boy/girlfriends					
Yes	127	55	1.241 (0.416)	3.458 (2.398–4.986)	1.517 (0.747–3.080)
No	189	283		1	1
Ever had sexual intercourse					
Yes	122	48	1.335 (0.669)	3.799 (2.598–5.557)	1.953 (0.938–4.063)
No	194	290		1	1
Discussed with parents on the issue of VCT					
Yes	137	76	0.970 (0.712)	2.638 (1.880–3.702)	2.038 (1.423–2.920)**
No	179	262		1	1
Media exposure					
Yes	184	183	0.524 (0.363)	1.689 (1.164–2.452)	1.437 (0.967–2.137)
No	107	63		1	1
High cost for VCT services					
Yes	52	61	0.375 (0.297)	1.455 (0.912–2.321)	1.346 (0.824–2.200)
No	75	128		1	1
Waiting time before got VCT in health institution					
<60 min	113	179	0.796 (0.561)	2.218 (0.953–5.163)	0.571 (0.232–1.401)
>60 min	14	10		1	1

Source: Field survey, 2019. NB 1=reference category=COR=Crude odds ratio, AOR=Adjusted odds ratio*p<0.05, **p<0.01. VCT: Voluntary counseling and testing

school outside of the study area to ensure the questionnaire's reliability. Before entering the data, the acquired data were double-checked for accuracy.

Quantitative data was obtained from preparatory school students via a questionnaire, and statistical analysis was performed using SPSS version 16. The association between outcome and explanatory variables was examined using bivariate and multivariate analyses with $p = 0.25$ and 0.05 , respectively, at a 95% confidence level. To determine the degree of association between each explanatory and the outcome variable, cross tabulation and chi-square procedures were utilized. The logistic regression model was used because it is the best method for determining the strength of the association between the outcome variable and the explanatory variables when the outcome variable is dichotomous and has a value between 1 and 0. The results in the table were described using descriptive statistics such as frequency and percentage.

RESULTS

The study population's background characteristics

The study included 654 students, with a 97% response rate. In total, there were 654 responses, with 251 (38.4%) male and 403 (61.6%) female in grades 11–12th. There are 161 rural residents (24.6%) and 493 urban residents in terms of birthplace (75.4%). In terms of religion, 506 persons (77.4%) are orthodox Christians, 88 (13.4%) are Muslims, and 60 (9.2%) are followers of other faiths such as Protestantism and Catholicism. In terms of age, 63.3% of respondents were under the age of 18 and 36.7% were over the age of 18. In terms of marital status, 636 (97.2%) of young people are single, with 18 (2.8%) married.

When questioned about personal monthly pocket money, 156 students (23.9%) said they had it for everyday costs, while 498 students (76.1%) said they did not have any. Fathers' educational status: 63 (9.6%) of participants said their fathers were illiterate, 183 (28%) said their fathers were literate, 122 (18.7%) said their fathers had an elementary education, and 286 (43.7%) said their fathers had a secondary education or above.

For most of the interviewees' fathers' occupational status, 254 (38.8%) were government employees, followed by businessmen, with 189 (28.9%). Research participants reported their mothers' education status, 306 (46.8%) of the interviewed mothers had no formal education, 110 (16.8%) had primary education, and 238 (36.4%) of the interviewees indicated that their mothers had received secondary education and above. With regard to the occupations of mothers, the majority of respondents reported that their mothers are domestic wives, which is two hundred ninety-one (44.5%), one hundred sixty-three (24.9%) traders, one hundred sixty-three (24.9%) of merchants, one hundred sixty (24.5%) and forty (6.1%) were, government employed and others respectively. Others refer to daily laborer as well as farmers.

The majority of the interviewees' fathers' occupations were government employees (38.8%), followed by businessmen (189), (28.9%). 306 (46.8%) of the questioned mothers had no formal education, 110 (16.8%) had primary education, and 238 (36.4%) of the interviewees indicated that their mothers had acquired secondary education and above. With regard to the occupations of mothers, the majority of respondents reported that their mothers are domestic wives, which

