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DETERMINANTS OF LONG ACTING REVERSIBLE CONTRACEPTIVES USE AMONG GRAND MULTIPARA WOMEN IN BUYANGA SUBCOUNTY – IGANGA DISTRICT, EASTERN UGANDA

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Abstract

Background: Grand multiparity has been considered to be an independent factor for increasing adverse outcomes for both the fetus and mother. Some complications that are classically associated with grand multiparity include fetal malpresentation, dysfunctional labour, abruptio placentae, placenta previa, postpartum haemorrhage, ruptured uterus, macrosomic babies and anaemia. Grand Multiparity (GM) also has far reaching effects at population level, majority of the Grand Multipara women are poor with inadequate access to modern perinatal care coupled with increased maternal age. Due to very high parity, they tend to feed their children at the expense of their own nutrition, and are thus prone to malnutrition. The rapid succession of pregnancies and periods of lactation also predisposes them to iron and calcium depletion which ultimately affects the children as well. The negative health effects of Grand Multiparity increase with every child born after the 5th child, especially if the birth intervals are less than 24 months. Given the fact that most subsequent births among GM women are either unintended or poorly spaced, mothers who are para 5 and beyond need to use Long Term Reversible Contraceptives. Despite their level of effectiveness, less than 15% of women who use contraception worldwide use LARC

***Objective:** The purpose of the study was to investigate Long Acting Reversible Contraceptive use and its determinants among grand multipara women in Buyanga Sub County – Iganga district, Eastern Uganda.*

***Methods:** The study was based on the positivist paradigm in which, a cross sectional survey design was used. The study population was grand multiparous women (330) in Buyanga Sub County-Iganga district, whose sample size was determined using a formula by Arkin and Colton (1963). A multistage sampling technique was used; parishes and villages were sampled using simple random sampling. Convenience sampling was used to sample the households, while the women were sampled purposively and only randomly if two were found in the same household. Structured interviews and questionnaire were used to collect and capture the data respectively. The computer software Statistical Package for the Social Sciences (SPSS) version 20.0 was used to analyze the data, using descriptive statistics, Chi square tests, and binomial logistic regressions.*

***Results:** The prevalence of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga Sub County (based on the women who were using LARCs by interview time) was therefore, 21.5%. Two individual characteristics determined LARC use; having carried more than six pregnancies (AOR = 2.617, 1.273 - 5.382), and having delivered some of the children outside the health facility (AOR = 2.617, CI = 1.273 - 5.382). Three spousal characteristics significantly determined LARC use; fathering of more than eight children (AOR = 3.171, 1.475 - 6.821), spousal initiated of a conversation about family planning (AOR = 2.194, CI = 1.285 - 3.744), and spousal belief in the use of contraception or family planning (AOR = 1.947, CI = 1.13 73.335). None of the health service characteristics had a statistically significant influence on the use of LARC use among grand multipara women in Buyanga Sub County.*

***Conclusion:** Long acting Reversible Contraceptive use among grand multipara women in Buyanga Sub County-Iganga district is low, with only 2 out of every 10 grand multipara women using it. Use of LARCs among grand multipara women in the sub county is determined to a larger extent by spousal characteristics, to some extent by individual characteristics of the women, and to no extent by health service characteristics.*

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1. Introduction

Achievement of the global Sustainable Development Goals requires population explosion control and concurrent reduction of maternal mortality by 2030. Abel (2016) urges that the realization of the set goals will lead to a global population of between 8.2 to 8.7 billion by 2100. Furthermore, he points out that this will in turn translate into population growth below even the lower bound of recent United Nations probabilistic population projections, hence the focus on population growth management. Conversely, the reduction of maternal mortality to less than 75 deaths per 100,000 live births by 2030 is priotised (United Nations, 2017). However, the similarity between these two SDG targets is that both can be achieved by use of reproductive health interventions, notably family planning. This is because, with family planning, birth control can be achieved, and in addition, maternal mortality that arises from pregnancy complications caused by multiparity can be prevented.

Pregnancy complications directly related to parity continue to be a challenge to obstetricians (Singh, 2015), and the most burdening form of parity to maternal reproductive health is grand multiparity. The international federation of gynecology and obstetrics however defined grand multiparity as delivery of more than five births after fetal viability. Grand multiparity has been considered an independent factor for increasing adverse outcomes for both the fetus and mother (Alsammani, 2015). The negative health effects of Grand Multiparity increase with every child born after the 5th child, especially if the birth intervals are less than 24 months, which is usually the case, making contraception key in that situation.

Background of the study

In many parts of the world, Grand Multiparity (GMP) is a reality, and it is associated with higher risks of obstetric complications such as gestational diabetes, gestational hypertensive disorders, maternal anemia, postpartum hemorrhage, congenital malformations and perinatal mortality (Shechter, 2010; Ghadeer, 2017). Some complications that are classically associated with grand multiparity include fetal malpresentation, dysfunctional labour, abruptio placentae, placenta previa, postpartum haemorrhage, ruptured uterus, macrosomic babies and anaemia (Mgaya, 2013). Grand Multiparity (GM) also has far reaching effects at population level, majority of the Grand Multipara women are poor with inadequate access to modern perinatal care coupled with increased maternal age (Afolabi, 2013). Due to very high parity, they tend to feed their numerous children at the expense of their own nutrition, making them to be prone to malnutrition, they are too busy to attend to their health and due to the rapid succession of pregnancies and periods of lactation; they are predisposed to iron and calcium depletion (Njoku, 2017), which ultimately affects the children as well. The above mentioned effects can thus be avoided with lower parities, and in terms of the minimal risk concept; the safest babies to have are second, third and fourth. It is for that reason that GM hazards are greater for women in their fifth pregnancy and onwards (Ghadeer, 2017; Mgaya, 2013).

