Original Article

Factors Influencing Contraceptive Use Among Young Girls in Nyarugenge District, Rwanda

Authors: Rosine Uwizera[1*], Charles Nsanzabera[1,2]

Affiliation : [1] Department of Public Health, Mount Kenya University, Rwanda

[2]African institute of Research for Public Health and Development, Burundi, Rwanda

***Correspondence to email: Email: nkusirosine@gmail.com**

Abstract

Background: Globally, in 2017, around 20 million of the 37 million young girls who were either active sexually or married and wanted to prevent pregnancy in the upcoming years were not using modern contraceptive methods, despite needing them. In Rwanda, contraceptive use among young girls in Nyarugenge District remains an important health problem. The RDHS 2020 revealed that 5% of adolescent girls in the country have already begun childbearing, a trend that is reflective of the situation in Nyarugenge. This early childbearing is largely attributed to insufficient use of contraceptive methods, negative attitudes and poor knowledge among young girls in the district.

Objective: This study aims to determine the factors influencing the use of contraceptive among young girls aged 15 to 19 year attending health centers in Nyarugenge District, Rwanda. Recommendations arising from this research aim to inform policymakers on the implementation of context-based preventive measures to promote contraceptive use in young girls.

Methods: A quantitative method and a cross-sectional design were employed in the study. It targeted adolescent girls attending health centers of Nyarugenge District, with a sample of 255 participants determined using the Cochran formula. Stratified random sampling was utilized to choose participants from health facilities and simple random for each health center participant selection, and data was gathered through a structured questionnaire. The data analysis was performed with SPSS and the findings were displayed in figures and tables. Univariate analysis for descriptive process was carried out and bivariate, and multivariate techniques such as chi-square tests and logistic regression, were employed. The researchers set the confidence interval at 95% and determined significance at $p < 0.05$. Ethical concerns were strictly observed throughout all stages of the study.

Results: The study's findings revealed the prevalence of contraceptive use among young girls attending health centers in Nyarugenge District, Rwanda, where 47.3% of respondents reported currently using contraceptives, while 52.7% stated that they do not use any form of contraception. The multivariate analysis revealed that wealth

level plays a role in contraceptive use. Compared to young girls in the lowest wealth category (Level 1), those in Level 3 had more chances to be using contraceptives (AOR = 4.836, 95% CI: 1.682-13.905, p = 0.003). Media sources played a critical role in contraceptive uptake: Young girls who obtained contraceptive information from TV were over three times more likely to use contraceptives (AOR = 3.322, 95% CI: 1.504-7.337, p = 0.003). Young girls who had knowledge about contraceptives were 4.272 times more likely to use them compared to those without knowledge (AOR = 4.272, 95% CI: 1.972-9.254, p < 0.001). Perception was the most significant factor. Girls with a good perception of contraceptives were nearly 19 times more likely to use them than those with a poor perception (AOR = 18.964, 95% CI: 5.250-30.887, p < 0.001). Young girls with two or more sexual partners were nearly four times more likely to use contraceptives compared to those with only one partner (AOR = 3.939, 95% CI: 1.897-8.179, p < 0.001). Smoking was significantly associated with contraceptive use. Young girls who regularly smoked were 2.768 times more likely to use contraceptives compared to non-smokers (AOR = 2.768, 95% CI: 1.190-6.424, p = 0.018).

Conclusion: In sum, the study's findings showed that nearly half of the young girls use contraceptives. In addition, economic status, knowledge, positive perception, media exposure, number of sexual partners, and smoking behavior were the strongest predictors of contraceptive use.

Keywords: Factors, Contraceptive use, Young girls, Nyarugenge District, Rwanda

Introduction

Globally, an estimated 20 million out of 37 million sexually active or married adolescent girls aged 15–19 were not using modern contraceptives in 2017, despite needing them (Darroch et al., 2018). The contraceptive prevalence among married or cohabiting girls aged 15–24 remains low at 24% (UNFPA, 2021). Projections suggest that meeting the unmet needs of this population could prevent 2 million unintended births, 4 million abortions, and 6 million unplanned pregnancies each year (Sully et al., 2020). Factors such as education, socio-economic background, and access to youth-friendly services strongly influence contraceptive uptake. Girls with more education tend to use contraceptives more due to better reproductive health knowledge (UNFPA, 2023), while economic status affects access to services (Guttmacher Institute, 2023).

Cultural stigma and religious norms often discourage unmarried girls from using contraceptives, and legal barriers further limit access in many settings (Plan International, 2023; UNFPA, 2023). In sub-Saharan Africa, usage remains below the global average, with about 18% prevalence among adolescents (African Union, 2023). Countries like South Africa and Kenya show relatively higher rates than others such as Niger and Chad, where access barriers and misconceptions persist (MSI, 2023). In Benin, only 8.5% of young women aged 15–24 reported using modern contraceptives (Ahissou et al., 2022), and in many rural areas, cost and availability remain key challenges (UNICEF, 2023). Nevertheless, efforts such as Kenya's youth-friendly services and DRC's reported 16.5% usage among young women (Ministry of Health Kenya, 2023; Casey et al., 2020) indicate growing awareness and institutional support.

