# A Psychometric Evaluation of the Everyday Racial Discrimination Scale, and Associations with Sexual Pleasure Among Women in British Columbia, Canada

**by**

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# Declaration of Committee

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# Ethics Statement

The author, whose name appears on the title page of this work, has obtained, for the research described in this work, either:

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## Abstract

Racial discrimination is linked to poor health outcomes, but the validity of the Everyday Discrimination Scale (EDS) used to measure racism has not been tested among women in Canada, nor has its association with sexual health been fully explored. This thesis uses cross-sectional survey data from women ≥16 years living with and without HIV in British Columbia. Confirmatory factor analyses (CFA) and multigroup-CFA examined the validity and cross-group invariance of the EDS across racial/ethnic groups and HIV status. Ordinal logistic regression assessed the association between racial discrimination and sexual pleasure, a key component of sexual health. Results show that the EDS provides valid, reliable, and comparable estimates of discrimination across groups, as well as that higher levels of racial discrimination were significantly associated with lower odds of experiencing sexual pleasure, regardless of HIV status. These findings highlight the need to address racism as a key determinant of sexual health and rights.

**Keywords**: racial discrimination; everyday discrimination scale; psychometric analysis; sexual pleasure; women living with HIV; intersectionality

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grateful for your unwavering love, support and constant reminders that ‘I’m almost there.’ Not once did I have to worry about making ends meet as a student. You have given me access to opportunities I could have only ever dreamed of, and I will be forever thankful for that.

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# Table of Contents

# List of Tables

# List of Figures

## List of Acronyms

| | |
|---|---|
| 2S/LGBTQIA+ | Two-Spirit, lesbian, gay, bisexual, transgender, queer, intersex, asexual |
| ACB | African, Caribbean, and/or Black |
| BC | British Columbia |
| BCC3 | British Columbia CARMA-CHIWOS Collaboration |
| CARMA | **C**hildren and **W**omen: **A**nti**R**etroviral therapy and **M**arkers of **A**ging |
| CFA | Confirmatory Factor Analysis |
| CFI | Comparative Fit Index |
| CHIWOS | **C**anadian **H**IV **W**omen's Sexual and Reproductive Health Cohort **S**tudy Collaboration |
| CRA | Community Research Associate |
| EDS | Everyday Discrimination Scale |
| HIV | Human Immunodeficiency Virus |
| mCFA | Multigroup Confirmatory Factor Analysis |
| RMSEA | Root Mean Square Error of Approximation |
| SES | Socioeconomic Status |
| SFU | Simon Fraser University |
| TLI | Tucker Lewis Index |
| WAS | World Association of Sexual Health |

# Preface

This manuscript-based thesis is comprised of four chapters, two of which are in various stages of publication. As such, the methods and some of the introduction, and discussion within different chapters may be repetitive.

A version of **Chapter 2** was accepted on October 1st, 2024 for publication as part of a Special Section on HIV, Health, and Black Canadian Communities in a future issue of the *Canadian Journal of Public Health*. Below are the co-authors of that paper:

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A version of **Chapter 3** is currently under preparation for circulation to the following co-authors for their input:

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## Positionality Statement

My positionality is informed by various intersecting identities and experiences. I identify as a cis-gender heterosexual Black Zimbabwean woman living in Canada, having immigrated to this country and acknowledging that I am a settler on stolen lands. My worldview is shaped by an anti-racist and intersectional feminist epistemology, recognizing the systemic inequities embedded within society. It was upon my arrival in Canada at the age of 19 that I began to truly recognize the significance of my Blackness in the lens of society and how it would significantly influence the ways in which I experience the world. This realization has fuelled both despair and anger, but also left a sense of hope that something can be done about it.

As a settler on Indigenous lands, I acknowledge and honour the Indigenous peoples who have been and continue to be stewards of these lands. I am mindful of the complexities in the ways they have experienced racism and injustice in this country. Moreover, as a woman, I can identify with the stories and struggles of the research participants, but also recognize the importance of intersectionality in understanding the diverse experiences of all women involved in the study.

It is crucial for me to acknowledge my potential biases particularly regarding cis-heteronormative perspectives, especially in relation to sexual health and well-being. Additionally, I am cognizant of the privileges afforded to me by my upbringing in a middle-class, two-parent household, as well as my access to higher education. Throughout my thesis work, I commit to engaging in continual self-reflection, examining my privileges, explicit and implicit biases, and challenging assumptions. By doing so, I aim to ensure a more inclusive and nuanced exploration of the research topic and contribute to a more equitable understanding of racial discrimination and its impact on women's sexual well-being.

# Chapter 1. Background, Rationale, and Objectives

## 1.1. Background

### 1.1.1. Racism in Canadian Society

Racism can be defined as a

> "system in which one group of people exercises power over another on the basis of skin colour; an implicit or explicit set of beliefs, erroneous assumptions, and actions based on an ideology of the inherent superiority of one racial group over another, and evident in organizational or institutional structures and programs as well as in individual thought or behavioral patterns" (1).

Racism can be understood to operate on three main levels: individual, cultural and institutional/systemic (1,2). Briefly, Institutional/systemic racism relates to the policies, laws, and practises of varying institutions and social systems that directly or indirectly promote or maintain differential advantage to some racial groups (particularly white) over others (2). Examples include residential segregation, barriers to home ownership and wealth accumulation, lack of recognition of foreign credentials in the workforce, and discriminatory policing practises. Societal racism refers to the perpetuation of racist attitudes through various means of socialization and cultural transmission such as mass media, schools, religious doctrines and practises, and various art forms in which racialized people may be portrayed as being abnormal or problematic (2). This form of racism also manifests in the everyday language we use without much thought in which "whiteness" is associated with overwhelmingly positive attributes while "Blackness" is associated with the contrary; e.g., blackmail, blacklist, black-market (1). Finally, individual racism encompasses personal beliefs and attitudes held by individuals and the behaviours that may stem from those beliefs and attitudes (3). For example, an individual may hold beliefs about a racialized group as being lazy, dangerous, or unmotivated. Those beliefs may remain at the level of thought, but they may also manifest into actualized behaviours of racial discrimination through distinction, exclusion, restriction or preferential treatment based on race (2). This may take many forms such as refusal to hire or promote someone, verbal or physical harassment, or refusal to sit next to a person on the bus because of their race. Although these various forms of racism can be conceptually analysed in isolation, in reality, they intersect and interact, leading racialized individuals to experience racism in complex and dynamic ways.

In Canada, racism persists, but there is widespread denial of its existence (1). Canada prides itself on being a "liberal democracy", which often leads to a refusal to acknowledge the reality of racism (1). Instances of racism are typically treated as isolated incidents caused by "depraved" individuals or as uncharacteristic events that are inconsistent with Canadian values. Consequently, there is a general reluctance to recognize racism as a systemic issue deeply ingrained in Canada's cultural values and democratic institutions (1). However, an abundance of evidence spanning from early European settlement to the present day demonstrates the existence of racism against non-white peoples. Anti-Indigenous racism is a direct consequence of colonial policies and practices that established social stratification based on race, leading to unequal distribution of resources, power, and freedom, all of which differentially impacted and continue to impact Indigenous people (4). Systemic anti-Indigenous racism is evident in discriminatory government legislation like the Indian Act and the residential school system. It also manifests itself in Indigenous peoples' overrepresentation in provincial criminal justice and child welfare systems, as well as disparities in education, employment opportunities, healthcare access, and the prevalence of poverty (4,5).

Anti-Black racism is another distressing reality, as Black Canadians are disproportionately represented in the criminal justice system, subjected to police brutality, and have disproportionate employment and education rates (6,7). Similarly, Chinese Canadians endured the Chinese head tax until 1923 and have since experienced increased xenophobia and discrimination, particularly following the COVID-19 pandemic (8). These are a few examples that illustrate the pervasive presence of racism in Canadian society, despite attempts to downplay or completely ignore its existence, with significant consequences on the lives of racialized people, including health outcomes.

