Global Scientific JOURNALS

GSJ: Volume 10, Issue 9, September 2022, Online: ISSN 2320-9186

www.globalscientificjournal.com

Prevalence and Factors Associated with Contraceptive Use Among Female Adolescents in Selected Secondary Schools in Gasabo District, Rwanda

Marie Chantal Nyiramafaranga

Author Details
Marie Chantal Nyiramafaranga is currently pursuing master's degree program in Public Health in Mount Kenya University, Rwanda, PH-+250-789-849- 326. E-mail: mcfaranga@gmail.com

KeyWords
Female adolescent, Contraceptive use, associated factors, prevalence, sexual intercourse, secondary school, Gasabo district

ABSTRACT

Globally, adolescent pregnancy represents a public health challenge. Sub Saharan Africa, which experiences the continuous increase of female adolescents, is highly concerned by this problem. Rwanda experiences the same challenge, where 21% of its female adolescents become mothers before their 18th birthday. The purpose of this study was to determine the prevalence of contraceptive use and the factors that influence it among female teenagers in Gasabo District secondary schools. Adolescent was defined as someone between the ages of 10 and 19. The study's findings depict contraceptive use among female teenagers and will provide insight into the factors that influence contraceptive use among this age group. Decision-makers and policymakers could use these findings to take appropriate action in light of the situation. In Gasabo District, a descriptive cross-sectional study was undertaken in two secondary schools (one in the rural area and the other in the urban area). A sample population of 385 adolescent girls from the two institutions was selected using a simple random sampling method. A quantitative approach was used and questionnaires served as a tool of data collection. Willingness of participation was confirmed by a signed consent form from each pupil or a signed assent form from parent/ guardian whose child is under 18years, and the confidentiality was kept. The study was conducted during the month of April 2022. With the use of SPSS 22.0 in data analysis, descriptive statistics like percentage and frequencies were analyzed. Association between variables was assessed through bivariate and multivariate analysis using Chi-square test and logistic regression analysis respectively. The study participants were between 10 and 19 years old and 37.1% of them belonged to the age group of [10-15] years. The urban participants were represented at 53.2%. According to the finding of this study, the prevalence of contraceptive use was 16.4% among females of two selected secondary schools in Gasabo District. Condoms (77. 8%) were the widely used contraceptive method, followed by pills (19.0%) and injectables (3.2%). The researcher has found that the source of information about contraceptive use (AOR=4.934, 95%CI: 1.846 –13.186, p=0.001) and the age of respondent at her first sexual intercourse was associated with contraceptive use ((AOR=5.265, 95%CI: 1.625 - 17.058, p=0.006) and (AOR=14.603, 95%CI: 3.687 – 57.842, p<0.001) for the age [14-16] and [17-19] respectively) were associated with contraceptive use. Therefore, female adolescents need a parental education about contraceptive use and encouragement to avoid early sexual intercourse in order to improve the contraceptive use among this group of people. Further research, particularly that at the global level, is needed to better understand the barriers adolescent girls face in contraceptive use.

Introduction

Globally, the female adolescent population experiences a continuous increase, especially in sub-Saharan Africa so that 1 in every 4 female adolescents will be in developing countries by 2030[1]. Each year, in developing countries, approximatively 21 million adolescent girls get pregnancy, 16 million of them give birth and over 777,000 births occur in adolescents before their 15th birthday[2]. Adolescent pregnancy and childbirth complications represent 99% of all maternal deaths occurring in developing countries[3].

Every year, among adolescents, 3.9 million unsafe abortions are accounted and contribute to adverse health outcomes such as maternal mortality, morbidity and irreversible health problems[4]. Early pregnancy presents high health risk both for the young mothers and their babies whose have high risk of prematurity, low birth weight and other adverse health conditions at their birth[5]. Contraceptive use is one of the methods of preventing early and intended pregnancies and consequently preventing adverse health outcomes among adolescents.

The Rwanda Demographic Health Survey of 2015 has showed the level of teen pregnancies was two time higher in Eastern province and Kigali City than other provinces of the country where Nyagatare District was reported to be among the first four districts of Rwanda to have the lowest median age in girls at their first childbearing and Gasabo District was one of the two districts in Rwanda with the highest median age for girls at first sexual intercourse and childbearing. The same report has showed that 21% of adolescent females became mothers before their 18th anniversary with 11.6 percent of unmarried adolescent girls aged 15-19 years using contraception[6].

