Exploring Women's Experiences with Deciding to Use and Access Long-Acting Reversible Contraception

by

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Abstract

Women spend nearly half their life able to become pregnant. Despite the growing number of contraceptive options available, women continue to select user-dependent options over the user-independent long-acting reversible contraception (LARC). This in part contributes to the current rate of unintended pregnancy and abortion. Increasing LARC use has been proposed as one way to reduce unintended pregnancies and calls have been made for increasing women's access to LARC. The purpose of this thesis was to explore women's experiences with deciding to use a LARC and accessing the method. This was explored through two research projects.

The first project was a scoping review of the literature. This was completed to identify healthcare professional led LARC services with an evaluation of the services. A systematic search of four electronic databases was completed with 40 articles meeting the inclusion criteria. The identified services included counselling about LARC and providing LARC methods. These services were offered by a range of healthcare provider disciplines including physicians, nurses, pharmacists, and midwives. The services frequently increased LARC uptake by women and clients were satisfied with the services they received. This review suggests there are several service models that can have an impact on LARC use. However, it was noted that the perspectives of potential LARC users were not considered when designing the services, nor were women's opinions on the services always evaluated.

The second project in this thesis was a qualitative study that explored the lived experiences of women who have decided to use a LARC method and have accessed the method in Alberta, Canada. Qualitative Description and Community Based Participatory Research

frameworks were followed. Participants were purposefully recruited from the Birth Control Centre, an Edmonton-based clinic. One-on-one virtual interviews were conducted, and the data were analyzed through Reflexive Thematic Analysis. Four themes were generated from the analysis: 1) Actively Seeking Information, 2) Weighing Perceived Benefits and Drawbacks of LARC, 3) Deciding for Yourself, and 4) The Variable Experience of Access. Themes 1 to 3 provide insight into women's active role in the decision-making process. The fourth theme encompasses the five factors women described to affect their ability to access LARC: the availability and awareness of services, patient-healthcare provider connections, appointment availability and wait times, device availability, and LARC cost and coverage. This study highlights the active role women take when considering LARC methods and their desire to make decisions about LARC themselves. This study also identified accessing LARC as a highly individual experience.

The findings from this thesis identified several factors that women perceived to affect access to LARC methods. Additionally, this thesis provides new insights into how women decide to use LARC methods. Further research is required to understand the experiences of women living in rural settings and the experiences of gender diverse individuals. This thesis highlights the opportunities for healthcare providers to engage with women considering LARC and improve women's ability to access LARC.

Preface

This thesis is an original work by Emma Charlotte Bedard. Chapter 3, the qualitative research project, received research ethics approval from the University of Alberta Research Ethics Board—Health Panel, Pro00116700 “A Qualitative Exploration of Women’s Experiences Around Long-Acting Reversible Contraception”, May 4, 2022.

Dedication

This work is dedicated to all women.

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Chapter 1. Introduction

1.1 Background

Menarche, the onset of the menstrual cycle, is the beginning of a woman's reproductive years and occurs most commonly in Canada around age 12.[1, 2] Menopause marks the end of these reproductive years and typically occurs around age 51.[3, 4] The life expectancy of a Canadian woman is 84 years,[5] therefore the ability to become pregnant is present for nearly half a woman's life. Contraception is an important tool for reducing a woman's chance of pregnancy in addition to other known health benefits such as control of heavy menstrual bleeding and reduced endometrial and ovarian cancer risk.[6-8]

The current understanding of sex and gender is an evolving area of research. A persons gender expression may or may not match their biological sex.[9, 10] Contraceptive needs may apply to individuals who have the capacity for pregnancy but may not necessarily identify as women. For the purposes of this thesis, the term woman is used to mean any person with the ability to become pregnant. Additionally, the term woman is used to maintain accuracy with what is reported in the literature.

1.1.1 Unintended Pregnancy

An unintended pregnancy is either an unwanted pregnancy or a mistimed pregnancy. Two common reasons for unintended pregnancy are using contraception incorrectly or not using contraception at all.[11, 12] Despite the options available for preventing pregnancy, unintended pregnancy is still a common health concern. While the rate of unintended pregnancy has decreased since the early 1990s,[13] it is estimated that 31 in 1000 Canadian women have an unintended pregnancy annually.[14] The rate of abortion is high among

unintended pregnancies, with estimates ranging from 33-42%.[14-16] Unintended pregnancies are more common among young women (18-29 years old), low-income groups, and minority groups.[15, 17, 18]

Unintended pregnancies present health risks including an increased risk of maternal depression and parental stress.[18-20] Unintended pregnancy has been linked with negative infant outcomes including low birthweight, increased risk of infant mortality, and malnutrition.[21, 22] It is also associated with increased risk of behaviours known to cause fetal harm such as smoking or drinking during pregnancy.[18]

In addition to its direct effects on women and infants, unintended pregnancy carries a cost burden for the healthcare system. It has been estimated that unintended pregnancies in Canada cost roughly $320 million annually, with 85% of this cost attributable to contraceptive nonadherence.[17] Similarly, a study from Sweden found that unintended pregnancies cost 158 million euros annually (roughly $230 million Canadian dollars) suggesting other countries are also facing significant cost burdens.[23]

Given the effects on women and the healthcare system, it is important that the rate of unintended pregnancies be reduced. The Centers for Disease Control and Prevention has called for access to all contraceptive methods, including LARC, and for consistent contraception use for women wishing to avoid pregnancy.[11] An increase in LARC use is consistently identified as one way to reduce unintended pregnancies, with estimates that LARC is over 20 times more effective at preventing unintended pregnancy than combined hormonal contraceptives.[24, 25] With one-half of unintended pregnancies occurring among contraception users, a move to more effective methods of contraception is an important step in reducing this rate.[15]

Additional means of decreasing unintended pregnancies include social supports and contraceptive counselling.[26, 27]

1.1.2 Contraception

The first combined hormonal contraceptive (CHC), commonly referred to as "the pill," was marketed in 1960, though it would not be legalized in Canada until 1969.[28, 29] Since then the number and types of contraceptive options have expanded rapidly. Contraception can be categorized as a combination of hormonal or non-hormonal, short- or long-acting, and reversible or permanent. Natural methods such as withdrawal and fertility awareness-based methods also exist, though they are less effective than other available methods.[30] Contraceptive methods vary in how effective they are especially when comparing short- and long-acting methods due to the human error associated with remembering to take short-acting methods.

Short-acting, non-hormonal, reversible methods include barrier methods and spermicides. Barrier methods include male and female condoms, diaphragms, cervical caps, and contraceptive sponges. These methods prevent 72% to 88% of pregnancies with typical use.[30, 31]

Short-acting, hormonal, reversible methods include CHCs and progestin-only contraception. CHCs contain both estrogen and progestin components and are available as oral pills, patches, and vaginal rings. These methods are 91% effective at preventing pregnancy with typical use.[30, 31] Progestin-only contraceptives come as oral pills, often referred to as a "mini-pill", and an injection. Progestin-only pills are as effective as CHCs while the injection is slightly more effective at 93% effectiveness.[30, 31] The contraceptive injection provides 3

months of coverage per injection. The contraceptive injection is a longer-acting option than CHCs or the progestin-only pill, providing 3 months of coverage per injection,[32] and is sometimes classified as a long-acting reversible contraceptive method.[33-35]

Long-acting reversible contraception (LARC) methods include non-hormonal copper intrauterine devices (IUD), levonorgestrel intrauterine systems (IUS), and the progestin subdermal implant.[30] Collectively, the copper IUD and levonorgestrel IUS are referred to as intrauterine contraception (IUC). LARC methods are the most effective reversible contraceptives; they prevent between 99.2% and 99.95% of pregnancies annually with only the copper IUD identified as having a small difference between perfect and typical use (of 0.2%).[30, 31]

Lastly, permanent methods of contraception include male and female surgical sterilization. These methods are between 98.85% and 99.95% effective. Surgical sterilization is more common among older women when compared to younger women.[36]

Trends in the use of these contraceptives vary across the world. The most common contraceptive methods worldwide are female sterilization (219 million users), male condoms (189 million users), IUC (159 million users), and CHCs (151 million users).[37] Method choice also varies by marital status. Single or non-married women preferring short-acting reversible methods like condoms and CHCs while half of married or in-union women use long-acting or permanent methods.[37] The method mix in Canada shows women using primarily CHCs, male condoms, withdrawal, or no method for contraception.[30, 38] Notably, implant use is very low in Canada as it only became available in 2020 despite its availability in other countries.[39]

1.1.3 Long-Acting Reversible Contraception

1.1.3.1 History and Mechanism of Action

As previously mentioned, LARC methods include intrauterine contraception and subdermal contraceptive implants. The first documented record of intrauterine contraception originates from Poland in 1909.[40] The Food and Drug Administration in the United States first approved an intrauterine device in 1968 with copper intrauterine devices developed shortly after that in 1970.[40] The most noteworthy of early intrauterine contraception is the Dalkon Shield. The device was first brought to the United States in 1968, and by 1974 it was pulled from the market in the US and Canada because the multifilament strings were leading to infections.[40, 41] Partly due to the negative light cast upon IUC by the Dalkon Shield, IUC use dropped between the 1970s and 1990s.[42] It is also believed to still have a negative effect on IUC use despite safe IUC options being available.[43] The first modern hormonal intrauterine device, the Mirena®, reached North American markets in the early 2000s.[40, 44] Currently there are two hormonal intrauterine devices available in Canada, Mirena® and Kyleena®, and both are approved for 5 years of use.[44, 45] A 3-year intrauterine device, Jaydess® was available prior to the 5-year Kyleena® being marketed but has since been discontinued.[46] Several copper intrauterine devices are also available with durations ranging from 3- to 10-years.[47] The most recent addition to the Canadian market was the contraceptive implant Nexplanon® in 2020.[39]

LARC methods vary slightly in their mechanism of action. The implant contains etonogestrel and works by inhibiting ovulation.[48] An IUS works through releasing levonorgestrel, a progestin, locally to inhibit endometrial proliferation and thicken cervical

mucous preventing sperm from passing through the cervix.[44, 45] Copper IUC works primarily by releasing copper ions which affect sperm motility and viability.[48, 49]

1.1.3.2 LARC Benefits and Risks

LARC methods have several benefits associated with them. Implants and IUC are user-independent methods of contraception and do not require a person to remember to use them.[50] LARCs are associated with high satisfaction with the methods and very high 1-year continuation rates (80-90% of users).[51-53] LARC methods are safe, effective, and have been shown to decrease the rate of abortions.[52-55] Additionally, the IUS carries the benefit of reduced menstrual bleeding.[53] Studies have been conducted exploring women's perspectives on LARC methods and found that women are interested in these methods and often value LARC features like not needing to remember to use the method or more favourable side effects.[50, 56, 57]

These methods are not without risks though serious complications are rare. Intrauterine contraception carries a very low risk of uterine perforation (up to 2.6 cases per 1000 insertions) and infection (0.54% risk in the first 90 days after insertion).[58] Expulsion of the device is possible though more common if placed postpartum.[58] Contraceptive implant users may experience complications with insertion and removal.[59] Additionally, all LARC methods carry a risk of ectopic pregnancy if pregnancy occurs while using the method, though the risk of ectopic pregnancy overall is lower than average with a LARC method.[58, 59] Up to 50% of pregnancies occurring with an IUC in place are ectopic.[58]

1.1.3.3 Underutilization of LARC

Despite their benefits and few risks, LARC methods are still underutilized in Canada and the United States.[30, 60-63] Possible reasons for this include a lack of knowledge among potential users, misconceptions, and barriers including issues with accessing providers who are willing and able to provide LARC methods.[62] Healthcare provider misconceptions around the safety of LARC use in young and nulliparous women, not bringing LARC up during counselling, and assuming that patients know about the methods have been identified as barriers to LARC use.[64-67] A lack of provider training in LARC provision and support for offering the required services or confidence in providing the methods has also been identified.[64, 65, 68, 69] Provider training has been the target for increasing LARC use, but unfortunately this alone does not always result in a change in use.[70] Patients also frequently run into barriers unrelated to a lack of provider training. High upfront costs (about $350 to $450 for an IUD or implant in Canada)[71, 72] and inconsistent insurance coverage of LARC are frequently reported, and women have turned to less effective methods such as CHCs due to the methods being covered.[64-66, 73-75] Women also report having little to no knowledge about LARC methods.[64, 65, 75] Access to healthcare providers for LARC insertion further influences utilization. Research has found that only just over half of women receive a LARC method when requested when following a two-visit protocol compared to same-day insertion.[76] A two-visit protocol requires women to first visit a clinic for assessment and prescription of the method before later returning for LARC placement.

Misperceptions about LARC are an additional consideration when exploring the utilization of LARC. A belief that LARC methods are not appropriate for use in young women or

nulliparous women, or that LARC simply aren't used by young women, is common in both patients and providers despite this being inaccurate.[64, 65, 69, 74] Other beliefs held that do not align with current evidence are that LARC methods cause pelvic inflammatory disorder, increase the risk of ectopic pregnancy, are abortifacients, and "long-acting" is misinterpreted as "permanent".[65, 77] There are also misconceptions around women's ability to adhere to CHCs. A 2015 study reported that women believed "perfect use" of an oral contraceptive pill could make it as effective as a LARC method.[66] It has also been said that women may overestimate their ability to adhere to CHCs and may therefore prefer a "controllable" method.[66, 75]

1.1.3.4 Benefits of Increasing LARC Use

Given that LARC is highly effective at preventing pregnancy, there is an interest in increasing its use to reduce the rate of unintended pregnancies.[24, 74] Arguments have been made that increasing LARC use will result in direct savings for both contraceptive users and health systems.[17, 23, 78] Black et al. estimated that if 10% of oral contraceptive users in Canada switched to a LARC method would see savings of $34 million annually.[17] Furthermore, women have expressed interest in using LARC methods. Research by Oppelt et al. found that 60% of women said LARC could be an option for them if they had more information about it.[79] Secura et al. have also reported that two-thirds of women opt for a LARC method when cost barriers are removed.[80]

1.1.4 Contraceptive Decision-Making

There has been research conducted into how women make decisions to use contraception, though little has focused on LARC. Women seem to have a desire for autonomous decision-making around contraception and feel the final decision should rest with

them.[81, 82] Women have also expressed interest in receiving comprehensive information on contraception including the available options, side effects, and long-term effects.[83, 84] One study noted that women seek out information relating to a contraceptive prescription more than prescriptions for other medications, further supporting their interest in contraceptive information.[85] Sources for this information have included healthcare providers, friends and family, and the Internet.[86, 87]

What is known on LARC decision making is related to the attributes women focus on and whether they relate to their decision to use a LARC. The decisions made by women who showed a preference for particular LARC attributes, like internal device placement or a 5-year duration, were not distinguishable from the choices of women who did not convey these preferences.[88] Later research then observed that women who chose LARC were more likely to focus on the positive method features rather than the negative features.[89]

1.1.5 Obtaining LARC Care in Canada

There are a few ways women in Canada can access LARC methods. One option is to speak with their primary care provider (PCP), whether that be a physician, nurse practitioner, or other provider.[30] PCPs can be trained on LARC insertion and some choose to offer the service at their clinic. Other options across Canada include the Rapid Access IUC and Implant Centres of Excellence (RAIICE) clinics. RAIICE is a network of centers created to help offer LARC methods in a timely manner.[90]

Several websites have been created with the goal of helping Canadian women determine what contraceptive method is best for them and how to access that method. These include the Society of Obstetricians and Gynecologists of Canada's "Sex & U",[91] Planned

Parenthood Toronto,[92] and Provincial health websites like MyHealth Alberta,[93] HealthLinkBC,[94] and Health PEI.[95]

1.1.6 Pharmacists' Role in LARC Care

Within the context of pharmacy practice, the potential for pharmacists to be involved in contraception, even LARCs, is not new. Canadian contraception guidelines have recently highlighted the potential for including allied health professionals, such as pharmacists, to increase effective contraception use.[30] Pharmacists have also been recognized to be in an ideal location to identify those who may benefit the most from a LARC method, for example identifying individuals with difficulty adhering to daily medication taking.[96] Pharmacists are also considered the most accessible healthcare provider and may have the potential to reach more individuals in need of contraception.[97]

It is not surprising then that pharmacists are already involved in providing sexual and reproductive health (SRH) services. A scoping review on SRH services by pharmacists identified that pharmacists are involved in the provision of hormonal contraception, injectable contraception, and emergency contraception in addition to other SRH services.[98] Additionally, in Alberta pharmacists with Additional Prescribing Authority (APA) can initiate medication therapy.[99] A recent cross-sectional survey of pharmacists in Alberta found that 40% of pharmacists with APA are involved with initiating CHCs and 94% of pharmacists administer the contraceptive injection.[100] With the accessibility of pharmacists and their active involvement with SRH services there is potential for their utilization to increase awareness of and access to LARC methods.

1.2 Statement of the Problem

Women spend nearly half their lives able to become pregnant. The rate of unintended pregnancies is high, driven in part by incorrect use or non-use of contraceptives.[11, 12, 14] Unintended pregnancy carries risks to both mother and child and costs the health system millions of dollars annually.[18-22] There are many contraceptives currently available to women. While LARC methods have been of interest researchers and healthcare providers for reducing unintended pregnancy rates, women often opt for user-dependent forms of contraception or no method and the use of LARC remains low.[30, 38]

There is currently a need for further exploration into women's decision-making around LARC. Specifically, we hope to learn how women choose to use a LARC and what they experience when accessing the methods. By exploring women's experiences, we gain insight into practice and system changes that can help support women's access to and use of LARC.

1.3 Thesis Objectives

This purpose of this thesis is to explore women's experiences with deciding to use a LARC and accessing the device. To achieve this, the following objectives were set: first, to identify and describe healthcare professional led LARC services including those offered by pharmacists. Second, to explore the decision-making process of women who have chosen to use a LARC. Third, to explore what women describe as the factors affecting access to LARC methods.

Two research projects were completed to meet these objectives. The first project focused on reviewing literature describing LARC services that have been implemented. This project was a scoping review of the literature aimed at identifying healthcare professional led

LARC services that included an evaluation of the service. The second project was a qualitative study aiming to explore women's lived experiences with deciding to use and access LARC methods in Alberta, Canada. We also explored women's needs directly relating to accessing LARC.

1.4 Methods

1.4.1 Scoping Review Design

The scoping review was conducted following the Joanna Briggs Institute Manual for Evidence Synthesis and reported according to the PRISMA Extension for Scoping Reviews.[101, 102] A scoping review was chosen to identify the existing knowledge in the area as this review type is excellent at exploring available literature and summarizing the evidence.[101] The focus of this review is to identify and describe the available evidence around healthcare professional led LARC services.

1.4.2 Qualitative Research Design

The second research project followed a qualitative research design. A Qualitative Description framework was chosen for its recognition of reality as socially constructed and goal of developing a rich description of a phenomenon through understanding peoples' lived experiences.[103-105] Additionally, this research followed a Community Based Participatory Research (CBPR) framework. CBPR was chosen to include community members in the research process and to facilitate collaboration between researchers and non-academic partners.[106] In this research we explore women's experiences with deciding to use and access LARC using one-on-one, virtual, semi-structured interviews. The research was analyzed following Reflexive Thematic Analysis (RTA).[107, 108]

The qualitative research took place in Alberta, Canada between August 2022 and July 2023. The project was designed and conducted during the third year of the COVID-19 pandemic which affected multiple aspects of the research. Virtual interviews were chosen to decrease the risk of spreading viral illnesses during the interview process and to increase participant comfort. Completing interviews virtually also allowed for reduced interruption to the research if changes to pandemic restrictions were to occur. The COVID-19 pandemic may have also directly affected women's ability to access care as healthcare settings were still offering reduced hours of operation and maintaining increased measures to prevent infection spread. These effects may have influenced the experiences of research participants and the information they shared.

1.4.3 Researcher Positionality Statement

An essential component of RTA is a researcher's ability to be reflexive, where reflexivity involves "a disciplined practice of critically interrogating what we do, how and why we do it, and the impacts and influences of this on our research."[108] This practice is one that I aspired to incorporate throughout this work, especially given my position as a novice researcher. I have begun to define my positionality through reflection on several occasions. As a foundation for the qualitative portion of this work I wish to share aspects of my personal, functional, and disciplinary reflexivity.[108, 109]

As a White, middle class, educated, younger individual I hold a relative position of social privilege despite my marginalized identity as a bisexual woman. This often leads me to operate under the assumption that others move through the world with the ease I am used to, despite objectively knowing that unchangeable factors such as these have profound impacts on an individual's life. Relating to my functional and disciplinary positions, I am a graduate student

completing a masters degree who started participating in research during the final year of my undergraduate training. My degree in pharmacy taught me to value objective truth above all else and I came to believe that subjectivity is a bias that should be reduced in good research. Exploring qualitative research methods generated an internal struggle with managing how my personal experiences will influence my research as I still viewed objectivity in research as the ideal. However, qualitative research is a subjective process and researchers are influenced by their lived experiences.[110] This subjectivity, "people's sense of themselves", is integral to qualitative research.[110] As a novice qualitative researcher, I now recognize that the work I produce will carry elements of my own experiences and that recognizing the impact on the work produced is necessary. I began practicing reflexivity to identify the ways my subjective experiences were impacting data collection and analysis. Additionally, my work as a healthcare professional and graduate student has helped to shift my interpretive framework from that of post-positivism, where I believed in a singular truth identified through rigorous study, to more of a social constructivism framework. As described by Creswell and Poth, social constructivism recognizes that realities are constructed through lived experiences and interactions, and that the reality produced in this work is co-constructed by the researcher and the participants while being shaped by individual experiences.[111]

1.5 Thesis Outline

The outline of the remainder of this thesis is as follows:

Chapter 2 is a literature review exploring the available evidence around healthcare professional led LARC services. This scoping review was conducted to map and describe the current evidence and help guide the following research project.

Chapter 3 is a qualitative research project conducted to explore the lived experiences of women who chose to use and access a LARC method in Alberta, Canada.

Chapter 4 provides a summary and discussion of the research, describes the implications of the work from a clinical and policy perspective, and provides direction for future research opportunities.

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Chapter 2. Long-Acting Reversible Contraception Services by Pharmacists and Other Healthcare Professionals: A Scoping Review

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Abstract

Background: Long-acting reversible contraception (LARC), including intrauterine contraception (IUC), implants, and injections, is the most effective form of reversible contraception. Increasing access to and use of LARC is one strategy for reducing unintended pregnancies. Several studies have implemented LARC services, but a review of the existing literature has not been published. Our objective is to describe LARC services that have been provided by healthcare professionals.

Methods: We conducted a scoping review based on the Joanna Briggs Institute Manual for Evidence Synthesis and the PRISMA Extension for Scoping Reviews. A comprehensive search was run on four electronic databases (from inception to July 25, 2022). Search terms encompassed LARC methods, provider types, and services. Included articles described healthcare professional led LARC services for contraception and an evaluation of the service.

