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A mixed-methods exploratory study of factors that influence postpartum IUD uptake after family planning counseling among women in Kigali, Rwanda

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An abstract of
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Abstract

A mixed-methods exploratory study of factors that influence postpartum IUD uptake after family planning counseling among women in Kigali, Rwanda

By Mariama S. Tounkara

Background: Rwanda has high unmet need for family planning (FP) methods, especially in postpartum periods during which women are advised to space pregnancies at least two years apart for improved maternal-child health. Despite increased interest in long-acting reversible contraceptive methods like the copper intrauterine device (IUD), a highly cost-effective method, access and uptake remain low among postpartum women. Research shows that low uptake of the postpartum IUD (PPIUD) may be due to poor knowledge, concerns about side-effects, and longstanding myths and misconceptions. This study aimed to determine factors associated with PPIUD uptake among postpartum women after receiving a PPIUD contraceptive counseling intervention (delivered along with discussion of the full range of contraceptive method options), as well as provider perceptions of facilitators and barriers to PPIUD uptake.

Methods: This mixed-methods study was conducted in Kigali, Rwanda in 2018. A case-control study was conducted with postpartum women who received PPIUD counseling (74 PPIUD users, 91 PPIUD nonusers) at three health facilities. Multivariate logistic regression analyses evaluated associations between women's socio-demographics, FP knowledge, and FP decision-making factors and the outcome of PPIUD uptake. Additionally, six focus groups were conducted with providers (n=24) and community health workers (n=17) trained to deliver the PPIUD contraceptive counseling intervention to assess their perceptions of the intervention as well as client facilitators and barriers to PPIUD uptake. Focus group discussions were recorded, translated, and analyzed for emergent themes.

Results: Factors associated ($p<0.05$) with copper PPIUD uptake included citing its non-hormonal nature, effectiveness, and duration of protection against pregnancy as advantages. Awareness of the 4-6 week postpartum insertion timing option, male partner control over FP decisions, and not considering fertility plans when making FP decisions were associated with non-use. Overall, low knowledge about the PPIUD persisted among clients even after counseling, indicating a need to further refine counseling messages. Provider focus groups highlighted client fears and concerns, inconsistent FP messaging, and male partner involvement as factors that influence non-use.

Conclusion: Male partner education and involvement in reproductive and FP decisions with their partners is important for increasing PPIUD uptake. PPIUD counseling addressing women's knowledge, fear, concerns, and misconceptions about the method as well as highlighting its advantages and insertion timing options delivered consistently by trained PPIUD providers and promoters is essential to increase PPIUD use in Rwanda.

Keywords: IUD, postpartum, family planning, counseling, male involvement, Rwanda

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"Verily, with every hardship comes ease." - "إِنَّ مَعَ الْعُسْرِ يُسْرًا"
Ash-Sharh (The Relief) 94:6

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ACRONYMS AND ABBREVIATIONS

ANC	Antenatal Care
CDC	Centers for Disease Control and Prevention
CFCP	Couples' family planning counseling
CHWs	Community Health Workers
FGDs	Focus Group Discussions
FP	Family Planning
IUD	Intrauterine Device
LAM	Lactational Amenorrhea Method
LARC	Long-acting reversible contraceptive
L&D	Labor and Delivery
MCH	Maternal and Child Health
MDG	Millennium Development Goals
MOH	Ministry of Health
PID	Pelvic Inflammatory disease
PPFP	Postpartum Family Planning
PPIUD	Postpartum intrauterine device
PSF	Projet San Francisco
RDHS	Rwanda Demographic and Health Survey
RZHRG	Rwanda Zambia HIV Research Group
TFR	Total Fertility Rate
UNFPA	United Nations Population Fund
WHO	World Health Organization

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CHAPTER I: INTRODUCTION

Although global total fertility rates (TFRs) have gradually declined since the 1950s, rates tend to be higher in poorly developed countries, mainly sub-Saharan countries (Bongaarts & Casterline, 2013). Evidence shows that sub-Saharan African countries still have high fertility and unmet need for family planning, with projections of their populations doubling in the next few decades. Additionally, women of reproductive age (15-49 years) in these areas tend to have short birth intervals, typically less than 18 months, which lead to adverse health outcomes for mothers their infants (Rutstein, 2005). In 2017, approximately 7.5% of 1.6 billion women in developing regions who want to avoid pregnancy have an unmet need for modern contraception and the highest proportion (21%) is in Sub-Saharan Africa (Guttmacher Institute, 2017). Literature shows that contraception failure rates are highest for users of traditional or barrier methods such as spermicide (28%), fertility-awareness based methods (24%), withdrawal (22%), sponge (24% parous women, 12% nulliparous women), and female (21%) and male (18%) condoms (Center for Disease Control and Prevention [CDC], n.d.). Of the modern methods, oral contraceptive pills and injectables are the most commonly used (World Health Organization [WHO], 2018), though these are user-dependent and associated with typical use failure rates of 6% and 9% respectively (CDC, n.d.). This underscores the need to improve access to the highly effective, user-independent long-acting reversible contraceptives (LARCs), such as intrauterine devices (IUDs) and implants, which have typical use failure rates of 0.05% - 0.8% per year (CDC, n.d.) immediately postpartum to ameliorate this gap.

Globally more and more women in low-income and middle-income countries like Rwanda are delivering their babies in health facilities. During the postpartum period,

women often welcome the opportunity to delay or space their next pregnancy. An analysis of Demographic and Healthy Surveys from 17 developing countries found that 50-90% postpartum women experience unmet family planning needs, and 95% desire to avoid pregnancy for at least one year (Borda, Winfrey, & McKaig, 2010; Pasha et al., 2015). Increase in facility-based delivery provides opportunity for introduction of postpartum family planning interventions. Research shows that the key to implementing effective postpartum family planning (PPFP) is by providing counseling during antenatal care (ANC), labor and delivery (L&D), postpartum maternity ward, infant vaccination, and follow-up visits, giving women and their partners ample opportunity to choose the most appropriate contraceptive method (MCHIP & PSI, 2014). This is particularly helpful for women who have limited access to healthcare or are not obtaining routine health care as they get more exposure to family planning education.

IUD use in Africa is low (<5%), and it is even less prevalent in sub-Saharan Africa (<1%) compared to more developed regions (9.2%) (United Nations (UN), 2011). The three categories of the modern IUDs are the Progestin-releasing IUDs, Copper IUDs, and Unmedicated IUDs. The Copper TCu380A, named for its high copper surface area of 380 mm^2, has a plastic T-shaped core with copper placed around the vertical stem and horizontal arms, and a frame connected to a monofilament thread that protrudes through the cervical canal into the upper vagina. This structure secures the IUD in the uterus and facilitates easy removal (Kaneshiro & Aeby, 2010; Kulier, O'Brien, Helmerhorst, Usher-Patel, & D'Arcangues, 2007). When placed in the uterine cavity via the cervix, the copper IUD creates a hostile and inflammatory environment to the ovum and sperm, thus preventing fertilization (Alvarez et al., 1988).

Studies have shown that the modern copper IUD is one of the most effective, safe, nonhormonal and reversible methods suitable for lactating mothers (Kaneshiro & Aeby, 2010; Kulier et al., 2007). A meta-analysis consisting of 35 randomized control trials and over 48,000 women in various developing and industrialized countries compared copper IUDs for their effectiveness and side effects. Results showed that the Copper TCu380A was more effective in preventing unwanted pregnancies, and long-acting (up to 12 years), with fewer side effects and a failure rate of 1% per year (Kulier et al., 2007). Additionally if used effectively and with periodic checks of the strings for expulsion, the probability of intrauterine and ectopic pregnancies during the first year with typical use is between 0.5 and 1.0 per 100 women (Kulier et al., 2007; Rowe et al., 1997). Additional analyses from ongoing, large, multinational studies demonstrate that the cumulative pregnancy rate is 1.7 - 1.5 per 100 women within the first 3 to 7 years of use, with no pregnancies by the 8th year (Rowe et al., 2016). Furthermore, use of the Copper TCu380A IUDs decrease the risk for ectopic pregnancies, which account for 10-15% of maternal deaths (Al-Inany, 2007; Cherot, 2007; Sivin, 1991).

The recommended times for IUD use during the postpartum period are post-placental (within 10 mins of placental expulsion), immediate postpartum (within 48 hours of delivery), and transcesarean, post-abortion and four week or more postpartum (FHI360, 2013a; Grimes, Lopez, Schulz, Van Vliet, & Stanwood, 2010; Randel, 2011; Singh et al., 2016). Literature documents that post-placental, immediate postpartum and transcesarean IUD insertions are the most ideal and beneficial to the provider, client and healthcare system (Grimes et al., 2010; Lopez, Bernholc, Hubacher, Stuart, & Van Vliet, 2015). Post-placental IUD insertions, in particular are the most effective and convenient

because they have higher retention rates, reduce subsequent postpartum visits and patients are highly motivated for contraception during this time (Grimes et al., 2010; Lopez et al., 2015; Singh et al., 2016). These periods are recommended because the cervix is open and limp, facilitating easy placement of the IUD at the fundus, either manually or with ring forceps (O'Hanley & Huber, 1992; Singh et al., 2016). Additionally, insertion during these periods are associated with fewer risks of infection and bleeding, and do not affect milk production or breastfeeding (Kapp, Curtis, & Nanda, 2010; Welkovic, Costa, Faúndes, de Alencar Ximenes, & Costa, 2001). Although IUD insertions after uterine involution (when the uterus returns to normal size) after 6 weeks of delivery are less prone to expulsions and infections, the overall benefits of post-placental and immediate postpartum IUD make them a top tier contraception method for postpartum women (American College of Obstetricians and Gynecologists [ACOG], 2016).

Problem Statement

Over half (52%) of all pregnancies in Rwanda occur less than two years after the preceding birth (USAID & MCHIP, 2010). The prevalence of contraceptive use among postpartum women in Rwanda is low as most women do not start taking contraceptives at the recommended time. According to the 2014-15 Rwanda Demographic and Health Survey (RDHS), the unmet need for family planning services is 19% for all women and 51% for women in their postpartum period, with 11% need for spacing and 8% for limiting (National Institute of Statistics of Rwanda (NISR), Ministry of Health (MOH), & International, 2015; USAID & MCHIP, 2010). Moreover, while the use of modern contraceptive methods by married women has nearly tripled from 17% in 2005 to 53% in

2014-15, contraception remains inaccessible and underused by many Rwandans (NISR et al., 2015).

Despite an increased desire for small families (3.1 children ideally), the average Rwandan woman is likely to bear at 4.2 children by the end of her childbearing years (NISR et al., 2015). Furthermore, 47% of all conceptions in Rwanda are unintended; most of which end in unplanned birth, abortion, or miscarriage (Basinga et al., 2012). Research shows that family planning decreases the risk of maternal and child mortality and morbidities, and Rwanda is one of a few countries that continues to observe this decline, thus meeting two of the UN Millennium Development Goals: reducing infant mortality and improving maternal health (Republic of Rwanda Ministry of Health, 2012). Data show that the infant mortality rate in Rwanda decreased from 107 per 1000 live births in early 2000s to 28 per 1000 in 2015 (United Nations Rwanda Unity in Diversity, n.d.). Additionally, maternal mortality was 210 deaths per 100,000 live births in 2015 (NISR et al., 2015). This is attributable in part to improved family planning, among other well-coordinated interventions such as immunizations of children and improved water and sanitation (Worley, 2015).

The high efficacy of Copper T-IUDs in preventing unintended pregnancy make them an ideal modern contraception option for postpartum women and couples interested in limiting or spacing pregnancies. However, since its introduction to Rwanda and despite its high advantage profile, IUD uptake has remains low, accounting for a little less than 3% of modern contraception (FP2020, 2017; Rwanda FP2020, 2017).

Program Description

In 1986, Projet San Francisco (PSF), a division of the Emory University's Rwanda Zambia HIV Research Group (RZHRG) began conducting research in sexual and reproductive health and family planning services for high-risk HIV populations in Kigali, Rwanda. PSF has worked in conjunction with the Centre Hospitalier Kigali (CHK), the National HIV/AIDS Reference Laboratory, and the Rwandan Ministry of Health's Biomedical Research center to improve clinical care for HIV infected persons and address contraception needs. PSF established couples' family planning counseling (CFPC), in order to increase reproductive health advances and uptake of contextually appropriate family planning methods. CFPC in combination with an HIV prevention intervention called couple's voluntary HIV counseling and testing (CVCT), have been effective in increasing LARC uptake and reducing HIV incidence (RZHRG, n.d.).

In August of 2017, PSF explored the unmet needs of postpartum family planning (PPFP), namely postpartum LARC (PPLARC) services, as part of a Bill and Melinda Grand Challenge Exploration Award and an Emory University Research Council Award. An interdisciplinary team consisting of medical professionals, researchers and trained nurses and social workers, developed and pilot tested an innovative evidence-based intervention that combined behavioral science and operations research methods to improve PPFP. The multilevel-intervention was informed by the Diffusion of Innovation and Theory of Planned Behavior frameworks which incorporated input from stakeholders, providers, community health workers, and couple/clients to address barriers to PPLARC use (Ingabire et al., 2018). Providers went through a 2-days didactic and practical training for IUD insertion and removal, mock counselling sessions, and had to pass pre- and post-training tests. CHWs in charge of pregnant women and newborn health

from two-hospital affiliated health centers received 1-day training to discuss postpartum family planning, counsel and encourage women to receive PPIUD and refer them to facilities. The intervention included clients, supply-related, demand-related and sustainability-related activities designed to change the attitudes, norms and perceived control of clients and impact their decisions to uptake PPLARC methods (Ingabire et al., 2018). This formative work led to the development of a promotional and educational flipchart focused on PPLARC methods to be delivered to women or couples during routine ANC, labor and delivery, infant vaccination services and within the community by community health workers (CHWs) (Wall, Ingabire, Allen, & Karita, 2018).

Since the development of the intervention program, providers and counselors from six government health facilities (two hospitals, their affiliated health centers, and two other health centers) in Kigali have received competency-based training and certification in delivering PPIUD services. In March of 2018 PSF began training CHWs to promote family planning methods in their respective catchment areas. In the 6-months prior to the intervention (February - July 2017), only one nurse and one midwife from each hospital were providing PPIUD services, and just 46 PPIUDs were inserted at the selected health facilities (Ingabire et al., 2018). Between August 2017 and July 2018 in the pilot study, PSF trained 83 promotional agents and 39 providers to provide PPIUD services. Additionally, 9,073 pregnant women received PPLARC promotions who later delivered at a selected health facility, and of those, 2,633 postpartum women had PPIUDs inserted which indicates a 29% uptake (Ingabire et al., 2018).

Theoretical Application

Given the need for more PPIUD uptake of among postpartum women, a theory-driven approach is helpful in understanding the factors that impact its utilization in preventing unintended pregnancies. Theory-based approaches have demonstrated promise in helping to predict behavior change like prevention of sexually transmitted diseases (STIs) and compliance with medical treatments (LaMorte, 2018). Invention of oral contraceptives is the 1960s called for the application of theory in research to elucidate inconsistent findings on factors relating to poor contraceptive use. However, health education and interventions programs that address contraceptive use often have no theoretical basis (Lopez, Tolley, Grimes, & Chen-Mok, 2009). Since more is known about the complexities of contraceptive behavior, applications of theories like the Health Belief Model (HBM), may help to identify and predict factors that influence contraceptive use in health facilities and low-resource countries like Rwanda (Hall, 2012).

The Health Belief Model (HBM) is a cognitive, interpersonal theory that posits that health-promoting behavior is determined by perceptions of threat, benefits, barriers, cues to actions in the environment and individual self-efficacy (LaMorte, 2018). This makes is appropriate for a complex issue such as contraceptive use. Through HBM, contraception behavior (i.e. PPIUD use) is influenced by people's motivation to prevent unintended pregnancy (Janz & Becker, 1984). In relation to PPIUD use, perceived threat (susceptibility and severity) of an unintended pregnancy is motivation to use PPIUD. Perceived barriers are negative influences of contraceptive use and include factors like side effects and limited access to PPIUD. Perceived benefits pertain to the efficacy of a contraceptive method in preventing pregnancy, while cues to action are internal or

external stimuli (family planning counselling) which may influence behavioral change based on knowledge acquired. Lastly, HBM emphasizes modifying factors like age, education, marital status, income, previous contraception use and peer influence which may lead to initiation of a method (Hall, 2012). Together these constructs can help to better conceptualize the factors that influence PPIUD use among postpartum women.

Purpose Statement

Despite the increases in the education, availability, and uptake of the PPIUD during the pilot project, there is a paucity in local data to inform the reasons for uptake of PPIUD. This formative research seeks to examine the factors associated with PPIUD uptake and non-uptake after receiving family planning counseling through a behavioral theory framework. Applying the health belief model to PPIUD utilization among postpartum women is an understudied area for research in family planning and contraception use. The specific objectives for this study are as follows:

1. To evaluate the factors associated with PPIUD uptake after the postpartum family planning counselling intervention among Rwandan women
2. To assess the barriers and facilitators to PPIUD promotion and uptake as perceived by Rwandan FP providers and promoters who were trained to deliver the counseling intervention
3. To compare the information from both clients and FP providers/promoters to better understand gaps in the counselling intervention.

Significance of Statement

Findings from the study objectives will provide insight into factors that influence of PPIUD uptake and also provide guidance for addressing the unmet family needs of

postpartum women. Data from the 2014-2015 Rwandan RDHS indicate that IUD use among married women age 15-49 differs between urban and rural residences as well as provinces in Rwanda (3.5% and 0.6% respectively). Furthermore, IUD use is highest in Kigali (3.8%) compared to the 1.3% in South, and less than 1% each in the north, west and east provinces (NISR et al., 2015). Research shows that a key to successful family planning programming is continuous quality improvement, monitoring, and evaluation of existing programs so as to yield evidence-based information that guides decision-making for policy makers and stakeholders (Richey & Salem, 2008). Thus, understanding these factors will help to improve client's knowledge, attitudes, and practices through increases in provider productivity in family planning services. As a country that has been credited internationally for being poised to achieve many of the MDGs (Republic of Rwanda Ministry of Health, 2012). Rwanda's continuous embrace of PPIUD services gives it a potential to lead a paradigm shift for family planning services among developing countries.

CHAPTER 2: LITERATURE REVIEW

2.1 – Commitments to Family Planning

Sub-Saharan African countries have high fertility rates, short birth intervals, and unmet needs for family planning which contribute to high maternal and infant mortalities and morbidities (Fosto, Cleland, & Mberu, 2013; Williamson, 2013; World Health Organization, 2015). Family planning (FP) counseling is an integral part of healthcare provided during the antenatal, delivery and postpartum (12 months after delivery) periods. Postpartum family planning (PPFP) is often defined as birth spacing or prevention of childbirth entirely during the first 12 months after childbirth (World Health Organization, 2005). According to the World Health Organization (WHO), an estimated 302,000 maternal deaths occurred in 2015; a 44% decline from the levels in 1990. Despite these improvements, developing countries account for 99% of maternal deaths (World Health Organization, 2015) . Provision of family planning for at least 24 months postpartum can reduce maternal and infant mortality rates by 32% and 10% respectively, in addition to other global challenges like poverty, hunger, access to education and environmental sustainability (Cleland et al., 2006; Fosto et al., 2013).