According to the 2019-20 Rwanda Demographic and Health Survey (RDHS), 5% of female adolescents aged 15-19 were already mothers or were pregnant with their first child[7]. The same survey showed that 50 percent of sexually active unmarried women use contraception, with 48 percent using modern methods and 2% using traditional methods. contraceptive methods that are most commonly utilized by females include oral contraceptive pills, implants, injectables, patches, vaginal rings, Intra uterine devices, condoms, male and female sterilization, lactational amenorrhea methods, withdrawal and fertility awareness-based methods [7].

A recent study conducted in one secondary school in RWAMAGANA District found a contraception rate of 39 percent among sexually active female adolescents in that school, despite an 88 percent knowledge level about contraceptive methods[8]. Despite these data on adolescent pregnancy and its negative health consequences, few researches were conducted among the female adolescents of the age group 10 to19 years. This study, in addition to the assessment of prevalence of contraceptive use among this segment of population in Gasabo District, it assessed the possible factors which are associated with their use contraceptive methods among female adolescents of two selected secondary schools in Gasabo District.

Research methodology

A cross-sectional study with a quantitative approach was used to assess the prevalence of contraceptive use among female adolescents of two secondary schools in Gasabo District. It was conducted at Groupe Scolaire Rugando located in Kimihurura (urban sector) and Groupe Scolaire Bumbogo located in Bumbogo (rural sector). These two schools are government schools, with GS Rugando located in urban and GS Bumbogo located in rural.

Target population

A population of females aged 10-19 years studying at two selected secondary schools in Gasabo District was targeted.

Inclusion criteria

Present on the day of data collection, having a signed consent/assent form and study participation willing

Exclusion criteria

Being among sampled people but absent during data collection or not having a signed consent/Assent form.

Sampling

A sample size was 385 girls and was calculated using the Fisher's formula with 95% confidence level and 0.5 as level of precision. A prevalence value of contraceptive use among female adolescents in Rwanda was unknown and we estimated it at 50% in the calculation.

A simple random sampling method was used. Means that, all individuals in the target population had the equal chance of being selected. The total number of females of each selected school was obtained from the Head of school. Once the total number of females responding to the inclusion criteria was found, the researcher applied the probability proportional to size sampling method, first to each school and then to each class in order to obtain the number of girls in each class to participate in the study. After obtaining the required number from each class, the specific participants were chosen by simple random sampling method where all of them had the same chance of being selected.

Data collection and analysis

Data were collected in April 2022.Questionnaires with closed-ended questions were used in data collection and they were designed in both English and Kinyarwanda language to facilitate the good understanding for participants.
After the university authorization and recommendation for data collection, the district officer in charge of education has authorized the data collection in the selected schools. In collaboration with the class heads, the investigator had a brief meeting with the research participants for explanation of the research aims. For those who were under 18 years, they received the assent forms to be signed by their parents/ guardians before they participate in the study. These assent forms were signed during the term holidays from 1st April 2022 to 19th April 2022. The Data collection activities were done during the last week of April 2022.
At the day of data collection, the signature checking was done for all consent/assent forms and questionnaires were given to qualified respondents. A sufficient time was given to participants for the questionnaire fillings. At the end, the researcher collected the filled questionnaires for assuring the accuracy and confidentiality of data. All questionnaires were anonymous to assure the confidentiality of the respondents.

After the coding of all questionnaires, the researcher recorded the data and analyzed them by using IBM SPSS Statistics 22.0 software. Frequencies and percentages were analyzed through descriptive statistics. Association between variables was assessed through bivariate and multivariable analysis using Chi-square test and Logistic regression analysis respectively. Estimates which P values are below 0.05 were considered as statistically significant.

Ethical considerations

The researcher has obtained a research approval from Mount Kenya university and an authorization for data collection from Gasabo District. The purpose of the study was well explained to the participants and the later participated voluntarily. The researcher has observed the free commitment of participants and has respected their confidentiality by using anonymity on questionnaires and consent/assent forms. The participants provided the signed consent forms and assent forms, for students aged 10 to 17 years, were signed by parents/ guardians.

