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Sexual and Reproductive Health Knowledge and Uptake among Adolescents and Young Adults Living with HIV in the Northwest Region of Cameroon

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Abstract

In Cameroon, HIV prevalence among youths (15-24 years) is 2% and 26.5% of them have unwanted pregnancies. Sexual and reproductive health (SRH) services are widely available, whose optimal utilization will reduce these high rates of HIV/STI transmission and pregnancies, but their knowledge and uptake of these services are unknown. This study aimed to assess determinants of SRH knowledge and uptake among HIV-infected youths in the Northwest region of Cameroon. This cross-sectional study received administrative authorization from the Delegation of Northwest and CBCHB IRB approval (IRB2021-77). We sequentially sampled youths living with HIV and receiving care at 16 treatment sites. Data was anonymously collected from consented participants between February and April 2022 using a structured questionnaire. The data was analysed using Stata version 14.0. In total 340 participants were enrolled, 70% female, 62% within 15-19 age group. Overall, knowledge of participants on SHR services was 78% and its uptake was 58%. Knowledge was 71% for SRH counselling, 78% for pregnancy prevention, 78% for STIs services and uptake of these services was 78%, 70% and 76% respectively. Increased age positively predicted SRH knowledge while urban residence had a negative influence. Being a male, living in urban residence and not schooling was negatively associated with SRH service uptake while good SRH knowledge positively predicted uptake. The suboptimal level of knowledge, consistent with low service uptake suggests the need for more sensitization and education on SHR services which is key to influencing uptake of these services and consequently reducing unintended pregnancies and HIV/STIs transmission.

Keywords*: Sexual and reproductive health, knowledge, uptake.*

Introduction

Although three decades have passed, HIV/AIDS is still known as one of the most important infectious diseases in today's world. In 2020 there was an estimated 1.75 million adolescents living with HIV and about 1.5 million (88%) live in sub-Saharan Africa [1]. Globally, about 45% of all new human immunodeficiency virus (HIV) infections occur among people aged 15–24 years. In Africa, 60% of all new HIV infections occur in adolescents (15-19 years old) and an estimated 1.7 million were exposed to many reproductive health problems [2]. By the end of 2020 there were 49424 adolescents (15-19) and young adults (20-24) LHIV in Cameroon and 1830 are from the Northwest region of the country [3]. Cameroon has the second largest HIV epidemic after Nigeria in the West and Central African sub-

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region. The Cameroon HIV impact survey conducted in 2017 revealed a 3.7% HIV prevalence in people aged 15–64 years, with prevalence among 15–24-year-olds being 1.2%: 2.0% among females and 0.4% among males [4]. Also, according to the U.S. President´s Emergency Plan for AIDS Relief (PEPFAR), the HIV prevalence in Cameroon among people 15-49 years in 2018 was 3.4% with about 2% of young people 15-24 years living with HIV [5].

The term "young people" which according to the World Health Organisation (WHO) are persons aged between 10 and 24 years and youth (15–24 years) are interchangeably used but often meaning the youth, adolescents, and young people [6, 7].Youths represent 25% of the world population [8].Young people living with HIV(YPLWH) in developing countries are entering adolescence and young adulthood in their numbers [9] and even children born with HIV are now living into adolescence and adulthood, thanks to advances in and improved access to antiretroviral therapy (ART) [10, 11].

As they mature, HIV infected adolescents encounter several sexual and reproductive health-related challenges, ranging from physiological, psychological, and social changes that may expose them to unhealthy explorative sexual behaviours like early sex debut, unsafe sex and multiple sexual partners. The start of sexual relationships, coupled with challenges of living with a lifelong sexually transmissible infection further complicates this period in the life of many ALHIV [8, 12].

Many young people living with HIV (YPLWH) like their peers without HIV, initiate sexual activity during this stage and report difficulty establishing romantic relationships such as stigma and discrimination, disclosure of their HIV status, adherence to antiretroviral therapy, mental health, and sexual and reproductive health (SRH) challenges [9, 13]. These challenges affect their future quality of life [14]. These have implications for not only their physical wellbeing but social and mental well-being as well and the consequences go far beyond the adolescents to the society as a whole as they are at risk for transmitting the virus to their sexual partners and their infants and experiencing worse health outcomes due to STI co-infection [9].