Nonetheless, although Grand Multiparity is becoming rare in developed countries, with an incidence of 1% - 4% of all births (Njoku, 2017) it is still relatively high in developing countries in excesses of 18.1%. Given the fact that the reproductive health effects of Grand Multiparity set in with every subsequent child birth from the fifth, and also given that most of these subsequent births are either unintended or poorly spaced (Shiferaw, 2017), mothers who are para 5 need to use Long Term Reversible Contraceptives (Shiferaw, 2017) especially where circumstances cannot permit long term permanent methods.

Long Term Reversible Contraceptives (LARC) are methods with long duration of action and with no need for active adherence once initiated (Espey and Ogburn 2011; Winner, 2012). LARC methods comprise intrauterine contraception (including copper intrauterine devices and the levonorgestrel intrauterine system), injectables, and implantable progestogens. LARC methods are the most effective modern contraceptive methods for preventing unintended pregnancies (common in Grand Multipara women) especially where couples have expressed a need to have more children. They are long-acting, reliable, safe, cost-effective, and have additional non-contraceptive benefits for a broad range of women seeking spacing or limiting methods of contraception. As Shiferaw (2017) points out, the contraceptive pill, patch or ring are less effective as compared to the LARC methods that are 20 times more effective for prevention of unintended pregnancies.

Similarly, in most countries two types of LARC methods are available: Intrauterine devices (IUDs) and the etonogestrel single-rod contraceptive implant. The copper T380A IUD is a T-shaped device of polyethylene wrapped with copper wire around the stem and arms. Ortiz (2007) argues that the copper IUD exerts its contraceptive effects primarily by preventing fertilization through inhibition of sperm migration and viability. The contraceptive implant on the other hand is placed sub dermally and consists of an ethylene vinyl acetate copolymer core that contains 68 mg of etonogestrel surrounded by an ethylene vinyl acetate copolymer skin (Espey, 2017). The ethylene vinyl acetate copolymer allows for controlled release of etonogestrel over 3 years (Espey, 2017). The primary mechanism of action of the implant is suppression of ovulation (Graesslin, 2008). Additionally, Ortiz (2007) argues that contraceptive efficacy may be conferred by the implant's thickening of cervical mucus and alteration of the endometrial lining. The contraceptive implant is the most effective method of reversible contraception, with a typical-use pregnancy rate of 0.05% (Trussell, 2011).

Despite their level of effectiveness, less than 15% of women who use contraception worldwide use LARC (Shiferaw, 2017). The exact prevalence of Long Acting Reversible Contraceptives use among Grand Multipara women is poorly documented, however LARCs still account for only a small percentage of the method mix in many SSA countries (Guttmacher Institute, 2017). Globally, IUDs are used by 14% of women of reproductive age who are married or in union (United Nations, 2013). As for the implants, most countries have an implant CPR around 6% or higher, with only a few countries above 11% (Jacobstein, 2018). In countries like Burkina Faso and Ethiopia, Democratic Republic of the Congo and Ghana, Kenya and Senegal, implant use now accounts for one-fourth to one-half of all modern method use. According to multiple surveys conducted over a 2- to 3-year span between 2013-14 and 2016-17 by Jacobstein (2018), there were average annual gains in implant prevalence range from 0.97 to 4.15 percentage points; contrasting historical annual gains in use of all modern methods of 0.70 percentage points in 42 Sub-Saharan African countries from 1986 to 2008.

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In Uganda, utilization of modern contraceptives has steadily increased from 8% (UBOS, 1996) to 35% (UBOS, 2016) over the last decade. According to UBOS (2016), the use of long-acting reversible contraceptives has remained as low as 7.8%. In most regions of the country, IUD use is below 3% (UDHS, 2016), while Implant use is below 10%. In regions like Busoga, IUD uptake is below 1%, while Implant uptake stood at 2.9% as of 2016 (UBOS, 2016). Uptake of these LARCs is still poorly documented in Busoga, and Iganga district specifically

Research questions

1. What is the prevalence of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga Sub County – Iganga district?
2. What are the individual determinants of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga Sub County – Iganga district?
3. What are the spousal determinants of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga Sub County – Iganga district?
4. What are the health service related determinants of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga Sub County – Iganga district?

Objectives of the study

To investigate the determinants of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga sub county – Iganga district

Specific objectives

1. To establish the prevalence of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga sub county – Iganga district
2. To analyze the individual determinants of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga sub county – Iganga district
3. To establish the spousal determinants of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga sub county – Iganga district
4. To identify the health service related determinants of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga sub county
5. Methodologies

Findings / Results

Introduction to findings:

This chapter presents the results of the study, presented according to the objectives of the study, in mainly tabular form

1. **Respondent bio data**

Table 1: Socio demographic characteristics of the respondents

Variable description	Labels	Frequency	Percent (Valid)
Current age (in years)			
	25-30	119	36.1
	31-36	83	25.2
	37-42	61	18.5
	More than 42 years	67	20.3
	Total	***330***	***100.0***
Religious denomination belonged to			
	Catholic	37	11.2
	Anglican	116	35.2
	Muslim	155	47.0
	SDA	7	2.1
	Born again	15	4.5
	Total	***330***	***100.0***
Marital status (Current)			
	Married	253	76.7
	Separated	13	3.9
	Cohabiting	64	19.4
Have had formal education			
	Yes	278	84.2
	No	52	15.8
	Total	***330***	***100.0***
Current level of education			
	Primary (Lower)	85	30.6
	Primary (Upper)	124	44.6
	Secondary (O level)	58	20.9
	Secondary (A level)	11	4.0
	Total	***278***	***100.0***
Number of children given birth to so far			
	Five only	84	25.5
	Six only	97	29.4
	Seven only	43	13.0
	Eight only	38	11.5
	More than eight	68	20.6
	Total	***330***	***100.0***
Currently employed			
	Yes	65	19.7
	No	265	80.3

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	Total	***330***	***100.0***

Before engaging the respondent in interviews aligned to the research questions of the study, an assessment of the socio demographic profiles of the grand multipara women were assessed; the findings of the study showed that more than a third of the women were youths in the age bracket of 25-30 years (n = 119, 36.1%). Muslim respondents made up almost half of the study population (n = 155, 47.0%), and more than three quarters of them were married (n = 253, 76.7%). The majority of the women reported that they had had formal education (n = 278, 84.2%), and of those, almost half had been educated to primary level (Upper) (n = 124, 44.6%). By study time, more than a quarter of the women had given birth to six children, and the majority were not employed (n = 265, 80.3%).

