Does the Cost Barrier to Contraception Differentially Affect Racialized and Indigenous Women? An Intersectional Quantitative Investigation

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any final required revisions, as accepted by my committee. I understand that my thesis may be made electronically available to the public.

Abstract

Background: In Canada, 15% of sexually active women of reproductive age do not use any form of contraception (Black et al., 2009; Black, Guilbert, Costescu, et al., 2015; Black, Guilbert, Hassan, et al., 2015). The majority of women who do use contraception rely on methods with high failure rates such as condoms only and withdrawal (Black, Guilbert, Costescu, et al., 2015). The most effective forms of birth control, long-acting reversible contraception (LARCs), are underutilized and often the most expensive per unit (Black, Guilbert, Costescu, et al., 2015; Di Meglio & Yorke, 2019). Research has shown that racialized and Indigenous women often have different experiences and barriers to reproductive health care compared to non-racialized and non-Indigenous women (Sutton et al., 2021; Wilson et al., 2013). One factor, cost, has been identified as the most important barrier to using effective contraception (Black, Guilbert, Hassan, et al., 2015; Hulme et al., 2015).

Specific Aims: Using data from the 2020 Annual Component of the Canadian Community Health Survey (CCHS), this thesis investigates two major questions (1) "Are racialized and Indigenous women less likely to use more expensive and effective forms of birth control than non-racialized and non-Indigenous women?" and (2) "Do differences in contraception use by racialized and Indigenous women, compared to non-racialized non-Indigenous women, appear to be due primarily to financial or cost barriers?".

Methods: Exploratory data analysis was first conducted in order to present univariate and bivariate distributions of predictor and outcome variables. Bivariate associations included Chi-square tests to examine significance at $p > 0.05$. Three sets of multi-variable binary logistic regression models were then used to assess relationships between outcome and predictor variables. The first set of models examined the binary outcome of Use vs. Non-use, while the

second set of models examined LARC contraception use from the sample of women who did use birth control. The last model investigated Use vs. Non-use of contraceptives among specific racial categories.

Results: A large proportion (52.85%) of racialized women reported not using any form of birth control compared to 22.68% of white women and 20.97% of Indigenous women. Higher proportions of racialized women relied on condoms (62.03%) compared to Indigenous (32.91%) and white (35.15%) women. In the first group of binary regression models, racialized women were found to be significantly less likely (OR = 0.766, CI = 0.617, 0.951) to use contraception of any kind regardless of income, education or provincial location. Of the women who reported using contraception, racialized women were found to be significantly less likely (OR = 0.546, CI = 0.365, 0.816) to use LARC forms of birth control. In both sets of models, Indigenous women were not significantly different from white women. In a sub-analysis of only racialized women, Filipino women were found to be significantly less likely (OR = 0.297, CI = 0.129, 0.683) to use birth control of any kind.

Conclusion: The findings suggest that the relationship between identity category and contraception use is not fully explained or even impacted by socioeconomic elements such as income and education. These results emphasize the need for further exploration of disaggregated race data pertaining to reproductive health inequities. The results also provide recommendations for Canadian health policy modifications in order to improve contraception access and use among potentially vulnerable populations.

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Finally, again to my parents who watched me push a chair to our kitchen table at the age of three and declare it would be my seat – this work is my seat at the table, I've arrived to the conversation and to the fight.

Dedication

I dedicate this work to the thousands of missing and murdered Indigenous women, girls and Two-Spirited people in Canada. An identity-based genocide that has not yet gotten the recognition and attention it requires from government and law enforcement.

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List of Abbreviations

Abbreviation	Meaning
LARCs	Long-acting reversible contraception
CCHS	Canadian Community Health Survey
BIPOC	Black, Indigenous, person of color
U.S.	United States
STI	Sexually Transmitted Infection
HIV	Human Immunodeficiency Virus
COC	Combined Oral Contraceptive
IUD	Intrauterine Device
IUS	Intrauterine System
RJ	Reproductive Justice
ACA	Affordable Care Act

Justice is indivisible.
You cannot decide who gets civil rights and who doesn't.
-Angela Davis

1.0 Introduction

Contraception is a major aspect of women's health care and of women's lives. The ability to choose not to have a child or to control the timeline of motherhood has contributed significantly to greater gender equity (M. J. Bailey, 2006). Studies have shown that use of contraception prior to the age of 21 has increased the number of women in the paid labor force and the number of annual hours that women work (M. J. Bailey, 2006). With the introduction of contraception to the public in the 1960's, it has been estimated that women's college enrollment increased from 12 to 20 percent by the 1970's (Institute for Women's Policy Research, 2019). Further, women's rising average age at first births in Canada, allowed in part by increased contraception use, might be connected to women's increased independence, educational attainment and socioeconomic status (Statistics Canada, 2018b).

This thesis will use Reproductive Justice (RJ) framework, an intersectional approach to analysis which arises from Black feminist thought and combines critical race theory, social justice perspectives and perspectives on reproductive rights (Ross & Solinger, 2017; Tam, 2021). The three primary principles of RJ are (1) the right not to have a child; (2) the right to have a child and (3) the right to parent children in safe and healthy environments (Ross & Solinger, 2017). To achieve these goals, access to high quality reproductive health care, including contraception, is necessary. Therefore, an RJ framework also posits that access to reproductive health care that can allow for safe dignified fertility management is a fundamental human right (Ross & Solinger, 2017). Further, RJ draws attention to certain government policies or laws that differentially impact some people because of their sex, gender or class. These laws often prevent

people from controlling their own bodies or prevent people from raising families in healthy communities (Ross & Solinger, 2017). An, American example of a law or policy that would impact someone from controlling their own body would be the issue of state control over the right to obtain an abortion. Finally, RJ highlights the history of reproductive oppression and control, particularly for racialized and Indigenous women in order to frame contemporary inequities between Black, Indigenous, people of color (BIPOC) and white women (Ross & Solinger, 2017).

In Canada there is an overreliance on cheaper and less effective forms of birth control and an underutilization of highly effective, but more expensive contraception (Black et al., 2009; Black, Guilbert, Hassan, et al., 2015). Male condoms are the most common form of birth control used by sexually active women ages 15 – 49 despite their high risk of unintentional pregnancy (Black, Guilbert, Hassan, et al., 2015; Trussell, 2011). The most effective forms, long-acting reversible contraception (LARCs), such as intrauterine devices (IUDs), intrauterine systems and etonogestrel/levenogestrel implants, are used by less than 5% of sexually active reproductive aged women who are attempting to avoid pregnancy (Black et al., 2009; Black, Guilbert, Hassan, et al., 2015; Metcalfe et al., 2016).

While there are many barriers to contraception use and LARC uptake, cost has been identified as the most important (Black et al., 2009; Hulme et al., 2015; Motluk, 2016; Nethery et al., 2019). As a result, the choice of contraceptive method is related to various aspects of socio-economic position. Lower educational status, lower income and young age have been associated with non-use of LARCs (Black, Guilbert, Hassan, et al., 2015; Metcalfe et al., 2016; Nethery et al., 2019).

For example, among Canadian youth aged 15 – 24, lower educational attainment has been found to be a significant predictor of not using any form of contraception (Metcalfe et al., 2016). Additionally, several Canadian studies found that those living in households with total incomes less than $50,000 per year were at a significantly higher risk for contraceptive non-use (Dunn et al., 2019; Nethery et al., 2019)

In addition to RJ, this thesis will use an intersectionality framework to focus attention on how women's contraception use might vary depending on their race, Indigeneity status, social class and other aspects of socioeconomic position. Intersectionality has focused attention on how gender oppression manifests differently, depending on other aspects of social location, such as race and class (Davis, 2011; Hill Collins, 2019). Specifically, the processes that produce oppression based on gender identity have been identified as different for racialized and non-racialized women (Hill Collins, 2019). Recently, intersectionality has become more recognized as a valid framework for interpretation in quantitative analysis (Bauer et al., 2021). This thesis will use the literature on both intersectionality and RJ framework in order to understand how multiple social positions potentially influence contraception choice and use.

Both intersectionality and RJ frameworks suggest that that there might be important differences in contraception use between racialized and Indigenous women and non-racialized and non-Indigenous women. Although there is a lack of race data, (Datta et al., 2021) and an under-examination of the concept of race in relation to contraceptive use in Canadian context, there is a growing body of evidence from both Canada and the United States supporting its importance (El-Mowafi et al., 2021; Idriss-Wheeler et al., 2021; Nnorom et al., 2019; Nwoke & Leung, 2020;

Paradies, 2016; Prather et al., 2018). Specifically, in Canada, the reproductive health of women who are Black, Indigenous, and people of color (BIPOC) has been adversely affected by a long history of systemic social injustices such as colonization and slavery (DasGupta et al., 2020; Idriss-Wheeler et al., 2021; Nwoke & Leung, 2020; Paradies, 2016; Prather et al., 2018; Ryan et al., 2021). Slavery and colonization might stretch through time to impact current generations of BIPOC women. Colonization and structural racism may continue to operate through multigenerational trauma, social exclusion, residential segregation and labor segregation, contributing to contemporary reproductive health inequities between BIPOC women and non-Indigenous white women (Gee & Ford, 2011; Nwoke & Leung, 2020; Sutton et al., 2021; Wyn et al., 2004). Women of color are more likely to die from childbirth, less likely to use contraception, and more likely to be diagnosed with an STI or HIV (Dehlendorf et al., 2011; Sutton et al., 2021). In Ontario, Canada, Black women are three times less likely to have a family doctor, who often prescribes contraception, compared to white women (DasGupta et al., 2020). Further, women of color are more likely to have an unintended pregnancy, have higher abortion rates and are more likely to report feelings of mistrust toward their health care providers (Sutton et al., 2021; Wyn et al., 2004).

Despite Canada's many governmental and private pharmaceutical health care plans, coverage for contraception remains inadequate (Motluk, 2016). LARCs are considered "devices" rather than "medications" under the *Canada Health Act,* and therefore are not covered under most private insurance plans (Di Meglio & Yorke, 2019; Health Canada, 2021a; Motluk, 2016; Nethery et al., 2019). However, if access to LARCs in Canada were to be improved through subsidization of their cost, research has shown that there could be an increase in LARC use as well as a reduction

in unintended pregnancies (Black, Guilbert, Costescu, et al., 2015; Snyder et al., 2018). Additionally, long-term LARC use has been associated with reduced risk of certain reproductive cancers as well as treatment for heavy periods and cramping during menstruation (Beining et al., 2008; Dorjgochoo et al., 2009; Motluk, 2016). Therefore, the uptake of more effective forms of contraception by sexually active Canadian women is an important public health issue.

In order to understand the role of socioeconomic elements and influence of historical oppression on contemporary health inequity, this thesis is an investigation of contraception use among Black, Indigenous and women of color. This investigation will use national survey data from the 2020 Canadian Community Health Survey (CCHS), and is informed by RJ and intersectionality frameworks, both in the analysis and interpretation.

To date, no study in Canada has investigated the interaction between high-cost contraception use and racialized and Indigenous identity. Further, no Canadian study has included race or Indigenous identity at all when reporting contraception use patterns. Given the established reproductive health inequities between non-racialized and non-Indigenous women and racialized and Indigenous women, an investigation of this kind is necessary to bolster health equity. In discussing my results, I aim to identify racial and ethnic disparities in Canadian contraception use. I will also provide evidence to inform Canadian policy makers of possible modifications in health policy to improve reproductive health equity. Finally, this investigation will provide recommendations for future research in reproductive justice.

2.0 Literature Review

In the review below, I will begin by examining intersectionality and Reproductive Justice frameworks in context of this project. I then review the literature on various contraceptive methods detailing their effectiveness and cost. This is followed by a review of the literature on contraception in Canada, including relevant Canadian health policy as well as a brief comparison to international contraception policies. Lastly, I examine the historical and social structuring of barriers to contraction use and reproductive inequities for BIPOC women.

2.1 Intersectionality

Intersectionality will be an important analytical tool in this investigation. Intersectionality is a framework that recognizes how multiple social identities (gender identity, social class, socioeconomic status, race, sexual orientation etc.) intersect at an individual level to influence a person's experience (Bowleg, 2012; Crenshaw, 1990). These social identities also reflect macro-level systems of oppression and privilege (racism, sexism, homophobia) (Bowleg, 2012; Crenshaw, 1990). For example, if two women are looking for employment with the same educational background, a homosexual Black woman might have a different experience than a heterosexual white woman because she might encounter stigma or discrimination due to racism and homophobia. It is important to note that intersectionality recognizes the interlocking and intersecting personal experience stemming from multiple social positions that reflect systemic systems of oppression is an integrative not an additive experience. This means that a person's experience will not be influenced by their race *or* their gender, but buy the intersection of both (Bowleg, 2012). Intersectionality framework can be used to understand various fields of scholarship, including public health. The tenet of intersectionality most relevant to public health

and this investigation is that multiple social identities at the individual level intersect with macro-level systems to produce health outcomes (Bowleg, 2012). For example, maternal mortality rates among Black women in the U.S. are 3.55 times higher than the maternal mortality rates of white women (MacDorman et al., 2021). The interaction of sexism and racism within the medical field might result in these disparate maternal mortality rates for Black mothers. Intersectionality will be a key framework in this investigation, as it can help us question if racialized and Indigenous women might have different experiences surrounding contraception access and use compared to non-racialized and non-indigenous women.

