

Barriers to the Use of Long Acting Contraceptive Methods among Married Women of Reproductive Age in Kicukiro District, Rwanda

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Abstract- Rwanda's high population growth constitutes a major challenge to the economic development. In 2010 Rwanda's population growth rate was of 2.6%. Over time, the use of Long Acting Contraceptive Methods (LACM) has not been opted for as short acting methods. In the study conducted in Kicukiro District to assess barriers to the use of LACM, the main objective was to identify the barriers to the use of LACM. Specifically, to measure prevailing rate of LACM use, to measure the association between socio-demographic characteristics and the use of LACM, to identify current knowledge and attitudes regarding LACM and to assess the accessibility to LACM. To meet all those objectives, a cross sectional study was conducted. The study participants were 96 women and proportionate sampling method was used. About 95.8% of participants had general knowledge about LACM. The study showed that LACM use increases significantly with the level of education (OR: 6.500; $p=0.012$), the number of children alive (four and above: OR: 14.25 $p<0.001$), the family size (four and above: OR: 8.591 $p<0.046$), the joint discussion with partner on the number of children to bear (OR: 5.053; $P=0.048$) and partner agreement to the use of LACM (OR: 3.659; $P=0.038$). According to the study, the use of LACM decreases significantly with desire of having another child (OR: 0.389; $P=0.040$) and negative attitude toward LACM (OR: 0.166, $P=0.014$). Campaigns against negative attitudes toward LACM should be strengthened.

Index Terms- Barriers, Long Acting Contraceptive Methods, Married Women of Reproductive Age.

I. INTRODUCTION

Globally and in Africa, unintended pregnancies as well as unsafe abortion continue to be a major reproductive health problem. Contraceptive use could prevent 218 millions of unintended pregnancies in developing countries in 2012, and in turn, 55 millions of unplanned births, 138 millions of abortions (of which 40 million are unsafe), 25 million miscarriages and 118,000 maternal deaths could be averted⁽¹⁾. Over time, short acting methods, such as oral contraceptives and injectables have prevailed whereas long acting contraceptive methods were ignored. Data from demographic and health surveys from four sub-Saharan countries showed that the proportion of women currently using LACMs is significantly lower than the proportion using short-acting methods. In many countries in the region, less than 5 percent of women use LACM⁽²⁾. The reasons are many: Services and supplies are not yet available everywhere, choices

are limited, fear of social disapproval, partner's opposition poses formidable barriers, worries of side effects and health concerns hold some people back; others lack knowledge about contraceptive options and their use⁽³⁾. Rwanda with an estimated population of 10,537,222 people has the highest population density in sub-Saharan Africa that is, 418 habitants /km². In Rwanda, the population growth rate was of 2.6% in 2012 and this population growth constitutes a major challenge to Rwanda's economic development⁽⁴⁾. The vast majority of inhabitants (eight millions) are in rural areas and 80% live on agriculture⁽⁴⁾. Data from Rwanda Demography and Health Survey indicated that the Fertility rate (births per woman) in Rwanda was last reported at 4.6 in 2010, and maternal mortality ratio of 476 per 100,000. Despite these statistics, the LACM prevalence rate among married couples is 6 %⁽⁵⁾. In Kicukiro, the place of this research study, the overall prevalence of Family Planning (FP) use is estimated to be around 52%. The use of long acting contraceptive methods remains low with 8.3% compared to short acting contraceptive methods with 43.7 %⁽⁶⁾. A lot of efforts to make family planning services readily available to those who need it have been done by the government of Rwanda, the private sectors and non- governmental organizations. The budget as well as the coverage for FP activities have been increased⁽⁷⁾. Although researches on Family Planning and Reproductive Health have been carried out in other parts of the country, neither assessment nor researches have been conducted to identify barriers to the use of LACM in Kicukiro District. It is therefore worth conducting a study to identify barriers that slow down the use of LACM in order to get better general overview of knowledge and practice regarding the birth control using LACM.