Globally there is an increasing desire to limit and space births which underscores the need for contraceptives for women. To address this gap, worldwide policy makers and leaders met at the 2012 London Summit on Family Planning and created the Family Planning Strategy 2012-2020. This summit called for global political commitments and resources that will enable 120 million more women and girls to use contraceptives by 2020 (UKAID from the British people & Bill and Melinda Gates Foundation, 2012). The strategy aims to support the achievement of the United Nations Millennium Development

Goals (MDGs) for maternal and child health, which calls for universal access to contraceptive services for women (UNFPA, 2013).

2.2 – The Rwandan Context

A direct result of high unmet family planning and relatively low contraceptive use is rapid population growth. Rwanda, the second most densely populated country in sub-Saharan Africa, has one of the fastest growing populations in the world, 507 persons per square kilometer, and an annual per capita income of $400 (NISR et al., 2015The Republic of Rwanda, 2013). Rwanda's current population is estimated to be over 12.5 million people, with a median age of 19.6 years which means the number of persons in the reproductive age group will increase fueling more population growth (Worldometers, 2018). This poses severe constraints on development and makes Rwanda vulnerable to various risks such as persistent high levels of poverty, maternal and infant mortality, environment degradation, and malnutrition (May & Kamurase, 2009).

Prior to the 1994 genocide, Rwanda had the highest fertility rate in the world, with a total fertility rate of eight children per woman (May & Kamurase, 2009). Data from the 1992 RDHS indicated that only 13% of married women were using modern contraceptive methods, a prevalence that dropped to 4% in 2000 due to the destruction of the country's infrastructure (Solo, 2008). Concerned about improving the country's quality of life, the Rwandan government began developing family planning initiatives and policies aimed at curbing demographic growth, socio-economic development, reducing fertility, managing sustainable natural resources, improving food safety, increasing access to education for all children, good governance, and equal opportunity for all (NISR et al., 2015). Post-genocide Rwanda also introduced more policies in the

2000s such as the Vision 2020 strategy, with emphasis placed on developing the health sector in order to ensure universal accessibility of equitable and affordable quality health services for all Rwandans (May & Kamurase, 2009; NISR et al., 2015).

In response to the MDG, the Rwandan government began a decentralization of the healthcare system by integrating family planning services with all health services to address the country's high population density. Additionally, the government implemented reforms such as the creation of villages in rural areas (*Umudugudu*), a performance-based financing (PBF) scheme which motivates facilities and providers to meet goals established in contracts with the government, and an almost universal health insurance program called "*Mutuelle de Santé"* (May & Kamurase, 2009). Additionally, the Ministry of Health, in collaboration with donors and agencies such as FHI 360 and Jhpiego, spearheaded a postpartum family planning program, and invested in training providers to offer quality modern long-acting contraception methods to postpartum women (FHI360, 2013a).

Since the implementation of the above policies and reforms, Rwanda has made tremendous gains in contraceptive coverage. Use of contraception is currently 31% among all women, 53% among married women, and 36% among sexually active unmarried women(FP2020, 2017). Reports from the Rwanda Family Planning 2020 show that 30% of all women are using modern methods like injectables (51%), implants (17%), pills (17%), male condoms (8%), female sterilization (3%), and IUDs (3%) (FP2020, 2017). With a 2020 MDG contraception prevalence target of 72%, it is evident that more work needs to be done on promoting modern contraceptives, with strong emphasis on

PPIUD (The Republic of Rwanda, 2013). Moreover, it is important to generate country-based evidence on reasons for uptake and post-insertion PPIUD outcomes.

2.3 – Postpartum Copper IUD and its Insertion

The postpartum copper IUD is long-acting (up to 12 years), reversible, cost-effective, prevents unintended pregnancy and unsafe abortion and improves birth spacing (Chen et al., 1998 ; Kaneshiro & Aeby, 2010; Kapp et al., 2010; Kulier et al., 2007). It is known to not have any hormone-related side effects and thus does not interfere with breastfeeding for all postpartum women including HIV positive women (Canning et al., 2016). Research shows that post-placental insertions (performed within 10 minutes of placental delivery or while the woman is still in the delivery room) and immediate postpartum (within 48 hours of delivery) are ideal and beneficial to the provider and client (Lopez et al., 2015). Additionally, the copper containing IUD, TCu380A has been deemed a top tier efficacious and safe contraceptive method with a failure rate less than 1% per year compared to other IUDs (1-1.5%) (Kaneshiro & Aeby, 2010; Kulier et al., 2007; Sivin & Schmidt, 1987). Blood loss, pain from interval insertions after involution and cramps are often masked by post-placental and immediate insertions. Furthermore acceptability of PPIUD is higher in women who are offered services during the postpartum period than after involution (Mohamed, Kamel, Shaaban, & Salem, 2003).

2.4 – Challenges and Contraindications of IUDs

A common complaint with immediate IUD use is postpartum hemorrhage or excessive bleeding. Earlier studies on the safety and efficacy of immediate post placental IUD insertions reported that they can contribute to increase in blood loss during the menses, however this was disputed by studies that showed minimal to no increase (Kapp

et al., 2010; Welkovic et al., 2001). The association between pelvic inflammatory disease (PID) and the PPIUD has also been explored, however when other risk factors like existing sexually transmitted diseases are accounted for, risk of PID is reduced. A review of the WHO's IUD clinical trial data reported that PID risk is highest around the time of insertion and up to 20 days after insertion than during later times, which suggests that contamination during the insertion process is of essence (Farley, Rosenberg, Rowe, Chen, & Meirik, 1992).

Literature on PPIUD report expulsions, which are often spontaneous and occur more commonly in the immediate postpartum period compared with interval insertions. Confirmation of the device being intact is ascertained by periodic self-examinations of the strings, or by a trained professional in PPIUD services. Risk of expulsion is lower for post-placental (within 10 minutes of delivery) than for those done between 10 mins to 48 hours after delivery. A multisite study found that after 6 months, the cumulative expulsion rate was 9% for immediate post-placental insertion, compared with 37% for insertions done between 24 to 48 hours after delivery (Chi, Bardin, & Mishell, 1994). For interval insertions, the expulsion rate is about 6% after 12 months (Sivin, Greenslade, Schmidt, & Waldman, 1992).

Reports have suggested that the varying expulsion rates between IUD insertions may be attributed to the experience and training of the PPIUD service providers. Fortunately, providing competency-based trainings and certifications for PPIUD providers improves insertion techniques and substantially reduce expulsion rates (Blumenthal et al., 2011; MCHIP & PSI, 2014). In a study that evaluated PPIUD programs in the Provincial General Hospital of Nyeri, Kenya and the Maternité Hamdallaye of Bamako, Mali, the expulsion rate was 1% post placental and 5% immediate postpartum in Nyeri compared

to the 15% post placental and 27% immediate postpartum in Mali. These rates were attributed to the different levels of training and experience of the providers (Morrison, Waszak, Katz, Diabate, & Mate, 1996).

2.5 – Factors Associated with Postpartum IUD Utilization

Data from the 2015 RDHS reported that approximately 99% of women of reproductive age in Rwanda received ANC from skilled providers (doctor, nurse, midwife, medical assistant) and 91% of births were delivered in health facilities, primarily in public health sectors of urban areas (NISR, 2015). With more women receiving antenatal care (ANC), delivering, and receiving infant vaccinations at government health facilities, an opportunity is introduced to initiate PPFP and emphasize use of PPIUDs.

The UNFPA reports that to strengthen PPFP, women's education on family planning must be reinforced especially for women with lower education who are at greater risk of having unmet needs for family planning (UNFPA, 2013). Administration of immediate postpartum FP methods should only be carried out with comprehensive education and counseling. Findings from Guinea's FP program reported that the key to implementing effective family planning is by providing PPFP counseling during ANC, labor and delivery (L&D), postpartum maternity care, infant vaccination visits, and follow-up visit; intra-facility communication and coordination; and PPFP counseling stamp on client card (MCHIP & PSI, 2014).

The uptake of PPIUD has been shown to be influenced by clients' knowledge as well as a number of socio-demographic factors (Farmer et al., 2015; Gebremedhin, Kebede, Gelagay, & Habitu, 2018; Tefera, Abera, Fikru, & Jember Tesfaye, 2017). A

study done in Ethiopia that assessed factors associated with utilization of long acting and permanent contraceptive methods among married women established that women with high knowledge on LARC methods including PPIUD were 8 times more likely to use them (Alemayehu, Belachew, & Tilahun, 2012). Another study by Maluchuru et al. reported that the lack of awareness of PPIUD by clients may be a reason for poor uptake. Additionally education level was associated with high knowledge and attitude towards contraceptive use as women who had completed secondary or higher education were twice likely to use a modern contraception (Maluchuru & Aruna, 2015). A different study in Nigeria evaluating factors associated with PPIUD uptake reported that women who had previously used contraceptives were less likely to choose the PPIUD than women who had never used them because they may have been comfortable with their previous method (Eluwa, Atamewalen, Odogwu, & Ahonsi, 2016). This highlights the fact that previous knowledge and or exposure to contraceptives does not necessarily correlate to PPIUD acceptance and insertion.

Literature reports that continuity of family planning counseling during the antenatal and postpartum periods can positively impact contraceptive use (MCHIP & PSI, 2014). Comprehensive counseling allows providers to determine which clients are eligible and gives clients time to discuss and make an educated decision on their contraceptive method of choice. In a study conducted in Egypt, out of 3,541 subjects who received contraceptive counseling, 28.9% accepted the PPIUD, and among them, uptake occurred after antenatal (26.4%) and postpartum counseling (31.8%) (Mohamed et al., 2003). A similar acceptance rate was reported in the evaluation of the multi-level

intervention to improve PPIUD services in Rwanda where 29% of 9,073 accepted the method after receiving counseling (Ingabire et al., 2018).

Studies have also reported that generally women who use PPIUD have are motivated to do so due to its perceived benefits (Bryant, Hamela, Gotter, Stuart, & Kamanga, 2015; Da Costa et al., 2018a; Kumar et al., 2014) . In an under-review qualitative study by Da Costa et al. in Rwanda, the perceived benefits of the PPIUD such as its lack of hormone-related side effects, long-acting nature, ability to breastfeed, and preventing unwanted pregnancy were reasons for uptake (Da Costa et al., 2018b). Another study of 2,733 women (aged 15-49 years) who received PPIUD counseling and insertion in India found that women accepted the copper PPIUD as a contraceptive method because of their desire for birth spacing (54%), they are long-acting (88%), free (22%), nonhormonal (21%), and require infrequent follow-up visits (13%). Further findings from the above study indicated that acceptance was higher among women with at least two children who were born within a short interval, as well as women with higher education (65%) (Kumar et al., 2014). Partner involvement in family planning counseling also impacts decision-making for LARC use. In a study of 1,914 pregnant women in Ghana, partner attitude (specifically positive attitudes towards LARC) was a key component in the PPFP decision-making factors for 80% of couples (Eliason et al., 2013).

On the contrary, the fear of side effects is one of the main reasons that clients decline PPIUD. A Uganda-based study reported that beliefs that contraceptives can result in infertility, cancer and even birth defects are common deterrents for potential clients (Tibaijuka et al., 2017). An under-review paper that explored factors associated with

interest in PPIUD in Rwanda concluded that self-reporting side effects (i.e. headaches, backaches, weight gain, weight loss, abdominal pain, vaginal dryness, infections) were associated with no interest in receiving a postpartum IUD (Da Costa et al., 2018a). Lastly, IUD users who have discontinued use of a method within 12 months of starting its use also report that side experienced effects were main reasons, in addition to desire for pregnancy, expulsion, and health concerns from possible complications (Eliason et al., 2013).

With Rwanda's low prevalence of IUD use (3%), more robust intervention programs with evidence-based information is needed to increase its use. With its high-profile advantage over other modern contraceptive methods, use of immediate postpartum copper IUD is ideal for preventing unintended pregnancies for postpartum women and couples interested in limiting or spacing pregnancies. Findings from this study would help contribute to the improvement in the uptake of the PPIUD services in Rwanda.

CHAPTER 3: STUDENT CONTRIBUTIONS

My thesis research question "what factors are associated with PPIUD acceptance or rejection after family planning counseling" was conceived by myself, the primary researcher and the study principal investigator (PI) Kristin Wall, PhD in Spring of 2018. For my summer practicum I conducted an evaluation of a postpartum family planning program established by the Emory Rwanda Zambia HIV Research Group (RZHRG) and Project San Francisco (PSF) in Kigali, Rwanda from May to August 2018. In the summer of 2017, PSF performed formative work in Kigali, Rwanda to explore the unmet needs of postpartum family planning (PPFP), namely postpartum Long Acting Reversible Contraceptive (LARC) services, as part of a Gates Grand Challenge Exploration Award and an Emory University Research Council Award. The aim of this research was to build on the 2017 project by improving the promotion of PPIUD and implant services in Rwanda in order to help reduce unintended pregnancy and increase birth spacing in Kigali.

Data Collection Instruments

Prior to departure I performed preliminary analysis of data on the PSF family planning promotions that were occurring at PSF's partnering health facilities: Muhima hospital and Muhima Health Center (HC), Kacyiru Hospital and Health Center, Remera HC, Kinyinya HC, and by community health workers. I also reviewed the contents of the family planning promotional flipchart that is used during counselling at the health facilities. Notes compiled from the reviews above were used to develop preliminary drafts of the quantitative surveys and focus group guides for the study participants.

Upon arrival at study site the researcher observed the existing PPLARC promotion methods during the following units of health services: antenatal care (ANC), labor and delivery (L&D), postpartum, infant vaccination, and six-weeks postpartum follow-up visits. Over the course of the study period, the drafts of the quantitative surveys and focus group guides were edited through correspondence with the PSF Gates Field Team, and then translated into Kinyarwanda, the local language of Rwanda.

Ethical Considerations

As part of the RZHRG's research projects, this study received a non-human subjects' determination from the Emory IRB for all work related to post-partum IUD service delivery. Protected health information from the participants were not collected during any part of the study. This study was added to the existing Emory and Rwandan IRB's approvals covered all interviews, which required written informed consent from all participants. PSF staff who are familiar with the culture and fluent in the local the language Kinyarwanda led the observations, surveys and interviews, while I observed.

Data Collection

For the surveys, the study population included clients who had received family planning promotions during any of the health services: community, antenatal care, labor and delivery, postpartum, infant vaccination and 6-weeks follow-up. I accompanied the PSF nurse counsellors to conduct the pilot tests of the surveys. This was done to gauge how participants may interpret the questions and if any rephrasing was needed for better comprehension. Survey revisions were approved by my supervisors and principal investigators prior to administration. In order to administer the surveys on tablets, I developed, digitalized, and updated data collection tools using Open Data Kit (ODK) and

Survey CTO. Due to my inability to speak the Kinyarwanda language, I only observed the surveys being administered to the clients. Data was collected from July to September 2018, however I was only present for surveys collected between July and early August. I remained in constant communication with the PSF Gates field team in Fall of 2018 to check on the progress data collection and provided assistance when needed.

The provider focus group discussions (FGDs) occurred during work breaks or after work hours, whilst the CHWs occurred during their monthly check-in meetings with nurse counselors. I helped to moderate the FGDs by taking general contextual notes and keeping track of time

Data Analyses

In September of 2018, I obtained the survey responses from the Survey CTO platform and began cleaning the data. Cleaning entailed combining different versions of the surveys after updates were made into working documents for ease of interpretation. I also created consolidated tables of the participant responses and some variables. Some qualitative responses to open-ended questions were quantized, which is the "the process of assigning numerical (nominal or ordinal) values to data conceived as not numerical…The not-numerical data typically referred to are segments of text in the form of written transcripts or field notes produced from interviews" (Sandelowski, Voils, & Knafl, 2009). This conversion of qualitative into quantitative data allows for statistical assimilation with the other obtained quantitative data and for merging of the results.

Univariate analyses were conducted to obtain frequencies and proportions for all demographic and the categorical variables of interest used in this study. Bivariate analyses were performed to test associations between sociodemographic, reproductive

characteristics, PPIUD knowledge, decision-making factors, and the outcome of PPIUD uptake. Chi-square tests (or Fisher's exact tests) and independent t-tests were used to assess for whether covariate distributions were statistically significantly different by the outcome. Variables that significantly differed by outcome status ($p < 0.05$) in bivariate analyses were evaluated in crude logistic regression models and odds ratios (ORs), 95% confidence intervals (CIs), and p-values were obtained. Selection for the adjusted multivariate logistic regression model was considered at $p<0.1$ due to the formative nature and relatively limited sample size of this study and backwards selection methods in SAS were used to obtain the final logistic regression model. All quantitative data analyses were conducted using SAS 9.4 (SAS Institute, Inc., Cary, NC).

For the qualitative data I sat with nurse counsellors to translate the FGD recordings from Kinyarwanda to English and took very detailed notes and quotes. I used an analytic thematic approach to analyze the data and developed codes. Themes related to client facilitators and barriers to PPIUD uptake that were and were not complementary to the quantitative survey findings were retained for interpretation.

CHAPTER 4: JOURNAL ARTICLE

A mixed-methods exploratory study of factors that influence postpartum IUD uptake after family planning counseling among women in Kigali, Rwanda

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INTRODUCTION

Although increased family planning has helped reduce global fertility rates, unintended pregnancies, and unsafe abortions, these outcomes are still relatively frequent in sub-Saharan African countries where unmet need for family planning is common (Bongaarts & Casterline, 2013). In 2017, approximately 7.5% of the 1.6 billion women of childbearing age (15-49 years) in developing regions had an unmet need for modern contraception, with the highest proportion (21%) in sub-Saharan Africa (Guttmacher Institute, 2017). Unmet need for postpartum family planning (PPFP), a highly effective strategy to decrease maternal and child mortality and morbidity (Cleland et al., 2006; World Health Organization, 2015), is particularly high throughout sub-Saharan Africa (Guttmacher Institute, 2017). The unmet need of modern contraceptive use among postpartum women has been associated with limited access, inadequate family planning counseling and provision, and cultural and economic barriers (World Health Organization, 2018).

The WHO recommends a birth spacing interval of two years for improved maternal and child health (World Health Organization, 2005). In Rwanda, over half (52%) of all pregnancies occur less than two years after the preceding birth (USAID & MCHIP, 2010). Additionally, 47% of all pregnancies are unintended, and most of them end in unplanned births, abortions, or miscarriages (Basinga et al., 2012). In Rwanda the unmet need for family planning during postpartum periods is (51%) (USAID & MCHIP, 2010). To ameliorate these issues, Rwanda has made significant gains in increasing contraceptive uptake by implementing policies like the Vision 2020 Strategy which decentralized the healthcare system and integrated family planning services with other

health services (May & Kamurase, 2009). Moreover, the Rwandan Ministry of Health is spearheading postpartum family planning programs and investing in training providers to offer the full menu of contraceptive options including modern long-acting reversible contraception (LARC) methods to postpartum women (FHI360, 2013a; FP2020, 2017).