Results

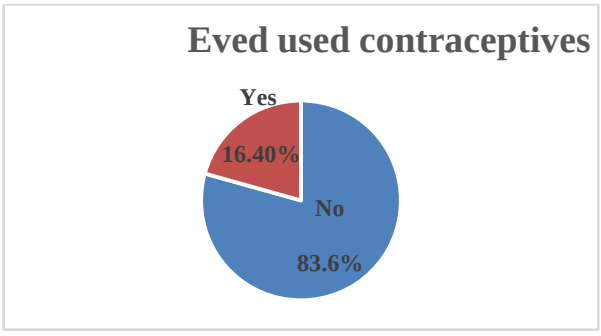
A total number of 385 girls aged 10 to 19 years old responded to the administrated questionnaires. The majority of the study participants (53.2%) studied at the school located in urban area whereas 46.8% came from the secondary school located in rural. Most of participants (62.9%) belonged in the age group 16 to19 years old. The large number of participants were protestants (57.1%) while others were Catholics and Muslims, representing 38.3% and 4.7% respectively. The category 2 was the most represented economic category (54.0%) against the category 4 which was the less represented (1.6%) (Table 1).

Table 1: Socio-Economic and Demographic characteristics of respondents, n=385

Variables	Frequency	Percent (%)
Address of respondent		
Urban	205	53.2
Rural	180	46.8
Age group		
[10-15]	143	37.1
[16-19]	242	62.9
Religion		
Catholic	143	38.3
Muslim	16	4.2
Protestant	224	57.1
Economic category		
1	67	17.4
2	208	54.0
3	104	27.0
4	6	1.6

Source: Primary data, 2022

Figure 1: Prevalence of contraceptive use among female adolescents of two selected secondary schools in Gasabo District, n=385



The Figure 1 shows that the prevalence of contraceptive use was 16.4% among 385 females in this study.

Table 2: Types of contraceptives used among female adolescents of two selected secondary schools in Gasabo District, n=63

Types of used contraceptive methods	Frequency(n)	Percent (%)
Condom	49	77. 8
Injectable	2	3.2
Pills	12	19.0

Source: Primary data, 2022

The table 2 shows three types of contraceptive methods are used by study participants. Condoms are highly used 49(77. 8%), followed by pills 12(19.0%) and injectable 2(3.2%).

Table 3: Factors associated with the use of contraceptive methods among female adolescents of two selected secondary schools in Gasabo District

Variables	Ever used contraceptives Yes n(%)	No n(%)	Chi-Square (χ2)	P-value
Age of the respondent (years old (n=385)			5.736	0.017
[10-15]	15 (23.8)	128 (39.8)		
[16-19]	48 (76.2)	194 (60.2)		
Address of the respondent (n=385)			0.016	0.90
Urban	34(54.0)	171(53.1)		
Rural	29(46.0)	151(46.9)		
Age at first sexual intercourse (n=112)			15.063	0.001
<14	16(25.4)	29(59.2)		
[14-16]	21(33.3)	13(26.5)		
[17-19]	26(41.3)	7(14.3)		
The person responsible for the respondent's home (n=385)			3.351	0.501
Both parents	39(61.9)	184(57.2)		
Mother only	11(17.5)	71(22.0)		
Father only	2(3.2)	26(8.1)		
Relatives only	2(3.2)	8(2.5)		
Guardian	9(14.2)	33(10.2)		
Religion of the respondent (n=385)			0.316	0.854
Catholic	23(36.5)	120(37.3)		
Muslim	2(3.2)	15(4.6)		
Protestant	38(60.3)	187(58.1)		
Source of information about contraceptive use (n=112)			8.847	0.012
Parents	45(71.4)	23(46.9)		
Friends	6(9.5)	4(8.2)		
Health facility or Teachers	12(19.1)	22(44.9)		
Economic category of the respondent (n=385)			0.707	0.702
Category 1	12(19.1)	55(17.0)		
Category 2	31(49.2)	177(55.0)		
Category 3 and 4	20(31.7)	90(28.0)		

Source: Primary data, 2022

The results of the table 3 revealed that age of respondent, age of respondent at first sexual intercourse and source of information about the contraceptive use were significantly associated with contraceptive use(P<0.05). The remaining variables that are address of the respondent, the person responsible for the respondent's home, religion of the respondent and economic category of the respondent have no statistically significant association with contraceptive use(P>0.05).