Results: Forty articles associated with thirty-five services met the inclusion criteria. Two service components were used either alone other together: patient counselling on LARC and provision of LARC methods. Services were offered by a single healthcare provider or multidisciplinary teams. The primary LARC offered to women was IUC. Services were offered in many settings ranging from hospitals to women's homes. Most services measured LARC use with over half seeing an increase in LARC use. Women's perspectives on the services were occasionally evaluated with women generally sharing positive feedback.

Conclusion: This review found LARC services offered by a range of healthcare professionals. Services varied in their components, settings, and supports suggesting there is no one-size-fits-all service. Healthcare professionals and program directors should identify the service

components that fit the needs of their target population and practice. Future work should seek to determine the most effective service models and women's perspectives on LARC services.

2.1 Background

Women are at risk of pregnancy for nearly half their lives, from menarche to menopause. Overall contraception use by women (ages 15-49) varies between countries; use is estimated at 72.1% in Canada and 61.4% in the United States.[1] It has been estimated that 40 to 45% of pregnancies are unintended in North America, with 1 in 5 Canadian women experiencing an unintended pregnancy.[2-4] Nearly one-half (48%) of unintended pregnancies occur among contraceptive users.[5] The cost of unintended pregnancies varies between countries and is estimated to be $320 million annually in Canada and $11.3 billion in the United States.[2, 6] Besides health system costs, unintended pregnancies are associated with higher maternal stress and increased risk of depression.[7]

There are many contraceptive options available to women including short-acting, long-acting, and non-hormonal contraceptive options. Long-acting reversible contraception (LARC) methods are the most effective contraceptives, especially intrauterine contraception (IUC) and implantable contraception. Current guidelines recommend LARC methods as first-line contraceptives, especially for younger women.[8-10] For the purposes of this review, LARC includes both hormonal and non-hormonal IUC, implantable contraception, and injectable contraception. IUC and the contraceptive implant are as reliable as surgical sterilization with typical-use failure rates from 0.05% to 0.8%. Injectable contraception typical-use failure rate is 6%.[11] These methods are superior to the typical-use failure rates of combined hormonal contraception (9%), male condoms (18%), and other non-surgical and non-hormonal options.[11] IUC and implant continuation rates are the highest of all reversible options, ranging from 78% to 84% at one year.[11]

Rates of LARC use are low, with North American estimates ranging from 6.8% (Canada) to 13.5% (United States) when including injectable contraceptives.[12] These rates are much lower than combined hormonal contraceptives (CHC). In 2009 it was reported that 43.7% of sexually active reproductive age Canadian women were using CHCs.[11, 13] It is thought a shift in contraceptive use from short-acting methods to long-acting methods would contribute to reduced rates of unintended pregnancy.[5] Women have also indicated interest in choosing LARC methods, with 60% of women stating that LARC could be an option for them if they had more information about the methods.[14]

Given the potential impact that increasing LARC methods has on unintended pregnancy and its associated negative outcomes, it is important to understand what services have been implemented to provide LARC methods. A comprehensive review of existing literature on LARC services is necessary to build future services with the aim of increasing LARC use. The objective of this scoping review is to identify and describe LARC services by healthcare professionals which have been developed and evaluated.

2.2 Methods

2.2.1 Study Design

A scoping review was conducted following the guidelines from the Joanna Briggs Institute and reported following the PRISMA Extension for Scoping Reviews (PRISMA-ScR, Appendix A).[15, 16] The study protocol was registered on Open Science Framework Registries.[17]

2.2.2 Search Strategy

The search strategy was developed in conjunction with a medical librarian (JYK). Comprehensive searches were completed in MEDLINE (via Ovid), Embase (Ovid), CINAHL, and Cochrane Library (via Wiley) on January 6, 2021. The search was updated on July 25, 2022. The first 200 results from Google Scholar were also included. The searches were not restricted by language or date limits. Search terms were defined using three themes: LARC methods (long-acting reversible contracept*, IUD or IUS, etonogestrel, etc.), service provision (initiative*, program*, provision, etc.), and healthcare providers. The full search strategy is available for MEDLINE (Appendix B). References were imported into Covidence for screening.[18] Bibliographies from excluded review articles and included articles were hand searched for additional articles.

2.2.3 Eligibility Criteria

Articles were included if they described a healthcare professional-led service on LARC methods for contraception in reproductive aged women and included any component of a service evaluation. LARC methods were defined as intrauterine contraception, contraceptive implants, and injectable contraception. No limits were placed on the publication year, services offered, healthcare provider types, article setting, intervention comparators, language, or type of evaluation methods. Articles using quantitative, qualitative, or mixed methods were included. Review articles, meta-analyses, commentary, and conference abstracts were excluded. Articles were excluded if the full text was not available, reported on healthcare student education, or focused on LARC provision for emergency contraception.

A person's gender may not match their biological sex. For the purposes of this review, we use the term woman as outlined in the included articles. This was chosen to maintain accuracy with what is reported in the literature.

2.2.4 Selection Process

Study selection occurred through two rounds of screening in Covidence,[18] first by screening study titles and abstracts, and second by full text review. Screening was completed by two independent reviewers (EB and NK). Disagreements were resolved through discussion. A third reviewer (NY) was used to address any further discrepancies.

2.2.5 Data Extraction

A data extraction template was created in Microsoft Excel (Version 2022) to record the information from included articles. Extracted data included article setting and design, participant characteristics, provider types, LARC methods offered, intervention descriptions, inclusion and exclusion criteria, participant characteristics, service evaluations, and article results. Data extraction was completed by EB and reviewed by a second reviewer (NK) for accuracy. Discrepancies were addressed through reviewing the article(s) together and unresolved discrepancies were settled by a third reviewer (NY).

2.2.6 Data Analysis

Descriptive analysis was used to describe LARC services provided by health care professionals. The data points analyzed included the type of service offered, the service components, service evaluation measures, and study results. For the purposes of this review, patient counselling includes any counselling strategy, provision of information directly to clients, or discussions between clients and providers. LARC provision includes contraceptive

injection, insertion of an IUC or implant, and provision of a prescription for LARC. A service component is any action between a healthcare provider and a participant, and a service is the sum of all service components and service supports.

2.3 Results

2.3.1 Selection of Sources

A total of 2558 articles were identified through the search with an additional 211 articles identified through Google Scholar and other sources (Figure 2.1).[15, 19] After title and abstract screening, 282 articles were assessed using full texts to determine eligibility. Applying the inclusion and exclusion criteria resulted in 40 eligible articles.[20-59] These articles related to 35 unique services. A complete description of included articles is available in Appendix C.

2.3.2 Study Characteristics

Table 2.1 lists the article characteristics. Articles were conducted primarily in Africa (n=14), North America (n=10), Europe (n=5), and Asia (n=5); see Figure 2.2 for a visual representation of article locations. Research designs included quantitative, observational, and mixed methods designs. Most articles reported community based LARC services.

2.3.3 Providers

A breakdown of the healthcare providers (HCPs) responsible for providing the services is available in Table 2.1 and Figure 2.3. A total of 22 articles (55%) had services provided by a single healthcare provider discipline. Multiple provider disciplines were part of the services reported in 17 articles with three-quarters of these including physicians plus at least one other discipline (n=13).

2.3.4 Study Participants

Thirty-eight articles (95%) reported characteristics of the individuals who received the service. Participants who received the service were women, as defined in each article, except in 2 articles where heterosexual couples were included.[36, 43] The mean ages in the studies were from 25 to 28 years (range of ages 13 to 51 years). For a full description of participant characteristics see Appendix C.

2.3.5 Services

Two service components were identified in the services provided. These included counselling women on LARC and providing LARC methods. Services included one or both components (Table 2.1). The LARC methods offered to patients included IUC, implantable contraception, and injectable contraception (Table 2.1). Services in eighteen articles (45%) made more than one LARC method available to participants. IUC methods included copper intrauterine device (65.5%), levonorgestrel intrauterine system (27.6%), and unspecified IUC types (34.5%).

When the services involved counselling women on LARC methods, the purpose of counselling centered on increasing women's knowledge of LARC,[23, 35, 37-40, 52, 56] enabling informed decision making,[27, 28, 35, 38-40, 56] and reducing pregnancy rates (see Table 2.2).[38, 55] Topics for counselling sessions included LARC efficacy,[27, 28, 38-40, 56] safety,[40, 53] advantages and disadvantages,[27, 28, 43, 53] and the reversibility of LARC (Table 2.2).[51] Three articles reported providers discussing all reversible contraceptive methods available with women.[27, 28, 59] Beyond adding a counselling component, some services chose to compare counselling at different times,[35] compare different counselling

styles,[51] or offer counselling in addition to covering the cost of the chosen LARC method.[38, 39]

Three counselling strategies were described in 8 services (Table 2.2). Two services used motivational interviewing.[55, 58] Counselling was done by providers following a script in 5 unique services.[22, 37-40, 56] Four services followed the GATHER Guide, a 6-step approach to family planning counselling,[60, 61] or based the counselling on the structure of the guide.[35, 38-40, 56]

When reported, counselling most commonly occurred prior to women receiving LARC.[23, 26-28, 36-41, 43, 45, 46, 51-53, 55, 58, 59] Prenatal appointments and/or postpartum periods were also used for providing information to women.[20, 22, 24, 34, 35, 48-50, 56] Post-insertion counselling that focused on care after receiving an IUC was used in one service.[53]

When LARC provision was included as a service component, the methods offered included IUC (67.9%),[20, 22, 24-26, 29, 30, 35-37, 40, 43, 45, 46, 48, 49, 52, 55, 59] implants (46.4%),[22, 25, 31, 32, 35-37, 40, 43, 46, 52, 55, 59] and contraceptive injection (28.6%).[21, 22, 33, 42, 44, 47, 54, 57] The services providing LARC methods were primarily offered to women in a hospital[20, 24, 26, 29, 35, 45, 48, 49, 55] or in women's homes.[21, 31-33, 43, 44, 46, 54, 57] Additional locations included community clinics,[30, 40, 46] pharmacies,[42, 47] and other community sites.[21, 36, 37, 54] Over half of the services offered same-day provision of LARC methods, including immediate postpartum provision.[20, 22, 26, 29-32, 35-37, 40, 42-48, 52, 54, 59] Four services allowed women to receive a method at a later date.[22, 36, 40, 43] If the service providers were not trained in LARC provision, or if provision was outside the scope of practice, women were referred to other providers to receive their chosen method.[40, 41]

Service components that accompanied provision of LARC methods included changing screening protocols[30] and establishing a clinic for LARC provision.[25] There were also 6 services that included post-insertion follow-up.[20, 24, 26, 34, 45, 53] Timing of follow-up ranged from 5 days after insertion to 3 months after insertion. Follow-up included checking IUD threads,[24] confirmation of device placement,[26] and assessment of patient complaints by providers.[34]

Services frequently included both counselling and LARC provision components.[20-22, 24, 26, 29, 36, 40, 45, 48, 49, 52, 55, 59] In addition to these components, one service hired new staff as dedicated workers for counselling and providing LARC.[46] A variation of the combination of counselling and providing LARC was the use of a checklist that reminded staff to counsel select women on LARC before later providing the chosen method.[37]

2.3.6 Service Supports

Several strategies were used to support the service implementation (Table 2.3). The first includes development of resources and use of existing resources that were provided directly to participants. These included informational videos on LARC that women could view[27, 28, 48-50] and informational posters or handouts.[24, 48, 49, 52]

The second service support was training HCPs to deliver the service. Training was offered in didactic-only sessions[28, 34, 40] or as a combination of didactic and practicum sessions.[21, 24, 26, 29, 48-50, 53, 54, 58] Where reported, delivery of training most commonly took between 2 and 9 days.[21, 26, 29, 33, 34, 44, 53, 57] The shortest reported training was a single 3-hour session[28] and the longest training delivery occurred over 6 months, though no information was provided on how much time was spent training.[30] Training focused on three

topic areas: LARC information, contraceptive counselling, and providing LARC methods. LARC information included updated information around indications, safety, and side effects.[21, 22, 28-30, 33, 34, 39-42, 44, 48-50, 53, 54, 57] Training for counselling focused on the technique(s) planned for the service and introduction of any counselling guides.[23, 24, 29, 30, 33, 34, 41, 42, 48-50, 53, 54, 57-59] Providing LARC methods included insertion of IUC,[20, 22, 24-26, 29, 30, 35-37, 40, 43, 45, 46, 48, 49, 52, 59] insertion of implants,[25, 31, 32, 35-37, 40, 46, 59] and contraceptive injection.[21, 33, 42, 44, 47, 54, 55, 57]

Lastly, resources were developed or identified and made available for providers to use during service delivery. Resources included checklists,[33, 37, 44, 54] counselling tools such as contraceptive models or images,[27, 28, 33, 54, 58] charts and handouts for use during counselling,[22, 27, 28, 34, 43, 48-50] standard operating procedures,[24] and LARC materials including the devices and insertion kits.[31, 32, 48-50, 53]

2.3.7 Evaluation Measures

The most common service evaluation measured LARC uptake by women.[20, 22-24, 26, 27, 29-31, 33, 34, 36-38, 40, 41, 43, 45, 46, 48-50, 52-59] Some services opted to measure women's choice of LARC, even if that method was not provided.[27, 35, 39, 40] LARC continuation, measured as receiving multiple contraceptive injections or having an IUC or implant in place for several months, was occasionally evaluated.[21, 24, 31, 33, 44, 45, 47, 51] Other service evaluation measures included rates of complications,[20, 24, 30, 54] measuring women's LARC knowledge after the service,[37, 52, 54, 56, 57] and rates of same-day LARC placement.[37, 39, 51, 52] Few services reported evaluating the feasibility,[42] barriers or facilitators to,[22] or quality of the service.[33]

A less common evaluation outcome was participant satisfaction, both with the services provided[22, 25, 28, 44, 47, 52-54, 58] and with the LARC methods themselves. [23, 24, 31, 33, 54, 56, 58] Additional participant measures included acceptability of the service or LARC methods,[25, 42] quality of life,[40] and reasons for selecting or not selecting LARC.[32] Lastly, provider LARC knowledge,[23] satisfaction,[28] comfort with providing the service,[47] and opinions on providing the service[22] was occasionally evaluated.

Of the services measuring LARC use, just over half saw an increase in use.[20, 23, 27, 30, 31, 34, 35, 37, 38, 40, 41, 45, 48, 52, 54-59] LARC continuation rates were 90% or higher in two-thirds of the articles reporting continuation.[20, 21, 24, 31, 33, 44, 45, 47, 51] Participants were highly satisfied with both their chosen LARC method and the services offered by HCPs.[21, 23-25, 31, 33, 42, 44, 45, 47, 52-54, 56, 58] One service had very low uptake of LARC methods with only two women accessing the clinic and one receiving a method.[25]

2.4 Discussion

This scoping review sought to identify existing LARC services that have been implemented and evaluated. Through this search we identified 35 unique LARC services (40 articles) fitting the inclusion criteria. Our dataset revealed services offering all types of LARC methods (IUC, implant, and injection) by several HCP disciplines, using two service components, and in a range of practice settings.

Generally, the results found that the services provided to women resulted in an increase in LARC use compared to baseline rates of use. This increase in use was observed in studies using one or both service components. These results are consistent with existing literature showing that women are interested in LARC methods and would consider using them.[14, 62]

This review also found that women were accepting of the LARC services offered by healthcare professionals. These results suggest that implementing LARC services can reasonably be expected to positively affect LARC use and be received well by contraceptive users.

Our results reveal it is possible to offer LARC services in hospitals, community clinics, pharmacies, and even in patient homes. While inpatient settings may facilitate LARC provision in the immediate postpartum period, community sites may offer more flexibility for women especially if services offer injectable contraception requiring repeat visits to a healthcare professional.

Though the main HCPs described in the LARC services were physicians, many services chose to include other HCPs like nurse practitioners, nurses, pharmacists, and midwives. Recent literature has called for providers such as nurse practitioners and pharmacists to support LARC use in addition to the care that physicians currently provide.[11, 63] This is especially important as countries like Canada are facing shortages of physicians causing limitations in access to primary care providers.[64-66] This review highlights how several different healthcare provider disciplines could be leveraged to expand women's access to LARC methods.

LARC services included the components of patient counselling and providing LARC methods. The counselling identified in this search was not limited to one counselling style, nor was the content included consistent across services. Current recommendations are to tailor contraceptive counselling to the individual's needs[67, 68] and there are several benefits to using shared decision-making during contraceptive counselling such as increased satisfaction with both counselling and the chosen method.[69] Despite this, only 5 services reported a goal of enabling informed decision-making via counselling while the most common goal was

increasing LARC use. Given existing concerns around contraceptive coercion,[67, 70, 71] it is important that enabling women's decision-making be a priority among counselling programs.

Intrauterine contraception was the most common LARC provided in the services described in the articles, though nearly half of the services offered contraceptive implants alone or alongside IUC. This is interesting as implant use is currently low worldwide,[1] which may in part be due to HCPs not having the training required to place the device. Research has shown that only about 10% of primary care providers (physicians and nurse practitioners) have training on implant placement compared to under half of family practice physicians trained to provide IUC.[72-74] The training of providers to increase the availability of LARC placement is likely one reasons services saw an increase in LARC uptake by women. It is also notable that over half of the services provided same-day LARC placement where possible. This has been shown to help increase LARC use by reducing loss to follow up[75] and should be incorporated into future services wherever feasible.

It was difficult to assess changes in LARC use after service implementation in several articles as baseline LARC use was often not reported. Of the services measuring LARC use, just over half observed an increase after service implementation. The captured in the remaining services did not allow determination of changes in uptake as the baseline use was not reported. Identifying services that saw an increase in LARC use by women suggests that there is potential for these services to continue ensuring women can access LARC or even increase access as new services are implemented. In the future, consistently quantifying the impact these services have on LARC use would help inform which services are most effective at increasing LARC use.

Women's perspectives on the services are one element of predicting how feasible implementing the service in other practices would be. When women's opinions on the service were evaluated, their feedback was positive; however, this feedback was generally reported as either "satisfied" or "dissatisfied" with the service and lacked insight into what the women considered important. Additionally, measuring women's satisfaction with their chosen method alone as some services chose to do risks overlooking women's perspectives on the service. Future services may wish to capture women's opinions on the service using open-ended survey questions or interviews.

To aid in the creation of future LARC services we have developed a list of elements program planners and HCPs may wish to consider prior to implementing a service (Figure 2.4). This list is meant to provide a high-level overview of the elements identified throughout existing services. These pieces can be considered in the context of the program setting and goals.

This is the first review examining existing LARC services by HCPs to our knowledge. We used a comprehensive search strategy developed in conjunction with a medical librarian. This review captured articles from a diverse range of countries and included services across settings and HCP disciplines. It is possible that literature fitting our research question has been missed due to inclusion of search terms relating to the service and evaluation of the services. Capturing the strategies for training providers to deliver LARC services has been examined in other reviews;[76, 77] therefore, several articles were excluded as they lacked description of the service delivery despite detailing how providers were trained to offer the service. This review is limited by the amount and type of information reported by the included articles which was inconsistent. It is also limited by publication bias as it was noted that most included articles

shared positive results. Lastly, the decision to conduct a scoping review was based on the broad research question chosen and the strengths of a scoping review in mapping the existing evidence. While a quality assessment of the included articles was not completed for this scoping review, future literature reviews could conduct a quality assessment to further build on these results.

This review provides a snapshot of the services offered across several countries, both hospital and community settings, and with a variety of HCP disciplines delivering the services. The review also identified services targeted at a variety of age groups and stages in life, including services offered during pregnancy. The findings of this review can inform the components of future LARC services and what may be important evaluation metrics. Healthcare professionals and program directors can review the strategies identified and implement those fitting their practice setting and goals.

2.5 Conclusions

Given the ongoing need for effective contraception and reducing unintended pregnancies, it is important to ensure women have access to contraception including LARC methods. This scoping review has identified two LARC service components offered by healthcare professionals. Services varied in their settings, professionals involved, LARC methods offered, evaluation, and supports suggesting there is no one-size-fits-all service. Healthcare professionals and program directors should consider each element of a service as described to ensure future LARC services fit their needs and the needs of their target population. Future studies could determine which service models best increase access to LARC, increase LARC use, and are most acceptable to patients and healthcare professionals.

