

Knowledge, Attitude and Practices towards contraceptive Use among Unmarried Females Students at Mount Kenya University Rwanda

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Abstract

Background: Contraceptive use is one of the effective means for preventing unintended pregnancies and is highly affected by cultural and social demographic background especially in premarital or unmarried females. Rwanda has made great effort to promote women's health and to decrease the maternal mortality and morbidity, but there is still a long journey to prevent post abortion morbidity and mortality. This study aimed to assess knowledge, attitude and practices towards contraceptive use among female students.

Methods: This is a quantitative cross sectional study conducted among 313 female students recruited using a stratified sampling method combined with a simple random sampling. Online questionnaire was used to collect data from study participants. Obtained data was processed and analyzed using SPSS version 25. Descriptive statistics was used to get background information of the study population, and multivariate analysis was used to evaluate factors influencing contraceptive use.

Results: The mean age of participants was $25.6 \pm 3.3SD$, Undergraduates respondents represented 92.7% , 7.3% of respondents were in postgraduates. The results showed that the knowledge of unmarried female students is generally good and their attitudes towards contraceptives are positive. Among 313 participants, 65.8% reported to be sexually active, 76.7% had used any modern contraceptive and 76.2% had practiced unprotected sexual intercourse at least once. A total of 11.5% have had unintended pregnancies at least once. The most commonly known and used methods were condoms and pills. Fear of side effects (55.6%) and lack of information about contraceptives (18.5%) have been reported as factors influencing the non-use of contraceptives.

Conclusion: This study concluded that there is still a gap in contraceptive use among sexually active unmarried female students, and recommended the university needs to increase awareness of university students towards contraceptive use.

Keywords: Contraceptives, Practices, Females Students, Mount Kenya University Rwanda

Introduction

Worldwide, the number of unintended pregnancies is on the rise and subsequent unsafe abortions account for 13% of maternal mortality despite that they are preventable causes [1]. Between 2010 and 2014, around 56 million induced abortions occurred each year, making a global abortion rate of 35 per 1000 for women aged 15-44 years. Among 56 million abortions, 25 million are unsafe, and 97% of unsafe abortions occur in low and middle income countries (LMIC) [2].

Globally, at least 22,800 women die each year from unsafe abortion complications and almost all that death related complications occur in low and middle income countries mainly in Africa. Regionally, the

rate of unintended pregnancies is alarming, with 14 million unplanned pregnancies occurring each year in sub-Saharan Africa [2].

Unintended pregnancy predisposes women to several health risks such as unsafe abortion, maternal death, malnutrition, mental illness and vertical transmission of HIV to children, and as long as the risk of unintended pregnancy in SSA continues to be high and unsafe, this predisposes approximately 1 in 16 women to psychosocial impacts of morbidity and mortality. It increases stress levels, impacts negatively on women's quality of life, and threatens economic status of families [3].

Locally, Rwanda has made remarkable progress towards declining and preventing the maternal mortality and morbidity, by reducing maternal mortality rate by three quarter between 2000 and 2015 [4]. Despite all those efforts, the number of women using modern contraception remains low (48%), with a high number of unmet needs in married women at 19% as per Rwanda Demographic Health Survey 2014-2015. Apart from this low percentage of contraceptive use and a high number of unmet needs among married women, only 11.4% of sexually active unmarried women aged 15-34 use modern contraception, and this is the major origin of unintended pregnancies and subsequent induced abortions [4]. Approximately, 60000 induced abortions occur in Rwanda each year, and an estimated two out of five Rwandan women who abort have complications requiring medical treatment [5].

Lack of knowledge about contraception and sexual reproductive health among unmarried women, health concerns, opposition from others, infrequent sex and method-related reasons are among hinders of contraceptive use and consequently leading to unintended pregnancies [6]. Analyzing the current situation of unmarried Rwandan female students towards contraception knowledge, attitudes, use and factors associated is of paramount importance in designing interventions targeting youth, in regards to sexual and reproductive health services improvement.

Contraceptive use highly depends on culture and social background. Only 36% of sexually active unmarried women in Rwanda were found using modern contraception and the remaining women are at high risk of unintended pregnancies which lead to unsafe abortion and maternal mortality and morbidity [4]. The aim of this study was to determine the knowledge, attitudes and practices of unmarried female students at Mount Kenya University Rwanda towards contraceptive use.

Methods

This study was conducted under descriptive cross sectional study with quantitative approach.

Target population

The target population of this study was unmarried female students aged 18-49 years, studying at Mount Kenya University Rwanda located in Kigali, the capital City of Rwanda.

