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Research Article

Reproductive Health Knowledge and Services Utilization among Rural Adolescents in Rwamagana District, Rwanda

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Abstract

This study aims to assess reproductive health knowledge and services utilization among adolescents from Rwamagana District. A community based cross-sectional study was carried out in Rwamagana district. A sample of 392 adolescents aged 15-19 participated in the study. Simple random sampling was used to select respondents. Data was collected by using a questionnaire adopted from previous studies. Data was checked for completeness, cleaned, coded and entered into Excel sheet, and then exported to SPSS version 22.0 for further analysis. Frequencies and percentage was used to summarize descriptive statistics. To determine the association between different factors associated with reproductive health knowledge and services utilization, a logistic regression model was employed. Ethical clearance was obtained from the Ethical committee of Mount Kenya University. It was observed that the majority of adolescents in Rwamagana District knew the sign of maturity. Overall the majority of adolescents 91.8% in Rwamagana District had good knowledge about reproductive health services. The majority of adolescents in Rwamagana District (66.8%) had ever utilized reproductive health services at a health facility. It was observed that adolescents who live with their parents were more likely to use reproductive health services compared to those who do not live with parents (aOR=2.161, 95%CI: 1.162-4.021, p=0.015). Moderate reproductive health services utilization was observed among adolescents. There is a need to increase adolescent's awareness on the available services at health facilities.

Keywords:
Adolescents; Knowledge; reproductive health; health services; Rwamagana District

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Introduction

According to World Health Organization (WHO), adolescents are people between 10 and 19 years of age. Today there are 1.2 billion adolescents worldwide with nearly 90% of them living in developing countries. Adolescence is characterized by significant physiological, psychological and social changes that put adolescents for high risk sexual and reproductive health (SRH) problems. This has partially been because adolescents were considered to be relatively healthy, without a heavy "burden of disease" [1], [2].

Adolescents are not quite capable of understanding complex concepts, or the relationship between behaviors and consequences, or the extent of control they have or can have over health decision making including that related to sexual and reproductive behavior. This makes them vulnerable to sexual exploitation and high-risk sexual behaviors and reproductive health problems [2,3].

Previous studies demonstrated that the age at marriage for adolescents living in rural areas is quite low compared to their counterparts in urban area. For girls these situations predispose them to teenage pregnancy that may have more immediate effect on their life than any other problem. The changing moral & social values and shift in the standard of societal behavior from conservatism to liberal interaction between both sexes is attributed largely to exposure to the media especially television and movies. Adolescents find themselves sandwiched between a glamorous western influence and a stern conservatism at home, which strictly forbids discussion on sex. This dichotomy aggravates the confusion among adolescents have led to increase in premarital sexual activity, pregnancy among unmarried girls apart from the increasing incidence of abortion & STDs.

Early and unprotected sexual activity and misconceptions about HIV/AIDs are prevalent among rural adolescents[4]. It was previously reported that adolescent knowledge about sexual reproductive health affects the reproductive health services utilization[5]. The World Health Organization (WHO) estimates that in Africa, 60% of all new HIV-infections occur in adolescents who are 15-19 years old. In developing countries, there are about 12.8 million births by adolescents aged between 15-19 years, and a large proportion of these pregnancies are unplanned [6].

Adolescent's sexual and reproductive health knowledge includes knowledge about the female menstrual cycle and conception, ways to avoid pregnancy, methods of contraception, correct use of condoms and oral contraceptives, sexually transmitted infections and HIV, means of STIs transmission, ways to avoid STIs and symptoms of STIs. Those are the indicators that are used to measure knowledge about SRH [1].

A study conducted in Nigeria found that about half (51.0%) of the respondents had ever used SRH services. The same study showed less than 50% of adolescents were knowledgeable about STIs while

52.9% were knowledgeable about how to avoid unwanted pregnancy. Factors related to adolescent sexual and reproductive health knowledge were being male, having regular cell phone and access to internet [7].

One of the major causes of the high prevalence of STIs among the adolescent is poor utilization of sexual reproductive health services as well as poor knowledge. In developing countries, 20,000 girls of between 15 and 19 give birth every day. One-third of these girls are married before 18 years old. Most of them are poor, less educated and living in rural areas [2].