II. LITERATURE REVIEW

Long-term contraceptive methods can be classified into Implants, IUDs and sterilization. The use of LACM has been hindered by several factors:

Socio demographic Characteristics Barriers

Age is one of barriers of the use of LACM. For example older women are more likely to have a stable long-lasting relationship with children. Older women are less likely to use the pill than younger women. In contrast, older women are more likely to use long-lasting methods or sterilization. This may be due to younger women desire for more children⁽⁸⁾. In the study carried out by Ristya Ira Murti in 2007 in Indonesia showed that there was a very strong relationship between women's age and

the non-use, use of short-term methods and the use of long-term methods⁽⁹⁾. Education has positive relationship on contraceptive use and can determine contraceptive methods choice. The more educated women are more likely to use contraception and have their own contraceptive choice⁽⁵⁾. A study conducted in Ethiopia has shown that only 10 percent of women with no education use contraception, though it is used by 53 percent of women with secondary education. Unmet contraceptive need is 35 percent for women without education, while only 17 percent of women with secondary or higher education have unmet need⁽¹⁰⁾. Number of living children can effect on contraceptive use and choice of all methods. According to RDHS (2010), Contraceptive use also increases rapidly as the number of living children increases. Number of live children was found to be an important predictor of demand for LACMs⁽⁵⁾. This is evidenced by the study conducted by Mussie *et al* in 2012, where mothers with two or more pregnancies were 3 times more likely to use LAPM as compared with those who had been pregnant only once⁽¹⁰⁾.

Socio-Cultural Barriers

Family pressure and societal stigma may also pose barriers due to cultural or religious norms dominant in the area in which a woman lives. In the study conducted by Muramutsa Felix in Gasabo, Gatsibo, Nyagatare, Nyamagabe, Nyarugenge and Rulindo districts in 2007 revealed that Socio-Cultural factors hinder Family Planning Practice in Rwanda where respondents expressed adherence to pro-birth culture⁽¹¹⁾. A newly published study using data from 2002 reports that Indian women with a specific family composition of two boys and one girl were 90% less likely to report having another pregnancy and 12 times more likely to be sterilized than women who have two daughters only⁽¹²⁾.

Provider Attitudes

Poor attitude that derive from the aforementioned constraints, combined with fear of recrimination from unhappy users, can serve to be a significant barrier against women who want to be sterilized⁽¹³⁾. Vagueness in public policy concerning the definition of major surgery and who can perform it, for example, can thwart attempts to increase the availability of sterilization by task shifting to lower cadre workers trained in the procedure⁽¹⁴⁾. In addition, health workers, from physicians to nurses and medical technicians, may have personal biases that can contravene national policy. In a recent study in the United States on physician influence, 45% of physicians would discourage contraceptive sterilization in a woman who had had two pregnancies and one live birth, while 29% would do so for a woman with four pregnancies and three live births. The study conducted in Egypt in 2013 showed that about one-third of the non-users and more than three-quarters of the discontinued women had been told to come back at a later date while they were menstruating⁽¹⁵⁾.

Access Barriers

Barriers may also exist in terms of poor access to and availability of sterilization services. In rural areas, distance can be prohibitive, and the time it takes to undertake and recover from the procedure (depending on the type) can be more than families are willing to accommodate. Even in developed

countries, issues of staffing, availability of operating rooms, missing paperwork, and stock-outs of necessary equipment can prevent requested sterilizations from moving forward⁽¹⁶⁾. The study conducted in Pakistan, evidenced that sterilization uptake increases when services are expanded. The opening of new family planning clinics in urban areas contributed to a rise in female sterilization from 14% to 22% in three years⁽¹⁷⁾. The results from a qualitative study conducted by Muramutsa in Gasabo, Gatsibo, Nyagatare, Nyamagabe, Nyarugenge and Rulindo districts in 2007 revealed that the lack of trained staff may hinder the access to LACM. In that study one nurse who was interviewed stated «I am the only one in the whole area surrounding the health center, who provides modern FP methods». In the same study restricted access to modern FP methods including LACM was a concern for some of the respondents. As one female respondent stated: «When someone needs a modern FP method, some health center providers tell them “please go somewhere else” and we feel confused because this center does not provide modern FP and therefore cannot help us.»⁽¹¹⁾.