Table 4: Logistic regression analysis of factors associated with the use of contraceptive methods among female adolescents of two selected secondary schools in Gasabo District

	Contraceptive use		
Variable	**AOR**	**95%CI**	**P-value**
Age of the respondent			
[10-15]	Reference		
[16-19]	0.430	0.134 - 1.382	0.157
Age of respondent at first sexual intercourse			

Below14	Reference		
14-16	5.265	1.625 -17.058	0.006
17-19	14.603	3.687-57.842	<0.001
Source of information about contraceptive use			
From Parents	4.934	1.846-13186	0.001
From Friends	3.930	0.758 -20.380	0.103
From health facility or teachers	Reference		

AOR: Adjusted Odds Ratio, CI: Confidence Interval

Source: Primary data, 2022

The table 4 reveals that girls who started sexual intercourse at the age of 14 -16 years have five times the chance of using contraceptives in comparison to those who had their first sexual intercourse before 14 years old (AOR=5.265, 95%CI:1.625 - 17.058, p=0.006). For those who were aged 17 to 19 years at their first sex intercourse, they were about fifteen times more likely to use contraceptives than their counterparts who started this activity before the age of 14 (AOR=14.603, 95%CI: 3.687-57.842, P<0.001). Females who have been informed by their parents about contraceptive use, were about five times more likely to use the contraceptives than those who got this information from other sources like teachers or health facility (AOR=4.934, 95%CI: 1.846-13186, p=0.001).

Discussion

This study has shown that the prevalence of contraceptive use among adolescent girls, aged 10-19 years, from the two selected secondary schools in Gasabo District was 16.4%. This prevalence is low relative to that of 39% which was found by the study conducted by NGERAGEZE,2019 among female adolescents of secondary schools in Rwamagana District.

Condoms, injectables and pills were found as the mostly used types of contraceptive methods. The level of utilization of condoms was higher (77. 8%) in comparison with pills (19.0%) and injectable (3.2%). These results are similar to the findings of various researchers[9-12],who have reported that condoms were the most widely used contraceptive methods by female adolescents. Similarly; the NISR, 2015 was found the higher level of condom use among adolescent girls who were not in union. These results can be associated with the fear of side effects of hormonal contraceptives by these adolescents, but it needs further research for confirmation.

About the factors associated with contraceptive use, this study revealed that there is no association between the contraceptive use and the residence of respondents. Means that, residing in urban or rural area has no impact on contraceptive use among the participants of this study. These findings are different from the results of Assefa(2015) where adolescent girls of urban residence were 4.6 times likely to use contraceptive methods in comparison to their counterparts of rural area. It was found that the religion was not associated with contraceptive use contrary to the results of a research conducted in Nepal, where the use of contraceptive was low among Hindu adolescent girls comparatively to those belonging to other religions[13].

There was no impact of family wealth of girls on the use of contraceptive methods contrary with what it was reported by other researches [14-15], stipulating that female adolescents from rich families were more likely to use contraceptive methods compared to those coming from the poor families. For adolescents of this study, the person who is responsible of living home has no impact on their use of contraceptives. This observation was different from that of Agyemang et al., 2019, after conducting a study in one district of Ghana, the author has found a high level of contraceptive use among those girls whose both parents were staying together. The age of respondent, after elimination of confounders effect, wasn't associated with contraceptive use. This result was differ from the results reported by other studies, showing a positive correlation between the age level and the level of contraceptive use[16].

Age of respondent at first sex intercourse were associated with the contraceptive use. This study has found that the higher is the age of participant at her first sex intercourse the higher is her chance of using contraceptives. These results are similar to the findings of

Tamang et al., 2017, where the odds of using contraceptive methods where higher among girls who started the sex intercourse at the age of 16-19 or 20-24 compared to those whose that age was under 15. This result may be associated with the girl's maturity effect. When the girl is mature enough, she has more capacity to make decisions, so the chance of using a contraceptive may be higher than her counterpart who is not yet mature.

Parental education about contraceptive use was found to be associated with contraceptive use. The results of the study showed that participants who have been informed by their parents about the contarceptive use, had five times the likelihood of using contraceptive methods compared to those who were informed through other sources information like friends, teachers or reproductive health professionals. This observation was similar to the findings of a study in secondary schools in Kicukiro District,conducted by Geoffrey, 2016 , where, among girls using contraceptive methods, their great proportion (26%) has been informed by their mothers comparatively to other sources of information[17]. The above observation may be related to children's trust in their parents so that the information received from the latter is much more considered than that received by the other means.

Conclusion

Generally, the researcher has found that 16.4% was the prevalence rate of contraceptive use among female adolescents of the two selected secondary schools in Gasabo District. The mostly used types of contraceptive methods were Condoms, pills and injectables where condoms have the higher level in use among those adolescents. The participant's age at first intercourse and the source of information about contraceptive use were found to be factors associated with contraceptive use among study participant

Acknowledgment

The author wishes to thank the study participants for their collaboration.

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