The Rwanda Family Planning 2020 Core Indicator Summary report for 2017-2018 showed that 30% of all women are using modern methods like injectables (51%), implants (17%), pills (17%), male condoms (8%), female sterilization (3%), and intrauterine devices (IUDs) (3%) (FP2020, 2017). LARC such as IUDs and implants are highly effective, convenient, easy to use, and require infrequent follow-up visits making them ideal for clients (American College of Obstetricians and Gynecologists [ACOG], 2016). The modern copper IUD in particular is nonhormonal, reversible, suitable for lactating mothers, and is one of the most effective, reliable, and safe methods to prevent unintended pregnancy and improve birth spacing (Kaneshiro & Aeby, 2010; Kulier et al., 2007). Additionally, post-placental (within 10 minutes of placental delivery), immediate postpartum (within 48 hours of delivery), and 6 week infant vaccination visits can be convenient times to insert the copper IUD while women are at the health facility (Dulli, Eichleay, Rademacher, Sortijas, & Nsengiyumva, 2016; FHI360, 2013b; Lopez et al., 2015; Singh et al., 2016). Expulsions are relatively rare but may be more common with immediate postpartum period insertion (Celen, Sucak, Yildiz, & Danisman, 2011; Eluwa et al., 2016). Providers can offer counseling to educate pregnant women about the PPIUD prior to delivery during routine antenatal care (ANC) visits, during or after labor and delivery, and at 6-week infant vaccination visits (Ingabire et al., 2018).

Various factors may be associated with the acceptance of PPIUD after counseling and offer of services. Women who use the PPIUD may be motivated by benefits such as its lack of hormone-related side effects, long-acting nature, ability to breastfeed, effectiveness, and reduced follow-up visits (Bryant et al., 2015; Kumar et al., 2014). Lack of knowledge, fear of side effects, and longstanding myths and misconceptions such as infection and infertility about the IUD have been associated with declining the method (Brunie, Tolley, Ngabo, Wesson, & Chen, 2013; Bryant et al., 2015; Cleland, Ali, Benova, & Daniele, 2017; Khu et al., 2013; Tibaijuka et al., 2017). Several studies have also shown that partner involvement in PPFP may affect decision-making for contraception use (Bryant et al., 2015; Eliason et al., 2013; Ndayizigiye, Fawzi, Lively, & Ware, 2017; Tibaijuka et al., 2017; Wall et al., 2013). For example, in a study of 1,914 pregnant women in Ghana, partner attitudes (specifically positive attitudes towards LARC) was a key component in PPFP decision-making for 80% of couples (Eliason et al., 2013).

Literature reports that repeated family planning counseling during the antenatal and postpartum periods can positively impact contraceptive use (MCHIP & PSI, 2014). Comprehensive counseling allows providers to determine which clients are eligible and gives clients time to discuss and make an educated decision on their contraceptive method of choice. In a study conducted in Egypt, out of 3,541 subjects who received contraceptive counseling, 28.9% accepted the PPIUD, and among them, uptake occurred after antenatal (26.4%) and postpartum counseling (31.8%) (Mohamed et al., 2003).

With Rwanda's low prevalence of IUD use and high unmet need for family planning during postpartum periods, more robust, evidence-based programs must be

promoted and improved to ensure wider uptake (FP2020, 2017; National Institute of Statistics of Rwanda (NISR) et al., 2015; USAID & MCHIP, 2010). In response to this need, Projet San Francisco (PSF) developed a multi-level intervention to improve PPIUD services in Rwanda which was implemented beginning in August of 2017 (Ingabire et al., 2018). The intervention was informed by the Diffusion of Innovation and Theory of Planned Behavior frameworks which incorporated input from stakeholders, providers, community health workers (CHWs), and couple/clients to address barriers to PPLARC use. This formative work lead to the development of a promotional and educational flipchart focused on PPLARC methods to be delivered to women or couples during routine ANC, labor and delivery, infant vaccination services and within the community by CHWs (Ingabire et al., 2018). Providers went through a 2-day didactic and practical training for IUD insertion and removal, mock counselling sessions, and had to pass post-training tests. CHWs in charge of pregnant women and newborn health from two-hospital affiliated health centers received 1-day training to discuss postpartum family planning, counsel and encourage women to receive PPIUD, and refer them to facilities. The intervention also included clients, supply-related, demand-related and sustainability-related activities designed to change the attitudes, norms and perceived control of clients and impact their decisions to uptake PPLARC methods. After the first year of implementation, there was a PPIUD acceptance rate of 29% of the 9,073 individual women counseling on the intervention (Ingabire et al., 2018). The objectives of the present study were: 1. To evaluate the factors associated with PPIUD uptake after the postpartum family planning counselling intervention among Rwandan women; 2. To assess the barriers and facilitators to PPIUD promotion and uptake as perceived by

Rwandan FP providers and promoters who were trained to deliver the counseling intervention; and 3. To compare the information from both clients and FP providers/promoters to better understand gaps in the counselling intervention

METHODS

Study design

A mixed-methods design was used for this research study. Quantitative data from a case-control study and qualitative data from focus groups were independently collected and analyzed, and results were compared thematically for interpretation. When results were corresponding, qualitative data were used to further illustrate survey findings. In some cases, qualitative data provided new information not obtained from the case-control study, and thus were presented independently.

Setting and the postpartum counseling intervention

The study took place in 2018 at three health facilities (Kinyinya Health Center (HC), Remera HC and Muhima Hospital) in Kigali, Rwanda. These sites were selected because they are high-volume facilities where our PPIUD counselling intervention had been implemented almost a year prior during antenatal care (ANC), labor and delivery (L&D), postpartum (before discharge), infant vaccinations (6 weeks postpartum), and in communities by CHWs. The facilities use the PPIUD focused family planning promotional and education flipchart developed by Projet San Franciscso (PSF) staff and Emory University's Rwanda Zambia HIV Research Group (RZHRG) (Wall, Ingabire, Allen, & Karita, 2018). The flipchart includes information on the full range of contraceptive methods, health benefits of spacing pregnancies, facts about the IUD such

as benefits and side effects, and description of the immediate PPIUD insertion procedure. While the full range of contraceptive method options were discussed and available, the counseling message on the PPIUD as it is the least well-known method.

Recruitment and inclusion criteria: case-control study

A convenience sample of postnatal women who delivered between January and September 2018 and received PPIUD counseling was recruited into the case-control study. Women were surveyed during the following units of services: PPIUD follow-up, postpartum (within 48 hours of delivery or before discharge), and infant vaccination visits. Users were selected from PPIUD follow-up visits and infant vaccination services to gain information on any experienced expulsions, side effects, and overall satisfaction. Nonusers were selected from infant vaccinations and postpartum.

Eligible participants for the case-control study: 1) received PPIUD/implant promotions at any of the PSF-affiliated facilities (Remera HC, Kinyinya HC, Muhima HC and hospital, Kacyiru) hospital; 2) spoke Kinyarwanda (the local language); and 3) voluntarily agreed to participate and provided written informed consent. Verification of the women having previously received our counseling intervention was ascertained by checking FP promotion and insertion government logbooks at each facility.

Recruitment and inclusion criteria: provider focus groups

Eligible participants for the focus group discussions were PPIUD trained and certified family planning providers (physicians, nurses, midwives) and trained CHWs who had been promoting PPIUD and implant use for at least 4 months prior to interview. A convenience sample of providers were recruited during work breaks and after work

days, whilst CHWs were recruited during their monthly check-in meetings with nurse counsellors.

Data Collection: case-control study

Two separate semi-structured surveys (one for PPIUD users and another nonusers) were first developed in English. They included closed-ended questions to assess sociodemographic characteristics, contraceptive use history, reproductive history such as parity and number of living, and sources of contraceptive information. Open-ended knowledge-based questions about postpartum family planning, PPIUD use, benefits, and facts (all of which had been discussed in the flipchart) as well as family planning decision-making factors were asked as open-ended questions. PPIUD users were also asked about experienced expulsions and side effects. On a five-point Likert-scale, PPIUD users were asked about the service delivery environment and overall satisfaction with the intervention and the method. Several questions had the option of specifying "other" instead of choosing one of the options provided and allowed the respondent to provide their own answer. Respondents were encouraged to elaborate on their responses.

The surveys were edited and revised through correspondence with the PSF staff and translated into Kinyarwanda (the official language of Rwanda) by native speakers to ensure content and semantic equivalence. They were also pilot-tested (n=6 users and n=8 nonusers) and iteratively revised to assess question phrasing, order, and for overall linguistic comprehension and cultural propriety. The surveys were administered by four trained PSF counsellors using tablets through the digital survey platform, Survey CTO (Dobility, Cambridge, USA). Surveys took 10-15 minutes to complete. All surveys were

conducted by trained PSF nurse counsellors during regular government health facility hours from July - September, 2018.

Data collection: provider focus groups

The focus group discussion guide was developed from the content of the promotional flipchart and observations made during hospital hours. It was designed to elicit providers perceptions of the facilitators and barriers related to providing the intervention and client PPIUD uptake. Focus group discussions were led by trained PSF staff and nurse counsellors who used the developed and translated interview guide to ask participants about their perceptions regarding promotional methods during the various units of care (ANC, LD, postpartum, infant vaccinations, CHWs). There were six focus group discussions; two consisting of 17 CHWs (n=11 and n=6) and four of 24 providers (n=9, n=7, n=4 and n=4). The focus group discussions were conducted from July - August 2018 and ranged from 30 minutes to 2 hours in duration.

Data analysis: case-control study

Data from Survey CTO was obtained, checked for completeness, cleaned, and coded for analysis in SAS. Additionally, all quantitative analyses were performed using SAS version 9.4 (SAS Institute, Cary, NC, USA). Age was estimated by subtracting the year of birth from the year of data collection (2018).

Qualitative responses to the open-ended questions were quantitized. Quantitizing refers to "the process of assigning numerical (nominal or ordinal) values to data conceived as not numerical…The not-numerical data typically referred to are segments of text in the form of written transcripts or field notes produced from interviews"

(Sandelowski et al., 2009). The conversion of qualitative into quantitative data allowed for statistical assimilation with the other obtained quantitative data and for merging of the results.

Numerical and categorical responses were reported as means and standard deviations and frequencies and percentages, respectively. These data were stratified by the outcome of interest which was current PPIUD use versus nonuse. This was followed by bivariate analyses to test associations between sociodemographic, reproductive characteristics, PPIUD knowledge, decision-making factors, and the outcome of PPIUD uptake. Chi-square tests (or Fisher's exact tests) and independent t-tests were used to assess for whether covariate distributions were statistically significantly different by the outcome. Variables that significantly differed by outcome status ($p < 0.05$) in bivariate analyses were evaluated in crude logistic regression models and odds ratios (ORs), 95% confidence intervals (CIs), and p-values were obtained. The variables were checked for evidence of multicollinearity based on a Spearman correlation coefficient of >0.8 to ensure that the predictors were not highly associated with each other. Selection for the adjusted multivariate logistic regression model was considered at $p<0.1$ due to the formative nature and relatively limited sample size of this study. Backwards selection methods in SAS were used to obtain the final logistic regression model. The backward selection method removes variables one at a time starting with least significant, then the next least significant and until all remaining predictors are significant at a specified level or removing more terms results in poorer fit (Goodnenough et al. 2012). Variables attaining significance at $p<0.1$ in the multivariate analysis were retained for the final adjusted logistic model.

Data analysis: provider focus groups

The focus group discussions were audiotaped and detailed-notes were taken on the main themes of the session. Thematic analysis was used to analyze the focus group data and organize data into explanatory codes that identify the perceptions of PPIUD uptake after provision of counselling. Themes related to client facilitators and barriers to PPIUD uptake that were complementary to the quantitative survey findings or provided new insight into PPIUD uptake were included in the results.

Ethical Considerations

Ethical clearance was obtained from the Emory University Institutional Review Board (IRB) and the Rwanda National Ethics Committee (RNEC). Written informed consent was obtained from all study participants and each individual was compensated with 3,000 Rwandan Francs (RWF). All study participants were informed about the study objectives and the process to ensure confidentiality of the data.

RESUTLS

Case-control study

Demographic and Reproductive Characteristics

For the final sample of 165 women, 66 were from Kinyinya HC, 89 were from Remera HC, and 10 were from Muhima Hospital. PPIUD users (n=74) were surveyed during PPIUD follow-up visits (n=54) and infant vaccination (n=20) services in order to gain information on any experienced expulsions and side effects, and overall satisfaction whilst nonusers were selected from infant vaccinations and postpartum. PPIUD nonusers

were surveyed during postpartum (n=26) and infant vaccination services (n=65) (See Figure 1).

Characteristics of the total sample (n=165) as well as bivariate analysis comparing the socio-demographics, fertility, and reproductive characteristics of the respondents are summarized in Tables 1 and 2. The mean age was 28 years (SD=6.3) among PPIUD users, and 29 years (SD=5.2) among nonusers, and 42% of the users were in the age range 18-26. Across both groups the majority of the women were married (77%), 87% cohabited with their partners, and 94% had government health insurance (mutuelle). Approximately 47% were Pentecostal (42% for PPIUD users and 52% PPIUD nonusers), 48% had primary level education, and 46% had an income. The average monthly income was $72.63 USD for users and $95.40 USD for PPIUD nonusers. The average parity was 2.5 (SD = 1.6), the average number of living children was 2.3 (SD=N 1.3), and 50% of both groups had 2 – 3 children. Furthermore, 49% of PPIUD users and 60% of PPIUD nonusers desired more children in 3 to 5 years.

Approximately 22% of the women (27% of PPIUD users and 19% of PPIUD nonusers) indicated that their most recent contraceptive method before their last pregnancy was a LARC, and 45% had not been using contraception (See Figure 2). Receiving promotions at ANC (61% vs 78%, $P = .016$), IV (22% vs 47%, $P = .001$), L&D (81% vs 46%, $P < .001$), and postpartum (19% vs 33%, $P = .042$: Table 2) were all found to be significantly associated with PPIUD uptake. The majority of PPIUD users (69%) received post-placental IUDs. Twenty-nine percent of nonusers who were not using contraception at the time of the survey planned to use an IUD within 3 months of the survey (See Table 3). Across both outcome groups, 62% of respondents had planned

their recent pregnancy and 90% planned to breastfeed exclusively. PPIUD users were more likely to make the final decision to uptake the method independently or with their partners, than nonusers (92% vs 78%, $P = .015$). The women also differed by the fertility intentions, with women who took their fertility intentions into account when making their family planning decisions being more likely to choose the PPIUD than women who did not (72% vs 9%, $P < .001$: Table 2).

Family planning and PPIUD Knowledge

Overall there were notable knowledge gaps about the PPIUD (Table 4). When asked about the recommended time for pregnancy after birth, less than half (48%) of the women correctly reported at least 2 years. When prompted to support their answer, 55% of respondents explained that birth spacing is important to ensure child health, to allow the mother's body to recuperate from the stress of pregnancy, and to have sufficient time for lactation. When asked open-ended questions about what they had learned about the PPIUD during the educational intervention, women reported that the PPIUD method was nonhormonal (87%), long-term (55%), highly effective (31%), reversible (17%), easy to remove whenever needed (9%), easily inserted after delivery (9%), and that one only had to pay once for the IUD compared to paying per provision when using injectables or pills (6%). Women who knew that the IUD can be easily inserted immediately after delivery (14% vs 4%, $P = .037$), required no further action once inserted (14% vs 4%, $P = .037$), easy to remove when needed (16% vs 3%, $P = .004$), paying once for IUD compared to paying per provision when using injectables or pills (12% vs. 1%, $P = 0.003$) were more likely to be PPIUD users (See Table 4).

When asked open-ended questions about the possible side effects with PPIUD use, 39% reported cramping and backache, heavy periods after menses (25%), spotting between periods or heavy periods (18%), and other (30%). Among the women chose "Other" (n=49) for side effects, 27 (55%) reported that the PPIUD had no side effects and 13 (25%) did not know or remember. Women who knew that the IUD can be easily inserted immediately after delivery (P = .037), required no further action once inserted (P = .037), easy to remove when needed (P = .004), paying once for IUD compared to paying per provision when using injectables or pills (P = .003) were more likely to be PPIUD users (See Table 4). When asked about when the PPIUD can be inserted, 87% identified post-placental (87%), 10 mins – 48 hours postpartum (30%), and 4 to 6 weeks (66%) and only 30 (20%) of the women correctly reported that method can be inserted at all 3 times. Women who reported that the PPIUD can be inserted between 4 to 6 weeks (55% vs. 74%, P = .014) were less likely to uptake the method. When asked about IUD expulsion, 61% indicated that expulsion was possible. When asked to explain how the method prevents pregnancy, 61% reported that it stops the spermatozoa and ovum from meeting. Regarding women's general awareness about the PPIUD, 25% had heard about the method previously from informal social networks such as peers, neighbors, and other PPIUD users.

Decision-Making Factors

Women were also asked about factors that impacted their decisions to either select or reject the PPIUD. Among the PPIUD users, the top factors indicated were that the method is nonhormonal (74%), long-term (58%), and highly effective (38%) (See Table 5). Ninety-nine percent of the PPIUD users indicated that they found the promotions

useful in their decisions, and 88% stated that they would not have gotten the method without the promotions they received. Partner's rejection or dislike of PPIUD (28%), absence of partner during decision time (19%), religion (14%), and influence from other women (13%) were cited as reasons for PPIUD non-uptake (See Table 6). Other reasons reported by nonusers were delivering at a different facility, cancer-causing myths, genital infections, discomfort during sexual intercourse and pregnancy while on method were cited as reason or PPIUD non-uptake. When asked why they chose the method they were using at the time the survey was administered, 56% of the nonusers stated that they preferred their method and its benefits, and 20% had no reason.

Logistic regression models

Women who reported knowing that PPIUD can be inserted 4 to 6 weeks after delivery were less likely to uptake the method than those who did not (adjusted odds ratio [AOR], 0.17; 95% CI, 0.06 – 0.44) (See Table 7). Compared to women whose partner alone made the final decision on PPFP, women who made independent or joint decisions with their partners were 4 times more likely to uptake the PPIUD ([AOR], 4.0; 95% CI, 1.1 – 14.6). Finally, the odds of accepting the PPIUD were higher among women who took their fertility intentions into account when making their postpartum family planning decisions versus those who did not ([AOR], 48.5; 95% CI, 16.4 – 143.4).

Postpartum IUD Experience (data not tabled)

Of the 74 PPIUD users, 13 (18%) experienced expulsion, and 77% of those women got an IUD reinserted and were using the IUD at the time the survey was administered. When asked if they experienced any side effects, 10 (14%) of 72

respondents indicated lower abdominal pain, backpain, and discomfort for husband during sexual intercourse. Ninety-two percent of users reported that they were satisfied with the method (average Likert score = 4.49, SD = 0.78). The women's experience with providers during insertion were positive, with 95% stating the interaction was good. Additionally, majority of the users (96%) would recommend the PPIUD to other women.