Religion Barriers

The extent to which religion plays a role as a barrier to sterilization depends upon the religion, on the interpretation of the Bible and Koran by religious leaders, and on the homogeneity of the faith in a particular region⁽¹⁸⁾. A sample of women in India showed that the prevalence of sterilization among Muslim women (14%) was lower than among Hindu women (29%) and among women from other religious groups (30–35%), while non-Muslims in Bangladesh were twice as likely to undergo sterilization as were Muslims⁽¹⁹⁾. However, sterilization rates can still be high in Catholic countries such as Brazil and in Muslim countries such as Turkey, which implies that religious guidelines are not always (whether by necessity or choice) strictly interpreted, implemented, or adopted⁽²⁰⁾.

Side Effects Barriers

In northern Karnataka, South India, the IUD is the most popular reversible contraceptive method but has a low continuation rate. A total of 713 IUD acceptors (461 rural and 252 urban) were interviewed to study factors influencing continuation of IUD use in south India. Only 35% of respondents had their original IUD in situ at the time of follow-up and 57% had requested removal, primarily because of side effects⁽²¹⁾. In qualitative study Conducted by Neeti *et al* in India to assess factors affecting contraception among women in a minority community in Delhi revealed the same where many participants hesitated to use intra uterine devices. Pain, bleeding disturbances, infection, discomfort with regular checking of thread and doubts about method reliability were the common concerns⁽²²⁾.

Quality of Service Barriers

Service quality is one of the major factors that affect demand and use for LACMs. Improved quality of care is an increasingly important goal of international family planning programs, for a variety of compelling reasons. From a human welfare perspective, all clients, no matter how poor, deserve courteous treatment, correct information, safe medical conditions and reliable products. It also has been argued that providing such

quality services will lead to increased service utilization by more committed users, eventually resulting in higher contraceptive prevalence and lower fertility. A study done on family planning services quality as a determinant of use of IUD in Egypt showed that the unadjusted relative risk ratios the quality of family planning services had a significant positive effect on the use of IUDs from public sources⁽²³⁾.

Misinformation Barriers

In the study conducted by Ristya in 2007 in Indonesia showed that there was a high degree of association between knowledge about contraceptives and the use of LACM⁽⁹⁾. This is evidenced by the results of the study conducted in Ethiopia in 2009 by Anley where women who had moderate knowledge were 6 times more likely to use LAPM as compared with those who had low knowledge and mothers who had high knowledge were 8 times more likely to use LAPM as compared with those who had low knowledge⁽²⁴⁾. Myths and misconceptions were identified in various studies as a barrier to the use of LACM. In the study conducted in Ethiopia among women who had general knowledge about LAPMs, 77(33.2%) heard myths and misconception. Among women who encountered myths and misconceptions 77(100%), 19(24.67%) said that use of Norplant would affect their health negatively. They said Norplant could cause hypertension, mental illness, anemia, weight gain, uterine mass, headache and fever. Some women 4(5.2%) encountered that implants could move around freely in the body once inserted and could be lost at the day of removal. A high number of women 17(22%) among those who heard myths and misconceptions said that use of implants might lead to permanent sterility and about 12(15.6%) heard IUD could do the same. Most women 16(20%) were concerned about the health effect of IUD, 9(11.2%) encountered IUD could cause bad smell of the vagina, the others said it could cause discomfort or pain during intercourse, headache and eat the uterus and make it thin. Also they heard that it could disappear in the uterus⁽²⁴⁾.

Partner Influence Barriers

A woman's perception of her husband's approval of family planning can directly affect whether she uses contraception⁽²⁵⁾. At the same time, these influences and decisions are dynamic within couples. As women age and have more child, spousal discussions about and agreement over the use of contraception, particularly LACMs, increases⁽²⁶⁾. Spousal distrust and misunderstanding may also influence uptake of LACMs. Potential users of permanent methods express apprehension about the effect of vasectomy, for example, on the faithfulness of their partners⁽²⁷⁾. The study conducted in Nepal in 2006 evidenced that 'Husband's approval of FP' is the second most significant predictor of female sterilization. For women whose husbands approve of FP, odds of adoption increases to eleven times⁽²⁷⁾. In qualitative study Conducted by Neeti *et al* 2010 in India to assess factors affecting contraception among women in a minority community in Delhi revealed the same where most of the women expressed the need for improved range of contraceptives which they can use without their husband's consent and are free of complications as they believed that ill effects of contraceptives limit their capacity to do household work⁽²²⁾.