Although not self-sufficient, knowledge remains essential in guiding human behavior and decision-making. Therefore, sexual, and reproductive health knowledge is vital for healthy decision making regarding sexual and reproductive health among adolescents [5]. Improving adolescents' knowledge to enable them to understand their SRH and build their skills to take responsibility of their health is an important step in meeting their health needs and rights. As girls move from older childhood through adolescence into early adulthood, they need sexuality education that responds to their developmental stages and circumstances and evolves with their changing needs. The sex education provided to them should be comprehensive, include but not limited to information on SRH problems and how to prevent them. They therefore need information and counselling that responds to these needs [15].

Unfortunately, young people, particularly adolescent girls in the rural parts of sub-Saharan Africa tend to have both low levels of sexual health knowledge and limited access to sexual and reproductive health (SRH) services, which are linked to higher engagement in sexual risk behaviors, unplanned pregnancies, higher rates of sexually transmitted infections (STIs), including HIV [2, 9, 12, 16].

In Cameroon, adolescent pregnancy is still a major public health challenge with a national prevalence of 14.2% in the general population. Of all girls aged 15-19 years in Cameroon, 21% have been pregnant at least once. The pregnancy rate is 26.6% among youths living with HIV in the Northwest region of the country. Political and sociocultural barriers to access modern contraception partly account for these pregnancy rates [17, 18].

Often adolescents do not know where and how to obtain the health services they need. Even when able to access health services, they are often feeling discouraged from doing so because they are not sure of privacy and confidentiality, and they fear being judged and treated with disrespect. In case adolescent girls LHIV become pregnant and want to keep the pregnancy, they should be able to access services that prevent mother-to-child transmission of HIV. They also need information and services to prevent and diagnose and treat STIs should they occur [15]**.** Therefore, SRH makes up a significant part of the world's sexual ill-health burden and factors such as lack of SRH knowledge, limited access to/use of contraceptives and SRHS, gender inequality and cultural practices contribute to the high rates of adolescent/youth fertility in sub-Saharan Africa [1, 11].

The health of adolescents especially their sexual and reproductive health (SRH) remains crucial for the attainment of any sustainable development. Many behaviors acquired as adolescents can last a lifetime and affect their well-being and consequently that of the nation´s future adults. Risky behaviors that begin in adolescence account for a great proportion of preventable deaths that occur in adults. A healthy transition of young people into adulthood can enable them use well the opportunities they have as adults [5]. Adolescents living with HIV can have safe, healthy, and satisfying sexual and reproductive health, but there is still a long way to go for this to be a reality, especially for the most vulnerable amongst them who face repeated violations of their rights [19].

Globally, young people ages 15–24 represent a growing population in need of HIV care and treatment. HIV care and treatment programs, however, are typically designed to serve infants, children, and adults and few are equipped to address the needs of adolescents [10]**.** Though there was a global agreements on adolescents' SRH and rights, this progress has been slowed down by unsatisfactory access to and uptake of these services among the young people in low- and middle-income countries [11]. The majority of HIV research on this group of people has focused on the clinical aspect with little emphasis on their sexual and reproductive health.

However, in designing such programs or improving existing ones, identifying gaps in knowledge is a priority. It is necessary, therefore, to determine the comprehensive knowledge that adolescents including younger adolescents have in order to ensure strategies that are targeted. There is limited information regarding the level of knowledge and utilization of sexual and reproductive health service among HIV-infected young people in Cameroon, particularly in the study area. Thus, this study was aimed to assess the sexual and reproductive health service knowledge and uptake and identify its determinants.

Methods

Study Design

It was a cross-sectional study. conducted from February to April 2022 and included a quantitative survey of adolescents (15-19 years) and young adults (20-24 years) LHIV in the Northwest Region of Cameroon. Participants were enrolled from 16 selected HIV care and treatment sites in the region, in consideration with patient load (at least of 15 adolescents and young adults on ART), functional level, ownership, and residential setting (rural or urban).

