Women's knowledge of, access to, and experiences with emergency contraception in New Brunswick

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Abstract

Ensuring that women have timely access to safe, effective and affordable emergency contraception (EC) is of critical importance. There are four primary modalities of EC available in Canada: the levonorgestrel emergency contraceptive pill (LNg-ECP), the copper-T intrauterine device (IUD), ulipristal acetate (UPA) and the Yupze method (combined oral contraceptive pills). This is a mixed methods study dedicated to exploring women's knowledge of, access to and experiences with EC in New Brunswick (NB). This study consisted of a two-part mystery client study, a community-based survey, and in-depth, semi-structured interviews with women in NB. The results of the mystery-client study indicate that 180 (87%) pharmacies had at least one brand of LNG-ECPs in stock. Although availability and knowledge of LNG-ECPs among NB pharmacists is relatively high, some are still providing incorrect medical and regulatory information. The findings of this study illustrate where improvement in pharmacy provision of LNG-ECPs in NB is required. Knowledge of EC among women in NB is relatively low, especially with respect to the IUD and UPA. Continuation of education efforts among pharmacists and sexual education teachers concerning ECPs in NB appears warranted. Exploring the barriers that NB women face in obtaining ECPs is not only imperative for improving access, but also yielding better quality reproductive health services in the province.

Résumé

Il est essentiel de veiller à ce que les femmes disposent en temps utile d'une contraception d'urgence (CU) sûre, efficace et abordable. Il existe quatre principales méthodes de contraception d'urgence disponibles au Canada : la pilule contraceptive d'urgence au lévonorgestrel (CU-LNg), le dispositif intra-utérin (stérilet), ulipristal acetate (UPA) et la méthode Yupze (pilules contraceptives orales combinées). Il s'agit d'une étude de méthodes mixtes consacrée à l'exploration des connaissances, de l'accès et des expériences des femmes en matière de CU au Nouveau-Brunswick (NB). Cette étude a consisté en une étude de clients mystères en deux parties, une enquête communautaire et des entretiens approfondis et semi-structurés avec des femmes au NB. Les résultats de l'étude sur les clients mystères indiquent que 180 (87%) des pharmacies avaient au moins une marque de CU-LNg en stock. Bien que la disponibilité et la connaissance des CU-LNg parmi les pharmaciens du NB soient relativement élevées, certains fournissent encore des informations médicales et réglementaires incorrectes. Les résultats de cette étude illustrent les domaines dans lesquels il est nécessaire d'améliorer la fourniture de CU-LNg en pharmacie au NB. La connaissance de la CU chez les femmes du NB est relativement faible, surtout en ce qui concerne le stérilet et l'UPA. La poursuite des efforts d'éducation des pharmaciens et des professeurs d'éducation sexuelle concernant la CU au NB semble justifiée. Il est impératif d'étudier les obstacles auxquels les femmes du Nouveau-Brunswick sont confrontées pour obtenir des CU, non seulement pour améliorer l'accès, mais aussi pour obtenir des services de santé génésique de meilleure qualité dans la province.

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List of acronyms and abbreviations

BTC	Behind-the-counter
EC	Emergency contraception
ECP	Emergency contraceptive pill
IUD	Intrauterine device
LNg-EC	Levonorgestrel emergency contraception
NB	New Brunswick
OTC	Over the counter
UPA	Ulipristal acetate
REB	Research Ethics Board

Chapter 1: Introduction

1.1 Literature review

Improving reproductive health information and services globally is paramount in ensuring that women have autonomy over their bodies. Access to safe, effective, and affordable reproductive health technologies has been, and continues to be, an important area of active investigation. Emergency contraceptives are medications or devices that are used after sex to prevent pregnancy and represent an important but underutilized contraceptive option for women.[1]

1.1.1 Overview of emergency contraception

There are five modalities of emergency contraception (EC) available globally: progestin-only emergency contraceptive pills (ECPs), the copper-T intrauterine device (IUD), the Yupze method (combined oral contraceptive pills), ulipristal acetate (UPA), and low dose mifepristone. Levonorgestrel ECPs are the most widely used modality of EC worldwide. With the exception of low-dose mifepristone, all EC modalities are available in Canada.

Levonorgestrel emergency contraception (LNg-EC) is a synthetic estrane steroid that is derived from 19-norestosterone (1). Levonorgestrel ECPs have been registered in over 150 countries and are available without a prescription in more than 60 countries globally (2). This dedicated product is available in the form of a 1.5mg pill and is recommended to be taken within

[1] Emergency contraception can be used by any person with the physical capacity to become pregnant, including those who do not identify as women. Indeed, EC may be an especially important contraceptive option for trans men, gender non-binary, Two Spirit, and gender non-conforming populations given the barriers these groups experience accessing clinic based sexual and reproductive health services. However, most of the literature focuses on women and girls and this study focused on women. As a result, I use the term "women" throughout but want to acknowledge that the import of EC is not limited to a specific gender.

72 hours of sex (3); however, evidence suggests that it is effective for up to 120 hours (4). When taken within 72 hours, this method prevents up to 89% of the pregnancies that would have occurred without treatment (4,5). According to recent studies, LNg-EC had no effect in stopping pregnancy if given on the day of ovulation or after ovulation (6). It also seems to have no effect on the endometrium and is not an abortifacient (6). Side effects include nausea, vomiting, abdominal pain, breast tenderness, headache, dizziness and fatigue (6). Although these side effects generally resolve within 24 hours, a re-dose may be required if vomiting occurs within 2 hours after taking the initial dose (6). There is limited and inconclusive data that suggests that there may be a reduced efficacy of LNg-EC with increasing body weight, especially for women over 75kg (7). Research to determine if an increased dose of LNg-EC when taken by heavier women increases efficacy is currently underway (8).

The copper T-IUD is the most effective option for post-coital pregnancy prevention (6). This device can be used up to 5 days after intercourse and reduces the risk of pregnancy by more than 99% (9); some research indicates that insertion can take place as much as 7-10 days after intercourse (4). Not only can the copper T-IUD be used as EC, but it also acts as a contraceptive device for up to 10 years (9). Upon removal of the IUD, baseline fertility returns. The copper-T IUD is a polyethylene T-shaped IUD that has an exposed copper wound around both the arms and vertical stem of the device (10). It works by continually releasing copper into the uterine cavity, interfering with sperm transport and fertilization (10). During the first 3 months of use, longer and heavier periods accompanied by spotting between periods are common. Women may also experience anemia, dysmenorrhea, and low back pain (10). In Canada, the copper T-IUD is available via prescription and must be inserted by a trained provider. Although IUDs are highly efficacious, they are rarely used as EC in Canada (11). This may be due to high upfront costs and

limited availability of trained health care professionals who can provide immediate/timely insertion (11).

Ulipristal acetate is a new generation EC drug that was approved for use as EC in Canada in 2015 (12). UPA was first approved in Canada in 2013 under the brand name Fibristal® for the treatment of uterine fibroids as a 5mg pill; the product label did not mention post-coital use. Ulipristal acetate is a selective progesterone receptor modulator that principally acts by inhibiting ovulation through anti-progestin effects (13). It binds strongly to progesterone receptors in target tissues (e.g. cervix, endometrium, ovaries etc.) and exerts tissue-selective agonist, antagonist, and partial agonist effects (14). Ulipristal acetate is recommended to be taken within 120 hours of sexual intercourse or contraceptive failure and is available in Canada in the form of a 30mg tablet (12,15). Studies have shown that when UPA is administered between the onset and the peak of the luteinizing hormone surge, it can delay follicular rupture for at least 5 days and therefore is more effective than LNg-EC around the time of ovulation (14). Even further, UPA continues to be effective for up to 120 hours, with no decline in efficacy over time (14). Ulipristal acetate may also be more effective for overweight or obese woman in comparison to LNg-EC. Although LNg-EC appears to decline in efficacy when a woman has a BMI of 26 or more, UPA appears to lose effectiveness at a higher BMI threshold of 35 (16,17). UPA is available in Canada but requires a prescription. However, is unclear how many women have actually used this method of EC in Canada.

First developed in the 1980s for medication abortion, mifepristone is a synthetic steroid that also acts as an anti-progestin (18). Mifepristone blocks the action of progesterone, causing the degeneration of the endometrial lining, softening of the cervix, and sensitizing the environment to prostaglandins (18). When used at higher doses (200mg to 600mg) mifepristone

has an abortifacient effect, and when used with a prostaglandin it is very effective in terminating an early pregnancy (11). Mifepristone can also be used as an emergency contraceptive at lower doses (10mg to 25mg), especially if taken before ovulation (19). Some side effects of low-dose mifepristone include intermenstrual bleeding, delayed onset of subsequent menstruation, and gastrointestinal upset (20). There are several studies that have been conducted to assess the efficacy of mifepristone in comparison to other modalities of EC. According to a systematic review conducted by Shen and colleagues (21) all doses of mifepristone resulted in fewer pregnancies than the Yuzpe method. In comparison to LNg-EC, there is both medium and high-quality evidence to suggest that mifepristone is associated with fewer pregnancies (21). However, unlike LNg-EC (and similar to UPA) the efficacy of mifepristone does not decrease over the five-day window (11).

Often referred to as the gold standard for medication abortion, mifepristone was approved in Canada for use in 2015 and is available in 60 other countries worldwide as a medication abortion method (22). In Canada, mifepristone is currently only available as Mifegymiso®, a combination package that includes a 200mg pill of mifepristone and 800mcg of misoprostol. In the form of EC, mifepristone is registered in only few countries (including Armenia, China, Russia and Vietnam) (11).

The Yuzpe method is a type of combined hormonal regimen that was first developed in the 1970s by Canadian obstetrician-gynecologist Albert Yuzpe (4, 23). This method has largely been replaced by progestin-only EC. This method involves taking 2 doses of pills containing of a minimum of 100µg of ethinyl estradiol and a minimum of 500µg of LNg, 12 hours a part (24). The primary mechanism of action is to inhibit or delay ovulation and therefore has a greater efficacy if taken before ovulation (23). The Yuzpe method is effective up to 72 hours after

intercourse and is most effective when taken in the first 12-24 hours (11). In terms of efficacy, the Yuzpe method reduces the risk of pregnancy by up to 75% of when administered within 72 hours of sexual intercourse (4, 24). The most common adverse effects include nausea (50%) and vomiting (20%) (23). In Canada, the Yuzpe method is technically available in the sense that combined hormonal oral contraceptive pills are widely available, but this has largely been replaced by LNg-ECPs. Nevertheless, this method still remains an important option in settings where dedicated progestin-only products are unavailable or unaffordable.

1.1.2 A brief history of emergency contraception in Canada

Before a dedicated ECP was available in Canada, women used the Yuzpe regimen. This regimen comprised the off-label use of combination oral contraceptive pills (4). The first dedicated ECP marketed in Canada was an estrogen-progestin pill sold under the brand name Preven®; however, this pill was withdrawn from the market in 2001 (4). A dedicated two 0.75mg pill regimen of progestin-only EC was made available in Canada in 2000 as a Schedule F drug, meaning it was available by prescription only (2,25). On April 19, 2005, LNg-EC was removed from Schedule F, making it available behind-the-counter (BTC) (26). After much deliberation, in 2008, Canada became the fifth country in the world to approve the off-the-shelf over the counter (OTC) sale of LNg-EC (27); within a few years, the two pill formulation was largely replaced by the single 1.5mg dose and the most widely known brand is PlanB®. However, a body of research has demonstrated that LNg-EC is often held "behind-the-counter", thereby reducing timely access to the drug (19,20).

The real world BTC availability of LNg-EC creates problems with respect to privacy, cost, and timeliness. First, many pharmacies are not equipped with private spaces to support conversations surrounding EC (30). Having these conversations at the pharmacy counter

jeopardizes the anonymity of the client, especially in small and rural communities. In addition to privacy concerns, requiring a consultation in obtaining EC increases the price of the medication, as there can be professional fees attached to this practice (28,30). Adding costs to an already expensive drug creates significant barriers to access, especially for young and low-income individuals. Finally, requiring an additional interaction to obtain EC creates more chances for services to be denied. Pharmacy characteristics like operating hours, pharmacist workload, and/or pharmacist willingness to provide EC are all potential barriers which significantly influence the timeliness of access (27,30). Therefore, with EC being an extremely safe and effective medication, the option to access it OTC should be made available to all individuals.

1.1.3 Setting the context: New Brunswick

New Brunswick is one of the four provinces that make up Canada's east coast. It has the largest land mass of Canada's three maritime provinces, covering 73,440 square kilometers (31). Being the third least populous province in Canada, NB has a population of about 750,000, with almost half of that population living in rural areas (32,33). New Brunswick is the only bilingual province in Canada,[2] with two thirds of the population identifying as English-speaking and one third as French-speaking (34,35). With respect to religion, in a 2011 National Household Census, 84% of residents of the province identified as Christian, while 15% reported having no religious affiliation (36).

[2] New Brunswick's bilingual status is unique in that it is constitutionally entrenched under the *Canadian Charter of Rights and Freedoms*. Sections 16–20 of the *Charter* include parallel sections that guarantee the same rights at both the federal and provincial level. The first Official Languages of New Brunswick Act states that English and French are the two official languages of NB and recognizes the fundamental right of New Brunswickers to receive provincial government services in the official language of their choice.

With just over half of its residents living in rural areas, NB is a province that experiences disparities with respect to access to health services. In fact, people living in rural communities tend to have poorer health status and greater difficulty accessing health care services than people living in urban centres (37). Rural, remote, and Indigenous communities are more likely to have familiarity with health care providers and therefore are more vulnerable to biased and non-confidential care (38,39). A lack of privacy, anonymity, and confidentiality in both personal and professional contexts pose significant barriers to residents of rural areas (40). Even further, these communities have a limited choice in healthcare providers, and, as a result, may be forced to travel long distances in order to access appropriate care (38,40). Barriers to accessing specific health services in rural areas most commonly stem from health care professional shortages, and, more specifically, a shortage of specialists (37). In addition to lack of health care professionals, rural health clinics and pharmacies tend to have limited hours of operation on weekends and evenings, making access to care more difficult than their urban counterparts (39). In examining the barriers that women face accessing EC in the province, it is important to acknowledge and understand the unique experiences of those living in rural and remote communities.

1.1.4 Abortion access in New Brunswick

New Brunswick has had a turbulent history with respect to reproductive rights and justice. Since the decriminalization of abortion in Canada in 1988, NB has been the site of continual legal and political activity surrounding abortion policies (21). Until 2014, NB had some of the most restrictive abortion regulations in Canada. In 2014, the Liberal Premier Brian Gallant amended Regulation 84-20 of the Medical Services Payment; as a result women were no longer required to obtain written permission from two separate doctors in order to obtain an abortion (41). Despite this amendment, several barriers to abortion access remain (42). There are

only four abortion-providing facilities (3 hospitals and 1 clinic) in NB, forcing women to travel long distances to receive care. Furthermore, provincial insurance only covers abortions that take place in hospitals (28). As a result of the province's refusal to cover out-of-hospital abortions, NB's only private abortion clinic (Clinic 554) is up for sale and is facing impending closure (43). As of April 2020, discussions between the federal and provincial governments regarding the funding of Clinic 554 are ongoing (43).