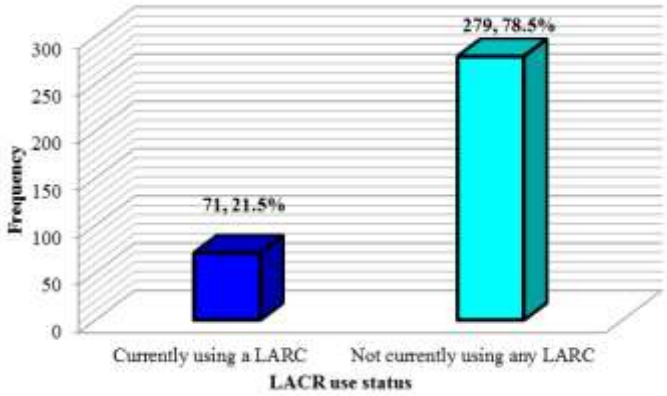
2. Long Acting Reversible Contraceptive use

Table 2: Long Acting Reversible Contraceptive use among grand multipara women in Buyanga Sub County

Variable description	Labels	Frequency	Percent (Valid)
Currently using any Local Acting Reversible Contraceptive			
	Yes	71	21.5*
	No	259	78.5
	Total	***330***	***100.0***
LARC being used			
	IUD	9	12.7
	Implant	62	87.3
	Total	***71***	***100.0***
Period of time LARCs have been used			
	Less than a year	28	39.4
	One year	12	16.9
	Two years	9	12.7
	Three years	12	16.9
	More than three years	5	14.1
	Total	***71***	***100.0***
Plan on using any Long Acting Reversible Contraceptive in future, if not using now			
	Yes	113	43.6
	No	146	56.4
	Total	***259***	***100.0***

When it came to prevalence of LARC use, the findings as shown in Table 2 above depict that the majority of the women interviewed in Buyanga sub county were not using any Local Acting Reversible Contraceptive by study time (n = 259, 78.5%). Of those who were using a LARC, however, it was the Implant that had the highest number of users (n = 62, 87.3%). Still among those who were using LARCs, more than a third of them 28/71 (39.4%) had been using it for less than a year. Among those who were not using any LARC, more than half of them had no plan for using any Long Acting Reversible Contraceptive in future, (n = 146, 56.4%).

Figure 2: Prevalence of Long Acting Reversible Contraceptive use among the grand multipara women



The prevalence of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga Sub County (based on the women who were using LARCs by interview time) as shown in figure 2 above is therefore, 21.5% (71)

3. Individual characteristics and LARC use

Table 3.1: The individual determinants of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga Sub County

			Long Acting Reversible Contraceptive use		
Variable description	**Frequency**	**Percent**	**Currently using LARC [n = 71]**	**Currently not using LARC [n = 279]**	**X^2 / F P value**
Duration since last child birth					
< 1years	62	18.8	18(29.0%)	44(71.0%)	

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1years	70	21.2	17(24.3%)	53(75.7%)	**F = 8.381**
2years	58	17.6	13(22.4%)	45(77.6%)	**P = 0.204**
3years	19	5.8	4(21.1%)	15(78.9%)	
4years	22	6.7	3(13.6%)	19(86.4%)	
5years	24	7.3	7(29.2%)	17(70.8%)	
>5years	75	22.7	9(12.0%)	66(88.0%)	
Want to have more children					
Yes	178	53.9	37(20.8%)	141(79.2%)	**X^2= 0.122**
No	152	46.1	34(22.4%)	118(77.6%)	**P = 0.727**
Desired time before having the next pregnancy child					
One	24	13.5	5(20.8%)	19(79.2%)	
Two	30	16.9	11(36.7%)	19(63.3%)	
Three	48	27.0	13(27.1%)	35(72.9%)	**X^2 =7.396**
More than three	76	42.7	35(46.1%)	41(53.9%)	**P = 0.060**
Pregnancies carried so far					
Five only	81	24.5	15(18.5%)	66(81.5%)	**X^2 = 6.799**
Six only	88	26.7	12(13.6%)	76(86.4%	**P = 0.033***
More than 6	161	48.8	44(27.3%)	117(72.7%)	
Long acting reversible contraceptives can be of help to a woman who already has more than five children					
Yes	270	81.8	60(22.2%)	210(77.8%)	**X^2 = 0.440**
No	60	18.2	11(18.3%)	49(81.7%)	**P = 0.507**
Ever heard about Intra Uterine Contraceptive devices (IUCD)					
Yes	253	76.7	52(20.6%)	201(79.4%)	**X^2 = 0.594**
No	77	23.3	19(24.7%)	58(75.3%)	**P= 0.441**
Ever heard about the Contraceptive implant					
Yes	289	87.6	60(20.8%)	229(79.2%)	**X^2 = 0.783**
No	41	12.4	11(26.8%)	30(73.2%)	**P = 0.376**
Duration of IUD effectiveness as a contraceptive					
More than two years	101	30.6	26(25.7%)	75(74.3%)	
More than three years	67	20.3	18(26.9%)	49(73.1%)	**X^2 = 4.596**
Don't know	162	49.1	27(16.7%)	135(83.3%)	**P = 0.103**
Used any modern contraceptive (e.g pills, injection) in recent past					
Yes	98	29.7	26(26.5%)	72(73.5%)	**X^2 = 2.077**
No	232	70.3	45(19.4%)	187(80.6%)	**P = 0.150**

The table above shows part of the results of the individual characteristics and how they determine LARC use. The findings show that for almost a quarter of the women interviewed, it had been more than five years since they had given birth to their last born child (n = 75, 22.7). More than half of the women reported that they wanted to have more children (n = 178, 53.9%), and among those, almost half of them desired to have the next pregnancy after three years (n = 76, 42.7%). Almost half of the women had carried more than 5 pregnancies by study time (n = 161, 48.8%). The majority of the women were of the view that long acting reversible contraceptives can be of help to a woman who already has more than five children (n = 270, 81.8%). More than three quarters of the women interviewed had ever heard about Intra Uterine Contraceptive

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devices (IUCD) (n = 253, 76.7%), and had also ever heard about the Contraceptive implant (n = 289, 87.6%). Almost half of the women did not know the duration of IUD effectiveness as a contraceptive (n = 162, 49.1%).