In Rwanda, public health initiatives have prioritized contraceptive access among youth, especially in urban districts like Nyarugenge. According to the 2020 RDHS, 23% of girls aged 15–19 used modern contraceptives (NISR, 2020). However, barriers such as limited knowledge, cultural beliefs, and inadequate service accessibility remain widespread (Save the Children, 2023). In Nyarugenge District, early childbearing continues to be a concern, with 5% of girls aged 15–19 already having begun childbearing largely due to poor contraceptive uptake and misinformation (Hakizimana, 2021). Challenges in accessing reproductive health services persist, increasing the vulnerability of young girls to unplanned pregnancies and their consequences. Despite existing efforts, contraceptive use among young girls remains low in Nyarugenge. This study aims to identify key factors associated with the low uptake and to propose informed strategies that improve contraceptive access and usage, ultimately enhancing the reproductive health and well-being of young girls in the district.

Methods

Study design

The study was conducted under a cross-sectional design and a quantitative method to determine the factors influencing contraceptive use among young girls aged 10 to 24 year attending health centers in Nyarugenge District, Rwanda.

Study setting and population

The study population were made of 36,527 females aged between 10 to 24 years old in Nyarugenge District according to fifth Rwanda Population and Housing Census (RPHC5, 2022). The RPHC5 findings helped to ensure sampling frame with proportionate to size sampling in the study area. The study was carried in 8 health centers of Nyarugenge District. Those health centers are: Mwendo HC, Rwampara HC, Kabusunzu HC, Rugarama HC, Butamwa HC, Nyaruyenzi HC, MuhimaHC and Kanyinya HC (Nyarugenge District hospital, 2024).

Study sample size and sampling

Cochran sample size formula was applied to calculate the appropriate sample size (Creswell, 2018). Using the p of 17.4% (Kawuki et al., 2022). After the correction by adding non-response rate of 15%, the sample size was 256 of study participants. Proportionate stratified random sampling was executed to selected study participants from 8 health centres of Nyarugenge district and a combination of simple random sampling was used to select participants with equal chance from each health centre.

Study instruments

In this study, data were collected using a structured questionnaire adapted from previous research on contraceptive use (Garcia et al., 2023). The questionnaire had six sections: Section A captured socio-demographic details and factors like experience, residence, wealth index, religion, and media exposure. Section B assessed participants' knowledge of contraceptive methods, including their use, effectiveness, and side effects. Section C explored attitudes and beliefs, while Section D focused on access to family planning services and types of contraceptives used (Garcia et al., 2023). Section E examined behavioral factors such as sexual activity and substance use. The questionnaire was translated into Kinyarwanda to aid in data collection.

Study validity and reliability

The Content validity index (CVI) was executed by the division of the number of relevant items by the total amount of items. Our study tools were deemed sufficiently validated if the CVI is greater than 0.81. A pilot study with

10% of the sample size was carried out at a health center outside the study area. The data collection instrument was deemed reliable with the Cronbach's α score of 0.72.

Statistical analysis

Data analysis followed the approach of Bosnjak et al. (2020) by Bosnjak et al. (2020), involves using analytical statistical techniques to draw relevant insights and conclusions. The collected data was processed promptly through steps such as coding, cleaning, and tabulating. SPSS software version 21 was utilized to manage the data effectively. Contraceptive use was assessed with a yes or no response, allowing the determination of its prevalence among young girls. Descriptive statistics were used for univariate analysis. For bivariate analysis, the test of chi-square and p-values analyzed the link between variables. Variables that were statistically significant with $p<0.05$ were taken for further multivariate analysis. Logistic regression was employed to analyze the association between variables and contraceptive use, while adjusting for the encountered confounding factors. As such, the level of significance was $p<0.05$ with a 95% confidence interval (CI).

Ethical considerations

Ethical approval for this study was granted by the Institutional Review Board at Mount Kenya University-Rwanda (Reference number: MKU/ETHICS/04/20/2025), with authorization also obtained from Nyarugenge District Hospital. Participation was voluntary, with informed consent obtained after explaining the study's purpose and procedures. To protect privacy, data were anonymized using unique codes, securely stored, and kept separate from consent forms, which were destroyed after data analysis. No participant names appeared on questionnaires or reports. Although there were no direct risks or benefits to participants, the findings aim to inform future policies that could benefit the broader community.