### 1.1.2. Racism and health inequities

Despite the overall improvement in the general health of Canadians, health inequities persist which systematically place racialized people at higher risk of poor health outcomes (9). Indigenous; African, Caribbean and/or Black (ACB), and other racialized people experience high levels of health inequity in Canada shaped by multiple interacting social factors (7,10). According to a report from Statistics Canada, based on the 2016 Canadian population, compared to white adults, the prevalence of diabetes was 2.3, 1.9, and 1.8 times higher in South Asian, Black and Arab/West Asian adults respectively (11). During the COVID-19 pandemic, the mortality rate ratio between Black people and the non-racialized and non-Indigenous population was more than two times higher (12). Similarly, Indigenous people experience significant disparities in health outcomes, including mental health, with the suicide rate among Indigenous people between 2011 and 2016 being three times the rate of non-Indigenous people (13). These disparities are sobering so it is important that the drivers of these disparities are studied, understood, and ultimately mitigated.

Racial inequities in health have historically been attributed to biological/genetic differences among the races (14). However, such theories have been refuted because they ignore the fact that race is socially constructed to uphold white supremacy by downplaying the impact of racism on the health outcomes of racialized groups (14–16). Genetic or biological factors are not the centrally defining characteristics of race and are unlikely the primary sources of racial differences in health; in fact, there is more genetic variation within racial groups than across them (17). This understanding within the scientific research community resulted in a shift in the way racial health inequities are studied towards focusing on socioeconomic status (SES). Many contemporary health studies treat socioeconomic characteristics as potential confounders of the association between race and health in their analyses. While this implicitly considers the ways in which systemic racism influences the health of racialized groups, it does not address the noneconomic and multilevel pathways through which racism harms health. An investigation into the common standard practises in SES measurement concluded that different socioeconomic measures cannot be assumed equal among groups (18). For example, using data from the United States (US) National Health Interview Survey, Black American and Mexican American groups at every education level had lower income than white groups with the same educational attainment, suggesting that there may be unequal education quality and employment opportunities (18). This implies that comparing SES variables alone may not be sufficient to understand race-related health disparities.

In many studies, once SES is adjusted for, the racial differences in health outcomes are significantly reduced or eliminated; however, in several others, disparities persist, further suggesting that focusing on SES alone is inadequate (10,19–21). Factors beyond SES are influencing the health of racialized people, and a growing body of literature has identified racial discrimination as a significant driver of these health inequities (7,22–26). A study using data from the 2003 Canadian Health survey investigated the health effects of racialization in Canada and found that white identification corresponded with significantly better health scores than any other racial/cultural identity (19). However, binary logistic models adjusting for age, gender, immigration status, educational attainment, household income, and residential locale were unable to explain the statistically significant risks of diabetes among respondents identifying as Aboriginal[a], Aboriginal/White, Black, Filipino, or South Asian, or the risks of hypertension among respondents identifying as Black or Filipino (19). Similarly, the models were unable to explain the risks of fair/poor self-rated health among respondents identifying as Aboriginal, Aboriginal/White, or Chinese. The authors concluded that it is appropriate to hypothesize that some of the unexplained disparities in health outcomes can be attributed to experiences of racism and discrimination at both the systemic and individual, everyday level (19). Reducing racial inequities in health to socioeconomic differences underestimates the pervasive effects of racism.

Here, I specifically focus on experiences of everyday racial discrimination, which are the chronic, routine and relatively minor experiences of unequal treatment of a person or group of persons because of their race and/or ethnicity that can happen repeatedly throughout one’s life (25,27). Everyday racial discrimination can include experiences such as being treated with less courtesy than other people, people acting as if they are afraid of you and being followed around in stores because of your race. This type of racism is important to consider because while more major and blatant forms of racism certainly place the health of racialized people at jeopardy, racialized groups in Canadian society face high levels of subtle everyday forms of racial discrimination which are also detrimental to health (1). Based on data obtained from the 2013 Canadian Community Health Survey, individuals identifying as Black, Asian, Indigenous, Multi/Mixed race, South Asian, West Asian, and Latino reported significantly higher rates

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[a] I use the term “Aboriginal” as this was the terminology used in the referenced paper at the time. However, I do recognize that the more appropriate term to use today is “Indigenous”.

of everyday racial discrimination compared to white individuals (28). Specifically, the data reveals that Black individuals were 15.7 times more likely, Asian individuals were 13 times more likely, Indigenous individuals were 11.35 times more likely, Multi/Mixed race individuals were 10.74 times more likely, and South and West Asians, and Latinos were 7.5 times more likely to report experiencing everyday racial discrimination in comparison to their white counterparts (28). The social and political landscape of Canada is such that it is generally socially unacceptable to display blatant racism, thus, everyday subtle racial discrimination may become more prevalent (1). Individuals become weary of being called racist, so instead of being outwardly racist by openly using racial slurs for example, they may engage in more subtle forms of racism such as increased suspicion, avoidance and other indirect forms of mistreatment of racialized people (29). These forms of discrimination, individually, may appear minor and inconsequential, but their persistent nature is such that they reproduce “social relations of power and oppression” (30) and may cause harm to the physical and mental health and wellbeing of those who experience it (16,25,29,31–33). For example, greater experiences of everyday racial discrimination have been associated with higher risk of depression, anxiety, breast cancer, and cardiovascular disease (25,31,34). Potential mechanisms in this relationship have been put forward. One way is by understanding racial discrimination as a stressor that causes recurrent activation of physiological responses (e.g. elevated blood pressure and cortisol secretion), lowered threshold for coping with new stressors and subsequent increased vulnerability to poor physical and mental health outcomes (25,35). A psychological view is that since racial discrimination is often an unexpected and uncontrollable stressor, it may pose a greater risk of ill health in comparison to stressors than an individual has the ability to control (35)

### 1.1.3. Gendered experiences of racial discrimination: an intersectionality perspective

Intersectionality is a theoretical framework that posits that social positions, such as race, gender, sexual orientation, and socioeconomic status, do not exist and influence lived experiences in isolation from each other (36). Instead, these identities interact to shape individuals’ lived experiences in complex and multifaceted ways (36,37). Racialized women for example, face ‘gendered racism’ which involves forms of discrimination shaped by societal stereotypes and controlling images that marginalize and objectify women based on racist and sexist perceptions of womanhood (38).

Therefore, women's lived experiences are not only shaped by their identity as women, but are also by their race/ethnicity, sexual orientation, and social class among others, all operating simultaneously. These social positions, along with the privileges or oppression they come with do not simply stack on top of one another in a linear or additive way but instead interact in complex and synergistic ways (36,37).

From the perspective of intersectionality, no single social category or form of inequality is more salient than another as they are not additive and therefore cannot be ranked (37). This framework encourages researchers to conceptualize and analyse health disparities in ways that are reflective of the lived experiences of those most disproportionately affected by adverse health outcomes (37). The framework's focus on broader macro-level sociostructural factors aligns with current public health advocacy that calls for consideration of factors beyond the individual level, such as socioeconomic status and systemic racism. Applying an intersectional perspective in this thesis allows for a richer exploration of racialized women's experiences with racism and health, emphasizing the need to consider the ways multiple identities and structural factors shape their experiences.

There is conflicting evidence about the frequency of experiences of racial discrimination among racialized men versus racialized women. While some studies have found that racialized (specifically Black) men are more likely to report experiencing racial discrimination than women (39), others have found it to be the contrary (40) and others have found no gender differences (28). Even if women may be less likely to report experiencing everyday racial discrimination than men, there is evidence that women are more likely to experience negative or more serious health outcomes as a result of the levels of discrimination they do report. For example, everyday racial discrimination was associated with increased arterial stiffness among Black women than Black men with a history of myocardial infarction in the US (41). Similarly, another US-based study found that Black women were more likely than Black men to report experiencing anxiety symptoms overall and in association with everyday racial discrimination (39). This warrants investigation into the impact everyday racial discrimination may have on other priority health areas for women, such as sexual health and wellbeing.