2.2 Reproductive Justice

As mentioned previously, this study will also use RJ framework for analysis and interpretation of results. RJ hones the ideas of intersectionality to relate specifically to issues of reproduction. Established in the 1990's, RJ is an amalgamation of intersectionality framework, social justice political activism, and reproductive rights, which was created to challenge white supremacist systems of control over reproductive health. Similarly, to the origins of intersectionality framework, RJ was first conceptualized by Black feminist scholars who presented the idea that sexuality, race, gender, and class were deeply interconnected (Combahee River Collective, 1978; Ross & Solinger, 2017). RJ, however, specifically addresses the ways in which these interlocking systems of oppression impact fertility and reproductive control (Ross & Solinger, 2017).

One of the key ideas in both RJ and Intersectionality frameworks posits that different "identity oppressions" are integrative rather than additive (Ross & Solinger, 2017). For example, although

women might share certain intersections, the processes that reproduce oppression in one intersection, such as gender, will be different for racialized and non-racialized women. Importantly, RJ highlights the history of reproductive oppression of women of color stemming from slavery and colonization, which will be valuable in this thesis (Ross & Solinger, 2017). For example, many Indigenous women lost their children due to the genocide that accompanied colonization and then to the residential school system. RJ pays attention to these historical reproductive injustices and in turn investigates modern remedies to facilitate reproductive autonomy and safety for historically vulnerable groups.

Another way RJ will lend support to this investigation is the framework's attention to human rights and their relation to government policies. One of the basic claims of RJ is that high-quality health care, housing and education, a living wage and a healthy environment are necessary for dignified fertility, childbirth and parenting (Ross & Solinger, 2017). Further, access to these resources is a fundamental human right and it is the responsibility of governments to provide these resources (Ross & Solinger, 2017). With this claim, RJ takes an active role in resisting laws that create barriers to people obtaining these resources or that violate a person's ability to have dignified fertility, childbirth and parenting experiences. This aspect of RJ will be particularly relevant in my exploration, because I investigate if factors such as income and education influence racialized and Indigenous women's use of high-cost and high-quality contraception. I will also investigate if governmental policies such as subsidization of contraception cost could improve BIPOC women's access to high-cost and high-quality contraception, which aligns with RJ framework's attention to how governmental policies can impact reproductive autonomy.

2.3 Contraception Methods in Canada

There are five main classifications of birth control methods: hormonal methods, LARCs, barrier methods, sterilization and emergency contraception (Fisher & Black, 2007; National Health Service, 2017). The most common hormonal method in North America is the combined oral contraceptive (COC) pill and the most common barrier method is the male condom (Black, Guilbert, Costescu, et al., 2015; Fisher & Black, 2007). In Canada specifically, male condoms are the most widely used form of any contraception method by sexually active women aged 15 – 49 (54%), followed by COCs (44%) and then withdrawal (12%) (Black et al., 2009; Black, Guilbert, Hassan, et al., 2015).

LARCs include intrauterine devices (IUD), intrauterine systems (IUS) and the subdermal implant, which was recently approved by Health Canada in 2020 (Health Canada, 2021b). Traditionally, the difference between IUD and IUS was the presence of copper or hormones (Alberta Health Services, 2018). IUDs typically have copper wrapped around them which changes the lining of the uterus and slows sperm movement (Alberta Health Services, 2018). IUSs are implants wrapped with a hormone (levonorgestrel) which thickens the lining of the cervix and thins the lining of the uterus to make fertilization and implementation more difficult (Alberta Health Services, 2018). IUSs also stop the ovaries from releasing an egg (Alberta Health Services, 2018). However, currently the term IUD is used universally to describe both instruments. The subdermal implant is inserted under the skin of the arm and releases a hormone (estonogestrel) which prevents ovulation and up to lasts three years (Halifax Sexual Health Centre, n.d.).

Contraceptive methods vary in terms of their effectiveness and cost. Although less expensive forms of birth control are widely used, they tend to have higher failure rates than more expensive methods. With respect to contraception effectiveness, "typical use failure" refers to unintended pregnancies that occur with actual use, which could be due to inconsistent or incorrect use (Trussell, 2011). "Perfect use failure" rates refers to the rate at which pregnancies occur even when directions for contraceptive use are followed exactly (Trussell, 2011). For typical use, male condoms, COCs and withdrawal have been found to have failure rates of 18%, 9%, and 22%, respectively (Black, Guilbert, Hassan, et al., 2015; Trussell, 2011). Furthermore, 15% of sexually active Canadian women of reproductive age, who reported not wanting to conceive, do not use any form of contraception, which has a failure rate around 46% (Black et al., 2009; Black, Guilbert, Costescu, et al., 2015; Black, Guilbert, Hassan, et al., 2015; Metcalfe et al., 2016). LARCs are the most effective form of birth control, with a typical use failure rate between 0.2% and 0.8% (Black, Guilbert, Hassan, et al., 2015; Trussell, 2011). Although LARCs are the most effective forms of birth control, there is very little uptake among Canadian women (less than five percent) (Black et al., 2009; Metcalfe et al., 2016).

2.4 Contraception Cost

One of the reasons for such low LARC uptake among Canadians might be the high cost. Although LARCs are the most effective forms of birth control, they are also most expensive per unit (Black, Guilbert, Hassan, et al., 2015; Di Meglio & Yorke, 2019). In 2015, in Canada, LARCs such as the IUS and IUD were found to cost $319 and $60 per unit, respectively (Black, Guilbert, Hassan, et al., 2015; Di Meglio & Yorke, 2019). Upon its 2020 approval the subdermal implant was expected to cost around $350 per unit in Canada (Halifax Sexual Health Centre,

n.d.). However, despite the high initial costs these methods typically only require one unit per every three years for the subdermal implant and one unit every three to seven years for the IUS and IUD (Black, Guilbert, Hassan, et al., 2015; Di Meglio & Yorke, 2019). This makes LARCs potentially the cheapest method per year at $12-63 for the IUS and IUD and $116 for the subdermal implant (Black, Guilbert, Hassan, et al., 2015; Di Meglio & Yorke, 2019; Halifax Sexual Health Centre, n.d.). According to a 2015 study, the most common forms of birth control, condoms ($1) and COCs ($11), are inexpensive per unit, however, they need to be re-purchased multiple times within the year and can end up costing over $130 per year in total (Black, Guilbert, Hassan, et al., 2015; Di Meglio & Yorke, 2019).

One factor that contributes to the economic barriers to contraception use is the lack of federal or provincial support for cost. There is currently no universal pharmaceutical coverage in Canada and employment-related insurance coverage for contraceptives is inconsistent and often inadequate (Di Meglio & Yorke, 2019; Health Canada, 2021a; Motluk, 2016; Nethery et al., 2019). For example, the Public Service Health Care plan, which covers federal employees, only pays for COCs (Motluk, 2016). Canada Post's plan seems to exclude any contraceptive implant or appliance, such as LARCs, regardless that these methods have medical purposes other than pregnancy prevention (Motluk, 2016). Some Indigenous Canadians qualify for the Non-Insured Health Benefits program, which does provide complete coverage of most birth control methods, however, only for registered First Nations women and Inuit women who are beneficiaries of an Inuit land settlement (Indigenous Services Canada, 2019a). This plan does not include Métis or other non-registered Indigenous women (Indigenous Services Canada, 2019b).

One barrier is that LARCs are considered “devices” and not “medications”, a distinction that might contribute to the lack of coverage by many insurance plans (Black, Guilbert, Hassan, et al., 2015; Nethery et al., 2019). As a result, the cost of most forms of birth control is almost entirely the responsibility of the individual or private insurance company, and with no federal requirements to cover all forms of contraception, insurance providers can use their discretion when choosing which contraceptives to cover (Black, Guilbert, Hassan, et al., 2015; Motluk, 2016).

There is evidence that broader coverage of contraceptive cost might increase use, particularly of LARCs. An investigation in the U.S. found that after the *Affordable Care Act* (ACA) mandated coverage of all forms of birth control in 2012, LARC use increased from 2.4% in 2002 to 14.5% in 2014, which might provide some support for mandating coverage in Canada (Snyder et al., 2018).

2.5 Quebec Contraception Subsidization

Quebec remains the only Canadian province that subsidizes the cost of contraception (Black, Guilbert, Hassan, et al., 2015). In 2019, according to the Canadian Community Health Survey (CCHS), Quebec was the province with the highest percentage of contraception use by youth age 15 – 24 attempting to avoid pregnancy (Dunn et al., 2019). Currently, there is no literature investigating whether the subsidization of cost in Quebec has resulted in higher uptake of more expensive contraceptive methods for vulnerable populations. Although there are data to show that youth in Quebec are more likely to use LARC methods of birth control, Indigenous youth in Quebec were still more likely to be non-users of any form of contraception compared to non-

Indigenous youth (Dunn et al., 2019). Moreover, no one has yet investigated whether racialized and Indigenous women in Quebec had higher rates of overall contraception use or LARC use compared to other provinces. Additionally, the most recent examination of specific types of contraception use across all provinces, and the study with the widest age range (15 – 49), is now more than a decade old (Black et al., 2009). Therefore, it is important to understand whether Quebec's subsidization has resulted in higher overall contraception use rates or higher LARC use rates, as it might provide support for universal cost coverage in Canada (Houston, 2020).

2.6 International Contraception Coverage

In other Western nations, national medical policies provide more comprehensive coverage of contraception compared to what is available in Canada. The governments of Australia and the United Kingdom presently provide complete subsidization for all forms of contraception (Australian Government Department of Health, n.d.; National Health Service, 2017; UK Parliament, n.d.). Additionally, more than 15 countries in the European Union have health policies that either completely or partially subsidize contraception. In the United States, private insurers are required to provide coverage for all Food and Drug Administration approved contraception methods, as mandated by the ACA. Further, these nations have also been found to have faster drug approval times compared to those of Health Canada, which results in a wider variety of contraception choices for their citizens (Black, Guilbert, Costescu, et al., 2015). On average, Canadian approval for new contraception distribution takes two years long than in other countries (Black, Guilbert, Costescu, et al., 2015). For example, although the subdermal implant was approved for Canadian distribution in 2020, it had been on the American markets since 2001 (Health Canada, 2021b). Longer Health Canada approval times impacts Canadian women

negatively. In 2004, Canadian women only had access to 35% of all available contraceptive forms on the market. In the same year the U.S. had 58% and the United Kingdom had 52% (Black, Guilbert, Costescu, et al., 2015).

2.7 Social Differences in Reproductive Health

In addition to the economic and policy-related barriers described above, Canadian women of color might face social barriers to contraception use. These might result in multiple reproductive differences for BIPOC women, which have been found in other countries, particularly the U.S. Contraception use in the U.S. is much less common among racialized women compared to white women (Sutton et al., 2021). Further, women of color in the U.S. have been found to have higher morbidity rates from HIV and cervical cancer, diseases that can be partially prevented by use of certain contraceptive devices (Sutton et al., 2021). For example, LARCs have been associated with reduced risk of reproductive cancers by reducing the inflammatory damage caused by ovulation, by stopping menstrual cycles (Karst & Drapkin, 2009). Additional research from the U.S. reports that Black and Hispanic women have higher rates of unintentional pregnancies and also have higher rates of induced abortions than white women, potentially resulting from reduced ability to afford contraception (Dehlendorf et al., 2013; Finer & Zolna, 2014; Sutton et al., 2021). Further, both Black and Indigenous women in Canada have higher rates of incarceration compared to white women, which inherently violates reproductive potential, by physically preventing women from reproducing, and limits access to reproductive services (Owusu-Bempah et al., 2021; Paynter, 2021). Although women may be held in correctional facilities for short terms, their access to health information is severely restricted (Paynter, 2021). Therefore, upon

release women often do not have the knowledge to access contraception, or the financial stability to afford it.

2.8 Lack of Disaggregated Race Data

Despite these alarming statistics the reproductive health of racialized women is poorly researched in Canada. An important reason is lack of appropriate data. The majority of health data in Canada are aggregate data which means that the data are gathered and grouped together to show summaries (National Collaborating Centre for Aboriginal Health, 2009). On the other hand, disaggregated data are broken down into groups such as specific racial groups (National Collaborating Centre for Aboriginal Health, 2009). This type of data are important because they help to expose hidden trends and help to identify specific vulnerable groups to policy makers (National Collaborating Centre for Aboriginal Health, 2009). For example, COVID-19 data in Canada are not often reported by race, however, several Canadian studies have highlighted the need for COVID-19 race data to be collected given the high prevalence of COVID-19 among racialized people in the U.S. and United Kingdom (Thompson et al., 2021).

It is argued that the lack of appropriate race data is rooted in Canada's pervasive culture of "color-blindness", which functions to maintain colonial systems of power (Allan & Smylie, 2015; Coen-Sanchez et al., 2022). With respect to race, Canada purports to have a post-racial inclusive society when in fact the lack of disaggregated race data perpetuates health inequities, particularly for BIPOC women (El-Mowafi et al., 2021; Idriss-Wheeler et al., 2021). To date, there is no mandate on the collection of disaggregated race data by Canadian officials (Datta et al., 2021; Idriss-Wheeler et al., 2021). Other western nations such as the U.S., United Kingdom

and Finland have mandated the collection of race data in order to identify and dismantle health inequities (Idriss-Wheeler et al., 2021). Some examples of Canadian gaps in sexual and reproductive health include the lack of literature on the rates of unintended pregnancy by racial category (Oulman et al., 2015). Additionally, the most recent data on induced abortions, collected in 2019, does not examine rates by racial or ethnic category (Abortion Rights Coalition of Canada, 2021). This is because Canada does not collect racial data on vital statistics, which includes abortion. Although countries such as the U.S. have mandated the collection of race information for vital statistics, Canada has no such mandate.