Study Findings

Table 1. Socio-demographic characteristics of the respondents

Variable	Frequency	Percentage
Age group		
15-17Y	6	2.3
18-19	42	16.4
20+ Y	208	81.2
Marital status		
Single	96	37.5
Married	79	30.9
Cohabitating	80	31.2
Divorced	1	0.4
Education Level		
Non-educated	25	9.8
Primary Education	73	28.5
Secondary education	106	41.4
University education	52	20.3
Occupation		
Student	44	17.2
Employee	85	33.2
Other	127	49.6

Residence		
Urban	255	99.6
Rural	1	0.4
District		
Nyarugenge	195	76.2
Kicukiro	32	12.5
Gasabo	29	11.3
Sector		
Gikondo	9	3.5
Gisozi	7	2.7
Gitega	41	16.0
kabeza	4	1.6
Kabusunzu	15	5.9
kanombe	3	1.2
Kanyinya	11	4.3
kigarama	10	3.9
kigali	17	6.6
Kimironko	12	4.7
Kimisagara	13	5.1
Mageragere	16	6.2
Muhima	18	7.0
Niboyi	4	1.6
Nyakabanda	3	1.2
Nyamirambo	23	9.0
Nyarugenge	32	12.5
Remera	9	3.5
Rwezamenyo	9	3.5
Wealth Index		
Level 1	24	9.4
Level 2	45	17.6
Level 3	187	73.0
Religion		
Catholic	101	39.5
Protestant	65	25.4
Adventist	38	14.8
Muslim	34	13.3
None	18	7.0
Head of household		
Yes	59	23.0
No	197	77.0
Health center		
Butamwa	23	9.0
Kabusunzu	27	10.5
Kanyinya	29	11.3
Muhima	23	9.0
Mwendo	57	22.3
Nyaruyenzi	21	8.2
Rugarama	51	19.9

Rwampara	25	9.8

Source: Primary Data, 2025

The data in Table 1 provides a detailed breakdown of the socio-demographic characteristics of the respondents in the study. A majority of the respondents (81.2%) were aged 20 years or older, followed by 16.4% in the 18-19 age group. A smaller portion, 2.3%, was in the 15-17 age group. In terms of marital status, a significant proportion of respondents were single, making up 37.5% of the sample. Those who were married constituted 30.9%, while 31.2% were cohabiting. A minimal percentage (0.4%) had divorced. The data also highlights the educational background of the respondents, with 41.4% having attained secondary education, 28.5% with primary education, and 20.3% having university education. Only 9.8% of the respondents had no formal education. The employment status of the respondents revealed that 33.2% were employed, while 17.2% were students. The remaining 49.6% fell under the "other" category, which likely includes various non-traditional occupations or those not currently working. A large majority of the respondents (99.6%) lived in urban areas, with only a small fraction (0.4%) residing in rural areas. Geographically, the respondents were mainly from Nyarugenge District (76.2%), followed by smaller groups from Kicukiro (12.5%) and Gasabo (11.3%). A more detailed look at the sectors shows a wide distribution, with Gitega (16.0%) and Muhima (7.0%) being the most represented sectors. Other sectors such as Gikondo, Gisozi, and Nyamirambo also contributed varying numbers of respondents. When it comes to wealth, most respondents (73.0%) belonged to level 3, the highest wealth category. Levels 1 and 2 accounted for 9.4% and 17.6%, respectively. Regarding religious affiliation, the largest group was Catholic (39.5%), followed by Protestant (25.4%), Adventist (14.8%), Muslim (13.3%), and 7.0% with no religion. Finally, when considering the household leadership, only 23.0% of respondents were the head of their household, while 77.0% were not.

Table 2. Source of contraception information

Variable	Frequency	Percentage
Contraception information from TV		
Yes	86	33.6
No	170	66.4
Contraception information from Radio		
Yes	108	42.2
No	148	57.8
Contraception information from Internet based social media (YouTube, etc)		
Yes	52	20.3
No	204	79.7
Contraception information from healthcare workers		
Yes	164	64.1
No	92	35.9
Contraception information from Community health workers		
Yes	79	30.9

No	177	69.1
Contraception information from interpersonal interaction		
Yes	53	20.7
No	203	79.3
Age of starting marriage if married		
20 Years	1	.4
21 Years	40	15.6
22 Years	27	10.5
23 Years	9	3.5
Not married	179	69.9

Source: Primary Data, 2025

The data presented in Table 2 showed that the majority of respondents (66.4%) reported not receiving contraception information from TV, while 33.6% indicated they had. Regarding radio as a source of information, 42.2% of respondents received information, while 57.8% did not. Only 20.3% reported receiving contraception information from internet-based social media platforms like YouTube, while 79.7% did not. Healthcare workers were the most common source, with 64.1% of respondents receiving information from them, and 35.9% did not. Community health workers were the source for 30.9% of respondents, while 69.1% did not receive information from them. Interpersonal interaction provided information to 20.7% of respondents, while 79.3% did not receive such information. The table also presents data on the age at which respondents started their marriages (if married). Among those who were married, 15.6% married at age 21, 10.5% at age 22, and 3.5% at age 23. A small proportion, 0.4%, married at age 20, while the majority (69.9%) were not married at all.