Differences in likelihood of reporting experiences of everyday racial discrimination between women and men may also, in part, be due to "gender biases" in measures used to assess this type of discrimination (42). Scale items may be more relevant to the experiences of racialized men and not racialized women. Social psychology research has demonstrated that women experience qualitatively different stereotypes, and thus different types of racial discrimination than men (43). For example, women are more likely to be viewed as “warm” but “incompetent” and will consequently experience high levels of “passive harm” such as being ignored or undermined (43,44). This type of discrimination is often “attributionally ambiguous” (i.e. difficult to conclusively pinpoint the motivation for the discrimination), in comparison to more “active harm” such as being threatened or harassed, and may actually be more harmful to health (44). A 2000 study found that in a sample of predominantly Hispanic working men and women, those who reported experiencing high levels of exclusion and low levels of verbal ethnic harassment (racial slurs) reported worse wellbeing than those who experienced high verbal ethnic harassment and low exclusion (45). The authors hypothesise that this may be because experiencing social exclusion without explicit verbal harassment can be confusing for the target, as they may not know which aspect of their identity (such as race, gender, or age) the exclusion is attributed to. This ambiguity can have detrimental effects on their well-being, leading to uncertainty and distress (45). Although this paper did not specifically identify gender differences in types of discrimination experienced, it does provide evidence that “minor” experiences of discrimination may be more harmful to health than more major ones. For this reason, it is important to evaluate the unique experiences of everyday racial discrimination among women living in Canada.

In Canada, research has found higher levels of racial discrimination among racial minority women, particularly Indigenous and Black women, than white women(28,30,46). According to the 2019 General Social Survey on Canadians’ Safety, almost 50% of Black women reported experiencing some form of discrimination in the last five years in contrast to 20% of non-Indigenous and non-visible minority women who reported the same (46). This higher prevalence was in large part due to higher levels of discrimination perceived to be motivated by race/skin colour/ethnicity/culture. Similarly, 33% of Indigenous women experienced higher levels of any form of discrimination than non-Indigenous, non-visible minority women, and again this was largely due to discrimination perceived to be based on race/skin colour/ethnicity/culture. This same survey also found that discrimination due to race had increased drastically among Black people in Canada between 2014 and 2019 (from 23% to 41%) and a similar rate of increase was observed among Indigenous people (from 8% to 14%). This may be partly due to increased awareness and discourse about racism among racialized people ignited by social movements such as '*Black Lives Matter'* and '*Idle No More'* (47,48). Nonetheless, this is a concerning trajectory that warrants further investments that take an intersectional lens to understand how experiences of everyday racial discrimination may be contributing to ill health and wellbeing among racialized women in Canada.

### 1.1.4. Everyday racial discrimination measurement

The Everyday Discrimination Scale (EDS) is one of the most widely used tools to measure perceived everyday discrimination in contemporary health research (14,25,49). Developed by Williams et al in 1997, the EDS was initially developed to measure experiences of race-based mistreatment among a sample of African Americans and assess how these experiences influence physical and mental health (14). Since then, the EDS has been adapted globally to assess various forms of discrimination such as gender, weight, and age discrimination, as well as general discrimination regardless of attribution (50–52). Researchers have also used the scale across groups with various intersecting social identities such as women in rural settings (53), sexual minority men (54) and university students (55) among others.

While using the same scale across diverse contexts is appealing because it allows for comparisons of research findings, caution is necessary. The EDS is widely used to measure perceived racial discrimination in various populations, yet much of the research assessing its reliability and validity has been conducted within American samples (43,56–58). Since race and racism are socially, historically, and contextually specific, the applicability of the EDS must be carefully evaluated across different contexts (19). In particular, Canada's colonial history is marked by the displacement and genocide of Indigenous peoples, the implementation of the Indian Act, and the residential school system, creating distinct patterns of racialization (1). Additionally, the arrival of enslaved African people as the first racialized group in Canada, followed by the abolition of slavery and migration from the US via the Underground Railroad are also unique elements of Black history in Canada (1,59). Canada's ethnoracial landscape has also been shaped by the arrival of Chinese and Japanese migrant workers in the 19th century, followed by the liberalization of immigration policies and the adoption of multiculturalism in the late 20th century and early 2000s (1,59). These historical factors set the stage for racial discrimination in Canada and necessitate caution in extrapolating findings of psychometric assessments conducted in other contexts (particularly US) to infer their suitability within Canadian samples. While the validity of EDS has been assessed in various US contexts (55,58,60,61), to my knowledge, there have been no evaluations of the scale's performance within Canada, particularly among racially diverse women.

An additional layer of complexity arises when considering HIV status. The data for this thesis come from a study of women living with and without HIV in British Columbia (BC), which is discussed in more detail later in this chapter. Although advances in HIV treatment have extended the life expectancy of women living with HIV, they still face significant marginalization, including HIV-related stigma. This refers to irrational negative attitudes, beliefs and behaviours towards people living with HIV, and these have been associated with delayed access to HIV-related care, low social support, and poor physical and mental health (62). HIV is an epidemic fuelled by inequities related to race, gender, and class (63). In Canada, racialized, and particularly Indigenous and Black women, are disproportionately impacted by HIV. While Black communities represent approximately 4% of the Canadian population, Black women accounted for about 42% of HIV cases among women in 2019 (64,65). Similarly, although Indigenous people make up approximately 6% of Canada's population. They represent 40% of HIV cases among women (64,65). Thus, women living with HIV in Canada often experience intersecting forms of stigma and discrimination, including HIV-related stigma, and racial discrimination, and numerous studies have used the EDS to measure racial discrimination among them (50,62,66–68). Given the intersection of HIV-related stigma with racial discrimination, the experiences of racialized people living with HIV may differ from those of individuals without HIV, or they may perceive racial discrimination in distinct ways. Investigating the psychometric properties of the EDS by HIV status is therefore crucial for informing future HIV research, and also to contextualise existing literature concerning the experiences of racial discrimination among women living with HIV in Canada.

Beyond assessing the reliability and validity of the EDS across race/ethnicity and HIV status, it is also crucial to examine measurement invariance. When EDS scores are compared across social groups, the fundamental assumption made is that the scale is measuring the same underlying construct, and that it is measuring it to the same degree in each group (i.e., measurement invariance) (58,69). If this assumption is violated, comparisons of prevalence of racial discrimination or associations with health outcomes by race/ethnicity or by HIV status lose meaning because the scale was not measuring the same thing across these groups (43). In two US-based studies, analyses of the EDS found a lack of measurement invariance across racial/ethnic groups (43,58). Specifically, Bastos and Harnois (58) found lack of invariance among African American, Latinx and Asian American respondents. Authors noted that the day-to-day discrimination experienced by these groups in the US differs and is shaped by the distinct roles each group occupies within societal institutions, such as work, family, and education, resulting in subjection to unique stereotypes. These findings, coupled with the absence of similar assessments in a Canadian context, underscore the importance of this line of inquiry.

Before relationships between racial discrimination and health outcomes among racialized women living with and without HIV in BC can be explored, there is a need to first verify that the scale reliably measures the construct of everyday racial discrimination and does so equally across groups. Only then, can we make meaningful inferences about the relationship between everyday racial discrimination and priority health outcomes for women, such as sexual pleasure.

### 1.1.5. Sexual pleasure

Sexual health as defined by the World Health Organization is

> "*a state of physical, emotional, mental, and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction, or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence*" (70).