The majority of the women had not used a modern contraceptive (e.g pills, injection) in recent past (n = 232, 70.3%). Among the individual variables shown in the table above, only one variable showed a statistically significant relationship with the use of LARCs, this was the number of pregnancies carried (gravidity) (X^2 = 6.799, P = 0.033). The descriptive cross tabulations show that of the women who had carried more than 6 pregnancies by study time, a bigger proportion of them (27.3%) were using long acting reversible contraceptives compared to women with other gravidities

Table 3.2: Individual characteristics and LARC use

			Long Acting Reversible Contraceptive use		
Variable description	**Frequency**	**Percent**	**Currently using LARC [n = 71]**	**Currently not using LARC [n = 279]**	**X^2 / F P value**
Contraceptive used currently or previously					
Pills	27	27.6	10(37.0%)	17(63.0%)	**X^2 = 4.556**
Injecta plan	71	72.4	12(16.9%)	59(83.1%)	**P = 0.033**
Believe in the use of contraception or family planning in general					
Yes	302	91.5	66(21.9%)	236(78.1%)	**X^2 = 0.242**
No	28	8.5	5(17.9%)	23(82.1%)	**P = 0.622**
View about the side effects that long acting reversible contraceptive can have on a woman					
There are no side effects	84	25.5	25(29.8%)	59(70.2%)	
The side effects are only minor	96	29.1	19(19.8%)	77(80.2%)	**X^2 = 5.226**
The side effects are severe rendering LARCs unsafe	123	37.3	24(19.5%)	99(80.5%)	**P = 0.153**
Don't know	27	8.2	3(11.1%)	24(88.9%)	
Delivery site of the children given birth to					
All in health facility	240	72.7	59(24.6%)	181(75.4%)	**X^2 = 4.906**
Some out of health facility	90	27.3	12(13.3%)	78(86.7%)	**P = 0.027***
Current age (in years)					
25-30	119	36.1	28(23.5%)	91(76.5%)	
31-36	83	25.2	21(25.3%)	62(74.7%)	**X^2 = 2.836**
37-42	61	18.5	12(19.7%)	49(80.3%)	**P = 0.418**
More than 42 years	67	20.3	10(14.9%)	57(85.1%)	
Religious denomination belonged to					
Catholic	37	11.2	8(21.6%)	29(78.4%)	
Anglican	116	35.2	28(24.1%)	88(75.9%)	**F = 8.632**
Muslim	155	47.0	26(16.8%)	129(83.2%)	**P = 0.060**
SDA	7	2.1	4(57.1%)	3(42.9%)	
Born again	15	4.5	5(33.3%)	10(66.7%)	
Marital status (Current)					
Married	253	76.7	50(19.8%)	203(80.2%)	**X^2 = 3.263**
Separated	13	3.9	5(38.5%)	8(61.5%)	**P = 0.184**
Cohabiting	64	19.4	16(25.0%)	48(75.0%)	
Current level of education					

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Primary (Lower)	85	30.6	28(32.9%)	57(67.1%)	**X^2= 5.393 P = 0.106**
Primary (Upper)	124	44.6	29(23.4%)	95(76.6%)	
Secondary (O level)	58	20.9	10(17.2%)	48(82.8%)	
Secondary (A level)	11	4.0	1(9.1%)	10(90.9%)	
Number of children given birth to so far					
Five only	84	25.5	27(32.1%)	57(67.9%)	**F = 12.284 P = 0.014***
Six only	97	29.4	23(23.7%)	74(76.3%)	
Seven only	43	13.0	9(20.9%)	34(79.1%)	
Eight only	38	11.5	4(10.5%)	34(89.5%)	
More than eight	68	20.6	8(11.8%)	60(88.2%)	
Currently employed					
Yes	65	19.7	19(29.2%)	46(70.8%)	**X^2 = 4.105 P = 0.043***
No	265	80.3	52(19.6%)	213(80.4%)	

In addition, the findings in table 3.2 above show that of the women who reported having used modern contraception in the past, the majority had not use injectaplan (n = 71, 72.4%). Almost all the women interviewed believed in the use of contraception or family planning in general (n = 302, 91.5%). Slightly above a third of the women interviewed were of the view that the side effects of LARC were severe, hence rendering LARCs unsafe (n = 123, 37.3%). The majority of the women reported that they had delivered all their children given in health facilities (n = 240, 72.7%).

The bivariate analysis results showed that three more individual characteristics of the grand multipara women in Buyanga had statistically significant relationships with LARC use. They were; the delivery site of the children given birth to (X^2 = 4.906, P = 0.027), the number of children given birth to [parity] (F = 12.284 P = 0.014), and employment status (X^2 = 4.105, P = 0.043). The significance of those two variables is based on the F values and p values of their relationship with the dependent variable (LARCs use). At this level, the descriptive crosstabs show that of the women who had previous used pills as a contraceptive more than a third of them were using LARCs (37.0%) compared to only (16.9%) who had previously used injectaplan. About a quarter (24.6%) of the women who had delivered all their children in a health facility had been using LARCs compared to about a tenth of those who had delivered some children out of a health facility. The proportion of women who were using LARCs happened to decrease with increasing parity. A bigger proportion of women who were currently employed (29.2%) were using LARC compared to those who were not employed (19.6%)

Table 4: Logistic regression analysis for the individual determinants of Long Acting Reversible Contraceptive use among grand multipara women