2.9 Racism as a Health Determinant

There is a growing body of literature that states that racism and not race is a determinant of health. Bailey et al. (2017) astutely explain that, "structural racism involves interconnected institutions, whose linkages are historically rooted and culturally reinforced. It refers to the totality of ways in which societies foster racial discrimination, through mutually reinforcing inequitable systems, … which together affect the risk of adverse health outcomes" (p.1454). Some of these inequitable systems include housing, education, employment and criminal justice (Bailey et al., 2017). Slavery and colonization in Canada serve as the historical links to contemporary structural racism. Although, rarely acknowledged or taught in schools, slavery is very much a part of Canadian history and both slavery and colonization may have contributed to the inequitable reproductive health conditions faced by BIPOC women. Historically, Black and Indigenous women have been the subject of forced sterilization and legalized eugenics programs (Prather et al., 2018; Ryan et al., 2021; Stote, 2012). However, reproductive control over Black and Indigenous women is not just a thing of the past in Canada. In 2021, preliminary findings

released by the Senate Committee on Human Rights in Canada showed that Black and Indigenous women continue to experience forced and coerced sterilization (Standing Senate Committee on Human Rights, 2021). Moreover, the impacts of past programs may continue to affect subsequent generations of women through mechanisms such as generational trauma and social segregation, which contributes to the aforementioned health inequities (Allan & Smylie, 2015; Gee & Ford, 2011; Paradies, 2016). In fact, racism and colonization have been internationally recognized as key determinants of health for BIPOC women (Allan & Smylie, 2015; Idriss-Wheeler et al., 2021; Mowbray, 2007).

Another important mechanism potentially connecting race to contraceptive use is mistrust of the healthcare system. Within colonial nations such as Canada, Indigenous women report higher rates of discrimination when visiting health care practitioners (Nelson & Wilson, 2018). In a 2008 investigation of Indigenous women's experiences with the Canadian healthcare system, many women reported feeling judged because of their Indigenous identity and that many doctors assumed they had alcohol and substance abuse problems even when the women had no history of use (Kurtz et al., 2008). Another common feeling shared by Indigenous women when visiting non-Indigenous practitioners was fear of child apprehension (Kurtz et al., 2008). One mother stated, "I lost my children to doctors…because no one [was] believing how they got hurt…" , when asked about her experiences of racism when visiting health care practitioners (as cited in Kurtz et al., 2008). This respondent felt that she needed to take her child to the doctor for every minor cut and bruise because of the negative stereotypes of Indigenous women being unfit mothers (Kurtz et al.,2008). Concern of child apprehension is particularly relevant given Canada's violent history with forced assimilation and residential schools (Coen-Sanchez et al.,

2022). Fear of child apprehension might result in mistrust of the healthcare system and possibly reduce the likelihood that an Indigenous mother visits her doctor for contraception.

Racialized women in Canada, particularly Black women, might share a similar relationship with the healthcare system given their history. Historically, Black women have been the subject of medical experimentation (Coen-Sanchez et al., 2022; Udonya, 2020). The idea to use Black people for medical experimentation still exists in contemporary medicine. During the COVID-19 pandemic, it was suggested that vaccine experimentation be done in Africa, rather than in the western countries where the disease was most prevalent (Udonya, 2020). Further, the representation of Black people among physicians is half of what it is in the general Ontario population, which could lead to a lower feeling of cultural safety among Black women seeking reproductive health care (DasGupta et al., 2020).

Additional mechanisms of structural racism might situate BIPOC women in jobs and residential areas that make reproductive health care access difficult (Gee & Ford, 2011; Paradies, 2016). In both Canada and the U.S., the impacts of centuries of exclusion from full participation in the labor market along with the commodification of bodies of color during slavery have reverberated through generations to result in decreased economic mobility and opportunity for women of color (Prather et al., 2018; Rousseau, 2009). Social segregation includes the pervasive concentration of people of color in ethnic enclaves. The presence of BIPOC individuals in segregated residential areas may influence health and socioeconomic status (Gee & Ford, 2011). For example, neighborhoods in Montreal with higher proportions of Black residents tend to have higher unemployment and low-income rates than non-visible minority neighborhoods (Hou &

Picot, 2003). Additionally, in Toronto, despite fairly consistent education rates, neighborhoods with a higher concentration of Chinese residents have been found to have higher unemployment rates and lower income families (Hou & Picot, 2003). Research has shown that residents in neighborhoods of Toronto that have higher crime rates also have poorer health and more limited access to health care services (Gao, 2016). Moreover, neighborhoods with higher crime rates are more likely to have lower average income, which might limit women's ability to afford contraception (Statistics Canada, 2015). Further, in the U.S. Black women are more likely than white women to live in areas that have high crime rates, poor housing quality, and limited access to health care services (Culhane & Elo, 2005). With respect to contraception access specifically, American research has shown that geographical areas with little to no access to contraceptive services have higher concentrations of BIPOC residents (Kreitzer et al., 2021).

Further, labor market segregation and unemployment might also be a potential factor for BIPOC women that makes contraception access difficult (Gee & Ford, 2011). People of color have higher unemployment rates and are more likely to work in dangerous jobs with fewer health benefits and lower pay (Weller, 2019). According to the Canadian government, in 2014 18.7% of Indigenous people living off reserves were classified as low-income, compared to the national average of 8.8% (Employment and Social Development Canada, 2016). Additionally, the unemployment rate of Indigenous people in Canada in 2011 was much higher than that of the non-Indigenous population. Specifically, Métis, First Nations off reserve and Inuit had unemployment rates of 10.4%, 17.6% and 19.6% respectfully compared to 7.5% for non-Indigenous citizens (Employment and Social Development Canada, 2016). Further, the Black unemployment rate in Canada is higher than that of the rest of the population and Black

immigrant women consistently had the highest unemployment rates of the total population from 2001- 2016 (Statistics Canada, 2020). Further, BIPOC women in Canada often earn the least compared to white Canadians despite having similar credentials (Statistics Canada, 2016). According to the 2016 census, racialized women earn 67 cents to the dollar that white men earn, and Indigenous women earn 65 cents to the dollar that a non-Indigenous man earns (Statistics Canada, 2016).

Labor and wage discrimination concentrate poverty and thus impact how BIPOC women are able to access and afford reproductive health care services (McBarnette, 1987). The combination of residential and labor segregation potentially situates women in a position of poverty, decreasing their ability to access reproductive health care services and therefore limiting their reproductive autonomy.

2.10 Intersectional Perspectives on Contraception Use

This investigation will use an intersectional Reproductive Justice (RJ) framework for data analysis and interpretation. Therefore, it is important to recognize the possibility of factors that might influence racialized and Indigenous women's use of LARC contraception methods other than socioeconomic elements.

Many racialized Canadian women might belong to cultures in which modestly is valued and discussions about sex are taboo. A focus group with Canadian Muslim women found that modesty and a desire to see only a female doctor emerged as significant barriers to reproductive health care access (George et al., 2014). Another important cultural concern is language.

Canadian immigrants and refugees who do not speak English have been found to be less likely to access preventative reproductive health care such as cervical cancer screenings (Woloshin et al., 1997).

Additionally, racialized and Indigenous women might be less likely to use LARC methods due to the historical significance of forced sterilization. Recent hearing evidence from the Standing Senate Committee on Human Rights in Canada heard testimony of forced sterilizations of Indigenous women as late as 2018 (Standing Senate Committee on Human Rights, 2021). This report also identified African Canadian and racialized/ethnic women as particularly vulnerable for modern coerced sterilizations, such as being convinced sterilization is the only option without being presented all information (Standing Senate Committee on Human Rights, 2021). Additionally, Black women in both the United States and Canada have been subjected to medical experimentation during slavery and Jim Crow eras (Prather et al., 2018; Udonya, 2020). Both these historical and contemporary events might create a sense of mistrust among Indigenous and racialized women when considering contraception (Wilson et al., 2013). Moreover, the historical significance of medical experimentation might shape Black women's current perceptions and attitudes towards contraception and the medical field in general (Prather et al., 2018). For example, in the U.S., Black and Hispanic women were more likely to endorse the belief that the government encourages contraceptive use in order to limit the population of racial minorities (Rocca & Harper, 2012).

It is clear that the issues affecting racialized and Indigenous women's access to and use of contraception, particularly LARC methods of contraception, might be different for BIPOC

women compared to non-racialized, non-Indigenous women. Historical factors along with cultural attitudes might influence racialized and Indigenous women's choice to use birth control and on the type of method used.

2.11 COVID-19 Pandemic

It is important to note that since this study will use CCHS data from the 2020 cycle the Coronavirus pandemic may have influenced respondent behavior. Admittedly, quarantine and lockdown requirements would drastically shape intimate partner relationships and sexual activity, especially if partners did not live together. Additionally, with shutdowns of non-emergency and elective medicine, some women might have faced barriers in accessing contraception. Further potential economic decline or job loss might have influenced family planning or fertility rates. One investigation from the U.S., found that 51.1% of their sample (N=3064) reported barriers to accessing contraception in July of 2020 (Diamond-Smith et al., 2021). This investigation also found that participants experiencing an income loss were more likely to report they would be using a different method of contraception if not for COVID-19 (Diamond-Smith et al., 2021). Additionally, Statistics Canada has also reported a drastic drop in fertility rates since the onset of the pandemic. In 2019, the estimated total fertility rate was 1.47 children per woman and in 2020 that rate decreased to 1.40 (Statistics Canada, 2021). In 2020, Canada also reported the lowest number of births since 2006 (Statistics Canada, 2021). Given the additional barriers to contraception access and decreased fertility rates, it is possible the pandemic may have influenced this investigation of contraception use.

Based on the presented literature there is evidence to suggest that racialized and Indigenous women might access and use contraception differently than non-racialized and non-Indigenous women. Intersectionality and RJ frameworks remind us that given the presence of historical oppression of and contemporary structural inequities for racialized and Indigenous women, they might face different barriers to contraception than non-racialized and non-Indigenous women. I have also identified several areas where racialized and Indigenous women seem to have differences compared to non-racialized, non-Indigenous women such as labor market segregation, historical oppression, and relationships with the healthcare system. Further, keeping in mind RJ's claim that material resources are necessary for reproductive autonomy it seems reasonable to question whether the differences identified in the literature might contribute to differences in contraception use between racialized and Indigenous women and white women.

3.0 Specific Aims

This study examines two major questions: (1) Are racialized and Indigenous women less likely to use more expensive and effective forms of birth control than non-racialized and non-Indigenous women? And (2) Do differences in contraception use by racialized and Indigenous women, compared to non-racialize non-Indigenous women, appear to be due primarily to financial or cost barriers?

In order to address these two main questions, I have the following sub-questions.

1. How do non-racialized, non-Indigenous women's use of LARC birth control methods compare to those of racialized women and Indigenous women?
2. Do higher proportions of racialized and Indigenous women use cheaper and less effective forms of birth control (withdrawal, condoms only) compared to non-racialized, non-Indigenous women?
3. Are education and income related to the likelihood that racialized and Indigenous women use birth control, or to the type of birth control used?
4. Do any differences in racialized and Indigenous women's use of LARCs in Quebec remain after controlling for education and income?

4.0 Methods

In the following section I discuss the data source for this project, describe the analytical sample and the study variables. I then describe the specific methodology I will use to analyze the data.

4.1 Study Design

This study is a quantitative cross-sectional investigation which aims to examine the association between race and Indigeneity and the use of various types of birth control. This investigation will use Reproductive Justice and intersectionality frameworks to identify research questions and understand how various factors such as income, education and provincial location might influence contraception use differently for racialized and Indigenous women compared to non-racialized, non-Indigenous (hereinafter referred to as "white") women. Income and education were included in this study because increased ability to afford contraception possibly from increased education reasonably increases the likelihood that women would use more effective contraception. Provincial location, particularly residence in Quebec, is of interest in this investigation due to Quebec's universal contraception coverage and the possibility this policy has led to higher use of high-cost birth control. Reproductive Justice and intersectionality frameworks also help to contextualize how historical inequities might remain relevant in BIPOC women's choice to use or not to use contraception. The data source and modeling approach are presented below.

4.2 Data Source

Data from the 2020 annual component of the Canadian Community Health Survey (CCHS) were used. The CCHS is a cross-sectional survey conducted by Statistics Canada, that samples people

living in Canada, 12 years of age and over. People living in all ten provinces and three territories are included in the survey sample (Statistics Canada, 2018c). The CCHS collects information pertaining to respondent health status, health care utilization and health determinants (Statistics Canada, 2018c). It is important to note, given the thesis topic, that the CCHS excludes those living on First Nations reserves and other Indigenous settlements, those experiencing institutionalization (including incarceration), full-time members of the Canadian Armed Forces and children (aged 12 – 17) living in foster care (Statistics Canada, 2018). Data were accessed and analyzed at the South-Western Ontario Research Data Center (SWORDC).