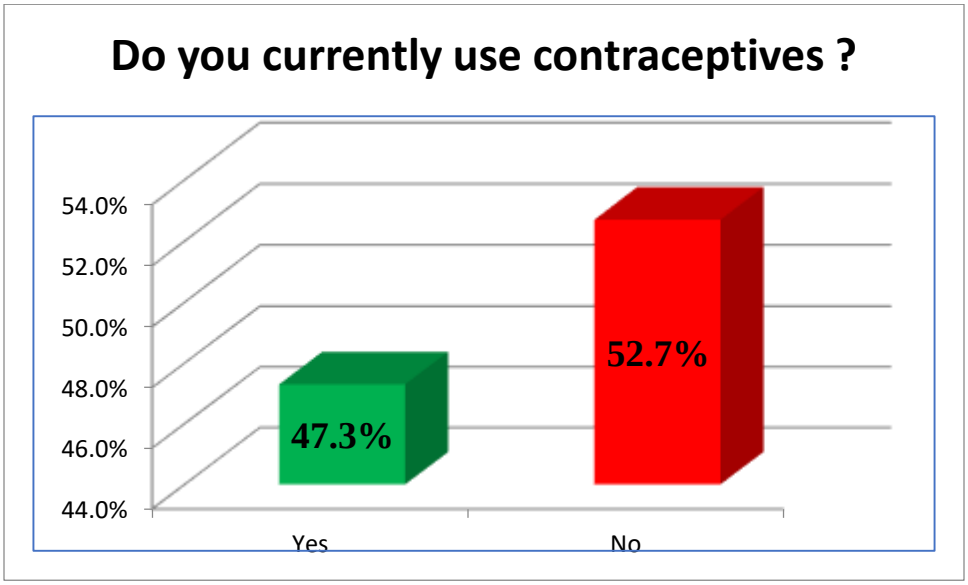

Figure 1. Prevalence of contraceptive use among young girls attending health centers of Nyarugenge District, Rwanda

The findings presented in Figure 1 show the prevalence of the use of contraceptive by young girls attending health centers in Nyarugenge District, Rwanda, where 47.3% of respondents reported currently using contraceptives, while 52.7% stated that they do not use any form of contraception.

Table 3. Type of contraceptive used

Variable	Frequency	Percentage
Which type of contraceptive do you currently use or have used?		
Condoms	62	24.2
Pills	97	37.9
Injections	61	23.8
IUDs	24	9.4
Emergency Contraceptive pill	10	3.9
other	2	0.8

Source: Primary Data, 2025

The majority of the participants reported using pills (37.9%) as their contraceptive method, followed by condoms (24.2%) and injections (23.8%). A smaller percentage of participants used IUDs (9.4%), emergency contraceptive pills (3.9%), and other methods (0.8%).

Table 4. Bivariate analysis of socio-demographic factors influencing contraceptive use among young girls attending health centers of Nyarugenge District, Rwanda.

Particulars	Do you currently use contraceptives?		Chi-square	P-value
	Yes n(%)	No n(%)		
Age group			4.623	0.099
15-17Y	5(2.0)	1(0.4)		
18-19	23(9.0)	19(7.4)		
20+ Y	93(36.3)	115(44.9)		
Marital status			5.788	0.122
Single	46(18.0)	50(19.5)		
Married	30(11.7)	49(19.1)		
Cohabitating	44(17.2)	36(14.1)		
Divorced	1(0.4)	0(0.0)		
Age of starting marriage if married			8.358	0.079
20	1(1.3)	0(0.0)		
21	15(19.5)	25(32.5)		
22	13(16.9)	14(18.2)		
23	0(0.0)	9(11.7)		
Education Level			5.255	0.262
Non-educated	8(3.1)	17(6.6)		
Primary Education	33(12.9)	40(15.6)		
Secondary education	57(22.3)	49(19.1)		
University education	23(9.0)	29(11.3)		

Occupation			9.057	0.011
Student	16(6.2)	28(10.9)		
Employee	33(12.9)	52(20.3)		
No occupation	72(28.1)	55(21.5)		
District			1.255	0.534
Nyarugenge	89(34.8)	106(41.4)		
Kicukiro	18(7.0)	14(5.5)		
Gasabo	14(5.5)	15(5.9)		
Health center			5.516	0.5
Butamwa	8(3.1)	15(5.9)		
Kabusunzu	15(5.9)	12(4.7)		
Kanyinya	15(5.9)	15(5.9)		
Muhima	12(4.7)	11(4.3)		
Mwendo	26(10.2)	31(12.1)		
Nyaruyenzi	8(3.1)	13(5.1)		
Rugarama	22(8.6)	29(11.3)		
Rwampara	15(5.9)	10(3.9)		
Wealth Index			6.869	0.032
Level 1	9(3.5)	15(5.9)		
Level 2	29(11.3)	16(6.2)		
Level 3	83(32.4)	104(40.6)		
Religion			4.789	0.310
Catholic	46(18.0)	55(21.5)		
Protestant	27(10.5)	38(14.8)		
Adventist	20(7.8)	18(7.0)		
Muslim	21(8.2)	13(5.1)		
None	7(2.7)	11(4.3)		
Head of household			0.315	0.575
Yes	26(10.2)	33(12.9)		
No	95(37.1)	102(39.8)		