Data from Rwanda's Ministry of Health indicate that adolescents and young adults comprise the majority of Rwanda's population. For instance, young adolescents (10-14 years) make up about 17.1%, old adolescents (15-19 years) about 12.4% and young adults comprise 10.7% of the total population while another third of the population (32.1%) is under 10 years. The report showed that adolescents remain a neglected group. In the country's health care model this group is neglected because they are considered comparatively healthy with a low disease burden. Yet the choices adolescents make today affect their health and the health of their families in future, especially the choices related to family planning and STDs. It was reported that Rwandan adolescents lack the ability to negotiate safer sex or to seek the health of family planning services [8].

Due to the lack of knowledge and poor utilization of reproductive health services the number of unwanted pregnancies and STDs has been increasing in Rwanda. The number of teenage pregnancies in various parts of the country shows how government and parents need to put in more efforts to contain the issue which leads many young girls to drop out of school. For example, in 2016 some 17,000 young girls most of them under 18 years got pregnant [9].

Teenage pregnancy has been described as a major challenge to Rwanda whose numbers are increasing, especially in the rural areas. Poor rural girls with limited or no access to sexual reproductive health services are at higher risk of becoming pregnant or falling victim to sexually transmitted diseases. On the other hand, a report from UNICEF showed that young people in Rwanda remain at risk of contracting HIV virus. This is because a large number of young people in Rwanda, are unaware of the risks associated with HIV and particularly how to prevent against HIV. The same report showed that only 49% of males and 43% of females understand how to use condoms [10].

Knowledge and the utilization of reproductive health services are the important components in preventing adolescents from different sexual and reproductive health problems. Limited studies on adolescent knowledge and reproductive services utilization have been conducted in Rwanda. These studies were carried out mainly in urban areas among the general population. Therefore assessing factors affecting reproductive health services utilization within adolescent are very important to improve adolescent reproductive health services utilization and thereby reduce the burden of adolescent disease and disabilities associated with reproductive health.

Methods

Research Design

A community cross-sectional study with quantitative approach was carried out in Rwamagana district. A cross-sectional research design was chosen because this helps the researcher to collect quick information and make analysis that respondent to study objectives.

Study Area

The present study was conducted in Rwamagana district. The district have 14 sectors including Fumbwe, Gahengeli, Gishali, Karehe, Kigabiro, Muhazi, Munyaga, Munyiginya, Musha, Muyumbu, Mwulire, Nyakaliro, Nzige, Rubona. Ten of these sectors do not have urban area. This study was carried out among adolescent from pure rural sectors.

The least populated district in eastern province is Rwamagana with about 313 thousand inhabitants. However, the district is ranked number one with high population density (460 inhabitants/km^2). Rwamagana district population is predominantly rural. 91.4% of the resident population (313,461inhabitants) lives in rural areas whereas only 8.6% lives in urban areas. Kigabiro is the most urbanized sector of

Rwamagana district with 55% of its population residing in urban areas. It is followed by Karenge (22.2%) and Gishari (7.7%).

Target Population

This study was conducted in rural sectors of Rwamagana District. According to fourth population and housing census, the population of Rwamagana is mostly young where 65 % of the resident population of Rwamagana is under 25 years old. Adolescents aged 15-19 years are 31852; of them 20890 are from rural sectors, therefore, this was considered as target population in the present study.

Sample Design

Sample Size Estimation

Based on the target population, a sample size was estimated by using Yamanee formula.

$n = \frac{N}{1+(e)^2 N}$ Where n is desired sample, N target population, e is the marginal error (5%)

$$n\frac{20890}{1+(0.05)^2 20890} = 392$$

Therefore, a sample size of this study was 392 adolescents aged 15-19 years.

Sampling Technique

Due to the nature of the study, the study was conducted in rural sectors as the aim of the study is to assess the reproductive health knowledge and services utilization among adolescents from rural areas of Rwamagana District. Table below shows the number of adolescents that were selected in each sector. Proportion to sample was used to estimate the respondents from each sector Table 1.