Although threats to access still remain, recent developments have the potential to mitigate some of the barriers to abortion care in the province. In 2017, Health Minister Victor Boudreau announced that Mifegymiso®, the gold standard for medication abortion, would be offered free of charge to women with a valid Medicare card (44). This made NB the first province to provide universal cost coverage of medication abortion (44). This development has the potential to decrease the number of women who have to travel to obtain care and will offer women more privacy, as they will be able to take the medication in the comfort of their own home. Even further, in April 2019, Health Canada removed the ultrasound requirement for Mifegymiso®, thus decreasing unnecessary barriers and delays in accessing the product (45).

1.1.5 Emergency contraception in New Brunswick

Although there has been a lot of research and discussion around abortion policies in NB, there has been far less work surrounding EC. In NB, provincial legislation delegates regulatory power to the New Brunswick College of Pharmacists, making scheduling amendments made by National Drug Scheduling Advisory Committee effective immediately (22). Therefore, the changes made to the status of LNg-EC and UPA were supposedly adopted in NB immediately. As a result, LNg-EC is supposed to be available over the counter and UPA is approved for post-coital use as a prescription drug.

Little has been written about EC in NB. However, a national study found that women living in Atlantic Canada generally had lower levels of familiarity than women residing in other Canadian regions with contraceptive methods (including EC) other than oral contraceptive pills and condoms (46). Research also suggests that women often have inadequate information about EC's effectiveness, time frame of use, and availability, as well as the difference between medication abortion and EC, and the effects of EC on fertility and pre-existing pregnancy (47). In fact, a study conducted in the neighbouring province of Nova Scotia found that women appeared to be poorly informed about EC's effectiveness, the proper timing of EC administration, EC's mechanism of action, and how to access progestin-only EC (48). This is troublesome because in order for EC make an impact at a population level, women must first be aware of its existence and second, have adequate and sufficient knowledge of the medication.

1.1.6 Unintended pregnancy

Increasing awareness and availability of EC has the potential to decrease the amount of unintended pregnancies in NB as well as save on healthcare costs. Although data on unintended pregnancy in Canada are limited, it is estimated that about 40% of all pregnancies are unintended (49). In fact, according to Black and colleagues (49), the estimated annual number of unintended pregnancies in Canada is 180,733, costing approximately $320 million. Canadian women aged 20-29 represent an estimated 104,952 of unintended pregnancies, which has a direct cost of approximately $175 million. Emergency contraception plays an important role in decreasing these numbers.

Teenage pregnancy rates in NB are higher than the national average of 14.0 pregnancies per 1,000 teenage females (50). At a rate of 19.8 pregnancies per 1,000 teenage girls, NB has the highest teenage pregnancy rate of all the Atlantic provinces (50). These data illustrate a need for

an increased awareness of the different methods of contraception, including EC technologies. With EC being a significantly cheaper and more accessible option for women in comparison to abortion services in the province, it is an important option that provides women with an additional chance to avoid pregnancy.

1.2 Rationale

There has not yet been a rigorous study dedicated to exploring women's knowledge of, access to, and experiences with EC in NB. The findings of this study will therefore help to address this gap in the current literature. Although there have been several different mystery-client studies assessing the provision of EC in pharmacies, the overwhelming majority of this information is from the United States (51–53).

With abortion care and other sexual and reproductive health services being limited in the province, it is imperative that women both know their options and have access to these medications. Emergency contraceptives present an important option for women; however, there are several barriers that threaten both access and use. Improving knowledge of and access to EC in NB has the opportunity to allow women to exercise more control over their reproductive and sexual health. Through this qualitative study, we aimed to explore and document women's knowledge of, access to, and experiences with EC in order to examine how access and services could be improved to meet better women's needs.

1.3 Purpose and research questions

The purpose of my research was to explore women's knowledge of, access to, and experiences with EC in NB. Using a multi-methods qualitative approach, this study addressed the following research questions:

(1) What is the status of EC in NB pharmacies as reported by pharmacists and in practice?

(2) What are women's experiences accessing EC in NB?

(3) What do NB women know about the different modalities of EC?

(4) What efforts could be undertaken to improve access to and use of EC in NB?

1.4 Thesis structure

This thesis takes the form of "thesis by article" and is divided into six chapters. Chapter 1 provides an introduction to the study with a review of the literature related to EC and its status in NB. The chapter also includes the rationale for the study, the research questions, an outline of the thesis, and a statement of contributions. Chapter 2 provides an in-depth description of the methodology for the study. This chapter includes information about the methods used in this project, including the mystery-client method, as well as the analytic approaches that we used in each component of the study.

Chapters 3, 4, and 5 are original research articles prepared for this thesis. The first article (Chapter 3) centers around the mystery-client telephone study. Using a mystery-client study design, we called all 207 non-specialty pharmacies in the province posing as a 17-year-old woman seeking to prevent pregnancy after sex. This article evaluates the availability, cost, parental involvement, and male procurement of emergency contraceptive pills (LNg-EC) in the province of NB. This article has been published by *Pharmacy* and conforms to the standards of this peer-reviewed journal.

Chapter 4 consists of the second article; we intend to submit this manuscript to *Contraception*. This article focuses on the interview portion of the project and includes information about participants knowledge of and experiences with EC in the province. This article also discusses ways in which EC could be improved in NB. This article conforms to the standards of this peer-reviewed journal.

Chapter 5 contains the third article from this project. We intend to submit this manuscript to *Women's Health Issues* and have formatted the article accordingly. This article uses data obtained from both the survey and interviews to document women's knowledge of and attitudes towards UPA in NB. The article also examines ways in which we can improve knowledge of and access to this form of EC in the province.

Finally, the last chapter begins with an integration and triangulation of the results. I then reflect on my positionality and how it affected the research process. Next, the future directions, and limitations of this study are discussed. The thesis ends with conclusionary statements. A complete list of references and appendices can be found at the end of the document.

1.5 Statement of contribution

I completed this project in partial fulfillment of the requirements of the Master of Science in Interdisciplinary Health Sciences program at the University of Ottawa. I collaborated with my supervisor to conceptualize the study design and design the study instruments. We based the study instruments on a previous study done by my supervisor's research group (54). Based on previous research, I conducted all of the primary data collection, including all the mystery-client calls. I also carried out data analysis for all components of the project. I worked with a research assistant (Janelle Anglin) who aided in recruitment for the study and transcription of the

interviews. My supervisor reviewed and contributed to the qualitative data analysis, contributed to and approved the submitted manuscripts, and supervised me through all components of this project.

Chapter 2: Methods

In order to answer my primary research questions, I employed a multi-method qualitative approach. The first component of this study involved a two-part mystery client study, where I called all of the 207 non-specialty pharmacies listed on the New Brunswick Pharmacist Association's website and then visited a subset of 30 of these pharmacies. The second component of the study involved an online community-based survey designed to learn more about NB women's knowledge of and experiences with EC. For the third component of the study, I conducted 21 in-depth, semi-structured interviews with a sub-set of survey participants in order to explore further their knowledge of, experiences with, and access to emergency contraception. In this chapter, I begin by detailing these study components. I then describe the analytic techniques employed for each of components and end with a discussion of the ethical considerations surrounding and the conceptual framework used for this project.

2.1 Mystery client study

In order to understand better women's access to EC in the province, we conducted a two-part mystery client study of pharmacies in NB. According to the New Brunswick Pharmacist's Association (55), in 2018 there were approximately 207 non-specialty pharmacies in NB. Thus, for the first phase of the mystery client study we sought to collect information from all pharmacies in the province.

For the second phase of the mystery client, we used the same database to construct the sample for in-person visits. We used a stratified random selection process to select the in-person sample, ensuring that independent pharmacies and pharmacies in different locales were represented. We decided to include 30 pharmacies in this component of the project because we

believed this number provided us with the ability to explore EC availability in different types of pharmacies (chain, independent) in different regions of the province. This number was also feasible given the time and funding constraints of the program. Finally, this sample size is consistent with the sample's sizes reported in a number of published studies on the pharmacy availability of EC (52,56).

2.1.1 Telephone mystery client study

Over a 2-week period in December 2018, I made all of the phone calls to the 207 pharmacies in our database. Posing as a 17-year old woman seeking post-coital contraception, I called all of these pharmacies in order to obtain information about availability, cost, and parental involvement. If a pharmacy did not answer on the first call, I would call up to a maximum of 4 times.

Using a client profile (see Appendix A), I began the interaction by asking if there is "something I could use to prevent pregnancy after sex." Using the information in the client profile, I then allowed the interaction to unfold organically. I audio-recorded and transcribed the telephone conversations and later analyzed these interactions using descriptive analytics.

2.1.2 In-person mystery client study

In the second phase of the mystery client study, I made in-person visits to 30 of the 207 pharmacies. These visits occurred over 2 separate weeks; one in December 2018 and one in October 2019. During these visits I examined five key issues; if EC was available, whether EC was kept BTC or OTC, the price of the LNg-EC, the pharmacy hours, and the quality of the pharmacist-patient encounter (if one occurred).

We constructed a client profile for the situations where I interacted with a pharmacist (see Appendix B). When LNg-EC was kept BTC, the "client" asked the pharmacy representative where it was located. The "client" began the interaction by saying, "I am looking for the thing that you can take after sex to prevent pregnancy, do you know where I can find it?" "The client" then responded to any questions posed by the pharmacist, using the information from the client profile. At the end of the interaction, the "client" would say "I forgot my wallet at home. Can my boyfriend come and pick it up later?" The interactions were in English and because they took place in person, were not recorded. I made a quick memo as soon as I left each pharmacy in order to ensure accuracy of the information collected.

2.1.3 Data analysis

I used the same analytic techniques for both portions of the mystery client study; however, unlike the telephone calls, I was not able to audio-record the in-person visits. I inputted the information about the calls into SurveyMonkey®, including comments about the overall quality of the interaction. I later exported these data into Microsoft Excel®. I inputted the information about the in-person visits directly into Microsoft Excel® immediately after each interaction. We used descriptive statistics to classify the pharmacies and provide basic information about the interactions. We analyzed the summaries for content and themes using both deductive and inductive analytic techniques (57). Meetings with my supervisor guided our interpretation and we resolved differences through discussion. I did not reveal myself as a mystery client to the pharmacists; however, I will not reveal any personally identifying information about the pharmacists or the pharmacies in any publications or presentations that result from this thesis.

2.1.4 Training and preparation

Mystery-client studies conducted in other settings informed our study design (52,56,58). In 2016, I participated in the Undergraduate Research Opportunity Program, where I conducted a similar study dedicated to exploring women's access to EC in British Columbia. During this time, I underwent training from my supervisor, Dr. Angel M. Foster, on how to conduct mystery-telephone calls. Through this training and experience, I learned first-hand about the different scenarios that people may face when attempting to access EC, which helped prepare me for my calls with NB pharmacies.

2.2 Community-based survey

At the beginning of 2019, we designed the survey component of this study which was based on a survey conducted by my supervisor and her research group with young adults in Ontario (54). We piloted the revised instrument with members of Dr. Foster's research group before we officially launched the survey in June of 2019. We designed the survey component of the study to provide general information about women's knowledge of, access to, and experiences with EC in NB. We split the survey into four sections; demographic information, sexual, reproductive health, and relationship history, knowledge of EC, and sources of EC information. At the end of the survey, we gave participants the option to participate in a follow-up interview. To be eligible to for the survey, participants had to have access to the Internet and self-identify as women who were:

(1) Aged 15 or older;

(2) Current residents of NB; and

(3) Sufficiently fluent in English or French to answer survey questions.

2.2.1 Participant recruitment

I recruited participants by using a variety of methods including postings on social media websites, advertisements on Kijiji and Craigslist, and postings in New Brunswick Community College locations (42). I include a sample of the survey posters as Appendix C. The survey was kept open from June 2019 to March 2020.

2.2.2 Data analysis

I used SurveyMonkey® to collect the survey responses. I then exported these data into Microsoft Excel® to perform descriptive statistical analyses, including frequencies and cross-tabulations (59). We analyzed the free response questions for content and themes using both deductive and inductive techniques.

2.3 Semi-structured interviews

In order to learn more about the experiences of women in NB, I conducted in-depth, semi-structured interviews by phone/Skype with those survey respondents who were interested in speaking with me. The modality of the interview depended on the preference of each individual participant. I conducted the overwhelming majority of interviews over the telephone (n=20), with only one being conducted by video call. For each interview, I used a guide adapted from previous research from Dr. Foster's group (54). We decided to use semi-structured interviews as they allow respondents to influence the topic and the interaction to flow more organically (60). The conversational nature of semi-structured interviews also fosters a more casual environment, which may make the participants feel more comfortable (60). The eligibility criteria for participation in the interview portion of the study are self-identified women who:

(1) Were aged 15 or older;

(2) Had ever-used EC;

(3) Resided in NB at the time of obtaining EC; and

(4) Were sufficiently fluent in English or French to answer interview questions.

Upon recruitment, we realized that two participants had attempted to access EC in the province but were not successful in those attempts. We felt it was important to capture these experiences and thus we expanded our eligibility criteria to include those who had either ever-used EC or who had tried to obtain EC but were unsuccessful in doing so.

2.3.1 Data analysis

With consent from the interviewee, I audio-recorded all of the interviews. Throughout the interviews I took notes and created memos of my reflections directly after each interview (26). These memos allowed me to not only reflect on the content of the interviews, but also helped me explore my feelings and the ways in which they influenced the interview process (62). The memos also played an important role in the analytic process, as they helped us determine when thematic saturation had been reached (62). With the help of a research assistant, we transcribed all of the recordings verbatim. We used ATLAS.ti software to manage both the memos and transcripts from the semi-structured interviews (63). After transcription was complete, we familiarized ourselves with the interview transcripts, notes, and memos, and then developed a code book using both inductive and deductive techniques (64). The initial categories and codes that were included in the code book were based on an extensive review of the existing literature, our interview guides, our study objectives and research questions. As analysis progressed, we refined these categories and codes based on insights derived from the transcripts, notes, and

memos (64). After completing the first phase of coding, we explored each code in order to identify themes. Using an iterative process, we identified major themes and relationships between the interviews (59). In order to protect the data, we saved all recordings, memos and on password protected devices (58).

2.4 Conceptual framework

As the goal of this thesis is to inform policy and practice, we employed a type of action-oriented research called participatory research (65). Participatory research

> . . . attempts to break down the distinction between the researchers and the researched, the subjects and the objects of knowledge production by the participation of the people-for-them-selves in the process of gaining and creating knowledge. In the process, research is seen not only as a process of creating knowledge, but simultaneously, as education and development of consciousness, and of mobilization for action (65, p. 943).

In other words, participatory research is a method that seeks to remove the traditional barrier between knowing and doing (66). The use of participatory research allowed us to engage with women in NB in order to obtain their perspectives on access to EC in the province, and ways in which these services could be improved. Even further, an important feature of participatory research is its emphasis on empowering the research participants (65). Through involving these women in the research process, we were able to give voice to the first hand-experiences and challenges that they had experienced in the province.