Source: Primary Data, 2025

The bivariate analysis in Table 4 showed that occupation was linked to the use of contraceptive ($\chi^2 = 9.057$, $p = 0.011$). A higher percentage of contraceptive users were unemployed (28.1%) compared to employees (12.9%) and students (6.2%). Similarly, wealth index showed a significant association with contraceptive use ($\chi^2 = 6.869$, $p = 0.032$). The use of contraceptive was higher among girls in level 3 of the wealth index (32.4%) compared to those in level 2 (11.3%) and level 1 (3.5%). Other demographic factors like status, level of education, age group, district, sector, religion, and household headship did not show statistically significant associations with contraceptive use.

Table 5. Bivariate analysis of source of information factors influencing contraceptive use among young girls attending health centers of Nyarugenge District, Rwanda.

Particulars	**Do you currently use contraceptives?**		**Chi-square**	**P-value**
	Yes n(%)	**No n(%)**		

Contraception information from TV			12.523	0.001
Yes	54(21.1)	32(12.5)		
No	67(26.2)	103(40.2)		
Contraception information from Radio			14.367	0.001
Yes	66(25.8)	42(16.4)		
No	55(21.5)	93(36.3)		
Contraception information from Internet based social media (YouTube, etc)			0.241	0.623
Yes	23(9.0)	29(11.3)		
No	98(38.3)	106(41.4)		
Contraception information from healthcare workers			2.326	0.127
Yes	83(32.5)	81(31.8)		
No	37(14.5)	54(21.2)		
Contraception information from Community health workers			6.854	0.009
Yes	47(18.4)	32(12.5)		
No	74(28.9)	103(40.2)		
Contraception information from interpersonal interaction			0.105	0.745
Yes	24(9.4)	29(11.3)		
No	97(37.9)	106(41.4)		

Source: Primary Data, 2025

The bivariate analysis in Table 5 revealed that television as a source of contraception information was linked to the use of contraceptive ($\chi^2 = 12.523$, $p = 0.002$). A higher proportion of contraceptive users (21.1%) reported receiving contraception information from TV compared to non-users (12.5%). Radio as a source of contraception information also showed a significant association with contraceptive use ($\chi^2 = 14.367$, $p = 0.001$). Among contraceptive users, 25.8% obtained information from the radio, compared to 16.4% of non-users. Community health workers as a source of contraception information had a significant association with contraceptive use ($\chi^2 = 6.854$, $p = 0.009$). A higher percentage of contraceptive users (18.4%) received information from community health workers compared to non-users (12.5%).

Table 6. Bivariate analysis of knowledge factors influencing contraceptive use among young girls attending health centers of Nyarugenge District, Rwanda.

Particulars	**Do you currently use contraceptives?**		**Chi-square**	**P-value**
	Yes n(%)	**No n(%)**		
Could you enumerate three different types of contraceptives you are aware of?			12.770	0.001
Yes: Able to enumerate 3 different types of contraception	89(34.8)	70(27.3)		
No=Unable	32(12.5)	65(25.4)		

Source: Primary Data, 2025

The bivariate analysis in Table 6 indicates a significant association between knowledge of different types of contraceptives and contraceptive use among young girls in Nyarugenge District, Rwanda ($\chi^2 = 12.770$, $p = 0.001$). A higher proportion of contraceptive users (34.8%) were able to enumerate at least three different types of contraception compared to non-users (27.3%). Conversely, a notable percentage of non-users (25.4%) were unable to name three contraceptive methods, compared to only 12.5% of users.

Table 7. Bivariate analysis of factors of perception factors influencing contraceptive use among young girls attending health centers of Nyarugenge District, Rwanda.

