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Role of Male Partners in Postpartum Family Planning

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By

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In College of Medicine and Health Sciences

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CERTIFICATION FOR AWARD

The undersigned certify that they have read and hereby recommend for acceptance by the University of Rwanda a dissertation entitled “**Role of male partners in postpartum family planning**” in partial fulfilment of the requirements for the Degree of Master of Medicine (Obstetrics and Gynecology) of the University of Rwanda.

DECLARATION AND COPYRIGHT

I, Aimee Nyiramahirwe declare that this dissertation is my own original work except where specifically acknowledged and it has not been presented to any other University for similar or any other degree award.

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Thank you to my colleagues, residents from obstetrics and gynecology department

Thank you colleagues midwives

Thank you to my family.

I thank the Almighty God

DEDICATION

To my lovely husband Edouard NDIKUMANA

To my son GANZA NTWALI Aiden

ABSTRACT

Background: Strategies to increase the uptake of contraception services have been adopted in Rwanda but the unmet needs for family planning remains high. Women in postpartum period are at higher risk for unintended pregnancy due to the silent conversion from lactational amenorrhea to reactivation of ovulatory cycles. The purpose of this study was to explore the role of male partners on the uptake of postpartum contraception.

Methods: A prospective cross-sectional study was conducted among women who delivered at the University Teaching Hospital of Kigali during a period of 3 months with random sampling. A questionnaire was used to collect socio-demographic and antenatal data, information on male companionship, and intent to use postpartum contraception at admission. Participants were contacted 6 weeks later to collect data on contraceptive use. The outcome variables were uptake of postpartum contraception and types of contraceptive taken (long acting vs short acting) controlling for male companionship during antenatal period. Chi-square test was used and p-value ≤ 0.05 was considered significant.

Results: A total of 209 women were recruited with mean age of 30.8 ± 5.2 years. The majority (60.9%) were multigravida, 66.5% were multiparous. More than half (55%) had male partner companionship, 18.3% had companionship for 4 antenatal visits, 28.2% had education on contraception with their male partner. Factors significantly associated with uptake of postpartum contraception were: age above 30 years, owning or heading a business, multigravidity, multiparity, antenatal care at health center or district hospital, caesarean delivery, and previous utilization of contraception. Male companionship significantly increased the intent to use contraception, uptake of modern contraception in general, and uptake of long active contraceptives but did not predict the uptake of short acting contraceptives.

Conclusions: Our study demonstrates positive association between male companionship during antenatal care, labor and delivery with uptake of postpartum family planning. Our study suggest, more sensitization to involve the male partners, improve the education on contraception during antenatal care and further research to assess the sustained uptake of contraception beyond the postpartum period

Key words: postpartum, Family planning, contraception, male partner, uptake

LIST OF SYMBOLS AND ACCRONYMS

WHO	: World Health Organization
SPSS	: Statistical Package for Social Sciences
FP	: Family Planning
PPFP	: Postpartum Family Planning
ANC	: Antenatal care
CHUK	: Centre Hospitalier Universitaire de Kigali
PPC	: Postpartum Contraception

TABLE OF CONTENTS

CERTIFICATION FOR AWARD	II
DECLARATION AND COPYRIGHT	III
ACKNOWLEDGEMENTS	IV
DEDICATION	V
ABSTRACT	VI
LIST OF SYMBOLS AND ACCRONYMS.....	VII
TABLE OF CONTENTS	VIII
LIST OF TABLES.....	IX
LIST OF FIGURES	X
I. INTRODUCTION	1
I.1. BACKGROUND.....	1
I.2. STUDY QUESTION.....	2
I.3. HYPOTHESIS:	2
I.4. OBJECTIVE	3
II. METHODS.....	3
II.1. DESIGN.....	3
II.2. STUDY POPULATION	3
<i>II.2.1. Inclusion criteria.....</i>	<i>3</i>
<i>II.2.2. Exclusion criteria</i>	<i>3</i>
II.3. SAMPLING.....	3
II.4. SAMPLE SIZE.	4
II.5. DATA COLLECTION PROCESS	4
II.6. DATA ANALYSIS	4
II.7. ETHICAL CONSIDERATION.....	4
III. RESULTS	6
III.1. SOCIODEMOGRAPHIC CHARACTERISTICS	6
III.2. PREGNANCY HISTORY, OUTCOME AND PRIOR CONTRACEPTIVE USE	7
III.3. FACTORS ASSOCIATED WITH PFP UPTAKE	9
<i>III.3.1. Socio demographic factors</i>	<i>9</i>
<i>III.3.2. Obstetric factors associated with PFP uptake</i>	<i>10</i>
<i>III.3.3. Effect of companionship on FP uptake.....</i>	<i>13</i>
IV. DISCUSSION	15
V. CONCLUSION AND RECOMMENDATIONS.....	18
LIMITATIONS OF THE STUDY	18
REFERENCES	19

LIST OF TABLES

Table 1. Sociodemographic characteristics.....	6
Table 2. Pregnancy history, outcome and prior contraceptive use	8
Table 3. Sociodemographic factors associated with PPFp uptake.....	10
Table 4. Obstetric factors associated with PPFp uptake	12
Table 5. Effect of companionship on FP uptake	14

LIST OF FIGURES

Figure 1. Components of health education on family planning during antenatal care 9

I. INTRODUCTION

I.1. Background.