III. MATERIALS AND METHODS

Study Design

A cross sectional design which is quantitative in nature was used to assess barriers to the use of long acting contraceptive methods among married women of reproductive age.

Study Area and Study Population

The study was conducted in health facilities that provide FP service in Kicukiro District, Kigali city. The study population was married women of reproductive age of 18-49 years who visited the health centers of Kicukiro district for FP.

Sample Collection and Processing

A sample of 96 married women was determined using formula with finite population correction⁽²⁸⁾. Proportionate stratified sampling method was used to determine the number of women from each health facility. A systemic sampling method was used to select participants from each stratum. Data from the written questionnaire was coded and entered into the computer using SPSS 21.0. A descriptive analysis was carried out for each of the variables. To assess the relationship between independent and dependent variables, bivariate analysis was done. To assess the presence and degree of association between the dependent and independent variables, chi-square or Fischer exact test were used and statistical significance was defined when p-value was less than 0.05. Odds ratio with 95% confidence interval in multiple logistic regression was computed on variables which showed significant association with the dependent variable to identify their independent effects.

Ethical Consideration

The ethical clearance was obtained from Mount Kenya University (MKU) ethical committee. After obtaining the permission from the directors of health centers, the interviews started. The participation was free and personal. The researcher explained to the respondents that they would remain anonymous. A discreet place which offers an acceptable confidentiality level was identified. Each respondent had all her time to think and to answer freely. The participants were informed that the ethical consent will be respected. All respondents were fully briefed about importance of the study. Once the consent was given, the researcher conducted the data collection procedure. The respondents were told to stop the process whenever they felt uncomfortable.

IV. RESULTS

Prevalence of the Use of LACM in Kicukiro District

Table 1: Level of Use of Long-Acting and Short Acting Contraceptive Methods among Respondents

Contraceptive methods	Frequency	Percent
Injection	62	64.6
Pills	19	19.8
Implant	7	7.3
IUD	2	2.1
Female sterilization	1	1.0

Spermicide	0	0.0
Condom	3	3.1
Abstinence	0	0.0
Diaphragm	2	2.1
Vasectomy	0	0.0
Total	96	100

association between Occupation and LACM use was not significant (P=0.076).

Table 2: Distribution of Respondents According to their Knowledge toward LACM

Contraceptive methods	Frequency	%	P-value
General knowledge on LACM			0.639
Yes	92	95.8	
No	4	4.2	
Implant (n=92)			0.087
Yes	88	95.6	
No	4	4.4	
Intra Uterine Devices(n=92)			0.259
Yes	82	89.1	
No	10	10.9	
Female sterilization (n=92)			0.072
Yes	70	76.0	
No	22	24.0	
Vasectomy (n=92)			-
Yes	59	64.1	
No	33	35.9	
Know place they can get LACM			0.221
Yes	90	98.0	
No	2	2.0	
Know benefits from LACM			0.063
Control birth for long time	86	93.5	
No	6	6.5	

Respondents were asked the method chosen after consultation (Table 1). A large percentage of 64.6% of participants has chosen injection followed by pills with 19.8%. Only 10.4% of participants have chosen LACM (Implant by 7.3%, IUD was chosen by 2.1% and Female sterilization was chosen by 1%). Table 3 describes socio demographic characteristics of participants and their association to the use of LACM. Respondents were between 18 and 49 years old. The age ranged from 18-25 is presented in greater proportion with 48.0% of respondents and there was no significant association between age and the use of LACM (P=0.251). Respondents were asked the highest level of studies they have completed. Illiterates count 6.2% of participants, who have completed primary education were 39.6%, secondary education 41.7%, higher education 12.5%. There was a significant association between Education and use of long acting contraceptive method P=0.003. Respondents were asked their religion. Catholic affiliation was 41.7 % followed by Protestants with 31.7%. There was no significant association between religion and choice of LACM (P=0.840). Of the 96 women enrolled into the study 62 of them reported desire of bearing other children (64.6%) whereas 28.1 % of participants do not desire having any more, as for 7.3% they have no position. There was a high association between using LACM and desire of having another child (P=0.001). When asked the number of children alive 46.9% reported having one, while 38.5% reported having two to three and 14.6% had four and above. The association between number of children alive and LACM use was significant (P<0.001). Participants were asked the size of the family. Among them 53.1 % reported having three children whereas 46.9% of them reported having four and above. There was a significant association between the size of the family and using LACM (P=0.027). A large proportion of women who participated in the study were farmers with 35.4%.The