Each annual component of the CCHS includes a national sample of approximately 65,000 respondents (Statistics Canada, 2018c). Data are selected using two different frames. The first, for ages 12 – 17 was constructed from the Canadian Child Benefit and stratified by health region. For respondents 18 and older, the CCHS uses a frame constructed from the Labour Force Survey. The sample of respondents 18 and older was then selected using a multi-stage design which first stratifies respondents into geographical clusters and then health regions (Statistics Canada, 2018c). Finally, the survey was conducted either through electronic questionnaires or computer assigned telephone interviewing, in both cases a letter was sent to the respondent's dwelling with an access code for survey participation.

4.3 Analytical Sample

This study's analytical sample included those who answered "female" to the question "What was your sex at birth", (which included those who answered "male" or "other" to the question "What is your gender?'), those between the ages of 15 – 64 and respondents who indicated that they had ever had sex (in their lifetime). If respondents answered "no" to ever having had sex in their

lifetime, the CCHS did not ask them about birth control and therefore they were not included in this study.

During the process of data cleaning, people who indicated they had been born male and women who indicated they had never had sex were removed from the sample. The final analytical sample was 9003. This sample was mostly white women (N = 7429) followed by racialized women (N =1071) and finally Indigenous women (N = 503).

I also conducted a sub-group analysis in which the analytical sample included only those who indicated membership in at least one racial category and excluded "white" women. In this analysis I use a race variable, labeled as "Other" which had five racial categories, including "Arab", "Southeast Asian", "West Asian", "Korean", and "Japanese". I also created a category, "Multiracial", which included those identifying membership in more than one racial/ethnic category.

4.4 Study Measures

This project's measures including outcomes, main predictors variables and the potentially moderating variables are presented below.

Outcome variables

The main outcome variable in this study was the method of birth control each respondent reported having used. Here the questions "Did you or your partner use a condom the last time you had sex?" and "What other methods of protection did you and your partner use the last time you had sex?" were used to capture contraception use patterns. The final category options

included “withdrawal or pulling out”, “tubal sterilization”, “birth control pill”, “injection”, “spermicidal foam, jelly, cream film, suppository”, “hormonal implant”, “rhythm method”, “contraceptive patch”, “vaginal contraceptive ring”, “IUD”, “None” and “Other”. Due to small cell sizes certain methods were collapsed in order to meet Statistics Canada output vetting criteria. Injection, spermicidal foam, jelly, cream film, suppository, hormonal implant, rhythm method, contraceptive patch, and vaginal contraceptive ring were collapsed and given their own category referred to as “grouped methods” in the analysis. Additional grouping was done in preparation for analysis by dichotomizing birth control methods into one of two categories, LARC methods and non-LARC methods. In this case, the hormonal implant and IUD were grouped as LARC methods and all others were non-LARC methods.

A second binary outcome variable was created in preparation for analysis to assess use of any contraceptive, vs. non-use. For this variable, respondents who answered “no” to using condoms and “yes” to birth control option “none” were grouped into the second category. All other respondents were placed into the first category.

Predictor Variables

To create my main predictor variable, race and Indigeneity identity questions in the socio-demographic characteristics sections will be used to create one categorical variable. To create the Indigenous category, the question “Are you an Aboriginal person, that is, First Nations, Métis or Inuk (Inuit)? First Nations includes Status and Non-Status Indians” was will be used. In this survey, if a woman identified themselves as Indigenous, they were not asked what racial category they belonged to. Finally, to create the last two categories in the nominal predictor

variable, white and racialized, the question, “You may belong to one or more racial or cultural groups on the following list. Are you…”, will be used.

This produced a variable with three categories. “racialized, Indigenous, and white”. I chose these three distinct categories for several reasons. Indigeneity is distinct from racial and ethnic identity and I therefore reasoned that it should be a separate category (Williams & Schertzer, 2019). Further, because I am interested in the differences between BIPOC women and white women, I felt it was important to create three separate categories.

For the purpose of analysis, if a respondent identified as belonging to any racial/cultural group other than “white”, they were considered to be a racialized woman. This included respondents who answered “yes” to white and “yes” to another racial identity, and those who answered “yes” to more than one racialized category.

Covariates and control variables

Covariates and control variables included age, highest level of education, income category, provincial location, marital status, student status and a Covid-19 lockdown measurement. Age was included in this study as a control, because sexual behaviors and fertility goals might vary over the lifespan. Further, age might impact ability to afford contraception based on ability to work or education status. Age was grouped into five categories of 10 – year cohorts, ranging from 15 – 64, which was the complete age range specified by the CCHS for contraception questions. This study includes women 55 – 64 in order to increase sample size, observe contraception patterns across the lifespan and examine differences between age cohorts. Age was

grouped into discrete categories rather than used as a continuous variable for ease of interpretation.

Highest educational attainment was included because higher educational status might increase earning potential, thus affecting ability to afford contraception. Education status is organized on three levels, (1) less than secondary school graduation, (2) secondary school graduation, but no post-secondary school, or (3) post-secondary degree. An income category was included as a covariate in order to observe differences in contraception use between racial and Indigenous identities of similar income categories. Total annual household income before taxes is grouped into five categories ranging from no income (including negative income) to more than $150,000. This variable was grouped into categories for ease of interpretation.

Provincial location was dichotomized to either Quebec residence or non-Quebec residence, to allow us to assess whether Quebec's subsidization of contraception is a predictor of use. Marital status was also included as a covariate because fertility goals might be affected by whether or not a respondent is in a partnership. Marital status might also impact a respondent's sexual activity. This variable was divided into three groups (1) partnered, (2) divorced, separated or widowed and (3) single. Student status was also included in this investigation as a control variable. This variable was included because current student status might impact a respondent's desire to have a child as well as their access to contraception. Most schools and universities offer comprehensive sexual education as well as have student health clinics where women can get birth control at no cost. Student status was created as a binary variable with the options not a student or current student. Finally, this study also included a COVID-19 lockdown measurement to assess the

possibility that the government mandated quarantine might have affected individual birth control use. Due to lockdown protocols Statistics Canada stopped collecting CCHS data in March of 2020 and restarted in September of 2020. These dates will be used to create a pre-lockdown and post-lockdown group within the COVID-19 variable.

4.6 Analyses

Exploratory data analysis was first conducted in order to examine the frequencies and relationships between predictor and outcome variables. In this step, issues with missing data and small cell sizes were addressed. As stated above, several variables required data collapsing in order to avoid small cell sizes. These included provincial location and birth control types. Additionally, for the cross-tabulation of "withdrawal", race category and Indigeneity (Table 3) were collapsed to meet Statistics Canada criteria for data release. However, this is the only instance in which race and Indigeneity were grouped together. There were several instances in which participants answered, "don't know" or "refuse", in these cases they were removed from the sample. All missing variables were identified and removed from the sample, except for those appearing in tables containing condom use. Missing data for these variables occurred because these respondents answered "refusal" to the question "Did you or your partner use a condom the last time you had sex?". Because condom use was not mutually exclusive to other methods of birth control, these respondents were also asked the question "What other methods of birth control did you and your partner use the last time you had sex?". Therefore, if these missing data points were removed, they would also be removed from the "other methods of birth control" group. Missing points accounted for less than 1% of the overall sample.

To address research sub-questions 1 and 2, bivariate frequency tables were created to examine the sample characteristics and to depict contraception use patterns among each identity group. In these cross tabulations, Chi-Square tests will be used to test significance at $\alpha < 0.05$, using scaled weights. CCHS master weight variables are also applied to each table in the results section.

Finally, to address research sub-questions 3 and 4, several multivariate binary logistic regressions models are presented to assess the relationship between outcome and predictor variables. Resulting odds ratios are evaluated with 95% confidence intervals to assess the significance of predictor variables on the outcome. Interaction terms were originally included to examine the presence of a significant interaction between outcome and predictor variables; however, no such relationship was found, and interaction terms were not included in the final models. Bootstrap weights are applied to each final regression model in order to present accurate estimates of variance, given the sample design (Statistics Canada, 2018c).

5.0 Results

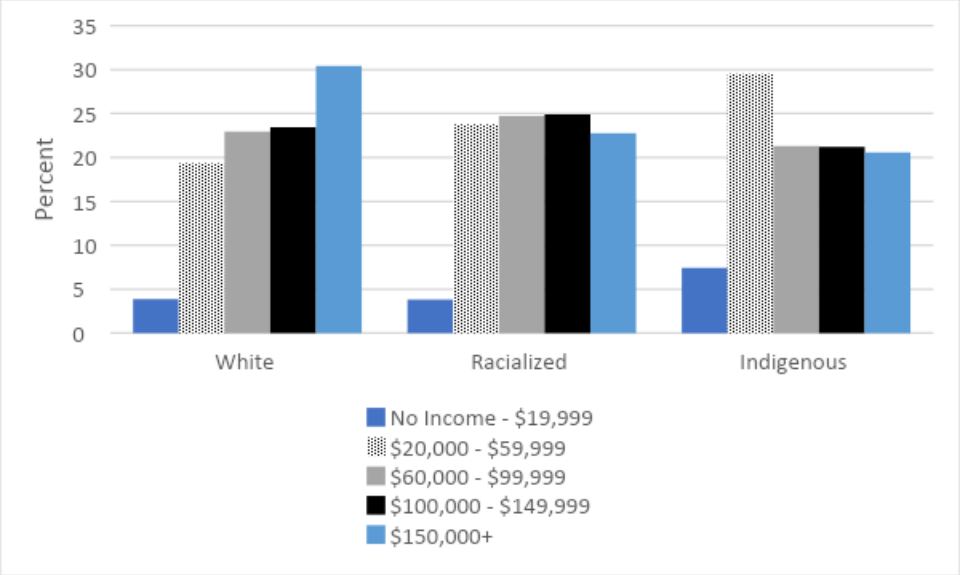
5.1 Sample Description

As described above, my main analytical sample included women identifying as white, racialized or Indigenous, aged 15 to 64, and who indicated ever having have had sex in their lifetime. Population weights were applied to the data set, allowing us to report population-level estimates. The overwhelming majority of the weighted sample were white women (75.91%), followed by racialized women (19.87%), while Indigenous women made up the smallest proportion of the total weighted sample (4.22%). Due to small cell sizes, I am unable to report provincial location by identity category. Other sample descriptions are presented below, and a full description of independent variables can be found in Table A.1 in the appendix.

Income Category

The least common income category was "No income – $19,999", with only an estimated 4.01% of the total population. The remaining of the total sample was fairly evenly dispersed amongst the income categories. The income distribution of my sample was as follows: $20,000 – $59,999 (20.65%), $60,000 – $99,999 (23.22%), $100,000 – $149,000 (23.65%) and $150,000+ (28.47%). Income category by identity category is presented in Figure 1.

Figure 1: Total Household Income in 2020 by Identity Category, women aged 15 to 64, Canada.



Note: Values displayed as percentages of each identity category. Population weights have been applied.
Source: 2020 Canadian Community Health Survey.

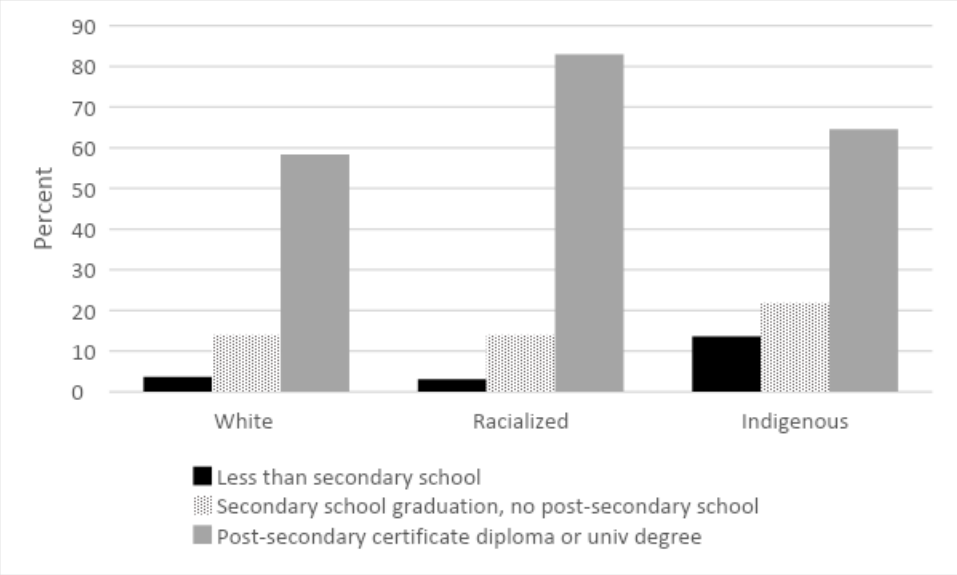
There were relatively more Indigenous women with total household incomes of $19,999 or less than either "white" or "racialized" groups (7.41% compared to 3.87% and 3.82% respectively). Somewhat surprisingly, the percentage of "white" and "racialized" women in this lowest income category were virtually identical. The largest proportion of Indigenous women are found in the $20,000 – $59,999 income range (29.49%), compared to 19.34% and 23.77% of white and racialized women respectively. Proportions of women with total household incomes of $60,000 – $99,999 were similar across all identity categories, with 22.93% of white women, 24.73% of racialized women and 21.31% of Indigenous women. Racialized and white respondents had fairly similar proportions of their sample with total incomes of $100,000 – $149,999 (24.91% and 23.46% respectively). Indigenous women in my sample had the lowest proportion of total household incomes of $100,000 – $149,999, with only 21.2%. There were substantially more

white women with total household incomes of $150,000 or more than either racialized or Indigenous groups (30.41% compared to 22.76% and 20.59% respectively).