The use of family planning (FP) has become one of the world's priority, given the composite of benefits associated with increased number of population using contraceptives(1). Family planning is intended for couples or individuals to attain their desired number of pregnancies at their desired timing.

There are various methods for family planning and each has its prevalence of users but, generally, only 44% of women in reproductive age between 15 to 49 years are reported by the United Nations to be using modern contraceptives while ten percent have an unmet need for family planning(2) and this rate of unmet need was unchanged for years(3). Current studies show that the uptake of family planning is more noticed in developed countries than in low- and middle-income countries (LMIC). The highest prevalence of women using modern contraceptives are Nicaragua (76.4%) while the united states of America (USA) and Canada have the rate 73.9% and 74.0% respectively(4). On the other hands, the rates of family planning users in LMIC are still low, which leaves women in these countries at higher risk of pregnancy complications compared to women from developed countries(5).

A study done among 17 sub-Saharan countries (not including Rwanda) have shown that the prevalence of reproductive age women using contraceptives is only 17% ranging between 7% (Gambia) and 29% (Uganda) and, the sub-Saharan Africa alone accounts for two thirds of all maternal deaths worldwide(6,7). According to the Rwanda Demographic and Health Survey (RDHS) 2020, only less than two thirds (58.4%) of Rwandan women in reproductive age are using any modern contraceptive and this is more observed in rural areas compared to urban areas (59.2% vs 55.0%)(8). In addition, even though the rate of unmet needs for family planning has reduced in Rwanda from 19% in 2015 to 14 % in 2020, these numbers are still high and the country continuous to work with key partners to increase the acceptability and uptake of contraceptives(8,9).

The world health organization has implemented several strategies to increase the uptake of contraceptives both in developed countries and in developing countries among high-risk women such as postpartum women and countries have adopted and institutionalized the guidelines(10). The post-partum period is of particular high risk for unplanned pregnancy because of its physiologic property of inducing a lactational amenorrhea during which women eventually ovulate without preceding periods and hence, this result into an unplanned pregnancy(11). Therefore, the WHO recommends the postpartum FP as an integrated part of the existing family planning service with special focus on postpartum

women for immediate use of family planning as soon as within ten minutes post-placental or later depending on the medical eligibility criteria and women's choice(12). Convincing a woman to use postpartum contraception (PPC) is a process that starts during antenatal care from several weeks before delivery. Fortunately, women have more chances of meeting health care providers during antenatal care. As the couple receives health education on labor and delivery of the expected new baby, healthcare providers should include health education on contraceptive use with an extra convincing benefit that it will allow the couple to take care of the newly born baby before they can plan for another pregnancy plus other maternal and child benefits of PPC(13).

For the past 10 years, more than 98% of delivering Rwandan women receive antenatal care at least once during pregnancy by a trained and skilled care provider and half of them complete four antenatal visits(8,9). In addition, 94.3% of deliveries are attended by a skilled care provider at an institution where PPC is possible to offer(8). During antenatal visit (ANV), most women are accompanied by their male partners with whom they receive health education together and after consultation, couples are expected to have an inclusive discussion on family planning after the current pregnancy and take a decision as a couple.

The involvement of men in decision making about contraceptive use has been claimed by many researchers and policies as an essential component toward contraceptive uptake but also, disapproval of men about contraceptives has been documented as one of the challenges that increase the unmet needs for FP(5). For example, in some African countries such as Togo, male partners took decision about FP use in 71% of couples(10) while opposition by male partners was responsible of not using FP among 90% of non FP users in Ghana(14).

In Rwanda, a study done in 2015 by Kitessa et al found that 47.6% of women in immediate postpartum desired family planning and only 11.4% discharged with family planning(15). Kitessa has also demonstrated that postpartum women who had a discussion with their male partners about FP were significantly more likely to use FP(15). Whether the companionship of male partners with their pregnant wives during antenatal care, labor and delivery would increase the uptake of PPF among Rwandan women is unclear. The purpose of this study is to explore the role of male partners on the uptake of PPC among women delivering at the University Teaching Hospital of Kigali.

I.2. Study question

What is the role of male partners in the uptake of postpartum contraception among Rwandan women?

I.3. Hypothesis:

The involvement of male partners during antenatal care increases the uptake of postpartum contraception among Rwandan women

I.4. Objective

General Objective: To evaluate the role of male partners on the uptake of PPC

Specific Objectives:

- To assess rate of male companionship with their pregnant wives during antenatal care, labour and delivery
- To assess the rate of cancelling on contraception during antenatal care, labor and delivery
- To characterise the women who use PPC vs women who do not use PPC controlling for male companionship

II. METHODS

II.1. Design

This was a prospective cross-sectional study women who have had companionship by their male partners during ANC and observe the uptake of postpartum contraception compared to women who did not have husband's companionship. In this study, postpartum contraception is defined as contraception taken immediately or within 42 days post placental removal.

II.2. Study population

Pregnant women who consulted the maternity department at CHUK for labor and delivery during a period of three months from February to April 2021.

II.2.1. Inclusion criteria

- Pregnant women consulting CHUK for labor and delivery.
- Accepting to voluntarily participate in the study.

II.2.2. Exclusion criteria

- Women aged under 18 years
- Women with critical condition that last for more than 42 days and hence have not been eligible for informed postpartum contraception.
- Women whose hysterectomy was performed due to obstetrics complications

II.3. Sampling

A random sampling was used. Women were later allocated women in the group with male partner companionship and group of no male partner companionship.