Sampling Technique

A total of 16 study sites were purposefully sampled to include high, medium and low volume Antiretroviral Therapy (ART) treatment centres. From each site, study participants were selected using a sequential sampling technique. Based on the calculated sample size and the study population estimated, every fourth client was enrolled.

Data Collection

Structured questionnaires containing questions on demographics, Knowledge and use of the three groups of sexual and reproductive health (SRH) services were anonymously administered to those who consented to participate in the study. When the clients came to pick up their ART medication, the research assistant explained the objectives of the study to them. Those who gave consent were then asked to answer a questionnaire in a private room with assistance from the nurse in charge of adolescent HIV care and treatment. Depending on the convenience of the participant, the questionnaires were administered either in English or Pidgin-English. In addition to sociodemographic characteristics of study participants, whether or not they knew where to seek SRH counselling, if they had ever sought such counselling and their preferred sources of counselling, whether they knew ways of preventing pregnancy, if they had ever used any pregnancy prevention method and reasons for not using them. They were equally asked to give examples of STIs, their signs and symptoms, some ways of preventing STIs and if they had ever used any method to prevent transmission of STIs. Uptake or utilization of reproductive health services also treated as those adolescents who used at least one component of RH services.

Data Management and Analysis

The data was checked for completeness, coded, entered into the Microsoft Excel software and exported to Stata version 14.0 where it was analysed.

Anonymous data was collected from consented participants between February and April 2022 using a structured questionnaire including questions on knowledge and uptake of SRH counselling, pregnancy prevention and STI prevention services. SRH knowledge was assessed on counselling, pregnancy prevention, and HIV/STI prevention service and scored on an 8-point scale.

A score of 0-4 was considered poor knowledge while a score of 5-8 was graded as good knowledge.

The uptake of SRH services was generally classified into four categories using a 3 points scale. Participants who did not use all three groups of services were classified under poor uptake while those who used all three groups of services were rated as having good uptake.

The dependent variable was “knowledge and uptake of SRH services” and the independent variables were socio-demographic, source of SRH counselling. Descriptive statistics were used to describe participants’ characteristics and we used the Chi square test to compare these difference characteristics. Odds ratios at 95% confidence interval were obtained from calculations using logistic regression analysis to determine the association between the dependent and independent variables. Univariate analysis was first done, and all significant variables were put into a multivariable logistic regression model to get their association with the outcomes.

Results

Characteristics of Study Participants

A total of 340 youths living with HIV in the Northwest region of Cameroon were included in the study and their average age was 18.7 years. Of the participants enrolled, a total of 211 (62.1%) were in the 15-19 years age group, nearly half (41%) were residing in urban settings, majority (93%) were singles. Over half (53%) were schooling, about two thirds (92%) had attained post primary educational level. These participants were predominantly Christians (96%). Details of the characteristics of study participants in relation to their SRH knowledge and uptake are presented on table 1 and 2 below.

Table 1. Characteristics of Study Participants by SRH Knowledge

Characteristics of young people living with HIV by SRH knowledge rating							
Variable/Level	**All Participants**		**Poor**		**Good**		**P-Value**
	N=340	**%**	**N=139**	**40.9%**	**N=201**	**59.10%**	
Age group (Years)							
15 – 19	211	62.1%	105	75.5%	106	53%	<0.001
20 – 24	129	37.9%	34	24.5%	95	47%	
Sex							
Female	238	70%	87	37%	151	63%	0.014
Male	102	30%	52	51%	50	49%	
Marital status							
Single	316	93%	134	42%	182	58%	0.031
Married	24	7%	5	21%	19	79%	
Setting of residence							
Rural	139	41%	43	31%	96	69%	<0.001
Semi urban	63	19%	23	36%	40	64%	
Urban	138	41%	73	53%	65	47%	
Level of Education							
Primary	26	8%	13	50%	13	50%	0.33
Post primary	314	92%	126	40%	188	60%	
Current educational status							
Schooling	180	53%	71	39%	109	61%	0.57
Not schooling	160	47%	68	43%	92	57%	
Religion							
Christians	327	96%	134	41%	139	59%	0.86
Muslim	13	6%	5	39%	8	61%	