Provider focus groups

There were a total six focus group discussions among providers trained to deliver the PPIUD educational intervention: two focus groups with n=17 CHWs and four focus groups with n=24 providers (nurses, midwives, physicians). Thematic analysis of the focus groups revealed various barriers and facilitators to IUD uptake among postpartum women as perceived by the providers, as well as findings related to the delivery of the intervention.

Low PPIUD Knowledge

The lack of IUD-specific knowledge emerged as an important factor relating to client interest in and selection of the method. Providers discussed several challenges: explaining to clients why postpartum insertion of the IUD is ideal; explaining the insertion and removal process; describing how it prevents pregnancy; and justifying why the method is highly efficacious relative to other contraceptives. Providers reported that clients are generally suspicious about the IUD as it is new to many Rwandan women, and it makes clients uncomfortable that the IUD is placed in the cervix. It is disconcerting for some women that the IUD is invisible unlike other visible contraceptive methods like pills and implants. The providers in the focus group reported that women's initial understanding of

an IUD is that it is placed in a sacred and sensitive part of the body. This is especially challenging for young, first-time mothers because unfamiliarity with female anatomy and medical terms like "placenta" and "cervix" cause confusion. Some mistake the cervix for the vagina, hence they fail to understand how a metal object? placed in the vagina after delivery will not lead to expulsion or cause harm. To address this issue, a Muhima Hospital provider stated that they use didactic materials. She explained: "*an actual IUD and the pictures within the flip chart…facilitate the promotion as we explain by showing them what we are explaining."* Providers also explain to the client that the post-placental insertion time is ideal because the cervix is large and open which makes the device easier to place inside the women's body. Other providers reported that they emphasize the benefits of the postpartum IUD such as that it is nonhormonal, long-acting, and prevents the spermatozoa and ovum from interacting, thus preventing pregnancy.

Male Partner Involvement in IUD decision-making

One provider said that when women hear about the PPIUD during ANC visits, they may inform their partners about it, who will later accompany them to the follow-up visits to learn more about the method. According to the providers, couples counselling during ANC is the most effective time to deliver the intervention because both men and women? have sufficient time to ask questions and received information that will lead to informed decisions. For example, a nurse from Remera HC stated, *"During the couple counselling the promotion is easier compared to when a woman is alone, because men are more convinced on family planning than women."* In regard to men's participation during family planning counselling, a Muhima hospital provider stated, "*they [men] ask how long it takes to do sexual intercourse after insertion."* Once the couples? are counselled

and understand the benefits like the economic and financial impact, they are more "*receptive and supportive*" of using an IUD?

Rumors and Myth

Promoters explained that some women may make the decision to uptake the PPIUD during ANC visits. However, the circulation of rumors and myths (i.e., the IUD is harmful, moves to other parts of the body, aborts pregnancies, causes infertility) by peers and neighbors during community gathering occasions like Umuganda (community work day) or Akagoroba K'Ababyeyi (Parents Evening Forum) often dissuade women from adopting the method. For example, a Kinyinya HC provider stated: "*Rumors and myths that women hear like IUD can disappear, cause discomfort during sexual intercourse, can cause infection and cancer..[for this reason] it is not easy to convince them [to use an IUD]."* These rumors perpetuate fear about failure of the proposed method and may also cause distrust between women and their healthcare providers. To dispel these rumors, providers explained that increasing the use of satisfied IUD user testimonies and allowing medical staff to go into communities for PPIUD promotion to share the positive benefits? would help minimize rumors and correct false information?.

Concerns and side effects

During each FGD, the providers discussed the risks and concerns associated with side effects of IUDs. They explained that women's fears and concerns are prompted by peers, neighbors and unhappy IUD users. A Kinyinya HC provider described that the segments of the promotional flipchart that address side effects prompted clients to ask the most questions. He stated, *"the part of side effects raises more questions …they [the*

clients] ask you if IUD [has] side effects like weight gain, infection, backache… mostly [these questions are asked by] those who have had side effects on contraceptive methods." Other client concerns include reduction of vaginal secretions during sexual intercourse as a result of the IUD. Providers also explained that for women who undergo difficult deliveries that lead to tears or episiotomy (a surgical cut used to enlarge the vaginal opening for delivery), fear about additional pain during the IUD insertion is an area of concern. The reversibility of the PPIUD also raised concerns for some women who plan to have more children. According to a Remera CHW, *"some clients think that only the person who inserts the IUD can take it out. They are concerned… if they want to take it out in a couple of years--what are the chances of finding the same staff? So they would rather stick with their pills and injectables because they are easy."* To address these concerns, providers explained to the clients that any trained staff can remove their IUD at their request.

Inconsistent messages from providers

A pervasive theme that emerged from the focus group discussions were conflicting messages from various sources of information. Clients explained that some women were previously incorrectly informed by providers that some of the more familiar short-acting methods like pills and injectables are nonhormonal. Additionally, some women received ANC from religious health facilities and were told by providers that the IUD is an abortive method that interrupts conception. These inaccurate messages can be deterrents for women who may have been interested in IUDs.

Perception of intervention

Participants also discussed the overall impact of the intervention by highlighting the strengths and weaknesses of the program. In particular they spoke to the strength of the PPIUD service delivery trainings they received which facilitates their ability to counsel women and their partners effectively. They also underscored the importance of the continuity of promotions during the various units of care like ANC, L&D, IV and during follow-up. Repetition of the message is more likely to encourage clients to uptake the method. Participants also highlighted the fact that the using didactic materials like the PPIUD flipchart during counseling is a helpful resource to have during promotions. They appreciate the ability to refer to it and confirm the information they are delivering to clients. When asked about what can be done to address some of the challenges they encounter while promoting, a Remera provider suggested having an educational video on PPIUD playing in the waiting rooms to aid in promotions, especially when providers are busy with other activities. Another recommended *"distributing individual brochures may help in the promotion as a woman can continue reading the information once home, and if she hears rumors, she may again refer to the brochure."* Finally, CHWs encouraged provider-community engagements to during community outreach events because people are more trusting in providers than in CHWs.

DISCUSSION

This study employed a mixed methods approach to understand factors associated with PPIUD uptake after an educational intervention. From the case-control study findings, joint family planning decisions and considering fertility plans when making FP decisions were associated with uptake, while knowledge of the fact the PPIUD can be

inserted 4 to 6 weeks postpartum was associated rejection of the method. It is possible that the nonusers who reported that the method can be accepted at 4-6 weeks postpartum had intentions to take the method in the 3 months following the study (sTable 3). PPIUD users reported that the provision of counselling at the PSF-affiliated facilities raised their awareness on the method and ultimately led to their final decision to uptake and IUD. This demonstrates the strength of the intervention and highlights the need for more PPIUD competent providers.

According to WHO, PPFP counselling should ideally begin during ANC, however counselling during early labor and immediate postpartum are also acceptable (WHO, USAID, & MCHIP, 2013). Among the 74 PPIUD users surveyed in this study, 61% and 81% of PPIUD users and nonusers reported being promoted to in ANC and labor and delivery, respectively. This was corroborated by promoters in the focus group discussions who explained that once promotions have occurred during ANC, subsequent promotions are easier because they are able to address residual questions and concerns and remind women of the method's advantages.

A WHO report on unmet need for family planning shows that a common reason for nonuse of contraception is lack of awareness (WHO et al., 2013). Findings from the study show that the majority (77%) of the study population were not aware of the PPIUD prior to counseling. Contraceptive provision in many Sub-Saharan African countries has focused predominantly on short-terms methods such as condoms, injectables, and oral pills (Allen et al., 1993; Bryant et al., 2015; National Institute of Statistics of Rwanda (NISR) et al., 2015; Tibaijuka et al., 2017; Wall et al., 2013). Preference for other contraceptive methods and their benefits was a popular reason for non-PPIUD use. This

can be attributed to the fact that the IUD is a relatively new method of contraception in sub-Saharan countries like Rwanda with many misconceptions.

This study also intended to assess how women's knowledge about family planning and the PPIUD impacts PPIUD uptake. Overall, knowledge was low across both groups. During counselling, women were informed that they can uptake the IUD post-placental (<10 mins), 10 mins to 48 hours postpartum (before they are released from the hospital), and between 4 to 6 weeks postpartum. However, out of the 165 women surveyed, only 20% could correctly identify these insertion times when asked. Across both groups, knowledge of the convenience of PPIUD insertion seemed to be lacking. After the intervention, less than 9% of respondents reported that the IUD can be easily inserted immediately after delivery, requires fewer infrequent visits, and is easy to remove whenever needed. A Tanzanian study on women's perspectives on, and experiences of using postpartum intrauterine device suggested that women's limited knowledge of PPIUD advantages may have stemmed from incomplete contraceptive counseling (Huber-Krum et al., 2019). These findings highlight domains for improvement in the PPIUD educational intervention.

Most women were motivated to use the PPIUD due to its nonhormonal nature, effectiveness, and duration of protection against pregnancy, findings that are consistent with other studies (Bryant et al., 2015; Kumar et al., 2014). The quantitative data does not strongly suggest that fear of side effects impacted PPIUD uptake. However, the qualitative data with providers suggests that fear is a barrier to uptake. According to the providers, they counselled women who expressed specific fears and concerns related to PPIUD use, including the risk of cancer, the influence on sexual experiences, possible

infections, and pain. Previous studies show that IUD misinformation has been spread by local informal social networks, unhappy peer IUD users, and through religious authorities (Cleland et al., 2017; Gonie, Wudneh, Nigatu, & Dendir, 2018; Ndayizigiye et al., 2017; Robinson, Moshabela, Owusu-Ansah, Kapungu, & Geller, 2016; Tibaijuka et al., 2017). Providers must be trained to address these concerns during counseling.

Partners' involvement was a salient factor in women's decision; 46% of PPIUD nonusers indicated that partner's absence and refusal of the method led to their rejection of the PPIUD. This finding was corroborated by the providers who also expressed that a partner's presence during counselling impacts women's FP decisions. Numerous studies have also found partner's involvement to be very fundamental in family planning decisions in many sub-Saharan African countries (Brunie et al., 2013; Bryant et al., 2015; Eliason et al., 2013; Gonie et al., 2018; Khu et al., 2013; Tibaijuka et al., 2017). In this study, most women indicated that final decisions on a contraceptive method were made jointly. It may be highly beneficial to provide the PPIUD educational intervention during the first ANC visit, which 80% of Rwandan male partners attend (Karita et al., 2016).

Couples counselling also provides opportunity to discuss fertility plans and their relation to FP decisions which was positively associated with PPIUD uptake. Evidence from numerous studies show that fertility intentions impact women's decision to use contraceptive methods (Brunie et al., 2013; Bryant et al., 2015). Discussing women's fertility plans in relation to their contraceptive decisions also gives providers time to increase clients' knowledge of the methods and address their fears and concerns of the method.

Strengths and Limitations

A strength of this research is that it is one of few studies that incorporate both client and promoter knowledge and perspectives related to PPIUD use. Taking the service delivery perspective into consideration when developing family planning programs is important as the providers can provide nuanced information that may not otherwise be provided by clients. The small sample size for the case-control study is a limitation. Some variables may not have reached significance due to sample size. The sample is more representative of women who have access to healthcare. Additionally, the number of women approached to participate who declined was not recorded thus a response rate could not be obtained. Lastly, social desirability bias when collecting self-reported information is an additional limitation as both the women and promoters were surveyed at facilities where they received services or are employed.

Conclusion

There is an urgent need to reduce unmet family planning needs in developing nations to prevent unintended pregnancy and improve the health of women and children. Our implementation study supports the feasibility of large-scale PPIUD programs in Rwanda (Ingabire et al., 2018), a country that continuously to make progress in achieving the Millennium Development Goals (Ingabire et al., 2018; Republic of Rwanda Ministry of Health, 2012). The present study highlighted knowledge for insertion time of 4 to 6 weeks and fears and concerns about the PPIUD were associated with non-uptake of the PPIUD. Partner involvement in family planning decisions and fertility intensions as related to FP decision are factors that influence PPIUD uptake. Additionally, overall knowledge about the PPIUD was improved but still relatively low, even after counseling.

Widespread media campaigns community education about the IUD's advantages and safety, and proactive counseling to address couples' specific fears, are needed to increase awareness and uptake of the method (Bryant et al., 2015; Farmer et al., 2015). In the Rwandan context, community promotions can occur during community events like Umuganda and Akagoroba K'Abayeyi and can be led by PPIUD champions including happy PPIUD users, trained and certified PPIUD providers and community health workers, and religious leaders. Our findings also inform how to iteratively further refine our already successful PPIUD educational intervention which can be scaled-up to meet the contraceptive needs of postpartum women in Rwanda.

CHAPTER 5: Public Health Implications

There is an urgent need to address the unmet family planning needs of the developing nations in order to prevent unwanted pregnancy and improve the health outcomes of women and infants. The postpartum period is an ideal opportunity to initiate family planning methods. However, this time period is associated with significantly higher unmet need for family planning relative to non-postpartum periods (Guttmacher Institute, 2017). As an essential component of health, comprehensive family planning counseling during the antenatal and postpartum period will help individuals control their fertility, either in spacing out or limiting it all together. With its advantage over other modern contraceptive methods, use of the PPIUDs is ideal, convenient, efficient, and cost-effective. Ultimately, improved promotions of PPIUD services gives Rwanda the potential to make even more gains by addressing unmet family planning needs and meeting its MDG 2020 goals.

This implementation study supports the feasibility of large-scale PPIUD programs in Rwanda (Ingabire et al., 2018), a country that continuous to make progress in achieving the Millenium Development Goals (Ingabire et al., 2018; Republic of Rwanda Ministry of Health, 2012). Results indicate that although family planning promotions are being offered at health facilities, general awareness about the PPIUD needs to be improved for success. PPIUD awareness and acceptance is hampered by existing myths and misconceptions by potential clients. This study highlighted several factors that influence the uptake of PPIUD: lack of knowledge about PPIUD insertion at 4 to 6 weeks after delivery; partner involvement in family planning decisions; fertility intensions; and fears and concerns about IUDs. These factors reveal areas for improved programmatic action that would benefit the larger intervention study.

The findings reveal gaps for programmatic action that would benefit the larger intervention study and increase PPIUD use. The PPIUD acceptance rate of 29% of the 9,073 individual women counselled during the first year of the intervention implementation (Ingabire et al., 2018), coupled with the findings of this study inform how to iteratively refine the education intervention and scale-up to meet the contraceptive needs of women . The study was conducted in facilities where some providers are trained and certified in the provision of postpartum family planning counselling to clients. A few PPIUD nonusers indicated that they delivered their babies at facilities other than the ones where they were counselled, and unfortunately there were no trained PPIUD providers available. This underscores the fact that large-scale PPIUD programs in Rwanda are necessary, and thus more healthcare providers should be educated and trained in order to increase their knowledge on the method and acquire skills that will help them meet the needs of women. Additionally, occasional post-training follow-up and supervision of providers may be necessary in order to gauge providers' adherence to what they learned during training.

Women's fears and misperceptions about PPIUD can be mitigated by the comprehensive PPIUD counseling that also involve didactic materials and visual aids such as the IUD, educational videos, brochures, female anatomical models (Huber-Krum et al., 2019). During large volume counselling sessions such as antenatal care visits or 6-weeks infant vaccination, incorporating video-based interventions that illustrate the importance and benefits of family planning and the PPIUD could allow clients to make better informed decisions. The videos can be very beneficial in promotions especially

when providers are preoccupied with other duties prior to, or after the large group counselling.

During individual counselling providers may go in-depth and provide information specific to the PPIUD insertion procedure and the use of the female anatomic models will be very useful then. This can prevent any confusion for women and their partners have about the insertion process as providers demonstrate how the device is placed, and address safety concerns. Providers should also use to this time to discuss their client's fertility intentions and individual needs as a "one-size fits all" approach to counselling may not be appropriate. Couples' reproductive life plan, or pregnancy and parenting intentions during counselling and in the future are likely different. Thus, starting counselling with these key questions will help provides identify their client's family planning values.

Providers may also practice the teach-back method, with the visual aids as it further enhances the client's understanding and retention of information so they able to make better informed choices. The teach-back technique is an evidence-based approach to improving patient-provider communication and patient health compliance outcomes (Merck & Co, 2014). In a 2003 assessment of patients, up to 47% of them said that they forgot what their doctor had instructed them to do after leaving the office (Schillinger et al., 2003). Incorporating more of the teach-back method allows gives providers a chance to check for client's understanding and if necessary, explain things further.

With the high level of acceptance despite low levels of knowledge after counselling, strategies to increase public awareness of the PPIUD through different media sources are warranted. Widespread media campaigns and community education about

the IUD's advantages and safety, and proactive counseling to address couples' specific fears, are also needed to increase awareness and subsequently uptake of the method (Bryant et al., 2015; Farmer et al., 2015). Education and awareness of PPIUD should be targeted to all stakeholders including women's partners. Men's role as contraception and family planning users cannot be overlooked thus targeting them in community education events will be beneficial for increasing PPIUD uptake as was demonstrated by study findings. For this multi-level intervention in Kigali, promotions can occur during community cohesion events like Umuganda and Akagoroba K'Abayeyi. These can be led by PPIUD champions including happy PPIUD users, trained and certified PPIUD providers and community health workers, and religious leaders.

Theoretical Interpretations

While the study was not informed by theory it can be interpreted through a theoretical lens. Through the Health Belief Model (HBM), PPIUD use is influenced by people's motivation to prevent unintended pregnancy (Janz & Becker, 1984). In the context of this study women's fertility intentions impacted their decision to accept or reject the PPIUD. Perceived threat (susceptibility and severity) of an unintended pregnancy is motivation to use PPIUD. From the quantitative findings, 58% and 37% of PPIUD users indicated that the method's long-acting nature and effectiveness were reasons to adopt the method (Table 5). The PPIUD's long-acting nature, efficacy and nonhormonal were perceived benefits for users. Perceived barriers are negative influences of contraceptive use and in this study fear of side effects, as well as existing rumors and myths about the method, were prominent emphasized themes by providers, that prevent women from adopting the method. Cues to action were also found to impact

PPIUD uptake as 99% of users indicated that the counselling, they received was useful in their family planning decision making, 88% reported that they would not have gotten the method without the counselling (Table 5). While modifying factors such as peer influence from unhappy previous users were reason for rejection for (17%) of nonusers, sociodemographic factors such as age, education, marital status, income, parity, number of living children, and previous contraception use were not associated with PPIUD use.

Future Directions

Further research is required to understand the impact of potential confounding or modifying factors to PPIUD use. The quantitative portion of this study was a case-control study with a relatively small sample size. Performing the study among a larger cohort may allow for some variables to reach statistical significance. Expanding the sample size to include clients from the other health facilities involved in the intervention will better exemplify the overall impact of the intervention. An increased sample size may reveal service trends and barriers to PPIUD use that are specific to service delivering institutions to allow sufficient data for comparison. Future studies should aim to describe male partners' perspectives on barriers and facilitators to PPIUD utilization as this study's findings suggest that family planning decisions are often made jointly. Lastly, incorporating a prospective cohort study design among women with PPIUD users to evaluate the risk of anticipated complications would be informative for characterizing standard PPIUD service practices.