Particulars	**Do you currently use contraceptives?**		**Chi-square**	**P-value**
	Yes n(%)	**No n(%)**		
Do you think that contraceptive use is for preventing unintended pregnancies?			3.200	0.362
Disagree	6(2.3)	2(0.8)		
Neutral	19(7.4)	25(9.8)		
Agree	27(10.5)	26(10.2)		
Strongly agree	69(27.0)	82(32.0)		
Do you think using contraceptives could prevent young women abortions?			85.184	**<0.001**
Strongly disagree	1(0.4)	0(0.0)		
Disagree	3(1.2)	50(19.5)		
Neutral	14(5.5)	43(16.8)		
Agree	52(20.3)	28(10.9)		
Strongly agree	51(19.9)	14(5.5)		
Do you believe that using contraceptives is healthy and doesn't not have			85.028	**<0.001**

negative effect to one's health?				
Strongly disagree	**1(0.4)**	**0(0.0)**		
Disagree	**3(1.2)**	**32(12.5)**		
Neutral	**15(5.9)**	**65(25.4)**		
Agree	**53(20.7)**	**20(7.8)**		
Strongly agree	**49(19.1)**	**18(7.0)**		
A woman who uses contraception may have trouble getting pregnant again			44.868	**<0.001**
Strongly disagree	1(0.4)	2(0.8)		
Disagree	2(0.8)	18(7.0)		
Neutral	8(3.1)	43(16.8)		
Agree	45(17.6)	33(12.9)		
Strongly agree	65(25.4)	39(15.2)		
Adolescent women need to know how to prevent pregnancies.			83.373	**<0.001**
Disagree	3(1.2)	25(9.8)		
Neutral	6(2.3)	56(21.9)		
Agree	19(7.4)	19(7.4)		
Strongly agree	93(36.3)	35(13.7)		
Adolescent women should be allowed to obtain contraception if they want			70.945	**<0.001**
Strongly disagree	1(0.4)	2(0.8)		
Disagree	1(0.4)	26(10.2)		
Neutral	6(2.3)	47(18.4)		
Agree	56(21.9)	31(12.1)		
Strongly agree	57(22.3)	29(11.3)		

Source: Primary Data, 2025

The bivariate analysis in Table 7 showed that belief that contraceptives prevent abortions was linked to the use of contraceptive ($\chi^2 = 85.184$, $p = 0.002$). A greater proportion of users agreed (20.3%) or strongly agreed (19.9%), whereas non-users had a higher proportion of disagreement (19.5%). Belief in the health safety of contraceptives also showed a significant association ($\chi^2 = 85.028$, $p = 0.001$). More contraceptive users agreed (20.7%) or strongly agreed (19.1%) that contraceptives do not harm health, while non-users were more likely to disagree (12.5%) or remain neutral (25.4%). Concern that contraceptives affect future fertility was significantly associated with use ($\chi^2 = 44.868$, $p = 0.001$). A higher proportion of users agreed (17.6%) or strongly agreed (25.4%), while non-users were more neutral (16.8%) or disagreed (7.0%). Perception that adolescent women should know how to prevent pregnancy was linked to the use of contraceptive ($\chi^2 = 83.373$, $p = 0.001$). A large proportion of users strongly agreed (36.3%), while non-users were more likely to disagree (9.8%) or remain neutral (21.9%). Support for adolescent access to contraception was also significantly associated with use ($\chi^2 = 70.945$, $p = 0.001$). A higher proportion of users agreed (21.9%) or strongly agreed (22.3%), whereas non-users were more likely to disagree

(10.2%) or remain neutral (18.4%). In contrast, perception of contraceptives for preventing unintended pregnancies did not show significant link with the use of contraceptive ($\chi^2 = 3.200$, $p = 0.362$).

Table 8. Bivariate analysis of other Family Planning factors influencing contraceptive use among young girls attending health centers of Nyarugenge District, Rwanda.

Particulars	**Do you currently use contraceptives?**		**Chi-square**	**P-value**
	Yes n(%)	**No n(%)**		
If no, what are the main reasons for not using contraceptives?			2.560	**<0.001**
Lack of Knowledge	0(0.0)	53(20.7)		
Cultural or religious beliefs	0(0.0)	30(11.7)		
Inaccessible services	0(0.0)	8(3.1)		
Cost	0(0.0)	16(6.2)		
Side effects	**0(0.0)**	**25(9.8)**		
Others	**0(0.0)**	**3(1.2)**		
Which type of contraceptive do you currently use or have used?			53.132	**<0.001**
Condoms	**50(19.5)**	**12(4.7)**		
Pills	**43(16.8)**	**54(21.1)**		
Injections	**11(4.3)**	**50(19.5)**		
IUDs	**14(5.5)**	**10(3.9)**		
Emergency Contraceptive pill	**3(1.2)**	**7(2.7)**		
Other	0(0.0)	2(0.8)		
Have you received your preferred method?			0.337	0.561
Yes	115(44.9)	126(49.2)		
No	6(2.3)	9(3.5)		
Do you have problem with current method?			1.589	0.207
Yes	10(3.9)	6(2.3)		
No	111(43.4)	129(50.4)		

Source: Primary Data, 2025

The bivariate analysis in Table 8 showed that the reasons for not using contraceptives showed a significant link with contraceptive use ($\chi^2 = 2.560$, $p = 0.001$). The most reported barriers among non-users were lack of knowledge (20.7%), cultural or religious beliefs (11.7%), and side effects (9.8%). Similarly, the type of contraceptive used was linked to the use of contraceptive ($\chi^2 = 53.132$, $p = 0.001$). The most commonly used method was condoms (19.5%), followed by pills (16.8%), while injections were more frequently used among

non-users in the past (19.5%). Other factors, such as receiving the preferred method (p = 0.561) and problems with the current method (p = 0.207), did not present significant associations with contraceptive use.