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Table 2.1 Characteristics of Included Articles and Services (n=40)

Characteristics	Studies n (%)
Year of Publication	
Before 2010	4 (10)
2010-2014	7 (17.5)
2015-2019	21 (52.5)
2020-2022	8 (20)
Region	
Africa	14 (35)
North America	10 (25)
Europe	5 (12.5)
Asia	5 (12.5)
Central America	2 (5)
Australia	2 (5)
South America	1 (2.5)
Caribbean	1 (2.5)
Research Design	
Quantitative (Non-Randomized)	21 (52.5)
Quantitative Randomized Controlled Trial	7 (17.5)
Quantitative Cluster Randomized Trial	6 (15)
Observational	4 (10)
Mixed Methods	2 (5)
Setting	
Community	25 (62.5)
Inpatient Hospital	7 (17.5)
Inpatient Hospital and Community	4 (10)
Inpatient and Outpatient Hospital	3 (7.5)
Outpatient Hospital	1 (2.5)
Healthcare Provider(s)	
Two or More Provider Disciplines	17 (42.5)
Physician + Other Provider	13
Other Providers	4
Single Provider Discipline	22 (55)
Unspecified Healthcare Provider	1 (2.5)
LARC Method	
Intrauterine Contraception	29 (72.5)
Copper	19
Hormonal	8
Unspecified	10
Implant	22 (55)
Injection	8 (20)
Service Components	
Counselling	29 (72.5)
LARC Provision	28 (70)

Service Supports	
Provider Resources	17 (42.5)
Provider Training	13 (32.5)
Participant Resources	7 (17.5)
Service Evaluation Components	
LARC Uptake	30 (75)
Participant Satisfaction with Service	9 (22.5)
LARC Continuation	8 (20)
Participant Satisfaction with LARC	7 (17.5)
Women's LARC Knowledge	5 (12.5)
Choice of LARC	4 (10)
Rate of Complications	4 (10)
Rate of Same-Day LARC Placement	4 (10)

Table 2.2 Breakdown of Counselling Services

Strategies Employed	Topics Discussed	Purpose
● Motivational Interviewing[55, 58] ● Scripted Counselling[22, 37-40, 56] • Following the GATHER Guide[35, 38-40, 56, 60, 61]	● LARC methods ○ Effectiveness[27, 28, 38-40, 56] ○ Safety[40, 53] ○ Advantages & Disadvantages[27, 28, 43, 53] ○ Insertion & Removal[20, 43, 51, 53] ○ Reversibility[51] • All reversible contraceptive methods[27, 28, 59]	• Increase women's knowledge of LARC[23, 35, 37-40, 52, 56] ● Enable informed decision making[27, 28, 35, 38-40, 56] ● Promote LARC to women[43, 46] • Reduce pregnancy rates[38, 55]

Table 2.3 Breakdown of Service Supports

Patient Level	Provider Level	Provider Education Topics
• Videos[27, 28, 48-50] • Posters[24, 48, 49, 52] • Handouts[24]	• Didactic Training[28, 34, 40] • Hands-On Training[21, 24, 26, 29, 48-50, 53, 54, 58] • Checklists[33, 37, 44, 54] • Counselling Tools (models, images, handouts)[22, 27, 28, 33, 34, 43, 48-50, 54, 58] • LARC Materials (devices, insertion kits)[31, 32, 48-50, 53] • Standard Operating Procedures[24]	• LARC Information[21, 22, 28-30, 33, 34, 39-42, 44, 48-50, 53, 54, 57] • Contraceptive Counselling[23, 24, 29, 30, 33, 34, 41, 42, 48-50, 53, 54, 57-59] • Providing LARC Methods[20-22, 24-26, 29-33, 35-37, 40, 42-49, 52, 54, 55, 57, 59]

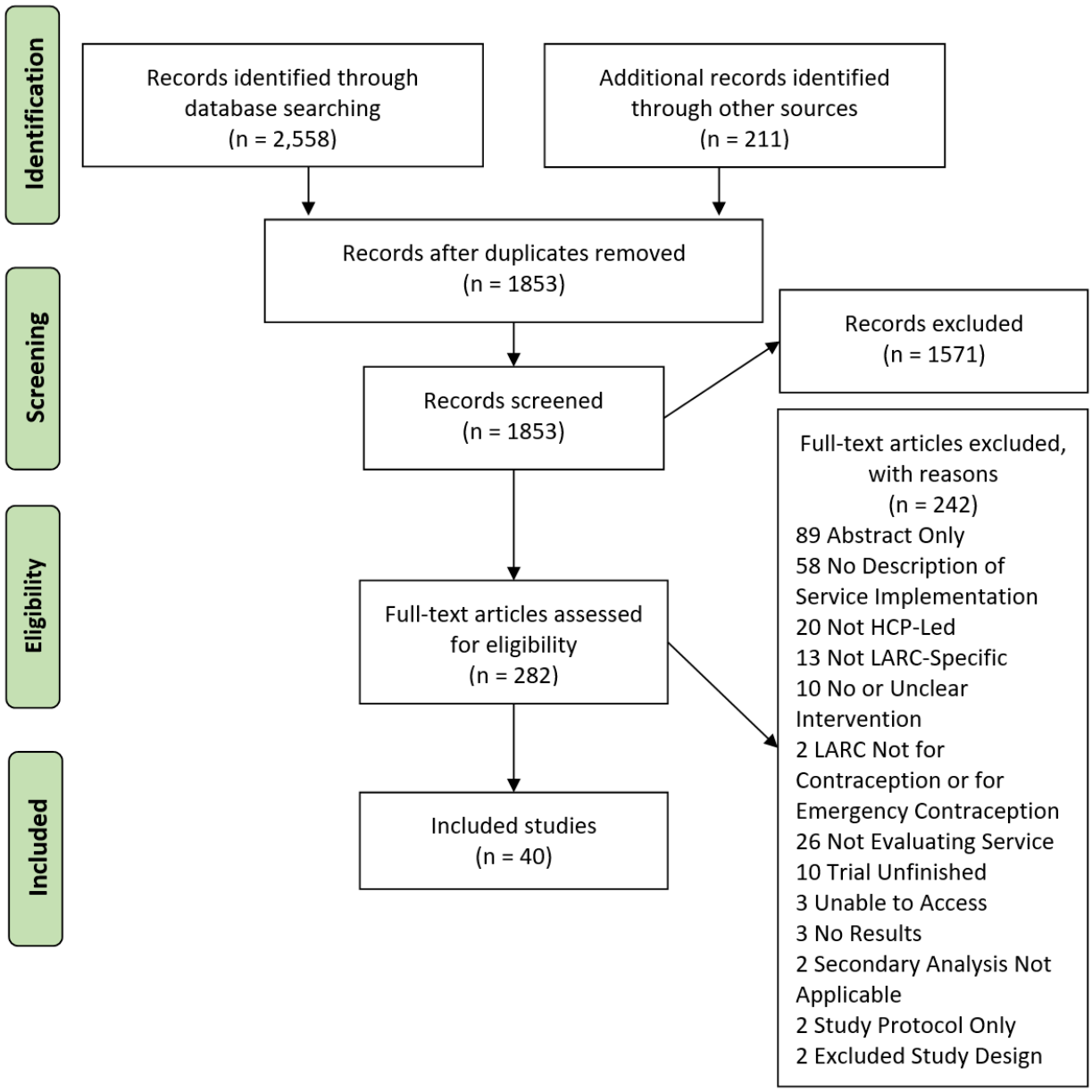

Figure 2.1 PRISMA Flow Chart

Adapted from: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 2009;6(7):e1000097. doi:10.1371/journal.pmed1000097

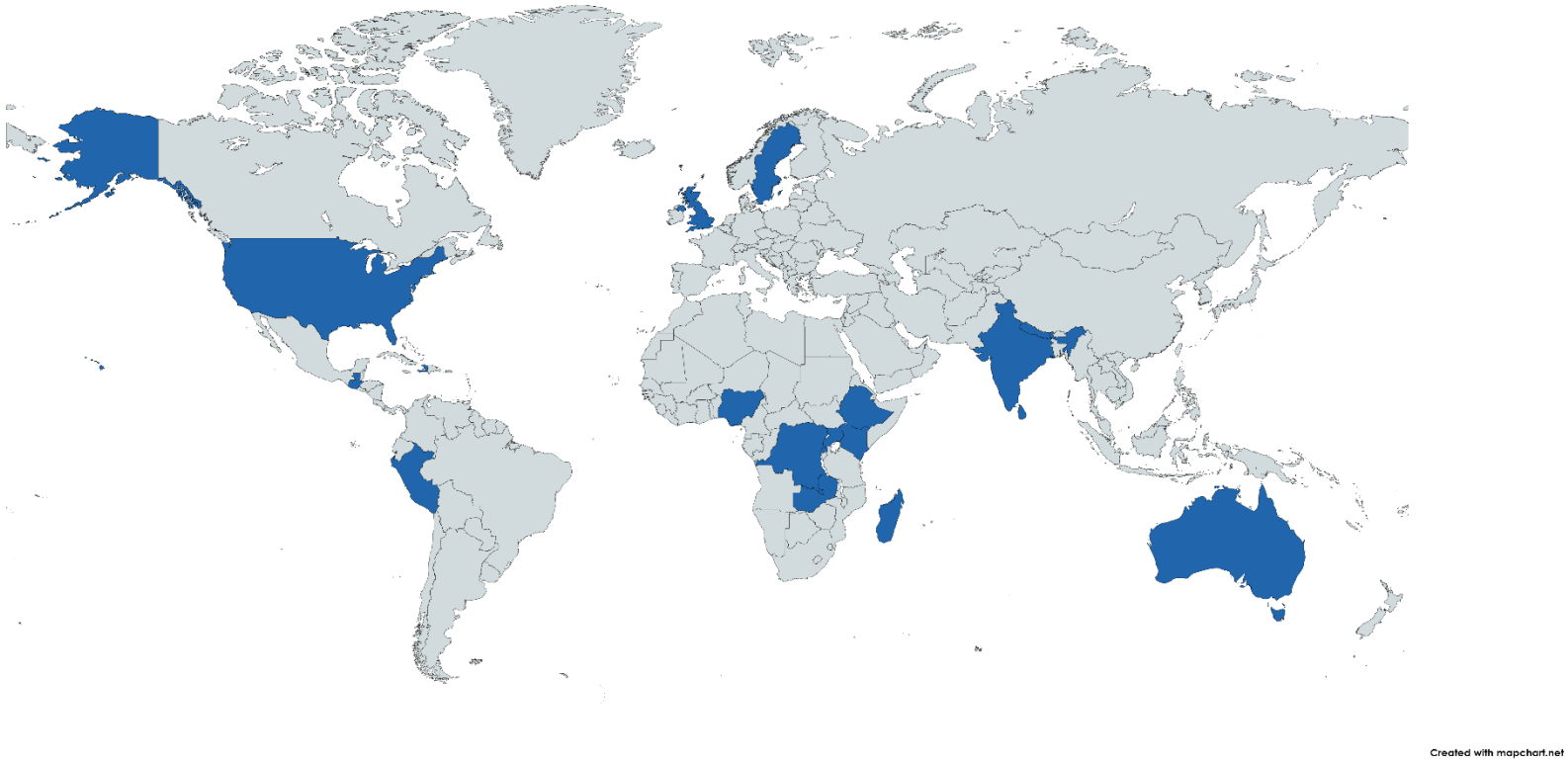

Figure 2.2 World Map Showing the Locations of Included Articles

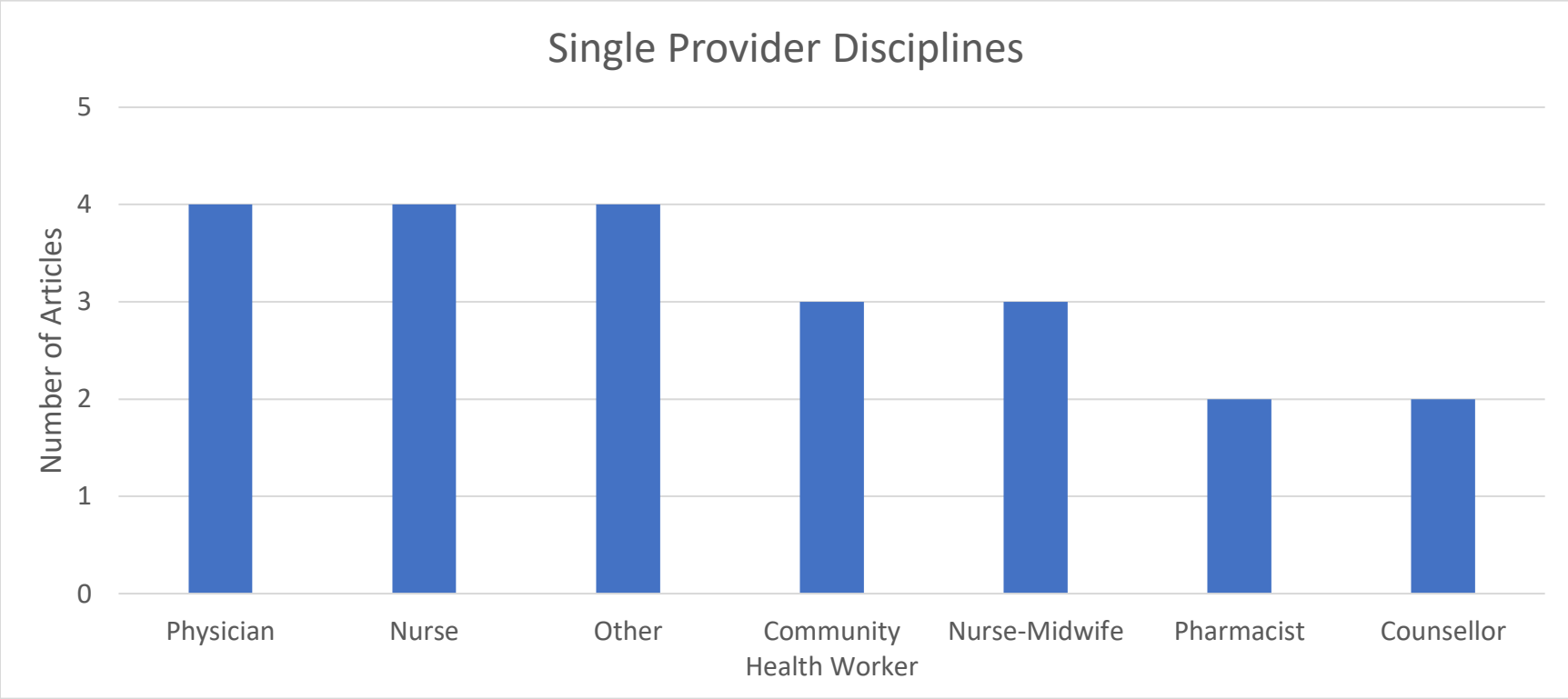

Figure 2.3 Breakdown of Healthcare Provider Disciplines in Articles Utilizing Only One Provider Type

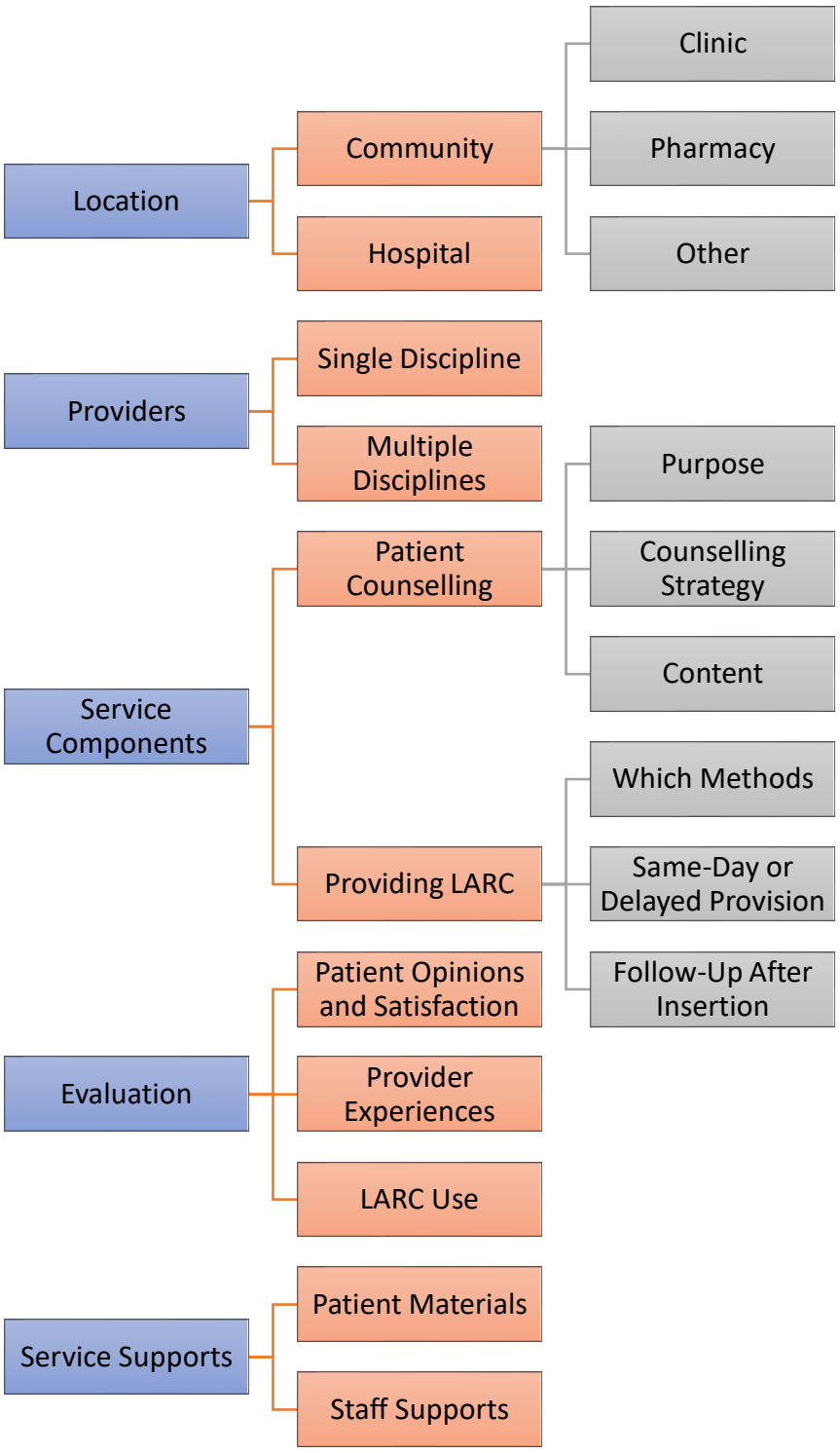

Figure 2.4 Diagram of service elements

Chapter 3. A Qualitative Exploration of Women's Experiences with Decision-Making and Accessing Long-Acting Reversible Contraception

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Word Counts: 249 (Abstract); 4945 (Text)

Figures: 1

Tables: 1

Plans for submission of a version of this manuscript to *Contraception*.

We would like to acknowledge that not all people who use contraception identify as women; our inclusion criteria were directed at individuals identifying as women, therefore we use the term throughout this paper.

Abstract

Background: Long-acting reversible contraception (LARC) includes intrauterine contraception and implants. LARC methods are highly effective yet use in Canada is low among women of reproductive age. The purpose of this qualitative study was to explore women's experiences of accessing LARC for contraception.

Methodology: This study followed qualitative description and community engagement frameworks. Virtual semi-structured interviews were completed with people with a female reproductive anatomy who identified as women, were 18 years or older, and had accessed a LARC for contraception. Recruitment occurred through purposive sampling at the community partner site. Interviews were recorded and transcribed, then uploaded to Quirkos software for coding. Data was analyzed following Reflexive Thematic Analysis.

Results: Eleven interviews were completed between August 2022 and February 2023. Four themes were generated from the analysis: 1) Actively Seeking Information, 2) Weighing Perceived Benefits and Drawbacks of LARC, 3) Deciding for Yourself, and 4) The Winding Road to Access. Overall, women's decision-making included searching for varied information sources and determining what factors were important to them before deciding to use a LARC. Access to LARC was not always straightforward and factors outside of a woman's control could delay access to the methods.

Conclusion: This study offers new insight into women's decision-making process when considering a LARC for contraception. It also provides a description of how women experienced obtaining LARC. The findings can be used to identify areas for improvement in clinical practices to increase the accessibility of LARC and help ensure women are able to use the methods.

3.1 Introduction

Long-acting reversible contraception (LARC) methods include intrauterine contraception (IUC) and the contraceptive implant. They are the most effective forms of reversible contraception, yet they are underutilized in North America with usage rates of only 5% in Canada.[1-4] Increased LARC use can reduce unintended pregnancy rates, abortions, and costs to the healthcare system and contraception users.[4-8] Given this, several calls have been made to increase access to, and use of, LARC methods.[9-12]

LARC are generally seen as an ideal contraceptive method by healthcare providers, yet women continue to select user-dependent methods over independent methods.[13] Individuals requiring contraception have described barriers including high cost, difficulty accessing the methods, low awareness or knowledge of the methods, and misperceptions around LARC.[14-16] Barriers from healthcare providers have also been described including a lack of training and misconceptions about LARC.[15-20] Little is known about how women access LARC methods, especially in Canada. Several websites exist for finding clinics that provide LARC services,[21, 22] yet even a review of LARC services offered little understanding around what services exist in Canada.[23]

Two factors affecting contraceptive decision-making include insurance coverage and communication between patients and healthcare providers. Women may feel limited in their contraceptive options based on which methods their insurance will cover.[24] Poor communication or communication that is rushed due to time constraints negatively impacts women's decision making and can lead to barriers in accessing contraception.[24, 25] Research into why women have chosen not to use LARC suggests the familiarity with oral contraceptives

and unfavourable perceptions of LARC methods contribute to their non-use.[26] Hearing negative stories about LARC also seems to influence the decision to use the methods.[27] Despite this, women have expressed interest in LARC methods and often select a LARC when barriers such as cost are removed.[28-30]

Making decisions around contraception use has been identified as a dynamic process based on individuals' experiences.[31] As women's life circumstances evolve, women often return to their initial decisions as they acquire additional knowledge resulting in changes in contraceptive methods. These changes also occur as relationship statuses and levels of commitment to partners change.[31] The description of contraceptive decision-making identified in the literature explores contraception as a whole and does not specifically address how women make decisions about LARC. Additionally, exploration into the decision-making process for LARC methods is limited by a focus on users behaviours and understandings of the method.[32]

The current study examines women's experiences around LARC decision-making and the process of accessing LARC for contraception. We sought to deepen our understanding of how women obtain LARC methods and how they decide to use LARC. Specifically, we address the following objectives: (1) to explore how women experience accessing LARC for contraception; (2) to conceptualize the decision-making process around LARC; (3) to identify women's needs; and (4) to explore how others influence access to LARC. By doing so we hope to identify the areas where women can be supported in their consideration of using, and access to, LARC methods.

3.2 Methodology

3.2.1 Study Context

This study occurred in Alberta, Canada. We partnered with the Birth Control Centre (BCC), a local Rapid Access IUC and Implant Centres of Excellence clinic in Edmonton, Alberta. The BCC is a public clinic staffed by nurses and physicians that provides contraception and other reproductive health services to primarily low-income and marginalized populations. The BCC accepts patients through self-referral. Contraceptive methods, including LARC, are not covered under the Alberta Health Care Insurance Plan and must be paid for by the patient, covered by a private insurance plan, or provided through a compassionate care program. Insertion and removal services for LARC are fully covered for all Alberta residents.

3.2.2 Design

We conducted a qualitative study following Qualitative Description (QD) and Community-Based Participatory Research (CBPR) frameworks using semi-structured one-on-one interviews.[33-37] QD aligns with the aim of the study in that it seeks to understand the perspectives of the participants involved while recognizing that reality is socially constructed.[35, 36] In this case, we sought to understand the experience of decision-making around LARC from the perspective of those who have completed this process. CBPR was chosen as it facilitates cooperation between researchers and community members and highlights the perspectives of those working directly with the study population.[37] The reporting of this qualitative research followed the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist (Appendix D).[38]

3.2.3 Sampling and Participant Recruitment

Participants were eligible for the study if they were 18 years of age or older, had female reproductive anatomy, identified as women, were using or were going to use a LARC method for contraception, and were residing in Alberta, Canada. Participants were purposively selected from the BCC with the intention of identifying individuals who had decided to use LARC and had accessed, or were going to access, a LARC method. We aimed to recruit 10 to 15 participants based on the expected ability to identify participants in the desired stage of decision-making.[39] Recruitment occurred from July 2022 to February 2023.

Clinic staff approached women who had received counselling for and had chosen to use a LARC. A nurse would read a brief script created by the research team to introduce the study (Appendix F). Interested women scanned a QR code with their cellphone to generate a pre-filled email that was sent to the research team. A member of the research team (EB) provided written study information outlining the study processes (Appendix G) and scheduled interviews by email. Assessment of participant eligibility was conducted immediately prior to each interview and verbal consent (Appendix H) was obtained. Each participant was provided a $25 electronic gift card to acknowledge their time.

3.2.4 Data Generation

One-on-one interviews were conducted by one researcher (EB) virtually via Zoom or by telephone between August 2022 and February 2023.[40] Interviews followed a semi-structured interview guide created by the research team and lasted between 18 to 51 minutes. The interview guide included open-ended questions and prompts designed to lead a discussion around each of the research objectives (Appendix I). The demographic data collected included

age ranges and choice of LARC method. Virtual interviews were recorded and transcribed using the Zoom recording and transcript features before removal of identifying information and reviewing for accuracy by the interviewer. Telephone interviews were recorded on an external device, transcribed, and de-identified manually by the interviewer. Transcripts were then uploaded to Quirkos for analysis.[41] Participants who accepted the offer received a copy of the interview transcript. No follow-up interviews occurred. Only the interviewer and participant were present for the interview.