We decided to employ a qualitative methodological approach because these methods are often used to investigate unexplored phenomena (57,67). As there is minimal information surrounding EC in NB, and only anecdotal evidence and media accounts to suggest that knowledge of and experiences with EC in the province are poor, qualitative approaches were the most appropriate in exploring this topic. Finally, using the mystery-client study method allowed

us collect data on how individuals interact with pharmacy representatives with respect to EC, while emphasizing the experience of the woman (57).

2.5 Ethical considerations

Based on the criteria laid forth in Article 2.1 of the TCPS2, the Office of Research Ethics and Integrity at the University of Ottawa determined the telephone-based mystery client study does not involve "human participants" and therefore did not require Research Ethics Board review. Other components of this study received approval from the Health Sciences and Sciences Research Ethics Board (REB) located at the University of Ottawa (File #12-14-12 and File #01-15-02). I include copies of these approvals as Appendix D.

Through the mystery client study, my thesis contains an element of deception. However, this form of participant observation is commonly used when evaluating services, especially with respect to pharmacies (68). Furthermore, this methodology has been used in other studies assessing the accessibility of EC in pharmacies (52). Therefore, the mystery client portion of the study does not represent an ethically compromising situation because I used deception in order to examine the provision of services by professionals within the context of their professional roles and responsibilities.

Chapter 3: Exploring the availability of emergency contraception in New Brunswick pharmacies: A mystery client telephone study

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pharmacy

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Article

Exploring the Availability of Emergency Contraception in New Brunswick Pharmacies: A Mystery-Client Telephone Study

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Abstract: Although levonorgestrel-only emergency contraceptive pills (LNg-ECPs) have been available over the counter in Canada for more than a decade, barriers to access persist. We aimed to obtain information about the availability and cost of LNg-ECPs in New Brunswick. Using a mystery-client study design, we called all 207 non-specialty pharmacies in the province posing as a 17-year-old woman seeking something to prevent pregnancy after sex. We evaluated the information provided for accuracy and quality. The overwhelming majority of pharmacies (n = 180, 87%) had at least one brand of LNg-ECPs in stock; the price averaged CAD28.69 (USD21.65). Although the majority of pharmacy representatives provided accurate information about LNg-ECPs, a small number made incorrect statements about the timeframe for use, side effects, and mechanism of action. In nine interactions (4%) pharmacy representatives incorrectly indicated that a male partner could not obtain LNg-ECPs; none indicated that parental involvement was required to procure LNg-ECPs. None of the pharmacy representatives referenced any other modality of emergency contraception, including ulipristal acetate. Our findings suggest that LNg-ECPs are widely available and that most pharmacy representatives are providing accurate medical and regulatory information. However, supporting the continuing education of pharmacists and pharmacy staff, particularly around alternative modalities of emergency contraception, appears warranted.

Keywords: Canada; emergency contraception; mystery-client; New Brunswick

1. Introduction

Emergency contraceptives are medications or devices that are used after sex to reduce the risk of pregnancy and represent an important but underutilized contraceptive option for women. Globally there are five modalities of emergency contraception (EC) available: the copper-T intrauterine device (IUD), ulipristal acetate (UPA), levonorgestrel-only emergency contraceptive pills (LNg-ECPs), the post-coital use of combined hormonal oral contraceptive pills (the Yuzpe

method), and low-dose mifepristone [1]. Except for low-dose mifepristone, all EC modalities are available in Canada.

New Brunswick is one of the four provinces that make up Canada's east coast. As the second most populous of Canada's Atlantic provinces, New Brunswick has a population of 751,171, with almost half living in rural areas [2,3]. Provincial legislation delegates regulatory power to the New Brunswick College of Pharmacists, thus scheduling amendments made by the National Drug Scheduling Advisory Committee are effective immediately [4]. Therefore, the changes made to the status of LNg-ECPs and UPA were adopted in New Brunswick immediately. As a result, LNg-ECPs are approved for over-the-counter sale and UPA is approved for post-coital use as a prescription drug. However, a body of research in Canada has demonstrated that LNg-ECPs are often held behind-the-counter, thereby reducing timely access [5,6]. Little has been written about EC in New Brunswick. However, a national study found that women living in Atlantic Canada generally had lower levels of familiarity with contraceptive methods other than oral contraceptive pills and condoms when compared to their counterparts in other regions [7]. Research in North America also suggests that women often have inadequate information about the effectiveness, timeframe for use, and availability of different modalities of EC, the difference between medication abortion and LNg-ECPs, and effects of LNg-ECPs on fertility and pre-existing pregnancy [8]. But in order to be able to use methods of EC, women must be aware of their existence and have adequate knowledge about how to use them. Health care providers play a critical role in providing evidence-based information and services and combatting misinformation.

We undertook a mystery-client telephone study to explore the availability of LNg-ECPs in New Brunswick pharmacies. Through engaging with all of the non-specialty pharmacies listed on the New Brunswick Pharmacists' Association website [9], we aimed to obtain information about availability, cost, parental involvement, and male procurement of LNg-ECPs, and identify avenues by which pharmacy provision of EC could be improved.

2. Materials and Methods

Mystery-client studies conducted in other settings informed our study design [10,11]. Over a 3-week period in December 2018, we called 207 non-specialty pharmacies in order to obtain information about EC.

2.1. Data Collection

MB, a New Brunswick native completing her MSc degree in Interdisciplinary Health Sciences at the University of Ottawa (Canada), made all the telephone calls. Using a client profile (see Section 2.2), MB began each interaction with, "Do you have something I could use to prevent pregnancy after sex?" The interactions then unfolded organically, and MB tried to solicit information about availability, cost, parental involvement, and boyfriend procurement. After calling the general phone number and asking to speak with a "pharmacist," the interactions lasted between 1 and 8 min.

2.2. Client Profile

We created a client profile in order to mimic an authentic encounter and consistently respond to questions during the interaction. Emily is a 17-year-old young woman from an area near the pharmacy seeking something to prevent pregnancy after sex. The night before (approximately 10–20 h earlier depending on the time of the call) she had penile–vaginal intercourse with her boyfriend of 3 months. The condom "broke" during that interaction, which involved ejaculation. Emily is not using any other type of contraception. She does not know how her health insurance works but has insurance "through her parents." Her period ended about one week prior to the interaction (making her roughly 12 days from the first day of her last menstrual period (LMP)). Emily has heard about something that can prevent pregnancy after sex but does not know the details or the name of the product. If told "Plan B" she can indicate that she has heard that name before. Emily has no health problems, takes no medications, and has never been pregnant. She is open to learning about the copper-T IUD and/or UPA if the pharmacy representative provides information. She has heard of an IUD but does not know that it can be used as EC. Emily has not heard of UPA. We chose this profile to reflect "typical" characteristics of adolescent sexual health knowledge and behaviors, to indicate that the client was likely at risk of unintended pregnancy based on LMP, and to create organic opportunities to explore pharmacy representatives' knowledge about regulatory issues such as parental consent or boyfriend procurement.

2.3. Data Analysis

MB audio-recorded the telephone conversations and then inputted the information into SurveyMonkey® for later export into Microsoft Excel®. We used descriptive statistics to classify the pharmacies and provide basic information about the interactions. We analyzed the summaries for content and themes using both deductive and inductive analytic techniques. Regular meetings between MB and her supervisor (AMF) guided our interpretation and we resolved differences through discussion. We did not collect personally identifying information about individual pharmacy representatives and in this article, we have masked all identifying information about pharmacies. We present our results by domains of inquiry.

2.4. Ethical Considerations

Based on the criteria laid forth in Article 2.1 of the Tri-Council Policy Statement 2nd Edition [12], the Office of Research Ethics and Integrity at the University of Ottawa determined that this study did not involve "human participants" and therefore did not require Research Ethics Board review.

3. Results

3.1. Pharmacy Characteristics

We interacted with a representative from all 207 non-specialty pharmacies listed in the New Brunswick Pharmacists' Association directory and contacted pharmacies in all 15 counties in the province. We present general characteristics of these pharmacies on Table 1. Using Statistics Canada's population dwelling classifications [13], 65 of the pharmacies were located

in Medium Population Centers (MPCs), 125 pharmacies were located in Small Population Centers (SPCs), and 17 were located in rural areas. The majority of the pharmacies were chain stores (n = 159, 77%), 43 (21%) were banner (independently owned but working with a group for marketing and procurement purposes), and 5 (2%) were independent. In some cases, the pharmacy representative identified her/his/their professional position; we include this information on Table 1. The overwhelming majority of pharmacy representatives that we spoke with appeared to be women (n = 165, 80%) based on name and voice.

Table 1. Characteristics of pharmacies included in the study (N = 207).

Area Location of Pharmacy	
Medium Population Centre	65 (31%)
Small Population Centre	125 (60%)
Rural area	17 (8%)
Type of Pharmacy	
Chain	159 (77%)
Banner	43 (20%)
Independent	5 (2%)
Professional Position of Pharmacy Representative	
Pharmacist assistant/technician	56 (27%)
Pharmacist	69 (33%)
Unknown	82 (39%)

3.2. Availability and Cost of LNg-ECPs

The overwhelming majority of the pharmacies we contacted (n = 180, 87%) had at least one dedicated LNg-ECP product in stock at the time of our call. Of the 26 pharmacies that did not have LNg-ECPs in stock, 12 (46%) gave our client a referral to another pharmacy. Rural pharmacies were more likely than pharmacies in MPCs and SPCs to not stock LNg-ECPs (24% versus 9% and 13%). Pharmacy representatives provided information about the price of LNg-ECPs in 86% of our interactions (n = 178); the average price (all brands) was CAD28.69 (USD21.65). None of the pharmacy representatives we spoke with provided information about UPA or the copper-T IUD.

3.3. Accuracy of Medical Information

Although the majority of the pharmacies provided accurate information about LNg-ECPs, some did provide information that was medically inaccurate (n = 26, 13%); we based our assessment of medical accuracy on international guidelines issued by normative bodies [14,15]. Incorrect medical information included the timeframe for use, side effects, and/or the mechanism of action of LNg-ECPs. The most common error involved the timeframe for use (n = 20, 40%); generally, pharmacy representatives stated that LNg-ECPs had to be used less than 72 h after intercourse. As a provider in an SPC stated, “Is it past 24 h? Because I think [LNg-EC] is supposed to be [used] before.”

Thirty-one pharmacy representatives (15%) offered some information about side effects; overwhelmingly they correctly informed the mystery client that these were minor and transient. However, in two cases pharmacy representatives provided confusing and medically inaccurate information about vomiting and when a person should take a second/additional dose of LNg-EC. Two incorrectly stated that estrogen was the active ingredient of "Plan B" and described side effects and risks that were consistent with the use of combined hormonal oral contraceptive pills, patches, or rings. Finally, 15 pharmacy representatives (7%) provided information about mechanism of action of LNg-ECPs with varying degrees of accuracy and precision.

3.4. Accuracy of Regulatory Information

Pharmacy representatives in New Brunswick discussed a number of EC-related service delivery practices that are in conflict with federal regulations, provincial regulations, and best practices. Although we did not specifically ask about the de facto regulatory status of LNg-ECPs, 48 pharmacy representatives (23%) indicated that the pills were not available "on the shelf". One pharmacy representative in a SPC incorrectly stated, "We keep it back in the pharmacy, and legally, that is where they have to be."

In terms of procurement of LNg-ECPs, 9 pharmacy representatives (4%) incorrectly indicated that a male partner could *not* procure the medication. As LNg-ECPs are supposed to be available over the counter, there should be no age, sex, gender, or other restrictions to procurement. However, as one provider in a SPC explained, "You have to have a consultation to decide if you are eligible for it, so we would need to see you."

Pharmacy representatives were unanimous that a 17-year-old woman could obtain LNg-ECPs without parental consent. However, several pharmacy representatives expressed that younger teens would need to involve their parents. As one provider in a SPC stated with respect to parental involvement, "No, not at 17, [but] 16 would be another story."

Finally, four pharmacy representatives (2%) refused to provide any information about EC over the phone. Instead, they indicated that the pharmacist would have to speak to the client in person before they could provide any information about ECPs.

3.5. Personal Questions Asked

Fifty-three pharmacy representatives (26%) asked our mystery client personal questions. These questions pertained to the use of ongoing contraceptive methods (n = 21), general health/sexual health history (n = 14), name/boyfriend's name (n = 9), weight (n = 5), circumstances behind the need for EC (n = 2), current pregnancy status (n = 2), date of the last menstrual period (n = 2), and other (n = 8). Table 2 summarizes the type of personal questions asked by the pharmacy representatives.

Table 2. Description of the personal questions asked by pharmacy representatives (N = 53).

Topic of Question Asked	Number (%)
Use of other contraceptive methods	21 (10%)
General health/sexual health history	14 (7%)
Name/boyfriend's name	9 (4%)

Weight	5 (2%)
Circumstances behind need for EC	2 (1%)
Pregnancy status	2 (1%)
Last menstrual period	2 (1%)
Other	8 (4%)

3.6. Quality of the Interactions

In terms of quality of interaction, the results were quite variable. The majority of the pharmacy representative (n = 135, 56%) simply answered our questions and did not provide additional information or ask personal questions. We provide an example of this type of interaction as Figure 1. However, in 29 instances (14%) the interaction was both judgmental and uncomfortable. For example, a pharmacist in a SPC said this in an abrasive tone in response to the client stating that she does not use oral contraceptive pills:

> So, [oral contraceptive pills] might ... be something you want to consider ... I just say this because I've seen sometimes that people might want to try something like this [EC] on a regular basis, but it is kind of hard on the system, it would not be the most recommended route.

In contrast, 14 pharmacy representatives (7%) went into detail about the location of LNg-ECPs in the pharmacy in order to support anonymity. For example, a pharmacist in a SPC explained:

> They are in the section where you get your Canesten, near the check-in counter at the pharmacy and it is called Plan B. It is in a blue box. We can help you find it but if you want to be anonymous, that is why I'm explaining it, so it is aisle number 6, close to the back of the store.

Emily: Hello, I was just wondering if you had something that I could use to prevent pregnancy after sex?

Pharmacy representative: Yes, we have something called Plan B.

Emily: Okay. How much does that cost?

Pharmacy representative: $30

Emily: Okay. I'm only 17, so I was just wondering if I needed my parents' permission in order to get it?

Pharmacy representative: No. It is located on the shelf, so you can just come in and pick it up yourself.

Emily: Okay. Would my boyfriend be able to come in and pick it up for me?

Pharmacy representative: Yes, he can.

Emily: Okay, thank you so much. Bye.

Figure 1. Typical interaction between the mystery client (Emily) and a pharmacy representative.

4. Discussion

In 2008, Dunn and colleagues found that 87% of Ontario pharmacies had LNg-ECPs in stock [16]; a decade later our findings suggest that pharmacy availability in New Brunswick is comparable. However, over half of the pharmacies that provided information about where LNg-ECPs "live", and 23% of all pharmacies in the study, indicated that the medication is not actually available on the shelf. This too is consistent with studies in other parts of Canada [5,10,16]. Research from throughout North America has shown that keeping LNg-ECPs behind- rather than over-the-counter impedes timely access, creates opportunities for pharmacists to deny services or ask intrusive questions, decreases patient privacy, and increases the cost [5,16,17]. Stocking LNg-ECPs behind-the-counter also creates barriers for individuals who wish to procure the medication on behalf of a friend or partner. We join the chorus of voices from the reproductive health and rights community and call on pharmacies in New Brunswick to follow federal and provincial regulations and make LNg-ECPs available over the counter.