II.4. Sample size.

Using the Yamane formula for sample size calculation. We estimated 500 total deliveries (in three months) based on the 3 months that preceded our research, margin of error of 0.05, and confidence level of 95%. A sample of 222 participants was calculated and consented to participate in the study at admission. During data collection on postpartum contraception, 13 women were excluded due to different factors: 3 women had been returned in hospitalization for postpartum complications, 7 were admitted at a covid-19 center due to covid-19 (either to manage the disease or for post-covid sequelae) and 3 were not reachable through the phone call. Therefore, a sample of 209 were exported for analysis.

II.5. Data collection process

A questionnaire was used to collect data from the participants. Demographic data, antenatal data, information on male partner companionship and intent to use postpartum family planning were collected at the time of admission or prior to a scheduled delivery for women already admitted for antepartum conditions. Women were also consented to provide their phone contact which was used to collect data on postpartum family planning. Every participant's date of delivery was registered on a calendared spreadsheet to schedule the end of her postpartum period. The calendared spreadsheet was checked every day to see the list of participant who have exited the postpartum period and then they were interviewed using a phone call.

II.6. Data analysis

Data entered and analyzed using IBM SPSS v25 for windows. Raw data are displayed as frequency and percentages, and inferential statistics were conducted to assess the relationship between independent and dependent variables. The main independent variables were age, gravidity, parity, history of caesarean delivery, pregnancy complication, marital status and having had male partner companionship. The main outcome variable was the "uptake of PPF" and secondary outcomes were intent to use PPF and mode of contraceptive chosen (Long acting vs postpartum). The chi-square test was used to evaluate the significance of the association between independent and dependent variables. An association was considered significant if the p-value is ≤ 0.05 and 95% confidence interval does not cross 1.

II.7. Ethical consideration

The ethical approvals were obtained from the Institutional Review Board of the University of Rwanda and from the Ethical committee of CHUK before data collection. The calendared spreadsheet was password-protected and saved on the computer of the researcher and the

research assistant. After data collection, participant's data were deidentified and a unique research identifier was assigned to each participant. Before data collection, the purpose of the study was explained to the participant when they presented at admission for labor and delivery services. Participants were informed that data will be collected at two moments: primary data at admission and data on PFFP use after the postpartum period. Participants were also explained that a phone call from the researcher is expected after postpartum period and a consent form was obtained before starting data collection.

III. RESULTS

III.1. Sociodemographic characteristics

During our study period, a total of 209 women were recruited to participate in the study as presented in table 1 representing the socio-demographic characteristics of study participants. The mean age was 30.8 ± 5.2 years with a normal symmetric age distribution. The most represented age group was 30-34 years (36.8%) followed by 25-29 years. Women with advanced maternal age represented 23.9% of all the study participants. The majority (92.3%) of women were married, 72.7% were residents of Kigali city, 51.7% were protestant, 77% were in category three of wealth index, 57.9% had attended university education, 40% had no occupation and 44% either owned a business or were employed in private sector.

Table 1. Sociodemographic characteristics

N=209		N	%
Age group	<25 years	26	12.4
	25-29 years	56	26.8
	30-34 years	77	36.8
	≥ 35 years	50	23.9
	Mean \pm SD		30.8 ± 5.2
Marital status	Cohabitate	9	4.3
	Single- not cohabitating	7	3.3
	Married	193	92.3
Residence	Kigali	152	72.7
	Out Kigali	57	27.3
Religion	Protestant	108	51.7
	Catholic	60	28.7
	Muslim	17	8.1
	Other	24	11.4
Wealth index	2	48	23
	3	161	77
Level of Education	Attended primary	16	7.7
	Attended secondary	70	33.5
	Attended University	121	57.9
	No formal education	2	1
Occupation	Public employee	33	15.8

	Private employee	28	13.4
	Owns or heads a Business	64	30.6
	No occupation	84	40.2
Are you a health care professional?	Yes	12	5.7
	No	197	94.3
Gravidity	Primigravida	63	30.1
	Multigravida	146	69.9
Parity	Nulliparous	4	1.9
	Primiparous	66	31.6
	Multiparous	139	66.5

Regarding the obstetric history, two thirds (69.9%) were multigravida while 30.1% were primigravida by the time of data collection (table 1). Furthermore, 31.6% had carried only one pregnancy that reached 20 weeks of gestation (primiparous), and 66.5% had had more than one pregnancy that reached at least 20 weeks of gestation (multiparous).

III.2. Pregnancy history, outcome and prior contraceptive use

The information related to antenatal history including male partner companionship and antenatal education on contraception are presented in table 2. The results show that one third (34%) of women who attend CHUK for labor and delivery have their antenatal contacts in private health institution, 30.6% at health centers and only 25% initiate their ANC at CHUK. In most cases (75.1%), there is no complication developed during antenatal period. The most common complication exhibited during pregnancy were genital infections (6.2%) followed by prelabor rupture of membranes (PROM) either prematurely or at term (5.7%) and genital bleeding (4.8%). Severe morbidities such as PPH and preeclampsia were developed by 0.5% and 2.4% respectively. The cesarean section rate was 55.3% of all participants and 93.8% had a live term delivery while one woman had neonatal death.