Although this working definition appears to centre sex-positive principles, research and public health practise on women's sexuality, and particularly racialized women, has a tendency to focus on adverse sexual health outcomes and associated risks (71–73). This includes research fixating on condom use to prevent sexually transmitted infections and HIV transmission, "promiscuous" and "risky" behaviours, and health illiteracy of racialized women (38,73). Fewer research focuses on sex-positive considerations to sex and sexuality. In fact, a content analysis of Black women's sexuality research in the US revealed that over the span of 46 years (1972-2018), only 6.2% of the identified 245 articles in the area aligned with sex-positive discourses (73). There is a need for more research that is aligned with sex-positive discourses, including those around sexual pleasure among samples of racialized women.

Sexual pleasure encompasses experiences of physical and/or psychological satisfaction and enjoyment from solitary or shared erotic experiences, including thoughts, dreams and autoeroticism (74). Although long neglected, sexual pleasure is an important part of sexual wellbeing and a marker for health equity (75). People engage in sexual activity for many reasons including reproduction and work (sex-work for example), but scholars have consistently reported that in many societies, the primary motivation for engaging in sexual activity is the pursuit of pleasure (76). This demonstrates the need to centre pleasure in sexual health research to adequately address the realities of people's sexual priorities. At the 26th World Congress of the World Association for Sexual Health (WAS) in 2021, the WAS issued the Declaration on Sexual Pleasure, affirming their commitment to recognising pleasure as an integral component of holistic sexual health, sexuality and sexual rights for all (77). Others have even gone as far as advocating for sexual pleasure to be included as one of the sustainable development goals together with already existing goals for sexual health (78). This identified priority warrants an investigation into how diverse populations with intersecting identities experience sexual pleasure, identify potential barriers, and subsequently bring forth solutions that will promote sexual health equity.

Unfortunately, marginalized populations face inequities, stigmas and other barriers that may stand in the way of having pleasurable sex. While sexuality is an individual experience, it does exist within political, social and cultural contexts that are disparate and may shape how people experience their sexuality (79,80). Racialized women are subjected to race-based sexual stereotypes resulting in their bodies being over-pathologized, hyper-sexualised and commodified, which may all threaten sexual wellbeing and the possibilities of experiencing sexual pleasure (81,82). This may be even more poignant among racialized non-heterosexual women and/or non-cisgender people who are confronted by cis-heteronormative standards that are irrelevant to their experiences. Adopting an intersectionality framework is therefore crucial when exploring the question of sexual pleasure among diverse groups of racialized women.

In Canada, recent investigations of sexual wellbeing among women living with HIV have highlighted the ways in which experiences of stigma and discrimination may act to affect women's sexual health and wellbeing outcomes including pleasure and satisfaction. A review of global quantitative literature on the sexualities of women living with HIV noted that research tends to over-pathologize women living with HIV and typically focus on managing or treating sexual dysfunctions instead of addressing the stigma and harmful social contexts that they exist in that may disempower them as they try to navigate their sexuality (71). This review highlighted that the barriers that women living with HIV face in relation to their sexualities likely have more to do with the social and political constraints they have to contend with in their lives such as HIV-stigma and non-disclosure laws, rather than the virus itself (71). For example, clinical markers of HIV poorly predicted sexual wellbeing outcomes such as sexual pleasure (71). Instead, HIV stigma in tandem with intersecting forms of stigma and inequities played a significant role in shaping women's experiences and expressions of their sexualities. Given these findings, along with the fact that a considerable proportion of women living with HIV in Canada belong to racialized communities, the insights derived from research with women living with HIV may have broader relevance to other women facing various forms of oppression and discrimination, such as racial discrimination, regardless of their HIV status.

Racial discrimination may be directly associated with sexual pleasure or might impact it through various pathways. For example, a study of women living with HIV across three provinces in Canada revealed that out of the 645 women who reported having a sexual experience in the last one month, 41.3% reported always experiencing pleasure (79). In this same study, women in long-term/happy sexual relationships had increased odds of experiencing sexual pleasure relative to women in short-term sexual relationships and long-term/unhappy sexual relationships (79). Given that experiencing racial discrimination has been shown to be negatively associated with relationship functioning among heterosexual couples (83), there may also be association between racial discrimination and sexual pleasure. Additionally, it has been consistently established that experiencing racial discrimination is associated with poor mental health outcomes such as depressive symptoms, anxiety and internalizing problems, and low self-esteem (14,23,26). Emotions indeed play an important role in the sex lives of women with many studies showing that emotional and mental states can activate stress responses that negatively affect women’s desire to have sex or their ability to fully enjoy it (71,79). So again, racial discrimination may be an important driver of poor mental outcomes that subsequently have a negative association with sexual pleasure. Furthermore, it has been noted that higher body satisfaction is associated with greater sexual satisfaction, including pleasure among women (84). This is because when someone is happy with their body, they can fully experience sex, especially with a partner, without too many inhibitions. But, racial discrimination has been shown to be associated with body shame (85). In this way, racial discrimination may negatively impact sexual pleasure through this pathway.

The wider scientific and public health practise community recognises the importance of sexual pleasure in the sexual lives of women. However, there is little attention to how inequities and stressors that racialized women face in their lives may shape their experiences of sexual pleasure. Specifically, everyday racial discrimination may be associated with sexual pleasure either directly or through different pathways, but this has not been adequately studied. This thesis aims to fill this gap and contribute to this area of research.

### 1.1.6. Main gaps in the literature

In summary, there is currently no existing psychometric assessment of the EDS within a sample of women in Canada. It is uncertain whether the scale appropriately captures the construct of everyday racial discrimination in racially diverse women living with and without HIV, nor if the scale items are invariant across groups. This thesis aims to address these gaps. Furthermore, no studies have investigated the association between everyday racial discrimination and sexual pleasure in women living with and without HIV in Canada. This thesis also hopes to address this gap in the literature.

## 1.2. Study objectives and hypotheses

The main objectives and hypotheses of this thesis are as follows.

*Objective 1*: To assess the validity and reliability of the 9-item EDS and evaluate measurement invariance across race/ethnicity- and HIV status-based groups among women living with and without HIV in BC.

Objective 2: To investigate the association between everyday racial discrimination and sexual pleasure in women in BC, and assess whether HIV status modifies this association.

Hypothesis 1: The EDS will be a reliable scale that produces valid estimates of everyday racial discrimination among racially diverse women living with and without HIV in BC. However, there will be some evidence of non-invariance of the EDS across race/ethnicity- based groups, but invariance across HIV status-based groups.

Hypothesis 2*:* Perceived everyday racial discrimination will be associated with lower odds of sexual pleasure. This association will be attenuated among women living without HIV.

### 1.2.1. Data source

To meet the objectives of this thesis, I will use cross-sectional data from the British Columbia CARMA-CHIWOS Collaboration (BCC3), a community-based study that includes women (cis- and trans- inclusive) living with HIV, as well as HIV-negative controls (86). Established in 2020, the BCC3 study is being conducted in the province of BC, and is a collaboration between two existing studies: The Children and Women AntiRetroviral therapy and Markers of Aging (CARMA) study and the Canadian HIV Women's Sexual and Reproductive Health Cohort Study (CHIWOS). CARMA is a prospective cohort study of women living with HIV and their children, and women living without HIV. The aim of CARMA is to study the effects of HIV and antiretroviral therapy on biochemical markers of aging (86). CHIWOS is a longitudinal, community-based study of women living with HIV in Canada, designed to examine women-centered HIV care and sexual and reproductive health outcomes (87). BCC3 integrates the expertise of both CARMA and CHIWOS through an interdisciplinary "cell-to-society" approach, which aims to understand how biological, clinical, and sociostructural factors influence the healthy aging of women living with and without HIV. This approach is grounded in a theoretical framework that acknowledges the complex and synergistic interactions between biological and sociostructural factors, rather than viewing them in isolation (88).

The BCC3 study integrates community-engaged research principles, including Greater Involvement of People living with HIV (89) and Meaningful Involvement of

Women Living with HIV (90). These are both principles that emphasize the value of meaningful engagement, involvement, and leadership of people (and specifically women) living with HIV, in HIV treatment, prevention, care, and beyond. Together, these principles guide the BCC3 study to ensure that research is done in a ‘good way’ by, with, and for women living with HIV at every stage of the research process (86).