A total of 392 eligible adolescents were recruited using simple random sampling. All adolescents from the selected sectors had an equal chance to be selected. A household with an adolescent aged 15-19 will be used as a sample frame, in case that a household had two or more adolescents, one was selected randomly. Eligibility criteria include: (1) residence of selected sector for at least one year, (2) being in a selected sector during data collection period (3) received a consent form from parents or caretaker (4)

Table 1. Sample size from each selected sector

Sectors	Total Number of adolescents aged 15-19	Sample size
Fumbwe	2325	44
Gahengeri	2365	44
Munyaga	1623	31
Munyiginya	1670	31
Musha	1997	37
Muyumbu	2482	47
Mwulire	2205	41
Nyakaliro	2073	39
Nzige	1740	33
Rubona	2410	45
Total	**20890**	**392**

able to communicate with the researcher. All respondents who do not meet the above mentioned criteria were excluded from the study.

Data Collection Instruments

Data was collected by using a questionnaire. Pre-tested structured questionnaires were prepared by reviewing previous studies on the problem of interest [3], [7]. The questionnaire explores the demographic, social and economic characteristics; knowledge of RH-related topics (fertility, contraception, STIs/HIV/AIDS, HIV counseling and testing (HCT)) and patterns of RH services utilization.

Data was collected by the researcher and trained research assistants. Research assistants were recruited and trained on the study objective, questionnaire content and how to ensure privacy and confidentiality. The collected data was checked for incompleteness and inconsistency and cleaned by the researcher. One research assistant collects data in two sectors. In a household with more than one adolescent aged 15-19 years, only one was selected as a potential respondent. All questionnaires and entered data will be kept secure by the researcher. Access is restricted. Names and addresses of participants were not required in the study.

Data Analysis

Data was checked for completeness, cleaned, coded and entered into Excel sheet, and then exported to SPSS version 22.0 for further analysis. Frequencies and percentage were used to summarize descriptive statistics. Percentages were used to assess the level of RH knowledge and services utilization among rural adolescents. A total of 19 questions were used to assess knowledge of adolescents about reproductive health services. The right answer was scored 1 and a wrong answer was scored 0, total scores were 19. The respondents were classified as good knowledge with scores >10 equivalent to 53% and lower knowledge with scores of 9 and less. Data were presented using tables and graphs accordingly. To determine the association between different factors associated with reproductive health knowledge and services utilization, a logistic regression model was employed. First, each variable was entered into a binary logistic regression model. Second, variables which showed significant at p-value of 0.05 were fitted into a multiple logistic regression model to assess the relationship between reproductive health knowledge and services utilization. Variables that remained significant at p-value of 0.05 in the final multivariate logistic regression model were identified as independent factors associated with reproductive health knowledge and services utilization among adolescents in rural areas of Rwamagana District.

Ethical Consideration

Ethical clearance was obtained from the Ethical committee of Mount Kenya University. Permission was obtained from Rwamagana District administration. The objective of the study was explained to the respondents. Respondents were free to decline or withdraw their participation in the study. Signed consent was obtained from the parents or caregiver for adolescents aged less than 18 years old. Data collection was conducted after verbal consent from the respondents.

Results

Socio-Demographic Characteristics of Respondents

A total of 392 adolescents aged 15-19 participated in the study. Participants were from 10 sectors of Rwamagana District including fumbwe, Munyaga, Gahengeri, Munyiginya, Musha, Muyumbu, Mwulire, Nyakaliro, Nzige and Rubona. Socio-demographic characteristics of adolescents from 10 Rwamagana Sectors are presented in table 2.

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Table 2. Socio-Demographic Characteristics of Adolescents

Variables	Frequency	Percentage
Gender		
Male	187	47.7
Female	205	52.3
Age Group		
15-17	198	50.5
18-19	194	49.5
Marital Status		
Single	367	93.6
Cohabiting	25	6.4
Religion		
Catholic	140	35.7
Muslim	118	30.1
Protestant	134	34.2
Occupation		
Student	125	31.9
Farmer	50	12.8
Merchant	112	28.6
Unemployed	59	15.1
Housewife	46	11.7
Education level		
No formal education	106	27.0
Primary	84	21.5
Secondary	202	51.6
Current Schooling		
In School	232	59.2
Out of school	160	40.8
Age of mother		
30-39	88	22.4
40-49	212	54.1
50-59	76	19.4

Table 2 (continued)

Variables	Frequency	Percentage
60+	16	4.1
Mother Education		
No formal education	182	46.4
Primary	141	36.0
Secondary	39	9.9
Tertiary	30	7.7
Socio-Class		
Category 1	43	11.0
Category 2	188	48.0
Category 3	161	41.0
Living status		
With parents	202	51.5
With no parents	190	48.5
Living with		
Mother only	162	41.3
Family member	3	0.8
Other (partners)	25	6.4

Socio-demographic characteristics of adolescents from Rwamagana District presented in table 2 shows that 205(52.3%) of them were female, half of them 198(50.5) were aged 15-17 years old. Of 392 adolescents 367(93.6%) were single, 140(35.7%) were affiliated to catholic religion, 125(31.9%) were students, 202(51.6%) completed secondary school while 232(59.2%) were currently at school.