					Confidence Interval	
Variable description	**S.E**	**Wald**	**P value**	**AOR**	**Lower limit**	**Upper limit**
Pregnancies carried so far						
Five only						
Six only	.343	2.603	.107	1.738	.888	3.401
More than 6	.368	6.842	.009	2.617	1.273	5.382
Delivery site of the children given birth to						
All in health facility						
Some out of health facility	.350	4.846	.028	2.160	1.088	4.287
Number of children given birth to so far						
Five only						
Six only	.340	.004	.949	1.022	.525	1.989
Seven only	.438	.130	.719	1.171	.496	2.763
Eight only	.584	3.574	.059	3.016	.960	9.473

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More than eight	.423	2.913	.088	2.058	.898	4.714
Currently employed						
Yes						
No	.315	2.438	.118	1.636	.882	3.036

The findings in the table above show that two individual characteristics remained statistically significant at regression; women who had carried more than six pregnancies were twice as likely to be currently using LARCs (AOR = 2.617, 1.273 - 5.382). Women who had delivered some of their children outside the health facility were found to have twice the odds of being current users of LARCs compared to those who had delivered all their children in a health facility (AOR = 2.617, CI = 1.273 - 5.382).

4. Spousal characteristics and LARC use

Table 5: Spousal determinants of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga Sub County

			Long Acting Reversible Contraceptive use		
Variable description	**Frequency**	**Percent**	**Currently using LARC [n = 71]**	**Currently not using LARC [n = 279]**	**X^2 / F P value**
Age range of husband					
25-30	35	10.6	12(34.3%)	23(65.7%)	
31-36	43	13.0	14(32.6%)	29(67.4%)	
37-42	82	24.8	13(15.9%)	69(84.1%)	**X^2 =11.913 P = 0.017***
More than 42 years	97	29.4	23(23.7%)	74(76.3%)	
Don't know	73	22.1	9(12.3%)	64(87.7%)	
Religious denomination of husband belong					
Catholic	38	11.5	10(26.3%)	28(73.7%)	
Anglican	114	34.5	25(21.9%)	89(78.1%)	
Muslim	159	48.2	33(20.8%)	126(79.2%)	**F = 1.232 P = 8.878**
SDA	4	1.2	0(.0%)	4(100.0%)	
Born again	15	4.5	3(20.0%)	12(80.0%)	
Kind of relationship with husband					
Monogamous	132	40.0	36(27.3%)	96(72.7%)	**X^2 =4.319 P = 0.038**
Polygamous	198	60.0	35(17.7%)	163(82.3%)	
Husband got some formal education					
Yes	294	89.1	61(20.7%)	233(79.3%)	**X^2= 0.939 P = 0.333**
No	36	10.9	10(27.8%)	26(72.2%)	
Spouse's occupation					
Peasant farmer/daily wages labor	167	50.6	42(25.1%)	125(74.9%)	**X^2 =4.196 P = 0.122**
Employed/Service	51	15.5	12(23.5%)	39(76.5%)	
Business	112	33.9	17(15.2%)	95(84.8%)	
Children spouse has given birth to so far					
Five only	39	11.8	15(38.5%)	24(61.5%)	
Six only	56	17.0	11(19.6%)	45(80.4%)	**X^2= 9.912 P =0.039***
Seven only	27	8.2	8(29.6%)	19(70.4%)	
Eight only	44	13.3	10(22.7%)	34(77.3%)	

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More than eight	164	49.7	27(16.5%)	137(83.5%)	
Spouse has any children outside relationship					
Yes	226	68.5	52(23.0%)	174(77.0%)	**X^2= 0.948**
No	104	31.5	19(18.3%)	85(81.7%)	**P = 0.330**
Husband ever initiated a conversation about family planning					
Yes	145	43.9	42(29.0%)	103(71.0%)	**X^2= 8.502**
No	185	56.1	29(15.7%)	156(84.3%)	**P =0.004***
Spouse believes in the use of contraception or family planning					
Yes	162	49.1	44(27.2%)	118(72.8%)	**X^2 =6.006**
No	168	50.9	27(16.1%)	141(83.9%)	**P =0.014***
Husband allows for wife's own reproductive health decisions					
Yes	209	63.3	48(23.0%)	161(77.0%)	**X^2 =0.711**
No	121	36.7	23(19.0%)	98(81.0%)	**P = 0.399**
Husband prefers joint reproductive health decision making decisions as a couple					
Yes	213	64.5	50(23.5%)	163(76.5%)	**X^2 =1.365**
No	117	35.5	21(17.9%)	96(82.1%)	**P = 0.243**
Husband expressed interest in having more children					
Yes	232	70.3	52(22.4%)	180(77.6%)	**X^2= 0.374**
No	98	29.7	19(19.4%)	79(80.6%)	**P = 0.541**
Experienced any form of domestic violence since last child birth					
Yes	54	16.4	13(24.1%)	41(75.9%)	**X^2 =0.250**
No	276	83.6	58(21.0%)	218(79.0%)	**P = 0.671**

The table above shows the characteristics of the spouses of the grand multipara women who were interviewed in Buyanga sub county. More than a quarter (n = 97, 29.4%) of the women interviewed reported that their spouses were aged 42 years and older. Almost half of the women interviewed reported that their spouses were Muslims (n = 159, 48.2%), and the majority (n = 198, 60.0%) mentioned that their spouses were in a Polygamous with them. More than three quarters of the women reported that their spouses had received some formal education (n = 294, 89.1%), and according to half of the women interviewed, the spouses were peasant farmers (n = 167, 50.6%). Almost half of the women sampled reported that their spouses had given birth to more than eight children (n =164, 49.7%), with the majority having children outside the relationship (n = 226 68.5%).

More than half of the women sampled reported that their spouses had never initiated a conversation about family planning (n = 185, 56.1%), and that their spouses did not believes in the use of contraception or family planning (n = 168, 50.9%). Nonetheless, the majority of the women reported that their husbands allowed them to make their own reproductive health decisions (n = 209, 63.3%), and that their husbands also preferred joint reproductive health decision making decisions as a couple (n = 213 64.5%). The majority of the women reported that their spouses had expressed interest in having more children (n = 232, 70.3%), and according t more than three quarters of the women interviewed, they had not been domestic violated by their spouses since they had given birth to their last born child (n = 276, 83.6%).