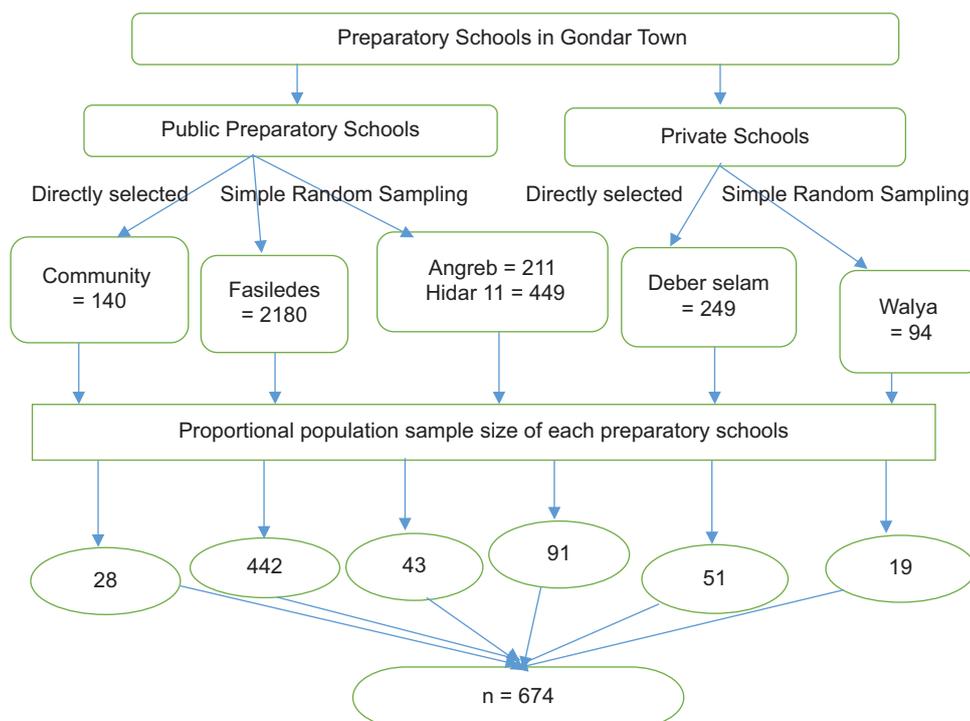


Figure 1: Schematic diagram of sampling procedures

is two hundred ninety-one (44.5%), one hundred sixty-three (24.9%) traders, one hundred sixty-three (24.9%) of merchants, one hundred sixty (24.5 %) and forty (6.1 %) were, government-employed and others, respectively. Others refer to daily laborer as well as farmers.

The majority of their families earn more than 3550 birrs from their monthly family income. In terms of living arrangement, the majority of students 480 (74.6%) lived with both parents, eighty-six (13.1%) lived with their mother only and eighty (12.2%) lived with others. Others only blamed this with father, sister, brother, grandmother, aunt, and grand father.

Study participants’ sexual histories

Among the interviewees, 71 (39%) men and 111 (61%) women have had girlfriends and boyfriends. Regarding sexual intercourse, one hundred seventy, (26%) of the study participants had sexual intercourse. Respondents mentioned that eighty-nine (52.4%) romantic relationships, sixty-three (37%) peer influence, and eighteen (10.6%) factors were drinking. 27 (4.1%) of the study participants faced sexual and reproductive health issues, such as 10 unintended pregnancies (37%), four abortions (14.8%), and 30 chlamydia (48.2%).

VCT knowledge and sources of information

In terms of VCT knowledge, 81.7% of research participants know what VCT is, and 56.1% of respondents know that the media (TV) is the most important source of VCT information. 32.6% of those polled had recently discussed VCT with their parents, according to the study participants. The reasons for VCT were not discussed with their parents in 49.9% of cases, fear of the family in 10.6% of cases, and cultural taboos in 55.3% of cases.

Utilization of VCT services

VCT services were used by 48.3% of study participants, according to the findings. 89.2% of adolescents utilize VCT services to better comprehend the current situation, 5.1% for marriage objectives, and 5.7% for self-suspicion. The majority of interviewees who received VCT services in the survey cited this issue, with 41.1% from government health centers and 32.6% from private health centers.

Factors associated with VCT services utilization

The factors associated with the usage of VCT services were assessed using a bivariate approach. The degree of association between the independent and outcome variables was first assessed using bivariate analysis.

On bivariate analysis, the factors were found to be significantly associated with VCT services utilization were, sex, age, place of birth, marital status, mother’s education, ever had sexual intercourse, media exposure, ever had girl or boyfriends, discussed with parents, cost and waiting time before got VCT p<0.25. These variables which were significant on bivariate analysis were entered into multivariate analysis by using enter. After that, mother’s education, age, place of birth, and discussed with parents on the issue of VCT in the past time were found to be significantly and independently associated with VCT services utilization at p<0.05.