3.2.5 Ethical Considerations

This study was approved by the University of Alberta Health Research Ethics Board (Pro00116700).

3.2.6 Analysis

The collected data was analyzed following the steps of Reflexive Thematic Analysis (RTA) as described by Braun and Clarke.[42-44] RTA was selected for its flexibility and was applied through the lens of relativism and subjectivity that is assumed by Qualitative Description. A single researcher (EB) began familiarizing herself with the data by reading each transcript several times before beginning the coding process. Codes were primarily generated inductively. Codes were reviewed for overlap and refined before generating initial themes. Analysis progressed in a non-linear fashion that included several rounds of coding and theme generation. Themes were discussed by members of the research team (EB, TS, and NY) on several occasions to ensure they contained a representative description of the data. Coding and refining of themes occurred on Quirkos while theme generation was completed manually through use of flashcards. A consultation with the healthcare team from the BCC was

conducted at the midpoint of the coding and theme generation process. This deepened the analysis by including perspectives from the professionals actively working with the study population. Finally, themes were refined and named. Recruitment was stopped after 11 interviews when it was determined by EB, TS, and NY during analysis that a rich description of women's experiences had been developed.[45]

3.2.7 Rigor and Reflexivity

The research team consisted of a graduate student and pharmacist (EB), a qualitative researcher (TS), a pharmacist researcher with expertise in women's health (NY), and a physician from the partner site (NC), all of whom identify as women. Staff from the BCC were involved with designing the recruitment strategy and provided insight during data analysis through a researcher-led discussion session. Data analysis was completed through the lens of healthcare providers. The analysis was reviewed on several occasions by the research team. These meetings allowed for discussion of the provisional themes and generation of new ideas.

EB identified as an insider to this research as a young woman and LARC user, and as an outsider as a pharmacist and researcher. To account for these varied perspectives, a practice of reflexivity was developed. EB reflected after each interview on topics of interest, moments when she felt connected to the data, and areas that were confusing or felt unrelatable. She also maintained an ongoing research journal to track ideas, thoughts, and reactions to the data. Notes were added to codes and provisional themes to monitor the ideas that resonated strongly, and care was taken to ensure these did not overpower the analysis.

To support readers in determining the transferability of this research to their population of interest,[46] a rich description of the phenomenon and participants has been included.

Factors influencing the transferability of this analysis include a description of the participants, the inclusion and exclusion criteria, the interview guide (Appendix I), and the reported process of data analysis. The reported process of reflexivity lends itself further to the transferability of the results by both positioning the researchers and ensuring they are cognizant of their influence on the analysis.[46] The authors additionally sought to ensure quality by allowing adequate time for each phase of the analysis.[42] This included returning to earlier stages in the analysis several times to fill gaps in understanding. The data were analyzed, rather than simply described, and adequately answer the research question.[42]

3.3 Results

A total of 27 people initially contacted the research team and the final sample included 11 women. Sixteen individuals did not respond to researcher emails and did not complete an interview. Participants in the one-on-one interviews were all under 40 years of age. The two participants in the 30 to 39 years category had chosen to use an IUC, while those ages 18 to 29 had equally chosen to use IUC (4/9 participants) and implants (5/9 participants). Three participants had used a LARC method in the past, all of which had been an IUC. Two participants had not yet received the method they had chosen at time of interview (both contraceptive implants). A description of each participant's demographics and assigned pseudonym is available in Table 3.1.

Four themes were generated through the analysis: *1)Actively Seeking Information, 2) Weighing Perceived Benefits and Drawbacks of LARC, 3) Deciding for Yourself, and 4) The Variable Experience of Access.* A visual representation of these themes, including the perceived factors affecting access, is available in Figure 3.1.

3.3.1 Actively Seeking Information

Participants described wanting information about LARC leading to an active search for this information. This search always included multiple sources such as the Internet, speaking to people in their inner circles like friends and family, or speaking to healthcare providers (HCP). The HCPs women reported consulting were primarily the BCC staff, though a few participants had discussed contraceptive options with their family doctor before contacting the BCC. Most participants reported completing this search on their own and seemed to value their ability to seek out multiple sources.

> *"I just did my own Google search you know reading up on WebMD website things like that. And then I also spoke to some friends who are in my age group and also have some of those contraceptives."* – Ebere

Women primarily spoke to HCPs about general information on LARC, side effects, LARC insertion, and other contraception options. While information sought from Internet sources and inner circles did address information about LARC, there was more emphasis placed on first-hand experiences. Participants even reported deliberately seeking out these first-hand experiences and considered them important factors when deciding what method of contraception to use.

> *"I would say I'll be completely honest here is that I also looked through Reddit in terms of people's experiences so not only do I educate myself on okay what is the process like and actually getting this done but also what are people's experiences?"* – Lily

When gathering information, participants weighted information differently based on who or what the source was. There was a perception about Internet sources, especially social

media, that the information shared may be biased or untrue. Information from HCPs was generally regarded with the most trust in its accuracy while information and stories from women's inner circle fell somewhere in the middle.

> *"I never thought about actually looking into more reliable resources about what the IUD is all about and what are the chances of something going wrong, so it kind of curved my perception of it a bit until I actually started doing more research. And going to the Birth Control Centre really helped because I could actually talk to medical professions about it instead of you know just relying on what I hear on social media*." – Becca

Several participants shared a desire to feel like they should know everything there is to know about LARC, especially before making any decisions. This desire seemed to manifest as a relatively deep dive into the available information, sometimes finding information not shared in a typical counselling session.

> *"I researched it to the point where I knew what a tenaculum was because I was like I'm gonna know everything about what's gonna happen to me before it happens*." – Stacey

3.3.2 Weighing Perceived Benefits and Drawbacks of LARC

Women often described what they perceived as the benefits and drawbacks of LARC. They felt these factors were important when deciding to use a LARC. The most common benefit described was the effectiveness as a contraceptive, thereby preventing pregnancy as desired. Women also described other positive LARC attributes in terms of what they were looking for in a contraceptive including the effects on menses, privacy, and convenience.

> *"I wanted something that would be highly effective. I also probably don't plan on having children within probably the next ten years."* – Lesya

Perceived LARC drawbacks focused on concerns about side effects and individual feelings around invasiveness and long-term commitment to a contraceptive. Many women shared that they heard about side effects they were not willing to risk experiencing such as prolonged spotting or increased menstrual bleeding. There also seemed to be a fear of LARC methods driven partly by hearing or reading first-hand stories. These stories frequently centered around uncommon adverse effects of LARC such as uterine perforation, implant migration, or ectopic pregnancy. Women seemed to interpret an adverse event as likely to happen to them, adding to negative feelings about either IUC or implants. The participants who reported not trusting IUCs had chosen to use a contraceptive implant, and the same was true in reverse.

> *"I also read I think this was on a gossip page but this girl was talking about how her partner felt her IUD and I was like "mmm nope"… Even for one of those things to happen sounds like too much."* – Darian

After gathering information on LARC, women began a process of weighing risks and benefits. Women described this process as something they mostly did alone, though speaking to HCPs was cited as one method of trying to work through their concerns. HCPs were sometimes able to put risks in context for women allowing them to consider what the risk to them was.

> *"I guess a promising thing was the doctors telling me that there's I think they said it was like a 1 in 10,000 chance that something will physically go wrong and I'll have to get [the IUC] surgically removed so it's pretty good odds to me."* – Becca

To decide to use LARC, women described needing enough information, needing to feel the positives of a LARC outweighed the negatives, and needing to feel confident in their decision. Participants described the point where they could make a decision as having had all their questions answered and feeling like they had been given enough information about LARC. This coincided with women sharing they felt the positives of a LARC outweighed the negatives.

> *"I think I went through all the things I could have to make sure I know as much information as I could and factor in the risk and the benefits and cons and pros."* – Isabelle

3.3.3 Deciding for Yourself

Despite describing how those around them could support their decision, women mentioned a strong desire to make the final decision for themselves. Partners were mostly described as not having a say in the final decision or not being affected by a woman's choice of contraceptive. Three participants initially described their decision-making as a joint decision with their partner, yet two women later in their interviews described having the ability to decide what method is best for them regardless of their partner's opinion. Some women felt they had decided to use a LARC before speaking to HCPs, leaving the HCP influence as support for their decision only. Ultimately, nearly every participant described this as a decision they made by themself.

> *"[My husband] knew what was going on, he knew that I decided to go for the IUD, but you know he was part of that decision making process eventually."* – Ebere

Participants described how the people around them could influence their decision making. Friends and family, as well as HCPs, often supported women by talking about LARC and

sharing positive experiences. Women also described feeling that their decision was supported by partners and HCPs and that their personal needs remained the focus during the process. Some participants described considering how their choice of contraceptive could impact their partner or taking their partner's opinions into consideration.

> *"I had um some talks with my boyfriend he was wanting me to get back on [the IUD] because we both like the feeling of not having to worry about anything so we made that joint decision."* – Ami

3.3.4 The Variable Experience of Access

While each participant had their own unique experience with accessing a LARC method, several factors were perceived by women to affect their ability to access LARC. Each of the five factors (Figure 3.1) could either facilitate or hinder women's access and influenced the process independently.

The first factor was the availability of LARC services and women's awareness of service options. While all participants eventually learned of the BCC, a few had initially reached out to other providers and clinics to access a LARC. Women reported learning of the BCC through Internet searches, having friends or family who had used the BCC, or from other clinics during their attempts to locate LARC services. Several women also described what they perceived as a general lack of awareness of where women could go to access LARC methods. The lack of awareness reportedly affected women's ability to access contraception in general and contributed to the amount of effort women exerted when trying to locate LARC services.

> *"I walked to the student service office and they printed out the name of a walk-in clinic and so that afternoon I walked to the walk-in clinic and I get inside and I talked to them*

and they said "we don't take walk-ins since COVID." At that point I'm feeling a little bit lost I'm like "I'm gonna go to the [hospital] and ask them whether they provide the service or if not where I can find it." So I go to the [hospital]… and I'm talking to them they're like "sorry we don't provide the service here so we're going to refer you to the Birth Control Centre."" – Lesya

The healthcare provider role in accessing LARC was described by women as multifaceted. Women described wanting a supportive relationship with HCPs that included open communication. Providers from the BCC were described as knowledgeable and supportive, which helped to ensure women were comfortable accessing care through this clinic. Some women described experiences with providers from other clinics where they felt the HCP did not know enough about LARC to assist them in either their decision-making process or access. This perceived lack of HCP knowledge prevented women from having discussions about LARC.

"My previous doctor was like kinda hard to talk to sometimes because he always seemed very rushed and like he didn't really want to have much of a conversation…I felt like if I wanted to sit down with him and talking about an IUD I felt like it would probably be a bit of a challenge." – Becca

Appointment availability and wait times were mentioned as factors that women considered when accessing LARC. Participants reported the BCC had appointments available soon after the initial consultation, sometimes offering same-day insertion. Women also appreciated that the BCC was flexible and was able to accommodate changes in patient

schedules. This was especially important to the participants who felt they required a LARC on a short timeline.

> *"I went to the Birth Control Centre because I thought it would be a lot faster and I figured they do it like all day every day so they know how it goes and they can just get it done real fast and they did!"* – Morgan

Availability of the device itself was another variable that could make LARC feel accessible or not. Some participants described either being provided a device through the BCC or being given a prescription they were able to fill that day. Others described having to wait for access to the device, both through pharmacies and the BCC, though this did not result in any participant being entirely unable to receive a LARC.

> *"[The clinic] had to order it through this compassionate care program so then about like two weeks later they called me."* – Charlie

Finally, the cost of a LARC and whether coverage was available was frequently mentioned by participants. Women described either being able to afford the device outright, having insurance coverage, or accessing a cost-support program offered by either the BCC or the LARC manufacturer. While all women were able to cover the costs of the device through one of the mentioned options, several participants cited cost as a reason for not getting LARC if they did not have insurance or the support programs.

> *"Cost was the thing yeah if I did not have coverage I don't know whether I would have been able to shell out like I don't know how much this one costs because it was just covered."* – Stacey

3.4 Discussion

This study explored women's experiences with deciding to use LARC methods. Additionally, it provides insight into the process women undertake when accessing a LARC for contraception. When considering a LARC, women actively sought out varied sources and types of information. Women needed to feel they had enough information and that the benefits outweighed the drawbacks before choosing to have a LARC placed. Even when women described having their inner circle or HCPs supporting their decision, they ultimately felt they were able to make the final decision for themselves. This study also highlights several factors that women perceive to affect access to the methods. The factors included the awareness and availability of LARC services, the healthcare provider role, appointment availability, device availability, and the cost to the patient.

Women valued hearing different perspectives on LARC, especially first-hand experiences describing what using a LARC was like. This finding was highlighted by multiple participants when describing their search for LARC information. This is similar to previous research where it was identified that women seek out multiple sources of information when making decisions around contraception.[47, 48] Women in our study described wanting information from HCPs about LARC, especially when determining how likely adverse effects would be to occur. They also described using Internet resources, yet LARC information on the Internet has been shown to lack quality.[49] Women turned to friends, family, and social media for both first-hand experiences of LARC use and to discuss their contraceptive options. Given this openness to hearing from multiple sources, there are opportunities for increasing women's ability to learn about LARC from reliable sources such as HCPs.

A key part of women's decision making was their ability to weigh LARC benefits and drawbacks. Participants mentioned several benefits they viewed LARC methods as having, including effectiveness at preventing pregnancy, convenience, privacy, and reduced menstrual bleeding. These benefits are similar to those previously identified in the literature,[50-52] and previous studies have found that women more often select LARC if they value a contraceptive that is long-lasting or forgettable.[53] Despite the many benefits mentioned by participants, misconceptions and fear around LARC methods were commonly described. Many of the concerns women had about LARC stemmed from negative stories they had heard and were interpreted as likely to occur to them. In our study, some participants described talking to HCPs and putting these risks in context while others chose not to consider an IUC or a contraceptive implant entirely due to a fear of adverse effects. During the consultation with healthcare staff from the BCC, HCPs described resistance to their attempts to contextualize LARC risks during counselling sessions. Research has shown that misconceptions around LARC can be corrected by HCPs easily.[54] However, that study described women's fears around LARC, specifically the fear of having an IUC inside them, was not corrected by HCPs and instead required that women hear positive first-hand stories from people who were using an IUC.[54] Our results show similarities to previous research as contextualizing the risks of LARC by HCPs was not always enough to resolve women's fears around LARC methods.

Women expressed a desire to have autonomy through the decision-making process around LARC. Several participants described instances where the opinions of people around them, such as a romantic partner or a family member, were considered but ultimately did not

sway their decision. This autonomy has similarly been described in other studies with contraceptive decision making not specific to LARC.[25, 55, 56]

The process of obtaining a LARC was described differently by each participant even though all women accessed LARC at the same clinic. Participants discussed not feeling comfortable discussing contraception with providers outside the BCC. This discomfort stemmed from a perceived lack of knowledge from providers and resulted in women choosing not to discuss LARC with certain providers or feeling their questions went unanswered. Several participants also encountered challenges when trying to locate an HCP that could offer LARC insertion. During the consultation, BCC staff members described encountering women frustrated with having to wait days or weeks for a gynecologist to insert a LARC when they were referred by their primary care provider. Women valued timely access to the devices and insertion once they have decided to use a LARC. A lack of providers trained to offer LARC has previously been identified in the literature.[14-16, 19, 20] Interventions that provide HCPs with the knowledge and training to offer LARC services is one possible way to increase LARC access, and previous research has shown provider training to be an effective option.[57-61]

Cost is an additional area where improvements can be made for access. Many participants were able to obtain LARC through cost-support programs or insurance coverage, though concerns about cost were still cited as a barrier to LARC. Research has explored women's decision making around LARC when cost barriers are removed and saw an increase in the number of women selecting a LARC when cost is not a factor.[29, 62] There are multiple ways these costs to women can be reduced. This could include increasing primary care provider awareness of the cost-support programs available for those unable to afford a LARC method.

Coverage through health systems is an additional option such as that recently announced in British Columbia, Canada where LARC methods are now fully covered for residents.[63]

There are a few limitations to this research. The study included only women who had chosen to use and were able to access a LARC method. Research into the experiences of women who were unable to access LARC in Alberta should be explored in future research. While LARC methods can be used by people of all genders with a female reproductive tract, transgender men and gender diverse people are expected to have reasons for selecting LARC that may not be concerns for cisgender women. Further research should be conducted into the experiences of transgender and gender diverse populations who use LARC. Participation in the study is voluntary and the experiences of the participants may be different from those who chose not to participate; for example, participants may have had stronger feelings around their experience with access, both positive and negative, than women who chose not to participate.

3.5 Conclusions

This study offers insight into women's decision-making process around LARC. It highlights the active role women take when considering their options for contraception, especially when searching for information and weighing the pros and cons. Additionally, women value being able to make the final decision about LARC for themselves even when considering the opinions of those around them. This study describes the process of accessing LARC as highly individual and highlights areas for improvement such as LARC cost and HCP training. These findings can be used to tailor the information provided to women during LARC counselling and increase women's access to LARC methods through individual practice and social changes.

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Table 3.1 Participant Characteristics

Pseudonym	Age Range	Chosen LARC	History of LARC Use	History of non-LARC Hormonal Contraception
Ami	30-39	Copper IUC	Yes	Natural Methods
Ruby	18-29	Implant	No	Injectable Contraception
Stacey	18-29	Implant	Yes	Oral Contraceptive Pill
Isabelle	18-29	Implant	No	Contraceptive Patch
Lesya	18-29	Implant	No	Emergency Contraception
Ebere	30-39	Levonorgestrel IUC	No	Injectable Contraception
Becca	18-29	Levonorgestrel IUC	No	Oral Contraceptive Pill
Lily	18-29	Levonorgestrel IUC	No	Oral Contraceptive Pill
Charlie	18-29	Levonorgestrel IUC	No	Oral Contraceptive Pill, Emergency Contraception
Darian	18-29	Implant	No	Oral Contraceptive Pill, Contraceptive Patch
Morgan	18-29	Levonorgestrel IUC	Yes	No

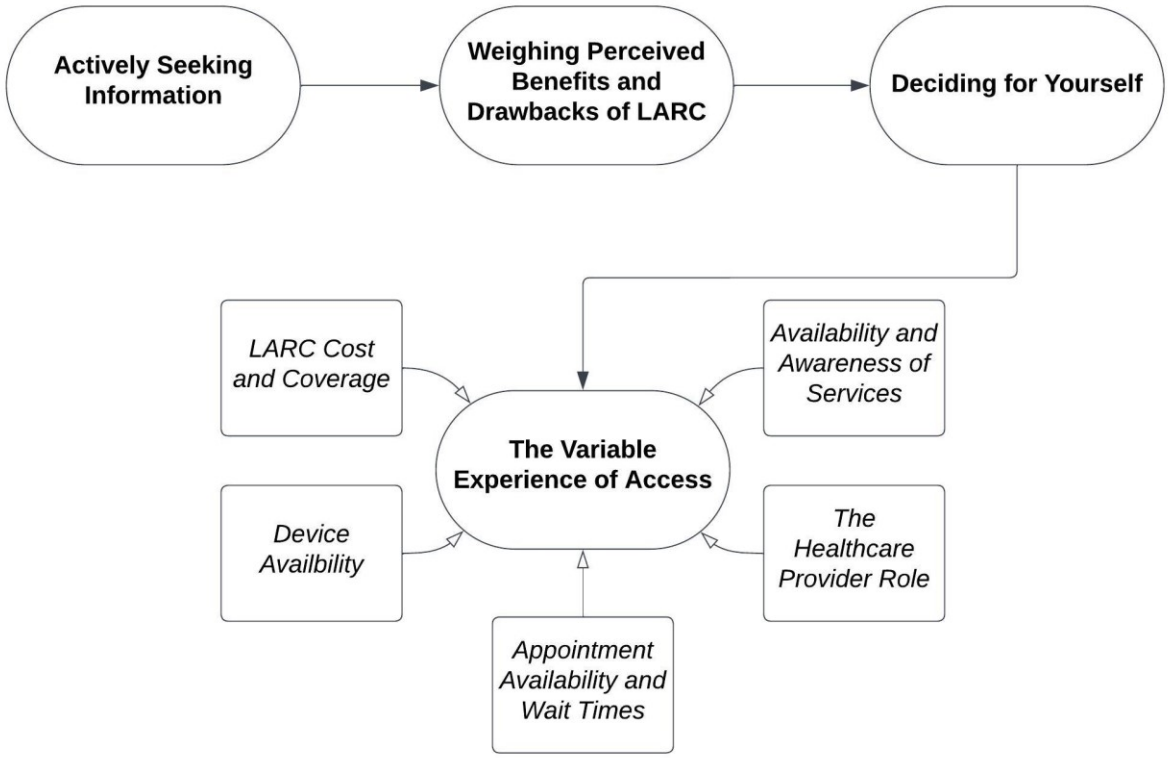

Figure 3.1 Thematic Map

Chapter 4. General Discussion

Contraception is a critical component of women's reproductive health. The rates of unintended pregnancy in Canada remain high despite the numerous contraceptive options available to women.[1] Unintended pregnancy has negative outcomes for both the mother and child in addition to the healthcare system burdens and cost associated with it.[2-7] Long-active reversible contraception (LARC) methods are considered the most effective reversible contraception and are recommended as first-line therapy when a woman wishes to avoid pregnancy.[8-10] While attempts to increase LARC use have been made, the rate of LARC use among Canadian women remains low leaving them at risk of contraceptive failure.[11, 12] To better ensure women in Canada have access to LARC methods, this thesis aimed to explore women's decision making around LARC and their experiences with accessing LARC.

Two research projects were undertaken to address the thesis objectives. A scoping review of the literature was conducted to identify implemented healthcare professional led LARC services. A qualitative research project was conducted to explore women's decision-making processes around LARC and to identify factors affecting access to LARC according to women. By examining existing services and speaking directly with LARC users, these findings will deepen the current understanding of women's decision-making around, and access to, LARC methods. Additionally, it will help direct ongoing research into existing care gaps.

4.1 Summary of Findings

4.1.1 Long-Acting Reversible Contraception Services by Pharmacists and Other Healthcare Professionals: A Scoping Review

The first project in this thesis is a scoping review exploring LARC services by healthcare professionals. The review followed the Joanna Briggs Institute Manual for Evidence Synthesis[13] and was reported following the Preferred Reporting Items for Systematic Reviews and Meta Analyses protocol extension for Scoping Reviews (PRISMA-ScR).[14] The search identified 40 articles meeting the inclusion criteria. The included articles described two unique service components which were used separately or together: counselling on LARC and provision of LARC methods. The identified LARC services varied in their application of the service components, the healthcare providers involved, setting, supports, and evaluation. To our knowledge, this is the first scoping review identifying existing LARC services by healthcare professionals. This research provides an exploration of what has been implemented to increase women's awareness of and access to LARC methods.