To be eligible for participation in BCC3, individuals have to i) self-identify as a woman (cis- and trans- inclusive), ii) be 16 years of age or older, iii) be able to provide written, informed consent in English, iv) be capable of attending an in-person study visit and v) not be pregnant or breastfeeding at the time of enrolment. Participant recruitment is done through contacting past CHIWOS or CARMA participants, in-person recruitment of patients at Oak Tree Clinic (the provincial referral center for women living with HIV and their families), word of mouth, posters at community centers, and clinics, social media, and through the BCC3 Community Advisory Board.

After providing written, informed consent, eligible participants complete two study visits: a clinical visit, and a community visit. During the clinical visit, various biological specimens (blood, urine, hair, mouth swabs, rectal swabs) are collected, and participants complete an interviewer-administered clinical survey that captures detailed sociodemographic information, self-reported medical and reproductive history, and substance use history. A research assistant conducts the clinical visit. Following the clinical visit, participants complete the community survey, which focuses on social determinants of health, including experiences of racism and other forms of discrimination and stigmatization, sexual health and wellbeing (including pleasure), experiences of violence, social support, among other factors. This community survey is primarily administered by Community Research Associates who are women living with HIV, hired as part of the BCC3 research team and trained in research (91). All surveys were designed and peer-reviewed by women living with and without HIV to ensure cultural sensitivity, appropriateness, and utility of the questions.

Participants receive a $50 honorarium for completing the clinical visit, and $40 for completing the community survey. Survey data are collected and managed using the Research Electronic Data Capture (REDCap) website application hosted by the BC Children’s Hospital (92).

The BCC3 study was approved by the University of British Columbia Children's and Women's Hospital Research Ethics Board (H19-00896).

## 1.3. Thesis Overview

This manuscript-based thesis consists of two stand-alone manuscripts intended for submission to peer-reviewed journals. However, the chapters in this thesis may be more detailed and longer than the final published versions due to journal word count and formatting requirements.

This present chapter, **Chapter One** provides an introduction to the research, including background information on racism in Canada, the Everyday Racial Discrimination Scale, and sexual pleasure. It also reviews relevant literature to set the stage for the rationale and objectives of this thesis. **Chapter Two** is the first empirical research chapter where I conduct a psychometric analysis of the everyday discrimination scale (thesis objective 1). **Chapter Three** is the second manuscript in which I investigate the association between perceived everyday racial discrimination and sexual pleasure among women living with and without HIV (thesis objective 2). Finally, **Chapter Four** summarizes the objectives and key findings from Chapters Two and Three. It also discusses the implications of these findings for future research, policy, and public health practice. This concluding chapter will also include my personal researcher reflections.

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# Chapter 2. Factorial Invariance of the Everyday Discrimination Scale among racially diverse women living with and without HIV in British Columbia, Canada

## 2.1. Abstract

The Everyday Discrimination Scale (EDS) is widely used in Canadian HIV research to measure racial discrimination among women. However, no studies have examined whether it provides valid estimates of discrimination that are objectively comparable across racial/ethnic groups or by HIV status. Confirmatory Factor Analysis (CFA) was conducted to assess the reliability and validity of the EDS among racially diverse women living with and without HIV in British Columbia. Multigroup-CFA (mCFA) was then used to determine whether the EDS measures the same construct to the same extent across race/ethnicity- and HIV status-based groups. Of 504 participants, 40% were women living HIV, and 60% were of various racial/ethnic identities. CFA showed adequate fit across groups, though some item redundancy was identified. mCFA revealed the EDS was invariant across race/ethnicity and HIV status groups. These findings suggest the EDS provides comparable estimates of racial discrimination, supporting its use in research on the prevalence and health impacts of racism among diverse women in Canada.

## 2.2. Introduction

Racism is an ideology and structured system that organizes people groups into 'races,' and uses those categories to establish an unfair distribution in access to power and resources (1). Despite unequivocal evidence on race as a social construct, with no genetic basis (2,3), racism persists, fostering differential treatment (i.e., race-based discrimination) towards racialized people. Recognizing race as a social construct has led to greater awareness of how racism contributes to poor health outcomes. This has sparked a shift in scientific research, prompting researchers to examine how systemic racism affects the socioeconomic status and consequently the health of racialized communities. As a result, much of contemporary health research treats socioeconomic factors as potential confounders in the relationship between race and health, but this approach fails to address the non-economic and multilevel pathways through which racism affects health. While adjusting for socioeconomic status (SES) sometimes reduces racial disparities in health, many studies find that disparities persist, suggesting that SES alone cannot explain these inequities (4–7). Other factors are influencing the health of racialized people, and a growing body of literature has identified everyday racial discrimination as a significant driver of these health inequities (8–13).

Everyday racial discrimination can be described as the seemingly minor, but chronic indignities experienced daily by racialized people (12,14). This includes experiences such as being followed around in stores, experiencing increased suspicion from others, or receiving poorer service in restaurants and stores because of one's race. In Canada, racialized people experience high levels of racial discrimination, with a 2019 survey revealing that 53% of Indigenous and 54% of Black people reported race-based discrimination. South Asian, Chinese, and other racialized groups also reported significant levels of discrimination (35%, 36%, and 32% respectively) (15). A 2019 Ontario study also reported that in the past year, six of every ten African, Caribbean and/or Black (ACB) participants experienced everyday racial discrimination (16).

Individually, encounters of everyday racial discrimination may appear trivial and inconsequential, but the chronic nature of such experiences yields a form of consistent stress that is associated with poor mental and physical health outcomes (16,17) including depressive symptoms (7), cardiovascular disease (18), and hypertension (19). The relationship between everyday racial discrimination and poor health is complex and multifaceted, but potential pathways have been put forward. A biopsychosocial model suggests that racial discrimination is a stressor that triggers exaggerated psychological and physiological stress response patterns (17). Over time, the cumulative impact of these repeated stressors can lead to “wear and tear on the body that can dysregulate multiple biological systems and lead to premature illness and mortality” (13). Individuals experiencing racial discrimination may also engage in behavioral coping strategies that may be harmful to health, such as harmful alcohol/substance use and disengagement from health activities, including sleep and exercise (13). The stress literature has also shown that not only may stressors such as discrimination be involved in the risk of disease onset, but may also exacerbate existing illnesses (13). For example, while acute forms of stress may trigger cardiovascular events, chronic stress (e.g., everyday racial discrimination) may affect cardiovascular risk mainly by acceleration of the atherosclerotic processes leading to rapid progression of disease (20).

With the increased recognition of the role of everyday racial discrimination in the unequal distribution of poor health outcomes globally and in Canada, there is a need for reliable and valid instruments to measure race-based mistreatment. These tools should adequately measure this form of racism, enabling valid explorations of associations with priority health outcomes. The Everyday Discrimination Scale (EDS) is widely used in epidemiological research to measure everyday racial discrimination. Originally developed in 1997 within a sample of African American adults from the Detroit Area Study, the EDS is a 9-item scale that aims to capture chronic experiences of daily race-based mistreatment (21). Respondents are asked how often they experience discriminatory behaviors in their day-to-day lives, such as being treated with less courtesy or being called names. While originally developed and used to capture race-based discrimination in a sample of African Americans, the EDS has since been adapted to measure discrimination based on other statuses or social positions, including gender (22), age (23), and weight (24). When used to measure racial discrimination, the scale has also been administered to groups with various intersecting identities such as Chinese Americans and Vietnamese Americans (25), American Indian/Alaska Native college students (26), and Black women living with HIV in Canada (22).