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FIGURES

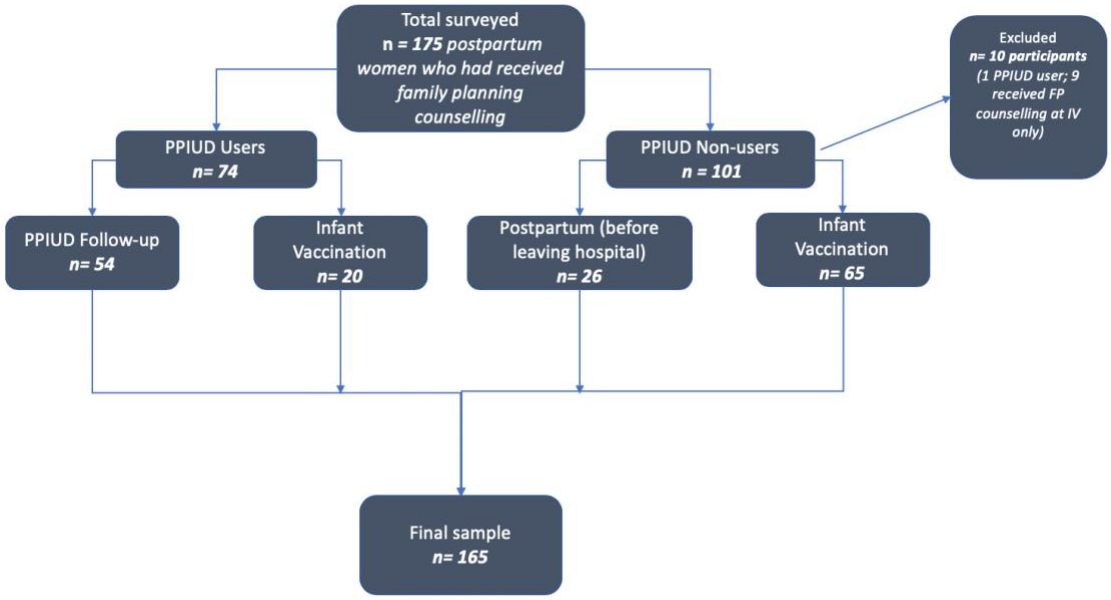

Figure 1: Flowchart for case-control study Participant Recruitment

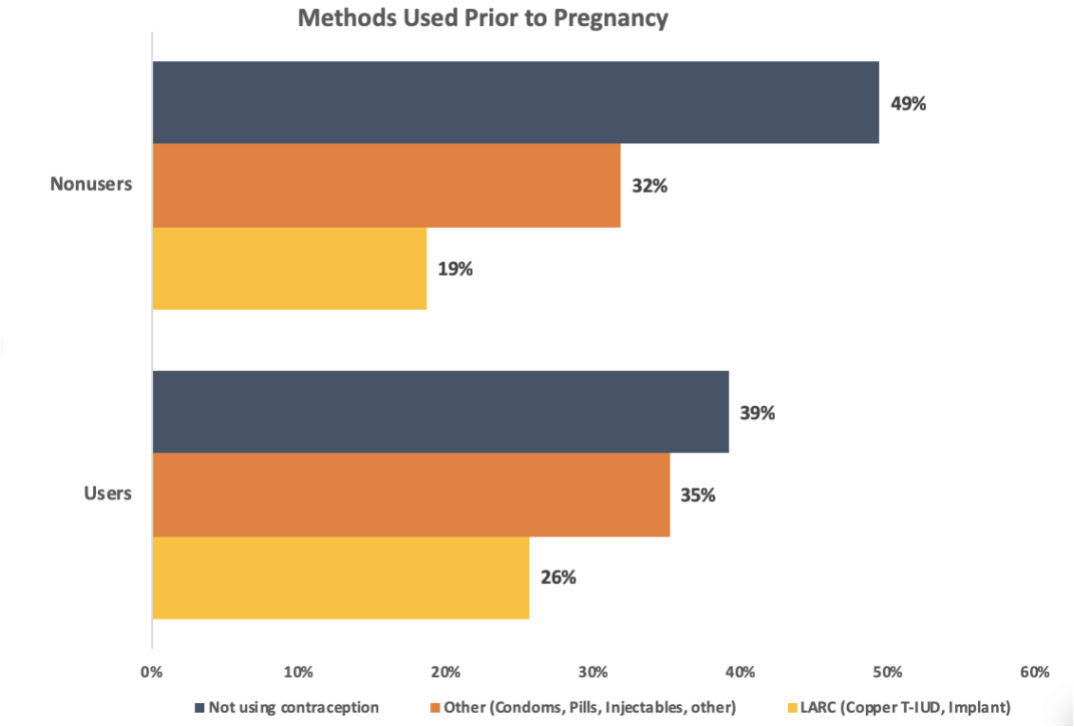

Figure 2: Most recent (last) contraceptive method used by the women before their last pregnancy (p=.32)

TABLES

Table 1: Sociodemographic profile of respondents by PPIUD use

Variables	Total (N = 165) n (%)	PPIUD Users (n = 74) n (%)	PPIUD Nonusers (n = 91) n (%)	*P* value
Age, mean (SD), y	28.9 (5.7)	28.3 (6.3)	29.4 (5.2)	.244
18-26	60 (36.4)	31 (41.9)	29 (31.9)	.404
27-31	55 (33.3)	23 (31.1)	32 (35.2)	
32-44	50 (30.3)	20 (27.0)	30 (33.0)	
Relationship Status				
Married	127 (77.0)	54 (73.0)	73 (80.2)	.272
Unmarried (Single, Divorced/Separated, Widow, Other)	38 (23.0)	20 (27.0)	18 (19.8)	
Living Situation				
Cohabiting with partner	144 (87.3)	63 (85.1)	81 (89.0)	.458
Other (alone, with parents/family, roommates)	21 (12.7)	11 (14.9)	10 (11.0)	
Religion				
Catholic	48 (29.1)	26 (35.1)	22 (24.2)	.282
Pentecostal	78 (47.3)	31 (41.9)	47 (51.6)	
Other (Seventh Day Adventists, Jehovah's Witnesses, Anglican, Baptist, Muslim, Other, None)	39 (23.6)	17 (23.0)	22 (24.2)	
Education Level				
No schooling	26 (15.8)	11 (14.9)	15 (16.5)	.958
Primary	79 (47.9)	36 (48.6)	43 (47.3)	
Other (Secondary, College/University)	60 (36.4)	27 (36.5)	33 (36.3)	
Income				
Yes	75 (45.5)	36 (48.7)	39 (42.9)	.458
No	90 (54.6)	38 (51.4)	52 (57.1)	
Monthly Income, mean (SD) (n=75), USD				.152
	$22.77 (68.74)	$72.63 (58.90)	$95.40 (76.70)	
Mutuelle (Government Health Insurance)				
Yes	155 (93.9)	67 (90.5)	88 (96.7)	.114
No[a]	10 (6.1)	7 (9.5)	3 (3.3)	
Parity, mean (SD), n	2.54 (1.57)	2.53 (1.62)	2.55 (1.54)	.928
0 – 1	47 (28.5)	23 (31.1)	24 (26.4)	.770
2 - 3	77 (46.5)	34 (45.9)	43 (47.3)	
4 or more	41 (24.8)	17 (23.0)	22 (26.4)	
No. of living children, mean (SD), n	2.37 (1.31)	2.34 (1.24)	2.40 (1.37)	.779
0 – 1	50 (30.3)	23 (31.1)	27 (29.7)	.978
2 – 3	83 (50.3)	37 (50.0)	46 (50.5)	
4 or more	32 (19.4)	14 (18.9)	18 (19.8)	

Abbreviations: SD, standard deviation, USD, United States Dollar; PPIUD, postpartum intrauterine device
P value derived from two-tailed independent sample t-test for continuous variables and chi-square test for categorical variables (or Fisher's exact test for categorical variables with 20% of expected cell counts less than 5).
[a] Includes insurance that is not mutuelle.

Table 2: Fertility and Reproductive Characteristics of respondents by PPIUD use

	Total (N = 165) n (%)	PPIUD Users (n = 74) n (%)	PPIUD Nonusers (n = 91) n (%)	*P* value
Most recent contraception method prior to pregnancy				
LARC (Copper T-IUD, Implant)	36 (21.8)	20 (27.0)	17 (18.7)	.321
Other (Condoms, Pills, Injectables)	55 (33.3)	25 (33.8)	29 (31.9)	
Never used contraception	74 (44.8)	29 (39.2)	45 (49.5)	
PPIUD Promotion Service Venues[a]				
Antenatal Care	116 (70.3)	45 (60.8)	71 (78.0)	.016
Infant Vaccination	59 (35.8)	16 (21.6)	43 (47.3)	.001
Labor & Delivery	102 (61.8)	60 (81.1)	42 (46.2)	<.001
Postpartum (before discharge)	44 (26.7)	14 (18.9)	30 (33.0)	.042
Community Health Worker	7 (4.2)	2 (2.7)	5 (5.5)	.461
Was the most recent pregnancy planned?				
Yes	102 (61.8)	45 (60.8)	57 (62.6)	.810
No	63 (38.2)	29 (39.2)	34 (37.4)	
Breastfeeding Plans				
Yes, exclusively	149 (90.3)	69 (93.2)	80 (87.9)	.250
Yes, non-exclusively	16 (9.7)	5 (6.8)	11 (12.1)	
Final Decision Maker regarding contraception				
Me & My Partner and I	139 (84.2)	68 (91.9)	71 (78.0)	.015
My Partner	26 (15.8)	6 (8.1)	20 (22.0)	
Desire More Children, mean (SD)				
Yes	91 (55.2)	36 (48.6)	55 (60.4)	.130
No/undecided	74 (44.9)	38 (51.4)	36 (39.6)	
Did your fertility Plans Impact FP Decision?				<.001
Yes	61 (37.0)	53 (71.6)	8 (8.8)	
No	104 (63.0)	21 (28.4)	83 (91.2)	

Abbreviations: CHW, community health worker; IUD, intrauterine device; PPLARC, postpartum long-acting reversible contraception; PPIUD, postpartum intrauterine device; FP: family planning

[a] Select all that apply.

P value derived from two-tailed independent sample t-test for continuous variables and Chi-square test for categorical variables (or Fisher's exact test for categorical variables with 20% of expected cell counts less than 5).

Table 3: Current and Future Contraceptive Methods for PPIUD Nonusers

Method	Current Method (n=91) n (%)	Future Method planned in next 3 months (n=65)* n (%)
Condoms	4 (4.4)	1 (1.5)
Pills	4 (4.4)	9 (13.8)
Implant	13 (14.3)	14 (21.5)
Injectables	2 (2.2)	11 (16.9)
Copper T-IUD	-	19 (29.2)
LAM	0 (0)	0 (0)
Not using a contraception method	65 (71.4)	10 (15.4)
Other	3 (3.3)	1 (1.5)

Abbreviations: IUD, intrauterine device; LAM, lactational amenorrhea method; PPIUD, postpartum intrauterine device
*Women who responded that they were currently "not using a contraception method"

Table 4: Knowledge about Family Planning and the PPIUD among respondents by PPIUD use

	Total (N = 165) n (%)	PPIUD Users (n = 74) n (%)	PPIUD Nonusers (n = 91) n (%)	P value
Recommended Pregnancy spacing after				
No limit	5 (3.0)	4 (5.4)	1 (1.1)	.181
2 years	80 (48.5)	33 (44.6)	47 (51.6)	
I Don't Know or Don't remember	52 (31.5)	21 (28.4)	31 (34.1)	
Other [ab]	28 (17.0)	16 (21.6)	12 (13.2)	
Reason for recommended pregnancy spacing after last birth (open-ended question)[a] (n=112)				
To ensure healthy growth of child	62 (55.4)	21 (40.4)	41 (68.3)	.003
Other[d]				
PPIUD Knowledge after PPIUD				
Highly effective	51 (30.9)	28 (37.8)	23 (25.3)	.082
Long-term	90 (54.5)	38 (51.4)	52 (57.1)	.458
Reversible	28 (17.0)	16 (21.6)	12 (13.2)	.151
Can be easily inserted immediately	14 (8.5)	10 (13.5)	4 (4.4)	.037
Doesn't use hormones	143 (86.7)	66 (89.2)	77 (84.6)	.390
Once inserted no other action required from client to prevent	14 (8.5)	10 (13.5)	4 (4.4)	.037
Easy to remove whenever needed	15 (9.1)	12 (16.2)	3 (3.3)	.004
If you use injectable or pills, you need to pay per provision while	10 (6.1)	9 (12.2)	1 (1.1)	.003
Other[e]	29 (17.6)	12 (16.2)	17 (18.7)	.679
Possible PPIUD Side Effects[c]				
Cramping and backache for few	64 (38.8)	32 (43.2)	32 (35.2)	.290
Spotting between periods or heavy	29 (17.6)	12 (16.2)	17 (18.7)	.679
Heavy periods after menses	41 (24.8)	17 (23.0)	24 (26.4)	.615
Other	49 (29.7)	23 (31.1)	26 (28.6)	.726
Recommended PPIUD Insertion Time[c]				
Post placental (<10mins)	143 (86.7)	67 (90.5)	76 (83.5)	.187
10 mins – 48 hours Postpartum	50 (30.3)	23 (31.1)	27 (29.7)	.844
4 to 6 weeks	108 (65.5)	41 (55.4)	67 (73.6)	.014
Other[f]	28 (17.0)	12 (16.2)	16 (17.6)	.816
Recommended PPIUD Insertion Time				
Correct: (Post placental (<10mins), 10mins – 48 hours postpartum, 4 to 6 weeks)	33 (20.0)	15 (20.3)	18 (19.8)	.938
Incorrect: all other responses	132 (80.0)	59 (79.7)	73 (80.2)	
Expulsion Possible				
Yes	101 (61.2)	49 (66.2)	52 (57.1)	.234
No	64 (38.8)	25 (33.8)	39 (42.9)	
How PPIUD prevents pregnancy (n=163)				.913
It stops the meeting of the	99 (60.7)	44 (60.3)	55 (61.1)	
I Don't Know/Don't	64 (39.3)	29 (39.7)	35 (38.9)	
Heard about PPIUD prior to counselling				
Yes	41 (25)	17 (23.0)	24 (26.0)	.615
No	124 (75)	57 (77.0)	67 (67.0)	

[a] Coded qualitative response.
[b] "Other" option includes 3, 4, 5, and 10 years.
[c] Select all that apply
N's may not add to totals due to missingness of data for questions that participants were not required to answer
[d] Other reasons for recommended pregnancy time after birth include: mother's body can prepare for next baby, improve overall health of family (economically and physically), birth spacing, enough time for breastfeeding.
[e] Other PPIUD knowledge include: IUD doesn't have many side effects, no frequent follow-up visits, may be removed at any time.
[f] Other responses for side effects include: None, I Don't Know/I don't remember.

Table 5: Reasons for Acceptance of PPIUD among PPIUD users

Reason [a]	**n**	**%**
Doesn't use hormones	55	74.3
Long-term	43	58.1
Highly effective	27	36.5
Other [b]	13	17.6
Reversible	11	14.9
Once inserted no other action required from client to prevent pregnancy	11	14.9
Can be easily inserted immediately after delivery)	9	12.2
Easy to remove whenever needed	9	12.2
If you use injectable or pills, you need to pay per provision while IUD you pay only once	9	12.2
Used to be happy on it/Happy testimony	9	12.2
PPIUD promotions useful in decision making?		
Yes	73	98.6
No	1	1.4
Would you have gotten the PPIUD anyway without promotions?		
No	65	87.8
Yes	9	12.2

[a] Select all that apply so percentages are more than 100%.
[b] "Other" responses include: Little/no side effects compared to other methods, secrecy of where IUD is placed

Table 6: Reasons for Rejection of PPIUD among PPIUD nonusers

Reason[a]	**n**	**%**
Other[b]	29	31.9
My partner refused to use PPIUD or doesn't like it	25	27.5
My partner was not present	17	18.7
Religious reasons	13	14.3
Influence from women in the same room	12	13.2
Unhappy peer testimony	4	4.4
Side-effects	1	1.1
Why did you choose your current method?		
Preference for current method and its benefits	51	56.0
None/no reason	18	19.8
Partner's choice	6	6.6
Insufficient decision-making time	5	5.5

[a] Select all that apply so percentages are more than 100%.
[b] "Other" responses include: delivering at different facility, rumors and myths (cancer, tumor, genital infections, discomfort during sexual intercourse, pregnancy while on IUD)

Table 7: Multivariate analysis of factors associated with PPIUD use

Variables	Bivariate analysis		Logistic regression analysis			
	cOR (95% CI)	*P* value	Full model aOR (95% CI)	*P* value	Reduced model aOR (95% CI)	*P* value
Recommended Pregnancy Time after birth					*Not included*	
Other	1 [Reference]		1 [Reference]			
No limit	3.00 (0.30 - 30.4)	.174	4.09 (0.19 – 87.7)	.302		
At least 2 years	0.53 (0.22 - 1.26)	.092	0.73 (0.20 – 2.64)	.239		
I Don't Know or Don't remember	0.51 (0.20 -1.29)	.091	0.91 (0.23 – 3.55)	.505		
PPIUD Knowledge (yes versus no)					*Not included*	
Highly effective	1.80 (0.92 - 3.51)	.084	2.01 (0.66 – 6.10)	.220		
Can be easily inserted immediately after delivery	3.40 (1.02 - 11.3)	.046	1.39 (0.21 – 9.09)	.732		
Once inserted no other action required from client to prevent pregnancy	3.40 (1.02 - 11.3)	.046	2.20 (0.35 – 13.9)	.403		
Easy to remove whenever needed	5.68 (1.54 - 21.0)	.009	2.22 (0.33 – 14.8)	.411		
If you use injectable or pills, you need to pay per provision while IUD you pay only once	12.5 (1.54 - 100.8)	.018	0.93 (0.05 – 16.8)	.960		
Knowledge of PPIUD insertion time option (yes versus no)						
4 to 6 weeks	0.45 (0.23 - 0.86)	.015	0.13 (0.05 – 0.39)	<.001	0.17 (0.06 - 0.44)	<.001
Final Decision Maker regarding PP FP						
My partner	1 [Reference]	.019	1 [Reference]	.095	1 [Reference]	.033
Me & My Partner and I	3.19 (1.21 - 8.43)		3.21 (0.82 – 12.6)		4.04 (1.12 -14.59)	
Fertility Plans Impact FP Decision						
No	1 [Reference]	<.001	1 [Reference]	<.001	1 [Reference]	<.001
Yes	26.2 (10.8 - 63.4)		44.4 (14.2 – 138.9)		48.5 (16.4 – 143.4)	

Abbreviations: aOR: Adjusted odds ratio; CI: confidence interval; FP: family planning, PPIUD: postpartum intrauterine device; IUD: intrauterine device; OR, odds ratio; PP: post-partum
P value <0.1

APPENDICES

Appendix A: PPIUD User Survey

Surveys for PPIUD users:

“ IBIBAZO BIBAZWA ABAGORE BAJE KURI GAHUNDA YO GUSUZUMA KO AGAPIRA KARI MU MWANYA WAKO.