Analytical findings revealed that at spousal level, four characteristics had a statistically significant relationship with long acting reversible contraceptive use. The included; the age range of husband (X^2 =11.913, P = 0.017), the number of children spouse has given birth to so far (X^2 = 9.912 P =0.039), belief in in the use of contraception or family planning (X^2 =6.006, P =0.014), and initiation of a conversation about family planning by the spouse (X^2= 8.502, P =0.004). At descriptive level, the findings in the crosstabs show that of the spouses who were between 25 – 30 years, a bigger proportion of their wives had used long acting reversible contraceptives (34.3%) compared to women whose spouses were older. Of the spouses who were had given birth to five children, a bigger proportion of their wives had used long acting reversible contraceptives

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(38.5%) compared to women whose spouses had given birth to more than five children. Of the spouses who were reported to have ever initiated a conversation about family planning, a bigger proportion of their wives had used long acting reversible contraceptives (29%) compared to women whose spouses had never initiated a conversation about family planning. The same applied to women whose spouses believed in the use of contraception or family planning.

Of the spouses who were reported to have ever initiated a conversation about family planning, a bigger proportion of their wives had used long acting reversible contraceptives (29%) compared to women whose spouses had never initiated a conversation about family planning. The same applied to women whose spouses believed in the use of contraception or family planning.

5. Health service characteristics and Long Acting Reversible Contraceptive

Table 7: Health service related determinants of Long Acting Reversible Contraceptive use among grand multipara women

			Long Acting Reversible Contraceptive use		
Variable description	**Frequency**	**Percent**	**Currently using LARC**	**Not using LARC [n = 279]**	**X^2 / F P value**
Presence of health facilities which provide LARCs in sub county					
Yes	312	94.5	67(21.5%)	245(78.5%)	**F = 0.006**
No	18	5.5	4(22.2%)	14(77.8%)	**P = 0.940**
Facilities always have LARCs in stock					
Yes	253	81.1	58(22.9%)	195(77.1%)	**X^2 = 0.022**
No	59	18.9	13(22.0%)	46(78.0%)	**P = 0.883**
Distance to the nearest FP providing health center sub county					
<1Km	61	18.5	15(24.6%)	46(75.4%)	**X^2 = 0.491**
1Km	111	33.6	24(21.6%)	87(78.4%)	**P = 0.782**
>1Km	158	47.9	32(20.3%)	126(79.7%)	
Health workers told mother about LARCs after last child delivery					
Yes	196	59.4	42(21.4%)	154(78.6%)	**X^2 = 0.002**
No	134	40.6	29(21.6%)	105(78.4%)	**P = 0.963**
Been told about LARCs by any health workers in the district or sub county					
Yes	216	65.5	46(21.3%)	170(78.7%)	**X^2 = 0.018**
No	114	34.5	25(21.9%)	89(78.1%)	**P = 0.894**
Cost of family planning commodities like contraceptives, In area					
Free of Charge	223	67.6	53(23.8%)	170(76.2%)	**X^2 = 2.065**
<10,000=	107	32.4	18(16.8%)	89(83.2%)	**P = 0.151**
Been educated about the dangers of grand multiparity by any health worker in this district or sub county					
Yes	210	63.6	46(21.9%)	164(78.1%)	**X^2 = 0.052**
No	120	36.4	25(20.8%)	95(79.2%)	**P = 0.820**
Attitude of health workers who provide reproductive health services area					
They are welcoming and responsive	313	94.8	70(22.4%)	243(77.6%)	**X^2 = 2.594**

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They are so rude to women	17	5.2	1(5.9%)	16(94.1%)	**P = 0.107**
Ever sought FP methods from any health facility in area but were told that they were not available					
Yes	59	17.9	17(28.8%)	42(71.2%)	**X^2 = 2.661**
No	271	82.1	54(19.9%)	217(80.1%)	**P = 0.132**

When asked about the characteristics of the health services regarding the proving of family planning services, almost all the women interviewed reported that the areas they resided in had health facilities which provide LARCs (n = 312, 94.5%). More than three quarters of the women reported that those health facilities always had LARCs in stock (n = 253, 81.1%). Almost half of the women sampled reported that the distance to the nearest FP providing health center in the sub county was greater than a Kilometer (n = 158, 47.9%). More than half of women reported that health workers at the public health facilities in the sub county had told them about LARCs after their last child delivery (n = 196, 59.4%). The majority also reported that they had been told about LARCs by health workers in the district or sub county (n= 216, 65.5%), and that family planning commodities like contraceptives, were free of Charge (n = 223, 67.6%).

The majority of the women reported that they had been educated about the dangers of grand multiparity by health workers in the district or sub county (n = 21, 63.6%). Almost all the women rated the attitude of health workers who provide reproductive health services area as being positive that is being welcoming and responsive (n = 313, 94.8%). More than three quarters of the women interviewed that they had never sought FP methods from any health facility in area and found them unavailable (n = 271, 82.1%).

Analytical findings showed that none of the health service characteristics had a statistically significant influence on the use of long acting reversible contraceptives among grand multipara women in Buyanga Sub County.

DISCUSSION

Introduction to Discussion

This chapter presents a discussion of the study findings based on only key findings however, for each of the study objectives.

1. **The prevalence of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga Sub County – Iganga district**

As earlier mentioned, grand multipara women need to use LARC because of a multitude of reproductive health reasons, however, this study established that the prevalence of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga Sub County was only 21.5%. This finding implies that only 2 of every 10 grand multipara women in Buyanga sub county use LARC, with a further implication that up to 8 of every 10 of them face risks of succumbing to dysfunctional labor, abruptio placentae, placenta previa, postpartum hemorrhage, ruptured uterus, anaemia (Mgaya, 2013), fetal malpresentations with every subsequent birth. The risk are actually more pronounced for each subsequent birth among the grand mutlipara women in Buyanga because of the very short birth intervals that majority of them have short birth intervals (less than 24 months) as shown in Table 3.1. This situation is of great public and particularly reproductive health concern more so in Buyanga sub county were a substantial proportion of women had actually progressed from grand multiparity to great grand multiparity (Table 1), meaning that some of the women in Buyanga face double the risk of experiencing severe obstetric complications with every subsequent birth, especially given the fact most of the women therein have short birth intervals.

