EXPLORING WOMEN'S EXPERIENCES WITH LONG-ACTING REVERSIBLE CONTRACEPTION: A MULTI-METHODS QUALITATIVE STUDY IN ONTARIO

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Abstract

Use of long-acting reversible contraception (LARC) is a highly effective strategy for preventing pregnancy. Methods of LARC include the intrauterine device (IUD) and the contraceptive implant; the latter is currently unavailable in Canada. Less than 5% of Canadian women use LARC as their contraceptive method. Exploration of women's experiences with methods of LARC can shed light on the factors and dynamics influencing information and use. Understanding these dynamics may also inform efforts to increase awareness of the contraceptive implant, once it is approved for use in Canada. This multi-methods study aimed to assess Ontario women's knowledge of and attitudes toward methods of LARC and identify avenues to improve information and services related to LARC in the province. The study comprises two components: an anonymous online bilingual survey and a telephone/Skype interview with a subset of survey participants. Our results suggest that the main factors influencing LARC use are its ease of use, efficacy, and recommendation by a health care professional. Most survey respondents were satisfied with the information provided by their health care provider when they were first prescribed LARC. However, Franco-Ontarian participants we interviewed faced challenges obtaining reproductive service in French. Participants highlighted a number of ways that LARC could be improved and new methods of LARC could be introduced in Canada. This study provides insight into opportunities to improve counselling to Ontarian women and highlights areas that should be routinely discussed with contraceptive patients about methods of LARC.

Résumé

L'utilisation de la contraception réversible à action prolongée (CRAP) est une stratégie très efficace pour prévenir les grossesses. Les méthodes de CRAP comprennent le dispositif intra-utérin (DIU) et l'implant contraceptif; ce dernier est actuellement indisponible au Canada. Moins de 5% des Canadiennes utilisent les CRAP comme méthode de contraception. L'exploration des expériences des femmes en matière de méthodes CRAP peut permettre de mieux comprendre les facteurs et la dynamique qui influence l'information et son utilisation. La compréhension de cette dynamique peut également éclairer les efforts visant à accroître la sensibilisation à l'implant contraceptif, une fois son utilisation approuvée au Canada. Cette étude portant sur plusieurs méthodes visait à évaluer les connaissances et les attitudes des femmes ontariennes à l'égard des méthodes de CRAP et à identifier les moyens d'améliorer l'information et les services liés aux méthodes des CRAP dans la province. L'étude comprend deux volets: un sondage anonyme en ligne bilingue et un entretien téléphonique / Skype avec un sous-ensemble de participants au sondage. Nos résultats suggèrent que les principaux facteurs influençant l'utilisation du LARC sont sa facilité d'utilisation, son efficacité et sa recommandation par un professionnel de la santé. La plupart des répondants au sondage étaient satisfaits des informations fournies par leur fournisseur de soins de santé lors de la première prescription de LARC. Les participants franco-ontariens que nous avons interrogés ont toutefois eu du mal à obtenir des services de reproduction en français. Les participants ont mis en exergue divers moyens d'améliorer les CRAP et d'introduire de nouvelles méthodes au Canada, notamment par éducation et la disponibilité. Cette étude donne un aperçu des possibilités d'améliorer les conseils fournis aux femmes ontariennes et met en évidence les sujets qui devraient faire l'objet de discussions régulières avec les patientes au sujet des méthodes de CRAP.

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Table of contents

List of acronyms and abbreviations ... vi

Chapter 1: Introduction ... 1

Contraceptive use in Canada ... 3

Contraceptive use in Ontario ... 4

The long acting reversible contraception: An overview ... 4

Table 1: LARC overview ... 5

The intrauterine device ... 6

Description ... 6

Procedure ... 6

Mechanism of action ... 7

Indications, acceptability, efficacy, and safety ... 8

Contraindications ... 9

Table 2: WHO List of contraindications for IUD use ... 9

Side effects ... 9

Risks ... 10

The implant ... 11

Study rationale ... 11

Research questions ... 11

Specific aims ... 11

Chapter 2: Methods ... 13

Data collection: Online survey ... 13

Data collection: In-depth interviews ... 14

Data analysis ... 15

Theoretical framework ... 16

Ethical considerations ... 16

Statement of contribution ... 17

Chapter 3: Article #1 ... 18

Chapter 4: Article #2 ... 38

Chapter 5: Article #3 ... 53

Chapter 6: Discussion ... 63

Dissemination of findings ... 67

Recommendations ... 67

Provisions of reproductive health services 67
Health policies 68
Limitations 68
Positionality and reflexivity 68
Significance 69
Conclusions 69
Appendix A : Characteristics of all online survey participants 79
Appendix B: Source of Information and Knowledge of LARC * Survey Participants' Age Cross Tabulation 81
Appendix C: Source of Information and Knowledge of LARC * Survey Participants' Language Cross Tabulation 83
References 71

List of acronyms and abbreviations

CART-GRAC	Contraception Access Research Team
HIV	Human immunodeficiency virus
IDI	In-depth interview
IUD	Intrauterine device
LARC	Long-acting reversible contraception
OHIP	Ontario Health Insurance Plan
ODB	Ontario Drug Benefit
PID	Pelvic inflammatory disease
REB	Research Ethics Board
STI	Sexually transmitted infection
WY	Woman-year

Chapter 1: Introduction

In the late 1960s, Canada experienced a multitude of amendments to its Criminal Code. The *1968-69 Criminal Law Amendment Act* (S.C. 1968-69, c. 38) brought significant changes, specifically in the area of contraception. Section 179 of the Criminal Code, enacted in 1892, made it illegal to sell or promote contraceptive methods.[1] Hence, the then Prime Minister, Pierre Elliott Trudeau, introduced Bill C-195 to adapt the Canadian Criminal Code.[2] He proposed decriminalizing the sale of contraception and abortions that were approved by a hospital-based therapeutic abortion committee.

This law was the result of lawsuits and mobilized actions for the right of women to prevent pregnancy and control fertility. Dr. Elizabeth Bagshaw, one of the first female physicians in Canada, was one of the first to advocate for women's reproductive rights. In 1932, she established the first family planning centre in Hamilton, Ontario, providing families with pessaries, contraceptive jellies, condoms, and information about preventing pregnancy.[3] The centre was illegal and Dr. Bagshaw was consequently criticized by both the medical establishment and religious leaders. In 1935, Alvin Ratz Kaufman, an industrialist and philanthropist, created the first Parent Information Office in Kitchener, Ontario. This centre, similar to Dr. Bagshaw's centre, also provided families with condoms, contraceptive jellies, and information on preventing pregnancy. A highly publicized trial regarding a field worker of Kaufman's Parent Information Office changed the public's opinion of contraception; Dorothée Palmer, a nurse, was charged with providing information on contraception in a disadvantaged

neighborhood of Ottawa.[4] Ms. Palmer's acquittal both reflected and sparked a change in the perception of contraception in Canada.

However, it was only after the Second World War that the public's acceptance of contraception cemented. With the post-war baby boom and the introduction of oral contraceptive pills, some Canadian medical associations and groups of church leaders launched a campaign for family planning.[5] They created the first chapter of the Planned Parenthood Association in 1961, an organization that served as the lead advocate for changes in the Canadian Criminal code.[6] A few years later, with the introduction of the *1968-69 Criminal Law Amendment Act*, Canadians were given the right to contraceptive options without fear of criminal prosecution. With the introduction of these amendments to the Criminal Code, many family planning clinics received funding from the federal government. Subsequently, these clinics were legally able to provide information and training related to contraception. Health and Welfare Canada (now Health Canada) was the primary funding agency for these initiatives.[5]

Today, contraceptive financing is unevenly distributed across the country. Canada is the only country that offers a public health service but has no national prescription drug coverage system.[7] This can be explained by the limitations set by the *Canada Health Act*. The jurisdictional division of responsibility within the country allows individual provinces to establish their own regulations for drug coverage.[8] Provincial coverage may vary depending on the individual's legal status and the type of medication. For example, the most recent federal cuts to refugee health services have resulted in the cancellation of coverage for reproductive health services, including contraception.[9] In most Canadian provinces, patients have to pay for contraception out-of-pocket unless they have private drug coverage. The literature indicates that 60% of the Canadian

population has access to private insurance,[10] but 24% of the population does not have prescription drug coverage.[11] Individuals who are not covered through a private prescription drug plan, and who do not meet eligibility, find themselves in a situation of inaccessibility and disparity. Prescription drug coverage is also a concern for teenagers who often cannot pay out-of-pockets and who must compromise their privacy to benefit from a parent's private plan.

In Ontario, all residents are eligible for the Ontario Health Insurance Plan (OHIP), which entitles residents to health care services paid for by the provincial government.[12] This includes the Ontario Drug Benefit (ODB) Program. Eligibility depends on several criteria and conditions and provincial insurance schemes cover a variety of contraceptives. However, not all residents of Ontario meet the eligibility criteria for these programs.

Contraceptive use in Canada

Problems related to contraceptive coverage can have an impact on the prevalence of contraceptive use[13] and method accessibility can influence user adherence.[14] The most widely used contraceptive methods in Canada are condoms and oral contraceptives, in large part due to their affordability and accessibility.[15] There are more than 180,700 unintended pregnancies in Canada, representing 40% of all pregnancies that occur in the country.[13] At 58%, the unplanned pregnancy rate is highest among women aged 20 to 29.[13] This is attributed to the inconsistent and non-use of contraception.[13] The literature also demonstrates that the use of long-acting reversible contraception (LARC) over a period of 12 months or more can significantly reduce the national economic burden associated with unplanned pregnancy.[13] Nevertheless, only 4.6% of the population use LARC in Canada.[16,17]

Contraceptive use in Ontario

The majority of contraceptives available in Ontario require a prescription.[18] No contraceptive insertion is covered by the provincial public plan, except in post-abortion care situations.[19] Minimal data exist regarding the prevalence of contraceptives use in Ontario, as the majority of surveys have been conducted at a national level. Additionally, access to the intrauterine device (IUD) is not equal across the province, both because of the cost and the geographic variability in the number of physicians trained in insertion. There is some evidence that indicates that a physician's enthusiasm for an IUD is a determining factor in a woman's decision to use an IUD for contraception.[20] A 2009 Ontario study demonstrated a correlation between a patient's preference of contraceptive method and a physician's attitude and knowledge.[21]

The long acting reversible contraception: An overview

Methods of LARC are the most effective non-permanent methods at preventing pregnancy.[21] LARC includes intrauterine devices (IUDs) and implants (Table 1). They differ from other methods of contraception due to their long-term action and reversible effect. They can be removed at any time by a trained provider and allow the user to conceive immediately after removal. Moreover, they do not rely on user compliance; once inserted by the health professional, the effects begin in the following week. Women are generally advised to use a backup method for one week after insertion. Therefore, the gap is very small between the perfect use rate and the typical use rate.[22] Methods of LARC do not protect against sexually

transmitted infections (STIs), so they must be used in combination with a condom to protect against STIs.