Pharmacy representatives in our study generally provided medically accurate information about LNg-ECPs and recognized that both minors and men could purchase LNg-ECPs. However, there does appear to be some persistent confusion about the timeframe for use. Although guidance offered by the World Health Organization [14] and the International Consortium for Emergency Contraception [15] is clear that LNg-ECPs can be used up to 120 h after unprotected or underprotected sexual intercourse, the labels on LNg-EC products available in Canada still state the timeframe for use is 72 h [18]. This undoubtedly contributes to a lack of clarity around when LNg-ECPs can be used. However, in most cases in our study, pharmacy representatives indicated that the timeframe for use was *less than* 72 h after sex. This misinformation probably stems from the fact that LNg-ECPs are more effective at reducing the risk of pregnancy the sooner they are used [14]. Continuing education efforts directed at pharmacists and pharmacy staff should continue to emphasize the evidence-based timeframe.

In a number of encounters the pharmacy representative provided detailed information to help the client obtain LNg-ECPs anonymously. These findings are heartening. However, we did have a number of encounters that were uncomfortable and/or judgmental, either because of the types of questions being asked or the overall tone of the interaction. Shoveller and colleagues conducted a study in British Columbia and found that participants reported receiving stigmatizing messages from providers when they sought ECPs and worried that health care providers would consider them irresponsible or promiscuous for requesting post-coital contraception [17]. Highlighting professional and positive encounters with pharmacy representatives may help allay these fears as well as showcase a model for others to follow.

In 2015, Health Canada approved ulipristal acetate for use as an emergency contraceptive under the brand name ellaOne [19]. Studies have shown that UPA is more effective than levonorgestrel-only EC both in general and when used by women who weigh more than 165 pounds [14,15]. The copper-T IUD is the most effective modality of emergency contraception and if left in place confers ongoing contraceptive benefit [20,21]. However, none of the pharmacy representatives in our study mentioned either UPA or the copper-T IUD as an option to our mystery client. As the client only asked for "something" to prevent pregnancy after sex, this is a missed opportunity. A recent study with pharmacy representatives in Ontario suggests that knowledge of modalities of EC other than LNg-ECPs is limited [22]; we suspect this same dynamic is at play in New Brunswick. Supporting efforts to educate pharmacists and pharmacy

staff about other modalities of emergency contraception could help increase access to more effective post-coital methods.

Our study has several limitations. Notably, although New Brunswick is a bilingual province, we conducted all our calls in English. This enhanced the authenticity of the interaction, but it means we are unable to assess how pharmacy representatives would respond to a Francophone caller. Further, we recognize that a single interaction with a representative from a pharmacy may not reflect the practices of others working at the same institution. However, this approach did allow us to obtain a snapshot of EC availability and accessibility.

5. Conclusions

Our findings suggest that LNg-ECPs are widely available in New Brunswick and that most pharmacy representatives are providing accurate medical and regulatory information. However, encouraging all pharmacies to stock LNg-ECPs over the counter could increase timely access to post-coital contraception. Supporting the continuing education of pharmacists and pharmacy staff, particularly around alternative modalities of emergency contraception, also appears warranted. Encouraging the New Brunswick College of Pharmacists to provide information about all EC modalities to their members could advance this effort.

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Abbreviations

EC Emergency contraception
IUD intrauterine device
LMP last menstrual period
LNg-ECPs levonorgestrel-only emergency contraceptive pills
MPCs Medium Population Centers
SPCs Small Population Centers
UPA ulipristal acetate

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Chapter 4: Exploring women's experiences with emergency contraception in New Brunswick, Canada: A qualitative study

We have formatted this article for the peer-reviewed journal, *Contraception.* I have included a word version of this manuscript in this chapter. The manuscript adheres to the formatting requirements of the journal.

Exploring women's experiences with emergency contraception in New Brunswick, Canada: A qualitative study

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Exploring women's experiences with emergency contraception in New Brunswick, Canada: A qualitative study

Abstract

Objectives: This qualitative study aimed to document women's knowledge of and experiences with emergency contraception in New Brunswick, a bilingual Canadian province with a large rural population. We also explored women's perspectives on how services could be improved.

Methods: We conducted 21 in-depth, semi-structured phone/Skype interviews with women who had attempted to access emergency contraception while residing in New Brunswick. We employed an iterative multiphase analytic approach centering on content and themes and used ATLAS.ti to manage our data.

Results: The overwhelming majority of participants had limited knowledge of the full range of modalities of emergency contraception at the time of the interview. With respect to progestin-only emergency contraceptive pills, women reported misinformation about mechanism of action, efficacy, and effects on future fertility. Women also cited shame and stigma, the de-facto "behind-the-counter" status of the medication, and rural residence as significant barriers to timely use.

Conclusion: Although progestin-only emergency contraception is extremely safe and effective and should be available over the counter and without a prescription, the experiences of our participants indicate that this is far from the reality. Improving timely access to a range of emergency contraceptive options in New Brunswick appears warranted.

Implications: Women in New Brunswick continue to experience significant barriers to accessing medications and devices that can be used after sex to prevent pregnancy. By lifting up women's voices, our study highlights the need for initiatives to decrease externalized and internalized stigma, improve clinician and retail pharmacy provision practices, and increase timely access.

Keywords: Canada; Emergency contraception; New Brunswick; Qualitative research

1. Introduction

Emergency contraceptives are medications or devices that are used after sex to prevent pregnancy and represent an important but underutilized contraceptive option for women. There are five modalities of emergency contraception (EC) available globally: the Yupze method (the post-coital use of combined hormonal oral contraceptive pills), levonorgestrel-only EC pills (LNg-ECPs), ulipristal acetate (UPA), low dose mifepristone, and the copper-T intrauterine device (copper T-IUD) [1]. With the exception of low-dose mifepristone, all EC modalities are available in Canada.

New Brunswick is one of the four provinces that make up Canada's east coast. New Brunswick has a population of about 750,000, with almost half of that population living in rural areas [2-3] and is the only bilingual province in Canada, with two thirds of the population identifying as English-speaking and one third as French-speaking [4]. In New Brunswick, provincial legislation delegates regulatory power to the New Brunswick College of Pharmacists, making scheduling amendments made by National Drug Scheduling Advisory Committee effective immediately [5]. Therefore, the changes made to the status of LNg-ECPs and UPA were adopted in NB immediately. As a result, LNg-ECPs are supposed to be available over the counter and UPA is approved for post-coital use as a prescription drug. Although LNg-EC is supposed to be available over the counter, this is not necessarily the case and there has been a large body of research that indicates that the medication is often held behind-the-counter, thus reducing timely access [6-8].

Little has been written about EC in New Brunswick. However, a national study found that women living in Atlantic Canada generally had lower levels of familiarity with contraceptive

methods (including EC) other than oral contraceptive pills and condoms that those living in other regions [9]. Research also suggests that women often have inadequate information about LNg-EC's effectiveness, time frame of use, and availability, the difference between medication abortion and EC and effects of EC on fertility and pre-existing pregnancy [10]. In addition to lack of knowledge and misinformation, women living in rural areas experience unique barriers to access. More specifically, residents living in rural areas have less access to sexual and reproductive health care services, have inconsistent sexual health education, and are less likely to have confidential and unbiased care [11-12].

Although there is anecdotal evidence to suggest that residents of New Brunswick face significant barriers in obtaining EC, there has not yet been a rigorous investigation into women's experiences obtaining EC in the province. From mid-2019 to early 2020, we conducted in-depth interviews with self-identified women who attempted to use EC while residing in New Brunswick in order to explore their knowledge of and experiences with emergency contraception.

2. Methods

This project is part of a multi-methods qualitative study dedicated to exploring access to, knowledge of, and experiences with EC in New Brunswick.

2.1 Participant recruitment and data collection

We conducted in-depth, semi-structured interviews with women between July 2019 and March 2020. We employed a multi-model recruitment strategy, posting study advertisements on listservs and online platforms, circulating study information through local organizations and engaging with social media [13]. As a separate part of the overarching project we also conducted an online survey with young adults, and we invited eligible survey participants to complete a follow-up interview. Ultimately, all of our participants came from the online survey. The eligibility criteria were self-identified women, aged 15 years of age or older, who had attempted to access EC in the province and were proficient in either French or English. Interviews averaged a half an hour in length and took place over the telephone or Skype. Participants received a CAD25 gift card to amazon.ca as a thank you for participating.

MB, an MSc student at the University of Ottawa originally from New Brunswick, conducted all interviews after having received training from her supervisor (AMF), a medical anthropologist and medical doctor with extensive EC-related research experience. With permission from the participant, we audio-recorded interviews and later transcribed them verbatim. We asked open-ended questions and probed participants' responses when appropriate. The interview guide began with a series of questions about the participant's background, knowledge of EC, and sources of EC information. We then asked participants to detail their experiences accessing any and all modalities of EC in the province. Finally, we asked women about the ways in which services could be improved in New Brunswick and in the last part of the interview we explored participants' knowledge of and opinions about UPA, a second generation emergency contraceptive drug approved for post-coital use in Canada in 2015 [14]. MB took notes during the interviews and formally memoed immediately after each interview.

Memoing served as a means to reflect on interviewer-participant interactions, identify emerging themes, and determine thematic saturation [15]. MB and JA transcribed interviews verbatim; although we recruited both Anglophone and Francophone participants, we conducted all of our interviews in English.

2.2 Analysis

We engaged in an iterative analytic process centering on content and themes [16-17]. Using interview transcripts, notes, and memos, we conducted content and thematic analyses using predetermined categories and codes that were based on the study aims and research questions [18]. We then employed inductive analytic techniques where we added additional codes and categories based on the expanding data in order to identify emergent themes [16]. Through this process, we identified themes and formed relationships between the themes, categories, and codes.

We used ATLAS.ti to manage our data. We developed a codebook using pre-determined categories and codes based on the overall study aims and research questions. MB created the initial codebook and served as the principle coder. AMF reviewed both the codebook and the coded transcripts. Group meetings guided our interpretation and we resolved disagreements through discussion.

2.3 Ethical considerations

We received ethics approval from the University of Ottawa's Research Ethics Board. Throughout this paper, we use pseudonyms and mask or redact all personally identifying

information. We showcase individual women's experiences through narrative vignettes and use illustrative quotes to highlight themes and ideas.

3. Results

3.1 Participant characteristics

We interviewed 21 women over the course of the study. Consistent with the demographics of New Brunswick [4,19], the largest proportion of participants were from Westmorland county (*n*=8), and most self-identified as white (*n*=20). At the time of the interview, our participants averaged 25 years of age, the majority were attending school (*n*=16), and just over half were married/partnered (*n*=11). See Table 1 for a summary of participant characteristics.

Women detailed the experiences of their first-time accessing EC and, if applicable, their most recent time accessing EC. The majority of the women had taken EC between 1 and 2 times (*n*=14). All of the participants who used EC had either PlanB® or a generic brand of LNg-ECPs. Two of the participants did not ultimately take EC after going to the pharmacy (See Claudette's Story, Fig. 1). Women cited lack of knowledge and misinformation, societal shame and stigma, behind-the-counter status, and rural residence as barriers in accessing EC in the province.

Fig. 1 about here

3.2 Lack of knowledge and understanding of EC are significant barriers to use

The vast majority of participants had initially learned about EC either through their sexual health education courses (n=10) or peers (n=10). Regardless of where they learned about EC, their knowledge of LNg-EC was generally limited and/or incomplete. As 23-year-old Ariana stated, “It wasn’t explained to me and we kind of didn’t speak of the information. I think a lot of people were kind of in the same boat that I was. And then in a situation, you might genuinely not know if you need [EC].”

Although all of the participants had a basic understanding of what EC was, several had questions and concerns about its effects on future fertility, efficacy, and mechanism of action. As 20-year-old Jessica explained, “I will say that I used to think it was like super bad for you to take it. Like, if you like took it more than once then there wouldn’t be any chance of getting pregnant ever.” Several women echoed this sentiment and stated these fears caused hesitancy and anxiety about the medication.

Participants also had questions concerning the efficacy of EC, particularly the safety of multiple uses. As Lindsay, 21, asked, “I know one of my friends, she used to take the PlanB® pill quite often and I had heard some talk around it that it decreases its effectiveness the more times you take it. And I was wondering if that is true or false?” Although efficacy does not decrease with multiple instance of use, several women brought up this misconception.

Generally, most of the women that we spoke with understood that EC is not an abortifacient; however, some did have questions surrounding LNg-ECPs’ mechanism of action. As Leah, 20, asked, “I think that one thing that I’ve heard is that people think that it like [causes an abortion], which is like not the case, like it prevents the egg and sperm from meeting, right?” The confusion about how EC prevents pregnancy was indicated as a barrier for use and was

described as one of the reasons why women might decide not to use the medication. As Holly, 24, described, "I know that some people wrongly believe that PlanB® is like an abortion pill, which it isn't…So that's like an added stigma, and there shouldn't be stigma around having an abortion at all, but there definitely is."

Fig. 2 about here

3.2 Fear of pregnancy and not understanding risk of getting pregnant resulted in use of EC

As Samantha's story illustrates (Fig. 2), a lack of understanding pregnancy risk and the mechanics of getting pregnant influenced many of our participants' decisions to use EC. As Audrey, age 23, explained:

> It was pretty soon after I started becoming sexually active and like, I really did not understand like much around sex. Like, it honestly embarrasses me so much, like, how little I understood coming out of high school. Just about like sex and like what actually needs to happen in order for you to get pregnant…it was just a combination of, like, me being a little like not sure how everything worked and also just like not knowing what was going on.

Although most participants indicated that their use of EC was a result of either unprotected sex or contraceptive failure, several women indicated that they were using multiple forms of contraception when they decided to take LNg-EC. The decision to use EC despite using multiple forms of contraception was a described as a result of the fear of getting pregnant. As Katie, who was using oral contraceptive pills correctly and consistently when she used LNg-ECPs, explained, "Many times I used [PlanB®] was when I was young and not even understanding…the way regular contraception works and also thinking that getting pregnant is

the worst thing that could ever happen." The fear and anxiety surrounding pregnancy was a driving force in obtaining EC and women felt like they needed to take every means necessary to not become pregnant, as Leah, age 21 explained:

> And although I was on the [oral contraceptive] pill, I am a very anxious person…And even though— if I was on the pill and now, I have an IUD—even then I get really, really nervous. Even knowing that those forms of contraception are effective, I still felt like I wanted to take PlanB® to make sure…because otherwise I feel like that was the only way that I could feel okay about it.

Participants overwhelmingly voiced their desire for a more comprehensive sexual health curriculum in the province. It was clear that the information that these women received in their sexual education courses did not accurately inform them of the mechanisms surrounding pregnancy and the efficacy of contraception. As Abbey, 22, stated, "You know, you hear people: 'every time I have sex, I'm nervous I'm pregnant'. You know, that kind of thing. But if there was true understanding of the science of how the human body works, then I feel like there would be less stress about that."