Sample design

According to the Registration office, currently Mount Kenya University Rwanda has 2943 registered students in total, including 1543 females. All students are enrolled either in postgraduate group or undergraduate group. Postgraduate program includes distance learning program, evening and weekend programs, whereas undergraduate program comprises distance learning program, day program, and evening program and weekend programs. All programs comprise different schools, which include different departments and classes. Distance learning with a total number of 107 female students was excluded in the study population, making a total population of 1436 female students.

The researcher used the stratified sampling method combined with simple random sampling as follow:

Two main strata were considered; undergraduate and postgraduate strata. The postgraduate strata combined weekend and evening pro-

grams students, who were divided into two main strata; one stratum for the students learning health related sciences, and one for those learning non-health related studies, assuming that health related students have advanced knowledge about the research topics than the rest of the students.

The undergraduate strata combined day, evening and weekend strata and was divided into two main strata, those ones learning health related studies within one stratum, and the rest of undergraduate female students within another stratum. Health related sciences included those ones learning public health, nursing and medical laboratory sciences. Within health related sciences stratum and non-health related sciences stratum in either postgraduate or undergraduate groups, a simple random sampling was used to select study participants. The sample size was calculated using Yamane Taro (1967) formula (Osahon & Kingsley, 2016) and then proportional allocation was applied to get the required number of study participants in each stratum.

This study used the following Yamanes formula for sample size calculation:

$$\text{Where: } n = \frac{N}{1+N(e)^2}$$

Where n= Sample size

N= Total population

e= margin error equals to 5% at 95% confidence interval

$$\text{This formula gives the following sample size: } = \frac{1436}{1+1436(0.05)^2}$$

By proportional allocation of the total sample size, each stratum was composed of the following students:

$$\text{Postgraduate health related sciences} = \frac{45 \times 313}{1436} = 10 \text{ students}$$

$$\text{Postgraduate non-health related studies} = \frac{60 \times 313}{1436} = 13 \text{ students}$$

$$\text{Undergraduate health related sciences} = \frac{390 \times 313}{1436} = 85 \text{ students}$$

$$\text{Undergraduate non-health related studies} = \frac{941 \times 313}{1436} = 205 \text{ students}$$

Sampling technique

In collaboration with classes representatives (CR) in each stratum, on-line questionnaire was sent to targeted students for completion using whats App platforms, and the recruitment process ended every time the required number was reached by considering the first respondents in each stratum. Study participants consented to take part in the study prior completion of the questionnaires. All unmarried female students at MKUR aged 18 to 49 years, as well as cohabitating, divorced, or widowed students who consented to participate in this study. Pregnant students and religious students belonging in congregations with virginity vows were not unrolled in the study. Distance learning students were excluded in the study as well.

Data collection methods

Online questionnaire was used to collect data from participants and it was written in English. Questions were related to factors influencing contraceptive use among sexually active unmarried university female students at Mount Kenya University Rwanda. The questionnaire comprised 4 sections regarding the aim of the study: (a) social demographic characteristic of respondents; (b) knowledge of participants about

contraception; (c) attitudes of participants towards contraceptive use, and (d) practices and factors influencing use of contraception by participants.

Data analysis procedure

Raw data from the questionnaire was entered into SPSS version 25. Quantitative data was analyzed using SPSS version 25. Descriptive statistics was used to present background information of the study population, and multivariate analysis was used to evaluate factors influencing contraceptive use. P-values were calculated using Chi square and Fisher's exact tests and were set at less than 0.05 for significance.

Ethical consideration

Before data collection the research proposal was submitted to MKUR Institutional Review Committee (IRC) for ethical clearance. A consent form with details on study purpose and the information partici-

pants were asked to provide was sent together with the questionnaire, and contained the researcher contacts and respondents were asked to contact him anytime during completion for any further clarification or explanation if needed. Participants were also assured that they were free to withdraw from the study anytime if deemed necessary. To ensure confidentiality and anonymity, code numbers were used for each study participant instead of names.

Results Social demographic characteristics

A total number of 313 participants meeting the selection criteria were recruited and completed the questionnaire. Table 1 represents the demographic characteristics of the study participants: The mean age of participants was 25.6±3.3 (20-41 years). The majority of respondents were single at 92.7%, 49.8% were Catholics, and 76.4% lived in a rental apartment. Undergraduate respondents represented 92.7% while 7.3% of respondents were postgraduate's students.