Respondents were asked if they knew LACM. A large majority (95.8%) indicated to be informed on LACM and 91.7% knew at least two methods (Table 2). The most commonly known methods were implants at 95.6%, followed by IUD at 89.1%, female sterilization at 76%, and vasectomy at 64.1 %. Among participants 98% reported that they knew where they could get the LACM. Respondents were asked benefits they could get from LACM and 93.5% agreed that LACM can control number of birth over long time.

Table 3. Association between LACM Use and Socio-Demographic Characteristics of Study Participants

Socio- demographic characteristics	Frequency	Percent	LACM use		P value
			Yes	No	
Age group of participants (n=96)					0.251
18-25	46	48.0	6	40	
26-33	30	31.2	1	29	
34-41	16	16.7	2	14	
42+	4	4.1	1	3	
Education status (n=96)					0.003
Illiterate	6	6.2	0	6	
Primary education	38	39.6	0	38	
Secondary education	40	41.7	6	34	
Higher education	12	12.5	4	8	

Occupation (n=96)					0.076
Unemployed	9	9.4	1	8	
Business	26	27.1	1	25	
Famer	34	35.4	2	32	
Employed	23	24.0	6	17	
Student	4	4.1	0	4	
Religion(n=96)					0.840
Muslim	19	19.8	2	17	
Catholic	40	41.7	5	35	
Protestant	30	31.7	3	27	
Adventist	7	7.3	0	7	
Desire of having children (n=96)					0.001
Yes	62	64.6	2	60	
No	27	28.1	8	19	
Don't know	7	7.3	0	7	
Number of children alive (n=96)					<0.001
One	45	46.9	0	45	
Two-three	37	38.5	4	33	
Four and above	14	14.6	6	8	
Size of family(n=96)					
Three	51	53.1	2	49	
Four and above	45	46.9	8	37	

Respondents were asked their attitudes toward LACM (table 4). Those who reported that LACM can cause cancer were 60.4% and 67.7% of respondents reported that LACM enhance marital unfaithfulness. Those who reported that LACM can decrease sexual pleasure were 65.6%; others

62.5% reported that LACM can cause congenital malformation and 55.2% reported that LACM can increase promiscuity. Respondents' negative attitudes were found to be highly associated with the use of LACM (P<0.05).

Table 4: Distribution of Respondents according to their Attitudes toward LACM

Variable	Frequency	Percentage	LACM use		P-value
			Yes	No	
Cause cancer (n=96)					0.047
Yes	58	60.4	3	55	
No	38	39.6	7	31	
Enhance marital unfaithfulness (n=96)					0.002
Yes	65	67.7	2	63	
No	31	32.3	8	23	
Decrease sexual pleasure (n=96)					<.001
Yes	63	65.6	1	62	
No	33	34.4	9	24	
Cause congenital malformation (n=96)					0.045
Yes	60	62.5	2	58	
No	36	37.5	8	28	
Increase promiscuity (n=96)					0.039
Yes	53	55.2	2	51	
No	43	44.8	8	35	