Regarding companionship during pregnancy, 55% of women in this study had companionship by their male partner at least once during pregnancy or labor. Among women who had joint companionship with their male partners, nearly only 18.3% were accompanied at least 4 times, 27% had companionship only once throughout pregnancy, 87.8%, had joint companionship with their male partners in the first trimester, and 5.2% were accompanied for the first time during labor.

Among all women in this study, only 28.2% had health education on family planning coupled with their male partner. The components of health education on family planning

was mostly the type of contraceptives (87.8%) and benefits of contraception (55.4%) while the side effects were explained to only 16.9% of participants (figure 1).

More than half (54.5%) had used modern contraceptive a least once before the recent pregnancy and among them, 60.5% had experienced at least one side effect of the contraceptive used. When asked about their current plan for future fertility, 43.5% indicated that they have completed their fertility.

Table 2. Pregnancy history, outcome and prior contraceptive use

Variable		N	%
Place of ANC N=209	Health center	64	30.6
	DH	21	10.0
	Private clinic	71	34.0
	CHUK	53	25.4
Complications on pregnancy N=209	Pain that required treatment	4	1.9
	PROM	12	5.7
	Genital infection	13	6.2
	Preeclampsia	5	2.4
	PTL	2	1.0
	Emesis Gravidarum	5	2.4
	PPH	1	0.5
	Genital bleeding	10	4.8
None	157	75.1	
Mode of delivery	Vaginal delivery	92	44.7
	Cesarean delivery	114	55.3
Pregnancy outcome	Abortion	4	1.9
	PTL	8	3.8
	Term delivery	196	93.8
	Neonatal death	1	0.5
Had	Yes	115	55.0
Companionship	No	94	45.0
	1	31	27.0

Partner companionship frequency	2	37	32.2
	3	26	22.6
	4	21	18.3
Timing of first companionship	1st trimester	101	87.8
	2nd trimester	6	5.2
	3rd trimester	2	1.7
	At labor	6	5.2
FP education with partner	Yes	59	28.2
	No	150	71.8
Ever used FP before	Yes	114	54.5
	No	95	45.5
Ever had FP complication	Yes	69	60.5
	No	45	39.5
(N=114)			
Completed fertility	Yes	91	43.5
	No	118	56.5

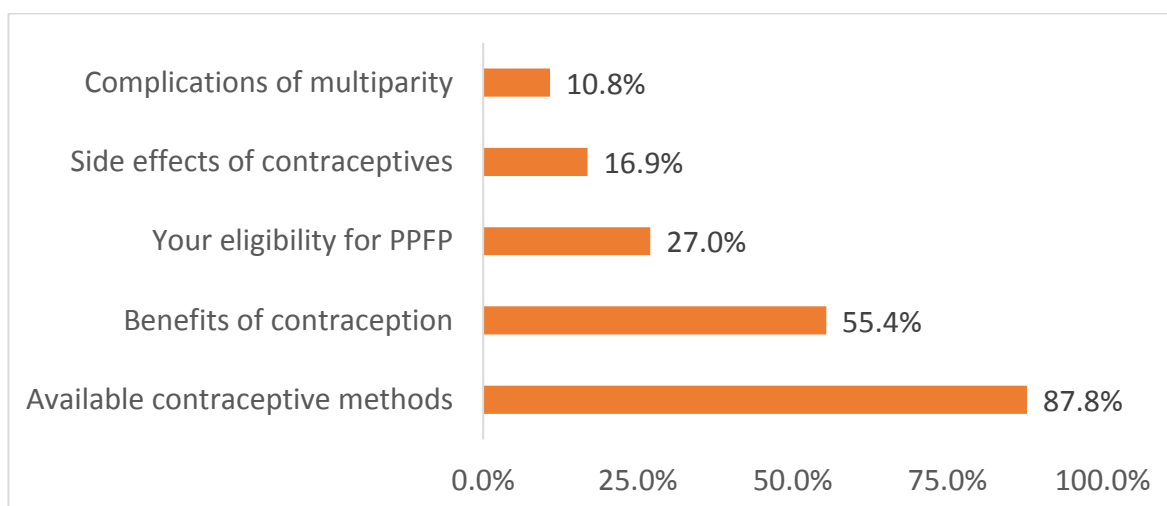


Figure 1. Components of health education on family planning during antenatal care

III.3. Factors associated with PFP uptake

III.3.1. Socio demographic factors

The socio-demographic factors associated with postpartum contraceptive use are presented in table 3. The results show that, women aged 30-34 years and those aged more than were significantly more likely to take PFP (41.7% and 31.3% respectively) compared to their younger counterparts ($p < 0.001$). Also, there was a statistically significant association

between occupation and uptake of PFP with the highest uptake likely to occur among women who own or head a business (33.0%, $p < 0.001$). Other factors such as marital status, residence in Kigali city, religion, wealth index, and level of education were not significantly associated with the use of PFP.