Table 1: Demographic Characteristics of Respondents

Variables	Frequency	Percentage
Age		
20-24 years	130	41.5
25-29 years	149	47.6
≥30 years	34	10.9
Mean±SD(Range)	25.6 ±3.3(20-41)	
Marital status		
Single	290	92.7
Cohabitate	19	6.1
Divorced	4	1.3
Religion		
Catholic	156	49.8
Protestant	147	47.0
Islam	10	3.2
Level of study		
Undergraduate	290	92.7
Postgraduate	23	7.3
School		
Health Sciences	95	30.4
Non Health Sciences	218	69.6
Year of study		
Year 1	58	18.5
Year 2	87	27.8
Year 3	102	32.6
Year 4	43	13.7
Masters 1	16	5.1
Masters 2	7	2.2
Residence		
Lives in rented house/apartment	239	76.4
Lives with parents	74	23.6

Knowledge on Contraceptives

Participants in this study expressed different knowledge on various contraceptive methods and their source of information about contraceptives was investigated and is summarized in Table 2.

As represented in Table 2, the most known contraceptive methods among participants were condoms (97.4%), pills (94.9%) and permanent sterilization (77.6%). Participants were also knowledgeable about injectable contraceptives (64.5%) and fertility period abstinence (57%) and less than half were knowledgeable

about implants and IUD at 46% and 45.7% respectively. Basal body temperature, cervical mucus, diaphragm and patches were the least known at 17.9%, 17.3%, 12.5% and 10.9% respectively.

More than half of participants reported to derive their information on contraceptives either from friends (27.5%) or from the media (24.9%). In addition, 21% get information from school, 2.9% from their parents or guardians and 2.6% mentioned to have no information about contraceptives.

Table 2: Knowledge about contraceptive methods and source of information

Variables	Frequency	Percentage
Knowledge about contraceptive methods		
Condoms	305	97.40
Pills	297	94.90
Withdraw	208	66.50
Injections	202	64.50
Fertility period abstinence	181	57.80
Sterilization	243	77.60
Implant	144	46.00
IUD	143	45.70
Basal body temperature	56	17.90
Cervical mucus	54	17.30
Diaphragm	39	12.50
Patches	34	10.90
Source of information about contraceptives		
School	68	21.7
Friends	86	27.5
Parents	9	2.9
Other relatives	37	11.8
Media	78	24.9
Web	27	8.6
Have no information	8	2.6

Furthermore, among the investigated 313 women, 40.4% reported that birth control pills are effective even if a woman failed to take them for three consecutive days; however, 95.2% knew that the pills do not guarantee 100% protection against pregnancy. A significant proportion of participants (98.4%) knew that condoms do not only offer contraceptive benefit but also offer protection against sexually transmitted infections. More than 80% of the respondents mentioned that women using birth control shots (Depo-Provera) must get an injection every three months for the ingredient to be effective in preventing pregnancy. In addition, combination of condom and pills was reported by 93.6% of the respondents as a better contraceptive modality compared to either alone.

The respondents also expressed their knowledge regarding the side effects of the contraceptives, where 31.1% answered that contraceptive pills side effects include mood change and weight

gain. Similarly, 18.3% mentioned an increase in breast cancer for women taking estrogen-containing contraceptives and likewise 17.6% mentioned an increase in gynecological cancers (ovarian, endometrial and cervical) as a side effect of contraceptive pills. However, over 93% were aware that if a woman develops side effects of one type of contraceptive she should switch to a different type with safety.

In regards to emergency contraceptives, 66.1% of the respondents reported to have heard about the method. However, 28.5% thought that immediate post-coital douching is a method of preventing pregnancy, 73. % were aware that the emergency contraceptive pills should be taken within 72 hours post-coital and only 22.1% were aware that IUD can be used as an emergency contraceptive (table 3).

Table 3: Knowledge on contraceptives

Questions	Yes		No		I don't know	
Birth control pills are effective even if a woman failed to take them for 2-3 days	126	40.4	163	52.2	23	7.4
Female sterilization is one way to avoid pregnancy.	240	76.9	10	3.2	62	19.9
Health education is important for women who want to use contraception	309	98.7	3	1.0	1	0.3
Contraceptive pills do not guarantee 100 % protection.	297	95.2	10	3.2	5	1.6
Condoms prevent STDs	307	98.4	4	1.3	1	0.3
Side effects of OCP include mood swings and weight gain.	97	31.1	81	26.0	134	42.9
There is an increased risk of breast cancer in women taking estrogen-containing contraceptives.	57	18.3	87	27.9	168	53.8
Women using the birth control shot must get an injection every 3 months.	253	81.1	11	3.5	48	15.4
If a woman is having side effects of one kind of contraceptive pill, switching to another type might help	293	93.9	6	1.9	13	4.2
Using both a condom and the pill is considered to be a very effective contraceptive.	291	93.6	5	1.6	15	4.8
Using the pill increases a woman's risk of ovarian, endometrial or cervical cancer.	55	17.6	86	27.6	171	54.8
Douching after sex prevent getting pregnancy	89	28.5	209	67.0	14	4.5
Emergency contraception pills are supposed to be taken before 72 hours	228	73.1	26	8.3	58	18.6
IUD can be used as emergency contraception	69	22.1	108	34.6	135	43.3