Table 5 describes the accessibility of LACM. Respondents were asked if there was a health center in the nearby that provides LACM. Among them 89.6% responded positively. While 10.4% of them responded negatively. Respondents were asked about the distance between their homes and the nearest health center. Among respondents 20.8% use ten minutes to get to the nearest health center. Those who use 10 to 30 were 37.5%, others 25% use one hour

and 16.7% use more than one hour. When asked if they knew that LACM are available 75% of them responded positively and 25% responded negatively. Among women who participated in the study 6 of them reported they had been refused LACM due to the following reasons: the lack of menstruation was reported by 3 women, the lack of husband consent was reported by 1, another woman reported that the service was not available, and another one reported that she

was refused the services as she was too young to start LACM. When asked on the convenience of opening hours 99% of them responded passively. Respondents were asked who takes the last word when it comes to bearing other children and 18.8% reported that the decision is taken by woman, who reported that the decision is taken by husband were 53.1% and

respondents who reported joint decision were 28.1% . When respondents were asked if they discuss with the partner the use of LACM of them 47.9% indicated that they discuss about it. However 45.7 % of those who discuss with their partner on the use of LACM reported that their husbands do not agree on their use.

Table 5. Accessibility of Long Acting Contraceptive Methods

Variables	Frequency	Percent	LACM use		P-value
			yes	no	
Awareness of health center in the nearby that provides LACM before consultation(n=96)					0.964
Yes	86	89.6	9	77	
No	10	10.4	1	9	
How close is the nearest center (n=96)					0.221
Within 10 min	20	20.8	1	19	
Between 10 and 30 min	36	37.5	2	34	
Within 1 hour	24	25.0	5	19	
More than 1 hour	16	16.7	2	14	
Awareness of availability of LACM (n=96)					0.521
Yes	72	75.0	5	67	
No	24	25.0	5	19	
Refused of LACM before (n=96)					0.388
Yes	6	6.2	0	6	
No	90	93.8	10	80	
Reason of being refused of LACM (n= 6)					0.896
No menstruation	3	50.0			
Too young	1	16.6			
Service not available	1	16.6			
Lack of husband' consent	1	16.6			
Convenience of service hours (n=96)					
Yes	95	99.0	10	85	
No	1	1.0	0	1	
Who take decision to bear another children (n=96)					0.005
Wife	18	18.8	1	18	
Husband	51	53.1	2	49	
Joint decision	27	28.1	7	20	
Discussed with the partner the use of LACM (n=96)					0.045
Yes	46	47.9	8	38	
No	50	52.1	2	48	
Partner agreement to the use of LACM(n=46)					0.028
Yes	25	54.3	7	18	
No	21	45.7	1	20	

In table 6, results from multiple logistic regression analyses of this study showed that those with higher education are more than six times more likely to use LACM than those with secondary schools (OR=6.500, P=0.012, 95% CI=1.510-17.974), desire of having other children had a 61% reduction in the odds of using LACM relative to those who do not desire other children (OR=0.389, P= 0.040, 95% CI=0.158-0.956), the number of living children was also highly associated with the use of LACM. Women with four children and above were more than fourteen times more likely to use LACM than those with three (OR=14.625, P=<0.001, 95% CI=3.398-12.941), the size of family is also a predictor of the use of LACM according to the results of this study.

Women who indicated the family of four persons and above were more than eight times more likely to use LACM than those who reported being below three persons (OR=8.591, P=0.046, 95% CI=1.043-17.775), for women who reported joint decision with their husband the number of children were 5 times more likely to use LACM than those who do not discuss (OR: 5.053; P=0.048 CI=0.863-7.456), those who reported that it is husband who take the decision to bear another children had a 76.5% reduction in the odds of using LACM relative to those who do not desire other children (OR=0.235, P= 0.019, 95% CI=0.070-0.785),respondents with negative attitudes that LACM can cause cancer, had an 83.4% reduction in the odds of using LACM relative to those who did

not report it (OR=0.166, P= 0.014, 95% CI=0.040-0.695), Respondents who reported that LACM can enhance marital unfaithfulness had a 77% reduction in the odds of using LACM relative to those who did not report it (OR=0.230, P= 0.043, 95% CI=0.055-0.953), other respondents who reported that LACM can increase promiscuity had an 88.4% reduction in the odds of using LACM relative to those who did not report it (OR=0.116, P= 0.046, 95% CI=0.014-0.959), those

who reported that LACM can decrease sexual pleasure had an 88.9% reduction in the odds of using LACM relative to those who did not report it(OR=0.111, P= 0.041, 95% CI=0.013-0.915), and respondents who reported that LACM can cause congenital malformation had an 89% reduction in the odds of using LACM relative to those who did not report it (OR=0.106, P=0.037, CI=0.013-0.876).