Highest Educational Attainment

Overall, the study sample consisted largely of post-secondary educated women, with the majority 77.57% holding a post-secondary degree or diploma (Figure 2). Only 4.87% held less than high-school education. Educational attainment by identity category is presented in Figure 2.

Figure 2: Highest Educational Attainment by Identity Category, women aged 15 to 64, Canada 2020.



Note: Values displayed as percentages of each identity category. Population weights have been applied. Source: 2020 Canadian Community Health Survey.

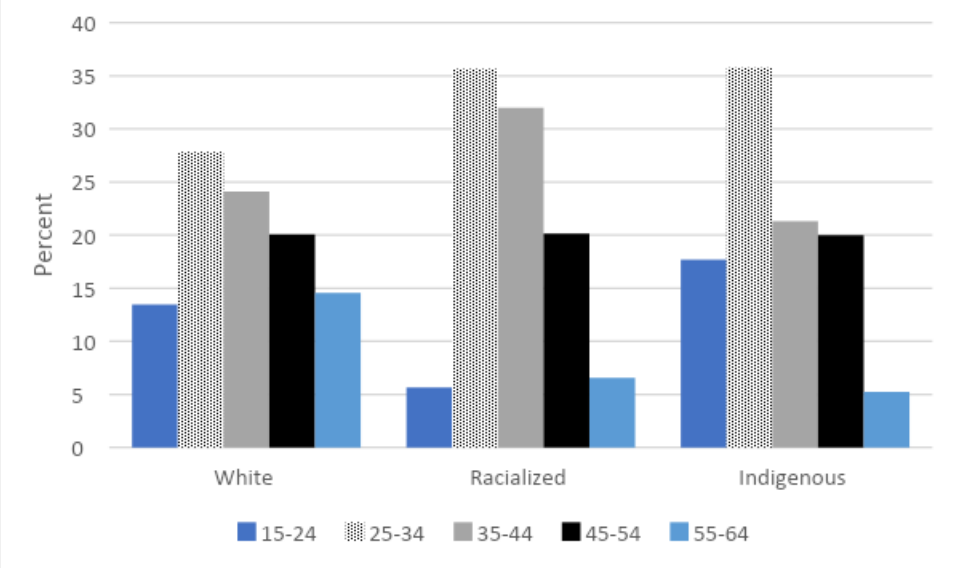
My sample of white women had only 3.68% with less than a high school education, 13.88% with a high school degree but no post-secondary and 58.35% with a post-secondary diploma or degree. Racialized women in my sample were the least likely to have below a secondary school degree, with only 3.11% of racialized women falling in this category. Further, 13.92% of racialized women in my sample had a high school degree with no post-secondary school.

Racialized women in my sample were also more likely than women in other groups to have a post-secondary school degree or diploma, with 82.99% of their total population. Indigenous women in my sample were the most likely to have less than a high school education, with 13.67% of their population. Finally, 21.79% had a secondary school degree but no post-secondary school and 64.53% had a post-secondary degree or diploma.

Age Group

The majority of the study sample was between the ages of 25 – 44 (55.16%), with the largest population between the ages of 25 – 34 (29.71%). Indigenous and racialized women had younger age distributions, relative to white women, as there were fewer respondents in the oldest age ranges, but more in the 25 to 34 year age range (Figure 2).

Figure 3: Age Category by Identity Category, women aged 15 to 64, Canada 2020.



Note: Values displayed as percentages of each identity category. Population weights have been applied.
Source: 2020 Canadian Community Health Survey.

5.2 Bivariate Analysis

Table 1 describes the relationships between the predictor variable categories and the six categories of birth control methods. For both Indigenous and white women, the most common of the six contraception options in Table 1 was sterilization, with 28.96% and 30.31% of the population for Indigenous and white women respectively. Similarly, for both Indigenous and white women the second most common contraception method in Table 1 was the COC pill (Indigenous = 27.57%, white = 24.59%). For racialized women the most frequently chosen method was *None* with 52.85% of the racialized population. Just as with Indigenous and white women, racialized women's second most common form of contraception was the COC pill, but a much lower proportion (13.57%). With respect to IUDs, which is one form of LARC, they were mainly used by white women (14.17%), then Indigenous women (12.44%) and finally racialized women (9.58%).

Table 1: Contraceptive use by type and identity category, women aged 15–64.

	Sterilization	Combined Oral Contraception	Grouped Methods	IUD	None	Other
	(%)	(%)	(%)	(%)	(%)	(%)
White						
Yes	30.31	24.59	2.41	14.17	22.68	5.05
No	69.69	75.41	97.59	85.83	77.32	94.95
Racialized						
Yes	6.75	13.5	5.06	9.58	52.85	3.96
No	93.25	86.43	94.94	90.42	47.15	96.04
Indigenous						
Yes	28.96	27.57	2.9	12.44	20.97	6.1
No	71.04	72.43	97.1	87.56	79.03	93.9
P-value	<0.01*	<0.01*	†	<0.01*	<0.01*	>0.01

Note: Data from 2020 CCHS. Population weights applied. "Grouped methods" includes Injection, Spermicidal foam, jelly, cream film, suppository, Hormonal Implant, Rhythm method, Contraceptive

*patch, and Vaginal Contraceptive ring. P-values are from chi square tests, * indicates significance. † due to small cell sizes, I could not obtain this p-value.*

In the CCHS condom usage was a separate non-mutually exclusive question. Table 2 shows the associations between identity category and condom use. Use patterns for this method follow a similar pattern as was found in Table 1. Indigenous and white women were found to have similar proportions of condom use, with 32.91% of Indigenous women and 35.15% of white women. Conversely, a much larger proportion (62.03%) of racialized women reported using condoms.

Table 2: Condom use by identity category, women aged 15–64.

	Condom use %	P-value
White		
Yes	35.15	**<0.01**
No	64.85	
Racialized		
Yes	62.03	
No	37.97	
Indigenous		
Yes	32.91	
No	67.09	

Note: Weight frequency missing = <1% due to refusal. Data from CCHS 2020. Population weights applied. P-value from chi-square test.

For the last birth control method, withdrawal, Indigenous and racialized women were collapsed into one category called BIPOC, due to small cell sizes. In this case 3.53% of white women reported using withdrawal, compared to 8.1% of BIPOC women.

Table 3: Use of withdrawal by identity category, women aged 15–64.

	Withdrawal use %	P-value
White		**<0.01**
Yes	3.54	
No	96.46	
Racialized & Indigenous		
Yes	8.1	
No	91.9	

Note: Weight frequency missing = <1% due to refusal. Data from CCHS 2020. Population weights applied. P-value from chi-square test.

Finally, an examination of LARC methods (hormonal implant & IUD) by provincial location shows that of women who used birth control methods, 29.2% were located in Quebec. The remaining 70.8% was spread across the rest of the country, shown in Table 4.

Table 4: Bivariate associations between provincial location and LARC use

	Quebec %	Other Province %	P-value
LARC	15.93	12.77	**<0.01**
Non-LARC	84.07	87.23	

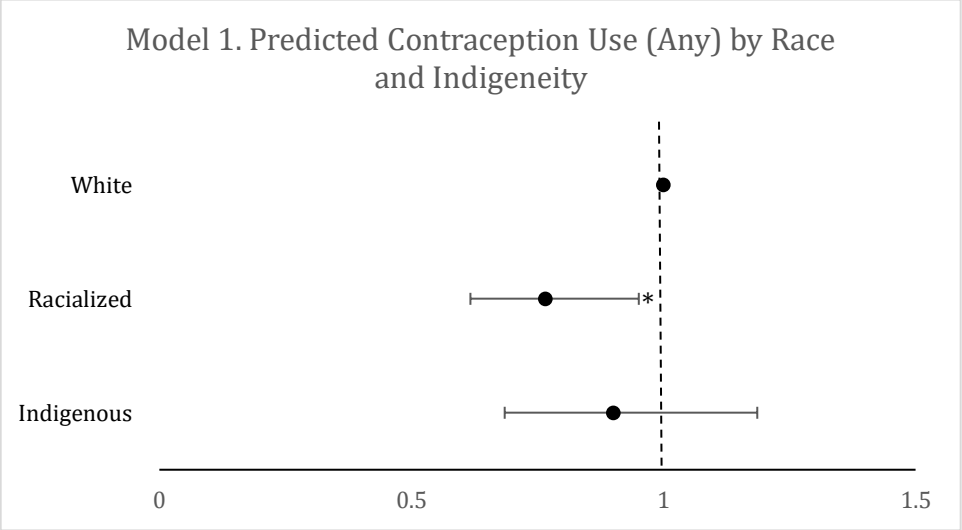
Note: Weight frequency missing = <1% due to refusal. Data from CCHS 2020. Population weights applied. P-value from chi-square test.

5.3 Binary Logistic Regression Models

Provincial location, total household income, and highest educational attainment were initially included as moderating variables to examine if certain variables influenced the relationship between outcome and predictor variables. However, no moderating relationship was found among any of the variables, therefore, each was included as a covariate. Further, several interaction terms were tested in order to investigate the possibility that total household income, provincial location and education had an interacting effect with my main predictor variable (racial or Indigenous identity) on model outcomes. Three separate models, testing each interaction term and their main effects were conducted, however, none resulted in any significant interaction and therefore are not reported. Since no moderating effect or significant interaction effect was found, provincial location, total household income, and highest educational attainment were included in each model as covariates.

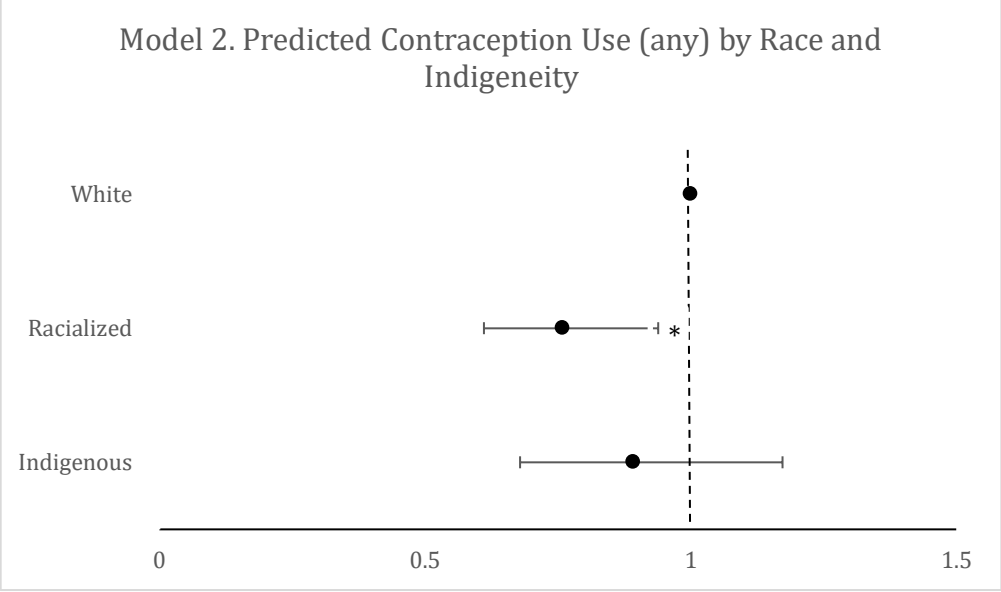
The regression analysis is divided into three sections, presenting five main models in total. The first examines the binary outcome variable "Use vs. non-Use", which predicts contraception use of any kind by racial and Indigenous identity. In this first section two main models are presented. Model 1 includes all covariates listed previously and Model 2 includes all covariates except for income category. This is done in order to examine if income status differentially affects use of contraceptives between identity categories.

Figure 4: **Odds Ratios of Overall Contraception Use by Identity Category**



*Note: Odds ratios are adjusted for age, highest educational attainment, provincial location, marital status, student status, Covid-19 lockdown, and income category. Error bars indicate 95% confidence interval, * indicates significance.*

Figure 5: Odds Ratios of Overall Contraception Use by Identity Category

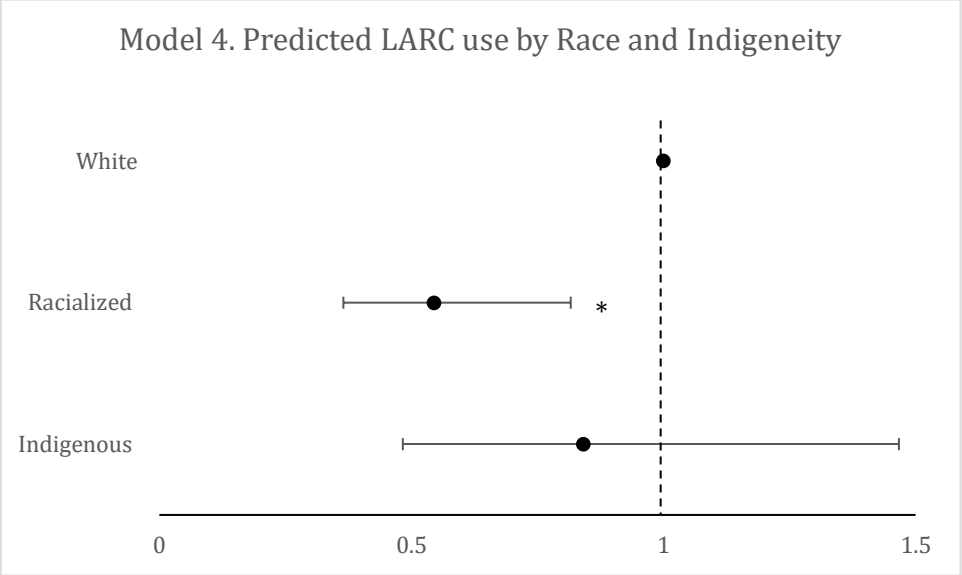


*Note: Odds ratios are adjusted for age, highest educational attainment, provincial location, marital status, student status, and Covid-19 lockdown. Error bars indicate 95% confidence interval, * indicates significance.*

In Model 1, racialized women were significantly less likely to use birth control of any kind after controlling for income, education, provincial location, marital status, student status and Covid-19 lockdown. The model results are presented in Table 5. The odds ratio with 95% confidence interval for the racialized group is 0.766 (0.617, 0.951) (Figure 4). Indigenous women were not significantly different from the reference category ("white") with an odds ratio and 95% confidence interval of 0.901 (0.68, 1.186). Despite not controlling for income category in Model 2, racialized women were still found to be significantly less likely to use birth control of any kind (OR = 0.758, 95% CI = 0.611, 0.939) (Figure 5). Similarly, Indigenous women did not significantly differ from the reference (OR = 0.892, 95% CI= 0.679, 1.173). This suggests that income is not an important contributor to the differences in use by racialized women.