Date: Start Time: End Time: Moderator Initial: Note-taker Initial: Interviewee ID:
Interview Site □ Muhima Hospital □ Muhima HC □ Kacyiru Hospital □ Remera HC □ Kinyinya HC
Interview Service Time □ Infant Vaccination □ PPIUD follow-up

A. Introduction

Hello_____. How are you doing today? Thank you again for agreeing to participate in this interview today and I appreciate your willingness to discuss your experiences with me. My name is _____ and I work with Projet San Francisco (PSF). PSF is conducting surveys that ask questions about the post-partum intrauterine device (PPIUDs) promotions you received. We also want to know what factors influenced your decision to select a post-partum contraceptive method or not. We will use this survey to develop a plan and improve PPIUD service promotion at the facilities. Participation in the survey is voluntary. Information from the survey will not include your name or any identifying information. This survey should take about _____ minutes.

Now we are going to go over the PSF Informed Consent form.

For the first part of this survey I will be asking you about some general demographic questions and you have you can select any of the available answer choices. If you select “other” for any of the questions we would appreciate it if you could elaborate on your answer.

Are you ready to begin the survey? □ Yes □ No

A. INTRODUCTION

Mwiriwe? mumeze mute?turabashimiye nanone kuba mwemeye kwitabira iki kiganiro uyu munsi. Mbashimiye ubushake mwagize kugirango tuganire kubumenyi mufite. Izina ryange ni _____ nkora muri kigo cya Projet San Francisco (mu magambo ahinnye PSF), tukaba tura abafanya bikorwa n’iki kigo cya_____,ndetse na Ministeri y ubuzima muri gahunda yo gutanga agapira ko mu mura umubyeyi akimara kubyara. PSF irimo gukora ubushakashatsi ku bigendanye n’inyigisho mwahawe kugapira ko mu mura, gakoreshwa

mukuboneza urubyaro. Turashaka no kumenya impamvu zabateye gufata umwanzuro wo guhitamo cg kudahitamo uburyo bwo kuboneza urubyaro bukoreshwa umugore akimara kubyara. Tuzifashisha ibitekerezo byanyu kugirango turebe uko twateza imbere inyigisho zitangwa mu mavuriro zigendanye nikoreshwa ry'agapira ko mu mura.

Kwitabira iki gikorwa n' ubushake, amakuru muri buduhe nta hantu hari bugaragare amazina yanyu cg andi makuru agendanye namwe. Iki kiganiro kiri bumare iminota 30.
Ubu tugiye gushyira umukono ku nyandiko ivuga ko mwemeye kwitabira iki kiganiro ku bushake . Turabashimiye cyane. masezerano.

Demographic Questions
Type of Participant(s) □ Woman only □ Woman and Partner
1. Wavutse ryari , tubwire umwaka w'amavuko?/ What is your year of birth? **Umugore/** woman**:_____** **umugabo (niba ahari)** / Partner if present: _____
2. Ese waba warashatse cg uri ingarangu? / What is your relationship status ? • Ingaragu /single • urubatse /Married • watandukanye nuwo mwashakanye /divorced or separated • umupfakazi/widow • ibindi (sobanura) _____/ Other specify:
3. Ubana na nde?/ What is your current living situation? □ uba wenyine /alone □ ubana n'ababyeyi/umuryango/with parents or family □ n'umugabo/ Cohabiting • ubana na bagenzi bawe / Live with roommates • abandi (sobanura:_____)/ Other (please explain)
4. N'ikihe cyikiro cy'amashuri warangije? / What is the highest level of formal school education you completed? **Umugore/ Woman:** • Ntayo(None) • abanza (Primary) • Ayisumbuye (Secondary) • Amakuru (University) **Umugabo niba ahari /Partner:** • ntayo(None) • abanza (Primary) • yisumbuye (Secondary) • Amakuru / (University)
5. Watwise inda zingahe? / How many pregnancies have you had? _____
6. Ufite abana bangahe? / How many children (biological and non-biological do you have? **_____**
7. Muri uyu mwaka ushize, winjizaga buri kwezi amafaranga angahe ugereranije, ukura mu byo ukora biguha amafaranga? / In the last year what has been the average monthly household income? **Umugore/** Woman **:_____** **Umugabo niba ahari /**Partner **_____**
8. Usengera muri rihe dini?/ What is your religious affiliation? **Umugore/** woman: • Gatorika / Roman Catholic • Abaporoso/ Protestant □ Abadiventiste b' umunsi wa 7 / Seventh-day Adventist • Abayisiramu / Muslim • Jehovah Witness • Anglican • Baptist • ayandi / Other • Ntaryo/ None **Umugabo niba ahari /** partner if present: • Gatorika/ Roman Catholic • Abaporoso/ Protestant •

Abadiventiste b' umunsi wa 7/ Seventh-day Adventist • Abayisiramu / Muslim • Jehovah Witness
• Anglican • Baptist • ayandi/ Other • Ntaryo/ None

9. Ufite ubwishingizi? N'ubuhe? / Do you have health insurance? If so which one
Woman • yego/ Yes**, bwandike /** type: _____ • **oya/**No
Partner • **yego/** Yes**, bwandike /** type: _____ • **oya/**No
Types • RAMA (government) • MMI (Military) • MEDIPLAN • Other • None

10. Ni izihe service waherewemo inyigisho zijyendanye n'agapira ko mu mura gakoreshwa umugore akimara kubyara? / During which services did you receive PPIUD promotion?

☐ **Mu kwipimisha inda /** ANC ☐ **gukingiza /** Infant Vaccination ☐ **mu ibyariro /** Labor & Delivery
☐ **Aho bashyira ababyeyi bamaze kubyara /** Postpartum ☐ **kubajyanama bubuzima/** community health worker

11. Ni ubuhe buryo bwo kuboneza uheruka gukoresha? / What is/are the most recent (last) contraceptive method(s) you used before pregnancy? **(Prompt participants. Check all that participant mentions.)**

• **agakingirizo /** Condoms • **ibinini /** Pills • **agapira ko mu mura/** Copper T-IUD • **agapira ko mukuboko/** Implant • **urushinge/** Injectables • **Uburyo bwo konsa** /LAM • **ntiwigeze ubonezaho urubyaro/** Never used contraception • **ubundi buryo (buvuge) /** Other (specify)_____

12. Ese inda y'uyu mwana wayitwise wayiteganyaga cyangwa ntiwayiteganyaga?/ Did you plan or want your most recent (last) pregnancy?
a. Yes
b. No

13. Wabyaye ryari ? / When did you deliver your last baby**? (Answer in months)** _____

14. Uronsa cg urateganya konsa/ Are you breastfeeding?
• **yego, Ntamuvangiye kugeza ku mezi 6/** Yes exclusively • **Yego, ariko muvangiye /** Yes, non-exclusively • **Oya/No**

15. Ni irihe vuriro waherewemo uburyo bwo kuboneza urubyaro urimo gukoresha? / At which facility did you get your current PPPIUD?

☐ Muhima Hosp. ☐ Muhima HC ☐ Kacyiru Hosp. ☐ Remera HC ☐ Kinyinya HC ☐ ahandi/Other: _____

16. Haciyeho igihe kingana iki nyuma yo kubyara ngo uhabwe ako gapirako mu mura ? / How long after your delivery did you get your PPIUD inserted?

☐ ako kanya ikimara kubyara (<10 mins) ☐hagati yiminota 10 n'amasaha48 (10 min-48 hours) • Ku byumweru 4-6/ > 4 - 6 weeks

Interviewer: iki gice tugezeho, ugiye kubazwa ibibazo bijyanye n'imyumvire ndetse n uko wabonye inyigisho/ibiganiro ku gapira ko mu mura gakoreshwa umugore akimara kubyara ./ For the next part of the interview I will be asking you a series of open-ended questions about your understanding and experience with PPIUD.

B. KNOWLEDGE OF FAMILY PLANNING METHODS

1. a. ***Ministeri y ubuzima ishishikariza abagore bakimara kubyara, ko batekereza kongera gusama byibura umwana angana ate?*** When is it recommended for a woman to plan her next child after delivery?
   - Nta gihe cyatanzwe, Igihe icyari cyose / No limit
   - Byibura imyaka 2 / at least 2 years.
   - simbizi cg ntango mbyibuka/ I Don't Know or don't remember
   - Ikindi gihe kivuge/ Other (specify) _____

   b. Kubera iki?/Why? (Skip if don*'t know)*_____

2. Ku byerekeranye n' ikiganiro nyigisho wahawe ku gapira ko mu mura gakoreshwa umugore akimara kubyara,/ During the promotions, what did you learn about PPIUD?
   - **a. N'ibihe byiza byako wumvishe? /** What are the benefits **(Don't probe)**
     - i. • Karizewe (Highly effective)
     - ii. • Kagoreshwa igihe kirekire (Long-term)
     - iii. • Iyo gakuwemo wongera gusama bidatinze (Reversible)
     - iv. • Gashyirwamo ku buryo bworoshye umugore akimara kubyara (Can be easily inserted immediately after delivery)
     - v. Nta misembura kagira (Doesn't use hormones)
     - vi. • iyo gashyizwemo , nta kindi bisaba umugore kongera gukora kugira ngo yirinde gusama (Once inserted no other action required from client to prevent pregnancy)
     - vii. • Biroroshye kugakuramo (Easy to remove whenever needed)
     - viii. karahendutse ugereranije n'ubundi buryo (If you use injectable or pills, need to pay per provision while IUD you pay only once)
     - ix. • Ibindi (bivuge) (Other, Specify)

   - **b. N'izihe ngaruka? /** What are some of the possible side effects of PPIUD insertions? **(Don't probe)**
     - i. • Kubabara mu nda cg umugongo mu minsi mike ugashyizemo (Cramping and backacke for few days after insertion)
     - ii. Kuva hagati y'imihango (Spotting between periods or heavy periods)
     - iii. Kwiyongera kw'imihango (Heavy periods after menses returns
     - iv. • ibindi, bivuge: (Other, specify)

   - **c. Bagashyiramo ryari? /** When are you able to get the PPIUD inserted? **(Don't probe)**
     - i. • Mu minota 10 , iyanyuma ivutse (Post placental)
     - ii. Hagati y'iminota 10 n'amasaha 48 (Postpartum)
     - iii. • ibyumweru 4 to 6 weeks (4 weeks to 6 weeks)
     - iv. • ikindi gihe, kivuge (Other, specify)

   - d. **Ese birashoboka ko kakwivanamo? /** Is expulsion possible?

i. Yego/Yes
ii. Oya/No

e. **Gakora gate/** How does it prevent pregnancy?

3. **Hari ahandi waba warumvise ama*k*uru ajyendanye n'agapira ko mu mura gakoreshwa umugore akimara kubyara?** / Outside of the promotions, had you heard about PPIUD previously?

• yego/ yes,
From where or from who/ Niba ari yego wayumvise hehe ,wayumviseho iki?_____
a. • oya/No

B. DECISION MAKING FACTORS

4. Mbese n'iki cyatumye uhitamo kuboneza urubyaro ukoresheje agapira ko mu mura ukimara kubyara? / What factors influenced your decision to select PPIUD?
DON'T PROBE

i. • karizewe /highly effective
ii. • Kakoreshwa igihe kirekire/long term
iii. • Iyo gakuwemo wongera gusama bidatinze/ Reversible
iv. • Gashyirwamo ku buryo bworoshye umugore akimara kubyara / Can be easily inserted immediately after delivery
v. □ Nta misembura kagira/ Doesn't use hormones
vi. • iyo gashyizwemo , nta kindi bisaba umugore kongera gukora kugira ngo yirinde gusama/ Once inserted no other action required from client to prevent pregnancy
vii. • Biroroshye kugakuramo/ easy to remove whenever needed
viii. □ karahendutse ugereranije n'ubundi buryo/ if you use injectable or pills , need to pay per provision while IUD you pay only once
ix. • Nsanzwe ngakoresha cg bagenzi banjye bagakoresheje barakankundishije/ used to be happy on it/ Happy testimony
x. • ibindi (bivuge:_____ other (specify)

5. **Hagati yawe n'umugabo, Ni inde wafashe umwanzuro wa nyuma**? / Who made the final decision?

i. • Ni njyewe /Me
ii. • Umugabo/ Partner
iii. • Twembi /My partner and I

6. **Ese urifuza undi mwana** /Would you like more children?

i. • Yego/Yes
ii. • Oya / No
iii. • Sindafata umwanzuro/Undecided

7. **Niba wifuza undi mwana**, If You want more children,
   i. Ni ryari umwifuza /When _____
   ii. Wifuza bangahe /How many: _____

8. **Ese kuba utifuza kongera kubyara cyangwa kongera kubyara nyuma y'iyo myaka umbwiye nicyo cyaguteye guhitamo gukoresha agapira ko mu mura ukimara kubyara** / According to the answer to the previous question, would you say that your fertility plans affects your decision about post-partum FP?
   a. Yego/Yes Oya/No

9. **Ese inyigisho wahawe ku gapira ko mu mura gakoreshwa ukimara kubyara, zaba zaragize uruhare mu gufata icyemezo cyo kugakoresha**? / Did you think the PPIUD promotions were useful in making your decision?
   a. □ Cyane/ Yes, a lot
   b. □ Urebye zamfashije gake /A little
   c. □ Oya/No if No Why:_____

10. **Hari ibindi bibazo waba ugifite nyuma yo kumva amakuru ku gapira ko mu mura gakoreshwa nyuma yo kubyara?** / What lingering concerns/questions do you still have after hearing the PPIUD promotions?

D. EXPERIENCE

11. **Ugereranije uko wishimiye gukoresha aka gapira , ku manota 5 ,wabiha angahe?** /On a scale of 1-5, with 5 being the highest, overall how satisfied are you with your PPIUD?
    i. • 1: Very Unsatisfied
       Kubera iki/Why?

       • 2: Unsatisfied

       Kubera iki/Why?:

    ii. • 3: Neutral
    iii. • 4: Satisfied
    iv. • 5: Very Satisfied

12. **Niba yatanze 1-5**: **N'izihe ngaruka wagize nyuma yo gushyirirwamo agapira**? / if they selected a score of 1-5,what side effects did you have if any?

13. **Niba yatanze 1-5: N'iki ugakunzeho kurusha ibindi** / if they selected a score of 1-5 on satisfaction, What do you like *best* about using the PPIUD?

14. **Twashakaga kumva uburyo igikorwa cyo kugushyiriramo agapira ko mu mura cyagenze**. / We would like to hear how the insertion process was for you.

    i. **Urebye uko waganiraga n'umuganga mu gihe yagushyiriragamo agapira ko mu mura,uramutse nk' umuha amanota , wamuha angahe kuri 5?** / On a scale of 1-5, with 5 being the highest, how was your interaction with the provider during the insertion?
        - 1: Very Poor
          Kubera iki/
          Why?_____
          _____
        - 2: Poor
          Kubera iki/Why?
          _____
          _____
        - 3: Neutral
        - 4: Good
        - 5:Very Good

    ii. **Warufite ubwoba?** /Were you afraid?
        i. • yego, cyane/ Yes, a lot
           Kubera iki?/why ?
        ii. • yego, bukeya/ Yes
           a. Kubera iki?/ why?
        iii. • ntabwo narimfite/ No

    iii. **Bagushyiriramo agapira ko mu mura , ese wabonye byaratinze**? / Did you feel like the insertion procedure was too long?
        i. • yego/yes
        ii. • oya/ No

15. Expulsion? / karavuyemo?
    a. Niba karavuyemo, Ni ryari kavuyemo / If she had expulsion, when did it happen?_____

16. Niba karakuwemo, if removed:
    i. Kukera iki /Why?

    ii. Ni ryari kakuriwemo? /When was it removed? _____

17. Ni iki wifuza kuba waramenye mbere yuko ukoresha agapira ko mu mura? / What did you wish you knew that you didn't know prior to getting the PPIUD?

18. Ese ubona wari gufata aka gapira ko mura , iyo uza kuba utarahe za nyigisho ku gapira bashyiramo abagore bakimara kubyara? / Yego/Yes Oya/No
    Would you have gotten this contraception method anyway without the promotions?

E. SUGGESTIONS FOR IMPROVEMENTS

Interviewer: mbere yuko dusoza iki kiganiro,nifuzaga kukuba igitekerezo cyawe kubijyanye nicyo twakora kugirango abakoresha ubu buryo biyongere*?/ To close this interview up a bit I would like to ask your opinion on what we can do to increase PPIUD use.*

19. Ni iyihe nama watanga kubandi babyeyi batekereza kuzakoresha agapira ko mu mura? / What advice would you give to other women who are thinking about getting PPIUDs?
20. How likely are you to encourage your friends to uptake PPIUD?
    i. 1. Strongly discourage
    ii. 2. Discourage
    iii. 3. Neutral
    iv. 4. Encourage
    v. 4. Strongly encourage

21. Ni yihe nama watanga kubigisha ubu buryo bwo kuboneza urubyaro bw'agapira ko mu mura gakoreshwa nyuma yo kubyara / What advice would you give to the promoters about promoting PPIUDs?

22. Hari andi makuru waba ufite wifuza kudusangiza uyu munsi? / Is there any other information that you would like to share today?

B. CONCLUSION

Tubashimiye cyane uyu mwanya wanyu mwaduhaye, ibitekerezo byanyu n'inginzi kandi bizadufasha kononosora neza gahunda z'ibiganiro ku gapira ko mu mura gashyirwamo umugore akimara kubyara.
Well that completes the interview. Thank you once again for taking the time to answer the questions. I appreciate your thoughts and perspectives and look forward to applying your input to inform future PPIUD promotions.

Appendix B: PPIUD Nonusers Survey

Surveys for non ppiud users: for women in Postpartum to be discharged or IV who did not chose PPIUD.

" IBIBAZO BIBAZWA ABABYEYI BITEGURA GUTAHA KANDI BATAFASHE PPIUD CG ABAJE GUKINGIZA KU KWEZI 1 N'IGICE BAKABA BATAFASHE PPIUD.

Date: Start Time: End Time: Moderator Initial: Note-taker Initial: Interviewee ID:
Interview Site □ Muhima Hospital □ Muhima HC □ Kacyiru Hospital □ Remera HC □ Kinyinya HC
Interview Service Time □ Infant Vaccination □ Postpartum

C. Introduction

Hello_____. How are you doing today? Thank you again for agreeing to participate in this interview today and I appreciate your willingness to discuss your experiences with me. My name is _____ and I work with Projet San Francisco (PSF). PSF is conducting surveys that ask questions about the post-partum intrauterine device (PPIUDs) promotions you received. We also want to know what factors influenced your decision to select a post-partum contraceptive method or not. We will use this survey to develop a plan and improve PPIUD service promotion at the facilities. Participation in the survey is voluntary. Information from the survey will not include your name or any identifying information. This survey should take about _____ minutes.

Now we are going to go over the PSF Informed Consent form.

For the first part of this survey I will be asking you about some general demographic questions and you have you can select any of the available answer choices. If you select "other" for any of the questions we would appreciate it if you could elaborate on your answer.