Table 3. Sociodemographic factors associated with PFP uptake

		On PFP, N (%)		
		Yes	No	
Age	<25 years	8 (7.0)	18 (19.1)	<0.001
	25-29 years	23 (20.0)	33 (35.1)	
	30-34 years	48 (41.7)	29 (30.9)	
	≥35 years	36 (31.3)	14 (14.9)	
Marital status	Cohabitate	3 (2.6)	6 (6.4)	0.136
	Married	110 (95.7)	83 (88.3)	
	Single- not cohabitating	2 (1.7)	5 (5.3)	
Residence	Kigali	80 (69.6)	72 (76.6)	0.256
	Out Kigali	35 (30.4)	22 (23.4)	
Religion	Protestant	61 (53.0)	47 (50.0)	0.911
	Catholic	33 (28.7)	27 (28.7)	
	Muslim	8 (7.0)	9 (9.6)	
	Other	13 (11.3)	11 (11.7)	
Wealth index	2	28 (24.3)	20 (21.3)	0.599
	3	87 (75.7)	74 (78.7)	
Level of Education	Attended primary	10 (8.7)	6 (6.4)	0.761
	Attended secondary	41 (35.7)	29 (30.9)	
	Attended University	63 (54.8)	58 (61.7)	
	No formal education	1 (0.9)	1 (1.1)	
Occupation	Public employee	25 (21.7)	8 (8.5)	<0.001
	Private employee	22 (19.1)	6 (6.4)	
	Owens or heads a Business	38 (33.0)	26 (27.7)	
	No occupation	30 (26.1)	54 (57.4)	

III.3.2. Obstetric factors associated with PFP uptake

Obstetric factors were associated with uptake of PPF and are displayed in table 4. Relative to primigravida, multigravida women were significantly more likely to use postpartum family planning (63.7% vs 34.9%, $p < 0.001$) and similar association was observed among multiparous (66.9%) women relative to primiparous (31.8%) and nulliparous (25%), with p -value < 0.001 . Furthermore, higher rates of PPF uptake were observed among women who underwent ANC at district hospital (71.4%) and health center (60.9%) compared to only 42.3% among women who had their ANC in private health institution and 58.5% at CHUK ($P = 0.044$). Women who underwent a cesarean delivery were significantly more likely to take postpartum contraception compared to their counterparts who underwent vaginal delivery (63.2% vs 46.7%, $p = 0.018$). Also, PPF was more likely to be taken by women for whom the recent pregnancy resulted into a term delivery (93.8%, $p = 0.028$) compared to only less than 25% among women who had abortion or preterm labor. The one woman in this study who had a neonatal death has opted not to take PPF.

Having companionship by a male partner was significantly associated with higher utilization of PPF compared to women who did not have companionship during pregnancy (61.7% vs 46.8%, $p = 0.031$). However, having received the health education together with the male partner was not statistically associated with PPF uptake (57.6% vs 54.0%, $p = 0.635$). Regarding previous utilization of modern family planning services, more uptake of PPF were observed among women who had previously used FP (73.7% vs 32.6%, $p < 0.001$), among women who ever suffered a complication of (81.2% vs 62.2%, $p = 0.025$), and among women who self-reported to have completed their fertility (63.7% vs 48.3%, $p = 0.026$).

Table 4. Obstetric factors associated with PFP uptake

		Any modern, N (%)				p-value
		Overall	Yes	No		
Gravidity	Primigravida	63 (30.1)	22 (34.9)	41 (65.1)	<0.001	
	Multigravida	14 (69.9)	93 (63.7)	53 (36.3)		
Parity	Nulliparous	4 (1.9)	1 (25.0)	3 (75.0)	<0.001	
	Primiparous	66 (31.6)	21 (31.8)	45 (68.2)		
	Multiparous	13 (66.5)	93 (66.9)	46 (33.1)		
Place of ANC	Health center	64 (30.6)	39 (60.9)	25 (39.1)	0.044	
	DH	21 (10.0)	15 (71.4)	6 (28.6)		
	Private clinic	71 (34.0)	30 (42.3)	41 (57.7)		
	CHUK	53 (25.4)	31 (58.5)	22 (41.5)		
Complications on recent pregnancy	Yes	52 (24.9)	33 (63.5)	19 (36.5)	0.158	
	No	15 (75.1)	82 (52.2)	75 (47.8)		
Mode of delivery	Vaginal delivery	92 (44.7)	43 (46.7)	49 (53.3)	0.018	
	Cesarean delivery	11 (55.3)	72 (63.2)	42 (36.8)		
Pregnancy outcome	Abortion	4 (1.9)	1 (25.0)	3 (75.0)	0.028	
	PTL	8 (3.8)	1 (12.5)	7 (87.5)		
	Term delivery	19 (93.8)	113 (57.7)	83 (42.3)		

	Neonatal death	1 (.5)	0 (.0)	1 (100.0)	
Had Companionship	Yes	11 (55.0)	71 (61.7)	44 (38.3)	0.031
	No	5)	44 (46.8)	50 (53.2)	
FP education with partner	Yes	59 (28.2)	34 (57.6)	25 (42.4)	0.635
	No	15 (71.8)	81 (54.0)	69 (46.0)	
Ever used FP before	Yes	11 (54.5)	84 (73.7)	30 (26.3)	<0.001
	No	4)	31 (32.6)	64 (67.4)	
Ever had FP complication	Yes	69 (60.5)	56 (81.2)	13 (18.8)	0.025
	No	45 (39.5)	28 (62.2)	17 (37.8)	
Completed fertility	Yes	91 (43.5)	58 (63.7)	33 (36.3)	0.026
	No	11 (56.5)	57 (48.3)	61 (51.7)	
		8)			

III.3.3. Effect of companionship on FP uptake

During this study, we also evaluated the effect of companionship and the results are presented in table 5. The results of this study show that, women who had a companionship with their male partners were seven times more likely to express intention to use PPF compared to women who did not have companionship (66.2% vs 21.2%, OR: 7.314, 95%CI: 3.478-15.378, $p < 0.001$) and were more likely to use modern contraceptive (61.7%, vs 46.8%, OR: 1.834, 95%CI: 1.055-3.187, $p = 0.031$). Specifically, having had companionship with the male partner was associated with higher uptake of long acting contraceptives (64.9% vs 49.6%, OR: 1.874, 95%CI: 1.044-3.362, $p = 0.034$) but there was not significant difference in uptake of short acting contraceptives: 56.1% vs 54.8%, OR: 1.056, 95%CI: 0.531-2.099, $p = 0.878$).