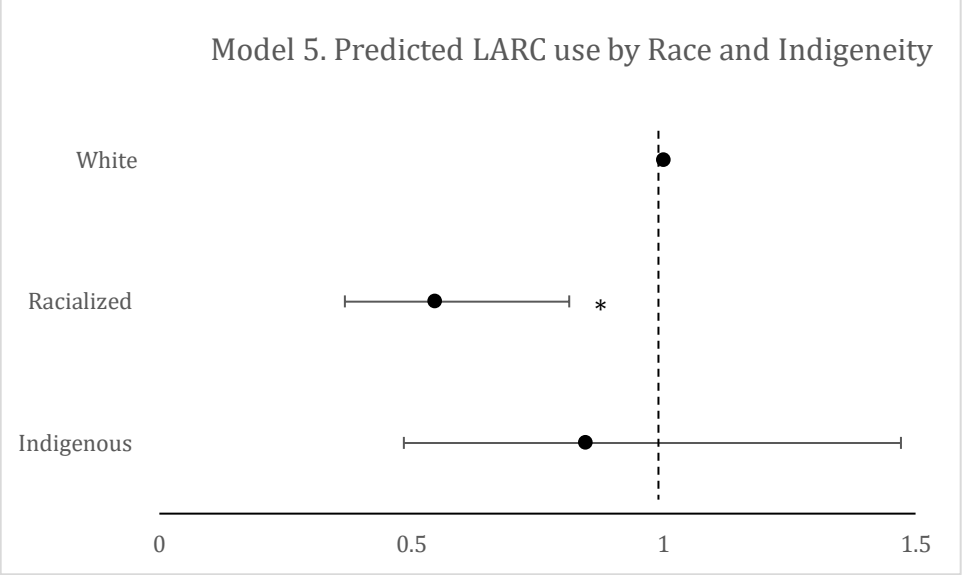
The next step of the binary regression analysis assesses the binary outcome variable *LARC vs non-LARC,* by racial and Indigenous identity, to estimate whether racialized or Indigenous women who used any type of contraception, were more or less likely to use these methods. Similarly, to the first regression analysis section, this third section includes two models. The first, Model 4, includes all possible covariates and the second, Model 5, includes all covariates except for income category.

Figure 7: Odds Ratios of LARC Contraception use by Identity Category



*Note: Odds ratios are adjusted for age, highest educational attainment, provincial location, marital status, student status, Covid-19 lockdown, and income category. Error bars indicate 95% confidence interval, * indicates significance.*

Figure 8: Odds Ratios of LARC Contraception use by Identity Category



*Note: Odds ratios are adjusted for age, highest educational attainment, provincial location, marital status, student status, and Covid-19 lockdown. Error bars indicate 95% confidence interval, * indicates significance.*

In Model 4, racialized women were found to be significantly less likely to use LARC methods of birth control compared to the reference category (OR = 0.546, 95% CI = 0.365, 0.816) (Figure 7). Indigenous women did not significantly differ from the reference with respect to LARC contraception use (OR = 0.842, 95% CI = 0.483, 1.467). Finally, in Model 5 similar results were found. Racialized women were less likely (OR = 0.547, 95% CI 0.368, 0.813) to use LARCs compared to the reference and Indigenous women were not significantly different (OR = 0.845, 95% CI = 0.485, 1.471) (Figure 8) from the reference.

Table 5 summarizes results from Models 1 – 2, which assess the binary outcome variable *Use vs. Non-Use* and Table 6 summarizes findings from Models 4 and 5, which examined LARC use. Table 7 summarizes results from Model 3, which was the sub-analysis investigation of overall contraception use by racial category.

Table 5. Binary logistic regression models estimating overall contraception use by racialized and Indigenous identity

	Model 1 OR (95% CI)	Model 2 OR (95% CI)
Racial or Indigenous Group (ref: White)		
Indigenous	0.901 (0.68, 1.186)	0.892 (0.679, 1.173)
Racialized	**0.766* (0.617, 0.951)**	**0.758* (0.611, 0.939)**
White	1 (--)	1(--)
Age Group (ref: 35 – 44)		
15 – 24	1.442 (0.821, 2.531)	1.472 (0.837, 2.588)
25 – 34	1.009 (0.818, 1.245)	1.000164 (0.813, 1.231)
35 – 44	1 (--)	1 (--)
45 – 55	**0.572* (0.467, 0.7)**	**0.578* (0.473, 0.707)**
55 – 64	**0.201* (0.163, 0.247)**	**0.2* (0.163, 0.246)**
Highest Level of Education of Respondent (ref: Post-secondary certificate, diploma or univ degree)		
Less than secondary school graduation	**0.704* (0.508, 0.976)**	**0.687* (0.5, 0.944)**
Secondary school graduation, no post-secondary	**0.759* (0.616, 0.936)**	**0.743* (0.605, 0.912)**
Post-secondary certificate, diploma or univ degree	1 (--)	1 (--)
Marital Status (ref: Partnered)		
Divorced, Separated, Widowed	**1.615* (1.29, 2.023)**	**1.548* (1.254, 1.911)**
Single	**2.633* (2.121, 3.269)**	**2.558* (2.095, 3.124)**
Partnered	1 (--)	1 (--)

Table 5, continued

	Model 1 OR (95% CI)	Model 2 OR (95% CI)
Provincial Residence (ref: Quebec)		
Quebec	1 (--)	1 (--)
Other	**0.814* (0.678, 0.977)**	**0.825* (0.689, 0.988)**
Student Status (ref: Current student)		
Not a student	**0.699* (0.5, 0.977)**	**0.698* (0.5, 0.975)**
Current Student	1 (--)	1 (--)
COVID-19 Lockdown (ref: pre-lockdown)		
Post – lockdown	**1.219* (1.046, 1.42)**	**1.214* (1.042, 1.414)**
Pre – lockdown	1 (--)	1 (--)
Income Group (ref: $60,000 - $99,999)		
No income – $19,999	1.218 (0.879, 1.69)	
$20,000 – 59,999	0.984 (.0798, 1.213)	
$60,000 – 99,999	1 (--)	
$100,00 – 149,999	1.136 (0.927, 1.393)	
$150,000	1.157 (0.937, 1.427)	

Note: Data from 2020 CCHS. Bootstrap weights are applied. Bolded values are significant at p <0.05

Table 6. Binary logistic regression models estimating LARC use by racial and Indigenous identity

	Model 4 OR (95% CI)	Model 5 OR (95% CI)
Racial or Indigenous Group (ref: White)		
Indigenous	0.842 (0.483, 1.467)	0.845 (0.485, 1.471)
Racialized	**0.546* (0.365, 0.816)**	**0.547* (0.368, 0.813)**
White	1 (--)	1 (--)
Age Group (ref: 35 – 44)		
15 – 24	0.912 (0.506, 1.641)	0.895 (0.496, 1.615)
25 – 34	**1.425* (1.075, 1.965)**	**1.459* (1.078, 1.974)**
35 – 44	1 (--)	1 (--)
45 – 55	**0.583* (0.399, 0.85)**	**0.581* (0.398, 0.848)**
55 – 64	**0.078* (0.029, 0.205)**	**0.079* (0.03, 0.209)**
Highest Level of Education of Respondent (ref: Post-secondary certificate, diploma or univ degree)		
Less than secondary school graduation	**0.401* (0.197, 0.816)**	**0.407* (0.2, 0.827)**
Secondary school graduation, no post-secondary	0.951 (0.65, 1.393)	0.956 (0.653,1.399)
Post-secondary certificate, diploma or univ degree	1 (--)	1 (--)
Marital Status (ref: Partnered)		
Divorced, Separated, Widowed	1.036 (0.648, 1.656)	1.082 (0.702, 1.668)
Single	0.791 (0.548, 1.141)	0.818 (0.572, 1.171)
Partnered	1 (--)	1 (--)
Provincial Residence (ref: Quebec)		
Quebec	1 (--)	1 (--)
Other	0.779 (0.559, 1.086)	0.77 (0.553, 1.073)

Table 6, continued

	Model 4 OR (95% CI)	Model 5 OR (95% CI)
Student Status (ref: Current student)		
Not a student	0.978 (0.631, 1.516)	0.974 (0.625, 1.517)
Current Student	1 (--)	1 (--)
COVID-19 Lockdown (ref: pre-lockdown)		
Post – lockdown	1.253 (0.949, 1.656)	1.255 (0.951, 1.657)
Pre – lockdown	1 (--)	1 (--)
Income Group (ref: $60,000 - $99,999)		
No income – $19,999	1.097 (0.505, 2.38)	
$20,000 – 59,999	0.733 (0.5, 1.075)	
$60,000 – 99,999	1 (--)	
$100,00 – 149,999	**0.61* (0.419, 0.888)**	
$150,000	0.8 (0.549, 1.165)	

Note: Data from 2020 CCHS. Bootstrap weights are applied. Bolded values are significant at p <0.05.

Older age groups, from 45 onward, were found to be less likely to use birth control of any kind or LARC method compared to the reference (35 – 44). This finding was consistent across all five models regardless if income category was a covariate. Women aged 25 to 34, were found to be more likely to use LARC methods of birth control in both Models 4 and 5 (income covariate vs. no income covariate), suggesting use is not affected by category.

Women with less than high school education were found to be less likely to use both LARCs and contraception of any kind. Similarly, women with secondary school graduation, with no post-secondary education were found to be less likely to use contraception of any kind, however this was not found in LARC Models 4 and 5. This finding was also not found in the racialized subset.

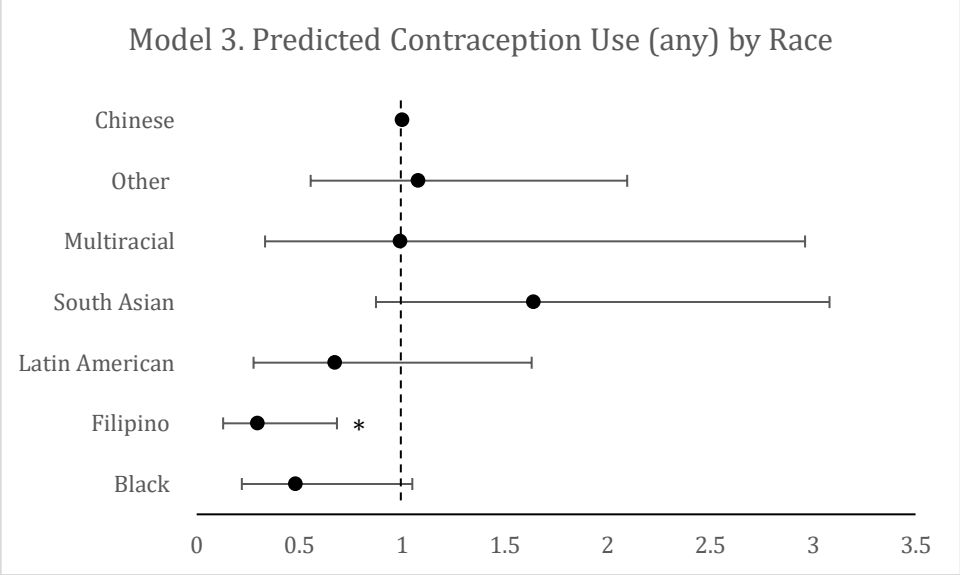
Women living in Quebec were more likely to report using contraception of any kind, in Models 2 and 3. However, this was not true in Models 4 and 5, possibly because of a much smaller sample size used for these models.

Finally, post-lockdown, women were more likely to report using contraception. This was not found in LARC models, which might be due to the fact that LARC forms of contraception are often used for years at a time and the decisions to use or not use them might have been made well before the COVID lockdowns.

5.4 Subgroup Analysis

This investigation's regression analysis includes a sub-analysis of overall contraception use (*Use vs Non-Use*) by individual racial categories. As described above, the sample for this analysis includes only racialized women.