Table 2. Characteristics of Study Participants by Uptake of SRH Services

Characteristics of adolescents and young adults living with HIV by SRH Uptake rating							
Variable/Level	**All Participants**		**Poor**		**Good**		**P-Value**
	N=340	**%**	**N=238**	**70%**	**N=102**	**30%**	
Age group (Years)							
15 – 19	211	62.1%	156	74%	55	26%	**0.04**
20 – 24	129	37.9%	82	64%	47	36%	
Sex							
Female	238	70%	154	65%	84	35%	**<0.01**
Male	102	30%	84	82%	18	18%	
Marital status							
Single	316	93%	221	71%	95	31%	0.92
Married	24	7%	17	70%	7	30%	
Setting of residence							
Rural	139	41%	82	59%	57	41%	**<0.01**
Semi urban	63	19%	49	78%	14	22%	
Urban	138	41%	107	78%	31	22%	

Level of Education							
Primary	26	8%	18	69%	8	31%	0.93
Post primary	314	92%	220	70%	94	39%	
Current educational status							
Schooling	180	53%	166	64%	64	36%	
Not schooling	160	47%	122	76%	38	24%	**0.01**
Religion							
Christians	327	96%	229	70%	98	30%	
Muslim	13	6%	9	69%	4	31%	0.95
SRH Knowledge							
Poor	238	70%	122	88%	17	12%	**<0.01**
Good	102	30%	166	58%	85	42%	

Overall Knowledge and Uptake Rating

Averagely knowledge of participants on SRH services was 78% and the uptake of these services was 58%. Overall, only 59% of the study participants had good knowledge of their sexual and reproductive health services. On the other hand, utilization of these services was poor in up to 70% of the study participants. Details of overall knowledge and uptake of SRH services are shown on Figure 1 below.

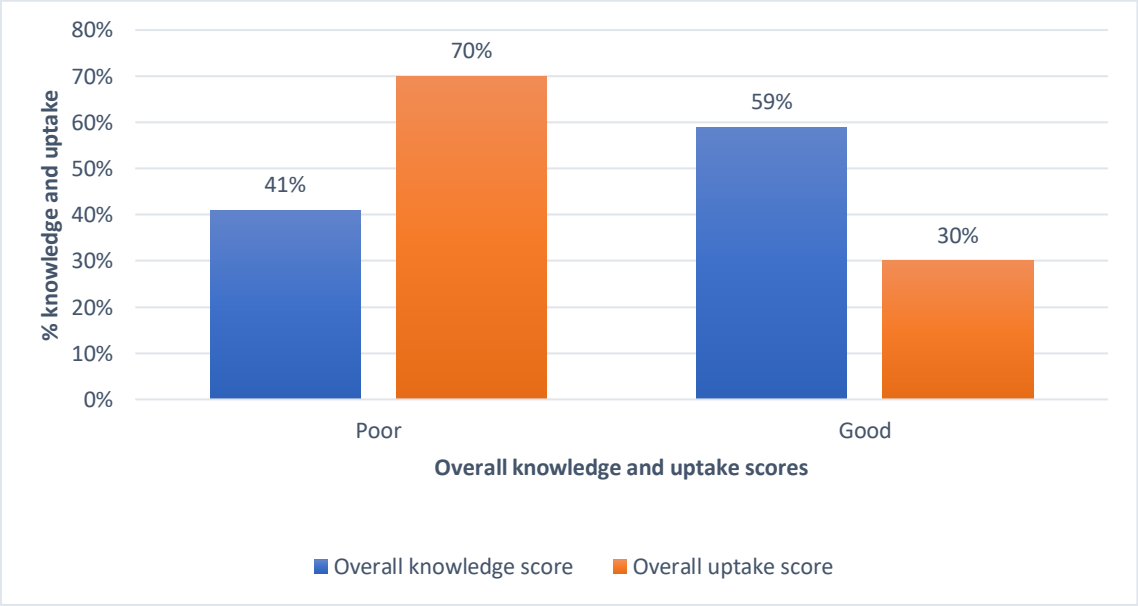

Figure 1. Overall SRH Knowledge and Uptake Rating

Knowledge and Uptake of the Specific Groups of SRH Services

Participants' knowledge of SRH counselling was 71%, 78% for pregnancy prevention, and 78% for STIs prevention services while the uptake was found to be 78%, 70% and 76% respectively. Participants were most knowledgeable in STI prevention services and but rather used counselling services the highest. The most preferred source of SRH counselling was health care worker (55%), followed by parents (32%). Figure 2 below presents the knowledge and uptake of different groups of SRH services.