Attitude towards contraceptives

On attitudes towards contraceptive use among all respondents and based on the questionnaire, 93.3% agreed or strongly agreed that contraceptives should be used by all unmarried sexually active females who do not want to get pregnant, 98.1% expressed that using contraceptives provide a sense of safety to the user and 98.4% agreed or strongly agreed that contraceptives can protect the health of the family and the community in general. When asked about the benefits to the male partner, 98% of the respondents expressed that

contraceptives would be beneficial to male partner and similarly, 97.7% agreed or strongly agreed that male's positive attitude may improve the contraceptive use to females. However, participants also mentioned that discussing contraceptives with boyfriend would be embarrassing and nearly half of them (47.8%) agreed or strongly agreed that a boyfriend's objection to contraceptives can prevent the woman from using contraceptives as presented in Tables 4.

Table 4: Attitude towards the use of contraceptives

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
	N(%)	N(%)	N(%)	N(%)	N(%)
Contraceptives should be used by all females who don't want to get pregnant	225(71.9)	70(22.4)	8(2.5)	4(1.3)	6(1.9)
Contraceptives provide a sense of safety to the user	227(72.8)	79(25.30)	5(1.6)	1(0.3)	0
Contraceptives benefits males too	216(69.2)	90(28.8)	6(1.9)	0	0
Discussing contraceptives with boyfriend is embarrassing	58(18.6)	81(26.0)	41(13.1)	76(24.4)	56(17.9)
Boyfriend's objections can prevent girlfriend from using contraceptives	48(15.4)	101(32.4)	31(9.9)	77(24.7)	55(17.6)
Contraceptives can protect the health of family and community	227(72.8)	80(25.6)	1(0.3)	4(1.3)	0
I may not use contraception if my religion disapproves it	46(14.7)	63(20.2)	49(15.7)	91(29.2)	63(20.2)
Male positive attitudes may improve contraceptive use	207(66.3)	98(31.4)	6(1.9)	1(0.3)	0
Different contraceptives should be available and easily accessible at our campus.	231(74.0)	64(20.5)	1(3.2)	1(0.3)	6(1.9)

Sexual behavior and Practices towards contraceptives

By the time of data collection, 206(65.8%) of female respondents in this study have had a sexual experience at least once. Among these respondents with sexual experience, 76.2% had practiced unprotected sexual intercourse. By the time of the survey, thirty-

six respondents 17.6% of the sexually active and 11.5% of overall respondents) had had an unintended pregnancy at least once. In terms of sexual orientation, the majority of female students 94.2% were heterosexual.

Table 5: Sexual behavior and contraceptive use

Variables	Frequency	Percentage
Ever had sex	206	65.8
Ever had unprotected sex	157	76.2
Ever had an unwanted pregnancy	36	17.6
Sexual orientation		
Asexuality	2	0.6
Bisexuality	8	2.6
Heterosexuality	295	94.2
Homosexuality	8	2.6
Ever used any contraceptive	158	76.7
Contraception use on recent sexual intercourse	141	68.4
Have you ever used EC	122	57.0
Use of traditional contraception	33	15.4

Furthermore, 76.7% had used any modern contraceptive, 57% have ever used emergency contraceptive, 68.4% used contraceptives in the last sexual intercourse while 15.4% had ever used a traditional method.

Factors influencing the use of contraceptives

The most highlighted factors influencing the non-use of contraceptives were fear of side effect (55.6%) and lack of information about contraceptives (18.5%). Also, 2.6% of our respondents reported their parents to be the reason why they do not use contraceptives while 8.6% and 6.1% reported religion and lack of the service at the campus respectively as barriers. Similarly, more than 98% of all the respondents highlighted the lack of contraceptive guidance and policy at the campus. Consequently, 94.5% claimed the availability of contraceptive options at the campus should increase contraceptives use among female students at Mount Kenya University Rwanda.