The first service component identified, counselling on LARC methods, was primarily used to increase women's knowledge of LARC and to enable informed decision-making.[15-24] To categorize the services identified in this review, counselling services were defined as any discussion between HCP and patients or any provision of information to women. The second service, provision of LARC methods, included any service where women were able to have a LARC inserted, including through referral networks. Women were often able to receive same-day LARC provision,[16-18, 21, 25-41] while some services additionally arranged for women to receive LARC on a date following the initial consultation if same-day insertion was not an option.[21, 26, 32, 34] Counselling and LARC provision were frequently implemented together.[17, 21, 25-28, 32, 36, 39, 41-45]

The healthcare providers involved with LARC services were primarily physicians, nurse practitioners, and nurses. Multidisciplinary teams were occasionally leveraged in delivering services to patients, including separating the responsibilities of counselling patients and insertion.[26, 46] Pharmacists were involved in providing LARC methods in 2 articles, both of which involved administration of injectable contraception.[33, 38] Services were implemented in several settings including community clinics, hospital, and pharmacies.

The most common evaluation measure was LARC uptake, with 75% of the included articles reporting uptake, though changes in the rate of LARC use were often not measurable as the baseline rate of LARC use was not always reported. Just over half of the services evaluating a change in LARC use saw an increase in use.[15-19, 21-23, 25, 29, 30, 36, 39-41, 45, 47-50] Some articles evaluated women's satisfaction on the newly implemented services.[17, 24, 26, 35, 38, 40, 50-52] One article included a description of the challenges encountered when introducing LARC services.[26]

Previous research has been conducted into healthcare provider training and found that training on LARC provision increased LARC uptake by women.[53, 54] Our review identified provider training as an important component in supporting LARC services, though the duration and type of training varied between interventions. The effectiveness of counselling strategies for contraception has also previously been investigated, though not addressing LARC specifically.[55] A systematic review by Carvallaro et al. identified that contraceptive counselling was associated with increased contraceptive continuation and contraceptive use, though the quality of the included studies was of concern.[55] Our work identified interventions where counselling was provided alone or with provision of LARC methods, and we

did not seek to determine which service component was more effective. A systematic review and meta-analysis is underway to assess the effectiveness of different LARC interventions.[56]

The findings from this scoping review highlight the flexibility available for implementing new LARC services. Service components can be tailored to the available setting, healthcare providers, and LARC methods offered. Further, this review supports the use of a broad range of healthcare professionals to offer LARC services.

4.1.2 A Qualitative Exploration of Women's Experiences with Decision-Making and Accessing Long-Acting Reversible Contraception

The second project in this thesis was a qualitative study exploring women's decision-making and access to LARC methods. The study was conducted through the lens of qualitative description and community engaged research, and data was collected through semi-structured, one-on-one interviews. The aim of the project was to understand how women make decisions about LARC, in addition to how they access the methods. Women were purposefully sampled through a community partner, the Birth Control Centre (BCC), if they had decided to use a LARC method and had obtained or were going to obtain the device. Eleven interviews were conducted remotely, by Zoom videoconferencing or phone, and were audio recorded before verbatim transcription. The collected data was analyzed through Reflexive Thematic Analysis, incorporating insights from community partner staff. To our knowledge, this is the first study exploring both women's decision-making around, and perceived access to, LARC methods.

Three themes were developed exploring women's LARC decision-making. The first theme, Actively Seeking Information, describes how women sought out information on LARC methods including first-hand experiences. Women accessed multiple sources of information,

and often raised concerns around the quality of information from Internet sources. Healthcare providers were considered important sources of information about LARC, including side effects and the insertion procedure, and were often described as the most reliable information source. Women's inner circles and the internet were sources of experiential information and concerns were raised about the accuracy of the information. The second theme, Weighing Perceived Benefits and Drawbacks of LARC, describes how women worked to determine whether LARC methods were a good option for them. Women identified the attributes of LARC they deemed important and compared them to the risks, for example the risk of adverse effects like uterine perforation. HCPs played an important role in helping contextualize risk levels. Women described needing to feel like they had enough information to make a decision, though the amount of information varied between participants. The theme Deciding for Yourself explores how women identified the decision to use LARC as one they made for themselves. While HCPs, partners, and inner circles often supported women's decision, the final decision was retained by women.

The final theme, The Variable Experience of Access, explores women's range of experiences with accessing LARC. Five independent factors were perceived by women to affect their access to LARC: availability and awareness of services, the healthcare provider role, appointment availability and wait times, device availability, and LARC cost and coverage. While all participants accessed LARC, or were going to obtain a method, through the same clinic, their individual journeys to obtain LARC were different because of these factors. For example, some participants initially contacted their primary care provider to discuss LARC options but found the information obtained was not enough for them to make an informed decision or did not

lead to a referral to a provider trained to insert LARC. Comparatively, when women accessed the Birth Control Centre directly, they described the providers as knowledgeable and supportive, and women were able to have a LARC inserted in a timely manner.

Several similarities in the findings from our study can be identified in the literature around contraceptive decision-making. The process of actively seeking information around contraception, both factual and experiential, has similarly involved HCP, inner circle, and Internet sources.[57-59] Additionally, women have been described as more likely to seek out additional information when receiving a prescription for contraception than for non-contraception prescriptions.[58] Women's search for contraceptive information was seen with LARC decision-making in our study, with all participants reporting some form of information gathering before deciding to use LARC. Shared Decision-Making (SDM), where both the provider and the patient offer their own expertise to agree on a treatment decision,[60] has been observed to increase women's satisfaction with their choice of contraception.[61] A recent study by Chen et al. described SDM in contraception as including "an iterative back and forth process between patient and provider," with the patient making the final choice in which method to use.[62] Our findings identify three ways HCPs contribute to SDM around LARC: acting as information sources, clarifying patient concerns, and supporting women's decision-making. Women reported collaborating with HCPs when considering LARC methods, yet all but one participant described making the final decision to use LARC on their own. This signals the importance of providers implementing SDM when discussing LARC methods with women.

A strength of this study was the use of a community engaged research framework. Through consultation with the Birth Control Centre (BCC) staff members working closely with

the study population a richer understanding of women's access to LARC was generated. Feedback from the healthcare providers offered insight into the nuances of access, highlighting women's frustrations with long appointment wait times. The BCC staff further supported the call to increase provider knowledge around the cost-support programs available for women wishing to use LARC, especially for primary care providers and pharmacists.

The results from this qualitative work provide insight into women's decision-making processes as they relate to LARC. Additionally, the results provide a description of women's experiences with accessing LARC methods. Healthcare providers play an important role as educators and can support women when considering LARC. There is a need for increased access to LARC methods that providers can help fill.

4.1.3 Integration of Scoping Review and Qualitative Findings

While interview participants did not describe receiving information from HCPs as "counselling," several similarities can be drawn between their descriptions and the counselling intervention component identified in the scoping review. Participants described discussing LARC with HCPs, including having their questions about the methods answered. Women also retained the final choice on whether to use a LARC when discussing options with providers from the BCC. Counselling interventions identified in the scoping review were implemented with the intention of increasing women's knowledge of LARC and enabling informed decision-making. These findings align with the principles of SDM,[62] suggesting that SDM for LARC counselling could increase a woman's ability to make informed decisions while ensuring women retain autonomy over their contraceptive decisions. One area where counselling provided by HCPs was not meeting women's wants is regarding experiential information. Interview participants

highlighted their interest in hearing first-hand stories of LARC use in addition to information provided about LARC by HCPs. Only one article was found to include experiential information in a counselling service, where feedback on women's likes and dislikes about LARC were collected and shared with other clients.[37] This desire for experiential information may require interventions from HCPs and external organizations to ensure women are receiving accurate information.

While many providers, including family physicians and pharmacists, would be well positioned to offer LARC counselling, barriers to implementation may arise. Time constraints in appointments or busy pharmacies may limit the provider's ability to engage in SDM. Additionally, the availability of providers trained to offer LARC counselling and insertion services was identified by women as a constraint. Further training to ensure providers are knowledgeable about LARC and insertion services would help ensure these services are accessible to those who need them. Training HCPs specifically to offer SDM around LARC methods is expected to increase women's abilities to consider LARC.

One concern that arose in the qualitative findings was how providers outside of the BCC did not know where to refer women seeking LARC services. This resulted in women needing to seek out trained providers out their own. Some LARC services included in the scoping review included referral networks where providers not trained to place LARCs could refer women to trained providers.[39, 40] Implementing similar processes would help connect women interested in LARC with the appropriate provider, reducing the burden of finding qualified providers currently placed on women. The creation of new LARC services would further reduce the work required by women as it would create new access points in the system.

Together, the findings of the scoping review and qualitative work identify room for improvement in how LARC counselling and insertion services are offered. These gaps can be filled through intentional training or the addition of new services. The experiences women described are critical in identifying areas where change would be impactful to their processes of information seeking and accessing LARC.

4.2 Implications and Future Directions

4.2.1 Clinical and Pharmacy Practice

The findings presented in this thesis show that there are opportunities for HCPs to open conversations with women about LARC even before women initially consider using a LARC method. This was especially noticeable as women seemed to consider using a LARC after previously using other methods. Women would have established relationships with the prescribing provider, like physicians, and with the pharmacist to access non-LARC contraceptives. By implementing regular LARC counselling when discussing contraceptive options with women, HCPs could introduce the idea of using a LARC earlier in women's contraceptive journeys and potentially increase LARC use.

There is room for increasing the role of pharmacists in offering LARC services and calls have been made for pharmacists to be more involved with contraception care and specifically LARC care.[11, 63] While the scoping review identified only two services where pharmacists provided injectable contraception,[33, 38] work by our research team found that pharmacists are involved in educating women on LARC methods.[64] Pharmacists reported providing patient education on intrauterine contraception (IUC) and 8% of pharmacists with their additional prescribing authorization reported prescribing IUCs.[64] Pharmacists are in an optimal position

to lead discussions about LARC methods with women who present with prescriptions for short-acting methods. These discussions could lead to women considering LARC and beginning the information seeking process.

Incorporation of pharmacists into multidisciplinary teams could leverage their roles as medication experts and help women when they are considering which contraceptive to use. Collaboration between pharmacists and providers who are trained on LARC insertion, such as physicians and nurse practitioners, could reduce provider workload. This strategy was implemented in some identified hospital-based services with several HCP disciplines.[26, 46] Community pharmacists are highly accessible healthcare providers[65, 66] and could act as an initial contact point for women when seeking contraceptive care, especially when trying to find information about LARC methods.

Challenges specific to LARC services incorporating pharmacists would also exist. Women may not consider pharmacists a viable option for LARC information as pharmacists are not trained to insert the methods. There may also be challenges with building a collaborative practice model between community pharmacists and providers who offer LARC insertion as this may create additional work for both providers. One article in the scoping review described concerns raised by healthcare providers about the increase in workload and current staffing levels in one article.[26] Accounting for this increase in workload would need to be accounted for when implementing new services.

Given the variety of settings where LARC services could be offered, options exist for the utilization of multiple provider disciplines. A hospital or primary care network setting would facilitate division of labour between HCP disciplines. For example, a pharmacist could provide

contraceptive counselling before a physician or other trained HCP offers LARC insertion. This would allow for greater access to LARC methods as the provider trained to insert the device is not required to complete all steps needed for decision-making and access. Comparatively, community settings would be less able to offer this streamlined arrangement. Instead, referral networks could be created between pharmacists and providers offering LARC insertion to help connect interested women to providers trained to offer LARC services. This would help bridge the gap in awareness for where to access LARC identified in our qualitative work. Connections between pharmacists and providers working at Rapid Access IUD and Implant Centres of Excellence clinics would be especially beneficial as it would help ensure women are being connected to clinics with reasonable wait times,[67] something women expressed as being important when accessing LARC during the interviews.

Creating supports like training or practice tools, similar to those identified in our scoping review, would help empower pharmacists to involve themselves in LARC care. Practice tools could be used to increase pharmacist knowledge in LARC, offer instruction on how to approach the topic of LARC with women, or be used as documentation tools to mitigate the amount of additional work required to implement a service. Training for pharmacists as professional development is another option and training could help pharmacists to feel confident in starting these conversations and help ensure the information women access is consistent.

4.2.2 Access, Awareness, and Education

Given the challenges described by women in locating LARC services, there is a need to create new access points in the healthcare system for women seeking LARC. Interview participants described seeking care at multiple sites before finding a provider offering LARC

insertion, and even described providers who were not able to provide counselling on LARC methods. Increasing provider knowledge on LARC methods should be one step in ensuring women are able to access reliable information on LARC. Training should address both provider knowledge on LARC and training to offer contraceptive counselling, ideally focused on SDM as women in the interviews described a similar counselling style as helpful when considering LARC. Expanding the availability of LARC insertion and removal services is an additional strategy, though HCP training alone may not increase LARC use.[68] Program directors and HCPs should consider which LARC service components identified in our scoping review are feasible to implement to expand access to LARC methods.

Ensuring women are knowledgeable about their contraceptive options is one strategy for improving access to LARC. This was identified in our scoping review as counselling women on LARC methods was a key intervention. There are several ways this could be achieved. First, HCPs could work to ensure they are incorporating discussions on LARC methods for any patient seeking contraception whose values align with the benefits of LARC. Second, as the Internet was identified as an important source of information for women considering LARC, working to ensure the information available is of high quality is necessary. Previous research has highlighted concerns around the quality of LARC information available on the Internet.[69] The qualitative work in this thesis identified that women are aware of these drawbacks to Internet information to some extent. This highlights a need for improving the quality of the information that women can find online. While highly reliable information sources exist,[70] there are ways this could be improved. Collecting and disseminating positive first-hand stories of LARC use could combat the negative stories often found online. This could be achieved by using the

platforms of existing women's health interest groups, though HCPs must be involved in reviewing collected stories to ensure the information shared is accurate and to provide further context. Additionally, professional organizations could conduct campaigns highlighting LARC and encouraging women to speak with their healthcare providers to find the contraceptive method that is best for them. Professional organizations could also develop new resources, both online and designed for in-office use, aimed at providing information around LARC insertion, removal, side effects, and complications. Through these methods, we can help ensure women are able to make informed decisions on LARC use.

4.2.3 Policy

There are a few potential policy changes that could be implemented to improve access to LARC methods. The first is around the cost of LARC. Reducing or removing the direct cost to women has been shown to improve women's ability to access LARC methods.[71] Additionally, women described challenges with affording LARC during the interviews. Recent changes in British Columbia have been implemented so that LARC methods are fully covered for all residents,[72] and there have recently been calls to implement free contraceptives across Canada.[73] Until LARC is fully covered for all people who wish to use it, there is room to help bridge the coverage gap by ensuring providers, especially pharmacists, are aware of cost support programs through LARC manufacturers or programs similar to the BCC.

Limited access to providers trained to offer LARC services was a concern raised by women during the interviews. Not all providers with the ability to offer LARC insertion are trained to do so, with about 18% of primary care providers trained on implant placement and under half of family physicians trained on IUC insertion in the United Stated.[74-76] The

proportion of providers trained to offer implant services is expected to be even lower in Canada as the contraceptive implant was only approved in late 2020.[77] This is a concern as Canada faces a shortage of physicians[78-80] further reducing the access to LARC services. Increasing the proportion of providers trained to offer LARC services, in addition to recruiting new providers to Canada, would contribute to the accessibility of LARC services.

4.2.4 Future Research

The findings from both the scoping review and the qualitative work help to establish a platform on which further research can be built. The scoping review identified two service components that have been used to expand LARC access in addition to several supportive elements like provider training. However, it did not attempt to evaluate which version of a LARC services was the most effective for increasing LARC access. Further research is needed to determine the services that would integrate well into the Canadian healthcare system. When building LARC services, care should be taken to establish the current baseline LARC use so that changes in use can be observed. Additionally, the review noted that most services lacked patient input in both the service design and the evaluation. Future services should be developed that incorporate patient ideas and feedback to ensure the services work for not just the providers and system but also for the end users.

The qualitative work included in this thesis investigated the LARC decision-making and access experiences of only cisgender women. However, 1 in 300 people over the age of 15 in Canada identify as transgender or non-binary.[81] There are priorities around contraceptive care for transgender individuals including desire for menstrual cycle suppression and minimizing estrogen levels.[82] These priorities may directly affect the patient's choice of

contraceptive method and may contribute to a different decision-making process around LARC. Research into the decision-making and access needs of transgender and non-binary people should be completed to ensure their needs are understood and accounted for when developing LARC services.

Our findings around LARC decision-making and access are based on the experiences of women who obtained care in an urban centre. While the majority of Canada's population lives in urban centres, nearly 1 in 5 Albertans live in a rural setting.[83] Rural communities face unique challenges such as recruiting and retaining providers,[84] meaning there may be additional access barriers that did not arise through our qualitative work. Further research into how people experience accessing LARC in rural communities should be completed to determine what steps must be taken to ensure all Canadians have access to LARC care.

4.3 Reflection on the Research Process

At the beginning of this thesis, I had little experience with qualitative research methods. When developing the protocol for my qualitative work I had a vague understanding of my interpretive framework, that of social constructivism. This had been a shift from that of post-positivism which I held throughout my undergraduate training. Through the interpretation that realities are constructed through lived experiences and interactions,[85] the narrative generated through the qualitative work in this thesis sought to connect women's experiences with healthcare provider and researcher perspectives and knowledge. The Qualitative Description (QD) and Community Based Participatory Research (CBPR) frameworks were essential in guiding how I worked with the data.[86-89] QD complimented my social constructivism framework as QD recognizes reality as socially constructed.[86-88] CBPR

contributed depth to my understanding of the phenomenon by allowing for incorporation of feedback from BCC staff. The collaboration between the research team and BCC staff was critical in shaping our understanding of women's access to LARC methods. It deepened our understanding of barriers to LARC care and helped contextualize women's experiences by offering the perspective of providers working directly with the study population.

As a woman using LARC I identified as both an insider to women's decision-making and LARC access. I needed to identify my previous experiences with considering and accessing LARC to ensure they were not over-represented in the analysis. To do this I practiced reflexivity and writing memos to ensure I both knew my beliefs and experiences with the phenomenon and that I was aware of my reactions to the data.[90] To maintain awareness of my personal experiences, I was careful to note experiences I felt closely matched my own. During the initial analysis I noticed that I was most drawn to stories I connected with. To help balance this, I began searching for experiences women shared that left me feeling confused or uncertain, or stories I felt contradicted my experiences. This allowed me to keep the analysis focused on the shared experiences of women rather than my own experiences. I found I needed to let go of early themes that had initially resonated with me personally.

Following Reflexive Thematic Analysis (RTA) facilitated both my own understanding of qualitative data analysis and my understanding of the phenomenon. The iterative nature of RTA allowed me to move between stages of data analysis in a manner that best suited my learning needs.[90, 91] Each time I returned to data analysis or initial theme generation my understanding of women's experiences deepened and I was able to generated a more nuanced analysis. Discussions with the research team and the BCC staff further deepened the analysis

and facilitated my growth as a qualitative researcher further by providing insights I may have missed, allowing me to explore new areas of the data. Feedback from the BCC staff specifically helped explore the nuances in appointment availability and wait times by reporting on how women accessing the BCC often chose to visit this clinic over waiting weeks for a gynecologist. Without input from staff, further participant interviews may have been required to fully understand this aspect of LARC access.

4.4 Conclusions

Using a scoping review of the literature and a qualitative research design, this thesis explored women's decision-making around, and access to, LARC methods. The findings showed that there are many factors affecting access to LARC, and there are several possible strategies that could be used to ensure women are able to use LARC methods. Additionally, the findings provide new insights into how women decide to use LARC methods. The results suggest that healthcare providers, including pharmacists, could be better leveraged to ensure women have reliable sources of LARC information. This thesis highlights the ongoing need for practice and policy changes to support women in accessing the contraceptive methods that are right for them. Future research may consider exploring the implementation of LARC services in Alberta to improve access to the methods.

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Appendices

Appendix A. Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist*

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	27
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	28-29
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	30-31
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	31
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	31
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	32
Information sources	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	32
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Appendix B
Selection of sources of evidence	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	33
Data charting process	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	33
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	33-34
Critical appraisal of individual sources	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the	Not Done

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
of evidence		methods used and how this information was used in any data synthesis (if appropriate).	
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	33
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	34 and Figure 2.1
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	34, Appendix C
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	Not Done
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	Appendix C
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	34-39
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	39-42
Limitations	20	Discuss the limitations of the scoping review process.	42-43
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	43
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	44

*Tricco AC, Lillie E, Zarin W, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. Ann Intern Med. 2018;169(7):467-73. doi: 10.7326/M18-0850

Appendix B. MEDLINE Search Strategy

MEDLINE **Ovid MEDLINE(R) ALL** 1946 to July 22, 2022	1. long-acting reversible contracept*.mp. 2. ((intrauterine or intra-uterine) adj3 (contracep* or device* or system*)).mp. 3. (IUD or IUDs or IUCD or IUS).ti,ab,kf. 4. (etonogestrel and (intrauterine or intra-uterine)).mp. 5. (levonorgestrel and (intrauterine or intra-uterine)).mp. 6. ((inject* or implant*) adj2 contracept*).mp. 7. contracepti* coil*.mp. 8. ((intracervical or intra-cervical) adj1 (contracep* or device*)).mp. 9. (Depo-provera or Depoprovera).mp. 10. Medroxyprogesterone.mp. 11. or/1-10 12. uptake.ti,kf. or uptake.ab. /freq=2 13. (campaign* or counsel* or initiative* or program* or service* or training).ti. 14. provision.ti,kf. or provision.ab. /freq=2 15. (train* adj5 (insert* or inject* or counsel* or provider* or intervention*)).mp. 16. (training or intervention*).ab. /freq=3 17. counsel*.ab. /freq=2

	18. or/12-17 19. (practitioner* or prescriber* or pharmacist* or pharmacy or pharmacies).ti,ab,kf. 20. exp Pharmacists/ 21. (doctor* or clinician* or physician* or nurse*).ti,ab,kf. 22. exp Physician-Patient Relations/ or exp Physicians/ or exp Physician's Role/ 23. exp Nurse's Role/ or exp Nurses/ 24. ((healthcare or health care or primary care) adj1 (provider* or worker*)).ti,ab,kf. 25. or/19-24 26. 11 and 18 and 25

Appendix C. Article Characteristics, Services, and Results*

Author & Year	Study Objective	Country & Setting	Participants	Providers & LARC Type	Services	Program Supports	Planned Outcome Measures	Results
Bhadra et al. 2018 [20]	To see if more women will accept LARC if nurses are trained in FP counseling and PPIUC insertion.	India Inpatient and Outpatient Hospital Quantitative (non-randomized)	Women ages 18 to >35 years attending the prenatal clinic or labor room in early labor.	Nurse Midwives IUC (not specified)	-Women counselled on postpartum insertion of IUCs and about the advantages and importance of family planning during prenatal visits and at time of admission (not in active labour, before delivery). -Consenting women had an IUC inserted within 10 minutes of placental expulsion following vaginal delivery by a doctor or nurse or by a doctor during C-section. -Follow-up 6 weeks after delivery.	Providers trained to insert PPIUCs. Included theory lectures, video demonstrations, practice on anatomical models, and hands on training.	LARC Acceptance Complication rates	-PPIUC uptake increased from <1% to 37.4%. -71.5% inserted post-vaginal delivery, 28.5% inserted during C-section. -92.8% of vaginal insertions completed by nurses. -Complication rates similar for nurses vs. physicians. -31.3% of women counseled at prenatal visits, 68.7% of women counseled at admission. -63.4% of women returned for 6-week follow-up. 93.7% were willing to continue the IUC.
Binanga et al. 2016 [21]	To highlight the potential of pilot research studies to achieve advocacy objectives.	Democratic Republic of Congo Community Mixed Methods	Description not provided	Medical and nursing students Injection	-Students provided counselling to women through campaign days, to couples and women with house-to-house visits -Contraceptive delivery done through campaign days, house-to-house visits, and distribution on campuses or other community sites.	7 days of training on contraceptive technology, managing side effects, delivery of 4 methods (condoms, pills, CycleBeads, Sayana Press), and procedures for referring for IUCs and implants. 1 day practicum training.	Not Stated	-374 people accepted DMPA-SC. -Of acceptors, 51.6% were new contraception users. -92.3% of acceptors received a second injection. -Majority of acceptors were satisfied with the counselling and services received from the students.
Cameron et al. 2017 [22]	"To determine whether antenatal contraceptive counselling was acceptable to	Scotland, UK Inpatient Hospital and Community	Women ages <20 to 44 years old booked for antenatal care.	Midwives Obstetricians IUC (copper	-Women discussed contraception with a midwife at 22-week antenatal visits. Emphasis placed on LARC. Chosen method	Training: LARC insertion training (physicians), group training on postpartum contraception	LARC Uptake Barriers and facilitators to providing counselling and	-78% of respondents remembered an HCP discussing contraception in the antenatal period. -9% of women received LARC methods. Additional 4% were referred for "fast-track" IUC.