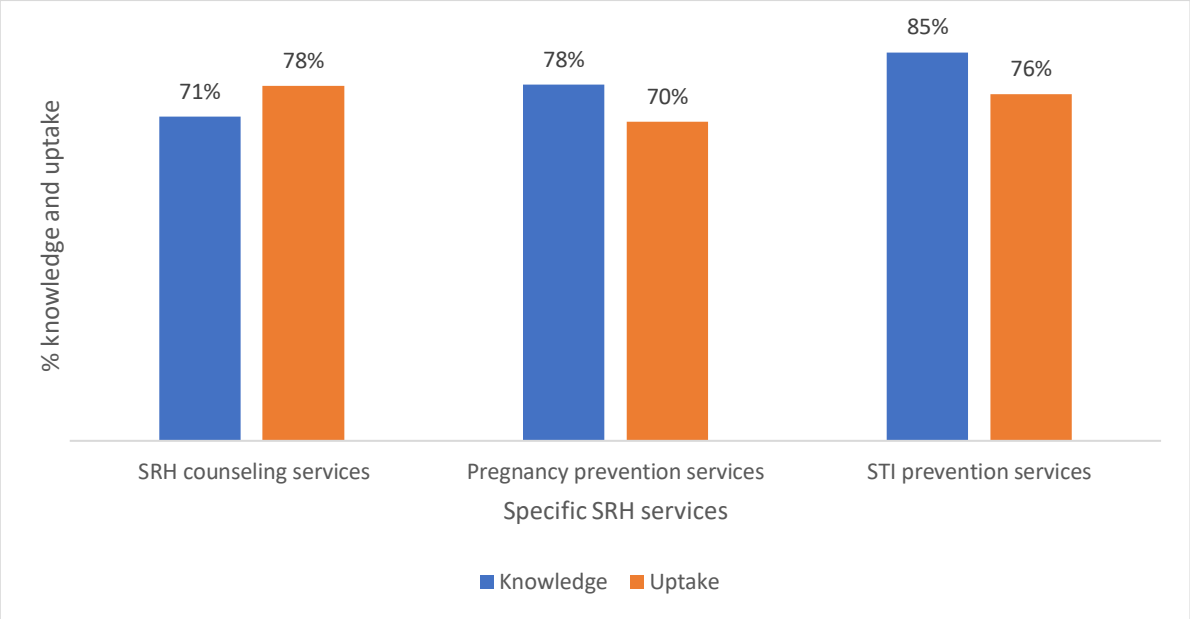

Figure 2. Knowledge and Uptake of Specific Groups of SRH Services

Determinant of SRH Knowledge of Participants

The crude SRH knowledge score among participants was 78%. Bivariate analysis was performed between knowledge and independent variables to determine factors associated with SRH knowledge. The results revealed that there was a strong statistically significant relationship between SRH knowledge and age group, sex, marital status, and residential setting (P-values <0.05). There was no statistically significance relationship between SRH knowledge and current educational status, level of education and religion (Table 3).

Variables that were significant at bivariate analysis were put into a multivariate logistic regression analysis to predict their association with SRH knowledge among adolescents and young adults living with HIV. Level of education had no association but was forced into the multivariable analysis due to its presumed effect on knowledge. From the logistic regression analysis, age group and residential setting were found statistically significant factors associated with SRH knowledge among adolescents and young adults living with HIV.

The odds of SRH knowledge among participants within the 20-24 years age group was 2.5 (AOR=2.52, 95%CI:1.54-4.12) times higher than those of their counterparts within 15-19 years age group (P-value = <0.01). Compared to participants living in rural areas, there was strong evidence that those resident in semi-urban areas had lesser chances (AOR 0.82, 95%CI:0.43-1.56) of having SRH knowledge and this chance was even lesser among those residing in urban areas (AOR 0.4, 0.23-0.64) (Table 3).

