

The Level of Contraceptive Knowledge among Female University Undergraduates in Gitega, Burundi. A Cross-sectional Study.

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Abstract

Background

Modern contraceptives (MC) refer to any family planning method used to prevent a pregnancy. The knowledge about fertility control is an important step towards access to and use of an appropriate contraceptive method in a timely and effective manner. In Burundi, the utilization rate among sexually active adolescents (15–19) is very low despite reported 11% high fertility rate among these groups.

Methodology

A cross-sectional quantitative study was conducted among 340 female undergraduates in Gitega Universities. The study period was from June 2019 to October 2021. The Leslie Fischer's formula was used to calculate the required sample size.

A structured self-administered questionnaire consisting 15 items was used to collect data relevant to the study. Data was entered and carried out using IBM Statistical packages for Social Science (SPSS) Statistics v23. Descriptive statistics were summarized. Chi-square test was used to assess the association between different variables

Results

A total of 340 females' students were studied. 68% were aged 25-29years. The majority of the respondent 290 (85.3%) were unmarried. 198(58.2%) were single and 92(27.1%) were engaged. 41.2% were in second year of study and 139 (40.9%) in year 3 of study. The majority of female students (88.5%) were aware of the contraceptives and the majority (67.9%) knew the correct meaning of contraception.

Conclusion

Despite the knowledge of modern contraceptives methods amongst female undergraduates, the utilization of modern contraception is low. The low utilisation of FP may be linked to the negatives perceptions and beliefs around family planning that is not well-accepted, especially amongst young people.

Recommendations

Provide high-quality contraceptive services that help females students overcome the personal and cultural barriers they face by providing care that protects their rights to voluntary, informed and confidential contraceptive choice.

Keywords: Modern contraceptives, Burundi, Female Students, Polytechnique de Gitega (UPG), Institut supérieur paramédical de Gitega (ISPG), Knowledge, Date Submitted: 2022-09-04 Date Accepted: 2022-09-14

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1. Background:

Contraceptive use is a key indicator for measuring improvements in access to reproductive health as asserted in the 2030 Agenda for Sustainable Development Goals under target 3.7. "By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programs". (United Nations (UN), 2018).

Globally, 62 percent of married women ages 15-49 use a method of family planning and 56 percent use a modern method. Examples of modern methods include the pill, intrauterine devices, implants, injectable, condoms, and sterilization. These rates are twice as high among women living in high-income countries (67 percent and 60 percent, respectively) compared to women living in low-income countries (34 percent and 29 percent, respectively) (2019 Family Planning Data Sheet Highlights Family Planning Method Use Around the World, n.d.) Although important progress has been made in increasing family planning coverage with modern methods worldwide, there is still a large gap in relation to effectively meet the contraceptive needs among sexually active young females (Dennis, *et al.*, 2017).

In 2016, 38 million young females in developing countries needed contraceptives because they are married, or are unmarried and sexually active, and do not want a child for at least two years to avoid an unplanned pregnancy. However, the majority 60% or 23 million females are not using modern contraceptives (Darroch, *et al.*, 2016). Consequently, an estimated 21 million pregnancies, of which about 12 million give birth annually. About half (49%) of pregnancies to young females are unplanned, and more than half of these end in induced abortion (Darroch, *et al.*, 2016).

In Sub-Saharan African (SSA) countries, the general prevalence of current contraceptive use among women of reproductive age (15-49 years) is found low (17%) but varies substantially across countries, with rates ranging from 7% in Gambia to 29% in Uganda (Ba, *et al.*, 2019). However, the highest rates of early childbearing are found in

sub-Saharan African countries paired with lowest rates of contraceptive use. The East African community, despite the progress achieved, a substantial unmet need for contraception among young women East Africa still remains, ranging from 35% in Kenya to 59% in Uganda (Dennis *et al.*, 2017). Even though contraceptive knowledge is nearly common in the region and contraceptive prevalence has increased in the past two decades, the unmet need for contraception remains high in all the countries within East Africa (Bakibinga *et al.*, 2016)

In Burundi, even though knowledge seems to be high, only 23% of married women use a modern contraceptive. The utilization rate among sexually active adolescents (15-19) is very low (8%), despite a high fertility rate in this age group (11%). Furthermore, adolescent birth rate in Burundi is 58 births per 1000 adolescents (15-45) with 19% of early marriage. According to the World Bank report 2018, high levels of child bearing is stem primarily from the high rate of marital fertility and low level of contraceptive use. A recent evidence showing Burundi contraceptive use indicate that 4 in 9 (44.4%) young females aged 20-24 had their contraceptive needs met. This is being reported as the lowest among the aged group. Therefore, the study conducted at Gitega in 2015 found that Gitega Health District has a low utilization family planning services (22.6%) comparing to the national average of 27% all methods included. (ndayizeye *et al.*, 2015).