Table 6: Results from Multiple Logistic Regression of Variables that Have Effect on the Use of Long Acting Contraceptive Methods

Predictor	β	WS	OR	95%CI	P-value
Education					
Higher education	1.872	6.319	6.500	1.510-17.974	0.012
Desire having other Children	-0.945	4.231	0.389	0.158-0.956	0.040
Number of living children					
Four and above	2.683	12.980	14.625	3.398-12.941	<0.001
Size of family					
Four and above	2.151	3.996	8.591	1.043-17.775	0.046
Joint decision to bear children	2.041	7.697	5.053	1.821-12.566	0.048
Decision taken by husband to bear children	-1.448	5.537	0.235	0.070-0.785	0.019
Partner agreement to the use of LACM	1.272	3.084	3.569	0.863- 7.456	0.038
Reported negative attitude					
Cause cancer	-1.796	6.043	0.166	0.040-0.695	0.014
Enhance marital Unfaithfulness	-1.471	4.106	0.230	0.055-0.953	0.043
Increase promiscuity	-2.151	3.996	0.116	0.014-0.959	0.046
Decrease sexual Pleasure	-2.197	4.170	0.111	0.013-0.915	0.041
Congenital malformation	-2.224	4.349	0.106	0.013-0.876	0.037

V. DISCUSSION

The Prevailing Rate of the Use of Long Acting Contraceptive Methods

Regarding long acting contraceptive prevalence rate in this study, 10.4% of respondents opted for LACM (Implant by 7.3%, IUD by 2.1% and Female sterilization by 1%). Although there was some improvement compared to the national average of 6%⁽⁵⁾, the use of LACM remains low. This low utilization rate of LACM in Kicukiro district could be due to the negative attitudes that women have on them but, results are slightly higher than those from Kicukiro district hospital where the prevalence rate was 8.3%.

Use of LACM and Socio Demographic Characteristics of Participants

Sociodemographic variables are among important factors influencing individual's decisions on contraception and fertility⁽⁹⁾. Respondents were between 18 and 49 years old. It is the range of age by which women according to WHO are said to be sexually active.

The range of age from 18 to 25 is presented in greater proportion with around 48% of respondents. The range of age is also high in the distribution of age in the population of Rwanda

⁽⁴⁾.The contribution of changes in effects of education is also important. Respondents were asked the highest level of studies they have completed. The level of education was associated with the use of LACM, P= 0.003. Educated people tend to adopt modern values and have the opportunity and better access to gain adequate information about contraceptives. The assumption here is that the more educated the women are, the better informed they are about family planning and contraceptive methods and better able to accept it. According to the results from this study, the desire of having other children in few following months slows down the use of LACM (P=0.001).Of the 96 women who were enrolled into the study 62 women reported their desire of bearing other children (64.6%). "Rwandan culture is very pro-birth. There are many proverbs that encourage having more children such as: 'Kagire abana' which means 'May you have more children' or 'Nimusubireyo nta mahwa', which means 'keep having children; it can't hurt'⁽¹¹⁾. Although the culture encourages births, the number of living children was found to be an important predictor of demand for LACM⁽²⁴⁾.Results from this study showed that the number of living children and the size of the family are associated with the use of LACM, (P= 0.001, P=0.027) respectively. One reason may be that as long as the number of children increases there is satisfaction on behalf of the

parents another reason is that a big number of children may challenge the economy of the family.