Regarding the socio-demographic of their family, the majority 54.1% had mothers aged 40-49 years old, nearly a half 182(46.4%) reported that their mother had no formal education, 188(48.0%) were in ubudehe category 2, 202(51.5%) reported that they live with their parents, of those who do not live the parent 162(41.3%) were living with their mothers only.

Reproductive Health Knowledge among Adolescents in Rwamagana District

Individual knowledge about reproductive health aspects was assessed by 18 questions. Overall knowledge was also estimated.

Findings presented in table 3 show that the majority of adolescents 180(54.1%) never heard that reproductive health services are offered at health center. Regarding individual knowledge on the reproductive health aspects a total of 166(42.3%) reported that a girl could become pregnant at the first sexual intercourse, 225(57.4%) agreed that a girl could become pregnant during puberty, 254(64.8%) agreed that a girl could become pregnant after puberty.

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Table 3. Reproductive health knowledge among the adolescents in rural area of Rwamagana District

Variables	Frequency	Percentage
Ever heard that reproductive health services are offered at health center		
Yes	212	45.9
No	180	54.1
A girl could become pregnant at first sexual intercourse		
Yes	166	42.3
No	226	57.7
A girl could become pregnant during puberty		
Yes	225	57.4
No	167	42.6
A girl could become pregnant after puberty		
Yes	254	64.8
No	138	35.2
Males could be physically mature to get a girl pregnant		
Yes	254	64.8
No	138	35.2
Males get a girl pregnant during puberty		
Yes	288	73.5
No	104	26.5
Breast development for a girl is a sign of maturity		
Yes	339	86.5
No	53	13.5
Appearance of pubic hair for both girls and boys is a sign of maturation		
Yes	301	76.8
No	91	23.2
Appearance of facial hair development for boys is a sign of maturation		
Yes	233	59.4
No	159	40.6
Appearance of menstruation for a girl is a sign of maturity	325	82.9
Male voice changes are a sign of maturity	295	75.3
Body shape changes for both girls and boys are a sign of maturity	278	70.9

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Table 3 (continued)

Variables	Frequency	Percentage
Increasing of testicular size, acne and body odor are the signs of maturity	312	79.6
Ways of preventing unwanted pregnancy		
Consistent and proper use of condom	368	93.9
use of oral contraceptive pills	300	76.5
use of Injectable contraceptives	347	88.5
use of long-lasting contraceptives	179	45.7
Aware about Sexually transmitted infections (STIs)	329	83.9
STIs Symptoms		
Pain during urination	137	34.9
Pain during sexual intercourse	316	80.6
Route of HIV transmission		
Unprotected sexual intercourse	371	94.6
HIV can be got during the first unprotected sexual experience	187	47.7
Transfusion of infected blood	191	48.7
Sharing sharps	325	82.9
During child birth	248	63.3
During breastfeeding	118	30.1
Prevention of HIV		
Sexual abstinence	386	98.5
Consistent and proper use of condom	392	100
Avoid transfusion with infected blood	300	76.5

Concerning the maturity of male to get a girl pregnant, 254(64.8%) reported that male could be physically mature to get a girl pregnant, 288(73.5%) reported that males get a girl pregnant during puberty. The majority of respondents 339(86.5) agreed that breast development for a girl is a sign of maturity, 301(76.8) said that appearance of public hair for both girls and boys is a sign of maturation, 233(59.4%) of respondents knew appearance of facial hair development for boys is a sign of maturity. It was observed that the majority of adolescents in Rwamagana District knew the sign of maturity where 82.9%, knew that appearance of menstruation for a girl as a sign of menstruation, 75.3% knew that male voice changes are a sign of maturity, 70.9% knew that body shape changes for both girls and boys are a sign of maturity and 79.6% knew that increase of testicular size, acne as sign of maturity.