Table 1: LARC overview

	Long-acting reversible contraception		
	IUD		Implant*
	Non-hormonal	Hormonal	
Brand name	Paragard®*, Mona Lisa®, Flexi T 380®, Nova T®, Liberté®	Mirena®, Jaydess®, Skyla®*, Liletta®*	Implanon®, Nexplanon®, Jadelle®
Medicinal ingredient	Copper[23,27]	Progestin (Levonorgestrel) [24,27]	Progestin (Etonogestrel)[25,27]
Other designation	Copper-T IUD	Levonorgestrel-releasing intrauterine system (LNG-IUS).[27]	N/A
Route of Administration	Intrauterine	Intrauterine	Subdermal
Duration of effectiveness	Recommended replacement every 5 years. Effective up to 12 years (10 years for Paragard [26])	5 years[27]	4 years
Typical-use failure rate (%)[28]	0.8	0.02	0.05

Perfect-use failure rate (%)[28]	0.6	0.02	0.05

**Not available in Canada, N/A Not applicable*

The intrauterine device

Description

An intrauterine device is a small, flexible, T-shaped plastic device that is inserted into the uterus by a health care professional to prevent pregnancy for three to twelve years, depending on the type of device. There are two types of intrauterine devices: the copper IUD and the hormonal IUD. There are two IUD models in Canada, the copper-releasing device (e.g., Mona Lisa®, Flexi T 380®, Nova T®, Liberté®) and the levonorgestrel-releasing intrauterine system (e.g., Mirena®, Jaydess®).

The national price range of a copper-releasing device varies from CAD$90 to CAD$200. The price of the hormone releasing IUD ranges from CAD$320 to CAD$400.[29,32]

Procedure

Intrauterine devices should be inserted and removed by a trained health care professional. The device can be inserted at any time as long as the woman is not pregnant.[30] IUDs can be inserted right after giving birth or having an aspiration or surgical abortion.

After checking the patient's medical history, and verifying the positioning of the uterus, the physician inserts a speculum into the vagina and sterilizes the cervix with an antiseptic solution. The device is then inserted into the uterus while leaving 1 to 2 inches of the IUD strings.

The strings allow the healthcare professional to remove the IUD when needed and provides the user with a mechanism of checking that the device remains in place. The insertion only takes a few minutes. A feeling of discomfort and some bleeding may be experienced by the user, but these effects disappear quickly after the insertion. The user can have sex after insertion.[22]

Mechanism of action

The main mechanism of action of an intrauterine device is to prevent fertilization. IUDs may also have a post-fertilization effect and an ability to inhibit implantation.[31,32] Existing literature demonstrates a contraceptive effect of IUDs caused by a local inflammatory reaction at the endometrium that affects the function and viability of spermatozoa. This inflammatory reaction caused by the presence of a foreign body, such as the IUD, hinders the fertilization process; however this inflammation has no effect on ovulation. Fertilization begins with insemination; during this stage the spermatozoa begin a path through the cervical mucus. The success of fertilization depends on two main factors: the motility of the spermatozoa and the fluidic properties of the cervical mucus. IUDs will affect both factors, first by altering the composition and production of cervical mucus and then by altering the motility and viability of the sperm.[33] Studies have observed either a reduction in sperm count, phagocytosis, or detachment of their head-tail 15 to 30 minutes after insemination.[34,35,36,37] The vertical part of the copper IUD is surrounded by a copper stem that affects the motility of the spermatozoa, while creating a hostile and cytotoxic environment in the uterus by copper ions[33].

The hormonal IUD is made of a vertical cylindrical structure of polyethylene containing levonorgestrel. This hormone is released slowly through a membrane that controls the release rate.[38] This results in the suppression of estrogen and progesterone receptors.[39] The hormonal

IUD slowly releases a small amount of levonorgestrel which will thin the endometrium and thicken the cervical mucus.[40] Hormonal IUDs can induce a systemic reaction depending on the concentration of hormone.

Indications, acceptability, efficacy, and safety

Intrauterine devices are recommended for women seeking a contraceptive method with prolonged and reversible action, without necessary manipulation during coitus. IUDs can be used by women with contraindications or sensitivity to estrogen, as well as women who are breast-feeding. A 2002 study found that 50% of Canadian women of child-bearing age were familiar with IUD.[41] Only 10% of the women had a favorable opinion of this method of contraception compared to 63% for the oral contraceptive pill. This same study revealed that 1% of Canada's population aged 15-44 and sexually active used an IUD. The copper IUD can be used as emergency contraception up to five days after unprotected sex. Trials are currently underway to determine if the hormonal IUD can be used as an emergency contraceptive. The hormonal IUD impacts menstruation and has been shown to decrease cramping and bleeding.[42] Studies show that 15% to 20% of women will experience amenorrhea within the first year of use.[43],[44] Clinical trials demonstrate a failure rate of 1.26 per 100 woman-year (WY) for the copper IUD and 0.09 per 100 WY for the hormonal IUD.[45,46] This unit covers 12 months of exposure to the risk of pregnancy in the reproductive life of a sexually active woman.[47]

Contraindications

The World Health Organization developed a list of contraindications for the use of intrauterine devices, including current pregnancy and current or recent pelvic inflammatory disease. The full like is included as Table 2.[48]

Table 2: WHO List of contraindications for IUD use

Absolute contraindications	Relative contraindications
• pregnancy • current, recurrent, or recent (within past 3 months) pelvic inflammatory disease (PID) or sexually transmitted infection (STI) • puerperal sepsis • immediate post-septic abortion • severely distorted uterine cavity • unexplained vaginal bleeding • cervical or endometrial cancer • malignant trophoblastic disease • copper allergy (for copper IUDs) • breast cancer (for LNG-IUS)	• risk factor for STIs or human immunodeficiency virus (HIV) • impaired response to infection - in HIV-positive women - in women undergoing corticosteroid therapy • from 48 hours to 4 weeks postpartum • ovarian cancer • benign gestational trophoblastic disease

Side effects

Side effects caused by intrauterine devices appear during the first few months of use. The most common effects are irregular menstruation for both types of IUD and increased bleeding for copper IUD. Persistent pain may be a result of malpositioning or infection. The hormonal device appears to have a low incidence of systemic hormonal effects such as depression, acne, headaches, and breast tenderness.[49] An increase in ovarian cysts has also been reported in 30%

of hormonal IUD users. Nevertheless, they are typically asymptomatic and do not require intervention or treatment. They generally disappear spontaneously.[50,51.]

Risks

Risks associated with the use of intrauterine devices include uterine perforation, infections, and expulsion.[52] Studies have observed a rate of 0.6 to 1.61 perforations per 1,000 insertions[53,54] and 9.68 cases of infection on 1,000 insertions causing pelvic inflammation within 20 days of insertion [55,56]. Perforations usually occur during insertion. Risks are increased during postpartum insertion, when the operator is inexperienced, or when the immovable uterus is tilted posteriorly or slightly anteverted.[57] Infections are generally higher during the first 20 days after insertion. The endometrial cavity becomes sterile soon after. Studies note a very low risk of expulsion, from 2.4% to 6.0% in the first year of use. The risk of expulsion is increased with postpartum insertion, nulliparity, and previous expulsion.

There is little literature on the experience of female IUD users in Ontario or in the rest of Canada. However, the media produces coverage on the subject. Popular newspaper articles convey and contribute to misconceptions such as there being a causal relationship between ectopic pregnancy and the insertion of an IUD or contraindication for women who have never given birth.[41,58]

The implant

The implant is a small thin stick inserted by a doctor under the skin of the arm. The implant slowly releases the progestin that prevents pregnancy for up to four years. This method of long-lasting contraception is currently not available in Canada because it has not been approved by Health Canada.[15]

Study rationale

Little in-depth research has been published on the experience of users of long-acting reversible contraception in Ontario. Misconceptions spread by the media may influence LARC use.[59] Further, the out-of-pocket costs associated with LARC may discourage women from choosing these contraceptive methods. Exploration of women's experience with LARC methods can shed the light on the factors and dynamics influencing information and use. Findings from this study may also inform efforts to increase awareness of the contraceptive implant, once it is approved for use in Canada.

Research questions

This study aimed to answer the following research questions:

1. What are Ontarian women's knowledge of, attitudes toward, and experiences with the IUD?
2. What are Ontarian women's perspectives on how IUD-related information and services can be improved?

Specific aims

Through a bilingual online survey and in-depth interviews with a sub-set of survey respondents, this qualitative study specifically aims to:

1. Assess Ontario women's knowledge of and attitudes toward methods of LARC;

2. Identify where women in Ontario get information about methods of LARC;
3. Explore Ontario women's experiences with the use of methods of LARC; and
4. Identify avenues to improve information and services related to methods of LARC in the province.

In addition to contributing to the body of literature on Canadian women's contraceptive experiences, this qualitative study seeds a larger project dedicated to identifying facilitators and barriers to expanding access to methods of LARC in Canada.

Chapter 2: Methods

In order to address our stated aims, we conducted a multi-methods study with women of reproductive age in Ontario. The study comprised two components: an anonymous online bi-lingual survey and a telephone/Skype interview with a subset of survey participants. The online survey provided a snapshot of LARC-related knowledge, attitudes, and practices and the in-depth interviews (IDIs) allowed for a deeper understanding of women's lived experiences.