Fig. 3 about here

3.3 Shame and stigma impede timely access to EC, especially in rural communities

All of the women that we spoke with expressed how shame and stigma were significant barriers when accessing EC. These feelings seemed to stem from society's negative view of female sexuality and adolescent sex in particular. As Carole, age 24, explained:

> Well I think that our society shames young women for having sex. And, way more so than men, I guess if you're talking a binary. But yeah, I think women are definitely shamed more…when having sex and then being viewed as irresponsible, like need[ing] emergency contraception, so that's probably where those feelings came from.

In comparison to other forms of contraception, several women indicated that the post-coital use of EC carries more stigmatizing messages because they feel like they should have done more to prevent pregnancy before they had sex. Women described how they were worried about people seeing their decision to use EC as irresponsible, as exemplified by Hailey, age 25:

> When someone is on the birth control pill, it could just be for their health benefits, like it could lessen cramps, lessen their period… like that kind of thing. Whereas, when I was getting the emergency contraceptive, there is only one reason you need that. And that was the one thing that kind of made me a little anxious, was to see how, like, the people around me while I'm getting this would respond.

Although some of the participants cited that they experienced stigmatizing messages from the health care provider that they interacted with (see Fig. 2), most of our participants reported having positive interactions. Instead, the stigma that most women felt was characterized as internal. After asking Samantha about why she felt embarrassed accessing EC, she said, "[P]robably self-blame of I didn't… I don't know…. I didn't take the right steps or didn't go about it properly."

As reflected in Holly (Fig. 3) and Claudette's (Fig. 1) stories, shame and stigma were often amplified in situations where participants were accessing EC in rural areas. Although most of these women said that they would consider travelling outside of their hometowns to procure the medication, many indicated that this was not an option when they were younger. Women,

such as Candace, age 19, cited fear of breaches in confidentiality and the lack of anonymity as barriers.

> The pharmacist would have known who I am, who my family is, who my boyfriend is and all of that. And word travels, even though it is supposed to be [confidential] or whatever, it spreads. That is just the way it is. Whereas, in [a city] there are so many pharmacies, like I could go literally anywhere and not know anyone.

Fig. 4 around here

3.4 Most participants cited the actual behind-the-counter status of LNg-EC as a significant barrier to use

The majority of participants cited the behind-the-counter status as a significant barrier to accessing EC. Being able to access EC over the counter was described as a way to increase the users sense of agency in the situation and speed up the process. As 22-year-old Julie explained, "[Y]ou feel more in control as well when you are doing that, and you can just pick it up and know what you're getting and why you're using it. Like, you don't have to consult with anyone or have this awkward interaction…or explain yourself."

As illustrated in Samantha's story (Fig. 4), participants like Abbey described the behind-the-counter status as intimidating and expressed that the mandatory interaction fosters a fear of judgment

> The only thing about that though, is with…if someone is going in for their first time looking for PlanB® or something, and you see it's behind-the-counter, you know, that's intimidating. Especially if it's your first time taking it. So, I really think it should be…in the, you know, like the normal aisles of the pharmacy.

Although most women said that they would prefer the over-the-counter status for themselves, some stated that they think that EC should remain behind-the-counter for other woman who procure the medication. As Carole explained, "I think now, at the age I'm at, I would prefer it in the aisle. I am happy though that when I was younger, they were still doing it behind-the-counter."

The sentiment that the over-the-counter availability of EC would make it easier to be "abused" was also cited as a reason why EC should be kept behind-the-counter. As Ariana, a 23-year-old woman, explained, "But I understand why they keep the PlanB® and stuff behind-the-counter because there's so many young girls that would need it and just…Like I understand why it's behind there, so people don't just grab it."

Participants also described keeping EC behind-the-counter as a way to ensure that young women get the information about the medication. Participants like Katie, age 24, voiced their concerns about how women could learn about EC if it was available on the shelf,

> Getting it off the shelf is helpful, it does take away any type of, like, shame. But I do think that…I don't know, like illiteracy rates are pretty high in New Brunswick, so I don't even know if people would read the information that was given. Like having something that you can call - I guess you could call like a public health nurse - but just like, I don't know like, maybe more information should be given when you are taking it.

4. Discussion

Having knowledge and understanding of EC are key factors in its use. Despite the fact that EC is extremely safe and effective, myths surrounding its mechanism of action, side effects and impact on fertility continue to negatively impact access to the medication. Both health care providers and sexual education courses play an important role in combatting misinformation about EC. In fact, in a study conducted in the United States, women who had heard of EC from a

health information source had significantly higher knowledge levels and greater intentions to use EC in comparison to women who had received their information elsewhere [10]. Our results also suggest that it is important to identify avenues for which misinformation is being disseminated and ensure that health professionals and sexual health education courses are providing complete and correct information [10].

In Canada, as in many areas of the world, women's sexuality continues to be scrutinized. This creates situations where some women blame or judge themselves for using EC [20]. As several women mentioned in our interviews, the decision to use EC was framed as the result of a mistake, and not a responsible decision taken to prevent pregnancy. Despite the fact that there is considerable evidence that better access to contraception does not lead to sexual promiscuity [21–24], some participants still brought up concerns about over-the-counter availability resulting in an "abuse" of EC. The repeated used of EC poses no health risks; however, the idea that using EC multiple times has negative consequences on a women's reproductive health has been socially engrained and creates barriers to access [25]. Although most women described having positive experiences with their health care provider when accessing EC, some still described negative and uncomfortable interactions. This, in addition to the internalized stigma experienced by our participants, illustrates how efforts to combat stigma appear warranted.

The effective behind-the-counter status of LNg-EC creates problems with respect to privacy, cost, and timeliness. Requiring a consultation in obtaining EC not only interferes with privacy, but it also increases the price of the medication [6,26]. Adding additional costs to an already expensive drug creates significant barriers to access, especially for young and low-

income individuals. Carrying EC behind-the-counter also introduces more opportunities for services to be denied. Pharmacy characteristics like operating hours, pharmacist workload and/or willingness to provide EC are all potential barriers associated with behind-the-counter availability [5,6,26].

Some participants had concerns about how women can receive information about EC if it is on the shelf; however, there ways to increase knowledge of EC without interfering with its access. Women do a good job at determining their need for EC themselves and keeping the medication over-the-counter provides them with the choice to interact with a health care provider or not [5]. In fact, as acknowledged by the Canadian Pharmacy Association, even if a woman took levonorgestrel and did not need it, it would not cause her any harm [5]. Therefore, it is important to continue to improve avenues through which EC information can be disseminated in tandem with over-the-counter availability.

4.1 Limitations

As this is a qualitative study, our results were not intended to be representative or generalizable. Because interviews took place over the phone/Skype, women without access to these technologies were unable to participate. Most participants resided in Southern counties of New Brunswick when accessing EC and all of our participants were English speaking. Future research would benefit from capturing the perspectives of women residing in Northern counties of New Brunswick and of language minority populations.

4.2 Conclusions

Women in New Brunswick experience numerous barriers with respect to accessing emergency contraception. Given that LNg-EC is extremely safe and effective medication, the New Brunswick Pharmacist Association should emphasize the importance of EC being available on the shelf. The New Brunswick government may also want to examine their sexual education curriculum in order to ensure that students are receiving comprehensive information about all contraceptive options, including different modalities of EC. Improving timely access to a range of emergency contraceptive options in New Brunswick appears warranted.

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Table 1: Characteristics of in-depth interview participants (N=21)

		All participants (N=21) n (%)
Language	English	21 (100)
	French	0 (0)
Age	Under 18	0 (0)
	18-24	17 (81)
	25 and older	4 (19)
Race or Ethnicity	White	20 (95)
	First Nations/Métis/Inuit	1 (5)
Number of times using EC	0	2 (9)
	1	7 (33)
	2	7 (33)
	3 or more	5 (24)

Claudette is in her early 30s and from a small town in New Brunswick. Although she has never used EC, she had tried to access it once in her early 20s but was advised not to take it.

Claudette and her partner had been together for a couple of months when the condom broke during sex. Like most girls her age, Claudette was fearful of getting pregnant, "The thought of pregnancy was scary to me especially since I hadn't had any other education other than high school…[M]y thoughts were to go to college or…University or have a second education and…all of those combined into one, we were not ready to parent." Claudette was not familiar with EC, so she confided in her friend about what she should do. Her friend recommended that Claudette go to her local pharmacy and ask the pharmacist about PlanB®. The pharmacist told Claudette that because she was over the weight limit and it had been past 72-hours, she should not take the medication. Claudette described her experience with the pharmacist as positive, but she left the pharmacy feeling anxious and helpless, "But again, because the pharmacist told me that after 72 hours, that the chances of it working, especially at my body mass…that it wasn't worth me taking. I ended up not taking it and praying to God that I wasn't pregnant." Although both the Yuzpe method and use of the Copper-T IUD were available at that time, the pharmacist did not provide her with any information about alternative modalities or follow-up options.

As Claudette's conversation was at the pharmacy counter, she was worried that pharmacy staff and customers would be able to hear her conversation. Being from a small town, the fear of being judged by other people in her community was considerable, "I remember being a little nervous because coming from a small town, you're always afraid of other people talking about you behind your back."

Figure 1. Claudette's story

Katherine is a single woman in her early 20s. She has taken EC about 10 times. She has had mixed experiences with accessing EC in the province. A particularly negative experience happened while she was attending University.

Katherine and her partner had been using condoms as their primary method of contraception when the condom broke. Immediately after she realized what had happened, she decided that she would go to her University clinic to obtain PlanB®. Katherine interacted with a nurse and described the experience as embarrassing and judgmental. The nurse that she interacted with indicated that Katherine was over the weight limit for Plan B® and therefore advised her not to take the medication. The nurse did not then provide Katherine with any other options or additional information. "And that was the thing, like I was crying when I was asking for it, and it was kind of like, well we can't do anything for you are here, so like here it is and if you end up getting pregnant, it's not our fault." Katherine left the clinic quite upset but decided she would take PlanB® anyway.

She described the uncertainty of not knowing if she was pregnant as extremely unsettling and stressful. "Yeah, I kind of just took it and like, didn't tell anyone my experience at all because I was embarrassed because I felt bad about asking for it, and I felt bad about gaining weight. So, it was kind of like all the emotions."

Figure 2. Katherine's Story

Holly is a woman in her early 20s from a rural area in New Brunswick. She has taken emergency contraception three times. Holly's described her experience accessing EC in her hometown as less comfortable than when she bought it in an urban area.

The first time Holly used PlanB® was when she was 17 years old. At the time, Holly was using oral contraceptive pills. She and her partner had also used condoms, but the condom broke. Out of fear of judgment and to ensure anonymity, Holly asked a male friend to buy PlanB® on behalf of her and her partner. "I didn't purchase it, but he purchased it and he had no issues, like, from what I remember. He like literally just went in and bought it and they were super nice to him." If Holly's friend had not been able to procure the medication for her, she would have considered travelling outside of her hometown to access emergency contraception. Holly explained that she would still not feel comfortable buying PlanB® in her hometown today. "I think honestly even like now I probably wouldn't feel comfortable buying it in [my hometown]. Yeah and like it's such a small place and like I know there's confidentiality and stuff but like people talk like regardless."

Holly ultimately explained that the shame and stigma she experienced in her hometown was a significant barrier. "I, like at the time, did not feel that I could personally go in and purchase it because I felt like there would be too much shame and like stigma around that. And I also, like, wouldn't have wanted people to find out that I was purchasing it at that age."

Figure 3. Holly's story

Samantha is a woman in her early 20s. She has taken emergency contraception twice. She described her initial time taking emergency contraception as nerve-wracking and stated that she experienced a lot of internalized stigma.

Samantha had recently become sexually active and was using oral contraceptive pills. She and her partner had also used a condom. She said that looking back now, she probably did not need to use emergency contraception, but at the time she did not fully understand the mechanism of getting pregnant. “Initially, I really didn’t need it. Like, I just think… just being newly sexually active and kind of being new to that field, I was like super nervous and anxious about it.” She said that she was hoping to find emergency contraception in a discreet place on the shelf but started to panic when she could not find it. When she went up to the pharmacy counter to ask where the emergency contraception was located, there was a large line up. “I was on like high alert type thing and feeling super ashamed and looking around making sure that there was no one I knew.” She waited until there was no longer a line and asked the pharmacist. Overall, Samantha said that the experience lasted around 2 hours because she first had to work up the courage to go into the pharmacy, and secondly ask a pharmacist for emergency contraception.

Although Samantha described her experience as scary and nerve-wracking, she emphasized that she did not feel judgement from the pharmacist that she interacted with. “And I think the pharmacist probably was, like definitely didn’t show any judgment or shame towards me. But yeah, I think I was just expecting that from everyone, so I just wanted to get it done really quickly.”

Figure 4. Samantha’s story

Chapter 5: Documenting women's knowledge of and attitudes toward ulipristal acetate in New Brunswick, Canada

We have formatted this article for the peer-reviewed journal, *Women's Health Issues.* We intend to submit this manuscript once the article presented in Chapter 4 has been accepted.

Documenting women's knowledge of and attitudes toward ulipristal acetate in New Brunswick, Canada

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Documenting women's knowledge of and attitudes toward ulipristal acetate in New Brunswick, Canada

Abstract

Background: Ulipristal acetate (UPA) is a new generation emergency contraceptive pill approved for post-coital use in Canada in 2015. We aimed to explore women's knowledge of and experiences with UPA in New Brunswick as well as avenues through which access could be improved.

Methods: We conducted a multi-methods qualitative study that consisted of an online survey and in-depth telephone/Skype interviews with a subset of survey participants. We used descriptive statistics to analyze the survey data. We analyzed our interviews for content and themes using both deductive and inductive techniques.

Results: From June 2019 to January 2020, we received 151 survey responses and conducted 21 in-depth interviews. Only 9% (n=13) of survey participants and 3 interviewees had heard of UPA. Most survey participants (90%) obtained their EC information from relatives and/or peers but would prefer to receive this information from a medical professional (76%) and/or health course (38%). Although none of our interview participants had ever used UPA, after providing a brief description of the method, 12 interview participants indicated that they would have considered using UPA had a clinician offered it to them. The overwhelming majority of interview participants cited the prescription status as a significant barrier to use.

Conclusions: Our findings suggest that the UPA represents an important and desirable option for some women. Supporting efforts to improve information about and access to a full range of emergency contraceptives in New Brunswick appears warranted.

Introduction

Ulipristal acetate (UPA) is a second generation selective progesterone receptor modulator that was approved for use as an emergency contraceptive pill in Canada in 2015 under the brand name Ella® (Health Canada, 2019a, 2019b). Ulipristal acetate is recommended to be taken as a single 30 mg dose within 120 hours of sexual intercourse or contraceptive failure and requires a prescription (Health Canada, 2019a; Scott et al., 2012). The overall efficacy of UPA is greater than progestin-only emergency contraception (EC), especially during the 73-120 hour window (Glasier et al., 2010; McKeage & Croxtall, 2011). Ulipristal acetate may also be more effective in comparison to progestin-only EC when used by women over 165 pounds. (Glasier et al., 2011; Moreau & Trussell, 2012). With its increased efficacy and timeframe for use, UPA presents an important option for women seeking a post-coital pregnancy method; however, it is unclear how many women have used the medication in Canada.