Table 5. Effect of companionship on FP uptake

Outcome variable		Companionship, N (%)					p-value
		Overall	Yes	No	OR	95% CI	
Intention to use FP at admission	Yes	157 (75.1)	104 (66.2)	53 (33.8)	7.314	3.478-15.378	<0.001
	No	52 (24.9)	11 (21.2)	41 (78.8)			
Any modern contraceptive	Yes	115 (55.0)	71 (61.7)	44 (38.3)	1.834	1.055-3.187	0.031
	No	94 (45.0)	44 (46.8)	50 (53.2)			
Long Acting Contraceptives	Yes	74 (35.4)	48 (64.9)	26 (35.1)	1.874	1.044-3.362	0.034
	No	135 (64.6)	67 (49.6)	68 (50.4)			
Short acting contraceptive	Yes	41 (19.6)	23 (56.1)	18 (43.9)	1.056	0.531-2.099	0.878
	No	168 (80.4)	92 (54.8)	76 (45.2)			

IV. DISCUSSION

This study aimed at evaluating the role of male partners companionship to their female pregnant partners on the uptake postpartum family planning. The results show higher rates of modern contraceptive among women who had a male companionship compared to other women in the control group without male partners companionship during antenatal care. More significantly, we found substantial higher rates of long acting contraceptive when a male partners had accompanied the pregnant woman. Our results are consistent with a prior study in among Rwandan women that showed a significant likelihood of PFP uptake when the male partner is involved during antenatal care than when the decision is independently taken by the woman alone,(16,17) and has also been described in a qualitative study in Tanzania (18).

The rate of male partner's companionship to their pregnant female partner in this study (55%) were comparable to the results from Kyela district in Tanzania showing a rate of 56.9%,(19), lower to the results from Afghanistan that have demonstrated a companionship rate of 69.4%(20) but higher compared to the results from Kenya with a companionship rate of 35%, (21) and 14% in South Africa,(22). The disparities in male partners' involvement during antenatal care among the countries in the same region may be a result from the difference in the healthcare systems adopted by these countries and strategies taken to attract the couple for antenatal visit. In Rwanda, for example, it is recommended for every pregnant woman to have at least one antenatal care with her male partner, preferably during the first trimester for the couple screening for HIV and other conditions that can be transmitted from partner to partner with possible subsequent transmission to the fetus,(23,24). Similar approaches are used in Tanzania where a pregnant woman is given a message to transmit to the husband as a request from the health care provider calling the husband to attend with his wife,(25). The results of our study together with results from other East African countries, show that the rate of male companionship during antenatal care is generally similar in the region with only less than two thirds of pregnant women have companionship during antenatal visits(18–21). This relatively low rate of male involvement during antenatal care is hypothesized to be a consequence from historical cultural bounds that relate a pregnancy to womanhood while a man would be regarded a financial provider and driver of economic engines for the family(19,22). Similar with the results from a study conducted in Afghanistan, (20), the rate of companionship in our study was mostly done once and during first pregnancy with fewer sustainability until labor.

It is encouraging that male in the east African countries have expressed a transition phase where they are willing to play a role in the maternal and child health and bridge from the historical culture of leaving the pregnancy-related activities to the woman alone (18).

It is documented that, more than 98% of Rwandan women have antenatal care by a skilled healthcare provider at least once during their pregnancy,(26), and this could be a potential opportunity to educate them about family planning according to their preferred future fertility plan. Among all study participants in this study, the health education on family planning was provided to only 28.2% of women with their male partners accompanying them. This proportion of education on contraception is very low in relation to the proportion of women who attended for antenatal care. While this can result into a large proportion of women undedicated in contraceptive use, subsequent acceptability of false information from rumors and other non-reliable source of information can lead to poor adherence to health care services,(27,28). Additionally, the results show that healthcare providers offer family planning education with more focus on explaining the available options but only few women are equipped with knowledge on possible or expected side effects and other non-contraceptive benefits such as reduced incidence of ovarian cancers, endometrial hyperplasia, regulation of menstrual cycle, and reduced menstrual bleeding for hormonal contraceptive users in general,(29).