Figure 6: Odds Ratios of Overall Contraception Use by Racial Category



*Note: Odds ratios are adjusted for age, highest educational attainment, provincial location, marital status, student status, Covid-19 lockdown, and income category. Error bars indicate 95% confidence interval, * indicates significance.*

In this model, Filipino women were found to be significantly less likely to use birth control of any kind, compared to the reference, odds of use that were only 30% of those of Chinese women (the reference) (OR = .297, 95% CI= 0.129, 0.683) shown in 6. Although not significant, possibly due to small sample sizes, Black women seemed also to be less likely to use birth control of any kind (OR= 0.48, CI= 0.22, 1.05) with roughly half the odds of use compared to the reference ("Chinese").

Table 7. Binary logistic regression model estimating overall contraception use by racial identity, racialized women aged 15 – 64, Canada.

	Model 3 OR (95% CI)
Race (ref: Chinese)	
Chinese	1 (--)
Black	0.481 (0.220, 1.05)
Filipino	**0.297* (0.129, 0.683)**
Latin American	0.672 (0.277, 1.631)
South Asian	1.640 (0.873, 3.081)
Multiracial	0.993 (0.333, 2.962)
Other	1.078 (0.555, 2.096)
Age Group (ref: 35 – 44)	
15 – 24	0.996 (0.05, 19.733)
25 – 34	0.797 (0.456, 1.393)
35 – 44	1 (--)
45 – 55	0.593 (0.337, 1.042)
55 – 64	**0.216* (0.097, 0.481)**
Highest Level of Education of Respondent (ref: Post-secondary certificate, diploma or univ degree)	
Less than secondary school graduation	0.734 (0.228, 2.356)
Secondary school graduation, no post-secondary	1.357 (0.698, 2.64)
Post-secondary certificate, diploma or univ degree	1 (--)
Marital Status (ref: Partnered)	
Divorced, Separated, Widowed	1.736 (0.771, 3.909)
Single	**3.925* (1.707, 9.025)**
Partnered	1 (--)
Provincial Residence (ref: Quebec)	
Quebec	1 (--)
Other	0.661 (0.330, 1.326)
Student Status (ref: Current student)	
Not a student	0.697 (0.355, 1.365)

Table 7, continued

	Model 3 OR (95% CI)
Current Student	1 (--)
COVID-19 Lockdown (ref: pre-lockdown)	
Post – lockdown	1.215 (0.803, 1.838)
Pre – lockdown	1 (--)
Income Group (ref: $60,000 – $99,999)	
No income – $19,999	2.334 (0.548, 9.944)
$20,000 – 59,999	0.925 (0.519, 1.648)
$60,000 – 99,999	1 (--)
$100,00 – 149,999	1.055 (0.586, 1.962)
$150,000	0.954 (0.554, 1.643)

Note: Data from 2020 CCHS. Bootstrap weights are applied. Bolded values are significant at p <0.05.

6.0 Discussion

In this section I discuss the major findings of this investigation and answer the original research questions. I also examine the strengths and limitations of this investigation as well as provide suggestions for future research. Finally, there is a discussion of the implications the findings of this study may have for Canadian health policy and future reproductive justice research.

6.1 Key Findings

This study aimed to assess the relationship between race and Indigeneity and contraception use, and whether lower contraception use by racialized and Indigenous women appeared to be due to financial barriers. The first main question (1) "Are racialized and Indigenous women less likely to use more expensive and effective forms of birth control than non-racialized and non-Indigenous women?", was addressed more specifically through two sub-questions. The first, (1.1) "How do non-racialized, non-Indigenous women's use of LARC birth control methods compare to that of racialized women and Indigenous women?" and the second, (1.2) "Do higher proportions of racialized and Indigenous women use cheaper and less effective forms of birth control compared to non-racialized, non-Indigenous women?"

Our results show that racialized women were less likely to have reported using any contraception than were white women, but that there was no difference between Indigenous women and white women. Racialized women also used more costly but more effective LARC birth control methods at significantly lower rates than white women, but Indigenous women's use of LARCs did not significantly differ from white women. Moreover, my results show that indeed higher proportions of racialized women used cheaper and less effective forms of birth control, such as

withdrawal, condoms or “none”. Again, I did not find any significant difference between Indigenous and white women, with respect to use of these forms of birth control. These relationships between race/Indigeneity and contraceptive use were found in the bivariate analyses as well as the regression analyses, after controlling for age and marital status, as well as other covariates.

The second main research question (2) “Do differences in contraception use by racialized and Indigenous women, compared to non-racialized non-Indigenous women, appear to be due primarily to financial or cost barriers?”. I do not have direct evidence of the role of cost in contraception decisions. However, I did examine this indirectly, using two sub-questions. The first was (2.1), “Are education and income related to the likelihood that racialized and Indigenous women use birth control, and on the type of birth control used?” and the second (2.2), “Do any differences in racialized and Indigenous women’s use of LARC in Quebec remain after controlling for education and income?”.

The results have shown that, although racialized women had lower overall use of contraception and those who used contraception also were less likely to use LARCs, I did not find evidence that this is likely to be explained by cost barriers. There does not appear to be a relationship between income and racialized and Indigenous women’s use of birth control, or the type of contraception used. The associations between racial and Indigenous identification and both contraceptive use variables (“any” use and use of LARCs) were unaffected by inclusion of income in the models. Interactions between the identity variable and income were also tested

during data analyses but were not found to be significant and therefore not included in the final model.

As described above, I expected that any relationship between racialized or Indigenous identity and contraceptive use would be moderated by residence in Quebec. This was because provincial coverage of contraception in Quebec would presumably reduce cost barriers. The presence of this moderating relationship would therefore be evidence that cost was at least a partial explanation for racial differences in use.

I found that, indeed, overall contraception use seemed to be higher in Quebec, and that this was true regardless of education and income. This was true in my regression models for "any" contraceptive use (Table 5), although not in the models for LARC use (Table 6). However, interactions between the identity variable and Quebec residence were insignificant, meaning that the relationship between race/Indigeneity and contraceptive use were not different for those living in Quebec or elsewhere in Canada.

Although not in my original research questions, I added a sub-analysis of overall contraception use by racialized women, using a more detailed racial classification. This model showed a considerable degree of variability in contraception use between racialized groups, with South Asian women having the highest odds of use and Black and Filipino women having the lowest. However, in this model, only Filipino women were significantly less likely than Chinese women (reference) to use birth control of any kind, after controlling for education and income.

The present findings suggest that the relationships between identity category and contraception use are not fully explained or potentially even impacted by socioeconomic characteristics. Based on the examination of current health policy literature, the relationship was expected to be heavily influenced by class or socioeconomic status (measured by income and education), as increased ability to afford contraception might logically lead to increased use. However, as the results shown in Table 5 and Table 6 suggest, this was not the case for women in the dataset. Although both overall contraception use and LARC contraception were significantly associated with identity category, these relationships appear to be independent of education and income.

Nonetheless, these findings provide support for the idea that contraception use, and reproductive health care in general, are impacted by different factors and experienced differently for racialized women than Indigenous and white women. Specifically, racialized women are significantly less likely to use contraception of any kind, regardless of income and educational levels, compared to white women.

6.2 Racialized Women

To interpret and contextualize my findings, I return to the Reproductive Justice (RJ) framework. RJ posits that fertile persons have the right to have a child, not have a child, and to parent in safe and healthy environments (Ross & Solinger, 2017). Alongside these principles there is the central claim that fertile people require a safe and dignified environment for these basic human rights, which includes access to safe housing, education and a livable wage (Ross & Solinger, 2017). While critically examining this study's findings I have to ask what factors either prevented or facilitated certain groups to attain these rights while others did not, as well as what factors were not included or captured by this study.

Our findings from Model 1 (Table 5) show that racialized women were significantly less likely to use birth control of any kind when controlling for income, education, provincial location, age, marital status, or student status. Even in Model 2 (Table 5) in which income category was removed, racialized women were still found to be significantly less likely to use contraception. These findings suggest that the relationship between race and contraception use is not influenced by income. Further, my bivariate analysis shows that significantly larger proportions of racialized women use cheaper and less effective forms of birth control such as condoms and withdrawal or no birth control at all. Moreover, far lower proportions of racialized women used IUDs. Similarly, in Models 3 and 4 (Table 6), of the women who used birth control, racialized women were less likely to use LARCs compared to white women regardless of income status.

These findings corroborate similar results from the U.S., in which Black and Latinx women used cheaper and less effective forms of contraception (Dehlendorf et al., 2011). However, as shown in Figure 1 and Figure 2, racialized women were fairly evenly spread across each income category and even had the largest proportion of post-secondary educated women. This, and the lack of an interaction with income, suggests that other factors might be influencing or mediating the relationship between women of color and their contraception choice. Examining these results within the context of RJ framework, it should be noted that there is a complex system of multiple factors that will influence the choice to use birth control such as cultural factors, mistrust of the healthcare system, or discrimination in health care system (Ross & Solinger, 2017).
Cultural and ideological factors might be more important than income or cost barriers contraception. A recent study from the U.S. discusses findings that seem particularly relevant to

my present results. Treder et al. (2022) examined the experiences of racism and resulting impact on reproductive healthcare for Black women in the U.S. In their investigation, personal and historical experiences of racism within the reproductive health care field triggered self-protecting actions when interacting with the healthcare system (Treder et al., 2022). Specifically, participants held knowledge of historical experimentation and forced sterilization of Black women which in the case of one participant affected her contraception decision making. Further, several participants felt pressured or coerced by doctors to use certain types of birth control (Treder et al., 2022). Other respondents felt their doctors treated them a certain way based on racial stereotypes. Treder and colleagues suggest that these experiences of racism created not only a sense of mistrust of the healthcare system but led participants to protect their own reproductive health because the current system did not meet their needs (Treder et al., 2022). These feelings of mistrust and experiences of racism might explain why racialized women had lower use rates than did white women, despite having the financial means to access birth control.

As part of my analysis, a sub-analysis of individual racial categories was conducted. In this sub-analysis (Model 3), Filipino women were found to be the least likely to use contraception of any kind compared to the reference. This was the case even when controlling for income, education, provincial location, age, marital status, and student status. Although this sub-analysis did not find Black women to be statistically different from Chinese women, in terms of their likelihood of using contraception when bootstrap weights were applied, it is important to note the direction of the confidence interval, as seen in Figure 6. My confidence interval for Black women, (0.22, 1.05) just narrowly misses significance and is on the left side of the reference value, suggesting Black women are less likely to use birth control than the reference. Additionally, the number of

Black women in my sample was small, which would result in a wider confidence interval with a higher margin of error. I think it is still important to recognize Black women as a vulnerable population, given the historical experiences of oppression of this group and the possible margin of error, in this investigation. Again, keeping in mind the context of RJ framework, there is a complex matrix of factors that will influence Black women's use of birth control (Ross & Solinger, 2017). The elements that were not captured my models, which could potentially illuminate the nature of Black women's contraception use could be the lack of representation in health care, historically inequitable health polices, health education, or other systemic inequities.

With respect to Filipino women my findings are not surprising given the religious affiliations of many Canadian Filipino women. In 2001, 81% of Canadian residents who identified as Filipino claimed to also practice Catholicism (Statistics Canada, 2007). Filipino health policy and cultural feelings about family planning remains heavily influenced by the Catholic Church (Narasimhan & Gipson, 2022). Although, the Filipino women in my analytical sample were living in Canada, traditional Filipino cultural norms or religious attitudes might have influenced their contraception decision making.

A recent study by Mahabir et al., in March of 2021, might inform my results by explaining elements of racialized people's interaction with the Canadian health care system. In their study, racialized health care users in Toronto, Ontario were more likely to report racial and ethnic based discrimination as challenges to receiving health care (Mahabir et al., 2021). Specifically, racialized health care users noted lack of clinician empathy, clinician ignoring or not taking symptoms seriously and feeling disrespected and belittled as common occurrences in health care

settings which contributed to challenges in using health care (Mahabir et al., 2021). A 2013 investigation found that Canadian immigrant women were more likely to have negative feelings toward hormonal contraception and were also more likely to report having difficulty accessing contraception prior to their pregnancies (Wiebe, 2013). Further, women who had been in Canada for less than five years were more likely to use more effective forms of birth control, such as LARC methods (Wiebe, 2013). Immigrants in this study were also more likely to report not knowing were to obtain birth control or not knowing about birth control in general (Wiebe, 2013).

Further, there could also be important cultural differences between the Black and white population in my sample. Over half of the Black population in Canada is foreign born, with the most common countries of birth for recent immigrants as Haiti, Nigeria and Jamaica (Statistics Canada, 2018a). The majority of the Black women in my sample were immigrants, however, this factor was not found to be significant in the models, therefore not included. Country of origin was not examined. My results could be a reflection of cultural attitudes toward reproduction, modesty or fertility management.

6.3 Indigenous Women

In all of the regression models that Indigenous women were included in (Models 1,2,4, and 5) there was no significant difference between Indigenous women's use of LARCs or any other form of contraception and white women's contraception use. Similarly, in my bivariate analysis, Indigenous women had very similar proportions of COC use (27.57%) and IUD use (12.44%) compared to white women's COC (24.59%) and IUD (14.17%) use. Further, Indigenous women had the smallest proportion of non-use (20.97%) and condom use (31.91%) out of all three

identity categories. When assessing the descriptive characteristics of the Indigenous women in my sample, most had at least a post-secondary education and were fairly evenly distributed across the top four income categories.