There have been several studies conducted in the United States to assess the availability of UPA in pharmacies. In a mystery client study examining over 500 pharmacies, less than 10% of pharmacists were able to fill a UPA prescription immediately (Shigesato et al., 2018). In a 2016 survey of health providers' knowledge of EC, only 26% of the surveyed health providers had ever heard of UPA (Batur et al., 2016).

Although the evidence suggests that access to UPA is limited in the United States, far less is known about its availability in Canada (Glasier et al., 2010). A study conducted in Ontario prior to UPA's approval in Canada found that most of the pharmacists surveyed had minimal information regarding UPA's timeframe for use, efficacy, and/or side effects (Chaumont, 2016). A 2020 mystery client study of New Brunswick pharmacies found that none of the pharmacy representatives provided information about UPA to the caller (Borsella & Foster, 2020).

Most studies in Canada have focused exclusively on progestin-only EC and few studies have focused on New Brunswick. A national study found that women living in Atlantic Canada generally had lower levels of familiarity with most contraceptive methods (including EC) compared to other women residing in other regions (Fisher et al., 2004). In another study conducted in the neighbouring province of Nova Scotia, women appeared to be poorly informed about progestin-only EC's effectiveness, proper timing of administration, mechanism of action, and how to access the medication (Whelan et al., 2011).

Although UPA has been available in Canada for 5 years, there is not much known about the medication in the Canadian context. To date there have been no published studies dedicated to exploring Canadian women's knowledge of, attitudes toward, or experiences with UPA. From summer 2019 to early 2020, we conducted a multi-methods qualitative study to explore New Brunswick women's knowledge of and attitudes towards UPA. Through this study, we hope to address gaps in knowledge and identify ways in which EC education and service delivery could be improved in the province.

Methods

Our multi-methods study consisted of an anonymous community-based online survey and in-depth interviews by telephone/Skype with a subset of survey participants. Eligible participants for the survey included self-identified women who were aged 15 years or older, sufficiently fluent in English or French to answer questions, and New Brunswick residents at the time of the study. In order to be eligible for an interview, women had to have attempted to access EC in New Brunswick. Modelled after a previous study in Ontario (LaRoche et al., 2018), we employed a multi-model recruitment strategy, posting study advertisements on listservs and online platforms,

circulating study information through local organizations and engaging with social media. This study received ethics approval from the University of Ottawa's Research Ethics Board.

Online survey

Our bilingual survey instrument included closed-ended and open-ended free response questions and took an average of 10 minutes to complete. We developed questions from a prior survey conducted by A.M.F. and her research group at the University of Ottawa (Hukku et al., 2018). We 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 50-question survey asked participants about their background, relationship status, and reproductive health and emergency contraceptive histories. The survey also contained a true and false section to explore the participant's knowledge of EC. The survey concluded with questions about the ways in which knowledge of and access to EC could be improved in New Brunswick. At the end of the survey, we offered participants the opportunity to enter a draw for a CAD $50 gift certificate. We concluded the survey by inviting respondents 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 schedule a telephone or Skype interview. We audio-recorded all interviews, which lasted an average of 30 minutes. M.B., a master's student in the Interdisciplinary Health Sciences program at the University of Ottawa, conducted the interviews after receiving training from her supervisor (A.M.F.), a medical anthropologist and medical

doctor with extensive qualitative research experience. With permission from the participant, we audio-recorded interviews and later transcribed them verbatim. We asked open-ended questions and probed participants' responses when appropriate.

The interview guide began with a series of questions about the participant's background, knowledge of EC and source of EC information. We then asked participants to detail their experiences accessing EC in the province. Finally, we asked women about the ways in which services could be improved in New Brunswick, and their knowledge of and opinions about UPA. MB took notes during the interviews and formally memoed immediately after each interview. Memoing served as a means to reflect on interviewer–participant interactions, identify emerging themes, and establish thematic saturation (Birks et al., 2008). Participants received a CAD $25 gift card to amazon.ca as a thank you for participating in the interviews.

Data analysis

We exported our survey data to Microsoft Excel® 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, M.B. created an initial codebook, with input from A.M.F. We analyzed interviews for content and themes using *a priori* (predetermined) categories and codes based on the research questions and interview guide. Inductive codes and categories emerged as we familiarized ourselves with the data. We used ATLAS.ti to manage out transcripts, notes, and memos. Guided by regular team meetings and discussions, our analysis centered on grouping categories of information,

drawing connections between ideas, and understanding relationships. In the final analytic phase, we combined the results from the two study components, paying particular attention to concordant and discordant findings. In this article, we organize our results around salient themes. We have removed and/or masked all personally identifying information and used pseudonyms throughout.

Results

Participant characteristics

Over a 7-month period, we obtained 151 surveys responses; 142 in English and 9 in French. Most participants were between the ages of 18 and 24 (70%), identified as white (96%), and were highly educated. The majority were in a committed monogamous relationship (59%) and had never been pregnant (83%). See Table 1 for a complete summary of survey participant characteristics.

We interviewed a subset of 21 women from the survey portion of the study. Consistent with the demographics of New Brunswick (Government of Canada, 2017, 2013), the largest proportion of participants were from Westmorland county (*n*=8) and most self-identified as white (*n*=20). At the time of the interview, our participants averaged 25 years of age, the majority were attending school (*n*=16), and just over half were married/partnered (*n*=11).

Knowledge of UPA is practically non-existent

While 85% (*n*=129) of the survey participants had heard of progestin-only EC, only 9% (*n*=13) had heard of UPA. In the statement-response section of the survey, questions involving UPA were more likely to receive an answer of "unsure" in comparison to questions about

progestin-only EC. In fact, 73% of survey participants cited that they were unsure if UPA was even available in New Brunswick. As one woman explained in an open-ended question, "I do not believe Ella is available in NB and I have heard Plan B is not as effective over 175 lbs and the pharmacist has never asked my weight when getting EC." Although the overwhelming majority of participants had minimal information about UPA, most women (73%) knew that it does not reduce the risk of contracting a sexually transmitted infection. See Figure 2 for a summary survey of participants' responses to statements about UPA.

Only 3 of the interview participants stated that they had heard of UPA and none had ever used it as a form of EC. As a 22-year-old pharmacy tech student, explained, "No, I literally never heard of that and…I don't think I've ever seen a prescription for it either." Not having information about UPA was cited as a significant barrier to use and several women, like 21-year old Liana, discussed how access to UPA would not improve unless it was more widely known,

> The fact that people do not know about it, means that it is harder to be available. But I feel like if more people knew about it…they'd probably seek it out more. Just because I know that all girls aren't the same weight and if they knew it was more effective than the other one, then they would probably want to go for that.

The overwhelming majority of our interview participants stated that they had never been offered a choice between different modalities of EC. This was cited as a missed opportunity to inform women of different forms of the medication. As Harper, 25, explained, "Like when I go and ask for Plan B, no one has ever been like 'Oh, have you heard of…' and told me about the Ella one that I can go see my doctor about it." Ensuring that women are aware of all their EC options was valued as important by all of the interview participants.

Health care sources play an important role in disseminating information about EC

Participants overwhelmingly cited the importance of health care providers and sexual health education courses in disseminating EC information. Most survey participants (90%) obtained their EC information from relatives and/or peers. However, the majority reported that they would prefer to receive this information from a medical professional (76%) and/or a health course (38%).

Ninety-eight survey participants thought that information about EC could be improved in New Brunswick, with most indicating the need to incorporate EC education into the provincial sexual health curriculum. As one participant explained in a free response section, "Information about ECs aren't readily available to young women making reproductive health decisions. This information was not discussed in high school health courses and was only made available to me by my family doctor when I did the initial research myself and followed up with her." In the open-response spaces survey participants repeatedly expressed their discontent with the sexual health curriculum in New Brunswick, particularly with respect to contraception and EC education. Survey participants repeatedly noted that if EC was mentioned in their sexual health courses, the information that they received was minimal.

Our interviewees echoed the sentiments of the survey participants in that they overwhelmingly highlighted the importance of receiving information from health care sources. As Florence, 20, recommended, "[We need to] make sure that pharmacists are aware [of UPA] because pharmacists can recommend things. So, if it becomes available and a pharmacist knows about it, like they can recommend it. If the pharmacist doesn't know about it, how can they… make it known to a patient that that is an option, you know?"

Considerable enthusiasm about UPA exists

Once we provided some information about UPA to interviewees, the overwhelming majority of participants voiced enthusiasm for UPA. The higher effectiveness of UPA, particularly among heavier women, was especially resonate. As a 21-year-old Liana explained:

> I think [I would choose Ella]. Just because my weight is more than… like I think I'm at 180 right now, so if I knew that it would be more effective [than PlanB®] I would probably still like try and get into an after-hours clinic and try to get a prescription because you don't want to spend your money on something that is not going to be effective for you personally.

Interview participants also appreciated that UPA has a greater efficacy than PlanB® across the entire 5-day-timeframe for use. As Carissa, 33, explained, "Just the fact that it's more effective. I think when you're dealing with something like that you want what's going to be most effective." Women described the prospect of an unwanted pregnancy as extremely unsettling and therefore valued effectiveness highly. Interviewees stated that the increased efficacy of UPA would be reassuring.

Finally, participants were excited to hear that there were different options of EC, as many were only aware of progestin-only EC (PlanB®). Interview participants felt that having a choice of modality was extremely important, as illustrated by 25-year-old Bridget:

> [A]nother piece is like being aware that there are other options than just Plan B. Like if Plan B is not going to work on you...I think a lot of people don't even know that [other EC options] exist. And I think a lot of people don't know that Plan B doesn't work for them. So, I think it just comes down to like education and, like, telling like teenagers and also adults here are the things you can take.

The need for a prescription discourages women from using UPA

Although the majority of interview participants thought UPA was a preferable option, 12 women reported that because use required a prescription, they would be unlikely to use this

modality of EC in the future. As Heidi, 24, explained, “So I think I would probably choose Plan B because you don’t need a prescription…I think a barrier to Ella is that you need a prescription for it and like a lot of times, like, emergency contraception is like an emergency. You need it now, right?” Making an appointment with a physician in order to get a prescription for UPA was described as a lengthy and tedious process that jeopardized the efficacy of the medication. As Harper stated:

> First, you have to go to your doctor, which, like we mentioned before, it could take weeks to see them. And then they would have to prescribe it, which could, like, not all pharmacies have it on hand I’m assuming because not a lot of people know about it. Like you would have to find a specific location that would have it available. And then, like, prescriptions take time to fill and all this and if there is a wait time…yeah so like I feel like that's a big, big barrier for women who need that.

Women described the idea of waiting to obtain EC as stressful, and generally preferred being able to pick up the medication immediately after unprotected or under protected sex. As 20-year-old Sylvie explained, “I think for me being able to just go in the day after, when you’re like ‘oh shit, that happened.’ Go in and get the pill, take it, done. Whereas, like, getting a doctor's appointment can take a bit, I guess.”

Several women brought up concerns about the privacy of obtaining EC via prescription, particularly for young women and women from rural or small communities. As Lexi, age 20, explained:

> So, I guess in my experience, I think I would have stuck with the pill [PlanB®] …Just at the time I probably would have had no idea how, like, getting prescriptions covered by insurance would work. So, I would have been scared that my parents would see it and be like ‘what’s this?’”

Several participants, like 22-year old Amelia, suggested that extending prescribing authority to pharmacists might be an avenue for expanding access. However, having an encounter with a pharmacist remained a barrier.

> I mean of course if [UPA] could be added to, you know, pharmacists' prescribing rights, that could increase it more but... still not the same as Plan B because you know, you'd have to have that talk with, with like your pharmacist and…a lot of pharmacies said they want to charge for counselling so...So, that's just a complete turnoff.

Discussion

Ulipristal acetate may be one of reproductive health's "best-kept secrets" (Hatcher et al., 1995). It is clear that women in New Brunswick do not have adequate knowledge of the different modalities of EC available in the province. Without this knowledge, women are unable to choose which type of EC best suits them. Ensuring that women have sufficient knowledge of and access to different types of EC is essential in having control over their reproductive health.

Health professionals play an important role in disseminating information about emergency contraceptive options. It is imperative that health professionals are knowledgeable about the different types of EC available in Canada and provide accurate and complete information to prospective users. The limited research suggests that pharmacists have little knowledge of UPA and do not routinely discuss this modality with clients (Chaumont, 2016; Borsella & Foster, 2020) but once introduced to UPA, show considerable interest in increasing awareness and use of the medication (Chaumont, 2016). Pharmacy professionals are in an important position to educate individuals and communities about reproductive health and thus developing continuing education programs that focus on the full range of EC technologies appears warranted.

Participants repeatedly identified the need to improve the EC content of sexual health courses and New Brunswick's sexual health curriculum. This will require a concerted effort to educate policymakers, clinicians, and educators about the importance of EC and the different modalities available in Canada and tailored to the Canadian context (Chaumont & Foster, 2017). In the interim, Canadian women would benefit from trustworthy and medically accurate online resources dedicated to EC.

Emergency contraception is a time-sensitive medication and requiring a prescription adds unnecessary appointments that prolongs the process of obtaining it. Many New Brunswickers do not have access to a primary healthcare physician thus complicating the process of obtaining a timely appointment (Fraser, 2019). Our participants repeatedly stated that the prescription status of UPA is a significant barrier use. Changing regulations on existing products and identifying restrictions that exist for over-the-counter use are two elements that continue to contribute to an increased uptake of EC (Rafie et al., 2017). Indeed, the deregulation of PlanB® to non-prescription status in Canada in the mid-2000s was associated with a 14-percentage point increase its availability in Ontario pharmacies as well an increase in positive attitudes among pharmacists for proving it (Dunn et al., 2008). Although moving UPA to "behind-the-counter" status would follow the path of PlanB® and would be an important step in expanding access, ample evidence from Canada and beyond has shown that requiring a consultation with a pharmacist create challenges related to cost, privacy, and timely access (CMAJ, 2005; Eggertson, 2008). Ulipristal acetate is already available without a prescription in Europe (Italia & Brand, 2016) and thus there is clear global evidence that UPA can be fully deregulated.

Limitations

As this is a qualitative study, our results were not intended to be representative or generalizable. As the survey was online, and the interviews took place over the phone/Skype, women without access to these technologies were unable to participate. Furthermore, most participants resided in Southern counties of New Brunswick when accessing EC and most of our survey participants and all of our interviewees were English speaking. Future research would benefit from capturing the perspectives of women residing in Northern counties of New Brunswick and language minority populations.

Conclusion

Our findings suggest that the UPA represents an important and desirable option for some women. However, the lack of knowledge and prescription status present significant barriers to access. Supporting efforts to improve information about and access to a full range of emergency contraceptives in New Brunswick appears warranted.