Our study has demonstrated higher uptake of PPF among women aged 30 years and above which is consistent with the result from Uganda also showing higher contraceptive uptake among more adult women aged above 30 years,(30,31). However, different from these studies from Uganda, the geographical residence and level of education did not appear to influence the contraceptive uptake among our study participant. It is not surprising to observe higher odds of utilizing long acting contraceptive among multiparous women as this group of population are likely to have achieved or early achieved their desired fertility, while primiparous women may still be exhibiting desire to achieve their number of children in the following decade. The results of our study have also shown a strong association between women's occupation (owning or heading a business) and higher rates of PPF uptake. Whether the utilization of contraceptive has contributed to the ability of women to own or head a business or whether the occupation has influenced these women to take contraception, it is not clear. However, the Institute for Women's Policy Research and the Center for Global Development have documented that, contraception uptake increases the woman's economic independence, the proportion of women in the workforce, the number of hours worked by a woman and reduction in women's poverty,(32,33). A more cohort or

case control study may give more explanation on the two-sided significance of this association.

Women who had once used a family planning method and developed related side effects, expressed higher odds of using PPFp compared to women who had never used modern contraception or women who had never had any side effect. It is evident that, myths and misconception about contraception and related side effects are a major challenge hindering the uptake of family planning and impose challenges in health education convincing women to utilize the methods,(27,28). The repeated uptake of family planning methods among women who had previously used them and had side-effects may have results from their prior experience that the related side-effects are benign, mild, fully reversible and do not cause infertility. Additionally, the health education package offered to these women during their previous attempt to use family planning may have generated a positive memory that facilitated subsequent healthcare education and re-uptake of family planning.

The role of male partner companionship on the uptake of PPFp was underlined in this study. Women who reported joint antenatal visit with their male partner have also shown higher intention to use PPFp, higher actual rates of modern contraceptive uptake in general and long acting contraceptive specifically. These results are in steady agreement with prior studies in Rwanda that also demonstrated higher contraceptive rate among women accompanied by their male partners, and hence, are calling of more inclusion and sensitization of male partners in antenatal care,(16,34,35). Our results also show a gap between intention to use family planning and the actual utilization rate (75.1% vs 55.0%). Whether this gap has been filled by interval contraceptives beyond the postpartum period or whether they translated into unmet needs, is unclear. The involvement of male partner in antenatal care has been documented to influence not only the uptake of family planning but also the utilization of maternal health services in general during pregnancy and in postpartum period with enhanced positive neonatal outcomes,(21,36).

V. CONCLUSION AND RECOMMENDATIONS

Our study demonstrates positive association between male companionship during antenatal care and delivery with uptake of postpartum family planning. The rate of partner companionship, however, are not yet exciting and, hence, there is a need for more sensitization and conviction of Rwandan males to accompany their women not only during the first trimester but also throughout the pregnancy, labor and delivery. Pregnancy is a couple decision and, therefore, the involvement of both partners should be emphasized during all process related to the pregnancy. The result show lower rates of health education on family planning which also rather emphasized more on the available methods during antenatal care. On the other hands, our results have highlighted higher acceptance rate of PPFp when a woman had previously used modern contraception and experienced the benign nature of the related side effects. Our results are calling for improvement of content of family planning education, take a chance to educate the couple on contraception when the male partner is accompanying the pregnant woman, and further research to explore strategies that would increase the rate of companionship and uptake of PPFp.

LIMITATIONS OF THE STUDY

The limitation of this study included lack of enough power to investigate the sustained uptake of contraception beyond the postpartum period and the recruitment of only one hospital which may not reflects the situation beyond the catchment area of this hospital. Our study was done during Covid-19 pandemic for which, containment measures included lockdowns and confinements. Therefore, the proportion of women who did not use PPFp may have partially resulted from the inability to access health institution due to the banned transportations. This study also did not investigate the gap between intent to use contraception and the actual uptake to use contraception (unmet needs) since this would involve extending the study period to follow the participants in a longitudinal framework. The strength of this study is in the prospective design that immediately recruited data from participants and the inclusion of the referral hospital where high risk pregnancies that would benefits from PPFp are managed.

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ANNEXES

The role of male partners in postpartum family planning

Corresponding Author: Aimée Nyiramahirwe, MD

Questionnaire

1. Age (completed years).....
2. Residence
 - a. Kigali
 - b. East
 - c. West
 - d. North
 - e. South
3. Marital status
 - a. Married
 - b. Cohabitate
 - c. Single- not cohabitating
4. Level of education
 - a. No formal education
 - b. Attended primary
 - c. Attended secondary
 - d. Attended University
5. Religion
 - a. Roman catholic
 - b. Protestant
 - c. Muslim
 - d. Other
 - e. No religious affiliation
6. Current Wealth index
 - a. A
 - b. B
 - c. C
 - d. D
 - e. E
7. Occupation (currently, during or before pregnancy)
 - a. No occupation
 - b. Owns or heads a Business
 - c. Public employee
 - d. Private employee
8. Obstetric formula at time of survey: G.....T.....P.....A.....L
9. How many children do you plan to have (including the current ones)?.....
10. Are you a health care professional?
 - a. Yes
 - b. No