Table 6: Reasons for not using contraceptives

Reasons for not using contraceptives	Frequency	Percentage
Fear of side effects	174	55.6
My friends	26	8.3
My parents	8	2.6
My religion	27	8.6
No enough information about contraception	58	18.5
Not available at the campus	20	6.4

Discussion

Based on the specific objectives, the results of this study show that the knowledge of unmarried female students at MKUR in regards to contraceptives is generally good. Positive attitude was expressed but the use of contraception is still low relatively to the number of sexually active women. Factors such as fear of side effects, lack of information and lack of the service at the university were significantly associated with poor use of contraceptives as discussed in this section.

Results of this study show that single unmarried women are mostly young adults with mean age of 25.6 - 3.3 and nearly 90% in their third decade of life. This is comparable to the results from a study in Tanzania that also showed that the predominantly single women at the St John's University of Dodoma were aged 27.4±5.7 years with more than two thirds aged 21-30 years [7]. Friends and media appeared to be the most common source of information about contraceptives and this is also in agreement with Indian females who mentioned media as their main source of information, and similar to the results from a community based study in Ethiopia [8, 9].

The most common known form of contraception among respondents were condom and pills and this is comparable to a study done in the neighboring countries, Uganda and Tanzania that also highlighted the condom and pills as the most known among university students [7, 10]. In addition, the non-contraceptives

benefits of condom that include prevention of sexual transmitted infections and cervical cancer can also enhance its awareness and this was observed among 98.4% of respondents who mentioned other benefits of condoms [11, 12]. The study population had good knowledge in agreement with the current literature suggesting that when a woman has developed on-tolerable side effects of one type of contraceptive she could opt for a different type [13].

Skipping a pill or two can potentially lead to an unplanned pregnancy. However, 40% of respondents reported that pills can still be effective even when missed for 3 consecutive days. Nearly one third believe that post-coital vaginal douching can be used as a form of emergency contraception and this is similar to the practice in previous decades where teens have consistently abused the douching with Coca-Cola as emergency contraception but, this was later proven wrong due to the rapid progress of sperms towards the uterine cavity and strong recommendations against the post-coital douching as emergency contraception were discussed by many researches [14, 15].

Participants expressed different attitudes on various questions regarding the use of contraceptives. Generally, participants in this study were in agreement that the use of contraceptive is beneficial not only to the individual user but also to the family and they recommended the use of contraceptives to all unmarried sexually active females. Similar findings were found in Tanzania where university students also mentioned that contraceptives are beneficial and they expressed willingness to use them in the future [7].

At least two thirds unmarried female students in this study had practiced sexual intercourse and most of them had unprotected sex at least once by the time of the survey. This is comparable to the results from a study done in Botswana and Uganda that documented two thirds of female students being sexually active [16, 17]. However, this study results are higher in comparison with an institution-based study in Ethiopia showing that only 54% of university students had practiced premarital sexual intercourses and far more different from a study from China with similar design showing that only 10% of the university students had practice sexual intercourse [18]. Ninety-two percent of the sexually active female's respondents in our study had used contraceptive (76.7% modern, 15.4% traditional), mostly condom and pills, to prevent unwanted pregnancy. Previous study conducted among Rwandan university students had shown that 98% had used any method of family planning [19].

Studies done in India, Tanzania and Uganda have also shown that the most used form of contraceptives among university students were condoms and pills [7, 8, 10]. Among the modern contraceptives on the Rwandan market, condoms and pills are the least expensive and readily available over-the-counter and hence this could explain the wide uptake of condoms and pills and relatively low uptake in regard to long acting contraceptives as explains by this study results.

Apart from the lack of family planning service at the university, other factors that were associated with non-use of contraceptives were fear of side effects and lack of information about different

contraceptives. This is in agreement with Kara et.al showing that the fear of side effects and lack of knowledge have negatively impacted the use of contraceptives among university students in Tanzania [7]. Different studies have claimed a significant association between contraceptive uptake and religious affiliation and this was observed in this study even though it was not statistically significant [10, 20].

Conclusion

In general, the knowledge on contraceptives of unmarried female students at MKUR is good and their attitudes are positive. The prevalence of sexually active unmarried female students has been found high at 65.8% and the prevalence of those who practiced unprotected sex was also found higher at 76.2%. This shows inconsistent use contraceptives among sexually active unmarried students, which put them at risk of unintended pregnancies and their consequences like unsafe abortions that may end up in maternal mortality or morbidity. In order to prevent those consequences, health campaigns to raise more awareness of youth on contraceptives use as well as comprehensive programs aiming at increasing their knowledge on contraceptives and easy access are suggested.

MKUR should avail user-friendly contraceptive package at the campus, and curriculum should include courses on sexual and reproductive health especially in non-health sciences. To the community, to avoid stigmatization of contraceptive use among youth, rather encourage their use for those who are sexually active to prevent unintended pregnancies and their consequences.

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