Knowledge and Attitudes towards LACM

The general knowledge of women about LACM was good. More than 95.8% of the study participants have general knowledge. This is better than 58.3% showed in the study done in Ethiopia⁽²⁴⁾. This could be due to the fact that women had better access to information about LACM. However, that knowledge doesn't affect the use them ($P=0.639$). These findings are similar to findings in other parts of Tanzania and Africa where it was noted that most women were aware of modern contraceptives except that its use was low⁽²⁹⁾. This is opposite to the study conducted in Ethiopia by Mussie Alemayehu, Tefera and Tizta in 2012. In their study women who had moderate knowledge were 6 times more likely to use LACM as compared with those who had low knowledge (AOR = 5.9, 95% CI: 2.3, 14.9) and mothers who had high knowledge were 8 times more likely to use LACM as compared with those who had low knowledge (AOR = 7.8, 95% CI: 3.1, 18.3)⁽¹⁰⁾. Negative attitudes toward LACM agents were shown to be factors that slow down the use of LACM. Women who reported significant negative effect of LACM had a significant reduction in the odds of using LACM relative to those who did not report significant negative effect. In another study, which assesses LACMs in Uganda, showed that most women heard myths and beliefs that could hinder the successful promotion and adoption of the services⁽³⁰⁾.

Accessibility of LACMs

Barriers may also exist in terms of poor access. Distance can be prohibitive, and the time it takes to undertake and recover from the procedure (depending on the type) can be longer than families are willing to accommodate⁽¹⁶⁾. Among respondents, 89.6% were aware of the nearest health center that can provide the service. Geographical barriers in this study do not hinder the use of LACM ($P=0.221$). In order to prevent this barrier, the government decided to construct "secondary posts" not far from religious-affiliated health facilities to meet the needs of clients of those areas⁽³⁾. A total of 31 secondary posts were constructed between 2006 and 2009. To serve other regions that had been without services, five new hospitals and 15 new health centers were built between 2005 and 2011. When asked if they were aware that LACM are available 75% of them reported that they were. Among women who participated in the study 6 of them reported being refused LACM. The reasons were lack of menstruation as reported by 3 women, 1 reported lack of husband consent, 1 reported that the service was not available and 1 was too young to start the methods. Being refused the use LACM does not affect the use of LACM ($P=0.388$). Those reasons were classified as medical barriers in some studies. Results from this study are different from the study conducted in Egypt by Eltom Saboula and Hussein⁽¹⁵⁾ in 2013. In their study regarding medical barriers, about one-third of the non-users and more than three-quarters of the women who abandoned after they had been told to come back at a later date once they had menstruation. These findings from that study are supported by evidence from Ghana, Kenya, Cameroon, Jamaica, and Senegal indicating that non menstruating women are commonly told they must return

when they are menstruating in order to be given a hormonal contraceptive method or to have an intrauterine device (IUD) inserted⁽³¹⁾. A woman's perception of her husband's approval of family planning can directly affect whether she uses contraception⁽²⁵⁾. The non-involvement of men in family planning intervention has been highlighted as a drawback to the success of interventions⁽³¹⁾. Non-consent of partners to family planning methods ranked next to fertility concerns as a barrier to LACM use in this study. When respondents asked if they discuss with partner the use of LACM, Only (47.9%) indicated that they discuss about it. However, 45.7 % of those who discuss with their partner on the use of LACM reported their husband do not agree on its use. Women participation in taking decisions including those related to fertility (high women autonomy in household matters; gender power balance in household decisions), as well as spousal communication on family planning has been indicated in several studies to be associated with increased likelihood of modern contraceptive use by women⁽³²⁾. The decision of woman or husband to bear children has an impact on the choice of LACM, $P=0.005$. The results from the study are similar to those from the study conducted by Lwelamira, Mnyamagola and Musaki in 2012 in Tanzania in which women who reported joint decisions with their husbands on issues related to fertility were more likely to be current users of modern contraceptives compared to those who reported that the final decision is taken by the husband alone (OR = 19.4, $p<0.01$)⁽²⁹⁾.

VI. CONCLUSION

Based on the information collected on the given sample, the prevalence of LACM use is still low among participants. Education, number of living children, size of family, joint decision to bear children and agreement of the couple to the use of LACM are factors that increase the use of LACM. The general knowledge about LACM of women who visit health centers and health post for FP is good. The results from the study also revealed that the desire of having another children, and decision of husband to bear children or not, and negative attitudes toward LACM are the main barriers that slow down the use of LACM.

There should be a great need to increase reproductive health education activities designed to improve family planning practices in Rwanda. Campaigns against attitudes that negatively affect the use of LACM should be intensified.

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