Unplanned pregnancies may occur as a result of not utilizing contraceptive methods or due to the failure of the contraceptive methods used, this is a reason for most reported early pregnancies. The only way to avoid unplanned pregnancy and STI's is not to have sex or by using the most effective birth control e.g. condom and thus protect against HIV. Female undergraduate university students should therefore be knowledgeable about different types of contraception in order for them to be able to make informed decisions about the use of contraception as protection against unplanned pregnancy and STD's. Studies have reported that the majority of the university students are at the upper end of the teenage years

(17–19 years) during which they are more likely to experiment with sexual activities while lacking knowledge on sexual health and protective measures.

Previous studies in Sub-Saharan Africa have demonstrate that university female students are at high risk of sexual transmitted infections including HIV, and they have high rate of unwanted pregnancy which results to high abortion rate (Somba *et al.*, 2014). Therefore, interventions based on knowledge, attitudes, and practices may lead to reduce rates of unplanned pregnancies if given the right political back up underpinned by the right sexual and reproductive health policy . This current study explores the knowledge, about contraceptive use among female undergraduate university students in Gitega province.

2. Methodology:

Study design and data collection tools

A descriptive cross-sectional quantitative study was conducted from June 2019 to October 2021 among female undergraduates in political capital of Burundi. A structured self-administered questionnaire was used to collect data relevant to the study's objectives and research questions. The questionnaires were administered individually to the respondents in their respective classes. Questionnaire were developed in English language by reviewing literature used in this study and translated in French language. The questionnaires were checked for completeness and accuracy before data entry.

Study area

The study was conducted in two universities, one non-medical University polytechnique de Gitega (UPG) and Institut superieur paramedical de Gitega (ISPG) which is medical university will be selected.

Study population

Two universities, one medical university, (Institut superieur paramedical de Gitega, ISPG) and universite politechnique de Gitega (UPG) which is non-medical were conveniently selected. From each participating institution All female undergraduate students (married and unmarried) who

will attend their study during data collection period will be considered as source population.

For both universities, 340 Students were selected according to the year of study (i.e year one to year three) where the total numbers of female's student university for each year was proportion to size of respective year of study.

This sample was divided into two equal groups; group one 170 females' undergraduates at Gitega polytechnic university (UPG) which is non-medical university, and group two 170 female undergraduates' students of Institut Superieur paramedical de Gitega (ISPG) which is considered as a medical university.

Inclusion criteria

All undergraduate female students during data collection period will be included in the study.

Exclusion criteria

Undergraduate female student's university who will not respond to the questionnaire will be excluded. All postgraduate female students were excluded. Those students who will not willing to participate in the study.

Sample size determination

In a previous study in Gitega province of Burundi, among the similar population, the contraceptive methods proportion (P) was 33%.

Therefore, $P = 0.33$. The sample size is determined using the Leslie Fischer's formula for the calculation of sample size in populations $> 10,000$,

$$n = \frac{z^2 pq}{d^2}$$

where

n = minimum sample size;

P = proportion of contraceptive use in Gitega province was 33% (DHS 2016-2017)

d = desired precision at 5%;

z = a constant at 95% confidence interval $z = (1.96)$.

$$Q = 1 - P$$

Given that; $Z = 1.96$, $P = 0.33$, $Q = 0.67$ and $d = 0.05$

Substituting values:

$$n = \frac{(1.96)^2 \times 0.33 \times 0.67}{(0.05)^2} = 339.75$$

Thus, the sample size will be 340 participants.

Sampling Procedure

A convenient sampling method was adopted because participants were selected based on availability and willingness to take part.; the Leslie Fischer's formula will be used to calculate the required sample size and a sample of 340 participants will be needed. For the study, 360 females were invited and only 340 were included in the final analysis—that is, the response rate was 94.4%.

Validity and reliability of instrument for the data collection

The pretesting of the questionnaire was pretested with 15 female undergraduates to ensure that the participants understand all the questions as well as to examine the reliability and validity of the scales use in our survey. Cronbach's alpha value above 0.5 will be considered accepted. The chi-square test will be used to assess the association between different variables. The responses given by these 15 students were not used in the final data analysis.