Author & Year	Study Objective	Country & Setting	Participants	Providers & LARC Type	Services	Program Supports	Planned Outcome Measures	Results
	women, and LARC uptake."	Mixed Methods		or LNG) Implant injection	recorded at 32/34-week visit. -IUC provided if delivering by elective C-section or by "fast track" services at a local sexual health service 4-weeks later. Other methods (implant, injection, pill, condoms) provided at discharge from the maternity service.	(midwives). Midwives used a short verbal script and leaflets on postpartum contraception during counselling. Website for audiovisual information.	contraception Women's views and satisfaction on counselling	-60% of respondents who discussed contraception with an HCP said the information came at the right time. -44% said they were planning to choose a LARC. -Focus group themes included views on antenatal contraceptive counselling, barriers to provision of contraception after delivery, and postpartum contraception becoming part of routine care.
Casella Jean Baptiste et al. 2018 [23]	To expand contraceptive access to hospitalised women of childbearing age who had high risk factors for increased morbidities and mortality.	Haiti Inpatient Hospital Quantitative (non-randomized)	Hospitalized postpartum women with cardiomyopathy	Nurse midwives Nurses Residents Implant	Education of clients on long-term FP methods. Women counselled in hospital on all available options (including DMPA, IUCs, implants)	Training of labor and delivery, postpartum, and internal medicine clinicians on family planning counselling and implant placement. Root cause analysis completed to determine why long-acting contraception wasn't accessible to hospitalized women.	LARC Uptake	-Implant acceptance increased from 0 to an average of 47 implants placed per month. -Average 20% of women delivering in hospital received a long-acting method (increase from 5% at baseline). -91% of women were satisfied with the implant (did not have removed). -Provider LARC knowledge on assessment increased from mean 64% to 89%.
Cooper et al. 2018 [24]	To train maternity providers in vaginal PPIUC insertion and subsequentially introduce and evaluate a routinely available service.	Scotland, UK Inpatient Hospital and Community Quantitative (non-randomized)	Women ages 16 to 44 years, anticipating vaginal birth, and interested in PPIUC. Excluded: contraindications to IUC.	Obstetrical doctors Midwives Community Teams: Midwives, general practitioners, family nurses.	-Information about IUC given to women at 20-week antenatal visit. Choice recorded in women's file. -Patient eligibility was confirmed by providers prior to placing IUC. -After confirmation of eligibility and consent	-"Train the trainers" model used. -Obstetric doctors and midwives trained on PPIUC: risks/benefits, training video, and practical simulation. -Educational	LARC Uptake Complications Expulsion Method continuation at 12 months Patient and	-4.6% of women requested and were eligible for PPIUC. -96.1% of eligible women received PPIUC. -63% of insertions were completed by midwives. -29.8% of acceptors experienced device expulsion by first follow-up. An additional 31.0% had partial expulsion. -88.7% of women with expulsion or partial expulsion had a device re-

Author & Year	Study Objective	Country & Setting	Participants	Providers & LARC Type	Services	Program Supports	Planned Outcome Measures	Results
				IUC (copper or LNG)	given, IUC inserted. -Women recommended to attend F/U appointment at 4-6 weeks post-insertion for a thread check.	sessions for community staff (midwives, GPs, family nurses) -Physician resources: staff posters and standard operating procedures. -Leaflets and posters provided for women.	insertion-related characteristics associated with expulsion Patient satisfaction at 6-weeks postpartum	inserted. -98.3% of women said they would recommend PPIUC. -79.6% of women reported continued use of IUC at 1-year.
Day et al. 2020 [25]	To assess the feasibility and acceptability of integrating a contraception clinic at an OAT service to improve access to contraception, especially LARC, for women receiving OAT.	Australia Community Quantitative (non-randomized)	Women at risk of pregnancy (sexually active with a male partner, age <50 years, not using contraception, not wishing to get pregnant). Mean age 38 years Excluded: tubal ligation	General practitioner Gynecologist IUC (not specified) Implant	-One-day per week contraception clinic established at an OAT program. -Available by appointment and drop-in. -Implant available to women on site at no cost. IUC insertion available at hospital across the road. -Women's knowledge of contraception, especially LARCs, assessed at screening.	N/A	Women's eligibility for the clinic Clinic utilization Follow-up rates Acceptability of LARC to women Acceptability of contraception in OAT program	-Survey identified 23 eligible women. -Two women accessed the clinic over 6 months. -One woman received an implant. -One referred for assessment and did not return to the clinic. -Majority of surveyed women were supportive of the opioid agonist treatment staff discussing contraception.
Eluwa et al. 2016 [26]	To determine key factors associated with uptake of PPIUC insertion in Nigeria.	Nigeria Inpatient Hospital and Community Quantitative (non-randomized)	Women meeting IUC eligibility criteria. Median Age: 28 years Excluded: women with contraindications to IUC.	Health care providers (type not specified) IUC (copper)	-Patients counselled on all available methods, including IUC. -At delivery, women who met eligibility criteria were offered IUC. IUCs were inserted within 48 hours of delivery. -IUC acceptors given a 6-week F/U appointment to determine if the IUC was still in place	-2 days didactic, 3 days practicum competency-based training on IUC insertions on models and patients. -Quality technical assurance exercises conduced twice yearly minimum. -Supportive supervision and mentoring for	LARC Uptake Factors associated with uptake	-41% of women accepted PPIUC. -Women with no education or only primary education more likely to pick IUC than those with post-secondary (aOR 2.03; 95% CI: 1.20-3.42). -Women with previous contraceptive use less likely to pick IUC (aOR 0.68; 95% CI: 0.55-0.84). -Single women more likely to choose IUC (aOR 6.76; 95% CI: 1.82-25.07). -No effect seen based on age.

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						HCPs throughout the intervention.		
Emtell Iwarsson et al. 2021 [27]	To evaluate the effect of structured contraceptive counselling on the uptake of long-acting reversible contraceptives and pregnancy rates.	Sweden Community Quantitative Cluster Randomized	Women ≥18 years old, sexually active or planning to be within 6 months, had pregnancy prevention as primary reason for contraception. Median age 24 years	Nurse-midwives Physicians IUC (not specified) Implant	-Patients received structured contraception counselling with an intervention package at various clinic types (abortion, youth, and maternal health). -Package presented all reversible contraception methods and their effectiveness, pros & cons, with aim of enabling informed decision making. -Video watched by patients prior to counselling. Remaining parts of the package used by HCP during counselling. -Control: routine counselling, no given structure.	Package: 7-minute video, 4 key questions (domains: dealing with pregnancy if it occurred, intended duration of contraception use, menstrual bleeding patters, and menstrual pain), modified tiered effectiveness chart showing typical use failure rates, and a demonstration box of contraceptive models.	Choice of LARC after counselling LARC initiation at 3 months Pregnancy rates at 3 and 12 months	-More participants in the intervention group chose LARC after counselling than control (OR 1.97, 95% CI 1.19-2.35). -More LARC use in abortion clinics (OR 2.36, 95% CI 1.34-4.15) and youth clinics (OR 2.31, 95% CI 1.48-3.62) -No change in maternal health clinics LARC use (OR 0.99, 95% CI 0.53-1.83). -Participants who did not intend to use LARC had higher odds of selecting LARC after counselling than control (OR 3.02, 95% CI 2.14-4.28). -A higher proportion of intervention participants initiated LARC by 3-months than in control (OR 1.74, 95% CI 1.22-2.49). -Pregnancy rates lower in intervention (OR 0.62, 95% CI 0.16-2.36) and at 12-months (OR 0.57, 95% CI 0.43-1.31).
Envall et al. 2021 [28]	Aimed to evaluate provider and participant satisfaction with the intervention package used in a cluster randomized trial in abortion, youth, and maternal health clinics and to explore whether satisfaction	Sweden Community Quantitative Cluster Randomized	Women ≥18 years old, sexually active or planning to be within 6 months, without a desire to conceive.	Nurse-midwives Gynecologists IUC (not specified) Implant	-Cross-sectional study on participants and HCPs in the LOWE Trial. -Surveys completed by HCPs for each participant seen.	-Before study: HCPs invited to 3-hour lecture & discussion on updates to contraception. HCPs introduced to intervention package. -Package: 7-minute video, 4 key questions (domains: dealing with pregnancy if it occurred, intended duration of contraception	Participant satisfaction with intervention package Provider satisfaction with intervention package	-88.0% of HCPs completed the survey. -More HCPs than participants found the effectiveness chart supportive (94.5% vs 55.9%, p<0.001). -More HCPs than participants found the box of models supportive (90.1% vs 51.3%, p<0.001). -The use of an educational video and key questions was new to 92.7% and 49.1% of providers respectively. -76.4% of providers had use and effectiveness chart and 81.8% had used demonstration models before. -Most participants who didn't know what method they wanted found the components of the intervention supportive: 77.5% video, 63.5%

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	differs between providers and participants or between clinic types.					use, menstrual bleeding patters, and menstrual pain), modified tiered effectiveness chart showing typical use failure rates, and a demonstration box of contraceptive models.		effectiveness chart, 62.7% box of models. -The intervention components were rated supportive more by participants who chose a different method than intended vs those who did not change: educational video (60.5% vs 39.5%, p<0.001); effectiveness chart (60.9% vs 39.1%, p<0.001); box of methods (52.8% vs 41.8%, p<0.001).
Foreit et al. 1993 [29]	To determine if it would be advantageous for Peruvian Social Security Institute to change its policy to permit postpartum FP.	Peru Inpatient Hospital Quantitative (non-randomized)	Married women of reproductive age (≤44 years) delivering in hospital. Excluded: Women who were sterilized or had a contraceptive method prescribed in hospital.	Physicians IUC (copper)	-Women could have an IUC placed immediately postpartum or before hospital discharge. -Two educators hired to provide in-hospital family planning counselling.	5-day training course on contraceptive methods, counselling techniques, and special aspects of the postpartum period. 4-days in service training in PPIUC insertion techniques.	LARC Acceptance LARC Prevalence Impact on postpartum outcomes Cost-effectiveness	-By the second semester of the program, 25% of women on the experimental ward received IUC. -At 40 days, 27.5% of women were discharged with an IUC vs. 12% in the control group (not significant). -At 40 days postpartum, 74% of women in control vs. 55.4% in the intervention used no contraception (p<0.01). -At 6 months, 31.3% in control vs. 18.2% in intervention used no method (p<0.01). -No difference on postpartum checkup attendance.
Goodman et al. 2008 [30]	To evaluate the cumulative impact of three different interventions on IUC utilization in a Planned Parenthood agency.	USA Community Quantitative (non-randomized)	Women presenting for well-woman exams or FP counselling. Age range not reported. Exclusion criteria not reported.	Clinicians Clinic staff IUC (copper and LNG)	1. Immediate post-abortal IUC insertion. See 2 3. Simplified screening criteria for low-risk candidates allowing for same-day insertions. -Phase 1: Control -Phase 2: Interventions 1 and 2 -Phase 3: all interventions	2. Staff and clinician IUC training provided over 6 months. Included new indications and evidence, insertion instruction, IUC counselling, and improvements to patient education materials.	Change in LARC utilization Complications	-IUC insertions increased from 28.1 to 70.7 per month on average in phase 2 (rate ratio 2.51; 95% CI: 2.25-2.82). -Insertions increased to 122.0 per month in phase 3 (rate ratio 4.34; 95% CI: 3.95-4.89). -A nearby clinic saw only a 20% increase in IUC uptake, 15 times less than the intervention site. -Complications occurred in <2% of the study populations. -Expulsion rates were 0.7% for interval insertions and 2.1% for post-abortal insertions. -12.2% of insertions resulted in voluntary removal.
Harrison et	To observe if	Guatemala	Women ages 15-	Nurses	-At the 40-day	N/A	LARC Initiation	-Intervention implant use at 3 months

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al. 2020 [31]	the reduced access barrier by providing contraceptives at the final home visit was associated with an increase in implant uptake by 3 months postpartum.	Community Quantitative Cluster Randomized	35 who had not started a contraceptive method. Median age 21.8 years.	Implant	postpartum visit (final of 6 routine visits), nurses would screen women for study participation. -Intervention: Nurses brought a kit with contraceptives (condoms, pills, injection, and implant). Contraceptives were offered to women at no cost in their homes during this visit. Participants screened by nurses using Medical Eligibility Criteria to ensure safety. -If a woman wishes to have an implant removed, the nurses can remove it in the home or advise women to have it removed at a centre. -Control: Routine care including comprehensive contraceptive education		by 3-months Overall contraceptive uptake Contraceptive continuation Pregnancy rates Patient satisfaction with method Additional: reach, effectiveness, adoption, and implementation of intervention	higher than control (RR 1.3, 95% CI 1.2-1.4). -Overall contraceptive uptake at 3 months higher in the intervention than control (RR 1.3, 95% CI 1.1-1.5). -3-month method continuation rates (intervention): implant 90%, injection 76%, pills 80%, condoms 50%. -Reasons for discontinuation: side effects, partner preference, sterilization, not wanting contraceptives anymore, forgetting to take pills, unknown. -At 3 months, 90.0% of women using a contraceptive were very satisfied. -Of those who initially declined a contraceptive in the intervention (n=34), 19 started a method later via community access. -Control arm: 44% of participants had not started a contraceptive by 3-months. Of those who did start, 53/56 got the injection, 1/56 used natural family planning, and 1/56 used an implant. 53/56 were very or a little satisfied.
Harrison et al. 2022 [32]	To present initial contraceptive choices of women offered postpartum contraception in rural Guatemala. The hypothesis is that comprehensive	Guatemala Community Quantitative Cluster Randomized	Women ages 15-35 years, had a 40-day postpartum visit, could provide consent, and had not started a contraceptive.	Nurses Implant	-Intervention: women were offered the standard of care (comprehensive contraceptive education) plus the option to start a contraceptive method in their home that day free of charge during the 40-day postpartum visit.	-Nurses trained to place the implant and bring contraceptive methods (implant, injection, pills, condoms) to the 40-day postpartum visit (final of 6 routine visits) in women's homes.	Contraceptive use at 3-months and 1-year	Intervention Clusters -33.3% of women chose the injection, 27.8% chose the implant, 29.6% declined to start a method, 4.6% chose pills, 1.9% chose condoms, 1.9% data missing. -Among those who chose the implant (n=30), 63.3% chose if because they thought it was the best option offered, 13.3% because it was long acting, and 6.7% because other women in the community chose it.

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	contraceptive education, improved access and availability through home delivery, and training of community nurses to place implants might increase uptake rates.				-If a woman wishes to have an implant removed, the nurses can remove it in the home or advise women to have it removed at a centre. -Control: women received the standard of care and were advised on how to obtain a contraceptive method.	-Nurses brought a kit containing contraceptive methods (condoms, pills, injection, implant) and a Medical Eligibility Criteria chart. Chart used to screen women for contraindications at study enrollment.		-Of those that chose the injection, 32.4% chose it because they'd used it before, 21.6% because other women used it, and 24.3% because they thought it was the best option offered. -Reasons for not selecting an implant: fear of having it in the arm, starting a method they had used before, afraid to have it placed at home, heard negative things about it, not wanting to deal with removal, afraid of side effects, unknown, or individual reasons. -Control women intended method: 43% planned to use the injection, 18% unsure, 11% implant, 10% no method, 2% copper IUC, and 1% condoms. -Women asked if they would be interested in having an IUC placed in the home: 56.7% no, 14.9% yes, 23.1% don't know.
Hoke et al. 2012 [33]	To determine if CBD workers were able to provide DMPA, if the service delivery functioned as intended, if DMPA provision by CBD workers was acceptable to the workers, and how the program affected levels of contraceptive use	Madagascar Community Quantitative (non-randomized)	Women ages 15-49 years	CBD workers Injection	-Services delivered in and out of patient homes. -Workers provided referrals for other methods to clients.	-3-day training session on DMPA provision including reproductive physiology, available methods, and counselling, screening, safe injection technique, infection prevention. -Job aids provided to workers: DMPA counseling/injection guidebook, eligibility checklist. -Practicum and written test completed by CBD workers.	Service Quality Training evaluation LARC use Patient service acceptability	-1662 clients received DMPA from a CBD worker. 95% of the clients trusted the CBD workers. -41% of the 1662 clients were new or re-starting contraceptive users. The remainder switched to CBD-delivered DMPA from another method or clinic-delivered DMPA. -93% of eligible clients received a second DMPA injection. -96% of clients were satisfied with DMPA as a FP method. -No CBD workers scored below 14/18 point on knowledge of the injection technique.

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Ingabire et al. 2018 [34]	To develop and pilot test an intervention targeting supply, demand, and sustainability to increase the uptake of the PPIUC.	Rwanda Inpatient Hospital and Community Quantitative (non-randomized)	Women receiving care at a study site. Average age 28.3 years.	Community health workers Midwives Nurses IUC (copper)	-PPIUC counselling was delivered during the last antenatal visits and at L&D. -F/U appointment at 10 days post-insertion. CHWs later reminded women to attend F/U appointments. Physical exam and assessment of women's complaints completed. -Stakeholder involvement: engage ministry of health, district mayors, clinic directors, in-clinic family planning champions, and Family Planning Technical Working Group	-Trained providers in IUC insertions and follow-up, reimbursed for training. -Training was 2-days didactic and included information about PPIUC, counseling flipcharts, insertion/removal training. CHWs trained to counsel on IUCs and refer women to centers. -Providers given access to resources, counselling flipcharts.	Number of workers trained to promote LARC Number of providers trained to provide LARC Clients receiving LARC counselling Clients receiving LARC up to 6-weeks after delivery	-9,020 women counselled and delivered at the selected facilities. -48% of women counselled were interested in PPIUC at that time. -2,575 PPIUCs inserted, which was a 29% uptake among women who received one-on-one counselling. -Prior to intervention, only 46 PPIUCs were provided in the facilities. -Timing of counselling associated with uptake: at labour/delivery 34%, during antenatal care 9%. -60% of women attended their 6-week follow-up appointment. -Expulsions were low (6%).
Kaewkiatti kun et al. 2017 [35]	To compare LARC use between immediate and conventional postpartum contraceptive counselling and discover predictive factors of postpartum LARC use.	Thailand Inpatient and Outpatient Hospital Quantitative Randomized Controlled Trial	Postpartum adolescent mothers (10-19 years old) who were hospitalized and gave birth before reaching 20 years old. Excluded: known learning difficulties, mental health problems, no need for contraception, and contraindications to contraception	Family planning nurse IUC (not specified) Implant	-Eligible/consenting women received counselling by a trained FP nurse. -Intervention: counselling during immediate postpartum period (2-3 days postpartum) and at 4-6 weeks postpartum. -Control: counselling only at 4-6 weeks postpartum. -Based on the GATHER Guide. -If patient selected LARC, doctor would insert at that time.	N/A	Choice of LARC Factors predicting postpartum LARC use	-The chance of a woman using LARC in the immediate counseling group vs counseling at 4-6 weeks was nearly 4 times higher (OR 3.78, 95% CI: 2.18-6.57). -73.7% of women in the intervention vs 42.6% in the control used LARC for postpartum contraception. -Only the intervention was found to affect LARC uptake after adjusting for education, pregnancy intention, and parity.
Khu et al. 2013 [36]	To investigate factors	Rwanda and Zambia	HIV discordant couples with	Physicians	-At enrollment and F/U at 1-3 months,	N/A	LARC uptake	Rwanda: -Of eligible couples (want no further

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	associated with IUC and implant uptake among HIV-discordant couples undergoing couples voluntary testing and counselling.	Community Quantitative (non-randomized)	women ages 18-45 years wishing to wait at least three years before having another child.	Nurses IUC (copper) Implant	couples offered the full range of contraceptive methods. Couples wishing to space pregnancies by 3+ years or to limit childbearing were identified using a questionnaire. Interested people counselled about LARC and reminded the methods were available on site. -Interested individuals could have LARC inserted immediately or later. -STI screening and treatment and referral for antiretrovirals for HIV positive partners was offered to couples.			children or to wait ≥3 years before having more, n=365), 8.2% chose an IUC, 27.4% chose an implant, and 64.4% chose no new method. Zambia: -Of eligible couples (n=528), 7.2% chose an IUC, 26.3% chose an implant, and 66.5% chose no new method.
Lee et al. 2015 [37]	To see how a checklist reminding clinic staff to assess pregnancy intentions, provide structured contraceptive counselling, and offer same-day contraception initiation affected women's contraceptive knowledge and use.	USA Community Quantitative (non-randomized)	Women seeking walk-in pregnancy testing. Mean age 25 years. Excluded: Pregnant, using LARC, tubal ligation, or wanted pregnancy within 6 months.	Nurses Advance Practice Clinicians Gynecologists Medical assistants IUC (not specified) Implant	-Usual Care: pregnancy testing only. Contraception counselling happen sporadically. -Intervention: checklist that reminded staff to begin by asking women about their pregnancy intentions and when they last had intercourse. Goal was to offer women wishing to avoid pregnancy same-day LARC. -If pregnancy not desired, scripted	N/A	Contraceptive use Women's contraceptive knowledge	-More women reported having same-day LARC placement during the intervention (5% vs. 0%, p=0.02) -More women reported receiving emergency contraception during the intervention (22% vs. 5%, p<0.001). -Women more likely to report receiving counseling (p<0.001) and having greater knowledge of IUCs and implants (p<0.05) during the intervention. -Knowledge of the injection did not significantly change. -At 3-month follow-up, intervention group more likely to be using an IUC, implant, or injection (32% vs 18%, p=0.03). -No less likely to use condoms in the intervention group.