In terms of knowledge about the ways of preventing unwanted pregnancy, the majority of respondents 93.9% knew that consistent and proper use of condom, 76.5% knew that use of oral contraceptive pills, 88.5% knew that use of injectable contraceptive should be used to prevent unwanted pregnancy.

Regarding the symptoms of STIs, only 34.9% knew that pain during urination can be STI symptoms, the majority 80.6% knew that pain during sexual intercourse is STI sign. For HIV transmission route, the majority 94.6% knew that HIV can be transmitted during unprotected sex, 82.9% knew that HIV can be transmitted through the sharing of sharps. Adolescents were aware about HIV prevention measures

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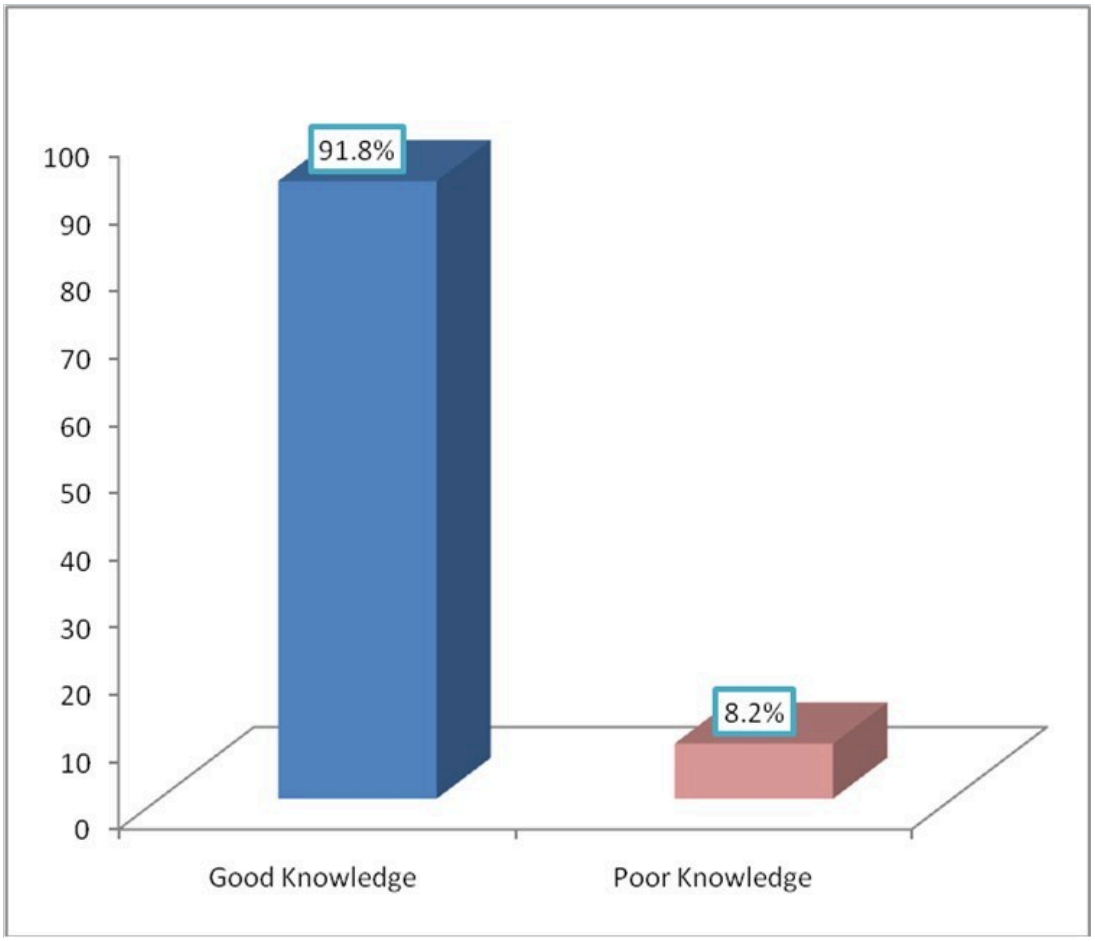

Figure 1. Overall Reproductive health Knowledge

where 386(98.5%) agreed that sexual abstinence during adolescence should prevent adolescents from getting HIV, all of the respondents knew that consistent and proper use of condom can prevent HIV.