Are you ready to begin the survey? □ Yes □ No

A. **INTANGIRIRO**/INTRODUCTION

Mwiriwe? mumeze mute?turabashimiye nanone kuba mwemeye kwitabira iki kiganiro uyu munsi. Mbashimiye ubushake mwagize kugirango tuganire kubumenyi mufite. Izina ryange ni _____ nkora muri kigo cya Projet San Francisco (mu magambo ahinnye PSF), tukaba tura abafanya bikorwa n'iki kigo cya_____,ndetse na Ministeri y ubuzima muri gahunda yo gutanga agapira ko mu mura umubyeyi akimara kubyara. PSF irimo gukora ubushakashatsi ku bigendanye n'inyigisho mwahawe kugapira ko mu mura, gakoreshwa mukuboneza urubyaro. Turashaka no kumenya impamvu zabateye gufata umwanzuro wo

guhitamo cg kudahitamo uburyo bwo kuboneza urubyaro bukoreshwa umugore akimara kubyara. Tuzifashisha ibitekerezo byanyu kugirango turebe uko twateza imbere inyigisho zitangwa mu mavuriro zigendanye nikoreshwa ry'agapira ko mu mura.

Kwitabira iki gikorwa n' ubushake, amakuru muri buduhe nta hantu hari bugaragare amazina yanyu cg andi makuru agendanye namwe. Iki kiganiro kiri bumare iminota 30.
Ubu tugiye gushyira umukono ku nyandiko ivuga ko mwemeye kwitabira iki kiganiro ku bushake . Turabashimiye cyane. masezerano.

Demographic Questions
Type of Participant(s) □ Woman only □ Woman and Partner
17. Wavutse ryari , tubwire umwaka w'amavuko?/ What is your year of birth? **Umugore/** woman**:_____** **umugabo (niba ahari)** / Partner if present: _____
18. Ese waba warashatse cg uri ingarangu? / What is your relationship status ? • Ingaragu /single • urubatse /Married • watandukanye nuwo mwashakanye /divorced or separated • umupfakazi/widow • ibindi (sobanura) _____/ Other specify:
19. Ubana na nde?/ What is your current living situation? □ uba wenyine /alone □ ubana n'ababyeyi/umuryango/with parents or family □ n'umugabo/ Cohabiting • ubana na bagenzi bawe / Live with roommates • abandi (sobanura:_____)/ Other (please explain)
20. N'ikihe cyikiro cy'amashuri warangije? / What is the highest level of formal school education you completed? **Umugore/ Woman:** • Ntayo(None) • abanza (Primary) • Ayisumbuye (Secondary) • Amakuru (University) **Umugabo niba ahari /Partner:** • ntayo(None) • abanza (Primary) • yisumbuye (Secondary) • Amakuru / (University)
21. Watwise inda zingahe?/ How many pregnancies have you had? _____
22. Ufite abana bangahe? / How many children (biological and non-biological) do you have? _____
23. Muri uyu mwaka ushize, winjizaga buri kwezi amafaranga angahe ugereranije, ukura mu byo ukora biguha amafaranga?/ In the last year what has been the average monthly household income? **Umugore/** Woman **:_____** **Umugabo niba ahari /**Partner **_____**
24. Usengera muri rihe dini?/ What is your religious affiliation? **Umugore/** woman: • Gatorika / Roman Catholic • Abaporoso/ Protestant □ Abadiventiste b' umunsi wa 7 / Seventh-day Adventist • Abayisiramu / Muslim • Jehovah Witness • Anglican • Baptist • ayandi / Other • Ntaryo/ None **Umugabo niba ahari /** partner if present: • Gatorika/ Roman Catholic • Abaporoso/ Protestant • Abadiventiste b' umunsi wa 7/ Seventh-day Adventist • Abayisiramu / Muslim • Jehovah Witness • Anglican • Baptist • ayandi/ Other • Ntaryo/ None

25. Ufite ubwishingizi? N'ubuhe? / Do you have health insurance? If so which one
Woman • yego/ Yes**, bwandike /** type: _____ **• oya/**No
Partner **• yego/** Yes**, bwandike /** type: _____ **• oya/**No
Types • RAMA (government) • MMI (Military) • MEDIPLAN • Other • None

26. Ni izihe service waherewemo inyigisho zijyendanye n'agapira ko mu mura gakoreshwa umugore akimara kubyara? / PROBE ! During which services did you receive PPIUD promotion?

☐ **Mu kwipimisha inda /** ANC ☐ **gukingiza /** Infant Vaccination ☐ **mu ibyariro /** Labor & Delivery
☐ **Aho bashyira ababyeyi bamaze kubyara /** Postpartum ☐ **kubajyanama bubuzima/** community health worker

27. Ni ubuhe buryo bwo kuboneza uheruka gukoresha? / What is/are the most recent (last) contraceptive method(s) you used before pregnancy? **(Prompt participants. Check all that participant mentions.)**
• **agakingirizo /** Condoms • **ibinini /** Pills • **agapira ko mu mura/** Copper T-IUD • **agapira ko mukuboko/** Implant • **urushinge/** Injectables • **Uburyo bwo konsa** /LAM • **ntiwigeze ubonezaho urubyaro/** Never used contraception • **ubundi buryo (buvuge) /** Other (specify)_____

28. Ese inda y'uyu mwana wayitwise wayiteganyaga cyangwa ntiwayiteganyaga?/ Did you plan or want your most recent (last) pregnancy?
a. Yes
b. No

29. Wabyaye ryari ? / When did you deliver your last baby**? (Answer in months)** _____

30. Uronsa cg urateganya konsa/ Are you breastfeeding?
• yego, Ntamuvangiye kugeza ku mezi 6 / Yes exclusively **• Yego, ariko muvangiye/** Yes, non-exclusively **• Oya/No**

31. Ni ubuhe buryo bwo kuboneza urubyaro ubu urimo gukoresha kuva ukimara kubyara?/ What is/are the current contraceptive method(s) you now use since you delivered your baby? **(Prompt participants. Check all that participant mentions.)**

• **agakingirizo /** Condoms • **ibinini /** Pills • **agapira ko mukuboko/** Implant • **urushinge/** Injectables • **ntabwo nkoresha uburyo bwo kuboneza urubyaro / Not using a contraception method**
• **Uburyo bwo konsa** /LAM Lactational amenorrhea method
• **ubundi buryo (buvuge) /** Other (specify)_____

32. Ni irihe vuriro waherewemo uburyo bwo kuboneza urubyaro urimo gukoresha? / At which facility did you get your current contraceptive method?

☐ Muhima Hosp. ☐ Muhima HC ☐ Kacyiru Hosp. ☐ Remera HC ☐ Kinyinya HC ☐ ahandi/Other: _____

33. *niba utaraboneza urubyaro:
Ni ubuhe buryo wifuza gukoresha, niba ubiteganya?/ IF NOT CURRENLTY USING A METHOD: What method do you plan to uptake post-partum, if any? **(Prompt participants. Check all that participant mentions.)**

• **agakingirizo /** Condoms • **ibinini /** Pills • **agapira ko mu mura/** Copper T-IUD •

agapira ko mukuboko/ Implant • **urushinge/** Injectables • **Ntabwo nkoresha uburyo bwo kuboneza urubyaro /** Not using a contraception method • **Uburyo bwo konsa** /LAM • **ubundi buryo (buvuge) /** Other (specify)_____
Urateganya ko watangira kubukoresha ryari? / When do you plan on taking up this method? **(Do not prompt participants. Skip if participant says 'None' for question above)** **34.** • **nonaha/**Immediately **hagati y'ukwezi n'amezi 3/** In 1-3 months • **hagati y'amezi 3 na 6 /** In 3-6 months from now • **Hejuru y amezi 6/** More than 6 months • **sindabimenya/** Not sure • **nukurira umwana/** When my period returns

Interviewer: For the next part of the interview I will be asking you a series of questions about your understanding and experience with PPIUD promotion. Kuri iki gice tugezeho, ugiye kubazwa ibibazo bijyanye n'imyumvire ndetse n uko wabonye inyigisho/ibiganiro ku gapira ko mu mura gakoreshwa umugore akimara kubyara.

B.KNOWLEDGE OF FAMILY PLANNING METHODS

23. ***a. Ministeri y ubuzima ishishikariza abagore bakimara kubyara, ko batekereza kongera gusama byibura umwana angana ate?*** When is it recommended for a woman to plan her next child after delivery? **(Read all options)**
    - Nta gihe cyatanzwe, Igihe icyari cyose / No limit
    - Byibura imyaka 2 / at least 2 years.
    - simbizi cg ntango mbyibuka/ I Don't Know or don't remember
    - Ikindi gihe kivuge/ Other (specify) _____

    c. Kubera iki?/Why? (Skip if don*'t know)*

_____
_____

24. Ku byerekeranye n' ikiganiro nyigisho wahawe ku gapira ko mu mura gakoreshwa umugore akimara kubyara,/ During the promotions, what did you learn about PPIUD?
    a. N'ibihe byiza byako wumvishe?/ What are the benefits **(Don't probe)**
        i. • karizewe/highly effective
        ii. • Kagoreshwa igihe kirekire/long term
        iii. • Iyo gakuwemo wongera gusama bidatinze/ Reversible
        iv. • Gashyirwamo ku buryo bworoshye umugore akimara kubyara/ Can be easily inserted immediately after delivery
        v. Nta misembura kagira/ Doesn't use hormones
        vi. • iyo gashyizwemo , nta kindi bisaba umugore kongera gukora kugira ngo yirinde gusama/ Once inserted no other action required from client to prevent pregnancy
        vii. • Biroroshye kugakuramo/ easy to remove whenever needed
        viii. karahendutse ugereranije n'ubundi buryo/ if you use injectable or pills , need to pay per provision while IUD you pay only once

ix. • ibindi (bivuge:_____ other (specify)

b. N'izihe ngaruka?/ What are some of the possible side effects of PPIUD insertions? **(Don't probe)**

i. • kubabara mu nda cg umugongo mu minsi mike ugashyizemo /cramping and backacke for few days after insertion
ii. □ Kuva hagati y'imihango/spotting between periods or heavy periods
iii. □ Kwiyongera kw'imihango/ heavy periods after menses returns
iv. • ibindi (bivuge:_____ other (specify)

c. Bagashyiramo ryari?/ When are you able to get the PPIUD inserted? **(Don't probe)**

i. • Mu minota 10 , iyanyuma ivutse/ Post placental
ii. □ Hagati y'iminota 10 n'amasaha 48/Postpartum
iii. • ibyumweru 4 to 6 weeks /4 weeks to 6 weeks
iv. • ikindi gihe (kivuge:_____ other (specify)

d. **Ese birashoboka ko kakwivanamo?/** Is expulsion possible? Yego/Yes Oya/No

e. **Gakora gate/** How does it prevent pregnancy?

25. Hari ahandi waba warumvise amakuru ajyendanye n'agapira ko mu mura gakoreshwa umugore akimara kubyara? / Outside of the promotions, had you heard about PPIUD previously?

a. • yego/ yes, where or from who_____
b. • oya/No

C. DECISION MAKING FACTORS

26. Ni izihe mpamvu zatumye udahitamo kuboneza urubyaro ukoresheje agapira ko mu mura gakoreshwa nyuma yo kubyara? / What factors influenced your decision to not select PPIUD? **DON'T PROBE**

i. • Umugabo ntiyari ahari (My partner was not present)
ii. • Umugabo yarakanze cg ntagakunda (My partner refused to use PPIUD or doesn't like it)
iii. • Numvishe benshi batakavuga neza cg batashaka (Influence from women in the same room
iv. □Ubuhamya bw'uwagakoresheje ntikamugwe neza (Unhappy peer testimony)
v. • Imyemerere y'idini (Religious factors)
vi. • Ingaruka zako (Side-effects)
vii. • **Please Probe!;** Hari Ibindi cg hari ibyo utasobanukiwe neza nyuma y'inyigisho (bivuge) Other/More concerns after promotion (specify:)

_____

_____
_____

27. Hagati yawe n'umugabo, Ni inde wafashe umwanzuro wa nyuma? / Who made the final decision?
    i. • ni njyewe /Me
    ii. • Umugabo/ Partner
    iii. • Twembi /My partner and I

28. Ese urifuza undi mwana/Would you like more children ?
    i. • Yego/Yes
    ii. • Oya / No
    iii. • Sindafata umwanzuro/Undecided

29. Niba wifuza undi mwana, If You want more children,
    i. Ni ryari umwifuza /When _____
    ii. Wifuza bangahe/How many: _____

30. **Ese kuba utifuza kongera kubyara cyangwa kongera kubyara nyuma y'iyo myaka umbwiye nicyo cyaguteye guhitamo gukoresha agapira ko mu mura ukimara kubyara?** / According to the answer to the previous question, would you say that your fertility plans affects your decision about post-partum FP? Yego/Yes Oya/No

31. **Watubwira impamvu waba warahisemo ubu buryo bwo kuboneza urubyaro uri gukoresha cg ushaka gukoresha?** /Why did you decide on your chosen method?

D. SUGGESTIONS FOR IMPROVEMENTS

32. Hari andi amakuru cg ibindi ibitekerezo waba ufite wifuza kudusangiza uyu munsi?/ Is there any other information that you would like to share today? **Probe!**

_____

_____

_____

CONCLUSION

Well that completes the interview. Thank you once again for taking the time to answer the questions. I appreciate your thoughts and perspectives and look forward to applying your input to inform future PPIUD promotions. ***Tubashimiye cyane uyu mwanya wanyu mwaduhaye, ibitekerezo byanyu n'inginzi kandi bizadufasha kononosora neza gahunda z'ibiganiro ku gapira ko mu mura gashyirwamo umugore akimara kubyara.***

Appendix C: Nurse Focus Group Guide

Focus Group Guide for Nurses: IKIGANIRO MU MATSINDA N' ABAFOROMO

Focus Group #: Date: Interviewer's Initial: Interview Start Time: Interview End Time:					
Promotion Site & Number of Participants					
□ Muhima Hospital #____	□ Muhima HC #____	□ Kacyiru Hospital #____	□ Remera HC #____	□ Kinyinya HC #____	□ Village/Area: #____

A. INTRODUCTION

[Interviewer, Note-Taker, and Observer introduce themselves]

Hello, my name is _____.

Thank you for participating in our focus group discussion today. We appreciate your willingness to discuss your experiences with the PPIUD Project. We hope to gain insightful knowledge on how to improve the current promotional methods used for promoting PPIUD use in your respective health facilities and communities. We want to significantly increase the number of women who uptake IUDs as this is the most effective method and is easy to use right after delivery.

We would like to emphasize that your participation is voluntary. This means that you are free to leave at any time. However, as gatekeepers to the PPIUD promotions we value all of your opinions and hope that you will stay to share them. All personal information will be de-identified (meaning your name or identifying information will not be shared) however your comments will be shared with Dr. Allen, Dr. Wall, Dr. Ingabire and others affiliated with the Project. We would like to emphasize that there are no right or wrong answers and encourage you to share what you think. Please feel free to join in the conversation when you have something to say or would like to respond in any way. We welcome questions and comments at any time.

Now we are going to go over the PSF Focus Group Consent form.

We expect this discussion to last between 45 minutes to an hour. Are there any questions before we start?

A. INTRODUCTION

[Interviewer, Note-Taker, and Observer introduce themselves]

A. IRIBURIRO

Mwaramutse nitwa ……..

Mwakoze kwitabira ikiganiro mumatsinda cy' uyu munsi, tubashimiye ubushake mugaragaza kugirango tuganire kubumenyi mufite kuburyo bwo kuboneza urubyaro bw'agapira ko mu mura gakoreshwa umugore akimara kubyara.

Twizeye ko muri butwungure ubumenyi bw'uko twateza imbere uburyo bukoreshwa mukwigisha kugapira ko mu mura gatangwa umubyeyi akimara kubyara mu mavuriro no mumidugudu aho dutuye.

Turifuza ko umubare w'ababyeyi bakorwsha agapira ko mu mura wakwiyongera kuko aribwo buryo bwiza kandi bwizewe bworoshye gukoreshwa umubyeyi akimara kubyara.

Twakongera tukabamenyesha ko kwitabira kwanyu ari ubushake bisobanuyeko igihe cyose ubishatse wagenda. Ariko nkabashinzwe kwigisha no gutanga ibiganiro kuburyo bw'agapira ko mu mura duha agaciro ibitekerezo byanyu kandi twizeye ko muri bubidusangize.

Igitekerezo buri muntu ari butange ntihari bugaragareho amazina cg andi makuru yose ajyendanye nawe, ariko ibitekerezo byanyu tuzabisangiza abaganga batandukanye bo muri ubu bushakashatsi.

Twababwira ko buri gitekerezo cyose gifite agaciro niyo mpamvu twifuza ko mwadusangiza icyo mibitekerezaho, mwumve mwisanzuye muri iki kiganiro niba ufite igitekerezo cgicyo wasubiza ntakibazo.

Turakira ibibazo ndetse n'ibitekerezo igihe icyo aricyo cyose.

Ubu tugiye gushyira umukono kuri aya masezerano.

Iki kiganiro kiri bumare hagati y'iminota 45 kugera ku isaha.

Haba hari ikindi kibazo mbere yuko dutangira?

B. Connection to PSF

Interviewer: *First, we'd like to learn a little bit about you all and your connections with PSF and the PPIUD*

1. How long have you been promoting PPIUD use for the PPIUD Project?
   Umaze igihe kingana iki utanga ibiganiro bishishikariza gukoresha agapira ko mu mura bashyiramo umugore akimara kubyara?

C. Family Planning Counselling and PPIUD Promotions with Flipchart

Interviewer: *Now we would like to ask you about your experiences as a family planning counselor promoting PPIUD with the flipchart .* ***Turifuza ku kubaza ibyo wabonye /wamenye nk umuntu utanga*** **ibiganiro bishishikariza gukoresha agapira ko mu mura, bashyiramo umugore akimara kubyara**

2. Can you please describe when/where you conduct PPIUD promotions?
   Ushobora kutubwira/kudusobanurira ahantu n'igihe utanga ibiganiro bishishikariza gukoresha agapira ko mu mura bashyiramo umugore akimara kubyara?
   a. *Probes:*
      i. Where do you usually do PPIUD promotions?
      Ni hehe ubusanzwe utangira ibiganiro bishishikariza gukoresha agapira ko mu mura bashyiramo umugore akimara kubyara.
      ii. When do you do PPIUD promotions? Time of day?
      Ni ryari/isaha ubusanzwe utangiraho ibiganiro bishishikariza gukoresha agapira ko mu mura bashyiramo umugore akimara kubyara

3. Can you share how you use the PPIUD flipchart when promoting?
   Ushobora kutubwira uburyo ukoresha ya mfashanyigisho, bakoresha batanga ibiganiro ku gapira ko mu mura bashyiramo umugore akimara kubyara
   a. *Probes:*
      i. Individual promotions?/ **Igihe uganiriza umuntu umwe umwe.**
         1. Do you read it verbatim or summarize the contents?
         Ese uyisoma uko yanditse yose cg uyisobanura muri make?
         2. Which parts of the flipchart do you emphasize? Why?
         N'ikihe gice cyo ku mfashanyigisho wibandaho kurusha ibindi? Kubera iki?
         3. Which parts of the flipchart do you skip, if any? Why?
         N'ikihe gice usimbuka niba gihari? Kubera iki?
      ii. Group promotions? **Igihe utanga ibiganiro mu ruhame**.
         1. Do you read it verbatim or summarize the contents?
         Ese uyisoma uko yanditse yose cg uyisobanura muri make?
         2. Which parts of the flipchart do you emphasize? Why?
         N'ikihe gice cyo ku mfashanyigisho wibandaho kurusha ibindi? Kubera iki?
         3. Which parts of the flipchart do you skip, if any? Why?
         N'ikihe gice usimbuka niba gihari? Kubera iki?