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					contraception counseling about LARC methods with offer of same-day placement was offered in conjunction with emergency contraception if indicated.			
Madden et al. 2019 [38]	To compare unintended pregnancy rates between women receiving structured contraceptive counselling plus usual care and women receiving counselling, HCP education, and LARC method cost support.	USA Community Quantitative (non-randomized)	Women ages 14-45 years, sexually active with male partner, not desiring pregnancy within 12 months, with an appointment at a participating site. Excluded: Current LARC users, male partner sterilized.	Health center staff IUC (copper and LNG) Implant	-Group 1: structured contraceptive counselling by trained staff (adapted from CHOICE) plus regular care from centre. Included evidence-based script presenting options in order of effectiveness. -Group 2: structured contraceptive counselling plus provider training and LARC cost support.	Healthcare provider contraceptive training. Evidence-based script given to providers.	Unintended pregnancy	-Group 2 had a 40% lower risk of unintended pregnancy at 12 months (5.3 vs. 9.8 per 100 women-years). -Unintended pregnancy aHR 0.60 (95% CI: 0.37-0.99). -Group 2 had higher LARC uptake. -Women who used LARC were less likely to have an unintended pregnancy ($p<0.01$).
Buckel et al. 2019 [39]	To compare the proportion of women receiving same-day insertion at enrollment among those desiring LARC between groups.	USA Community Quantitative (non-randomized)	Women ages 14-45 years, sexually active with male partner, not desiring pregnancy within 12 months, with an appointment at a participating site. Excluded: Current LARC users, male partner sterilized.	Physicians Nurse Practitioners IUC (copper and LNG) Implant	-Group 1: structured contraceptive counselling by trained staff (adapted from CHOICE) plus regular care from centre. Included evidence-based script presenting options in order of effectiveness. -Group 2: structured contraceptive counselling plus provider training and LARC cost support.	Providers educated on evidence-based recommendations for contraception and barriers to same-day LARC placement. Evidence-based script given to providers.	Rates of same-day placement among LARC acceptors	-Women in group 2 more likely to choose LARC (54% vs. 30.5%, $p<0.01$). -Among women who chose LARC (n=426), 13.7% in group 1 received the method at enrollment versus 53.8% of group 2 ($p<0.01$). -Women in group 2 were almost 5 times more likely to receive same-day placement: RR_{adj} 4.73 (95% CI: 3.20-6.98). -Reasons for not getting same day placement group 1: ordering from third-party pharmacy, returning with menses, provider wanting another appointment. -Reasons in group 2: not enough time for insertion (patient or provider), provider wanting another appointment.
Mazza et	To evaluate	Australia	Women ages 16-	Family	-Eligible women	Physicians trained	LARC insertion	-At 4-weeks after counselling, 8% more

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al. 2020 [40]	whether a complex intervention in family medicine practices resulted in increased LARC uptake.	Community Quantitative Cluster Randomized	45 years, sexually active with a male partner, not desiring pregnancy within 12 months, interested in contraception.	Physicians IUC (copper and LNG) Implant	screened by phone, asked to come to clinic for contraceptive counselling. Physicians would deliver structured contraceptive counselling adapted from CHOICE that focused on safety and efficacy of all methods (non-biased and scripted). -After screening, physicians either 1) provide a prescription for the method of choice, 2) offer same-day LARC insertion or a subsequent time for insertion, or 3) provide appointment for insertion of LARC method at one of the insertion clinics -Rapid referral for LARC to a local LARC insertion clinic for physicians that don't offer LARC insertions. -Control: usual contraceptive care without rapid referral network.	(online) to deliver structured contraceptive counselling and access to rapid referral LARC insertion clinics.	within 4-weeks of consultation Choice of contraceptive method LARC use at 6- and 12-months Quality of life	women had LARC inserted in the intervention group (95% CI: 1.5-15.4, p=0.018). -LARC uptake rose at 6 and 12 months with 44% and 47% of women using LARC in the intervention and 29% and 33% in the control. -No clinically significant differences in quality-of-life scores between groups. -44% of intervention vs. 8% of control physicians had initiated the structured contraception counselling when observed.
Mazzei et al. 2019 [41]	To increase uptake of LARC, specifically the copper IUC and the hormonal implant.	Rwanda Community Quantitative (non-randomized)	Women (mean 28 years old)	CHWs Nurses IUC (copper) Implant	-Clients educated about the full range of FP options. Fertility goal-based counselling identified women/couples wishing to delay pregnancy for 2+ years.	-CHWs trained about LARC methods, engaging couples together, and counselling based on fertility intention.	LARC uptake Demographic factors associated with LARC uptake	-78.7% of referrals issued by CHWs resulted in clinic visits (6072 visits). -LARC uptake increased over time from 39/month to 649/month. -57% of clients were not using contraception or were relying on condoms or traditional methods to avoid pregnancy. -After couples family planning

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					-After counselling, clinic referrals given to couples interested in LARC. Appointments could occur in the same or following months.			counselling, 94.6% selected a LARC method (79.1% implant, 15.5% IUC), 5.2% chose no method, 0.2% chose injectable, and <0.1% chose oral contraceptive pills. -Increase in LARC uptake post-implementation (p<0.0001). -Monthly IUC insertions increased from 29 to 61 (p<0.0001). -Monthly implants increased from 109 to 309 (p<0.0001). -Factors associated with LARC uptake (significant): referral being issues to a couple vs woman alone (aOR 2.7), religion being protestant (aOR 2.89) Catholic (aOR 3.05) or Muslim (aOR 2.50), having more living children (aOR 1.26 per child), desiring fewer children (aOR 0.84 per child), already using LARC (aOR 7.86) or injectable/oral contraceptive (aOR 0.45) vs condom alone.
Monastersky et al. 2007 [42]	To explore the potential of pharmacist-administered DMPA injections and feasibility and acceptability among patients, pharmacists, and clinicians.	USA Community Quantitative (non-randomized)	Women using DMPA, ages 19-45 years	Pharmacists Injection	-DMPA users at clinics were given the option of going to a pharmacist instead of their regular clinic for reinjection. -Pharmacists provided DMPA injections to women in the pharmacy.	Pharmacists completed contraception management training and training in injection technique.	Feasibility of contraceptive reinjection at a pharmacy Characteristics of women likely to use the service Women's acceptance of service	-69/77 total clients went to a pharmacist for DMPA reinjection. -One-half of women went to the pharmacist more than once. -44% of women considered pharmacist DMPA provision a valuable access option. -Women 20 years or older were more likely to select pharmacist injection. -About one-half of women said they would pay a fee for pharmacy reinjection service (up to $10). -2 pharmacists able to integrate injectable contraception services into their practice.
Mukamuyango et al. 2020 [43]	To present results of a program providing joint HIV testing and FP counselling, fertility goal-	Rwanda Community Observational	Heterosexual couples with women ages 21-40 years not desiring pregnancy within 2 years and not	CHWs Nurse counselors	-Flipchart used in group sessions that presented a fertility goal-based approach to contraceptive care. Highlighted the advantages of LARC	Training in counselling and LARC insertion/removal provided to staff.	Uptake of LARC within 1-month	-1290 couples were eligible and enrolled. -74% of couples selected LARC. -Uptake was higher among concordant vs discordant couples (79% vs 70%, p=0.0005) and with couples with HIV-negative men vs HIV-positive (77% vs

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	based LARC promotion and provision, and training, supplies, and protected time for service providers.		using LARC.	IUC (copper and LNG) Implant	for delaying pregnancy 2+ years. Illustrated IUC/implant insertion procedures and side effects/contraindications. Participants were asked a series of questions structured to help the couple agree on fertility goals and decide whether a LARC was suitable. -Women could choose to have LARC placed immediately or at a subsequent appointment.			71%, p=0.0152). -Male+/Female- couples less likely to uptake LARC than all others (66% vs. 77%, p<0.001). -Couples requesting LARC were younger, lived in Kigali and cohabitated fewer years, and had fewer children. -Higher uptake in non-Catholic clinics vs Catholic (85% vs 63%, p<0.0001). -Couples who had previously discussed LARC more likely to accept LARC than those that had not (94% vs. 54%). -Uptake higher in those with no education than with at least primary school education. -Higher uptake in couples planning to have more children vs those not planning to have more children (77% vs 72%).
Mwembo et al. 2018 [44]	To assess the acceptability of DMPA-SC provision by non-clinically trained CHWs among acceptors in a rural region.	Democratic Republic of Congo Community Quantitative (non-randomized)	Women, average age 27.7 years.	CHWs Injection	-CHWs offered DMPA-SC to women through door-to-door services along with the methods they were already providing.	5-7 days of training on DMPA-SC injection, side effects, and eligibility criteria. Included a standardized eligibility checklist specific for each available method.	Patient acceptability of service	-Almost three-quarters of DMPA-SC acceptors were new contraceptive users. Of those that had used contraception, over one-half previously used an injectable. -64.4% of women received the injection at home, 28% at a community outreach event, and the remainder at the CHW's house or outside. -92.1% of women at 3 months had or planned to have a second injection. -94.6% would choose to continue receiving DMPA-SC in the community by a CHW rather than a health facility. -97.9% of women were satisfied with the information provided by CHWs and 93.8% were satisfied with the overall service.
Ndegwa et al. 2014 [45]	To determine the effect of two levels of counselling on the provision of IUC at six weeks	Kenya Inpatient Hospital	Pregnant women between 36 weeks gestational age and term who attended the antenatal	Counsellor IUC (not specified)	-Control: routine counselling. -Intervention: intensive FP counselling by a trained counsellor.	N/A	LARC uptake Client acceptance of service	-Antenatal acceptance: uptake of IUC was higher in the intensive counseling group than control (78% vs. 66%, p=0.129). -Post-placental uptake: 63.3% of intensive vs 64.3% of control accepted

Author & Year	Study Objective	Country & Setting	Participants	Providers & LARC Type	Services	Program Supports	Planned Outcome Measures	Results
	postpartum.	Quantitative (non-randomized)	counselling clinic		-IUC acceptors who were eligible had the IUC inserted within 10 minutes of placental delivery -Follow-up for patients receiving IUC occurred at 6 weeks. Acceptors encouraged to return at 3 months postpartum for follow-up.		"Early outcomes"	the post-placental IUC (p=0.232). -Women who knew that an IUC is a long-term contraceptive method before counselling were 4.2 times more likely to accept the method. -Majority of women had at least one misconception about IUC. -Continuation at 6-weeks were 92% (intensive) and 89% (routine). -Client satisfaction rates were 92% (intensive) and 93% (routine).
Neukom et al. 2011 [46]	To evaluate a program hiring dedicated LARC clinicians to promote the technologies among FP clients and to provide same-day services.	Zambia Community Quantitative (non-randomized)	Patient description not provided.	Midwives IUC (copper) Implant	-Midwives led talks on LARC with groups of women waiting for other services. -LARC was offered to women, and they could receive same-day services. -Women's feedback on LARC likes/dislikes were collected and a flipchart was created that would be shared with prospective clients. -Increased number of hours and days LARC was offered.	18 midwives trained as dedicated LARC providers.	LARC use Cost of running the program	-Over 14 months, 33,609 women received a LARC method. -About two-thirds received an implant (n=22,079) and one-third an IUC (11,503). -376 IUCs and 980 implants were removed in the same period. -About 200 clients per month who may have initially expressed interest in LARC declined after counselling. -IUC acceptors had higher age and parity than implant users. -Over 50% of LARC acceptors switched from an oral or injectable contraceptive. -LARC methods provided an estimated 115,178 couple-years protection.
Picardo et al. 2010 [47]	To compare DMPA continuation in women randomized to receive follow-up injections by pharmacists versus usual FP providers and note the acceptability of the pharmacy for women.	USA Community Quantitative Randomized Controlled Trial	Women 18-51 years, presenting to Planned Parenthood with the intention of initiating, restarting, or continuing DMPA	Pharmacists Injection	-Participants assessed by a trained pharmacist following protocols for pregnancy testing and STI screening. -Women received first DMPA-SC dose at the clinic (from physician) before randomization to receive the 2nd and 3rd doses at either the clinic or at a pharmacy from a pharmacist	N/A	LARC Continuation Patient satisfaction with LARC Patient satisfaction with pharmacy experience	-44% of women in the pharmacy group received their second dose vs 60% clinic group. Receiving a second dose RR 0.73 (95% CI: 0.42-1.27). -36% of women in the pharmacy group received their third dose vs 48% clinic group. Receiving a third injection RR 0.75 (95% CI 0.39-1.46). -No significant differences in women's attitudes at 3 and 6 months between groups. -More women in pharmacy group reported higher level of satisfaction with their first return visit (p=0.046) but

Author & Year	Study Objective	Country & Setting	Participants	Providers & LARC Type	Services	Program Supports	Planned Outcome Measures	Results
								this disappeared by the second return visit (p=0.37). -Pharmacists reported comfort with the clinical role. -Planned Parenthood providers overall happy with the arrangement (comparison group).
Pradhan et al. 2019 [48]	To examine the impact of an intervention introducing postpartum contraceptive counselling and immediate PPIUC insertion with the intent to integrate PPIUC counseling and insertion as part of routine maternity care.	Nepal Inpatient Hospital Quantitative Randomized Controlled Trial	Pregnant women visiting for antenatal care or delivery services in the study hospitals.	Physicians Nurses Midwives Community Health Volunteers General Hospital Staff IUC (copper)	-Women could be counseled during antenatal care or during postnatal care after delivery, and/or in early labour. -After IUC chosen and consent received, IUC inserted following delivery -Informational wall chart and video for hospital waiting areas -No-cost IUC. -Designated facility coordinator.	Classroom and on-job training with supervised IUC insertions. Workshops for community health volunteers and general hospital staff, training of maternity care providers in PPFP counselling, IUC insertion, and complication management. Provider workshops included counselling techniques and practice IUC insertions. Leaflets for use during counselling. Provision of Kelly's forceps and IUCs	LARC counselling rates LARC uptake	-Proportion of women counselled on PPIUC increased from ~1-2% at baseline to max 29-67% post-intervention. -Counselling on any method increased by 23 percentage points (95% CI 5.3-41.0pp). -On average, intervention increased counselling rates by 25 percentage points (95% CI: 14-40pp). -39% of women counselled during antenatal care, 43% after admission for delivery, 18% before and after admission. -50% of counselled women reported being able to ask questions, and 58% received a leaflet. -PPIUC uptake increased to max 4-6% after intervention vs. 1% at baseline. -Intervention increased PPIUC uptake by 4.4 percentage points (95% CI: 2.8-6.4pp).
Huber-Krum et al. 2020 [49]	To address the impact of the intervention of modern contraceptive use, use of LARC, use of PPIUC, use of	Nepal Inpatient Hospital Quantitative Randomized	Pregnant women giving birth in the study hospitals with primary residence in Nepal.	Physicians Nurses Midwives Community Health	-IUC information (counselling) provided to women at intervention hospitals during antenatal care or after delivery with pamphlets and videos (in waiting rooms).	Classroom and on-job training with supervised IUC insertions. PPFP counselling training for volunteers and hospital staff,	Modern contraception use at 9-months postpartum Modern contraception use at 18-	-Baseline: 43% of women reported counselling on postpartum contraception and 10% had PPIUC inserted. -After the intervention, 36.2% of interviewed women used a modern contraceptive method. -At year 2, 39.1% were using a modern

Author & Year	Study Objective	Country & Setting	Participants	Providers & LARC Type	Services	Program Supports	Planned Outcome Measures	Results
	non-PPIUC LARC, use of short-acting contraception, and sterilization at one and two years postpartum.	Controlled Trial		Volunteers General Hospital Staff IUC (copper)	-IUC services including the device, insertion, and removal offered to women. -Informational wall chart and video for hospital waiting areas -No-cost IUC. -Designated facility coordinator.	maternity providers trained on PPFP counselling and PPIUC insertion and complication management. Leaflets for use during counselling. Provision of Kelly's forceps and IUCs	months	contraceptive method. -Proportion of women using non-PPIUC LARC increased from year 1 to 2: 3.0% to 5.5%. -Proportion of women using PPIUC decreased from 4.5% at year 1 to 3.9% at year 2. -Women in intervention had a 3.8 percentage point higher probability of using modern contraception at 1 year (95% CI: -0.1 to 9.5pp) and 0.3 percentage point higher at year 2 (95% CI: -3.7-4.1pp) -Intervention increased the probability of PPIUC use by 12.0 percentage points at year 1 (95% CI: 6.1-16.4pp) and 10.5 percentage points at year 2 (95% CI: 4.7-15.8pp). -No significant effect in modern contraception use overall (slight decline in other methods seen).
Karra et al. 2019 [50]	To evaluate the effect of a PPIUC intervention on PPIUC counselling and choice of PPIUC.	Sri Lanka Inpatient Hospital Quantitative Randomized Controlled Trial	Pregnant women giving birth in the study hospitals with primary residence in Sri Lanka.	Physicians Nurses Midwives General hospital staff IUC (copper)	-IUC information (counselling) provided to women at intervention hospitals during antenatal care or after delivery with pamphlets and videos. -Video for hospital waiting areas on postpartum family planning. -Group 1: early intervention hospitals. -Group 2: late intervention hospitals.	Classroom and on-job training with supervised IUC insertions. Workshops for providers on PPFP and IUC. Training of maternity providers on PPFP counselling. Training of doctors on IUC insertion. Leaflets for use during counselling. Provision of Kelly's forceps and IUCs.	LARC counselling rates LARC uptake	-Baseline counselling rates were 20-24% in group 1 and 6-8% in group 2. -Counselling rates exceeded 50% of women in group 1 and 60% of women in group 2. -Intervention increased counselling by 30.7 percentage points on average (95% CI: 14.8-46.5pp). -Intervention increased choice of PPIUC by 2.7 percentage points (95% CI: 0.01-5.4pp). -Receiving counselling increased choice of PPIUC by 8.9 percentage points (95% CI: 2.7-15.0pp). -26.4% of patients counselled before (during antenatal care) and after admission, 64.7% during antenatal care only, and 8.9% after admission only.
Rubenstein et al. 2011 [51]	To compare whether counselling	United Kingdom	Women, ages ranged from <18 to >25 years. Only	Physicians	-Two physicians provided different counselling styles for	N/A	Duration of LARC use	-Implant continuation rates were 92% (95% CI 81.1-100%) for "cautious" counselling and 80% (95% CI 64,3-

Author & Year	Study Objective	Country & Setting	Participants	Providers & LARC Type	Services	Program Supports	Planned Outcome Measures	Results
	style prior to insertion of subdermal implants affects continuation rates at one-year post-insertion.	Community Observational	those who received an implant were contacted. Women with learning disabilities were excluded.	Implant	the implant. -"Just Try It": stressed reversibility of implant and ease of removal, encouraging patient to try one. -"Cautious": warned patients decision to get an implant is not trivial, would emphasise the invasiveness of insertion/removal procedures		Continuation rate at 1-year	95.7%) for "just try it" (difference not statistically significant). -More women in "just try it" received the same-day placement of the implant than in "cautious" (5/25 vs. 1/25). -23/25 women in "cautious" and 22/25 women in "just try it" said they had enough information about the implant.
Schwarz et al. 2014 [52]	To compare contraceptive knowledge and use among women seeing emergency contraception before and after offering structured counselling and same-day LARC placement.	USA Community Quantitative (non-randomized)	Women seeking emergency contraception within to avoid pregnancy for at least 6 months and had a negative pregnancy test. Excluded women with an IUC or tubal ligation.	Physician Nurse Practitioner IUC (copper) Implant	Women seeking emergency contraception were asked to see a nurse practitioner or physician who verbally provided brief structured counselling abut IUC and implants and offered same day placement of copper IUC for emergency contraception (eligible women).	Posters in waiting rooms identified IUC as most effective emergency contraceptive method.	Contraceptive counselling rates Contraceptive knowledge Contraceptive use	-Women were more likely to report having discussed the IUC (77% vs. 8%, p<0.001) and implant (36% vs. 8%, p=0.004) with a clinician during the intervention. -Women more likely to report having their questions answered (96% vs. 88%, p<0.001) and report being satisfied with the discussion (76% vs. 63%, p=0.03) during the intervention. -No women had same day LARC placement with emergency contraception before the intervention. After, 36 women (11%) had same day IUC placement (and 2 implants). -Within 5 days of seeking EC, 12% of women (n=20) had an IUC or implant placed. -23% reported wanting same-day LARC but not receiving one (risk of pregnancy, scheduling conflicts, etc.). -40% of women during the intervention vs. 17% during preintervention reported using LARC within 3 months of seeking EC.
Sodje et al. 2016 [53]	To evaluate the feasibility, acceptability, uptake, and safety of PPIUC	Nigeria Inpatient and Outpatient Hospital	Pregnant women delivering at study sites. Excluded if	Physicians Midwives	-Patients counseled about IUC and the procedure, alternate methods, advantages, patient expectations,	5-day PPIUC training workshop including insertion training, practice, lectures,	Contraceptive uptake	-50.1% of eligible women had a PPIUC inserted. -45.2% had post-placental PPIUC insertion, 53.2% immediate postpartum insertion, 1.6% intra-caesarean

Author & Year	Study Objective	Country & Setting	Participants	Providers & LARC Type	Services	Program Supports	Planned Outcome Measures	Results
	in the context of provider training and supervision.	Observational	contraindications for PPIUC present.	IUC (copper)	adverse effects, and potential complications. Post-insertion counseling regarding expectations, adverse effects, symptoms of complications, how to check the IUC thread, and reasons to make emergency visits regarding the device. -Follow-up appointments for women scheduled at 14 days and 6 weeks after insertion.	and sessions focused on infection control, counselling strategies, and prevention of adverse events following IUC insertion. Providers given postpartum IUC kits.		insertion. -5.3% of participants at follow-up were satisfied and 94.7% were very satisfied regarding IUC insertion. -7.8% of women at 2-week follow-up and an additional 6.4% at 6-week follow-up experienced expulsion. -All participants attending follow-up gave satisfaction ratings of "satisfied" or "very satisfied" regarding IUC insertion. -No incidence of complications such as uterine perforation reported.
Stanback et al. 2007 [54]	To compare the safety and quality of contraceptive injections by community-based health workers to those of clinic-based nurses.	Uganda Community Quantitative (non-randomized)	Inclusion/ Exclusion criteria not provided. Average age 28 in intervention, 26 in control. Half of participants were married, mean parity was 4, over two-thirds wanted another child in future.	Community reproductive health workers (CRHWs) Injection	-DMPA provided in homes of either the patient or provider. -Control: provision in clinics by nurses or midwives.	Classroom training on counselling (using illustrated counselling tool), health screening, safe injection, and waste disposal. Screening for referrals because of health problems using a checklist taught. 2 weeks practicum in hospital before moving to community provision.	Second injection rates Reasons for discontinuation Knowledge of key information Complications Side effect rates Patient satisfaction with method Patient satisfaction with service	-First time DMPA users: 86% of patients in the intervention vs. 76% in control. -No difference in continuation between groups: 88% of CRHW patients and 85% of clinic patients received the second injection. -Control participants nearly twice as likely to report dissatisfaction with the method (40% vs. 22%) and 10 times as likely to report forgetting to continue (20% vs. 2%). -No significant differences regarding satisfaction or quality of care provided. -Small differences in side effects and knowledge of other methods (e.g. IUCs/condoms) recalled by patients.
Tomlin et al. 2017 [55]	To determine if emphasizing LARC using motivational interviewing techniques for teenage	USA Outpatient Hospital Observational	Pregnant patients ages 13-17 years with at least 4 prenatal visits, delivery at a hospital, and at least 1	Certified Nurse-Midwife (CNM) IUC (not	-Provider uses motivational interviewing to encourage postpartum LARC to help repeat teen pregnancy (with a	N/A	LARC uptake by 13-weeks postpartum	-40.9% of treatment patients versus 15.2% of control patients had started LARC by 13-weeks postpartum ($p<0.01$). -IUC use was 28% in treatment and 13% in control ($p<0.01$). -DMPA use as sole contraceptive rate was 36% in treatment patients versus