Though using the same scale across diverse contexts is appealing because it allows for comparisons of research findings, caution must be exercised. The EDS is widely used to measure perceived racial discrimination in various populations, but most research assessing its reliability and validity has been conducted within American samples (25,27–29). However, the social, historical, and contextual specificity of race and racism calls for careful consideration of the applicability of the EDS and evaluations of its performance in different social contexts (5). Canada's colonial history is marked by displacement, genocide, and cultural assimilation of Indigenous people and by discriminatory government legislation, such as the Indian Act and the residential school system, shaping distinct patterns of racialization and social stratification (30). Moreover, the arrival of African people as the first racialized group in Canada through enslavement, followed by the subsequent abolition of slavery and the migration of more free and enslaved Black individuals from the US via the Underground Railroad represents another unique aspect of Canada's history (30,31). The ethnoracial diversity in Canada can also be attributed to the arrival of Chinese railway workers and Japanese agricultural workers in the late 1800s to early 1900s, and to the liberalization of immigration policies and the adoption of multiculturalism as state and public policies in the late 1900s to the 2000s (30,31). These historical considerations set the stage for racial discrimination in Canada and necessitate caution in extrapolating findings of psychometric assessments conducted in other contexts (particularly US) to infer their suitability within Canadian samples.

Additionally, there are gender-based considerations in the way racial discrimination is experienced. Women have been found to experience qualitatively different stereotypes, and thus different types of racial discrimination than men (28). For example, women are more likely to be viewed as "warm" but "incompetent," and will consequently experience high levels of "passive harm" such as being ignored or undermined (28,32).  In fact, past research has revealed "gender biases" in measures used to assess race-based mistreatment. For instance, a study seeking to explore the extent to which gender bias in measurement accounts for disparities in perceived discrimination among African American women and men found that adjusting for gender-related measurement error fully explained the gender disparity in reports of perceived major life discrimination attributed to race. (33). Although this study found that the EDS were mostly gender balanced in African American samples, the evidence was somewhat mixed, with authors cautioning against generalizing their findings to other racial or ethnic groups. Thus, as researchers endeavor to assess experiences of racial discrimination among women in Canada, comprehensive psychometric assessments of the scale should be conducted to determine the suitability of the scale in this context. That is, is the EDS accurately measuring everyday racial discrimination among racialized women living in Canada?

Another important consideration is the validity of the EDS by HIV status. Racialized women, and particularly ACB and Indigenous women in Canada are disproportionally impacted by HIV, and numerous studies have used the EDS to measure racial discrimination among them (22,34–37). The complex interplay between HIV-related stigma and racial discrimination means that racialized people living with and without HIV may be subjected to qualitatively different stereotypes (27). Therefore, investigating the psychometric properties of the EDS by HIV status not only informs future HIV-related research but also enhances our understanding of existing literature concerning the experiences of racialized women with and without HIV in Canada.

In addition to assessing the reliability and validity of the EDS within this population, this analysis aims to examine the measurement invariance of the EDS across racial/ethnic- and HIV status-based groups. When EDS scores are compared across social groups the fundamental assumption is made that the scale is measuring the same underlying construct, and that it is measuring this construct to the same degree in each group (i.e., measurement invariance) (27,38). Violations of these assumptions mean that comparisons of estimates of racial discrimination or comparisons of associations with health outcomes across racial/ethnic groups or by HIV status can become meaningless (28). In two US-based studies, analyses of the EDS found a lack of psychometric invariance across racial/ethnic groups when used to assess racial discrimination (27,28). Specifically, Bastos and Harnois (27) found lack of invariance among African American, Latinx and Asian American respondents, and the source of non-invariance was determined to be the item “People act as if they are better than you.” Authors noted that the day-to-day discrimination experienced by these groups in the US differs and is shaped by the distinct roles each group occupies within societal institutions, such as work, family, and education, resulting in subjection to unique stereotypes. These findings and reflections, as well as the lack of similar assessments within a Canadian context underscore the significance of this line of inquiry.

In summary, using data from women living in British Columbia (BC), Canada, with and without HIV, the main objectives of this analysis were to assess the: 1) Validity and reliability of the 9-item EDS; and 2) Measurement invariance of the 9-item EDS across race/ethnicity- and HIV status-based groups.

## 2.3. Methods

### 2.3.1. Study Setting and Design

I used data from the community-engaged British Columbia CARMA-CHIWOS Collaboration (BCC3) study, which includes women living with HIV, and women living without HIV (39). BCC3 is a multidisciplinary community-engaged study that was established in 2020 and is being conducted in the province of BC. BC is the most ethnically diverse province in Canada with almost 30% of immigrant residents, and is also home to diverse Indigenous peoples who account for about 6% of the entire population (40,41). Approximately 9,637 people were living with HIV in BC at the end of 2020, with women making up approximately 17% of prevalent cases (42).

The BCC3 study is a collaboration between two existing studies: The Children and Women AntiRetroviral therapy and Markers of Aging (CARMA) study and the Canadian HIV Women's Sexual and Reproductive Health Cohort Study (CHIWOS). CARMA is a prospective cohort study of women living with HIV and their children, and women living without HIV. The aim of CARMA is to study the effects of HIV and antiretroviral therapy on biochemical markers of aging (43). CHIWOS is a community-based, longitudinal study of women living with HIV in Canada, aimed at examining women-centered HIV care and sexual and reproductive health outcomes (44). BCC3 brings together the expertise from both CARMA and CHIWOS studies by implementing an interdisciplinary 'cell-to-society' approach to understand the interplay between biological, clinical and sociostructural factors involved in the healthy aging of women living with and without HIV (45). BCC3 also integrates community-engaged principles into its study design, including Greater Involvement of People living with HIV (46) and Meaningful Involvement of Women Living with HIV (47). These are both principles that emphasize the value of meaningful engagement, involvement, and leadership of people (and specifically women) living with HIV in HIV treatment, prevention, care, and beyond. Together, these principles guide the BCC3 study to ensure that research is done in a 'good way' by, with, and for women living with HIV at every stage of the research process. The study was approved by the UBC Children's and Women's Hospital Research Ethics Board (H19-00896).

### 2.3.2. Participants

To achieve the aims of BCC3, women were eligible to participate if they i) self-identified as a woman (cis- and trans- inclusive), ii) were ≥16 years of age, iii) could provide written, informed consent in English, iv) could attend an in-person study visit and v) were not currently pregnant or breastfeeding. Participant recruitment was done through contacting past CHIWOS or CARMA participants, in-person recruitment of patients at Oak Tree Clinic (48) (the provincial referral center for women living with HIV and their families), word of mouth, posters at community centers, and clinics, social media, and through the BCC3 Community Advisory Board. To ensure that women enrolled in BCC3 represented the ethnoracial makeup of women living in BC, recruitment targets were set at the beginning of participant recruitment, and carefully monitored as recruitment progressed.

### 2.3.3. Data Collection

After providing written, informed consent, eligible participants completed two study visits: clinical, and community. During the clinical visit, various biological specimens were collected (blood, urine, hair, mouth swabs, rectal swabs), and participants completed a research assistant-administered clinical survey, which collected information on medical and reproductive history, substance use history, and detailed socio-demographic information. Following the clinical visit, participants completed the community survey, which focused on social determinants of health, including experiences of racism and other forms of discrimination and stigmatization, sexual health and wellbeing, experiences of violence, among others. This community survey was administered by Community Research Associates who are women living with HIV, hired as part of the BCC3 research team and trained in research (49). All survey data were collected and managed using the Research Electronic Data Capture (REDCap) website application hosted by the BC Children's Hospital (50,51).

## 2.3.4. Measures

### *Primary stratification variable: race/ethnicity*

Race/ethnicity was based on self-report. Participants were asked “What do you consider to be your racial/ethnic background?” Participants could select more than one racial/ethnic identity, could select “Other” and self-describe, or could select “Prefer not to answer.” I grouped participants into four main racial/ethnic groups: ACB, Indigenous, other racialized, and white (*See* **Appendix Table A.1**). These categories align with the common groupings used in women’s HIV research in Canada (37,52,53). Participants who identified as being both Indigenous and any other identity were categorized under “Indigenous.” Those who identified as being both ACB and any other identity were categorized as “ACB.” Participants who self-identified as another racialized group, or a combination of white and a racialized identity apart from Indigenous and ACB were categorized as “other racialized”. Similarly, this method of assigning single race categories is in alignment with the categories reported widely in Canadian HIV research and surveillance, as well as guidance from the Government of BC (54).