Data collection: Online survey

In the first phase of the project, we recruited women in Ontario to complete an online survey. We used a multi-modal community-based recruitment strategy, including social media announcements, online advertisements, and circulation of study information through listservs and community organizations in the province. We offered the survey, which took no more than 30 minutes to complete, in both English and French. All self-identified women aged 15-49 who lived in Ontario at the time of the survey were eligible to participate. Informed by previous surveys,[17,60] the instrument comprised both closed-ended and open-ended free response questions. We asked participants to provide basic demographic information, report on their reproductive health and contraceptive histories, respond to questions assessing LARC knowledge, and identify sources of LARC information. As a thank you for completing the survey, participants had the opportunity to enter a draw for a chance to win a CAD100 gift certificate to Amazon.ca (one gift certificate per 100 participants).[61,62] We did not collect personally identifying information about participants as part of the survey. However, on the last page of the survey, we asked all participants if they would like to receive the results of the study and if those

who have ever used a method of LARC would be interested in participating in an in-depth telephone interview about their experiences.

The online survey remained "open" for a three-month period after the initial launch (January 2018). Based on previous studies conducted by members of Dr. Foster's group with women of reproductive age in Ontario, we anticipated that over the open enrollment period approximately 300 participants would complete the online survey. We had chosen 300 as our target survey sample as we believed this number would be sufficient to obtain a snapshot of women's knowledge and attitudes toward methods of LARC and would be feasible given the project timeframe. Further, based on similar multi-methods studies, we anticipated that 10%-20% of participants would indicate interest in participating in the telephone/Skype interview. Indeed, our ultimate survey sample of 256 participants allowed us to recruit enough in-depth interview participants (n=25) to achieve thematic saturation.

<u>Data collection: In-depth interviews</u>

We contacted those survey respondents who expressed interest in participating in the IDI via email and after confirming eligibility we scheduled a mutually convenient time for a telephone/Skype interview. We contacted all participants who expressed interest in participating.

After consenting participants verbally, the interview began with basic demographic information and then moved to questions regarding ways in which participants learned about methods of LARC, the factors that influenced their decisions to use a method of LARC, and their experiences obtaining, using, and discontinuing (if applicable) the method. The interview then

moved to questions focused on participant opinions of methods of LARC and possibilities for improving information about and the provision of a full range of methods of LARC in Ontario. In the interviews we especially explored women's perspectives on the implant and what might facilitate its introduction in Canada. The interviews last an average of 30 minutes. We offered participants the study findings and provided participants with a CAD20 gift certificate to Amazon.ca as a thank you for their time. We conducted interviews in English and French (per the preference of the participant). We audio-recorded all interviews (with permission) for later transcription. We took notes during the interview and formally memoed immediately afterward.

Data analysis

We exported survey data to Microsoft Excel® for analysis. We analyzed the responses to close-ended questions using descriptive statistics such as frequencies and cross tabulations and open-ended questions using content and thematic analytic techniques. This was done using both *a priori* codes and categories based on the study aims and research questions and inductive techniques to identify emergent findings and themes.

We also analyzed the telephone/Skype interviews for content and themes using both deductive and inductive techniques. The data collection and analysis process was meant to be iterative, such that we began reviewing data as they were collected. Through the use of memoing after each interview we initiated the process of identifying recurrent themes and drawing connections between ideas. We transcribed (and translated into English) all interviews and used ATLAS.ti to manage our data. The content of the interviews combined with insights derived from the memos allowed us to create an initial codebook; each code was carefully

described and defined. Once we had coded transcripts, we worked within each code to identify principal sub-themes that reflect finer distinctions in the data. We then turned to the interpretation phase of our analytic plan in which we focused on identifying relationships among themes and concepts.

Theoretical framework

Action research serves as the theoretical foundation for this project. Specifically, this project was derived from and structured as practical action research and was situated within an interpretivist paradigm.[63] This project was designed to empower participants, acquire knowledge, and affect social change. As is characteristic of action research in general, the design embraced the planning, acting, observing, and reflecting cycle which was ongoing throughout the life of the project.[64]

Ethical considerations

We received approval to conduct this study from Social Sciences Research Ethics Board (REB) at the University of Ottawa through the modification of a previously approved application (File #01-15-02). The ethics application included a description of the project and the study design, all recruitment tools and study instruments, details of the consent process for each component of the project, the methods by which participant confidentiality were ensured, and the ways in which personally identifiable information was stored, conserved, and ultimately destroyed. We distributed a bilingual informed consent distributed to all interview participants.

We did not initiate the interview unless the consent form had been read, explained, and accepted by the interviewee.

Statement of contribution

I completed this study as part of the Master of Science in Interdisciplinary Health Sciences program at the University of Ottawa. As the lead investigator, I conceptualized the study, designed the study instruments, oversaw the data collection and analysis process, and led the writing of the manuscripts. I completed all of the French-language interviews and transcribed those audio files.

Throughout all phases of this project, my supervisor Dr. Foster, provided significant guidance. She supported the development of the proposal, research tools, ethics application, and funding applications, as well as drafting of the articles. Furthermore, Dr. Foster led a two-day qualitative workshop where I participated in 16 hours of interactive training on qualitative study design, instrument development, in-depth interviewing techniques, and focus group discussion facilitation. She has also provided significant training on dissemination. Additionally, as part of the require for the master degree, I completed a Directed Study course with my supervisor, during the winter semester of 2017. This course allowed me to gain skills in conducting in-depth interviews in both English and French and gave me the opportunity to analyze qualitative data.

One of Dr. Foster's MSc students, Nicola Brogan, conducted the English-language interviews and Ms. Brogan and several volunteers with Dr. Foster's group transcribed those audio files. Ms. Brogan contributed to this project as part of her Directed Study after having completed a similar qualitative methods workshop with Dr. Foster.

Chapter 3: Article #1

We intend to submit this article to *Journal of Obstetrics and Gynaecology Canada (JOGC)*. We have formatted this article for submission to *JOGC* and the manuscript adheres to the style, word limit, and citation guidelines for this journal.

Exploring women's experiences with the intrauterine device in Ontario

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Abstract

Background: Use of the intrauterine device (IUD) is a highly effective strategy for preventing pregnancy. However, less than 5% of Canadian women use IUDs and few studies have explored Canadian women's experiences with this contraceptive method. No published studies have examined IUD use in Ontario.

Objectives: We aimed to assess women's knowledge of and experiences with the intrauterine device and identify factors and dynamics influencing awareness and use.

Methods: We conducted a multi-methods study with women of reproductive age in Ontario. The study comprised two components: an anonymous online survey and a telephone/Skype interview with a subset of survey participants. The survey included both closed-ended and open-ended free response questions and focused on IUD-related knowledge, attitudes, and experiences. The in-depth interviews allowed for a deeper understanding of women's lived experiences. We used descriptive statistics and both inductive and deductive qualitative analytic techniques to analyze our data.

Results: From January to March 2018, we received 212 English-language survey responses and conducted 17 in-depth interviews with Anglophone participants. Participants described positive experiences with the IUD and our results suggest that the main factors influencing IUD use were ease of use and efficacy. Approximately half of users would recommend the IUD to a friend. Despite general satisfaction with the IUD, many women felt contraceptive counselling was incomplete. Participants highlighted a number of ways that IUD education and availability could be improved in Ontario.

Conclusion: Our findings shed light on issues that should routinely be discussed with contraceptive patients and offer insight into how to improve IUD education and access.

1. Introduction

The intrauterine device (IUD) is among the most effective contraceptive methods at preventing pregnancy (Planned Parenthood., 2019). IUDs differ from other methods of contraception due to their long-term action and reversible effect. Moreover, IUDs do not rely on user compliance and once inserted by the health professional the effects begin in the following week. Consequently, the gap is very small (0.2%) between the perfect use rate and the typical use rate (Trussell, 2011). The IUD is a small, flexible and T-shaped plastic device that is inserted into the uterus by a health care professional to prevent pregnancy for three to 12 years, depending on the type of device (Stoddard et al. . There are two types of intrauterine devices: the copper IUD and the hormonal IUD. There are two IUD models in Canada, the copper-releasing device (e.g.Mona Lisa ®, Flexi T 380 ®, Nova T ®, Liberté ®) and the levonorgestrel-releasing intrauterine system (e.g. Mirena ®, Jaydess ® Kyleena®)(Center, 2017; I. S. Health, 2017; Talk, 2019).

Little in-depth research has been published on the experience of users of intrauterine devices in Ontario. During the winter of 2018, we conducted a multi-methods study to explore women's experiences using the IUD, as well as their knowledge of and attitudes toward the method. We also aimed to document Ontarian women's perspectives on how to improve information and services related to IUDs in the province.

2. Methods

Our multi-methods, qualitative study consisted of two components: an anonymous online survey and in-depth interviews by telephone or Skype with a subset of survey participants. Women were eligible to participate in the survey if they were 15 years and older, residents of Ontario at the time of the survey, and sufficiently fluent in English or French to answer questions; survey participants were eligible for the interview if they had ever-used a method of long-acting reversible contraception (LARC). We used a multi-modal recruitment strategy that included social media engagement (Twitter and Facebook), online advertisements, and posts on listservs. This study received approval from the Social Sciences and Humanities Research Ethics Board at the University of Ottawa.

2.1 Online survey

Our survey instrument included closed-ended and open-ended free response questions and took an average of 35 minutes to complete. We developed questions from existing questionnaires, prior surveys conducted by AMF and her research group at the University of Ottawa, and the literature (LaRoche, K. J., et al., 2018) and pilot tested the online instrument with a small group of Anglophone and Francophone university students in Ottawa before launching the survey. After obtaining consent and ensuring eligibility, the 44-question survey asked participants about their background, relationship status, and reproductive health and contraceptive histories. We then asked participants to comment on their experiences with contraception and about their use of LARC, if applicable. At the end of the survey, we offered participants the opportunity to enter a draw for a CAD100 gift certificate. We concluded the survey by inviting respondents who had

ever-used a method of LARC to participate in an in-depth interview; we delinked this information from survey data.