On a positive note however, the prevalence of LARC use among women in Buyanga Sub County (part of Busoga) is higher than what was reported in the UDHS (2016), were a paltry 3% were said to be using the LARCs. The difference between the findings of this study and the findings of UDHS (2016) is because the UDHS was conducted three years ago today, and within that time, the ministry of health taking cognizance of the high fertility rate in the area intensively promoted LARC use, hence the increment, although uptake is generally still low. The finding is actually higher than what has been found in very many other studies; for instance in Rwanda by Bikorimana (2015) where the prevalence was 10.4%, in Central Uganda by Anguzu (2018) were the prevalence was 8.5% and in Burkina Faso, Kenya, Malawi, Nigeria, Niger (1.7%), and Zimbabwe were LARC use was reported to be less than 10% (Jacobstein, 2018). In addition, a lower LACR prevalence was also found in Mekele (12.3%), Goba (8.7%), Debremarkos (19.5%), Dendi (17.6%), Arbaminch (13.1%) areas of Ethiopia (Bulto, 2014; Alemayehu, 2012; Takele, 2012; Sahilemichael, 2015).

The difference between the current study finding and the findings of the aforementioned studies is because all the other studies included women of reproductive age with lower parities, who after child birth are not very much persuaded to use LARCs and personally do not perceive its need as compared to grand multipara women who by usual practice are persuaded to use practice after child birth, hence the higher uptake in this study based on the nature of population. Secondly, in some of those studies (for instance Anguzu, 2018; Anguzu, 2014) the assessment of LARC use was restricted to the extended postpartum period within which LARC use is usually low.

The LARC prevalence found among women in Buyanga sub county is however lower than what was found in studies by Shiferaw (2017) (38%), Anyanwu (2013) (88.7%), Hosseini (2014) (22%), Dhont (2009) (38%) and Nyambo (26%). The difference between those findings and the current study findings lies in the difference in methods that the studies used, for instance the studies by Anyanwu (2013) and Nyambo (2013) included depo provera as a LARC which led to a higher prevalence report given that Depo is frequently used by women although it is not a LARC. The study by Shiferaw (2017) was done at facility level, yet at facility level specifically at one health facility, as were one would most likely find a population of women who have actually received a family planning service or have come to remove an IUD or implant they had, which automatically increases LARC prevalence reports. That is contrary to the current study, which was community based, targeting all manner of grand multipara women (those who have ever sough health facility based service and those who have never).

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The findings of the current study also showed that the majority of the grand multipara women in Buyanga Sub County who were using a LARC, were using the Implant (87.3%), which is consistent with findings in North West Ethiopia by Saleamlak (2015), in Rwanda by Bikorimana (2015), and in Kenya by Shabiby (2015). The findings are also consistent with those found in Australia, Malaysia, and Ethiopia (Gultie, 2016; Melka, 2015; Eeckhaut, 2014). However, there was a noticeable difference in the actual level of implant use, since the three other studies had prevalence of implant use lower than 80% as opposed to this study (87.3%). This means that implant use among LARC users in Buyanga was higher than that in Rwanda, Ethiopia and Kenya, Australia, and Malaysia, which is a good indicator of the potential to further augment LARC use in Buyanga Sub County through for instance further promotion of implant use. Implants were possibly more used than the IUD because of the common misconception among majorly rural women that the IUD can be absorbed into the body and kill the user or cause cancer. What should not be overseen however is the fact that the level of implant use of 87% was among the few who were using LARCs and so does not show a very high uptake of LARC, hence service providers could focus on increasing general LARC uptake through possibly capitalizing on promoting implant use.

What was shocking however was the finding that among the grand multipara women who were not using any LARC, more than half of them had no plan for using any Long Acting Reversible Contraceptive in future (56.4%). This finding has a number of implications one which is that half of the non LARC users in Buyanga sub county will most likely continue having short inter-pregnancy and birth intervals and hence face the myriad of obstetric complication that arise from that, some of which might be fatal. The second implication of that finding is that family planning service providers, and organization's which plan on promoting FP use in the region should devise massive sensitization and behavior change campaigns at community level, prior to the provision of supplies to health facilities or during out reaches, if efficacy is to be realized.

2. The individual determinants of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga Sub County – Iganga district

The findings of this study regarding the individual determinants of LARC use agree with the supposition of the Socio ecological theory, given that some of the individual characteristics had a significant association with LARC use. The socio ecological theory construct of individual characteristics as determinants of health behavior holds true among grand multipara women in context of Buyanga Sub County. It further shows the need for family planning service providers in the area to emphatically consider the effects of individual characteristics of grand multipara women on FP service uptake and solve any negative any of them that are barriers rather than facilitators of the same.