DISCUSSION AND CONCLUSIONS

Discussion

The purpose of this study is to determine the prevalence of VCT service use and associated factors among Gondar town preparatory school students. VCT service utilization helps to control a variety of sexual and reproductive health problems while also fostering healthy, productive adolescents at the regional and country levels.

The sexual history of study participants revealed that (26%) had ever had sexual practice with the mean age of the first sexual intercourse being 18.62 (with SD1.714) years, which was slightly higher than the prevalence of (22.9%) with the mean age of 16.68 (SD 2.32) years found in a school-based study in Hadiya and lower than the 52.9% found in a study conducted in Goba [17,18].

The study found that 48.3% of respondents used VCT services, which is greater than other studies in Ambo University, Dire Dawa, and Goba, and Madawalabu Universities, but lower than other studies in Goba and Madawalabu University [19,20]. The fact that certain research included both sexually experienced and inexperienced adolescents could be one of the causes for the disparities. Adolescents from both in and out of school may make up the rest of the group.

The age of adolescents was found to be a major factor in the use of VCT services in this study. According to the findings of this study, adolescents above the age of 18 were 0.64 times more likely to use VCT services than those under the age of 18 (AOR = 0.642; 95% CI = 0.453–0.909). This research agrees with those of Madawalabu University and Jimma Town [21,22]. This could be because as people get older, their risk of experiencing VCT service use concerns rises.

The study revealed that place of birth was significantly associated with VCT services utilization. Adolescents in urban areas were 1.8 times more likely than those in rural areas to use VCT services (AOR = 1.785; 95% CI = 1.090–2.921). This research was similar to one conducted at Bahar Dar University [23]. This could be due to the fact that urban adolescents had better access to services, attitudes, and cultural acceptance than rural adolescents when it came to using VCT services.

The study found that the education of the mother had a substantial impact on the use of VCT services. According to the findings of this study, adolescent mothers with a secondary or higher education were 2.1 times more likely to use VCT services than those with no formal education (AOR = 2.144; 95% CI = 1.118–4.111). This could be because adolescents VCT service use is favorably associated with maternal education. The discussion of the VCT issue between the mother and the teenager helps the adolescent form a clear personal opinion on the use of VCT services.

The study indicated that discussion with parents on the issues of VCT was significantly associated with VCT service utilization. Participants who discussed VCT services with their parents were 2 times more likely to use them than those who did not (AOR = 2.038; 95% CI = 1.423–2.920), which was similar with research conducted at Madawalabu University and Bahir Dar University [21,23]. This could be attributed to an increase in adolescent discussions with parents about VCT as well as service use issues.

Conclusions

Bivariate and multivariate analyses were used to present the study's findings. According to the findings of the study, the majority of adolescents in the study region do not use VCT services. The survey found that adolescents were well-informed about VCT services. However, VCT service utilization among preparatory school students in the research area was extremely low. This could result in a distinction between knowledge and service consumption. According to the findings, adolescents who discuss VCT issues with their parents have a significant impact on their use of VCT services. When asked about the primary source of information about VCT services, a high proportion of respondents said that the media (TV) was the primary source of information. The use of VCT services was studied using multivariate analysis to examine if there was a link between demographic, socioeconomic, healthcare system, and individual characteristics. As a result, the mother's education, birthplace, age, and discussions with her parents were all linked to the use of VCT services.

To generalize knowledge and practice of service utilization, it takes a lot of work to plan and implement appropriate adolescents and young VCT service information, education, and communication programs in schools. To effectively serve the needs of adolescents and teenagers in VCT services, hospitals, health centers, and FGAE should form a network. To determine the effectiveness of VCT among adolescents and youth, more research is needed.

Ethical approval and consent to participate

At the start of the study process, ethical clearance was first obtained from the Department of Population Studies at the University of Gondar, College of Social Science and Humanities. The support letter was obtained from North Gondar Education Bureau and the next permission was obtained from Gondar town public and private preparatory school director offices in the verbal form. The verbal informed consent was obtain before conducting data collection. They were also informed

about their right to participate, not participate or withdraw from the study at any time. The data were collected anonymously to keep the confidentiality of the information. Voluntary consent was obtained from each participant to participate in the study during data collection in a verbal form. Regarding consents from parents under 16 years old study participants, informed written consent was not obtained. Verbal permission was got from parents, relatives, and concerned bodies.

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