2.2 In-depth Interviews

We contacted all survey respondents who expressed interest in participating in the second phase of the study by email to schedule a telephone/Skype interview. We audio-recorded all interviews, which lasted an average of 30 minutes. DC and NB, both master's students in the Interdisciplinary Health Sciences program at the University of Ottawa at the time of the study, conducted the interviews after receiving training from AMF, a medical anthropologist and medical doctor with extensive qualitative research experience. Interviewers followed the same guide and asked participants a series of open-ended questions about their background, reproductive health and contraceptive histories, and experiences using the IUD. In these interviews, we explored how women made the decision to adopt this contraceptive method, as well as the dynamics that shaped continuation or discontinuation, as applicable. We concluded the interview by asking participants how contraceptive services could be improved in Ontario. We took notes during the interviews and formally memoed shortly afterward. We sent all participants a CAD20 gift card and later transcribed all interviews.

2.3 Data analysis

We exported our survey data to Microsoft Excel (Microsoft Corp, Redmond, WA) and performed descriptive statistical analyses, including frequencies and cross-tabulations. We analyzed the free response questions for content and themes using both deductive and inductive techniques. We

began reviewing interview data during the collection phase to identify common themes and draw initial connections between ideas. Based on interview content and insights derived from the memos DC created an initial codebook, with input from AMF. We analyzed these data for content and themes using a priori (predetermined) codes and categories based on the research questions and interview guide and inductive codes and categories that emerged as we familiarized ourselves with the data (Denzin & Lincoln, 2011; Elo & Kyngäs, 2008) and we used ATLAS.ti to manage our data. Guided by regular team meetings and discussions, our analysis centered on grouping categories of information, drawing connections between ideas, and understanding relationships. In the last analytic phase, we combined the results from the two study components, paying particular attention to concordant and discordant findings. In this article, we focus on the English-language responses and organize our results around salient themes. We removed and/or masked all personally identifying information and use pseudonyms throughout.

3. Results

3.1 Participant characteristics

Over a three-month period, we obtained 212 surveys responses in English. Most participants were between the ages of 18 and 24, identified as Caucasian, and were highly educated. Of those who provided information about their relationship status and pregnancy history, the majority were in a committed monogamous relationship and two thirds had never been pregnant. We provide detailed information on Table 1. We completed 17 interviews with women from across Ontario who had ever-used the IUD. Our participants ranged in age from 17 to 40

and the majority resided in East Ontario. Consistent with our survey participants, most of our interviewees were highly educated and in a committed relationship. Women described varying reproductive health and contraceptive histories, but most of the interview participants were not parents.

3.2 Ease of use and efficacy are the main factors influencing use

"You can just insert it and forget it." (Julia, age 28, Central Ontario)

Survey participants indicated two main factors that influenced their decision: the ease of use (n=77, 88%) and efficacy (n=62, 70%). Similarly, most of our interviewees reported their appreciation of the non-user dependant nature of the IUD and emphasized the practicality of the low maintenance and long-acting aspects of the method. Many of our interview participants compared the ease of use and the efficacy of IUDs with oral contraceptive pills (OCPs), the NuvaRing®, and male condoms. They highlighted the convenience of not being subject to forgetfulness and short-term prescription renewal.

> *''I hated that feeling of being like did I take my pill or even the NuvaRing, I had to switch it out every three weeks. I put a new one and then I had to mark it on the calendar…It was always on my mind, like, do I have to change it, do I need a new one.''* (Olivia, age 26, Central Ontario)

Both survey respondents who had ever-used the IUD and interviewees also noted that they would recommend the IUD to a friend, particularly because of its convenience.

> *''Basically, I just tell them that, you know, I haven't had to think about an alarm going off for 3 years and I have another 7 or 8 years to go on my IUD so that it's basically, you know, if they basically don't want kids for the next decade.''* (Blake, age 26, Central Ontario)

“*One of the reasons why birth control fails is because people forget to take it properly. Um, and if you’re not thinking about being pregnant anytime soon, it’s definitely more convenient*.” (Judith, age 32, East Ontario)

Women we interviewed also reported that the efficacy of the IUD, as described by their health care provider, influenced their decision to adopt the method.

“I knew I wouldn’t want kids for another decade anyways so it seemed pretty perfect for me…the high no pregnancy rate seemed pretty good to me.” (Jen, age 26, West Ontario)

3.3 Women’s experiences with the IUD were generally positive

Overall, both survey and interview participants had good experiences with the IUD. Interviewees described the most positive aspects of the method as having lighter and shorter periods or experiencing amenorrhoea.

“It is great. I love it. I don’t have periods anymore…I don’t have to pack tampons and stuff especially because I do a lot of like outdoors stuff and camping and things that would not been conducive to dealing with periods. So yeah, I love for that. the big one for me right now is not having to worry about not getting a prescription filled because of where I’m living.” (Suzan, age 26, Eastern Ontario)

The most notable negative side effect of IUDs stated by both survey and interview participants was cramping, particularly during IUD insertion. The insertion process was most often described as uncomfortable and sometimes as painful; some participants experienced minor cramping and some had stronger cramps during and after insertion.

“So it’s like really, really painful for like 10-15 seconds and then that was it. Like I didn’t really feel very much at all except for the 10 or 15 seconds where it was actually being inserted and then you know, I felt like I was going to punch someone, but it was fine. And then after that, um, after that it was totally fine.” (Audrey, age 23, Central Ontario)

“I’ve just never felt pain like inside my body before like in my organs, and so it was very strange, it was very sharp I think. I was in shock after, throwing up, and my muscles were

> *stuck so I couldn't open my hands, and the nurse had to physically close my legs for me because I couldn't close my legs, and I couldn't move. It was very weird.*" (Josie, age 22, West Ontario)

3.4 Women rely on health care providers and the Internet for information on the IUD

Most of our survey respondents who had ever-used the IUD indicated that they first heard about the IUD from a health care professional (n=50, 57%) and from the Internet (n=35, 40%). In our interviews, many women stated that the internet played a key role in their research on contraceptive options.

> *"When it comes to whether I get my information from and how thoroughly I research, I don't go to my primary provider first, I don't go into a sexual health clinic, I may go on their website as a resource for information, but primarily I just google search it, searching the via google.*" (Ava, age 26, Central Ontario)

However, many of these participants went on to state that health professionals remain the most credible and reliable source of contraceptive information. Indeed many women reported that they did their own online research so that they could then have a more informed discussion with their provider. Women we interviewed also reported that the internet influenced their contraceptive method choice. In addition to getting medical information about the method, they also reported reading a variety of women's reviews of their own experiences with the IUD.

The majority of our survey respondents who were ever-IUD users were satisfied with the information provided when they were first prescribed the IUD (n=73, 83%). Similarly, women we interviewed specified that health service providers were able to answer all of their questions, explain the risks, and outline the insertion procedure and potential side effects. However, some

interviewees wanted more information from their health service providers about the variety of IUDs available and on potential pain during insertion.

3.5 IUD users would like to see more information about and better cost-coverage of the IUD in Ontario

Both of survey and interview participants cited education and accessibility as being avenues for improvement in Ontario. They stated that health classes should be available and improved for teens and adolescents so that they can be made aware of this option early in their reproductive lives.

> *"I think like presenting all of the information, all of the options, its really important especially to young women and teenagers. You know, like, when I was 17 and went to that health unit and was like I need contraception, if they have presented me some other options, which I don't know if they were available…But I would have been able to make a more informed decision than I might have chosen something other than the pill."* (Lexie, age 25, West Ontario)

Women we interviewed also emphasized that health care providers must present the IUD as an equal option to other types of contraception rather than focusing on OCPs as the default contraceptive. They also emphasized that the information presented on contraception should be available to everyone, regardless of their demographics, so that every woman can make well-informed decisions.

> *"So one piece that I feel like doctors-I don't know they don't recommend it until you try the pill because that is just the go to first option…I don't think it should be this option only if you've tried others and it hasn't worked. I don't see why it can't be a first line."* (Suzan, age 26, Eastern Ontario)

A number of survey participants noted that the cost of IUDs was "inflated". Several interviewees reported that the upfront cost was a barrier to IUD accessibility. However, they were convinced of the long-term advantage of this method.

> *"It is a lot of money on the upfront but it's very obvious that it's a less expensive option when you consider how much you would generally pay for monthly dispensing of any kind of birth control*." (Keisha, age 28, West Ontario)

Our survey participants and interviewees reported that many misconceptions about the IUD persist. In our interviews, women cited a number of the myths and misconceptions that they have heard from friends, family members, health care professionals, and the media. This included associating the IUD with an increased risk of ectopic pregnancy and infertility and discouraging nulliparous women from using the IUD. They felt strongly that these myths needed to be challenged and deconstructed.

4. Discussion

In 1985, the IUD's reputation took a turn in the United States when more than 300,000 lawsuits were filed against A. H. Robbins, a pharmaceutical manufacturer and marketer of the Dalkon Shield IUD (Bougie & Singh, 2016) regarding allegations that the IUD caused pelvic inflammatory disease. Although the latter was marketed at the time as being safer than the oral contraceptive pill, it was not subject to the *Federal Food, Drug, and Cosmetic Act* (Claeys, 2004; Schwartz, 1974). It was not until 1976 that the Food and Drug Administration decided to require IUD manufacturers to undergo efficacy and safety testing and pre-market approval (Junod, 2017). Rigorous tests could have allowed for detection of the poor design of the Dalkon Shield, a porous, multifilament string that allows bacteria to multiply and travel to the uterus (World

Health Organization, 2010; Cheng, 2000), which resulted in many side effects, including septicaemia and pelvic inflammatory disease. The modern design of the IUD avoids these risks by using as a replacement a polymer monofilament threads that decrease the risk of bacteria transmission (Northridge & Maslyanskaya, 2018; Shoupe, 2016; Wilkins et al., 1990). Although new generation IUDs are much safer and more efficient than before, their negative reputation persists and misconceptions continue to circulate among the population and the health professional community.