11. Where did you have your antenatal care?
 - a. Health center
 - b. DH
 - c. Private Clinic
 - d. Referral Hospital (CHUK)
 - e. Referral Hospital (Other)
12. What was the outcome of the most recent pregnancy (chose all that apply)
 - a. Abortion
 - b. IUFD
 - c. PTL
 - d. Term Delivery
 - e. Neonatal death
13. What complications did you have on most current pregnancy? (*choose all that apply*)
 - a. Pain that required medical management
 - b. Genital Bleeding
 - c. PROM
 - d. Genital infection
 - e. Diabetes
 - f. Pre-eclampsia
 - g. Preterm labor
 - h. emesis gravidarum
 - i. PPH
14. What was the mode of delivery for the most recent pregnancy ?
 - a. Vaginal delivery
 - b. Caesarean delivery
 - c. Not applicable
15. What family planning methods do you know? (*choose all that apply from a to h*)
 - a. COCP
 - b. Combined injectable contraceptives
 - c. POP
 - d. DMPA
 - e. Implant
 - f. IUCD
 - g. Sterilization
 - h. Condoms
 - i. None
16. When can a woman use contraceptives
 - a. During pregnancy
 - b. Same day after delivery
 - c. Should not use FP until at least 6 weeks postpartum
 - d. Should not use FP until at least 6 months after delivery
 - e. Should not use family planning when the baby is breastfeeding
 - f. Anytime outside pregnancy
17. Did the healthcare provider engage education on family planning with you during ANC?
 - a. Yes
 - b. No
18. What was the component of FP education? (choose all that apply)

- a. Contraception does not mean stopping childbearing
 - b. Available contraceptive methods
 - c. Your eligibility for postpartum contraception
 - d. Side effects of contraceptives
 - e. Male contraceptives
 - f. Benefits of contraception
 - g. Danger of too many children
19. Did your male partner accompany you during antenatal care?
- a. Yes
 - b. No
20. If yes, how many times did your partner accompany you?
21. If more than once, when was the first coupled visit with your partner
- a. 1st trimester
 - b. 2nd trimester
 - c. 3rd trimester
 - d. At labor
22. At which time of pregnancy did you partner attend ANC with you?
- a. 1st trimester
 - b. 2nd trimester
 - c. 3rd trimester
 - d. At labor
23. When you had antenatal education on family planning, were you coupled with your male partner?
- a. Yes
 - b. No
24. Have you ever used modern contraceptives before?
- a. Yes
 - b. No
25. If yes, which method have you used?
- a. Combined injectable contraceptives
 - b. POP
 - c. DMPA
 - d. Implant
 - e. IUCD
 - f. Sterilization
 - g. Condoms
 - h. Traditional
 - i. Not applicable
26. What complications did you have on previous contraceptive use?
- a. Genital bleeding
 - b. Pelvic pain
 - c. Genital infection
 - d. Failure contraception
27. When do you time to use FP?
- a. Postpartum /post abortion family planning (within 42 days after delivery)
 - b. Interval family planning
28. Contraceptive taken
- a. Combined injectable contraceptives

- b. POP
 - c. DMPA
 - d. Implant
 - e. IUCD
 - f. Sterilization
 - g. Condoms
 - h. None
29. When was your contraceptive method placed
- a. Post placental
 - b. Other: Number of days after delivery.....
30. Reason for not using postpartum contraception
- a. I am not informed about PPC
 - b. PPC are not safe for life of mother
 - c. PPC decrease or stop breast milk
 - d. My partner did not want PPC
 - e. I will use interval contraceptives
 - f. I don't want to use contraceptives
 - g. I don't plan to have sexual intercourse before 6 weeks post delivery
 - h. I use traditional methods
 - i. I am waiting for periods to take contraceptives
 - j. Not applicable
31. What is your reason for using contraceptive?
- a. To delay pregnancy
 - b. Child spacing
 - c. Completed family size
32. Is your partner aware of your current contraceptive use?
- a. Yes
 - b. No
 - c. Not applicable
33. Who should take decision about contraceptive?
- a. Male partner
 - b. Woman
 - c. Couple
34. When should contraceptive be used?
- a. Only if both partners agree
 - b. If woman alone agree

CMHS INSTITUTIONAL REVIEW BOARD (IRB)

Kigali, 2nd / February /2021

Dr Aimée Nyiramahirwe
School of Medicine and Pharmacy, CMHS, UR

Approval Notice: No 030/CMHS IRB/2021

Your Project Title "*The Role of Male Partners in Postpartum Family Planning*" has been evaluated by CMHS Institutional Review Board.

Name of Members	Institute	Involved in the decision		
		Yes	No (Reason)	
			Absent	Withdrawn from the proceeding
Prof Kato J. Njunwa	UR-CMHS	X		
Dr Stefan Jansen	UR-CMHS	X		
Dr Brenda Asimwe-Kateera	UR-CMHS	X		
Prof Ntaganira Joseph	UR-CMHS	X		
Dr Tumusiime K. David	UR-CMHS	X		
Dr Kayonga N. Egide	UR-CMHS	X		
Mr Kanyoni Maurice	UR-CMHS		X	
Prof Munyanshongore Cyprien	UR-CMHS	X		
Mrs Ruzindana Landrine	Kicukiro district		X	
Dr Gishoma Darius	UR-CMHS	X		
Dr Donatilla Mukamana	UR-CMHS	X		
Prof. Kyamanywa Patrick	UR-CMHS		X	
Prof Condo Umutesi Jeannine	UR-CMHS		X	
Dr Nyirazinyoye Laetitia	UR-CMHS	X		
Dr Nkeramihigo Emmanuel	UR-CMHS		X	
Sr Maliboli Marie Josee	CHUK	X		
Dr Mudenge Charles	Centre Psycho-Social	X		

After reviewing your protocol during the IRB meeting of where quorum was met and revisions made on the advice of the CMHS IRB submitted on 22nd January 2021, **Approval has been granted to your study.**

Please note that approval of the protocol and consent form is valid for **12 months**.