Author & Year	Study Objective	Country & Setting	Participants	Providers & LARC Type	Services	Program Supports	Planned Outcome Measures	Results
	patients receiving prenatal care had higher rates of postpartum LARC uptake than control.		postpartum visit with a contraceptive method.	specified) Implant	strong focus on social aspects of pregnancy). -Postpartum LARC emphasized during life skills classes available at the centre. -Injection with DMPA before hospital discharge as "bridge contraception" as immediate postpartum LARC was not offered at the time. -Control: those receiving prenatal care at the clinic from another provider.			51% in control at 13-weeks postpartum ($p<0.01$). -Bridging DMPA rates were 53% treatment versus 48% control ($p=0.36$). -Condoms, other methods, and no method were used at similar rates between groups. -Rate of LARC use aOR 2.8 (95% CI: 1.5-5.2) comparted to control.
Torres et al. 2018 [56]	To examine the effectiveness of personalized, in-hospital, postpartum contraceptive counselling for women who had a preterm birth on increasing LARC method uptake by 3 months postpartum.	USA Inpatient Hospital Quantitative Randomized Controlled Trial	Women who delivered between 24-36 weeks gestation. Ages 18-45 years.	Family Planning Specialists (discipline not specified) IUC (not specified) Implant	-In-hospital postpartum tiered effectiveness contraceptive counselling session before discharge by FP specialists. Structured counselling was scripted based on the GATHER tool, beginning with the most effective methods. Emphasis placed on LARC being the most effective. -If participant already decided on a method, the script was still read to ensure they were aware of all their options. -Control: standard care	N/A	LARC uptake at 3-months postpartum Contraceptive knowledge Non-LARC contraceptive use Patient satisfaction with method	-Intervention patients more likely to use a LARC method at 3 months than control: 51% vs. 31%, $p<0.05$. ARR 18% (95% CI: 0.5-36.2). -Satisfaction with method did not vary significantly between groups at 3 months. -Having an antenatal plan for LARC use was the strongest predictor of LARC use at 3 months (OR 31.7; 95% CI: 8.6-116.7). Intervention counselling did not enhance this further. -Both groups saw an increase in patient knowledge of LARC with no significant differences between them.
Weidert et al. 2017 [57]	To illustrate the impact of the program model	Ethiopia Community	Women ages 15-49 years	Community Health Workers	-DMPA provided to women (with or without charge per	4-days training to use a screening checklist, provide	Contraceptive knowledge	-8,604 women received a total of 15,410 DMPA injections, resulting in 3,853 couple-years protection.

Author & Year	Study Objective	Country & Setting	Participants	Providers & LARC Type	Services	Program Supports	Planned Outcome Measures	Results
	on reducing barriers to DMPA access and increase commodity security in rural communities.	Quantitative (non-randomized)		Injection	CHW discretion). -Supervision by experts and study personnel to provide support and discuss CHW experiences. Health extension workers also supervised CHWs	counselling, inject DMPA, report adverse events, and refer patients to facilities for other contraceptives. Service promotion (social marketing) by CHWs through door-to-door marketing, word-of-mouth, and community meetings.	LARC use	-19% of clients were new to family planning. 25% were new to DMPA. -Women's knowledge of modern methods increased significantly ($p<0.005$) for all methods except the rhythm method. -25% increase in contraception use (30.1% to 37.5%, $p<0.001$) noted, with DMPA largely responsible (20.6% to 27.2%, $p<0.001$). -One quarter of women using DMPA reported receiving it from a CHW (higher with younger women: 35% for 15-24y and 46% for 25-34y).
Whitaker et al. 2016 [58]	To determine if a counselling intervention using the principles of motivational interviewing would impact uptake of LARC after abortion.	USA Community Quantitative Randomized Controlled Trial	Women ages 15-29 years presenting for an abortion.	Trained counsellors (one physician, one social worker) IUC (copper and LNG) Implant	-Motivational Interviewing-based counselling session with a counsellor before returning to usual clinic flow. 7-step contraception counselling session incorporating principles and skills of MI. 7-steps not static, and counsellors could move between the steps, but counsellors were instructed to include all 7. Also elicited patient preferences and included those in counselling. -Control: non-standardized counselling.	Counsellor training included 6 hours didactic and 5 hours practical training (practice counselling session) on motivational interviewing. Pictoral guide depicting contraceptive methods organized by tiers of effectiveness.	LARC uptake within 4-weeks of visit Effective contraceptive method uptake within 4-weeks (IUC and hormonal methods) Method use at 1- and 3-months Patient satisfaction with method at 1- and 3-months Patient satisfaction with counselling	-Intervention participants more likely to have LARC placed immediately or within 4 weeks (65.5% vs. 32.3%, $p=0.01$). -Uptake of any effective method not different between groups (86.2% vs. 74.2%, $p=0.34$). -At 3-months post-enrollment, LARC use was more common in intervention women (60.0% vs. 30.8%, $p=0.05$). -Difference in effective contraception between groups not significant at 3 months (84.0% vs 61.5%, $p=0.12$). -More women (using any method) in intervention reported satisfaction with the method (90.5% vs 68.4%, $p=0.12$). -LARC users more satisfied with counselling in intervention (93.3% vs 62.5%, $p=0.10$). -Intervention arm more likely to report satisfaction with counselling: 92.0% vs. 65.4%, $p=0.04$
Zerfu et al. 2018 [59]	To investigate the effect of innovative	Ethiopia Community	Reproductive age, non-pregnant women	Community-based reproductive	Counselling and provision of all methods to patients	Providers trained to provide FP services and	LARC uptake Use of non-	-Among women using modern contraception LARC use increased by 72.3% (from 21.7% to 37.4%) and short-

Author & Year	Study Objective	Country & Setting	Participants	Providers & LARC Type	Services	Program Supports	Planned Outcome Measures	Results
	means to distribute LARC on contraceptive use.	Quantitative Cluster Randomized		health nurses (CORN) IUC (not specified) Implant	including LARC. Three components/types of counselling: barrier identification (provided to all women not on modern FP methods), method shift (provided to women on short-acting methods and/or natural methods to encourage shift to LARC), and comfort analysis counselling (provided to women using IUC or implant). Arm 1: women approached at home. Arm 2: women approached at home or health center; CORN based at health centers. Arm 3: Control	tailored counselling addressing women's individual needs.	LARC contraceptive methods	acting method use declined 19.6% (77.9% to 62.6%). -Percent of women using LARC in Arm 1 increased from by 45.9% (17.4% to 27.5%). -Percent of women using LARC in Arm 2 increased by 45.7% (13.2% to 24.3%). -Control Arm saw a non-significant decrease in LARC use (7.6% to 6.4%). -Compared to control, there was an 11.3 ($p<0.05$) and 12.3 ($p<0.05$) percentage point increase in LARC utilization in Arms 1 and 2 respectively. -Significant ($p<0.05$) shift to more care delivery through smaller health posts (30.5% to 44.8%) instead of health centers (69.2% to 51.8%).

Legend:

FP: Family planning
LNG: levonorgestrel
DMPA: Depo-medroxyprogesterone acetate
DMPA-SC: Depo-medroxyprogesterone acetate subcutaneous
IUC: intrauterine contraception
PPIUC: post-partum intrauterine contraception
CHW: Community health worker
OAT: opioid agonist treatment
STI: sexually transmitted infection
aOR: adjusted odds ratio
aHR: adjusted hazard ratio
CBD: Community based distribution
HCP: healthcare provider
PP: percentage point
EC: emergency contraception

*References located in Chapter 2

Appendix D. Consolidated Criteria for Reporting Qualitative Research (COREQ) Checklist: 32-Item Checklist*

No	Item	Question	Description
Domain 1: Research team and reflexivity			
Personal Characteristics			
1.	Interviewer	Which author/s conducted the interview or focus group?	**EB:** conducted all 11 one-on-one interviews
2.	Credentials	What were the researcher's credentials?	**EB:** PharmD, MSc Student **NC:** MD (finish) **TS:** BSP, MCE, PhD, FCSHP **NY:** BScPharm, PharmD, FCSHP, NCMP
3.	Occupation	What was their occupation at the time of the study?	**EB:** Masters Student, Pharmacist **NC:** Physician **TS:** Clinical Professor, Qualitative Researcher **NY:** Professor, Pharmacist
4.	Gender	Was the researcher male or female?	All researchers identified as female
5.	Experience and training	What experience or training did the researcher have?	**EB:** Completed graduate-level coursework on qualitative research methods **NC:** Physician providing contraceptive care to the study population **TS:** Experience conducting qualitative research projects as principal investigator or research team member; published qualitative research; supervised graduate students on qualitative

No	Item	Question	Description
			research projects **NY:** Supervised graduate students on qualitative research projects; experience conducting qualitative research projects as principal investigator or research team member; published qualitative research
Relationship with participants			
6.	Relationship established	Was a relationship established prior to study commencement?	No pre-existing relationship with participants. A relationship with the Birth Control Centre had been established prior to participant recruitment.
7.	Participant knowledge of the interviewer	What did the participants know about the researcher?	Participants were provided information on the purpose of the study. Participants reviewed the study information before verbal informed consent was obtained to proceed with the interview.
8.	Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g. *Bias, assumptions, reasons and interests in the research topic*	EB, TS, and NY are practicing pharmacists. EB and NY have research interests in contraception and women's health. TS is an expert in qualitative methods. NC is a practicing physician providing LARC care at the Birth Control Centre.
Domain 2: study design			
Theoretical framework			
9.	Methodological orientation and	What methodological orientation was stated to	Qualitative Description and Community-Based Research

No	Item	Question	Description
	Theory	underpin the study?	frameworks were used.
Participant selection			
10.	Sampling	How were participants selected?	Participants were purposefully sampled from clientele at the Birth Control Centre.
11.	Method of approach	How were participants approached?	Clinic nurses introduced the study after LARC counselling and provided a QR code for women to scan and email the research team.
12.	Sample size	How many participants were in the study?	11
13.	Non-participation	How many people refused to participate or dropped out? Reasons?	Chose not to complete an interview: 4 Did not respond to emails: 12
Setting			
14.	Setting of data collection	Where was the data collected?	Data was collected remotely via Zoom or telephone.
15.	Presence of non-participants	Was anyone else present besides the participants and researchers?	No
16.	Description of sample	What are the important characteristics of the sample?	Interview participants were cisgender women between the ages of 18 and 50 who had chosen to use (or were using) a LARC for contraception.
Data collection			
17.	Interview guide	Were questions, prompts,	Interviews were semi-structured

No	Item	Question	Description
		guides provided by the authors? Was it pilot tested?	using an interview guide (see Appendix I) developed by the research team. The interview guide was not pilot tested.
18.	Repeat interviews	Were repeat interviews carried out?	No
19.	Audio/visual recording	Did the research use audio or visual recording to collect the data?	Interviews were audio and video-recorded and transcribed via Zoom or manually and checked against the recording for accuracy.
20.	Field notes	Were field notes made during and/or after the interview or focus group?	Field notes were made during and after the interviews.
21.	Duration	What was the duration of the interviews or focus group?	Interviews ranged from 18 to 51 minutes.
22.	Data saturation	Was data saturation discussed?	Data analysis ended when the research team determined that a rich description of the phenomenon had been developed. This was determined through discussion and review of the manuscript.
23.	Transcripts returned	Were transcripts returned to participants for comment and/or correction?	No
Domain 3: analysis and findings			
Data analysis			
24.	Number of data coders	How many data coders coded the data?	One (**EB**)

No	Item	Question	Description
25.	Description of the coding tree	Did authors provide a description of the coding tree?	No
26.	Derivation of themes	Were themes identified in advance or derived from the data?	Themes were derived from the data
27.	Software	What software, if applicable, was used to manage the data?	Quirkos
28.	Participant checking	Did participants provide feedback on the findings?	No
Reporting			
29.	Quotations presented	Were participant quotations presented to illustrate the themes / findings? Was each quotation identified?	Themes were supported through direct quotations from participants. Quotations were anonymized using pseudonyms.
30.	Data and findings consistent	Was there consistency between the data presented and the findings?	Yes
31.	Clarity of major themes	Were major themes clearly presented in the findings?	Yes
32.	Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Diverse cases were discussed.

*Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. International Journal for Quality in Health Care. 2007;19(6):349-57. doi: 10.1093/intqhc/mzm042

Appendix E. University of Alberta Research Ethics Board Approval

Approval Form

Date:	May 4, 2022
Study ID:	Pro00116700
Principal Investigator:	Nese Yuksel
Study Title:	A Qualitative Exploration of Women's Experiences Around Long-Acting Reversible Contraception
Approval Expiry Date:	Wednesday, May 3, 2023

Thank you for submitting the above study to the Health Research Ethics Board - Health Panel. Your application has been reviewed and approved on behalf of the committee.

Approved Documents:

Recruitment Materials
QR Code
Clinic Staff Script
Consent Forms
Verbal Consent Script
Participant Information Sheet
Questionnaires, Cover Letters, Surveys, Tests, Interview Scripts, etc.
Interview Guide
Protocol/Research Proposal
Interview Procedures
Research Proposal
Other Documents
Participant Screening

Any proposed changes to the study must be submitted to the REB for approval prior to implementation. A renewal report must be submitted next year prior to the expiry of this approval if your study still requires ethics approval. If you do not renew on or before the renewal expiry date, you will have to re-submit an ethics application.

Approval by the REB does not constitute authorization to initiate the conduct of this research. The Principal Investigator is responsible for ensuring required approvals from other involved organizations (e.g., Alberta Health Services, Covenant Health, community organizations, school boards) are obtained, before the research begins.

Sincerely,

Dr. Manuel Lagravere
Member, Health Research Ethics Board - Health Panel

Note: This correspondence includes an electronic signature (validation and approval via an online system).

Appendix F. Clinic Staff Script

A Qualitative Exploration of Women's Experiences Around Long-Acting Reversible Contraception

Clinic Staff Script

We are working with pharmacy researchers at the University of Alberta to learn more about women's experiences with intrauterine devices and implants. The researchers are interviewing women that use these methods about how they made the decision to use them and what steps they took to get the method. Participating in the study or not will not affect the care you receive at this clinic. Would you be interested in sharing your experiences with the researchers?

If no: Thank you for your consideration.
If yes: Here is the QR code. Please scan this code and send the researchers the pre-filled email. You will hear from them within 48 hours.
Staff provides the interested woman the QR code (printed) and the woman scans the code.

Appendix G. Participant Information Letter

Study Title: A Qualitative Exploration of Women's Experiences Around Long-Acting Reversible Contraception

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Background

Long-acting reversible contraceptives (LARC) are available in Canada but are used by only a small number of women. These methods include intrauterine devices and implants. To better understand why these methods are not common, we are talking to women about they decide to use LARC and how the get the devices. This study will deepen our understanding of how women access contraception and the factors that affect the decision.

The objectives of this study are to explore LARC access and decision-making, to identify women's needs, and to explore how other factors affect women's ability to get to a LARC method.

As a woman who has chosen to use a LARC method, you are being asked to participate in a research study. In an interview with a researcher, you will be asked about how you decided to use LARC and your experience with getting the method.

Before you make a decision, one of the researchers will go over this form with you. You are encouraged to ask questions if you feel anything needs to be made clearer. You will receive a copy of this form for your records.

Purpose

The purpose of this research is to explore women's experience of accessing LARC in Alberta. The results will be used to benefit women, understand the challenges around accessing LARC, and supporting healthcare workers to inform change.

Study Procedures

You will be asked to complete a virtual one-on-one interview with the research investigator using Zoom or by phone. This interview will take between 60 to 90 minutes. During the interview you will be asked about your experiences with deciding to use and access LARC. There are no right or wrong answers. The interview will be recorded. You may choose to have the interview recorded without video, or you may complete the interview with your camera turned off. This recording will be transcribed, and your identifying information will be removed. You may be contacted by email again for follow-up if necessary.

If you want, you may receive a copy of your interview transcript and the final report of the research findings. You will be asked at the end of the interview if you would like a copy of these documents sent to your email address. If you would like a copy of the interview transcript, it will be emailed to you within 1 week of the interview date.

Benefits
The information collected during this study will help us better understand women's experiences with accessing LARC. These experiences may help to inform future practices around LARC. Participants may derive benefit from sharing their experiences and contributing to research that will assist women they considering LARC.

Risk
This study is looking at a topic that some people may feel uncomfortable with. You may feel uncomfortable with some questions asked during the interview. You are not required to answer any question that you do not want to or that makes you uncomfortable. There is also a risk of other people hearing your responses if you complete the interview with others around. To prevent this, we ask that you complete the interview in a quiet area away from others. If others are around, ask them not to interrupt you during the scheduled time. If you are concerned about privacy in a virtual interview, you may use a virtual private network (VPN) for added security.

It is not possible to know all of the risks that may happen in a study, but the researchers have taken all reasonable safeguards to minimize any known risks to a study participant. If we learn anything during the research that may affect your willingness to continue being in the study, we will tell you right away.

Incentive
If you choose to complete an interview you will receive a $25 gift card. This is to cover the time taken to complete the interview and any potential costs to you required to participate. If you withdraw from the study, you will still receive the gift card for your time.

Voluntary Participation
Being in this study is your choice. If you decide to be in the study, you can change your mind and stop being in the study at any time, and it will in no way affect the care or treatment that you are entitled to. You are not required to answer any specific question(s), even if you decide to participate in the study. Even if you choose to participate in the study, you can change your

mind without penalty. If you change your mind, your data will be removed and not included in the study. You can have your data removed from the study until 1 week after the interview. After this it will not be possible to remove your data.

Confidentiality & Anonymity

Every effort will be made to protect the confidentiality and anonymity of what is discussed during the interview. The identifying information such as your name and age may be collected, but this information will be removed from the transcript. Only members of the research team will have access to the recordings and transcript from the interview. The data gathered will be analyzed by the researchers at the University of Alberta. Information will be securely stored on password protected computers, locked filing cabinets, and a secure server for a minimum of 5 years. The only exception to this promise of confidentiality is that we are legally obligated to report evidence of abuse.

The results from this study will be shared through a research article, presented at research events, used in a thesis, or used to promote clinical practice changes. Direct quotes from your interview may appear anonymously in these planned uses of the data. No personal information will be included in any reports.

Contact Information

If you have any further questions regarding this study, please do not hesitate to contact Emma Bedard (srhresch@ualberta.ca or ecbedard@ualberta.ca), Dr. Terri Schindel (terri.schindel@ualberta.ca), or Dr. Nese Yuksel (nese.yuksel@ualberta.ca).

Additional Contacts

The plan for this study has been reviewed by a Research Ethics Board at the University of Alberta. If you have questions about your rights or how research should be conducted, you can email reoffice@ualberta.ca. This office is independent of the researchers.

Appendix H. Verbal Consent

A Qualitative Exploration of Women's Experiences Around Long-Acting Reversible Contraception

One-on-One Interviews – Verbal Consent Script

Thank you for agreeing to take part in this interview. The study information was emailed to you before this meeting. Participation in this research is completely voluntary, and you may withdraw at any point during this interview. You may also refuse to answer any question(s) if you are uncomfortable. This interview will be audio and video recorded and transcribed. Your name and identifying information will be removed from the transcript to protect your privacy. Only members of the research team will have access to the recordings in order to transcribe the interview.

Audio recordings and transcripts will be stored for at least five years. They will be stored on a secure server and password protected computers and stored in locked offices.

Do you consent to this interview being video recorded? *If no:* Do you consent to the interview being audio recorded? Do you consent to the interview being transcribed? Do you consent to the interview being analyzed and the results being used for academic research and publication? Do you have any questions before we proceed?

Participant: _____

Interviewer obtaining consent: _____

Date: _____ Time: _____

Appendix I. Interview Guide

Sample Questions to Guide Semi-Structured Interviews	
Domain	Questions*
Screening and Consent	0. Interviewer answers any questions the participant has about the study. 0a. Interviewer conducts participant screening. 0b. Interviewer reads the verbal consent script and obtains participant consent to conduct and record the interview.
Background	1. What age range do you fall in? 18 to 29, 30 to 39, 40 to 49, or 50 to 59? 2. Can you tell me a little about yourself? 3. What method(s) of contraception do you currently use? 3a. What methods of contraception have you used prior to *IUD/implant*? 4. Can you tell me about your use of contraception in the past? 4a. *Examples:* How long have you used contraception? What were your experiences with other methods like?
Decision-Making	5. Why did you decide to use an *IUD/implant*? 5a. *If not mentioned:* Why did you choose this method over others, e.g. the pill? 6. How did you decide to use an *IUD/implant*?
Access	7. How did you get your *IUD/implant*? 7a. What steps did you take to get the prescription? 7b. What steps did you take to get the *IUD/Implant* inserted?
Women's Needs	8. What did you want or need when considering getting an *IUD/implant*? 9. What did you want or need when getting your *IUD/implant*?
External Influences	10. Was there anyone or anything that helped you decide to use an *IUD/implant*? 10a. *If not mentioned:* What about family? Friends? Healthcare providers? 11. Was there anyone or anything that hindered your ability to use an

	IUD/implant? 11a. *If not mentioned:* What about family? Friends? Healthcare providers? 12. Can you think of anything else that influenced your decision to use an *IUD/implant*?
Conclusion	13. Is there anything else you would like me to know about your experience with deciding to use an *IUD/implant*?
Housekeeping	*Thank participant for completing the interview. Stop the recording.* 14. Would you like a copy of your transcript and/or the final report? 15. May I contact you again if I need to double-check anything or if I have additional questions for you? 16. Do you have a name you would like us to use as a placeholder for you?
* Questions may change as data analysis progresses using a reflexive Thematic Analysis framework	