Participants in our study rely primarily on health care professionals and the Internet to obtain information on IUDs; it is therefore crucial that information be up to date and evidence-based. The enthusiasm of a health care professional contributes to the increase of the use of a contraceptive method (Amico et al., 2017; Dunn et al., 2009; Reading & Newton, 1977). In 2009, the American College of Obstetricians and Gynecologists decided to revise their recommendation on the IUD and specify that nulliparous women and adolescents are eligible for IUD use (Centers for Disease Control and Prevention, 2010; Eliscu & Burstein, 2016; American College of Obstetricians and Gynecologists, 2012). Combined with significant effort to reduce the cost of IUDs, the rate of IUD use significantly increased, going from 2.4% in 2008 to 10.3% in 2012, then 11.8% in 2014 according to the National Survey of Family Growth (United States Department of Health and Human Services. National Center for Health Statistics, 2008; Kavanaugh & Jerman, 2018). In 2016, the Society of Obstetricians and Gynaecologists of Canada approved similar clinical practice guidelines (Black et al.,2016).

However, in Canada, the rate of IUD use is limited, at 4.6% (Black & Guilbert, 2015; Black et al., 2009). Lack of accessibility is commonly cited as a factor negatively impacting use,

particularly because of the high out-of-pocket price (Beeson et al., 2014; Peipert et al. 2012). Canada is the only country that offers a public health service but has no national prescription drug coverage system (Phillips, 2016), a situation that leaves many individual vulnerable to accessing contraceptive methods, particularly when they do not benefit from a drug plan or government assistance. The national price range of a copper-releasing device varies from CAD$90 to $200 while the price of the hormone releasing IUD ranges from CAD$320 to $400 (Fédération du Québec pour le planning des naissances naissances, 2019; Stanford & Mikolajczyk, 2002). Our results are consistent with these findings. Even though all of our interview participants had used an IUD, a number of them indicated that the upfront cost represents a barrier.

In 2018, the Ontario government launched OHIP +, a program that allows young people age 24 and under cost coverage of more than 4,000 drug products available under the Ontario Drug Benefit Program (Ontario Government, 2019); one IUD, Kyleena® is covered through this program. However, neither Jaydess® nor the copper IUD are covered under this initiative and Mirena® is only covered if it is prescribed for heavy menstrual bleeding (Planned Parenthood, 2018). Government initiatives such as the OHIP + represents a good first step to increasing the accessibility of effective contraceptive methods. However, a full range of contraceptives should be covered.

Finally, studies have shown the importance of contraceptive education in contraceptive knowledge and decision-making (Pazol et al., 2015). Contraceptive education should incorporate information about the full range of existing methods, including IUDs, as mentioned by our participants. This gives individuals the opportunity to make informed and autonomous decisions

that best meet their needs, which in turn leads to great satisfaction and consistent use (Hatcher, 2011). The status of sex education in Ontario has been subject to much recent debate. Ensuring that Ontario's updated Health and Physical Education Curriculum include age-appropriate information about all available methods of contraception as well as cost coverage.

4.1 Limitations

This is a small, multi-methods, qualitative study in one Canadian province. Although we are confident that our findings have import beyond the immediate study population, our results are neither representative nor generalizable. Our survey provided a snapshot of women's experiences and served as a vehicle for recruiting participants for the interview component. Future studies would benefit from including the perspectives of women from other provinces and territories.

4.2 Conclusion

The Ontario women who participated in our study were generally satisfied with their experience with IUDs. However, our participants identified several avenues for improving IUD education and access. Fortifying and expanding provincial policies and supporting evidence-based health education and provider training appears warranted.

Table 1 : Characteristics of online survey participants (N=212)

Demographic characteristic	n	(%)
Age		
>18 years	2	1
18-24 years	84	40
25-29 years	53	25
30-35 years	29	14
36-40 years	18	8
41-45 years	7	3
Over 45 years	8	4
No response	11	5
Region of Ontario		
Northwest	5	2
Northeast	9	4
East	115	54
Central	48	23
West	16	8
Other	8	4
No response	11	5
Race/ethnicity		
Black/ African Canadian/ Afro-Caribbean	6	3
East Asian or Asian	12	6
Inuit/ Metis/ First Nations	0	0
Latin American	4	2
Middle Eastern or Arab	7	3
South Asian or Indian	7	3
White/ Caucasian/ European	158	75
Other	4	2
No response	14	7
Education		
Some high school	3	1
High school diploma/GED	21	10
Some college	12	6
College diploma or certificate	13	6
Bachelor's degree	70	33
Some graduate school	20	9
Graduate degree	62	29
No response	11	5

Currently a student		
Yes, Full time	85	40
Yes, Part time	10	5
No	104	49
No response	13	6
Currently employed		
Yes, Full time	98	46
Yes, Part time	53	25
No	49	23
No response	12	6
Relationship status		
Single, not dating, not in a relationship	17	8
Casually dating one person	8	4
Casually dating more than one person	3	1
In a committed monogamous relationship	63	30
In more than one committed relationship	1	0
No response	120	57
Number of pregnancies		
0	62	29
≥1	29	14
No response	121	57

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Chapter 4: Article #2

We intend to submit this article to *Linguistic Minorities*. We have formatted the article for *Linguistic Minorities* and the manuscript adheres to the style, word limit, and citation guidelines for this journal.

En français s.v.p: Franco-Ontarians' challenges to obtaining long-acting reversible contraception

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Keywords: Ontario, Francophone, LARC, contraception, IUD

Abstract

Background: In Canada, over half of the Francophone population outside Quebec live in Ontario. However, this population is still in a minority situation in a predominantly English-speaking province. This linguistic situation, as a determinant of health, is a barrier to accessing sexual and reproductive health services and deserves to be examined in the context of equity in health policies.

Objectives: We aimed to assess Franco-Ontarian women's knowledge of and experiences with the intrauterine device (IUD) and identify the factors and dynamics influencing awareness and use.

Methods: We conducted a multi-methods study with Franco-Ontarian women of reproductive age. The study comprised two components: an anonymous online survey and a telephone/Skype interview with a subset of survey participants. We explored IUD-related knowledge, attitudes, and practices and analyzed our data using descriptive techniques and for content and themes.

Results: Over a three-month period in 2018, we received 44 survey responses and conducted eight in-depth interviews with Franco-Ontarians. Although participants described positive experiences with the IUD, our results suggest that language barriers reduce the accessibility of long-acting reversible contraception for this language minority population.

Conclusion: Efforts are required in Ontario to ensure that health care professionals and sexual and reproductive centers can provide contraceptive service delivery in French.

1. Introduction

A language barrier is defined as “the difficulty or inability of people of different languages to communicate with one another and thus to make themselves understood.” (RSSFE 2012) Studies have shown a correlation between language barriers and the quality of health services (Chang & Fortier, 1998; Flores, 2006; Yeo, 2004). This correlation can potentially affect the health of a minority population (Bouchard et al., 2009). Communicating in a language barrier context is an important consideration in the provision of health care (Meuter et al., 2015). Poor communication between health care professionals and patients can have an impact on the accessibility and delivery of preventative health services (Pearson et al., 2008). Difficulties in communication can also compromise the accuracy of the patient’s chart, diagnosis, and medical follow-up and can undermine patient's needs, expectations, and confidence in his or her caregiver (de Moissac et al., 2012; Savard et al., 2013; Wilson, 2013). The health professional may also be in breach of his/her/their ethical obligation to obtain informed consent and provide clear explanations.

When it comes to the accessibility of care, considerable inequities and inequalities persist. Bouchard and Desmeules (2014) demonstrate that it is essential to consider the experiences of linguistic minorities. In Canada, 54% of the Francophone population outside Quebec resides in Ontario. Nevertheless, this population is in a minority situation in a predominantly English-speaking province. This linguistic situation, as a determinant of health, is an obstacle to accessing to sexual and reproductive health care.

Adherence to a method of contraception is tied to the lifestyle and preferences of the patient (Hatcher, 2007). A method that does not fit a patient’s lifestyle will likely not be used

correctly or consistently. Therefore, informed decision-making is critical. Poor communication between the patient and the health care professional can increase the risk of not adhering effectively to a selected method.

Long-acting reversible contraceptive methods are the most effective methods of non-permanent contraception since they do not rely on the action of the user (Black & Guilbert, 2015). They differ from other methods of contraception because of their long-term action and their reversible effect. Methods of long-acting reversible contraception (LARC) include intrauterine devices (IUDs) and subcutaneous contraceptive implants. The latter is not currently available in Canada because it has not been approved by Health Canada (Black et al., 2016).

Little in-depth research has been published on the experience of LARC users in Ontario; there are no published studies specifically on Francophone minority populations. This article aims to explore the experiences of Francophone women living in Ontario with methods of LARC in order to shed light on the factors and dynamics that influence information and use, particularly in a context of linguistic diversity.

2. Methods

Our multi-method, qualitative study consisted of two components: an anonymous online survey and in-depth interviews by telephone or Skype with a subset of survey participants. We invited all women of reproductive age (15-49, inclusive) who resided in Ontario at the time of the survey and were sufficiently fluent in English or French to answer questions to participate in the online survey. We used a multimodal recruitment strategy that included social media posts, online advertisements, and announcements on listservs. We purposively recruited in Franco-

Ontarian communities and reached out to agencies serving this population throughout the province in order to capture their perspectives. We invited a sub-set of survey participants who had ever-used a method of LARC to participate in an in-depth interview. We received approval to conduct the study from the Social Sciences and Humanities Research Ethics Board at the University of Ottawa.

Online survey

Our survey instrument included closed-ended and open-ended free response questions and took an average of 35 minutes to complete. After obtaining consent and ensuring eligibility, the 44-question survey asked participants to report on their background, relationship status, and reproductive health and contraceptive histories. For those who had ever-used a method of LARC, we asked additional questions about how they first learned about the method, factors that influenced their decision to use the method, their experiences, and their reasons for discontinuation, if applicable. At the end of the survey, we offered participants the opportunity to enter a draw for a CAD100 gift certificate. We concluded the survey by inviting ever-users of LARC to participate in an in-depth interview.