3. Data analysis

The data was scrutinized and entered into the computer. Simple descriptive statistics was done to describe socio demographic characteristics, knowledge attitude, and practice towards contraceptive use.

Descriptive and analytical statistics of the data was entered and carried out using IBM Statistical packages for Social Science (SPSS) Statistics v23. Tests of statistical significance was analyzed using Chi-square tests for proportions. $P < 0.05$ was considered significant. Descriptive data was presented as simple frequencies and percentages.

Ethical Consideration

Ethical considerations included voluntary participation, informed consent, confidentiality of information, anonymity of research participants and approval from relevant authorities to undertake research studies.

Written permission to carry out this study was obtained from the Dean of faculty of science and technology of Cavendish university Uganda (CUU) the administrative authorities of Gitega provinces and the principals authorities of the two University. Consent of the respondents was also

solicited and obtained for the conduct and publication of this research study.

Written informed consent was taken from all of the participants. Before the beginning of the interviews, all participants were assured that their personal information should be kept secret; and the confidentiality was maintained by avoiding identifiers in the data collection tool also, they were assured that the participation in the study was entirely voluntary.

4. Results:

A total of 340 female students were studied with a response rate of 100 %. As it is shown in Table 1, the majority of the participants 165 (68%) were aged 25-29years. The majority of the respondent 290 (85.3%) were unmarried.198(58.2%) were single and 92(27.1%) were engaged. In terms of educational level, one hundred forty (41.2%) were in the second year of study and 139 (40.9%) in year 3 of study. The majority of the students did not have job 245(72.1). Of the total respondents, 283(83.5%) were Christians. One hundred seventy-nine (52.6%) were Catholics, 104 (30.6%) were protestants as the major reported religion, and the remaining 45 (13.2%) were Muslims.

The majority of female students 301(88.5%) were aware of contraceptives. And the majority 231(67.9%) knew the correct meaning of contraception.

Regarding the importance of contraceptives, the majority 263 (77.4%) of the respondents indicated that it was for preventing unplanned pregnancy, 230 (67.6%) responded that it was for reducing pregnancy-related risk,199 (58.5%) indicated that it was helping to decide the desirable family size, while 153 (43%) were confused at the same time by indicating that it was for having many children as possible.

Male condoms 198(58.2%) and Norplant 122(35.9%) were the most suitable contraceptive methods. The most common sources of information about contraception were classmates and friends 255(75%) followed by social media 227(66.8%) health facilities 224(65.9%) health professionals 214(62.9%) and parents

Table 1: Demographics characteristics of the respondents

Demographic Characteristics of the Respondents	Frequency	Percent (%)
Age		
15-19	34	10.0
20-24	117	34.4
25-29	165	48.5
30-34	24	7.1
Total	340	100
Marital status		
Single	198	58.2
Engaged	92	27.1
Married	50	14.7
Divorced	0	0
Widow	0	0
Total	340	100
Educational level		
First year of study	61	17.9
Second year of study	140	41.2
Third year of study	139	40.9
Total	340	100
Employment		
Job	70	20.6
No job	245	72.1
Self employed	25	7.4
Total	340	100
Religion		
Protestant	104	30.6
Catholic	179	52.6
Muslim	45	13.2
None	12	3.5
Total	340	100

111(32.6%). The knowledge about contraception varied by age, where respondents aged between 25–30 years had more knowledge about contraceptive methods as compared to other age groups. As expected, students pursuing medicine and life science had higher knowledge of different contraceptive methods than other disciplines

Hypothesis decision

Ho1: There will be no significant relationship between Students' knowledge about contraceptive issues and their contraceptive-use prevalence.

The above findings accept the null hypothesis as the p-value is greater than the alpha value

(0.05). Therefore, the alternative hypothesis of the study is rejected and the study concluded that there was no significant association between Students' knowledge about contraceptive issues and their contraceptive-use prevalence.