Table 9. Bivariate analysis of behavioral factors influencing contraceptive use among young girls attending health centers of Nyarugenge District, Rwanda.

Particulars	Do you currently use contraceptives?		Chi-square	P-value
	Yes n(%)	No n(%)		
Do you plan to continue method use?			1.411	0.235
Yes	109(42.6)	127(49.6)		
No	12(4.7)	8(3.1)		
Are you currently sexually active?			0.808	0.369
Yes	**120(46.9)**	**132(51.6)**		
No	**1(0.4)**	**3(1.2)**		
Have you ever got an unintended pregnancy in your life?			0.000	0.987
Yes	53(20.7)	59(23.0)		
No	**68(26.6)**	**76(29.7)**		
How many sexual partners have you had in the last 12 months?			53.859	**<0.001**
None	0(0.0)	1(0.4)		
1 Partner	27(10.5)	74(28.9)		
2-3 Partners	33(12.9)	46(18.0)		
4+	61(23.8)	14(5.5)		
Do you consume alcohol regularly?			3.528	0.171
Yes	61(23.8)	54(21.1)		
No	60(23.4)	81(31.6)		
Do you smoke cigarettes regularly?			7.257	**0.007**
Yes	38(14.8)	23(9.0)		
No	83(32.4)	112(43.8)		
Age1st Sexual Intercourse			4.884	0.087
12-15 Years	37(14.5)	32(12.5)		
16-20 Years	82(32.0)	94(36.7)		
21+ Years	2(0.8)	9(3.5)		

Source: Primary Data, 2025

The bivariate analysis in Table 9 showed that the number of sexual partners in the last 12 months was significantly associated with contraceptive use ($\chi^2 = 53.859$, $p = 0.001$). Girls with four partners and more (23.8%) had more chances to be using contraceptives in comparison with those with one partner (10.5%) or two to three partners (12.9%). Similarly, regular cigarette smoking showed a significant association with contraceptive use ($\chi^2 = 7.257$, $p = 0.007$). A higher percentage of contraceptive users (14.8%) smoked regularly compared to non-users (9.0%). Other behavioral factors, such as sexual activity, unintended pregnancy history, alcohol consumption, age at first sexual intercourse, and plans to continue contraceptive use, did not show statistically significant associations with contraceptive use.

Table 10. Multivariate analysis of factors influencing contraceptive use among young girls attending health centers of Nyarugenge District, Rwanda.

Variables	Description	AOR	(CI at 95%)	P-Value
Wealth index				
	Level1	1*		
	Level2	0.688	0.208-2.268	0.538
	Level3	4.836	1.682-13.905	**0.003**
Occupation				
	Student	1*		
	Employee	1.383	(0.488–3.913)	0.542
	Non-occupation	3.110	(1.160 - 8.335)	**0.02**
TV as a Source of Info				
	No	1*		
	Yes	3.322	(1.504-7.337)	**0.003**
Radio as a Source of Info				
	No	1*		
	Yes	2.688	(1.311 -1.311)	**0.007**
CHWs as a Source of Info				
	No	1*		
	Yes	1.820	(0.832 -3.979)	0.1
Knowledge				
	No	1*		
	Yes	4.272	1.972-9.254	**<0.001**
Overall perception				
	Poor perception	1*		
	Good perception	18.964	5.250-30.887	**<0.001**
Using Condoms and pills				
	No	1*		
	Yes	2.399	1.132-5.083	**0.02**
Having sexual partners				
	<=1	1*		
	>=2	3.939	1.897-8.179	**<0.001**
Smoking				

No	1*		
Yes	2.768	1.190-6.424	**0.018**

Source: Primary Data, 2025

The multivariate analysis revealed that wealth level plays a role in contraceptive use. Compared to young girls in the lowest wealth category (Level 1), those in Level 3 had more chances to be using contraceptives (AOR = 4.836, 95% CI: 1.682-13.905, p = 0.003). Though, no link was found for those in Level 2 (AOR = 0.688, p = 0.538). Occupation was also a significant factor. Compared to students, young girls who were not employed (non-occupation) had more chances to be using contraceptives (AOR = 3.110, 95% CI: 1.160-8.335, p = 0.02). However, being employed did not show a significant effect (AOR = 1.383, p = 0.542). Media sources played a critical role in contraceptive uptake: Young girls who obtained contraceptive information from TV were over three times likely of using contraceptives (AOR = 3.322, 95% CI: 1.504-7.337, p = 0.003). Similarly, those who received information from radio had a significantly higher likelihood of using contraceptives (AOR = 2.688, 95% CI: 1.311-5.505, p = 0.007). However, information from community health workers (CHWs) did not show a statistically significant effect (AOR = 1.820, p = 0.1).