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Table 2: Survey participants' responses to statements about UPA (N=151)

Statement	*n (%)*
Ulipristal acetate (Ella® or EllaOne®) reduces the risk of pregnancy	
Correct answer (Yes)	59 (39)
Incorrect answer (No)	5 (3)
Unsure	79 (59)
No response	8 (5)
Ulipristal acetate (Ella® or EllaOne®) is generally safe to use	
Correct answer (Yes)	48 (32)
Incorrect answer (No)	7 (5)
Unsure	79 (52)
No response	17 (11)
Ulipristal acetate (Ella® or EllaOne®) causes an abortion	
Correct answer (No)	68 (45)
Incorrect answer (Yes)	7 (4)
Unsure	59 (39)
No response	17 (11)
Ulipristal acetate (Ella® or EllaOne®) can be used up to five days after unprotected intercourse	
Correct answer (Yes)	17 (11)
Incorrect answer (No)	16 (11)
Unsure	100 (66)
No response	18 (12)
Ulipristal acetate (Ella® or EllaOne®) will reduce the risk of contracting a sexually transmitted infection	
Correct answer (No)	95 (63)
Incorrect answer (Yes)	3 (2)
Unsure	36 (24)
No response	17 (11)
In New Brunswick, ulipristal acetate (Ella® or EllaOne®) is:	
Correct answer (Available with a prescription)	15 (10)
Incorrect answer (Not available at all)	7 (5)
Incorrect answer (Available directly from the pharmacy)	15 (10)
Unsure	99 (66)
No response	15 (10)

Chapter 6: Discussion

6.1 Integration of results

Through this project we aimed to explore women's knowledge of, access to, and experiences with EC in NB. By completing a two-part mystery client study, employing a community-based survey, and conducting in-depth interviews, we were able to paint a picture of the landscape of EC in the province. Three key themes emerged: 1) Incorrect regulatory and medical information and practices exists, 2) Women lack knowledge, awareness, and education about EC and sexual health; and 3) Shame and stigma act as barriers to EC access.

6.1.1 Incorrect regulatory and medical information and practices exist

It is clear that medical professionals and educational platforms continue to provide women with incorrect and/or incomplete regulatory and medical information about EC. Although the majority of the pharmacies that I called provided accurate information about LNg-ECPs, some did provide information that was medically inaccurate (*n*= 26, 13%). Incorrect medical information included the timeframe for use, side effects, and/or the mechanism of action of LNg-ECPs. With respect to the in-person visits, none of the pharmacy representatives provided any additional information about LNg-EC.

The mystery-client telephone calls uncovered several EC-related service delivery practices that are in conflict with federal regulations, provincial regulations, and best practices. First, 9 pharmacy representatives (4%) incorrectly indicated that a male partner could *not* procure the medication. As LNg-EC is supposed to be available over-the-counter, there should be no age, sex, gender, or other restrictions to procurement. Importantly, pharmacy representatives were unanimous that a 17-year-old woman could obtain LNg-ECPs without parental consent. However, several pharmacy representatives expressed that younger teens would

need to involve their parents. Finally, 4 pharmacy representatives (2%) refused to provide any information about EC over the phone. Instead, they indicated that the pharmacist would have to speak to the client in person before they could provide any information about ECPs. We did not experience any of these issues when visiting the pharmacies in person, and all of the pharmacy professionals that we interacted with said the boyfriend could procure the medication.

Although we did not specifically ask about the regulatory status of LNg-ECPs when we called the pharmacies, 48 (23%) pharmacy representatives indicated that the pill was not available OTC. Similarly, half (*n*=15, 50%) of the pharmacies that were visited held LNg-EC behind-the-counter. This too is consistent with studies in other parts of Canada (28,52,69). Research from throughout North America has shown that keeping LNg-ECPs behind- rather than over-the-counter impedes timely access, creates opportunities for pharmacists to deny services or ask intrusive questions, decreases patient privacy, and increases the cost (27,28,30). The inconsistency of regulatory status in the province is something that the New Brunswick Pharmacists Association may want to examine closer.

The majority of our interview participants cited the BTC status as a significant barrier in accessing EC. Being able to access EC over the counter was described as a way to increase the participant's sense of control over the situation and speed up the process. Women generally preferred to obtain EC as quickly as possible and holding the medication BTC only prolonged the process. Participants described the BTC status as intimidating and expressed that the mandatory interaction fosters a fear of judgement.

My experiences as a mystery-client visiting the pharmacies reflected those of the women I spoke with. In instances where EC was kept BTC, I felt nervous about explaining myself to the

pharmacy professional. Although all of the pharmacy professionals treated me with respect, it was evident that they were in control of whether I would be able to buy the medication or not.

6.1.2 Women lack knowledge, awareness, and education about EC and sexual health

Both the survey and interview participants were not satisfied with their sexual health curricula, stating that they were not fully informed of their contraceptive and emergency contraceptive options. In fact, the decision to use EC was often a result of not understanding the mechanism of how to get pregnant. Although most participants indicated that their use of EC was a result of either unprotected sex or contraceptive failure, several women indicated that they were using multiple forms of contraception when they decided to take it. The fear and anxiety surrounding pregnancy was a driving force in obtaining EC, and women felt like they needed to take every means necessary to not become pregnant.

Participants primarily blamed this lack of knowledge on the poor sexual education courses they received and overwhelmingly voiced their desire for a more comprehensive sexual health curriculum in the province. It was clear that the information that these women received in their sexual education courses did not accurately inform them of the mechanisms surrounding pregnancy and the efficacy of contraception.

Over 20 years have passed since EC was introduced into the Canadian market, and it still remains one of family planning's "best-kept secrets" (2,70). Overwhelmingly, most participants had only heard about LNg-EC, with this information being generally minimal and/or incomplete. Despite the fact that EC is extremely safe and effective, myths surrounding its mechanism of action, efficacy and impact on fertility continue to negatively impact use of the medication.

Participants were most familiar with LNg-EC. In fact, 85% (n= 129) of survey participants had heard of progestin-only EC and 81% (n= 123) knew that LNg-EC could be

bought directly from the pharmacy in New Brunswick. With this being said, participants displayed uncertainty surrounding its effects on fertility, efficacy and mechanism of action. The most common concern was whether EC has a negative impact on fertility, with 35% (n = 53) being unsure if the repeated use of LNg-EC causes infertility and 21% (n=31) believing that it does. The World Health Organization stated that the repeated used of EC poses no health risks; however, the idea that using EC multiple times has negative consequences on a women's reproductive health has been engrained into society and therefore creates barriers in access (71).

Generally, most of the women that we spoke to understood that EC is not an abortifacient; however, there was some uncertainty surrounding the mechanism of action. The confusion about how EC prevents pregnancy was indicated as a barrier for use and was described as one of the reasons why women might decide not to use the medication.

Although data from the survey illustrates that knowledge of the copper-T-IUD was better than UPA, a large portion of participants were unaware that this device could be used as EC. In fact, only 5 of the interviewees indicated that they knew that the copper-T-IUD could be use as post-coital protection. Overwhelmingly, survey participants knew that the copper-T IUD was more effective than other forms of contraception and that it was generally safe to use. Questions surrounding the safety of prolonged use and timeframe for insertion displayed the most uncertainty. For example, 19 (13%) participants believed the long-term use of an IUD causes infertility, and 54 (36%) stated that they were unsure of this.

Only 13 (9%) survey participants and 3 (14%) interview participants had heard of UPA. In the true and false section of the survey, questions involving UPA were more likely to receive an answer of "unsure" in comparison to questions about LNg-EC and the copper T-IUD. In fact, 73% of survey participants cited that they were unsure if UPA was even available in NB.

Although the overwhelming majority of participants had minimal information about UPA, most women (73%) knew that it does not reduce the risk of contracting a sexually transmitted infection.

Not having information about UPA was cited as a significant barrier to use and several women discussed how access to UPA would not improve unless it was more widely known. The overwhelming majority of interview participants stated that they had never been offered a choice between different modalities of EC. This was cited as a missed opportunity to inform women of different forms of the medication. Ensuring that women are aware of all their EC options was a sentiment that was shared by all of the interview participants.

6.1.3 Shame and stigma act as barriers to EC access

All of the women that we spoke to expressed how shame and stigma were significant barriers when accessing EC. The harmful narrative that the use of EC is irresponsible presents significant barriers in accessing it in a timely manner and contributes to the perception that it is a "risky" product (72). Feelings of shame and stigma seemed to stem from society's negative view of female sexuality and adolescent sex in particular.

In comparison to other forms of contraception, several women indicated that the post-coital use of EC carries more stigmatizing messages because they feel like they should have done more to prevent pregnancy before they had sex. Women described how they were worried of people seeing their decision to use EC as irresponsible.

Although some of the participants cited that they experienced stigmatizing messages from the health care provider they interacted with, most of our participants reported having positive interactions. Instead, the stigma that most women felt was often characterized as internal. This, in addition to the societal stigma surrounding the product, negatively impacts a

women's decision to use EC. Women cited the importance of normalizing the use of EC in order to help de-stigmatize the product and reduce the shame women feel when purchasing it. It is also important that health care providers to continue to engage in unbiased and non-judgemental care when dealing with EC.

Despite the fact that there is considerable evidence that better access to contraception does not lead to sexual promiscuity (72–75), some participants brought up concerns about the OTC status resulting in an "abuse" of EC. Emergency contraception is extremely safe and effective, and increasing availability and accessibility only helps women in preventing unwanted pregnancy. In fact, even if a woman took levonorgestrel and did not need it, it would not cause them any harm (27).

Finally, shame and stigma were often amplified in situations where participants were accessing EC in rural areas. Although most of these women said that they would consider travelling outside of their hometown to procure the medication, many indicated that this was not an option when they were younger. Fear of breach of confidentiality and anonymity were cited as fears that were experienced when procuring medication in small towns.

6.1.4 Avenues for improvement

Participants overwhelmingly cited the importance of health care providers and sexual health education courses in disseminating EC information. Most survey participants (90%) obtained their EC information from relatives and/or peers; however, the majority would prefer to receive this information from a medical professional (76%) and/or a health course (38%). Health care sources are an important resource for women who have questions about the medication. In fact, in a study conducted in the United States, women who had heard of EC from a health information source had significantly higher knowledge and higher intentions to use EC in

comparison to women who had received their information elsewhere (47). This, in culmination with our results, suggest that it is important to identify avenues for which misinformation is being disseminated, and ensure that health professionals are engaging in evidence-based practices (47).

Health care providers play an important role in disseminating information about emergency contraceptive options. It is imperative that health professionals are knowledgeable about the different types of EC available and are providing accurate and complete information. More specifically, pharmacists play a key role in raising awareness and promoting access to EC within their communities.

Despite that fact that pharmacists play an important role in disseminating EC information, none of the pharmacy representatives mentioned either UPA or the copper-T IUD as an option to our mystery client. As the client only asked for "something" to prevent pregnancy after sex, this is a missed opportunity. A recent study with pharmacy representatives in Ontario suggests that knowledge of modalities of EC other than LNg-ECPs is limited (28); we suspect this same dynamic is at play in New Brunswick. Supporting efforts to educate pharmacists and pharmacy staff about other modalities of EC could help increase access to more effective post-coital methods.

Improving sexual health education courses to better inform women of their options was recommended by almost all participants. In fact, 98 survey participants thought that information about EC could be improved in NB, with most indicating the need to incorporate EC education into the provincial sexual health curriculum. Several interview participants also recommended the need for comprehensive and reliable websites that they would be able to reference when they have questions about EC. The information about EC online was often described as convoluted

and contradictory, so having a trustworthy website with information about the medication in the province would be beneficial.

Most participants expressed their discontent with the sexual health curriculum in NB, particularly with respect to contraception and EC education. Most of the participants stated that if EC was mentioned in their sexual health courses, the information that they received was minimal. Health care professionals are not only essential in improving primary access to EC, but also play an important role in updating sexual health courses to include all modalities of the medication. Therefore, health care providers should be included in developing the provincial sexual health curriculum. In order to expand access to a full range of emergency contraceptive methods, both providers and potential users would benefit from Canada-specific educational resources (28).

6.1.5 Triangulation of results

Triangulation is the approach by which the results of different methodological approaches are used to examine the convergence, complementarity, and dissonance between the findings (76). By utilizing four separate study components in exploring women's knowledge of, experiences with, and access to EC in the province, we were able to paint a picture of the landscape of EC in the province.

The analysis of each separate component of the study demonstrated high levels of congruence. Incorrect regulatory practices were reflected in the results of both parts of the mystery-client study and discussed at length by the interview participants. Furthermore, lack of knowledge and misinformation about EC was illustrated by both the survey results and interview participants. Finally, the shame and stigma surrounding access to and use of EC were prevalent

throughout all components of the study and presented as a significant barrier for both myself as a mystery-client and the participants of the survey and interviews.

6.2 Positionality, reflexivity and experiences of the researcher

Positionality and reflexivity are two important concepts that are essential when conducting qualitative research. Self-reflexivity is the process by which a researcher analyzes how, why, and in what ways their research operates with respect to power, privilege, and visibility (77). In other words, it is the analytic process used to explore present subjectivities that may influence the research process. One of the core elements of self-reflexive analysis is positionality, which refers to the identity, experiences, and perceptions of the researcher (78). As researchers, it is important to recognize both our own position as well as those of our research participants and how those influence the research process (78).

The mystery client method was designed to mimic the real-life experience of someone accessing EC in New Brunswick. Although we sought to make the telephone interactions as realistic as possible, the feelings that I felt as a researcher were one step removed from what women actually face when inquiring about EC. Accessing EC is often a stressful situation where the individual is in a vulnerable and uncomfortable position. Although I was aware of how sensitive these interactions can be, I was not ultimately in the position of a young woman trying to purchase EC, and therefore could not fully understand the unique lived experiences of a woman seeking the medication. To mitigate this gap, I engaged in formal memoing after each day of calling and reflected critically on how my position as a researcher impacted these interactions.

The mystery client in-person visits were also designed to mimic a real-life scenario of obtaining EC in the province. I did not feel as removed from this situation in this part of the study, as I was interacting with pharmacy professionals playing a mystery client that was more similar to myself. Through these visits, I was able to understand better the nuanced experiences that women have when accessing EC. I purposefully decided not to go to the pharmacy in my hometown in order to ensure that the pharmacy visits were as uniform as possible. In reflecting on my experience, I examined what it would be like to not have the option to travel outside of my hometown in order to access EC anonymously. With this being said, again, I was not in a real situation where I needed to procure the EC, nor did I need to purchase the medication.

Through the interview portion of the project, it was important for me to formally memo my experiences after each interaction. Each of the 21 women that I spoke with had unique experiences in accessing EC in the province, with some citing that they had encountered judgemental and/or uncomfortable interactions. Due to these interactions, some participants were initially hesitant when discussing their experiences with me. It was therefore important for me as a researcher to acknowledge how my background and training in EC influenced our conversations and ensure that I developed a rapport that fostered a comfortable and open environment.

6.3 Future directions

We plan to distribute the findings from this study across multiple mediums, including peer-reviewed journals and academic conferences. We have purposely chosen to disseminate our articles through journals that will promote the adoption of our recommendations. The three articles that were prepared for this thesis have been or will be submitted to peer-review journals:

Chapter 3 to *Pharmacy;* Chapter 4 to *Contraception;* and *Chapter* 5 to *Women's Health Issues.* In addition to the articles, we will write up a report of the findings for the research participants. We will also share this report with other stakeholders in order to inform them of ways in which services and access to EC can be improved in the province. Lastly, we have disseminated the findings of this study at academic conferences in Canada and the United States to reach health services decision-makers and researchers.