5. Discussion:

Demographic

The majority of participants (68%) were aged 25-29 years and (85.3%) were unmarried while (58.2%) were single and 92(27.1%) were engaged. In terms of educational level, one hundred forty (41.2%) were in the second year of study and 139

Table 2: Knowledge of modern contraceptive methods

Statements of knowledge	Respondents of the Study N=340	
	Frequency (N)	Percentage (%)
Have you ever heard about contraception?	301	88.5
Yes	39	11.5
No		
If yes, what is the meaning of contraception? a) It is the use of various devices, drugs, agents, sexual practices, or surgical procedures to maintain a pregnancy. Yes No	144 196	42.4 57.6
b) It is the use of artificial methods or other techniques to prevent pregnancy as a consequence of sexual intercourse. Yes No	231 109	67.9 32.1
What is the importance of using contraceptives?		
Help decide desirable family size Yes No	199 141	58.5 41.5
Prevent unplanned pregnancies Yes No	263 77	77.4 22.6
Having many children as possible Yes NO	153 183	45 55
improve maternal health Yes No	209 131	61.5 38.5
reducing pregnancy-related risk Yes No	230 110	67.6 32.4
Which contraceptive methods do you think is suitable for female undergraduates?		
a) Rhythm method Yes No	95 245	27.9 72.1
b) Intrauterine device Yes No	85 255	25.0 75.0
c) Oral contraceptive pills Yes No	99 241	29.1 70.9
d) Norplant Yes No	122 218	35.9 64.1
e) Withdrawal Yes No	92 248	27.1 72.9
f) Male condom Yes No	198 142	58.2 41.8
g) Female condom Yes No	112 228	32.9 67.1
h) Contraceptive vaginal ring Yes No	47 293	13.8 86.2
i) Don't know at all Yes No	89 251	26.2 73.8
How do you obtain the modern contraceptive knowledge?		
a) Health facility Yes No	224 116	65.9 34.1
b) Social media (Radio, TV, Newspaper) Yes No	227 113	66.8 33.2
c) Health professionals Yes No	214 126	62.9 37.1
d) Churches /mosques Yes No	123 217	36.2 63.8
e) Parents Yes No	111 229	32.6 67.4
f) Classmates and friends Yes No	255 85	75.0 25.0
Total		

Table 3: Contraceptive use knowledge and decision making

Knowledge factor	Chi ²	Df	Sig.(p)	Phi cramers V	95% C.I. for EXP	
					(B Lower	Upper
Have you ever heard about contra- ception?	.003	1	.956	-.003	.991	1.000
It is the use of various devices, drugs, agents, sexual practices, or surgical procedures to maintain a pregnancy.	2.25	1	.133	-.082	.125	.204
It is the use of artificial methods or other techniques to prevent preg- nancy as a consequence of sexual in- tercourse.	.58	1	.444	-.041	.426	.533
What is the importance of using con- traceptives? help decide desirable family size	1.08	1	.298	.056	.263	.361
prevent unplanned pregnancies	.42	1	.514	.035	.533	.638
Having many children as possible	9.66	1	.002	-.169	.000	.009
improve maternal health	17.90	1	.000	-.229	.000	.009
reducing pregnancy-related risk	4.67	1	.031	-.117	.016	.055
Which contraceptive methods do you think is suitable for female under- graduates? Rhythm method	.11	1	.739	-.018	.745	.832
Intrauterine device	8.59	1	.003	.159	.000	.019
Oral contraceptive pills	.01	1	.921	.005	.991	1.000
Norplant	3.53	1	.060	.102	.051	.108
Withdrawal	.19	1	.660	.025	.618	.718
How do you obtain the modern con- traceptive knowledge? Health facility	6.89	1	.009	-.142	.002	.028
Social media (Radio,TV,Newspaper)	.85	1	.355	-.050	.357	.461
Health professionals	2.40	1	.121	-.084	.115	.191
Churches /mosques	.71	1	.398	-.046	.357	.461
Parents	2.50	1	.113	.086	.128	.207

(40.9%) in year 3 of study. The majority of the students did not have job 245(72.1). Of the total respondents, 283(83.5%) were Christians. One hundred seventy-nine (52.6%) were Catholics, 104 (30.6%) were protestants as the major reported religion, and the remaining 45 (13.2%) were Muslims.

Knowledge

Although The majority of female students (88.5%) were aware of contraceptives and the majority (67.9%) knew the correct meaning of con-

traception., the utilization of contraception was still low. Knowledge about fertility control is an important step towards access to and use of an appropriate contraceptive method in a timely and effective manner. The results in this present study were found to be lower in similar African university settings where the levels of knowledge about contraceptives ranging 53.3 % to 86.3% .(Somba *et al.*, 2014)

Regarding the importance of contraceptives, the majority 263 (77.4%) of the respondents indi-

cated that it was for preventing unplanned pregnancy and the most suitable contraceptive methods were male condoms 198(58.2%) and Norplant 122(35.9%). Similar findings have been observed elsewhere in both developed and developing countries.