The findings presented in figure 1 show that the majority of adolescents 91.8% had good knowledge about reproductive health.

Reproductive Health Services Utilized by Adolescent in Rural Area of Rwamagana District

The findings presented in table 4 indicated that the majority of adolescents 262(66.8%) had ever utilized reproductive health services at a health facility. A total of 217(55.5%) had visited reproductive health center in the last 6 months, of those who visited the center 131(60.4%) were tested for HIV and given counseling, 151(55.5%) received STI diagnosis while very few adolescents 8(2.0%) visited RHS to seek HIV treatment.

Adolescents also mentioned obstacles that limit them to seek for reproductive health service, a total of 332(84.7%) said that reproductive health services are not necessary to them. Lack of knowledge on the reproductive health services available for adolescents (61.5%) was mentioned as a barrier to service utilization, 303 (77.7%) said that adolescents look healthy, therefore no need of seeking service. The majority 213(54.3%) of adolescents had discussed with parents about reproductive health topics. The reasons for not discussing reproductive health topics with the parents were mentioned where the majority 158(88.3%) reported that they fear to discuss reproductive health topics with the parents. Cultural restriction (38.4%) was also reported as a barrier to discussing reproductive health topics with parents. The majority of adolescents 141(78.8%) reported that parents do not give them time to discuss reproductive health topics, parents are always busy and some parents lack knowledge about reproductive health.

Table 4. Reproductive health services utilization

Variables	Frequency	Percentage
Ever utilize reproductive health services		
Yes	262	66.8
No	130	33.2
Visit of RHS center in the last 6 months		
Yes	217	55.5
No	175	55.5
Reasons for visit RHS center		
HIV testing and counseling	131	60.4
HIV treatment	11	5.1
STI diagnosis	151	55.5
STI treatment	8	2
Obstacle to adolescent reproductive health services utilization		
Never thought of the services	44	11.2
Services not necessary	332	84.7
Lack of knowledge on the services	241	61.5
Young people are healthy	303	77.7
Ever discuss with parents about reproductive health topics		
Yes	213	54.3
No	179	45.5
Reasons for not discussing reproductive health topics with parents (179)		
Not necessary	111	62
Fear of parents	158	88.3
Cultural restriction	151	38.4
Other reasons(parents not give us time, parents are busy, parents lack knowledge about the services)	141	78.8
Distance to nearby RH service delivery		
0-1 km	113	28.8
2-4 km	195	49.7
>5km	84	21.4
Walking time to reach RH service delivery		
30 min	187	47.7
One hour	121	30.9
Two hours	62	15.8
>2hours	22	5.6

Nearly a half 195(49.7%) of adolescents live at 2-4 km from the nearby reproductive health service delivery, 21.4% live at more than 5 km from health facility with adolescent reproductive health services. In terms of walking to health center, 47.7% used 30min to reach nearest health center, 5.6% used more than 2 hours Table 5.

Table 5. Bivariate analysis of the factors associated with reproductive health services utilization

Variables	Use of reproductive health services in the last 6 months		P-value
	Yes n(%)	No n(%)	
Gender			0.758
Male	102(47.0)	85(48.6)	
Female	115(53.0)	90(51.4)	
Age Group			0.744
15-17	108(49.8)	90(51.4)	
18-19	109(50.2)	85(48.6)	
Marital Status			0.727
Single	204(94.0)	163(93.1)	
Cohabiting	13(6.0)	12(6.9)	
Religion			**0.009**
Catholic	63(29.0)	77(44.0)	
Muslim	71(32.7)	47(26.9)	
Protestant	83(38.2)	51(29.1)	
Occupation			**0.015**
Student	61(28.1)	64(28.1)	
Farmer	31(14.3)	19(10.9)	
Merchant	75(34.6)	37(21.1)	
Unemployed	30(13.8)	29(16.6)	
Housewife	20(9.2)	26(14.9)	
Education level			**<0.001**
No formal education	63(29.0)	43(24.6)	
Primary	60(27.6)	24(13.7)	
Secondary	94(43.3)	108(61.7)	
Current Schooling			0.051
In School	119(54.8)	113(64.6)	
Out of school	98(45.2)	62(35.4)	
Age of mother			**<0.001**
30-39	60(27.6)	28(16.0)	
40-49	100(46.1)	112(64.0)	
50-59	51(23.5)	25(14.3)	