In-depth Interviews

We contacted all survey respondents who expressed interest in participating in the second phase of the study by email to confirm eligibility and schedule a telephone/Skype interview. We audio-recorded all interviews, which lasted an average of 30 minutes. DC a master’s student in the Interdisciplinary Health Sciences program at the University of Ottawa,

conducted all of the French-language interview. She and another master's student conducted the English-language interviews. They received training from AMF, a medical anthropologist and medical doctor with extensive qualitative research experience. Our interview guide included a series of open-ended questions about the participant's background, reproductive health and contraceptive histories, and experiences using the IUD. In these interviews, we explored how women made the decision to adopt this contraceptive method, as well as the dynamics that shaped continuation or discontinuation, as applicable. We concluded the interview by asking participants how contraceptive services could be improved in Ontario. We took notes during the interviews and formally memoed shortly afterward, a process that both allowed us to reflect on researcher-participant interactions and initiate the analytic process. We sent all participants a CAD20 gift card and later transcribed all interviews.

Data analysis

We exported our survey data to Microsoft Excel (Microsoft Corp, Redmond, WA) and performed descriptive statistical analyses, including frequencies and cross-tabulations. We analyzed the free response questions for content and themes using both deductive and inductive techniques. We began reviewing interview data during the collection phase to identify common themes and draw initial connections between ideas. Based on interview content and insights derived from the memos DC created an initial codebook, with input from AMF. We analyzed the interviews for content and themes using predetermined codes and categories based on the research questions and interview guide as well as emergent ideas (Denzin & Lincoln, 2011; Elo & Kyngäs, 2008); we used ATLAS.ti to manage our data. Guided by regular team meetings and

discussions, our analysis centered on grouping categories of information, drawing connections between ideas, and understanding relationships. In the last analytic phase, we combined the results from the two study components, paying particular attention to concordant and discordant findings. In this article, we focus specifically on the findings from our Francophone participants. We organize our results around domains of inquiry. We have removed and/or masked all personally identifying information and use pseudonyms throughout. We have translated all quotations to English.

3. Results

Participant characteristics

Over a three-month period, we obtained 44 survey responses in French. Most participants were between the ages of 18 and 29, identified as Caucasian (73%), and were well educated. A majority were in a committed monogamous relationship (18%) and 23% had never been pregnant. We provide more detailed information on Table 1. We completed eight interviews with women from across Ontario who had ever-used the IUD. Our participants ranged in age from 20 to 38, the majority resided in East Ontario, and most were highly educated.

Participants' experiences with LARC

The majority of our participants heard about long-acting reversible contraceptives through a health professional (59%) and the Internet (65%). The factors that influenced their decision to use a method of LARC were ease of use (76%), effectiveness (71%), and referral from

a health professional (59%). The majority of survey respondents (82%) would recommend a method of LARC to a friend. As one anonymous survey respondent wrote, ‘’It is probably one of the easiest forms of contraception if you have a busy schedule and are not able to take pills at the same time everyday, and if you do not want to think about it.’’

Experiences receiving reproductive health services

The majority of our interviewees reported that they receive health care in English, but would prefer to obtain this care in French. They felt that language concordance would have made them more comfortable and more likely to have been understood by the health professional. As Luisa explained, “I would have asked for a French doctor since when it's such personal things I feel more comfortable in French although I speak English well. But that demand seems to have been lost, I think.” Only one participant interviewed revealed that they received reproductive health services entirely in French.

Some of the bilingual participants interviewed revealed that they use English to simplify the procedures for accessing a family doctor, thus to reduce the complexity of applying in clinics to find a new French-speaking doctor. Indeed, several stated that they were lucky to have access to an obstetrician and preferred to have an English-speaking specialist instead of being without a doctor. As Louise explained,

> “I still feel lucky to have a family doctor so I do not want to complain about not having the perfect doctor while so many people do not have. I can speak English, I know what I do and I know what I want, so I do not mind more than that. I do not think I'm going to push to reapply.”

In order to overcome the need to use their second language during consultations with health specialists, some of the participants interviewed indicated that they searched for information about the IUD on their own and in advance. As a result, they had a better idea of what they want as a method of contraception and this facilitated discussions during the clinical consultations.

In the context of the interviews, some participants compared their experiences in urban and non-urban areas of Ontario and highlighted greater difficulty in receiving their reproductive health care in French in non-urban areas. The cities of Pembroke and Toronto, although urban, were also mentioned as having a lack of availability in French-language reproductive health services. As Leanne stated, "As per language rights, it is awful in many parts of the province...especially in rural areas.''

Perspectives on how services could be improved

Participants who reported that Francophones do not have enough access to essential information in their own language identified several avenues for improving this dynamic. They felt strongly that the lack of French-language information hampered Francophone women's ability to make an informed decision about different methods of contraception. Participants repeatedly mentioned the importance of increasing the number of Francophone health service professionals. Participants also suggested developing French-language training materials for both health professional and patients.

4. Discussion

Consistent with the situation faced by Francophones in minority situations have faced for more than 400 years in Ontario (Ontario, 2017), the results of this study suggest that there are linguistic barriers to accessing contraceptive services. There appears to be a need to reduce the difficulties related to the provision of reproductive health services to Francophone patients, particularly the need for trained in insertion bilingual doctors (Drolet et al.,2014).

Communicating with a reproductive care patient requires a good understanding of the life, needs, and preferences of the patient. This facilitates informed decision-making and increases the likelihood of consistent and correct contraceptive use. Our results suggest that some Franco-Ontarians have strong preferences for obtaining care in French but will use English to avoid delays in accessing a health professional. This has the potential to undermine the patient-provider relationship and decrease the quality of care.

Commonly referred to as Bill 8, the French Language Services Act only guarantees the right of an individual to receive services in French from Government of Ontario ministries and agencies in 26 designated areas (Ontario, 2017). However, Bill 8 does not extend to other types of organizations providing health services or to other areas of the province. Identifying ways to strengthen French-language services, through policies, training, and education, could meet an important need and decrease existing reproductive health inequities.

Limitations

This is a small, multi-methods, qualitative study in one Canadian province. Despite significant recruitment efforts, the number of Francophone participants in both study

components was small. Thus, our results should be considered exploratory. Future studies would benefit from including the perspectives of more women in language minority situations.

5. Conclusion

Linguistic discordance between health service providers and patients represents a barrier to receiving high quality reproductive health services. Although Canada has set in place individual guarantees to provide services to French-speaking women, the results from our exploratory study suggest the health system may be falling short. Efforts to increase the number of French-speaking providers and ensuring the availability of high quality and evidence based French-language resources about methods of LARC appears warranted.

Table 1: Characteristics of Francophone online survey participants (N=44)

Characteristic		n	(%)
Age			
	>18 years	0	
	18-24 years	10	23%
	25-29 years	11	25%
	30-35 years	3	7%
	36-40 years	7	16%
	41-45 years	3	7%
	Over 45 years	3	7%
	No response	7	16%
Region of Ontario			
	Northwest	1	2%
	Northeast	9	20%
	East	19	43%
	Central	3	7%
	West	3	7%
	Other	2	5%
	No response	7	16%
Race			
	Black/ African Canadian/ Afro-Caribbean	1	2%
	East Asian or Asian	0	0%
	Inuit/ Metis/ First Nations	1	2%
	Latin American	0	0%
	Middle Eastern or Arab	1	2%
	South Asian or Indian	0	0%
	White/ Caucasian/ European	32	73%
	Other	1	2%
	No response	7	16%
Education			
	Some high school	0	0%
	High school diploma/GED	2	5%
	Some college	0	0%
	College diploma or certificate	5	11%
	Bachelor's degree	17	39%
	Some graduate school	5	11%
	Graduate degree	8	18%
Student status			
	Full time	10	23%
	Part time	7	16%

Not a student	20	45%
No response	7	16%
Currently employed		
Full time	20	45%
Part time	10	23%
Not employed	7	16%
No response	7	16%
Relationship status		
Single, not dating, not in a relationship	1	2%
Casually dating one person	1	2%
Casually dating more than one person	2	5%
In a committed monogamous relationship	8	18%
In more than one committed relationship	1	2%
No response	31	70%
Number of lifetime pregnancies		
0	10	23%
≥1	7	16%
No response	28	64%

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Chapter 5: Article #3

We intend to submit this as a brief research article to *Contraception*. We have formatted this article for *Contraception* and the manuscript adheres to the style, word limit, and citation guidelines for this journal.

The complex journey of the contraceptive implant in Canada: Ontarian women's perspective on reintroduction

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Abstract

Objectives: The subdermal contraceptive implant is one of the most effective methods for preventing pregnancy. However, this method of long-acting reversible contraception is not available in Canada. We aimed to assess Ontarian women's knowledge of and attitudes toward the contraceptive implant.

Methods: In 2018, we conducted a multi-methods study that included both an online survey of and in-depth interviews with women of reproductive age in Ontario, Canada's largest and most populous province. We analyzed our results using descriptive statistics and for content and themes

Results: We received 256 survey responses and conducted 25 in-depth interviews. Participants expressed interest in the implant and favored introduction of the method.

Conclusion: The global evidence shows that the contraceptive implant is safe and effective. Efforts to introduce the implant into the Canadian health system are warranted.

1. Introduction

The journey of the contraceptive implant in Canada started in 1994 with Norplant® [1], a long-acting, reversible contraceptive consisting of six Silastic® rod each containing 36 mg levonorgestrel. This implant system was temporarily removed from North American markets, as Wyeth-Ayerst, the makers of Norplant, decided to take preventive measures following unsuccessful routine shelf tests. Health care practitioners in Canada were advised to stop inserting lots of the Norplant system with an expiration date in 2004, as they might have delivered less than optimum levels of levonorgestrel [2]. In Canada, only one of these affected lots was distributed, potentially affecting 60 patients.

Although additional tests were made and showed effective hormone release level, Wyeth-Ayerst Canada decided to officially remove the Norplant system from Canadian Market in September 2000, citing limitations in product component supplies. Use and cost were also known to be Norplant's drawbacks, as the $450 implant system was only used by 1% of Canadian women [3].

Since then, no other subdermal implant has entered the Canadian market, even though new generations of progestin-only implant systems have been developed with different biomaterial for the delivery system, number of implanted rods, or duration of efficacy. In the winter of 2018, we conducted a multi-methods study with women of reproductive age in Ontario to understand their knowledge of, attitudes toward, and experiences with long-acting reversible contraception (LARC). In this article we present the implant-related findings.