This could be explained by education campaigns and extensive social marketing of condoms in response to the HIV epidemic which has also been reported elsewhere.

However, methods such as oral pills and injectable contraceptives have also been mentioned as being common in some settings such as Adama University, Ethiopia. A very similar pattern in the choice of contraceptive method was reported among Nigerian undergraduate students.

The students knew the main sources of information about contraception as classmates and friends 255(75%) followed by social media 227(66.8%) health facilities 224(65.9%) health professionals 214(62.9%) and parents 111(32.6%).

This strongly suggests that many health care providers may not be well-informed about contraceptive methods or that they are not effectively conveying the information to their clients. The majority obtained information from friends, most of whom lack correct information on contraception

It is possible that even though students were universally aware of a range of contraceptive methods and knew where to get the services, they may have faced other obstacles that we did not directly measure in our study. The knowledge about contraception varied by age, where respondents aged between 25–30 years had more knowledge about contraceptive methods as compared to other age groups.

Hypothesis decision

Ho1: There will be no significant relationship between Students' knowledge about contraceptive issues and their contraceptive-use prevalence.

The above findings accept the null hypothesis as the p-value is greater than the alpha value (0.05). Therefore, the alternative hypothesis of the study is rejected and the study concluded that there was no significant association between Stu-

dents' knowledge about contraceptive issues and their contraceptive-use prevalence.

6. Conclusion

In Burundi, even though knowledge seems to be high, only 23% of married women use a modern contraceptive. The results in this present study were found to be lower in similar African university settings where the levels of knowledge about contraceptives ranging 53.3 % to 86.3% .

The utilization rate among sexually active adolescents (15–19) is very low (8%), despite a high fertility rate in this age group (11%) The low utilization of contraception may be linked to the negative perceptions and beliefs not well-accepted, among young people.

Recommendation

Provide high-quality contraceptive services that help female students overcome the personal and cultural barriers they face by providing care that protects their rights to voluntary, informed, and confidential contraceptive choice.

7. Limitations

Firstly, the study was conducted in only selected universities, which might limit the generalizability of the findings to all university students in Burundi. However, by selecting multiple universities from across the country, we believe that our results are fairly representative of Burundi university students in general. Secondly, sexual issues are sensitive; thus, the participants' free expression and honesty might be constrained. Thirdly, the method of using an anonymous self-administered questionnaire lacks consistency in terms of identifying all misunderstandings despite the attendance of a researcher in the field. To minimize this limitation, we ensured the confidentiality and privacy of the participants. Some study assistants attended the classroom to answer any possible questions given by participants while collecting data, and we also confirmed that the questionnaire was as simple and understandable as possible.

Acknowledgment

All praises, adoration, and glory belong to Almighty God our Father in heaven. I know nothing except what He allows me to know. I deserve nothing except what He finds me worthy of, my past, present, and future lie in His hands, the master planner of my life, and am honored to be just a mere reflection of His deeds.

Gratitude must be expressed and displayed to those who deserve it; Expressing the efforts of my parents (BUFIRIKA DEO and MBAHONANKWA Raymond) and my brothers and sisters, no words to express your prayers, care, love, counseling, aspiration, motivation, encouragement and many more, may God bless you.

My profound appreciation goes to my beloved sister NAHIMANA BEATRICE who supposed me and was charged with all the school fees and other requirements during my studies from primary school until now, her support and assistance have been indispensable to me. May Almighty God reward her abundantly with the benefits of their labor in this world and the heaven in Jesus' name.

A high degree of perfection can never be achieved in academic writing without proper guidance; I appreciate the guidance and counseling of the Research team of the School of Postgraduate and Research Studies at Cavendish University Uganda. I thank also my great supervisor Mrs. KHAWA NAMAJJA who took the time to read through my work and guide me despite her busy schedule. Her scholarly guidance, insights, constructive comments, critique, selfless devotion, and critical revision of the drafts made it possible for me to complete this research dissertation.

Thank you so much for the effort you have given this work.

List of Abbreviations.

MC: Modern contraceptive

DHS: Demographic health survey

SPSS: Statistical packages for Social Science

Source of funding.

This study did not receive any external funding.

Conflict of interest

No conflict of interest declared.

Publisher details:

Publisher: Student's Journal of Health Research (SJHR)
(ISSN 2709-9997) Online
Category: Non-Governmental & Non-profit Organization
Email: studentsjournal2020@gmail.com
WhatsApp: +256775434261
Location: Wisdom Centre, P.O.BOX. 148, Uganda, East Africa.



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