### *Secondary stratification variable: HIV Status*

Participants self-reported their HIV status on enrolment, and this was confirmed via HIV serology. Participants were grouped into either “living with HIV” or “living without HIV.”

### *Everyday racial discrimination*

Everyday racial discrimination was assessed using the 9-Item EDS, a tool that captures self-reported frequency of discriminatory experiences in a variety of everyday social situations (11,21). In the original version of the scale, respondents are asked “In your day-to-day life, how often do any of the following things happen to you” and then a follow up question is posed to determine what respondents think the main reason for those experiences is (e.g., gender, race, age, religion, weight, and sexual orientation). In the BCC3 survey, respondents were asked directly “In your day-to-day life, how often have any of the following things happened to you because of your race?” Scale items are: (a) “*You are treated with less courtesy*,” (b) “*You are treated with less respect*,” (c) “*You receive poorer service*,” (d) “*People act as if you are not smart*,” (e) “*People act as if they are afraid of you*,” (f) “*People act as if you are dishonest*,” (g) “*People act as if* *they are better you*," (h) "*You are called names or insulted*," and (i) "*You are threatened or harassed*." Responses are coded on a 6-point Likert scale with the following options: "Never," "Less than once a year," "A few times a year," "A few times a month," "A few times a week," and "Almost every day," producing a total raw score ranging from 9-54 with higher values reflecting higher frequencies of experiences of racial discrimination. Participants were also given the option "Prefer not to Answer" for each scale item. Scale items and item means by race/ethnicity are presented in **Appendix Table A.2**. The scale was asked to all participants, not just racialized participants.

### *Socio-demographic characteristics*

Demographic data included age in years; annual household income before taxes in Canadian dollars (≤$20,000; >$20,000); gender identity (cis-gender; gender queer [which included those who self-identified as Two-Spirit, transgender, or non-binary]); sexual orientation (heterosexual; Two-Spirit, lesbian, gay, bisexual, transgender, queer, intersex, asexual [2S/LGBTQIA+]); education (≤highschool; >highschool); employment status (employed; unemployed; student/retired); housing status in the last 6 months (housed; unhoused); marital status (married or common law; unmarried).

## 2.3.5. Analyses

I first described the sociodemographic characteristics of the sample, and differences were compared by race/ethnicity using Wilcoxon rank sum test for continuous variables and Pearson χ2 or Fisher's exact test for categorical variables.

To assess the reliability and validity of the EDS in the sample, Confirmatory Factor Analyses (CFA) was conducted, and measurement invariance was examined with Multigroup Confirmatory Factor Analyses (mCFA). Analyses were conducted in Mplus v.8.8, and were restricted to participants who had non-missing data for race/ethnicity and had completed the EDS (even partially); Mplus, by default, estimates models under missing data theory using all available data (55). Specifically, in this analysis, only one person had missing data on one of the EDS items and Mplus used full information maximum likelihood to estimate model parameters using available data.

CFA refers to a set of modelling strategies used to assess the performance of psychometric scales (56). CFA was used to estimate measurement models of the EDS within race/ethnicity-based groups and HIV status-based groups. Guided by prior assessments of the EDS, I estimated a single factor model of the 9-item EDS (29,57). Model fit was assessed using the following indices: Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), and Tucker Lewis Index (TLI). Chi-squared statistics are greatly influenced by larger sample sizes, so were not considered when assessing model fit. CFI and TLI values >0.95 and RMSEA values <0.06 were taken as indicators of acceptable model fit (56,58). In the view of the ordered categorical nature of the EDS items, I used the Weighted Least Square Mean and Variance (WLSMV) adjusted estimator (55).

All initial models showed poor model fit. So, I examined output modification indices to identify whether correlated residuals between pairs of items would improve model fit, which is essential for the subsequent tests of invariance. When modification indices suggested that correlated residuals would improve model fit, and it was conceptually reasonable — meaning the item pairs could be justified as relating to the same type of mistreatment — I allowed residual correlations and allowed them to be dissimilar across groups. This approach is in alignment with previous research in the field (27,29,57,59).

Ensuring well-fitting models within individual groups is a precursor of mCFA to test measurement invariance across groups (38). So, after achieving baseline models with acceptable fit, I proceeded with mCFA across racial/ethnic- and HIV status-based groups. mCFA is an analytical technique that evaluates whether a scale/tool elicits similar response patterns across groups or samples (i.e., invariance). I assessed three levels of invariance – configural, metric and scalar – each more restrictive than the previous. Configural invariance, is the least stringent and requires that the number of dimensions underlying the set of items, as well as the factor loading patterns are similar across groups (38,56,60). Next, metric invariance was assessed, which in addition to the requirements for configural invariance, assumes that the magnitude of factor loadings is similar across groups (38,56,60). Finally, in addition to all abovementioned criteria, scalar invariance includes similarity of item thresholds (38,56). When more restrictive models show worse fit, it suggests that either factor loadings or item thresholds differ across groups, indicating lack of measurement invariance.

To evaluate measurement invariance, I focused on changes in CFI values (38). This approach was chosen over chi-square difference tests, because the latter are highly sensitive to sample sizes greater than 200 (38,60). Mirroring previous research in the field, a $\Delta$CFI ≥ 0.002 from the least restrictive (configural) to the most restrictive models (metric and scalar) was taken as evidence of lack of invariance (28,38).

## 2.4. Results

### Sample Characteristics

Of 507 women who completed the BCC3 surveys, n=1 was excluded from the analysis because they selected “prefer not to answer” for all EDS variables, and n=2 were excluded because they did not report their racial/ethnic identity, resulting in a final analytic sample of 504 participants.

**Table 2.1** presents the characteristics of the 504 participants, stratified by race/ethnicity. Briefly, 202 (40.1%) were living with HIV and 302 (59.9%) were not. Sixty-two (12.3%) were ACB, 152 (30.2%) Indigenous, 90 (17.9%) other racialized, and 200 (39.7%) were white. The mean age of the sample was 47.2 (standard deviation [SD]: 13.63), with ACB women being the youngest (mean: 40.33, SD: 14.77) and white women, the oldest (mean: 50.48; SD: 13.21) (p<0.001). There were also racial differences in HIV status with almost 70% of ACB women in the sample being HIV-positive (vs. 44.1% for Indigenous, 36% for white and 22.2% for other racialized women, p<0.001). Stark socioeconomic differences also emerged by racial identity. Particularly, Indigenous women were significantly more likely to have a highschool education or less, be unemployed, and have a household income less than $20,000/year (p<0.001).