Table 5 (continued)

Variables	Use of reproductive health services in the last 6 months		P-value
	Yes n(%)	No n(%)	
60+	6(2.8)	10(5.7)	
Mother Education			0.204
No formal education	93(42.9)	89(50.9)	
Primary	87(40.1)	54(30.9)	
Secondary	19(8.8)	20(11.4)	
Tertiary	18(8.3)	12(6.9)	
Socio-Class			0.084
Category 1	19(8.8)	24(13.7)	
Category 2	114(52.5)	74(42.3)	
Category 3	84(38.5)	77(44.0)	
Living status			**0.039**
With parents	122(56.2)	80(45.7)	
With no parents	95(43.8)	95(54.3)	
Distance from/to nearby RH service delivery			**0.04**
0-1 km	70(32.3)	43(24.6)	
2-4 km	110(50.7)	85(48.6)	
>5km	37(17.1)	47(26.9)	
Time			
Discussion with parents about reproductive health services			0.67
Yes	120(55.3)	93(53.1)	
No	97(44.7)	82(46.9)	

Factors Associated with Reproductive Health Services Utilization among Adolescents in Rwamagana District

In bivariate analysis religion (p=0.009), occupation (p=0.015), education level (p<0.001), age of mother (p<0.001), living status (p=0.039), and distance from/too nearby RH service delivery (p=0.040) were associated with use of reproductive health services in the last 6 months. Females (53.0%) were more likely to use reproductive health services than males, a half of respondents 50.2% who used reproductive health services in the last 6 months were aged 18-19 years old. Most of adolescent who used reproductive health services in the last 6 months were Protestants, currently in schools and live with their parents.

Variables with significant association in bivariate analysis (p-value less than 0.05) were taken to multivariate analysis.

The findings presented in table 6 show the factors associated with reproductive health utilization among adolescents in Rwamagana District. The findings from multivariate analysis showed that adolescents who are affiliated to catholic church were less likely to use reproductive health services compared to protestant (aOR=0.447, 95%CI: 0.256-0.780, p=0.005). It was observed that adolescents who live with their parents were more likely to use reproductive health services compared to those who do not live with parents (aOR=2.161, 95%CI: 1.162-4.021, p=0.015).

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Table 6. Multivariate analysis of the factors associated with reproductive health services utilization

	aOR	95%CI	P-value
Religion			
Catholic	0.447	0.256-0.780	**0.005**
Muslim	0.822	0.474-1.424	0.485
Protestant	Ref.		
Occupation			
Student	1.072	0.422-2.721	0.884
Farmer	0.581	0.126-2.673	0.486
Merchant	1.102	0.418-2.907	0.845
Unemployed	0.968	0.394-2.375	0.943
Housewife	Ref.		
Education level			
No formal education	2.551	0.842-7.724	0.098
Primary	4.387	0.911-21.119	0.065
Secondary	Ref.		
Age of mother			
30-39	2.420	0.693-8.455	0.166
40-49	1.807	0.503-6.483	0.364
50-59	2.170	0.565-8.329	0.259
60+	Ref.		
Living status			
With parents	2.161	1.162-4.021	**0.015**
With no parents	Ref.		
Distance from/to nearby RH service delivery			
0-1 km	1.542	0.846-2.810	0.158
2-4 km	1.454	0.747-2.832	0.271
>5km	Ref.		

Despite no significant association observed, adolescents with no formal education were two times more likely to utilize reproductive health services compared to those with secondary education. Similarly, adolescents with mothers aged 30-39 years were more likely to use reproductive health services. Adolescents who live nearest health facility were 1.5 more likely to use reproductive health services but no significant association observed.

Discussion

Adolescent's reproductive health knowledge is affected by different controversies including says that adolescents are not ready for sensitive sexual information, comprehensive sexual education promotes early sex, reproductive health education makes young people promiscuous, reproductive health education does not fit with our culture or religion, adolescent should not use contraceptive methods and adolescent should abstain from sex until marriage [11]. Access and use of reproductive health services by adolescents, adolescents' level of knowledge in RH is paramount. Increasing adolescent's awareness about SRH and advocating for them is crucial to the adolescent's reproductive health effort. Hence, this study assesses the SHR knowledge and services utilization among adolescents in Rwamagana District.