The findings of the current study showed that women who had carried more than six pregnancies were twice as likely to be currently using LARCs (AOR = 2.617, 1.273 - 5.382). This finding is consistent with findings by Anguzu (2018), Azmoude (2017), Sahilemichael (2015), Hubacher (2013), Alemayehu (2012), andHubacher (2011). The findings of this study showed that among the grand multipara women in Buyanga Sub County, gravidity was equal to parity, in other words women who had carried six pregnancies for had an equivalent number of living children, which therefore also implied that use of LARC increase in parity. The finding specifically showed that LARC use was highest among women who were gravida six and more, and that is usually the time when the complications of multiparity set in (Mgaya, 2015) especially when the inter-pregnancy interval is short as was the case among women in Buyanga sub county. Therefore, it is possible that the grand multipara women who used LARCs more (after the sixth pregnancy) had experienced some obstetric complications arising from the onset of grand multipatiy and were thus compelled to use LARCS with an aim of spacing their births or prevent further child bearing, all in a bid to prevent complications. That is less likely among women who have just entered grand multiparity (5 pregnancies / children born), since at that stage the complication associated with grand multiparity are minimal since they increase with every subsequent birth after the fifth, and as such, such women could be seeing less need of using long term contraception. That is why such women were comparatively less likely to use long acting reversible contraceptives. However, the findings of the current study are inconsistent with those reported by Espey, Finer and Hubacher (2011), and the reason for the difference is that the study by Espey, Finer and Hubacher (2011) did not involve any grand multiparous women like the current study did. Therefore, the population in the other study did not comprise of women who had experienced any complications associated with multiparity and so, as their parity increased (up to about 3), there was no directly proportional need for LARC, as was the case in this study.

Surprisingly, the findings of this study showed that women who had delivered some of their children outside the health facility were found to have twice the odds of being current users of LARCs compared to those who had delivered all their children in a health facility (AOR = 2.617, CI = 1.273 - 5.382). That finding is most probably related to the experience of one or more of the known consequences of home births which included but are not limited to prolonged labor, maternal distress, still births, and obstructed labor, and fetal distress which usually turns out to be fatal. Such negative experiences usually make a mother want to prolong child births in a bid to achieve maximum recuperation following the complications suffered during home births, hence the increased use of LARCs.

3. The spousal determinants of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga Sub County – Iganga district

The findings of the study showed that women whose spouses had given birth to more than eight children were three times as likely to use LARC (AOR = 3.171, 1.475 - 6.821). The women were asked the number of children their husbands had sired in totality even if the spouse had more than one wife, however, regardless of that, the findings obtained revealed that the women who participated in the study are the ones their spouses had sired majority of the children with, even in polygamous relationships. That presumption as based on findings on parity (Table 1) is therefore related to an earlier finding (in objective 2) which showed that use of LARCs increased with increase in parity, as has also been found in other studies (Anguzu, 2018; Azmoude, 2017; Sahilemichael, 2015; Hubacher, 2013). That was because of the possible commencement and experience of obstetric complications starting from their 6th child birth, through the eight, which made the women start using LARC as measure to minimize occurrence of those complications.

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The finding of the study showed that women whose spouses had ever initiated a conversation about family planning were twice as likely to use LARC (AOR = 2.194, CI = 1.285 - 3.744), similar to findings by DeRose (2007), Neeti et al (2010), and Gebreselassie (2007). Buyanga sub county in particular and Busoga in general are highly patriarchal societies were a man's decision in a household is rarely debated by any household member especially the wife, hence the traditional phrase "Mwami Kyaakoba" meaning whatever the husband says, I do on the part of the wife. It thus follows that in Busoga, if a spouse initiates a conversation about family planning, chances are very high that he would have contemplated allowing its use, and would just want to make it official to his wife. When that happens therefore, the woman will most likely have the permission required to use family planning, hence the higher chance of such a woman (whose spouse initiates) to use LARCs.

The explanation for the finding above is somewhat similar to the explanation for the finding that women whose spouses believed in the use of contraception or family planning were also more likely to be currently using LARCs (AOR = 1.947, CI = 1.13 73.335). This is because in a patriachial society such as Buyanga, initiation of a conversation about family planning, and eventual acceptance of a woman to use FP by a spouse are anteceded by the husband's belief in FP. That means that once a man is a believer in FP, he is the one who will initiate a conversation about family planning, and give the woman permission to use LARC for instance, which cannot happen if a spouse is a nonbeliever. The results in Table 5 show that the number of women who had husbands that are nonbelievers in family planning was almost equal to the number which had believers in FP, however the number of women who had nonbelievers was slightly higher. That explains in part, why many grand multipara women were non users of LARCs; their husbands could not initiate a conversation about family planning and so could not let them use LARCs.

The findings shown above regarding the spousal determinants also imply that the socio ecological theory construct of interpersonal relationships as determinants of health behavior holds true among grand multipara women in context of Buyanga Sub County. That further shows the need for family planning service providers in the area to emphatically consider the effects of spouses on FP service uptake and solve any negative any of them that are barriers rather than facilitators of the same.

4. The health service related determinants of Long Acting Reversible Contraceptive use among grand multipara women in Buyanga Sub County

Analytical findings showed that none of the health service characteristics had a statistically significant influence on the use of long acting reversible contraceptives among grand multipara women in Buyanga Sub County (none of the variables had p values less the 0.05). This finding inconsistent with findings from many other studies (Tibaijuka, 2017; Mackenzie et al., 2013; Eltomy, 2013; Ramathuba*el al.* 2012; Mwaikambo et al, 2011; Gizaw&Regassa, 2011; Rubin &Winrob, 2010; Neeti, 2010; USAID, 2007). The difference between the findings could be related to the difference in the status of settings (health facilities) in which the studies were done.

For instance, in almost all the studies were health service was significant, the health facilities were mentioned to be having health service providers with poor attitudes towards women, usually no LARCs in stock, at a very long distances from the residences of the women, and health workers who were not usually educating women about the need for long acting contraception for grand multipara women. Such health service scenarios in those studies could have increased the predictive power of health service characteristics on the uptake of long acting reversible contraceptives among women. That was not the case in this study, the majority of the responses on health service characteristics were skewed towards the positive, which most probably lowered the predictive power of those characteristics.

The findings also imply that in the context of Buyanga sub county, even when the ministry of health via the district health office further stock the health facilities with LARCs, and the health service providers augment their patient-provider relationships, LARCs uptake will not increase if spousal characteristics and individual characteristics are not given focus, because the latter two are more significant. It can also be concluded therefore that the socio ecological theory construct of institutional characteristics as determinants of health behavior does not hold true among grand multipara women in context of Buyanga Sub County. In essence, family planning service providers in the area need to put more emphasis on the effects of individual and spousal characteristics on FP service uptake and solve any of them that are barriers rather than facilitators of the same.

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