2. Methods

We conducted a multi-methods, qualitative study that included both a bilingual (English-French) online survey and interviews with a sub-set of participants. Women of reproductive age (15-49, inclusive) could participate if they resided in Ontario and could complete the survey in English or French; those who had ever-used a method of LARC were eligible for the interview. We used a multi-modal community-based recruitment strategy and purposively focused on including women from language minority communities. The 44-item survey included domains related to demographics, contraceptive experiences, and LARC-related knowledge and attitudes. The interviews focused on these same domains and were conducted by DC, a Francophone master's student at the University of Ottawa and a second master's student in AMF's research group. We analyzed the survey results using descriptive statistics and the interviews for content and themes using inductive and deductive techniques. We organize our results around domains of inquiry and have assigned pseudonyms to participants. The Social Sciences and Humanities Research Ethics Board at the University of Ottawa approved this study.

3. Results

3.1 Participant characteristics

We received 256 survey responses; 212 in English, 44 in French. We present basic participant demographics on Table 1. We interviewed 25 ever-users of a method of LARC; we conducted 17 of these interviews in English and eight in French.

3.2 Knowledge of the implant contraceptive

Results from both the online survey and interviews suggest that knowledge of the contraceptive implant is limited in Ontario. In our interviews, almost all participants indicated that they had heard about the implant but when asked to provide additional information they were unable to do so. Our participants were interested in learning more about this contraceptive method and the insertion and removal process, duration of effectiveness, length of the rod, and type and amount of hormone, in particular. They were aware that this method was available in other countries and were intrigued by the possibility of introducing it into the Canadian health system.

3.3 Support for the introduction of the implant in Canada

Throughout the survey and the interviews, women reported that they would consider the contraceptive implant if it were available. They specifically liked the aspect of having the device inserted under skin of the arm rather than in the uterus, which they found to be less invasive. As Julia stated, "I think the idea of this contraceptive is excellent because if I have the choice to have something inserted under my skin or into the uterus, I would choose under the skin and I think that would be the opinion several women; especially the youngest ones."

Participants who were familiar with the implant's history in Canada shared that they looked forward to an improved version of this method. Overall, interviewees supported the (re)introduction of the contraceptive implant in Canada as this would give women access to more contraceptive options.

3.4 Efforts to facilitate the implant's introduction and use

Both of survey and interview participants cited numerous ways to facilitating the implant's introduction in Canada. Although interview participants were generally unable to identify ways to facilitate introduction from a regulatory perspective, they did identify both the training of health service providers and ensuring cost-coverage of contraceptive implants, once approved, as important components of facilitating an eventual introduction effort. As Jane explained, "If it's covered by the health plan. Um, because that's a big factor - like not a lot of people can drop 400 bucks on their IUD um, so it depends on that thing right?" Our interviewees also note that clear, simple, and evidence-based information would need to be disseminated.

4. Discussion

Canada remains a global outlier with respect to the contraceptive implant, which has been introduced in more than 85 countries worldwide [4]. This is consistent with a broader trend regarding contraception; of those methods of contraception that are available, only 35% are available in Canada, compared to 58% in United States, 52% in the United Kingdom, and 44% in France (44%) [5]. Indeed, it takes approximately 530 days in Canada for a contraceptive method to be approved compared to 396 days in the US and 341 days in the UK [6].

Our findings show that despite the lack of knowledge about the contraceptive implant, women in Canada have interest in the method. In addition to providing women with an additional highly effective option of contraception, participants in our study found it perplexing that the implant was widely available in much of the Global North. This type of Canadian exceptionalism appears

in conflict with Canada's global role in promoting sexual and reproductive health and contraceptive services.

Consistent with literature dedicated to introducing and scaling up health innovations [7,8] our participants identified training of health service providers and patient education campaigns as important avenues for increasing awareness and method use upon introduction. Our participants also noted the importance of ensuring that the implant be affordable, which would like require universal cost-coverage. This desire is consistent with broader efforts in the province to expand access to affordable prescription drugs through policy reform [9].

4.1 Limitations

This was a small exploratory study and required participants to reflect on a method of contraception that is not currently available. Future studies would benefit from including the perspectives of women from other provinces and territories.

4.2 Conclusion

Canada remains an outlier with respect to the availability of the contraceptive implant. Ontarian women who participated in our study expressed interest in the introduction of the method in Canada and the incorporation of the method into the Canadian health system.

Table 1: Demographic characteristics of our online survey participants (N=256)

Characteristic	n	(%)
Age		
>18 years	2	1
18-24 years	94	37
25-29 years	64	25
30-35 years	32	13
36-40 years	25	10
41-45 years	10	4
Over 45 years	11	4
No response	18	7
Region of Ontario		
Northwest	6	2
Northeast	18	7
East	134	52
Central	51	20
West	19	7
Other	10	4
No response	18	7
Race		
Black/ African Canadian/ Afro-Caribbean	7	3
East Asian or Asian	12	5
Inuit/ Metis/ First Nations	1	0
Latin American	4	2
Middle Eastern or Arab	8	3
South Asian or Indian	7	3
White/ Caucasian/ European	190	74
Other	5	2
No response	22	9
Education		
Some high school	3	1
High school diploma/GED	23	9
Some college	12	5
College diploma or certificate	18	7
Bachelor's degree	87	34
Some graduate school	25	10
Graduate degree	70	27
No response	18	7

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Chapter 6: Discussion

Access to comprehensive contraceptive care and contraceptive methods are part of women's health care. Efforts to sustain policies and measures that guarantee the availability of affordable and accessible methods of contraception and reproductive health services is crucial in a developed country like Canada. Universal coverage of contraceptives is proven to be cost effective and effective at reducing unintended pregnancy (Quick et al.2014). As the WHO recognizes reproductive and sexual health care as a fundamental human right (UNHR, 2015; WHO, 2009), Canadian women should have timely and affordable access to a full range of methods. Yet, our results demonstrate that significant challenges to the provision of sexual and reproductive health services to women in Ontario continue to exist. Our findings suggest that, although women have positive experiences using methods of LARC, misconceptions and lack of access to affordable and language-accessible care influence information and use. Specifically, our study suggests that there are unmet needs with regard to the provision of contraceptive services in both official languages.

The first article focuses on the IUD and highlights Anglophone women's experiences. The second article specifically centers on Franco-Ontarian women's experiences with methods of LARC and the linguistic challenges that impact contraception knowledge and counseling. Finally, our third article identifies facilitators and barriers to expanding access to the implant in Canada.

The integration of these findings depicts Canada as a latecomer in the scale up of new contraceptive technologies. Ontarian women don't have access to a full range of contraceptive methods as a result of the Canadian regulatory context. Though Canada is recognized as a world leader in its work to advance sexual and reproductive health and rights global, work remains to

improve access to reproductive healthcare within Canada. As our study suggest, the lack of accessibility and education has implications in attitude towards LARC. Our study aligns with the conclusions of Canadian Contraception Consensus (Black, Guilbert, et al., 2004) and suggests numerous barriers prevent Canadian women from obtaining and sustaining use of their contraceptive method of choice, including financial, linguistic and regulatory obstacles, lack of appropriate counselling, and lack of trained health care providers.

Language minorities and women's health care

The academic community undertakes a good deal of research on the health of Francophone minorities, but little attention is paid to the specific problems of women or to gender-based analyzes of health problems. The literature shows that Francophones evaluate their health as poorer than the general population of Ontario (Alimezelli 2015), however little research addresses the language barrier and women's health.

Among the few findings available, the difficulty for Franco-Ontarian women in obtaining a gynaecologist can be cited. This situation is partly explained by the shortage of health professionals, transportation costs due to their remoteness from urban centers, and lack of comprehensive training programs in French (PHRED 2005).

Studies have also shown that Francophone women living in minority situations use reproductive health screening services (e.g. mammogram, papanicolaou test) 20% less frequently than women in the majority linguistic group (Ontario's Ministry of Health of Long-Term Care, 2005).In addition, French-speaking women would sometimes prefer health programs in English because of their convenience (PHRED 2005). For example, one study found that

Francophone women preferred to participate in an English prenatal care program, if their doctor is English-speaking, in order to better communicate and use the English terminologies or because of the availability, frequency and flexibility of the English sessions and their proximity to their home.

Francophones may also prefer to use resources in English, believing that they are better than in French. It is therefore essential to create resources in French of similar quality to those in English and to promote them to patients.

Role and experience of the health professional

The literature recommends that health professionals encourage Francophones to self-identify (Best Start, 2013), in order to raise the importance of offering health services in the language of choice. However, while promoting health services in both official languages, health practitioners may also face burdens and barrier in provision of health services in French.Considering the lack of staff, a more geographically dispersed Francophone population, and the lack of budget of service providers working with French speakers in Ontario, the role of French speaking health professionals sometimes becomes that of the general practitioner representing several health programs, compared to the English speaking doctors who can focus on their specialization. Given their training in English, some health professionals could also be less familiar with French terminology and materials. Both patients and health professional experiences should be considered when analyzing access to services in Franco-Ontarian community.

Seeking health-related information online

Some online resources exist allowing the population to discover and identify French speaking professionals and services in the Ontario region. These resources also help organizations better understand how to reach, collaborate and communicate with Francophones, especially when French is not spoken in the organization. Websites like "Better Start", for example, represent an online resource and also provide recommendations on Ontario's perinatal, parental and professional resources on the Internet, as well as promoting resources available in French. This become important considering the significant decrease in the interest and participation of parents in prenatal meetings as shown in the study by Moreau and colleagues (2015) in the Franco-Ontarian community of Ottawa. This study also highlights the need to access various sources of information, including subjects such as pain management, the possibility of giving birth with a midwife or being accompanied by a doula, breastfeeding and postnatal sexuality.

Peguero-Rodriguez and Polomeno (2018) in their study highlighted the differences in websites advertising perinatal education meetings in the Ottawa region of Canada for Franco-Ontarian parental couples living in a linguistic minority situation. Their findings showed the lack of published advertising efforts of subjects covered and of educators' certification in some websites. In the same study, navigation on websites has also been shown to be more difficult in French than in English.