Young girls who had knowledge about contraceptives had 4.272 times more chances of using them in comparison with those without knowledge (AOR = 4.272, 95% CI: 1.972-9.254, p < 0.001). Perception was the most significant factor. Girls with a good perception of contraceptives were nearly 19 times more chances of suing them compared to those with a poor perception (AOR = 18.964, 95% CI: 5.250-30.887, p < 0.001). Girls who used condoms and pills had over twice chances of suing contraceptives overall (AOR = 2.399, 95% CI: 1.132-5.083, p = 0.02). Young girls with two sexual partners or more had nearly four times more chances of using contraceptives in comparison with girls having one partner only (AOR = 3.939, 95% CI: 1.897-8.179, p < 0.001). Smoking was linked to the use of contraceptive. Young girls who regularly smoked had 2.768 times more chances of using contraceptives compared to non-smokers (AOR = 2.768, 95% CI: 1.190-6.424, p = 0.018).

Discussion

Socio-Demographic Factors

This study found that most respondents were either single (37.5%), married (30.9%), or cohabiting (31.2%), with very few divorced (0.4%). These findings are consistent with Dreyer et al. (2021), who observed a higher prevalence of cohabitation (37.8%) than marriage (26.3%) among South African youth, reflecting shifting social norms and economic considerations. The dominance of urban residency (99.6%) among participants aligns with Kigali's urbanization trend, which often correlates with better access to services. Similarly, Makoni et al. (2022) found urban women in Zimbabwe comprised 65% of their study population, emphasizing urban–rural disparities in healthcare access. Only 23% of respondents were household heads, indicating that most were likely still in school or dependent on family. This mirrors findings in Uganda by Niwagaba et al. (2020), where just 22.5% of young urban women led households, reinforcing how age and social roles affect family dynamics.

Prevalence of Contraceptive Use

Contraceptive use among young girls in Nyarugenge District was 47.3%, indicating moderate uptake. This is comparable to the 42.1% reported in Kenya (Nyakundi et al., 2022), where barriers included misinformation and service inaccessibility. Similarly, Uganda's adolescent contraceptive use stood at 39.4%, attributed to gaps in service availability and supportive policy (Mukiibi et al., 2021). Tanzania reported a higher rate of 53.2%, linked

to youth-friendly services and community outreach (Kamoga et al., 2023). The relatively lower usage in Rwanda may reflect persistent cultural and systemic barriers.

Factors Influencing Contraceptive Use

Participants in the highest wealth category were significantly more likely to use contraceptives than those in the lowest, aligning with Katusiime et al. (2020), who found wealthier women in Uganda had three times the odds of contraceptive use. Knowledge also played a pivotal role those informed about contraceptives were over four times more likely to use them, consistent with Sithole et al. (2021), who reported similar outcomes in Zimbabwe. Perception emerged as the strongest determinant young girls with positive views on contraception were nearly 19 times more likely to use it, mirroring Oluwadare et al. (2019), who found perception to be a major driver in Nigeria. Additionally, having multiple sexual partners increased the likelihood of contraceptive use by nearly four times, as shown by Tawiah et al. (2020) in Ghana. Interestingly, smokers were also more likely to use contraception (AOR = 2.768), a finding supported by Wagah et al. (2021) in Kenya, who linked risk-taking behaviors with increased contraceptive adoption.

Study Limitations

This cross-sectional study relied on self-reported data, which may introduce reporting bias. It was limited to Nyarugenge District, restricting broader generalization. Furthermore, causal relationships cannot be established. Cultural beliefs and family influences were not explored in depth, which may also affect contraceptive behavior.

Study Implications

Findings highlight the need for economic empowerment, targeted education, and improved perceptions to enhance contraceptive uptake. Public health programs should focus on awareness, partner reduction, and youth-friendly services to prevent unintended pregnancies. The results can inform reproductive health interventions and policy refinement in Rwanda and similar settings.

Conclusion

The study's findings showed that nearly half of the young girls attending health centers in Nyarugenge District, Rwanda, use contraceptives. In addition, economic status, knowledge, positive perception, media exposure, number of sexual partners, and smoking behavior were the strongest predictors of contraceptive use. In contrast, factors such as occupation (being employed) and information from CHWs did not show significant effects. These findings emphasize the need for education campaigns, improved media outreach, and positive messaging on contraceptives to influence perception and increase uptake among young girls in Rwanda.

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