One reason for this finding could be the specific organizations, health clinics and health care policies designed to address Indigenous reproductive needs. Currently, the Non-Insured Health Benefits program, while not inclusive of all Indigenous women, does fully cover the cost of almost all available birth control methods (Indigenous Services Canada, 2019a). There are also a number of Indigenous health clinics that provide both status and non-status Indigenous women with access to contraception. For example, in Ontario there are several clinics such as Anishnawbe Health Toronto, Southwest Ontario Aboriginal Health Access Centre, De dwa da dehs nye s Aboriginal Health Centre and many others (Anishnawbe Health Toronto, n.d.; De dwa da dehs nye>s Aboriginal Health Centre, n.d.; Southwest Ontario Aboriginal Health Access Centre, n.d.).

However, considering RJ framework, it is important to examine what was not included in this evaluation of reproductive equity. Therefore, another possible explanation for the high rates and increased likelihood of Indigenous women's contraception use could also be related to physician bias or coercion. It has been well supported in the literature that often in Canada, physician interactions with Indigenous people are informed by stereotypes and stigma (Wylie & McConkey, 2019). This can result in clinician interactions with Indigenous women where certain types of birth control (sterilization or IUD) are perhaps prescribed without considering the desires of the patient (Boyer & Bartlett, 2017). Further, there have been several recent reports

stating that coerced sterilizations are still occurring in Canada. Even if a doctor obtains consent to conduct a sterilization, often the patient might not understand the procedure is permanent (Boyer & Bartlett, 2017; Standing Senate Committee on Human Rights, 2021). If the procedure is not fully explained then consent is not considered "informed" and therefore can be viewed as coerced, which might contribute to the high proportion of Indigenous women with sterilizations found above (28.96%). Lastly, the population of Indigenous women included in this study were not living on reserves. It is possible that access to contraception for women living on First Nations is different than for Indigenous women living in urban or suburban areas, which could have changed my results.

6.4 Policy Implications

Models 1 and 2, which examined overall contraception use showed that women in provinces other than Quebec were significantly less likely to use contraception of any form compared to women in Quebec. Although this finding was not replicated in models examining LARC use, perhaps due to smaller sample sizes, a bivariate analysis using a chi-square test of significance showed Quebec LARC use rates to be significant at $p > 0.01$. Indeed, these results could be due to Quebec's subsidization of contraception cost. Despite my findings not being replicated in LARC models, there is still an important implication for Canadian health policy. Cost was not shown to be a significant barrier to contraception use in this investigation, however, it is possible that subsidization of contraception cost could improve accessibility to birth control, thus increasing use.

During the 1960's, Quebec was making the transition from Catholicism to secularism in the wake of the Quiet Revolution (Krull, 2000). Prior to the revolution, the Catholic Church had a

great deal of influence over Quebec residents and the Quebec government. The church's influence helped to maintain traditional gender roles and likely contributed to high fertility rates in the province (Krull, 2000). Around the time of the Quiet Revolution, the Quebec government changed its health policy in order to subsidize the cost of contraception. In the following years Quebec's fertility rate dropped steadily. Prior to secularization and contraception subsidization in Quebec, the province's fertility rate was above the national average and starting in the 1960's the fertility rate dropped below the national average (Krull, 2000). It is possible that decreased religious influence and the modernization of gender roles might have influenced the reduction in parity among women in Quebec. Government subsidization of contraception cost could also contribute to a more progressive social climate that might promote sexual health and women's reproductive autonomy, which might improve access.

6.5 Strengths, Limitations and Suggestions

Currently the literature on reproductive health in Canada lacks research that investigates the role of racial identity in reproductive health choices such as contraception use. While studies on Indigenous reproductive health are more easily found, there has yet to be an investigation that incorporates both racialized and Indigenous women, much less in a comparative analysis to non-racialized non-Indigenous women. To my knowledge, this is the first investigation in Canada that specifically reports contraception use rates by racial or Indigenous identity. Further, this investigation seems to be the first to conduct a subgroup analysis of contraception use by specific racial identities, rather than grouping them together.

Despite the strengths of this investigation, this study is not without limitations. These include the fact my study uses pandemic data, and aspects of the CCHS questionnaire itself specifically, the populations of women the questionnaires included.

As mentioned previously, this project uses data from the 2020 cycle of the CCHS which overlapped with the onset of the COVID-19 pandemic in Canada. Therefore, there is a possibility that the results of this study might only be a snapshot of conditions during the pandemic and might differ from other cycle years of the CCHS.

This study also faced several limitations due to the design of the CCHS questionnaire. First, the CCHS does not ask women who identified as homosexual about birth control. This is flawed for several reasons, but partly because contraception can be used for health reasons other than birth control such as to lighten heavy menstrual periods, reduce cramping, decrease acne and also help lower risk of certain reproductive cancers (Motluk, 2016; Planned Parenthood, n.d.-a). Further, research has shown that sexual minority (non-heterosexual) women can make up as much as 1 in 3.5 of the people seeking contraception (Higgins et al., 2019) and often the term ‘homosexual’ does not encompass the diverse nature of many people’s sexual activities. Moreover, due to the fluidity of sexual orientation and lack of alignment with actual sexual activity, it is suggested that future cycles of the CCHS ask sexual health questions based on sexual activity rather than arbitrary labels of orientation.

Finally, the CCHS does not include women that are currently experiencing incarceration. While only about 4% of the total female Canadian population, Indigenous women make up around 40%

of the prison population (Department of Justice, 2020). Although most women have short durations of incarceration, there has been much support from literature showing the difficulty of contraception access while in prison (Paynter, 2021). This could have potentially shifted my confidence intervals below the reference value. Further, since this thesis focuses on contemporary health inequity resulting from historical oppression, it seems important to include women involved in the penal system, due to its historical and modern role in the oppression of people of color.

6.6 Implications for Future Research

To my knowledge, this is the first study to examine contraception use patterns among racialized and Indigenous women living in Canada. This study has provided evidence that racialized women are less likely to use contraception of any kind and seem to rely on cheaper and less effective forms of birth control compared white women in Canada. I did not find evidence that Indigenous women use contraception differently than white women. However, certain sociodemographic factors such as education, income and age do not seem to influence this relationship. Future research should investigate this difference further, possibly with a qualitative evaluation of racialized women's opinions or perspectives of birth control use. Since cost of contraception does not appear to be a major barrier to use for racialized and Indigenous women, a qualitative investigation might serve as a way to flesh out what drives BIPOC women's decision making when it comes to birth control.

Further, clinician level factors should be addressed such as clinician bias, attitudes and knowledge. For example, research in Canada has already found evidence to show that outdated knowledge of certain birth control methods has led to a tendency for clinicians to prescribe oral contraceptives

over other methods (Hulme et al., 2015). Further, over half (52.85%) of my racialized sample reported using no birth control at all. Future research might investigate reasons for such high rates of non-use in the racialized population. Factors such as culture, religion, and health care knowledge were not included in this study and might provide an indication for high rates of non-use.

This study also has implications for Canadian health policy. I found evidence to support that there are higher rates of contraception use, as well as specific LARC use, in Quebec compared to other provinces (Table and 5). As we know, Quebec is the only province to subsidize the cost of contraception and has been found to have the lowest rate of contraception non-use by youth in Canada (Black, Guilbert, Hassan, et al., 2015; Dunn et al., 2019). Further, there is evidence from the U.S. that shows federal contraception coverage has resulted in an increase in LARC use (Snyder et al., 2018). Previous evidence coupled with this study's findings suggest there could be a benefit to subsidizing contraception cost federally or provincially in Canada in order to increase birth control use and improve contraception access.

7.0 Conclusion

The purpose of this study was to examine the presence of any differences in high-cost birth control use between white, Indigenous and racialized women in Canada. I specifically investigated if any differences would be explained by income, education, or provincial location. Additionally, I conducted an examination of LARC contraception use in Quebec compared to the rest of Canada to assess if the provincial subsidization of contraception cost resulted in different use likelihoods.

This study uses Reproductive Justice and intersectionality frameworks to analyze and interpret study results. This study's specific aims were met using a cross-sectional quantitative analysis that included descriptive statistics, bivariate analysis, and multivariate binary logistic regression models. Using the 2020 microdata cycle of the CCHS, I found that racialized women were significantly less likely to use contraception of any kind, and of the women that used contraception, racialized women were the least likely to use LARC methods regardless of income or educational attainment. Further, racialized women had the largest proportion of contraception non-users and the smallest proportions of IUD users compared to white and Indigenous women. In a sub analysis of only racialized women, Filipino women were found to be the least likely to use contraception regardless of income, educational attainment or provincial location. This study did not find any significant difference between Indigenous women and white women, with respect to birth control use patterns. Finally, this thesis found that women in Quebec were the most likely to use LARC methods of birth control and the most likely to use birth control of any kind.

These study findings suggest the presence of reproductive health inequity in Canada based on racialized identity. This racial difference in contraception use was found even when controlling

for income, age, education, marital or student status, and provincial location, which necessitates further investigation. The difference in contraception use based on provincial location seems to provide evidence for a re-evaluation of federal contraception policies. My results show that contraception use and LARC contraception (based on chi-square analysis) use was indeed higher in the province in which contraception cost was subsidized, potentially providing support for universal contraception coverage in Canada.

Although these findings should be interpreted with caution due to small sample sizes, my findings seem to be similar to current statistics from the U.S. Future research should include qualitative examinations of individual contraception use and also consider factors that were not examined in this study such as clinician bias and clinician knowledge, religion, and culture. Additionally, future research might consider merging available data sets in order to increase sample size and improve the generalizability of study findings.

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Appendices

Appendix 1: **Table A.1: Description of Independent Variables**

	Percentage of Total Sample
Income Category	
No Income - $19,999	4.01
$20,000 - $59,999	20.65
$60,000 - $99,999	23.22
$100,000 - $149,999	23.65
$150,000+	28.47
Highest Level of Education of Respondent	
Less than secondary school	4.87
Secondary school graduation, no post-secondary school	17.56
Post-secondary certificate diploma or univ degree	77.57
Age Group	
15-24	12.09
25-34	29.71
35-44	25.54
45-54	20.09
55-64	12.56
Provincial Region	
Atlantic (New Brunswick, Nova Scotia, P.E.I., Newfoundland and Labrador)	6.25
Central (Quebec & Ontario)	62.53
Western (British Columbia, Alberta, Saskatchewan, Manitoba)	31.22
Marital Status	
Partnered	61.59
Divorced, separated, widowed	8.71
Single	29.7
Student Status	
Current student	10.91
Not a student	89.09
Covid-19 Lockdown	
Pre-Lockdown	25.59
Post-Lockdown	74.41

Note: Data source 2020 CCHS. population weights applied. Values expressed as percentages of total study sample.

Appendix 2: Land Recognition and Positionality

This thesis was written in what is now known as Waterloo, Ontario, Canada. Waterloo is situated on the Haldimand Tract, which is the land promised to the Six Nations and the traditional territory of the Neutral, Anishinaabeg and Haudenosaunee peoples. The main campus of the University of Waterloo, where my analysis was completed, is situated on the Haldimand Tract, the land granted to the Six Nations that includes six miles on each side of the Grand River. This land also includes the Between the Lakes Treaty No. 3 (1792). I am thankful to live and study on this land and support the Indigenous people in their fight for recognition and reclamation.

As a heterosexual, able-bodied, neurodivergent, cis-gendered, English-speaking, educated, "white-passing" woman of color, I have benefited from several intersections of privilege in my society. I understand that these privileges have influenced the opportunities and experiences that have led to my position today as a Master's candidate. My own relationship and experiences with both race and racism, combined with my passion for intersectional feminism have contributed to my desire to focus on women's health inequities, particularly for BIPOC women. In my future research I intend to incorporate my own experiences while also recognizing and respecting the variety of disparate experiences of women who come from different racial, cultural, sexual, and socioeconomic backgrounds than myself.

As someone who is interested in health policy and intervention as it pertains to BIPOC women, it is important to recognize the devastating impact that slavery and colonization have had on women of color. I respect that historically public health interventions were created within a white-centric male-dominated field, which narrowly considered the impact on BIPOC women. Additionally, I recognize how the systems of slavery and colonization often ruptured Indigenous family units and criminalized BIPOC people. As an American immigrant to Canada, I acknowledge that public health interventions have been unequally applied to BIPOC communities throughout both American and Canadian history. This inequitable treatment has often stemmed from racist systems and has contributed to the mass incarceration of many BIPOC women. Moving forward, health policy and public health interventions should incorporate and consider BIPOC experiences and stories.

Appendix 3: A Note on Language

In this thesis I made the conscious decision to capitalize Black and use small case white. This choice follows American research organization, Brookings' 2019 decision to change its typographical style in all future publications. Decades before, activist W.E.B. Du Bois, demanded for the capitalization of the word "negro" in major media publications as he felt the use of small letter was an insult to the more than two hundred million people with that identity. Brookings cited their choice with the following rationale: "It is an act in recognition of racial respect for those who have been generations in the 'lower case'".

Throughout sections of this paper the term 'identity category' is used. I chose this term in recognition and respect for Indigeneity. Indigenous identity is not a racial or ethnic category and therefore it would not be appropriate to group Indigenous women under mainstream terms such as 'ethnic category'. Indigenous refers to the original people of a country, and includes distinct histories, cultures and languages. Further Indigeneity, unlike the CCHS survey scheme used in this study, is not mutually exclusive from race and ethnicity.