4. What do you believe is working well with the PPIUD promotions?
   Utekereza ko ari ibiki bigenda neza muri iyi gahunda yo gutanga ibiganiro bishishikariza gukoresha agapira ko mu mura, bashyiramo umugore akimara kubyara

   a. *Probes:*
      i. What have been the facilitators to promoting?

N'ibiki byorohereza/byafashije mu gutanga ibiganiro bishishikariza gukoresha agapira ko mu mura bashyiramo umugore akimara kubyara

ii. Why do you think that is?
Ni ukubera iki utekereza ko bifasha/byorohereshya ibiganiro?

5. What do you believe is not working so well with the PPIUDs promotions?
Utekereza ko ari ibiki bibangamira/bitorohereza gahunda yo gutanga ibiganiro bishishikariza gukoresha agapira ko mu mura, bashyiramo umugore akimara kubyara

a. Probes:

What have been some of the challenges to promoting? (e.g., length of time, high volume setting, etc.)/ **N'izihe ngorane uhura nazo mu gutanga Utekereza ko ari ibiki bigenda neza muri iyi gahunda yo gutanga ibiganiro bishishikariza gukoresha agapira ko mu mura, bashyiramo umugore akimara kubyara**

i. Why do you think that is? **Ni kuki ariko ubitekereza?**

ii. What could be done about these issues? **N'iki cyakorwa**

6. What information do you think is needed in the flipchart to improve PPIUD promotions?
N'ubuhe butumwa bukenewe kogendwa mu mfashanyigisho kugirango tunononsore neza ibiganiro bishishikariza gukoresha agapira ko mu mura, bashyiramo umugore akimara kubyara?

a. Probes:

i. What information should be added?
N'ubuhe butumwa bwagombye kongendwamo

ii. What information should be removed?
N ubuhe butumwa bwagombye gukurwamo

D. Client Interactions during Promotions

Interviewer: *We would also like to learn about your interactions with the clients during promotions./* ***Turashaka kumenya uburyo ibiganiro bigenda hagati yawe n'abo ubiha?***

7. How receptive are the women and men that you usually promote to about PPIUDs?
Ese ubona abagore cg abagabo bakira bate ibiganiro utanga, bishishikariza gukoresha agapira ko mu mura, umugore afata akimara kubyara?

a. Probes:

i. Is there any particular part of the flipchart that confuses/not well understood?/ **Hari igice na kimwe cyo mu mfashanyigisho ubona giteye urujijo cg kitumvikana neza?**

1. Which parts raise the most questions? / **N' ikihe gice cyo mu mfashanyigisho bakunze kubazaho ibibazo byinshi?**

ii. Common questions or concerns you have observed or heard from them while or after promoting PPIUDs? / **N ibihe bibazo cg impungenge wabonye bakunze kugira mu gihe utanga ibiganiro cg nyuma y ibiganiro**
    1. This can be on PPIUD or the flipchart itself. **byaba ku gapira ko mu mura bashyiramo bakimara kubyara cg imfashanyigisho ubwayo.**

iii. What are the main comments from male partners if present during promotion?/ **ese abagabo babivugaho iki iyo ibiganiro bishishikariza gukoresha agapira ko mu mura , umugore akima kubyara, bitanzwe bahari?**
    1. Are they supporting/encouraging? Or more concerned? (specify those)/ **ubona babishyigikiye?/ cg bafiteho impungenge (n'izihe ? zivuge?)**

8. What would you say is the most effective time for promotion in the communities? Ku ivuriro, ibiganiro bishishikariza gukoresha agapira ko mu mura, umugore akimara kubyara, n ikihe gihe cyiza kurusha ibindi byatangwamo, kugirango bigire akamaro
    a. Probes:
        i. Infant vaccination, labor & delivery ANC, postpartum? **Umugore aje gupimisha inda, ari kunda & aje kubyara, amaze kubyara, aje gukingiza?**
        ii. Why is that?/ **kubera iki uhisemo icyo gihe**
        iii. Which is the least effective? Why? / **n ikihe gihe mubona gutangaho ibiganiro bidafasha**

9. What do you think motivates clients to choose PPIUDs? / **N iki ubona gitera ishyaka abagore guhitamo gukoresha agapira ko mu mura bakimara kubyara?**
    a. Probe:
        i. What makes them choose other contraceptive methods over PPIUDs or vice versa? **N'iki kibatera guhitamo ubundi buryo bwo kuboneza urubyaro, aho guhitamo agapira ko mu mura bafata bakimara kubyara?**

10. What are some factors that might make it hard for clients to choose PPIUDs**? N izihe mpamvu zishobora gutuma bigora umugore guhitamo gufata agapira ko mu mura akimara kubyara**
    a. Probes:
        i. Influence from other women, having had an episiotomy (postpartum promotion), religious/ **amabwire y abandi bagore, kuba bamwongereye abyara (episiotomy), imyemerere.**
        ii. Physical, socio-economic, educational, cultural?/ **imiterere ye, amashuri yize, umuco…..**

E. Data Collection

Interviewer: *We want to get a better understanding of how to collect the promotional data.*

Turashaka gusobanukirwa neza uko wandika amakuru ajyanye n ibiganiro byo gushishikariza gukoresha agapira ko mu mura , umugore akimara kubyara.

11. Can you speak about your data collection methods?/ **Ushobora kutubwira uburyo ukoresha wandika/ugaragaza ibirebana n' ibiganiro bishishikariza gukoresha agapira ko mu mura , umugore akimara kubyara.**

a. Probes:

i. What data do you collect after PPIUD promotion?
N'ibiki wandika wandika nyuma y ibiganiro

ii. Where do you record them?/ **ubyandika he?**

iii. When do you record them?/ **Ni ryari ubyandika?**

iv. Any challenge with data collection? / **n'izihe ngorane uhura nazo mu kwandika ayo makuru?**

F. Future Directions Improvements

Interviewer: *Finally, we would like to hear your thoughts about the future of PPIUD promotions for the PPIUD Project./* ***Dusoza, Turashaka kumva ibitekerezo kubyerekeye, ibiganiro byo gushishikariza gukoresha agapira ko mu mura, umugore akimara kubyara mu gihe kiri imbere***

12. What other promotional or data collection materials would be useful for PPIUD promotions? **N'izihe mfashanyigisho zindi cg ahandi hantu hakenewe kwandikwa amakuru yerekeye n ibi biganiro**

a. Probes:

i. Promotional materials?/ **imfashanyigisho**

ii. Data collection process (promotions, insertions, follow-up)?
Nibiki bikenewe mu kwandika amakuru mu gihe utanga ibiganiro, ushyiramo agapira ko mu mura cg uri gukurikirana umugore washyizemo agapira ko mu mura akimara kubyara.

13. Are there any other recommendations to improve PPIUD promotions you'd like to suggest? **Hari ikindi wumba gikenewe mu rwego rwo kunoza neza ibiganiro ku gapira ko mu mura bashyiramo umugore akimara kubyara.**

a. Probe:

i. Is there anything you feel like we have missed?/
Hari icyo wumva tutavuze cyari ngombwa?

G. CONCLUSION

Interviewer: *Thank you so much for your time. We appreciate your participation and your openness in sharing with us and your responses will greatly helpful.*

Turagushimira cyane kuri iki kiganiro tugiranye, igihe waduhaye, ibitekerezo byiza waduhaye n'inkunga ikomeye cyane kuri iyi gahunda.

Appendix D: Community Health Workers Focus Group Guide

Focus Group Guide for Community Health Workers

Focus Group #: Date: Interviewer's Initial: Interview Start Time: Interview End Time:					
Promotion Site & Number of Participants					
□ Muhima Hospital #____	□ Muhima HC #____	□ Kacyiru Hospital #____	□ Remera HC #____	□ Kinyinya HC #____	□ Village/Area: #____

A. INTRODUCTION

[Interviewer, Note-Taker, and Observer introduce themselves]
Hello, my name is _____.

Thank you for participating in our focus group discussion today. We appreciate your willingness to discuss your experiences with the PPIUD Project. We hope to gain insightful knowledge on how to improve the current promotional methods used for promoting PPIUD use in your respective health facilities and communities. We want to significantly increase the number of women who uptake IUDs as this is the most effective method and is easy to use right after delivery.

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Now we are going to go over the PSF Focus Group Consent form.
We expect this discussion to last between 45 minutes to an hour. Are there any questions before we start?

B. IRIBURIRO

Mwaramutse nitwa ……..

Mwakoze kwitabira ikiganiro mumatsinda cy' uyu munsi, tubashimiye ubushake mugaragaza kugirango tuganire kubumenyi mufite kuburyo bwo kuboneza urubyaro bw'agapira ko mu mura gakoreshwa umugore akimara kubyara.

Twizeye ko muri butwungure ubumenyi bw'uko twateza imbere uburyo bukoreshwa mukwigisha kugapira ko mu mura gatangwa umubyeyi akimara kubyara mu mavuriro no mumidugudu aho dutuye.

Turifuza ko umubare w'ababyeyi bakorwsha agapira ko mu mura wakwiyongera kuko aribwo buryo bwiza kandi bwizewe bworoshye gukoreshwa umubyeyi akimara kubyara. Twakongera tukabamenyesha ko kwitabira kwanyu ari ubushake bisobanuyeko igihe cyose ubishatse wagenda. Ariko nkabashinzwe kwigisha no gutanga ibiganiro kuburyo bw'agapira ko mu mura duha agaciro ibitekerezo byanyu kandi twizeye ko muri bubidusangize. Igitekerezo buri muntu ari butange ntihari bugaragareho amazina cg andi makuru yose ajyendanye nawe, ariko ibitekerezo byanyu tuzabisangiza abaganga batandukanye bo muri ubu bushakashatsi.

Twababwira ko buri gitekerezo cyose gifite agaciro niyo mpamvu twifuza ko mwadusangiza icyo mibitekerezaho, mwumve mwisanzuye muri iki kiganiro niba ufite igitekerezo cgicyo wasubiza ntakibazo.

Turakira ibibazo ndetse n'ibitekerezo igihe icyo aricyo cyose.

Ubu tugiye gushyira umukono kuri aya masezerano.
Iki kiganiro kiri bumare hagati y'iminota 45 kugera ku isaha.
Haba hari ikindi kibazo mbere yuko dutangira?

B. CONNECTION TO PSF

Interviewer: *First, we'd like to learn a little bit about you all and your connections with PSF and the PPIUD Project*

1. **How long have you been promoting PPIUD use for the PPIUD Project?**
   Umaze igihe kingana iki wigisha kugapira ko mu mura gakoreshwa nyuma yo kubyara?

C. Family Planning Counselling and PPIUD Promotions with Flipchart

Interviewer: *Now we would like to ask you about your experiences as a family planning counselor promoting PPIUD with the flipchart.*

UBAZA: *Turifuza kukubaza kubumenyi ufite nk'umuntu ushinzwe kwigisha kugapira ko mu mura gakoreshwa nyuma yo kubyara*

2. **Ushobora kudusobanurira ni ryari kandi ni hehe utangira inyigisho zigendanye n'agapira ko mu mura gakorehwa umubyeyi akimara kubyara. /** Can you please describe when/where you conduct PPIUD promotions?
   a. Ni hehe ukunda kwigishiriza?/ Where do you usually do PPIUD promotions?
   b. Ni ryari wigisha?/ When do you do PPIUD promotions? Time of day?

3. .***Wadusangiza uburyo ukoresha imfashanyigisho mugihe urimo kwigisha?/*** Can you share how you use the PPIUD flipchart when promoting?
   Probes

I. **Ese ujyenda ijambo kurindi cg uvuga ibyingenzi?/** Do you read it verbatim or summarize the contents?
II. **Ni ikihe gice cy'imfashanyigisho wibandaho cyane? Kubara iki**?/ Which parts of the flipchart do you emphasize? Why?
III. **Ni ikihe gice kiri mumfashanyigisho utavuga ? niba gihari kubera iki**?/ Which parts of the flipchart do you skip, if any? Why?

4. ***Utekereza ko ariki kigufasha mugutanga ikiganiro neza kijyanye n'agapira ko mu mura gakoreshwa umubyeyi akimara kubyara./*** What do you believe is working well with the PPIUD promotions?

Probes:

I. **Nibande babafasha mubyerekeranye nogutanga ibiganiro gushishikariza ababyeyi gukoresha agapira ko mumura umubyeyi akimara kubyara**/ What have been the facilitators to promoting?
II. **Mutekereza ko ari iyihe mpamvu bikorwa gutyo/** Why do you think that is?

5. **Utekereza ko ari iki kitagenda nezamugutanga ikiganiro kijyanye n'agapira ko mu mura gakoreshwa umubyeyi akimara kubyara?/** What do you believe is not working so well with the PPIUDs promotions?

Probes

I. **Ni izihe mbogamizi waba waragize mugutanga ikiganiro(igihe kimara, umubare w'abantu, nibindi)/** What have been some of the challenges to promoting? (e.g., length of time, high volume setting, etc.)
II. **utekereza ko biterwa niki?/** Why do you think that is?
III. **hakorwa iki kuri izo mbagamizi?/** What could be done about these issues?

6. Utekereza ko ari ayahe makuru yakongerwa muri iyi mfashanyigisho yarushaho kumvikanisha inyigisho z'agapira ko mu mura gakoreshwa umubyeyi akimara kubyara? / What information do you think is needed in the flipchart to improve PPIUD promotions?

Probes

b. *Ni ayahe makuru yakongerwamo?/* What information should be added?
c. *Ni ayahe makuru yakurwamo?/* What information should be removed?

D. Client Interactions during Promotions

Interviewer: *We would also like to learn about your interactions with the clients during promotions.*

Ubaza :turifuza kumenya uburyo mukorana nabo muha ibiganiro mugihe murimo kwigisha

7. ***Ni gute abo uha ikiganiro kugapirako mu mura gakoreshwa umubyeyi akimara kubyara bacyakira?/*** How receptive are the women and men that you usually promote to about PPIUDs?

Probes

i. **Hari igice cyo mumfasha nyigisho waba batumva / badasobanukirwa neza?/** Is there any particular part of the flipchart that confuses/not well understood?

1. **Ni ikihe gice bibandaho mukubaza ibibazo byinshi /** Which parts raise the most questions?

ii. **Ni ibihe bibazo wumvise bakunda kubaza mugihe cyangwa nyuma yo gutanga ikiganiro?/** Common questions or concerns you have observed or heard from them while or after promoting PPIUDs? This can be on PPIUD or the flipchart itself.
    1. **Bigendanye nagapira ko mu mura cg ni kumfashanyigisho ubwayo?/** This can be on PPIUD or the flipchart itself.
iii. **Ni ibihe bitekerezo bikunzwe gutangwa nabagabo iyo babonetse mukiganiro?/** What are the main comments from male partners if present during promotion?
    1. **Ese barabushyigikira / Barabushishikarira?/** Are they supporting/encouraging? Or more concerned? (specify those)

8. **Wumva ari ikihe gihe cyiza cyo gutangiramo ikiganiro mu midugugudu**/ What would you say is the most effective time for promotion in the communities?

Probes

i. **Mugitondo, nyuma ya saa sita, cg nimugoroba**/ Morning, afternoon, evenings?
ii. **Kubera iki aricyo cyiza?/** Why is that?
iii. **Ni ikihe gihe kitari cyiza?kubera iki?/** Which is the least effective? Why?

9. **Utekereza ko ariki gituma ababyeyi bashishikarira guhitamo agapira ko mu mura gakoreshwa umubyeyi akimara kubyara?/** What do you think motivates clients to choose PPIUDs?

Probe

i. **Ni iki gituma bahitamo ubundi buryo bwo kuboneza urubyaro butari agapira ko mu mura?/** What makes them choose other contraceptive methods over PPIUDs or vice versa?

10. **Ni izihe mpamvu zituma badakunda guhitamo uburyo bw'agapira ko mumura**?/ What are some factors that might make it hard for clients to choose PPIUDs?

Probes

i. **Babiterwa nabagenzi babo, nuko baba bababara kuko babongereye cg ni imyizerere yabo?/** Influence from other women, having had an episiotomy (postpartum promotion), religious
ii. **Imiterere yaho batuye,amikoro, amashuri bize cg umuco bakurikiza./** Physical, socio-economic, educational, cultural?

E. Data Collection

Interviewer: *We want to get a better understanding of how to collect the promotional data.*

Interviewer: **Turashaka kurebera hamwe uburyo amakuru yabagishijwe akusanywa.**

11**. Watubwira uburyo ukoresha ukusanya amakuru?/** Can you speak about your data collection methods?

Probes

i. **Ni ayahe makuru ukusanya iyo umaze kwigisha ubu buryo bwagapira ko mu mura gakoreshwa umubyeyi akimara kubyara**/ What data do you collect after PPIUD promotion?
ii. **Ese uyandika hehe?/** Where do you record them?
iii. **Uyandika ryari?/** When do you record them?
iv. **Hari imbogamizi uhura nazo mugukusanya amakuru?/** Any challenge with data collection?

F. Future Directions Improvements

Interviewer: *Finally, we would like to hear your thoughts about the future of PPIUD promotions for the PPIUD Project.*

Ubaza: Dusoza, Twifuzaga kumenya uko mutekereza ahazaza kuri iyi gahunda yitangwa ry'ibiganiro ku ikoreshwa rya'agapira ko mu mura umubyeyi akimara kubyara.

12. **Hari ibindi bikoresho bikenewe byagira umumaro mu ikusanya makuru yerekeranye nikoreshwa ry'agapira ko mu mura umubyeyi akimara kubyara./** What other promotional or data collection materials would be useful for PPIUD promotions?

Probes

i. **ibikoreshwa mugutanga ikiganiro?/** Promotional materials?
ii. uko ikusanya makuru rigenda (ibiganiro,ishyirwamo ry'agapira,ikurikiranwa ryako)/ Data collection process (promotions, insertions, follow-up)?

13. **hari izindi nyunganizi cg ibitekerezo mwaduha kugirango harusheho kunoza itangwa ry'ibiganiro kugapira ko mu mura gashyirwamo umubyeyi akimarakubyara.?/** Are there any other recommendations to improve PPIUD promotions you'd like to suggest?

Probe:

iv. ***Haricyo mwumva twaba twibgiwe/*** Is there anything you feel like we have missed?

G. CONCLUSION

Interviewer: Thank you so much for your time. We appreciate your participation and your openness in sharing with us and your responses will greatly helpful

Murakoze kubwigihe cyanyu mwaduhaye. Tubashimiye ubwitabire n'ibitekerezo mwaduhaye bizadufasha kurushaho kunoza iyi gahunda.