Table 3. Bivariable and Multivariable Factors Associated with SRH Knowledge

Bivariable and multivariable factors associated with SRH Knowledge						
Variable/Level	**Knowledge rating**		**Crude OR**		**AOR**	
	Poor	**Good**	**95%CI**	**P-Value**	**95%CI**	**P-Value**
Age group (Years)						
15 - 19	105	106	1	**<0.01**	1	**<0.01**
20 - 24	34	95	2.77(1.72-4.45)		2.52(1.54-4.12)	
Sex						

Female	87	151	1	**<0.01**	1	0.08
Male	52	50	0.55(0.35-0.89		0.65(0.40-1.10)	
Marital Status						
Single	134	182	1	**0.03**	1	0.07
Married	5	19	2.80(1.02-7.68)		2.63(0.91-7.62)	
Setting of Residence						
Rural	43	96	1	**<0.01**	1	-
Semi urban	23	40	0.78(0.42-1.46)		0.82(0.43-1.56)	0.54
Urban	73	65	0.40(0.24-.065)		0.40(0.23-0.64)	**<0.01**
Level of Education						
Primary	13	13	1	0.33	1	0.1
Post primary	126	188	1.50(0.67-3.32)		2.04(0.87-4.78)	
Current educational status						
Schooling	71	109	1	0.57	-	-
Not schooling	68	92	0.90(0.60-1.40)		-	-
Religion						
Christians	134	139	1	0.86	-	-
Muslim	5	8	1.11(0.36-3.50)		-	-

Determinants of Participants' Uptake of SRH Services

The crude uptake rate for SRH services was 58%. At bivariate analysis, factors statistically associated with uptake of SRH services were age group, sex, residential setting, current educational status and SRH knowledge. No association was found between use of SRH services and marital status, level of education and religion.

Significant factors from bivariable analysis were put into a multivariate logistic regression analysis to predict their association with uptake of SRH services among adolescents and young adults living with HIV. Sex, residential setting, current educational status and SRH knowledge were significant factors associated with uptake of SRH services (Table 4).

Compared to females, males were less likely (AOR=0.47, 95%CI:0.25-0.9) to use SRH services (P-value = 0.01). Compared to participants in rural settings, those in urban settings were less likely (AOR=0.50, 95% CI;0.22-0.30) to use SRH services (P-value=0.03). Participants who were currently not schooling were less likely (AOR=0.55, 95% CI:0.32-0.94) to use SRH services compared to those who were schooling (P-value=0.03). The odds of SRH service uptake among participants with good SRH knowledge was more than 4 (AOR=4.56, 95%CI:0.05-8.4) times higher than those in participants with poor SRH knowledge (P-value <0.01) (Table

Table 4. Bivariable and Multivariable Factors Associated with Uptake SRH Services

Bivariable and multivariable factors associated with SRH service uptake						
Variable/Level	**Uptake rating**		**Crude OR**		**AOR**	
	Poor	**Good**	**95%CI**	**P-Value**	**95%CI**	**P-Value**
Age group (Years)						
15 - 19	156	55	1	**0.04**	1	0.3
20 - 24	129	47	1.63(1.03-2.61)		1.34(0.80-2.30)	

Sex						
Female	154	84	1	**<0.01**	1	**0.01**
Male	84	18	0.40(0.22-0.70)		0.47(0.25-0.9)	
Marital status						
Single	316	221	1	0.9	-	-
Married	24	17	0.96(0.40-2.40)		-	-
Setting of residence						
Rural	82	57	1	**<0.01**	1	-
Semi urban	49	14	0.41(0.21-0.81)		0.50(0.22-0.30)	**0.03**
Urban	107	31	0.42(0.25-0.70)		0.63(0.036-1.13)	0.12
Level of Education						
Primary	18	8	1	0.93	-	-
Post primary	220	94	0.96(0.40-2.30)		-	-
Current educational status						
Schooling	116	64	1	**0.01**	1	**0.03**
Not schooling	122	38	0.60(0.35-0.91)		0.55(0.32-0.94)	
Religion						
Christians	229	98	1	0.9	-	-
Muslim	9	4	1.04(0.31-0.31)		-	-
SRH Knowledge						
Poor	122	17	1	**<0.01**	1	**<0.01**
Good	166	85	5.30(2.30-9.40)		4.56(0.50-8.40)	