The study found that more than a half of respondents 54.1% were not aware that reproductive health services are offered at health center. A total of 64.8% knew that a girl could become pregnant after puberty, 73.5% knew that a male could get a girl pregnant during puberty. Adolescents in this study were knowledgeable about the signs of maturity for both girls and boys where 86.5% knew that breast development for a girl is a sign of maturity, 76.8% knew that appearance of pubic hair for both girls and boys is a sign of maturity, and appearance of menstruation for a girl is a sign of maturity. These findings are consistent with a study conducted in Ethiopia where 53.5% of the adolescents who participated in the study responded that a girl could get pregnant the first time she had sex and the age at which it could occur was mentioned as during puberty. The same study reported that the male counterpart could be mature of physically made a girl pregnant during puberty [3].

In contrast, a study conducted in China reported that the majority of adolescents had lower knowledge about fertility issues. The results from the Chinese study revealed that unmarried migrants demonstrated low levels of RH knowledge on pregnancy fertilization (29.4%) and contraception (9.1%). Female participants showed more knowledge about pregnancy, contraception and STDs, but with less knowledge on family planning policy than the male participants. Participants aged 15-19 years old had the least knowledge on pregnancy and family planning policy [12].

Regarding the reproductive health utilization, this study found that the majority of adolescents 66.8% have ever utilized reproductive health services, 55.5% responded that they visited reproductive health center in the last 6 months prior to the survey. This study showed that there is a significantly higher RH services utilization rate among rural adolescents when it is compared with the study undertaken in Jimma where 41.1% ever experienced the services [13] even though the latter finding is not more comparable as it was undertaken in urban setting.

In bivariate analysis religion, occupation, education level, age of mother and living status were associated with use of reproductive health services ($P<0.005$). This finding are consistent with that conducted in Ethiopia where in bivariate analysis, the factors found to be significantly associated with reproductive health service utilization were education level and living status. In contrast, the same study found that adolescents' age, marital status ; mothers' educational status; poor family communication habit on SRH issues; family monthly income; history of sexual intercourse; poor discussion on SRH matters with sexual partner, peers, and health workers; perception of risk towards HIV/AIDS were associated with reproductive health services utilization [13]. The inconsistence may be because that Ethiopian study was conducted only among female aged 15-24 while this study was conducted among both male and female aged 15-19 years old.

It was observed that adolescents who live with their parents were more likely to use reproductive health services compared to those who do not live with parents (aOR=2.161, 95%CI: 1.162-4.021, p=0.015). In contrast, a study conducted in Ethiopia found that factors such as age of 16–20 years (AOR = 1.85, 95%CI: 1.17–2.92), mother's educational status (being illiterate (AOR = .33, 95%CI:. 14–.77)), discussion about reproductive health services with their family (AOR = 8.02, 9%CI:5.52–11.66), being Merchant (AOR = 2.7995%CI:1.11–6.96), unemployed (AOR = 2.90, 95%CI:1.19–7.06) or student (AOR:2.38, 95%CI:1. 04–5.42) in occupation, high perceived severity (AOR = 4.05, 95%CI:2.68–6.11), high perceived barriers (AOR = .44, 95%CI:.30–64) were independent predictors of reproductive health services utilization among female adolescents in the study area [14]. The difference may be due to the methodology mainly sample size where 844 females participated in the study while in this study 392 adolescents from one district were included in the study.

Conclusion

Majority of the adolescents demonstrated higher knowledge about reproductive health services in the study area. Moderate reproductive health services utilization by adolescents in Rwamagana District was observed. This study indicates that less than 60% of adolescents have visited reproductive health center in the last 6 months despite the availability of the services in the study area. The findings from multivariate analysis showed that adolescents who are affiliated to Catholic Church were less likely to use reproductive health services compared to protestant. It was observed that adolescents who live with their parents were more likely to use reproductive health services compared to those who do not live with parents. Parents need to increase the time they spend with their adolescents at home, and improve the discussion on the issues related to reproductive health. Adolescents are encouraged to visit health centers and youth centers in order to know the services that are available for them at those centers.

Competing Interests

The authors have declared that no competing interests exist.

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