It is especially important to share the results of this study with the New Brunswick Pharmacist Association. With the goal of this association being to provide leadership for the profession and improve the health of New Brunswickers, our findings will help to inform better them of best practices surrounding EC (55). More specifically, the results from this study will advise them of the behaviours of pharmacists in the province and will provide information with respect to improving EC services provincially.

Future research should be carried out to investigate the experiences with, access to, and knowledge of EC in the other Atlantic provinces. Literature suggests that knowledge surrounding contraception and EC are low in these provinces in comparison to other regions of Canada (49). In fact, in a study dedicated to exploring women's knowledge of EC in Nova Scotia, women appeared to be poorly informed about EC's effectiveness, timing of administration, mechanism of action and how to access the medication (48). Women living in Atlantic provinces also tend to have poorer access to family planning health services, thus jeopardizing their sexual and reproductive health (38). Exploring routes through which these services could be improved in the Atlantic provinces therefore appears warranted. Future research would also benefit from focusing on Francophone women's knowledge of, access to, and experiences with EC.

6.4 Limitations

I am Anglophone first language and therefore the mystery client portion of the study was conducted in English to ensure that the interactions were authentic and realistic. As this part of the study was only conducted in English, I was not able to assess Francophone women's experiences accessing EC in pharmacies. I attempted to mitigate this by offering the survey in French and English; however, we only received 9 French survey responses. In Canada, there are considerable gaps between access to services in French and access to services in English (79). The importance of language in the effectiveness of health care delivery is essential for the improvement of conditions and empowerment of a population (79). As NB is a bilingual province, further studies to explore Francophone women's experiences with accessing EC would be beneficial. Although we were not able to assess Francophone women's experiences, we did engage with all of the 207 non-specialty pharmacies across the province and were able to get a better understanding women's experiences with obtaining EC in pharmacies. With this being said, it is important to recognize that a single interaction with a specific pharmacy is not indicative of all the interactions that women may have with different pharmacists.

The overwhelming majority of the women that were interviewed were white and all interviews were conducted in English. The perspectives of women from different ethnic groups and language-minority communities was therefore not reflected in our data. Future research would benefit from capturing these voices. Furthermore, because the interviews took place via phone and video call, women who did not have access to these technologies could not participate. However, we chose to conduct interviews via telephone/video call to allow a greater flexibility to women, as they did not need to pay for transportation costs to attend the interview (80).

Although qualitative research is important in examining previously unexplored phenomena, it is not meant to be generalizable (57,67). Therefore, the findings from this study are not intended to yield representative and generalizable results, nor encompass all of the experiences women face when accessing EC in the province. Nevertheless, the in-depth interviews conducted with these women allowed us to capture their stories and to understand their experiences with accessing EC in the province. This gave us insight into the barriers that these women experience with respect to accessing EC in the province and ways in which services could be improved.

6.5 Conclusions

Timely access to affordable and effective EC technologies is of the utmost importance for women's reproductive health and rights. Although EC is safe and effective, there are still several barriers to access in Canada. Understanding the barriers that interfere with timely access to EC is essential in improving use and services in New Brunswick.

This study explored women's knowledge of, access to, and experiences with EC in the province of NB. Although most women were aware that LNg-EC existed, they did not have a complete understanding of the drug. Even worse, most of the women in the study had never heard of UPA. Our findings suggest that women are not knowledgeable of their emergency contraceptive options and are not satisfied with the information that they are receiving from health providers and sexual health courses. Although most pharmacy representatives provided correct medical and regulatory information, some are still providing incorrect information. Pharmacy representatives play an important role in disseminating information about EC;

however, when the opportunity arose, these representatives did not discuss the different EC options available.

The regulatory status has a significant impact on how accessible EC is. Although LNg-EC is supposed to be available OTC, pharmacies are not consistently following this regulation. The BTC status of LNg-EC presents problems with respect to privacy, cost and timely access and should be something that the New Brunswick Pharmacist Association should examine further. The prescription status of UPA was not a feasible option for many participants as it presents problems with respect to privacy and timely access (27,30). Exploring ways to improve access in the province through regulatory changes appears warranted.

Feelings of shame and stigma are associated with procuring and using EC, which create great barriers when accessing the medication. Focusing on EC as a safe and responsible option for women would help to destigmatize the medication within society. The societal de-stigmatization of EC can be achieved through increasing knowledge and understanding of the medication.

With access to abortion care and other sexual and reproductive health services being limited in the province, it is important that women know all of the options available to prevent pregnancy. Emergency contraceptives present an important option for women and improving education through health professionals and sexual education curricula appears warranted. Improving knowledge of and access to EC in NB has the opportunity empower women and allow them to exercise more control over their reproductive and sexual health.

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Appendices

Appendix A: Telephone client profile

A 17-year-old woman is seeking EC because she does not want to become pregnant. The night before (approximately 10-20 hours earlier) she had sex with her boyfriend of 3 months. The condom "broke" during that interaction, which involved ejaculation. She is not using any other type of contraception. She does not know how her health insurance works but has insurance "through her parents."

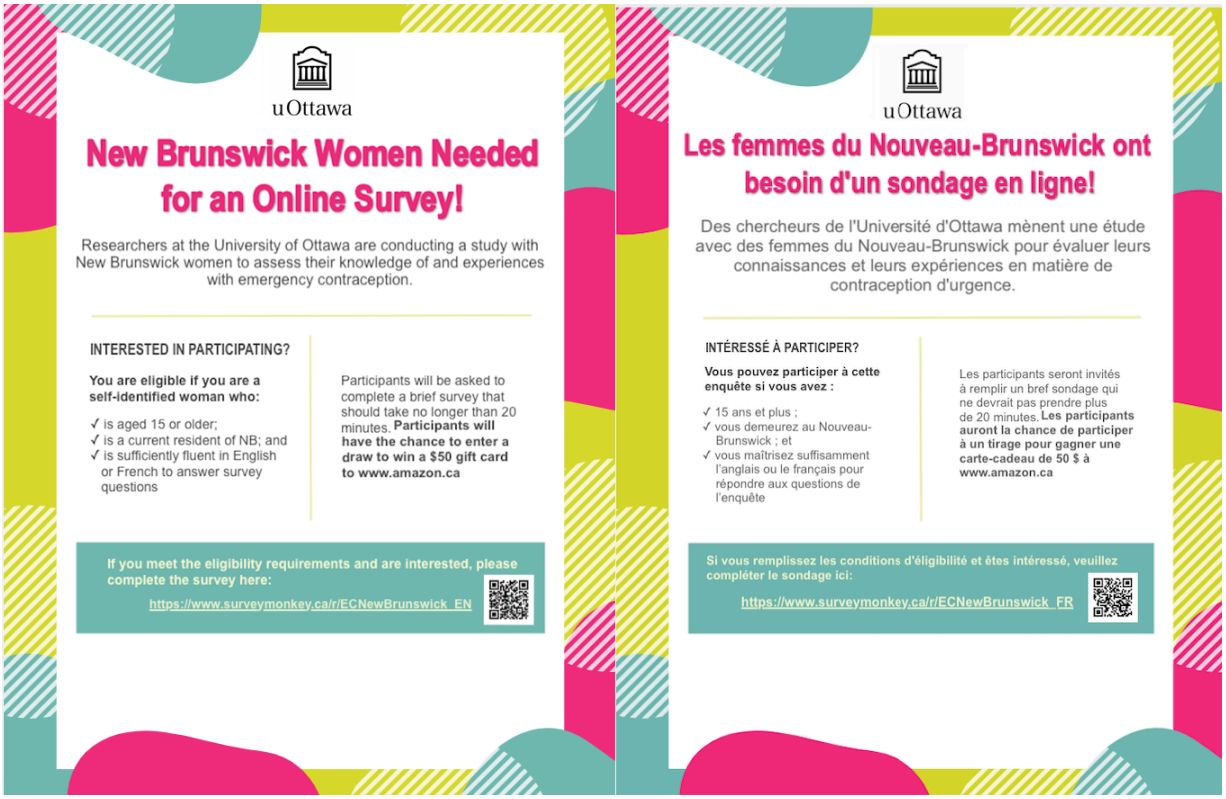
Her period ended about one week prior to the interaction (she is roughly 12 days LMP). She has heard about something that can prevent pregnancy after sex but does not know the details or the name of the product. If told "Plan B" she will be able to report that she has heard about that before. She has no health problems, takes no medications, and has never been pregnant. She is open to learning about the copper T-IUD and/or UPA if information is provided. She has heard of an IUD but does not know that it can be used as EC. She has not heard of UPA.

Appendix B: In-person client profile

A 20-year-old woman is seeking EC because she does not want to become pregnant. The night before (approximately 10-20 hours earlier) she had sex with her boyfriend of 3 months. The condom "broke" during that interaction, which involved ejaculation. She is not using any other type of contraception.

Her period ended one week prior to the interaction (she is roughly 12 days LMP). She has heard about something that can prevent pregnancy after sex but does not know the details about the product. She knows that she is looking for a drug called Plan B® because she spoke to a friend who has used it before. She has no health problems, takes no medications, and has never been pregnant. She is open to learning about the copper T-IUD and/or UPA if information is provided. She has heard of an IUD but does not know that it can be used as EC. She has not heard of UPA.

Appendix C: Example recruitment posters



uOttawa

New Brunswick Women Needed for an Online Survey!

Researchers at the University of Ottawa are conducting a study with New Brunswick women to assess their knowledge of and experiences with emergency contraception.

INTERESTED IN PARTICIPATING?

You are eligible if you are a self-identified woman who:

✓ is aged 15 or older;
✓ is a current resident of NB; and
✓ is sufficiently fluent in English or French to answer survey questions

Participants will be asked to complete a brief survey that should take no longer than 20 minutes. **Participants will have the chance to enter a draw to win a $50 gift card to www.amazon.ca**

If you meet the eligibility requirements and are interested, please complete the survey here:

https://www.surveymonkey.ca/r/ECNewBrunswick_EN

uOttawa

Les femmes du Nouveau-Brunswick ont besoin d'un sondage en ligne!

Des chercheurs de l'Université d'Ottawa mènent une étude avec des femmes du Nouveau-Brunswick pour évaluer leurs connaissances et leurs expériences en matière de contraception d'urgence.

INTÉRESSÉ À PARTICIPER?

Vous pouvez participer à cette enquête si vous avez :

✓ 15 ans et plus ;
✓ vous demeurez au Nouveau-Brunswick ; et
✓ vous maîtrisez suffisamment l'anglais ou le français pour répondre aux questions de l'enquête

Les participants seront invités à remplir un bref sondage qui ne devrait pas prendre plus de 20 minutes. **Les participants auront la chance de participer à un tirage pour gagner une carte-cadeau de 50 $ à www.amazon.ca**

Si vous remplissez les conditions d'éligibilité et êtes intéressé, veuillez compléter le sondage ici:

https://www.surveymonkey.ca/r/ECNewBrunswick_FR

Appendix D: REB certificates

File Number: 01-15-02 **Date (mm/dd/yyyy):** 03/26/2019

Université d'Ottawa University of Ottawa
Bureau d'éthique et d'intégrité de la recherche Office of Research Ethics and Integrity

Ethics Approval Notice

Social Sciences and Humanities REB

Principal Investigator / Supervisor / Co-investigator(s) / Student(s)

First Name	Last Name	Affiliation	Role
Angel	Foster	Health Sciences / Others	Principal Investigator

File Number: 01-15-02

Type of Project: Professor

Title: Exploring women's knowledge of and experiences with ulipristal acetate (ella®) / Exploring women's knowledge of and experiences with the intrauterine device (IUD)

Approval Date (mm/dd/yyyy)	Expiry Date (mm/dd/yyyy)	Approval Type
03/06/2019	03/05/2020	Renewal

Special Conditions / Comments:
N/A

550, rue Cumberland, pièce 154 550 Cumberland Street, room 154
Ottawa (Ontario) K1N 6N5 Canada Ottawa, Ontario K1N 6N5 Canada
(613) 562-5387 • Téléc./Fax (613) 562-5338
www.recherche.uottawa.ca/deontologie/ www.research.uottawa.ca/ethics/

File Number: 01-15-02 **Date (mm/dd/yyyy):** 03/26/2019

Université d'Ottawa University of Ottawa
Bureau d'éthique et d'intégrité de la recherche Office of Research Ethics and Integrity

This is to confirm that the University of Ottawa Research Ethics Board identified above, which operates in accordance with the Tri-Council Policy Statement (2010) and other applicable laws and regulations in Ontario, has examined and approved the ethics application for the above named research project. Ethics approval is valid for the period indicated above and subject to the conditions listed in the section entitled "Special Conditions / Comments".

During the course of the project, the protocol may not be modified without prior written approval from the REB except when necessary to remove participants from immediate endangerment or when the modification(s) pertain to only administrative or logistical components of the project (e.g., change of telephone number). Investigators must also promptly alert the REB of any changes which increase the risk to participant(s), any changes which considerably affect the conduct of the project, all unanticipated and harmful events that occur, and new information that may negatively affect the conduct of the project and safety of the participant(s). Modifications to the project, including consent and recruitment documentation, should be submitted to the Ethics Office for approval using the "Modification to research project" form available at: https://research.uottawa.ca/ethics/forms.

Please submit an annual report to the Ethics Office four weeks before the above-referenced expiry date to request a renewal of this ethics approval. To close the file, a final report must be submitted. These documents can be found at: https://research.uottawa.ca/ethics/forms.

If you have any questions, please do not hesitate to contact the Ethics Office at extension 5387 or by e-mail at: ethics@uOttawa.ca.

Signature:

Marc Alain Bonenfant
Research Ethics Coordinator
For Catherine Paquet, Director of the Office of Research Ethics and Integrity

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File Number: 12-14-12 **Date (mm/dd/yyyy):** 02/14/2018

Université d'Ottawa University of Ottawa
Bureau d'éthique et d'intégrité de la recherche Office of Research Ethics and Integrity

Ethics Approval Notice

Social Sciences and Humanities REB

Principal Investigator / Supervisor / Co-investigator(s) / Student(s)

First Name	Last Name	Affiliation	Role
Angel	Foster	Health Sciences / Others	Supervisor

File Number: 12-14-12

Type of Project: Professor

Title: Exploring the availability of emergency contraception in Canada: A mystery client study

Renewal Date (mm/dd/yyyy)	Expiry Date (mm/dd/yyyy)	Approval Type
12/23/2018	12/22/2019	Renewal

Special Conditions / Comments:
N/A

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During the course of the project, the protocol may not be modified without prior written approval from the REB except when necessary to remove participants from immediate endangerment or when the modification(s) pertain to only administrative or logistical components of the project (e.g., change of telephone number). Investigators must also promptly alert the REB of any changes which increase the risk to participant(s), any changes which considerably affect the conduct of the project, all unanticipated and harmful events that occur, and new information that may negatively affect the conduct of the project and safety of the participant(s). Modifications to the project, including consent and recruitment documentation, should be submitted to the Ethics Office for approval using the "Modification to research project" form available at: https://research.uottawa.ca/ethics/forms.

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If you have any questions, please do not hesitate to contact the Ethics Office at extension 5387 or by e-mail at: ethics@uOttawa.ca.

Signature:

Mélanie Rioux
Ethics Coordinator
For Catherine Paquet, Director of the Office of Research Ethics and Integrity

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