Discussion

This study was conducted to assess the knowledge and uptake of sexual and reproductive health services and its determinants among adolescents (15-19 years) and young adults (20-24 years) living with HIV in the Northwest region of Cameroon. It revealed that overall knowledge of participants on SRH services was 78% and its uptake was 58%. Participants were most knowledgeable in STI prevention services and but rather used counselling services the highest. Higher uptake rates were found in Kumbo West district of the Northwest region of Cameroon (61.0%,) [16] and in Ethiopia [2] probably because their studies were among general youth population while ours was among youths living with HIV.

Participants' knowledge of SRH counseling was 71%, 78% for pregnancy prevention and 78% for STIs prevention services. Past studies revealed knowledge of the study 41.3% for SRH counseling [20], 88.6% for pregnancy prevention services [5] and 92.2% for STI services [20]. The rate of SRH services uptake in our study was 78%, 70% and 76% for counseling, pregnancy prevention and STI prevention respectively. Other studies revealed rates of 9% [2] and 19.7% [20] for counseling, 77.3% pregnancy prevention and 7.6% for STI services [2].

We found that the preferred source of SRH counseling services in order of preference were health care personnel, mothers, friends, and teachers. These findings are like what was obtained in Zambia [20] and in the Southwest region of Cameroon [5]**,** but contrary to the results of Sevidzem and collaborators who noticed that youths preferred to learn about sexual and reproductive health from their mothers and least from health personnel [16]. Yet in another study in Gambia, the preferred source was found to be friends [21].

Variables that were statistically associated with SRH knowledge were age group and residential setting. The odds of SRH knowledge among participants within the 20-24 years age group was 2.5 (AOR=2.52, 95%CI:1.54-4.12) times higher than those of their counterparts within 15-19 years age group (P-value = <0.01). Similar findings were obtained in a study carried out among youths in secondary schools [5]. Compared to participants living in rural areas, there was strong statistically significant evidence that those in semi-urban areas had lesser chances (AOR 0.82, 95%CI:0.43-1.56) of having SRH knowledge and this chance was even lesser among those in urban areas (AOR 0.4, 0.23-0.64) (P-value <0.01). Uptake of SRH services was statistically associated with sex, residential setting, current educational status and SRH knowledge. Compared to females, males were less likely (AOR=0.47, 95%CI:0.25-0.9) to use SRH services (P-value = 0.01). Compared to participants in rural settings, those in urban settings were less likely (AOR=0.50, 95% CI;0.22-0.30) to use SRH services (P-value=0.03). Participants who were currently not schooling were less likely (AOR=0.55, 95% CI:0.32-0.94) to use SRH services compared to those who were schooling (P-value=0.03). In Ethiopia, it was similarly noticed that the odds of SRH services was higher among students [2]. The odds of SRH service uptake among participants with good SRH knowledge was more than 4 (AOR=4.56, 95%CI:0.05-8.4) times higher than those in participants with poor SRH knowledge (P-value <0.01).

Conclusion and Recommendation

Overall, SRH knowledge was estimated at 78% and its uptake at 58%. Increased age positively predicted SRH knowledge while urban residence was negatively associated with SRH knowledge. Being a male, living in urban residence and not schooling was negatively associated with SRH service uptake while good SRH knowledge positively predicted uptake.

The suboptimal level of knowledge, consistent with low service uptake suggests the need for more sensitization and education on SHR services which is key to influencing uptake of these services and consequently reducing unintended pregnancies and HIV/STIs transmission.

Ethical Considerations/Approval

Prior to interview, a written informed consent was gotten from participants ≥18 years and written assent plus guardian consent was obtained for those below 18 years. For confidentiality reasons, the questionnaires were coded and did not carry any clients-identifying information. The study received approval from the Institutional Review Board of the Cameroon Baptist Convention Health Services (approval number IRB2021-77). An administrative authorisation was obtained from the Regional Delegation of Public Health, Northwest Region, and other relevant authorities.

Conflict of Interest

The authors declare no conflicts of interest.

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