Dissemination of findings

In 2018, I gave both poster and oral presentations at two national conferences. This included the biennial Western Canadian conference on Sexual Health at the University of Alberta (Edmonton, Alberta) and the Women's Xchange Conference at the Women's college hospital (Toronto, Ontario). Feedback from participants and stakeholders at both events have informed my recommendations. In addition to contributing three articles to the peer-reviewed literature, an important avenue for disseminating findings to researchers, I will share our results with local stakeholders. My aim is to distribute a report to the findings to both study participants and Ontario organizations involved with the CART-GRAC network.

Recommendations

Provisions of reproductive health services

Our findings suggest that Ontarian women of reproductive age could benefit from better counselling when seeking contraception and should be properly informed on the full range of contraception available. Methods of LARC should not be restricted to specific populations and information communicated to patients should be evidence-based. Health care practitioners, especially general practitioners, should also be properly trained in LARC insertion to decrease delays and should also be trained in removal techniques. Addressing inequities related to language minority status is also critical. Health centers in Ontario should ensure that Francophone women have access to reproductive health in their chosen language.

Health policies

The current regulatory context of drug introduction in Canada does not allow all modern and effective contraceptive methods to enter the Canadian market. Drug approval agencies' processes and policies in other Global North countries are rigorous and have demonstrated that the implant is safe and effective. Canadian women should not be denied access to high quality, effective contraceptive methods. Canadian health policies could also profit from universal contraception coverage.

Limitations

One of the potential limitations of the project is the issue of language. My understanding and expression of English could have affected the fluidity of communication during the interviews. To mitigate this limitation, I worked closely with my supervisor and expanded the study team to include one Anglophone member, Nicola Brogan. This adjustment enhanced the credibility, trustworthiness, and rigor of the study.

Positionality and reflexivity

As a visible and linguistic minority in Ontario and an immigrant from the Caribbean, I am aware of the inequalities experienced by certain groups in Canada, particularly with regard to the provision of health services. My position as a woman of reproductive age also allows me to relate to participants' experiences with contraception. My interdisciplinary background in health sciences and general law helped me undertake this study as well as develop recommendations.

Through my academic and professional career, I have worked with groups living with inequalities in health and I have brought these experiences to the project.

Significance

This research is especially timely. There are a number of efforts underway to both expand access to existing methods of LARC and incorporate implants into the contraceptive methods mix in Canada. The findings from this study can help inform the activities of the Contraception Access Research Team (CART-GRAC) and other stakeholders. Further, there is currently some movement to expand provincial and federal insurance coverage of contraception such that all prescription medications and devices will be fully covered. Our results contribute to our understanding of women's experiences, including challenges women experience covering the out-of-pocket costs associated with LARC use. Finally, this project will contribute to a growing body of literature dedicated to sexual and reproductive health in Canada and highlight women's voices and experiences. Our findings may prove useful for service providers and sexual and reproductive health educators.

Conclusions

Despite Canada's commitment to investing in women's health and protecting sexual and reproductive health rights, our study suggests that Ontarian women experience challenges obtaining information about methods of LARC in the official language of their choice and accessing a full range of affordable and effective methods. In order for Canada to be a global

leader in reproductive health, medical, financial, systems, and structural barriers impacting contraception domestically must be reviewed and improved.

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Appendix A : Characteristics of all online survey participants (N=256)

Demographic characteristic	n	(%)
Age		
>18 years	2	1
18-24 years	94	37
25-29 years	64	25
30-35 years	32	13
36-40 years	25	10
41-45 years	10	4
Over 45 years	11	4
No response	18	7
Language		
English	212	83
French	44	17
Region of Ontario		
Northwest	6	2
Northeast	18	7
East	134	52
Central	51	20
West	19	7
Other	10	4
No response	18	7
Race/ethnicity		
Black/ African Canadian/ Afro-Caribbean	7	3
East Asian or Asian	12	5
Inuit/ Metis/ First Nations	1	0
Latin American	4	2
Middle Eastern or Arab	8	3
South Asian or Indian	7	3
White/ Caucasian/ European	190	74
Other	5	2
No response	21	8
Education		
Some high school	3	1
High school diploma/GED	23	9
Some college	12	5
College diploma or certificate	18	7
Bachelor's degree	87	34

Some graduate school	25	10
Graduate degree	70	27
No response	11	4
Currently a student		
Yes, Full time	95	37
Yes, Part time	17	7
No	124	48
No response	20	8
Currently employed		
Yes, Full time	118	46
Yes, Part time	63	25
No	56	22
No response	19	7
Relationship status		
Single, not dating, not in a relationship	18	7
Casually dating one person	9	4
Casually dating more than one person	5	2
In a committed monogamous relationship	71	28
In more than one committed relationship	2	1
No response	151	59
Number of pregnancies		
0	72	28
≥1	36	14
No response	149	58

Appendix B: Source of Information and Knowledge of LARC * Survey Participants' Age Cross Tabulation (N=256)

	AGE															
	< 18		18-24		25-29		30-35		36-40		41-45		> 45		Total	
	2		94		64		32		25		10		11		238	
	1%		37%		25%		13%		10%		4%		4%			
How did you first hear about LARC?																
• Friend or family member	1	50%	15	16%	16	25%	6	19%	6	24%	1	10%	3	27%	48	19%
• Health care professional	0	0%	25	27%	19	30%	9	28%	6	24%	1	10%	0	0%	60	23%
• Internet	0	0%	19	20%	14	22%	7	22%	3	12%	1	10%	2	18%	46	18%
• Magazine/newspaper	0	0%	3	3%	1	2%	0	0%	1	4%	0	0%	0	0%	5	2%
• Partner	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
• Other	0	0%	2	2%	3	5%	2	6%	2	8%	3	30%	0	0%	12	5%
What factors influenced your decision to use LARC? (Checkboxes)																
• Cost	0	0%	15	16%	6	9%	8	25%	2	8%	0	0%	1	9%	32	13%
• Ease of use	1	50%	30	32%	28	44%	17	53%	7	28%	3	30%	4	36%	90	35%
• Efficacy	1	50%	24	26%	24	38%	16	50%	7	28%	0	0%	2	18%	74	29%
• Experiences with other forms of contraception	1	50%	21	22%	18	28%	11	34%	4	16%	1	10%	2	18%	58	23%
• Internet/media	0	0%	8	9%	2	3%	2	6%	0	0%	0	0%	0	0%	12	5%
• Recommendation by friend or family member	1	50%	13	14%	10	16%	5	16%	3	12%	1	10%	2	18%	35	14%
• Recommendation by health care professional	1	50%	22	23%	14	22%	9	28%	6	24%	3	30%	1	9%	56	22%
• Recommendation by partner	0	0%	2	2%	0	0%	0	0%	0	0%	0	0%	0	0%	2	1%
• Side effect profile	0	0%	13	14%	14	22%	6	19%	4	16%	1	10%	3	27%	41	16%
• Other	0	0%	2	2%	3	5%	2	6%	3	12%	0	0%	0	0%	10	4%

When you were first prescribed LARC, did your health care provider discuss the following with you? (Checkboxes)																
• Efficacy of methods of LARC	1	50%	34	36%	26	41%	13	41%	8	32%	2	20%	3	27%	87	34%
• Other contraceptive options	1	50%	19	20%	18	28%	10	31%	5	20%	1	10%	1	9%	55	21%
• Possible side effects of using LARC	1	50%	28	30%	22	34%	15	47%	6	24%	2	20%	2	18%	76	30%
• Where to get a method of LARC inserted	1	50%	26	28%	25	39%	14	44%	7	28%	1	10%	4	36%	78	30%
• When to get a method of LARC removed	1	50%	25	27%	25	39%	13	41%	5	20%	2	20%	2	18%	73	29%
• Where to get a method of LARC removed	1	50%	19	20%	22	34%	10	31%	7	28%	0	0%	2	18%	61	24%
• Your medical history	1	50%	24	26%	22	34%	12	38%	6	24%	1	10%	2	18%	68	27%
• Your pregnancy intentions	1	50%	20	21%	21	33%	12	38%	6	24%	2	20%	2	18%	64	25%
Were you satisfied with the information provided to you when you were first prescribed a method of LARC?																
• Yes	1	50%	32	34%	27	42%	15	47%	7	28%	2	20%	5	45%	89	35%
• No	0	0%	6	6%	2	3%	3	9%	3	12%	2	20%	0	0%	16	6%

I calculated percentages based on total number of survey respondents (n=256). Participants were not required to answer all questions. Number of "No response" for age group question "Please indicate your age (n=18)» is shown in appendix A.

Appendix C: Source of Information and Knowledge of LARC * Survey Participants' Language Cross Tabulation (N=256)

	LANGUAGE			
	English		French	
	201	%	37	%
How did you first hear about LARC?				
• Friend or family member	39	44%	9	53%
• Health care professional	50	57%	10	59%
• Internet	35	40%	11	65%
• Magazine/newspaper	3	3%	2	12%
• Partner	0	0%	0	0%
• Other	10	11%	2	12%
What factors influenced your decision to use LARC?				
• Cost	30	34%	2	12%
• Ease of use	77	88%	13	76%
• Efficacy	62	70%	12	71%
• Experiences with other forms of contraception	50	57%	8	47%
• Internet/media	12	14%	0	0%
• Recommendation by friend or family member	30	34%	5	29%
• Recommendation by health care professional	46	52%	10	59%
• Recommendation by partner	1	1%	1	6%
• Side effect profile	35	40%	6	35%
• Other	7	8%	3	18%
When you were first prescribed LARC, did your health care provider discuss the following with you?				
• Efficacy of methods of LARC	73	84%	14	100%
• Other contraceptive options	49	56%	6	43%
• Possible side effects of using LARC	66	76%	10	71%
• Where to get a method of LARC inserted	66	76%	12	86%
• When to get a method of LARC removed	61	70%	12	86%
• Where to get a method of LARC removed	52	60%	9	64%
• Your medical history	59	68%	9	64%
• Your pregnancy intentions	57	66%	7	50%

Were you satisfied with the information provided to you when you were first prescribed a method of LARC?				
• Yes	73	83%	16	94%
• No	15	17%	1	6%

I calculated percentages based on total number of survey respondents (n=256). Participants were not required to answer all questions. Number of "No response" for age group (n=18) is shown in appendix