**Table 2.1. Sociodemographic characteristics of self-identifying women in the BCC3 sample (n=504)**

| | | **Racial identity** | | | | **p-value** |
|---|---|---|---|---|---|---|
| | **Overall N=504** | **African, Caribbean, and/or Black N=62** | **Indigenous N=152** | **Other Racialized N=90** | **White N=200** | |
| | **n (%)** | **n (%)** | **n (%)** | **n (%)** | **n (%)** | |
| **Age, years**, mean (SD) | 47.2 (13.6) | 40.3 (14.8) | 48.2 (11.9) | 42.7 (13.7) | 50.5 (13.2) | **<0.001** |
| **HIV Status** | | | | | | **<0.001** |
| Living with HIV | 202 (40.1) | 43 (69.4) | 67 (44.1) | 20 (22.2) | 72 (36.0) | |
| Living without HIV | 302 (59.9) | 19 (30.6) | 85 (55.9) | 70 (77.8) | 128 (64.0) | |
| **Gender** | | | | | | 0.13 |
| Cis-Gender | 487 (96.6) | 62 (100) | 143 (94.1) | 88 (97.8) | 194 (97.0) | |
| Gender Queer | 17 (3.4) | - | 9 (5.9) | 2 (2.2) | 6 (3.0) | |
| **Sexual Orientation** | | | | | | **0.001** |
| Heterosexual | 407 (80.8) | 56 (90.3) | 108 (71.1) | 80 (88.9) | 163 (81.5) | |
| 2S/LGBTQIA+ | 97 (19.2) | 6 (9.7) | 44 (28.9) | 10 (11.1) | 37 (18.5) | |
| **Education** | | | | | | **<0.001** |
| ≤Highschool | 181 (35.9) | 20 (32.3) | 99 (65.1) | 17 (18.9) | 45 (22.5) | |
| >Highschool | 323 (64.1) | 42 (67.7) | 53 (34.9) | 73 (81.1) | 155 (77.5) | |
| **Employmen**t | | | | | | **<0.001** |
| Employed | 238 (47.2) | 38 (61.3) | 41 (27.0) | 59 (65.6) | 100 (50.0) | |
| Unemployed | 235 (46.6) | 20 (32.3) | 108 (71.0) | 21 (23.3) | 86 (43.0) | |
| Student/Retired | 29 (5.8) | 3 (4.8) | 3 (2.0) | 10 (11.1) | 13 (6.5) | |
| Unknown | 2 (0.4) | 1 (1.6) | - | - | 1 (0.5) | |
| **Household income** | | | | | | **<0.001** |
| ≤CAD$20,000/year | 175 (34.7) | 19 (30.6) | 88 (57.9) | 17 (18.9) | 51 (25.5) | |
| >CAD$20,000/year | 291 (57.7) | 38 (61.3) | 49 (32.2) | 68 (75.6) | 136 (68.0) | |
| Unknown | 38 (7.5) | 5 (8.1) | 15 (9.9) | 5 (5.6) | 13 (6.5) | |
| **Housing Status (past 6 month**) | | | | | | |
| Housed | 450 (89.3) | 61 (98.4) | 120 (78.9) | 89 (98.9) | 180 (90.0) | **<0.001** |
| Unhoused | 51 (10.1) | 1 (1.6) | 30 (19.7) | 1 (1.1) | 19 (9.5) | |
| Unknown | 3 (0.6) | - | 2 (1.3) | - | 1 (0.5) | |
| **Relationship Status** | | | | | | |
| Married or common law | 144 (28.6) | 11 (17.7) | 26 (17.1) | 35 (38.9) | 72 (36.0) | **<0.001** |
| Unmarried | 360 (71.4) | 51 (82.3) | 126 (82.9) | 55 (61.1) | 128 (64.0) | |

ACB = African, Caribbean, and/or Black; 2S/LGBTQIA+ = Two-Spirit, Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual +; SD=Standard deviation; CAD = Canadian dollar; Statistically significant differences are highlighted in bold

## Confirmatory Factor Analyses

**Table 2.2** presents the results of the CFA and highlights internal consistency estimates and model fit statistics for the EDS by race/ethnicity and HIV status. Firstly, all Cronbach's alphas were >0.90 which indicates high reliability; however, these high alpha values may also be indicative of potential redundancy across scale items (61). In the CFAs, all factor loadings were >0.5 which generally indicates that the EDS items are strongly related to the underlying construct of everyday racial discrimination (62,63). High residual correlations between pairs of items were observed, indicating potential item redundancy, especially within race/ethnicity-based groups. The item pairs that had the highest residual correlations across groups were *(a)* and *(b)*, and *(h)* and *(i)* suggesting that these EDS items are affected by local dependence (59).

**Table 2.2. Final Confirmatory Factor Analysis models and internal consistency estimates of the Everyday Discrimination Scale by race/ethnicity and by HIV status**

| **Scale Items, residual correlations, or indices of fit** | **Standardized factor loadings, internal consistency, residual correlations, and estimates of model fit** | | | | | |
|---|---|---|---|---|---|---|
| | Race/Ethnicity | | | | HIV status | |
| | ACB (n=62) | Indigenous (n=152) | Other racialized (n=90) | White (n=200) | Positive (n=202) | Negative (n=302) |
| **Scale Item** | | | | | | |
| a) You are treated with less courtesy | 0.915 | 0.828 | 0.873 | 0.958 | 0.909 | 0.910 |
| b) You are treated with less respect | 0.986 | 0.877 | 0.929 | 0.950 | 0.943 | 0.934 |
| c) You receive poorer service | 0.819 | 0.873 | 0.944 | 0.947 | 0.940 | 0.913 |
| d) People act as if you are not as smart | 0.845 | 0.921 | 0.904 | 0.946 | 0.932 | 0.940 |
| e) People act as if they are afraid of you | 0.830 | 0.831 | 0.850 | 0.892 | 0.858 | 0.893 |
| f) People act as if you are dishonest | 0.733 | 0.923 | 0.887 | 0.868 | 0.909 | 0.910 |
| g) People act as if they are better | 0.866 | 0.872 | 0.839 | 0.949 | 0.879 | 0.945 |
| h) You are called names or insulted | 0.576 | 0.895 | 0.847 | 0.853 | 0.824 | 0.880 |
| i) You are threatened or harassed | 0.613 | 0.894 | 0.820 | 0.851 | 0.806 | 0.886 |
| **Internal Consistency (Cronbach's Alpha)** | 0.934 | 0.959 | 0.953 | 0.958 | 0.960 | 0.967 |
| **Residual Correlations** | | | | | | |
| a-b | - | 0.774 | 0.641 | 0.760 | 0.588 | 0.753 |
| a-c | - | 0.431 | - | - | - | 0.429 |
| b-c | - | 0.426 | - | - | - | 0.436 |
| h-i | 0.807 | - | 0.670 | 0.431 | 0.617 | 0.504 |

| **MODEL FIT INFORMATION** | | | | | | |
|---|---|---|---|---|---|---|
| RMSEA (CI) | 0.155 (0.108-0.203) | 0.101 (0.070-0.133) | 0.132 (0.093-0.172) | 0.098 (0.073-0.125) | 0.103 (0.078-0.130) | 0.079 (0.057-0.101) |
| CFI | 0.985 | 0.996 | 0.993 | 0.998 | 0.996 | 0.998 |
| TLI | 0.980 | 0.994 | 0.99 | 0.997 | 0.994 | 0.998 |

ACB = African, Caribbean and/or Black; RMSEA = Root Mean Square Error of Approximation; CI = Confidence Interval; CFI = Comparative Fit Index; TLI =Tucker Lewis Index

Within race/ethnicity-based-groups, CFI and TLI fell above the accepted threshold of >0.95, suggesting acceptable fit to the data. All RMSEA values were however >0.06, indicating poor fitting models. However, fit indices are not to be interpreted in isolation, and considerations of the particular analytic solution should be taken into account (56). Psychometricians have noted that when sample size is relatively small, as is the case for the ACB and other racialized subgroups, an RMSEA ≥0.06 may be of less concern when all other goodness-of-fit indices strongly suggest good model fit (56). Similarly, within HIV status-based groups, CFI and TLI value >0.95 indicated good fitting models, but RMSEA values >0.06 suggested poor model fit. This may again be related to sample size, or could be an indication of some model misfit. Nevertheless, given the very strong CFI and TLI values, acceptable model fit can be concluded.

## Multigroup Confirmatory Factor Analyses

In the mCFA (**Table 2.3**) to assess invariance across race/ethnicity-based groups, white respondents were excluded because low endorsement of most scale items within this group resulted in model non-convergence. Therefore, the sample size for this analysis was n=304. The ∆CFI≤0.002 from least to more restrictive models indicated invariance of the EDS across race/ethnicity-based groups. When assessing invariance across HIV status groups, stability of CFI values from least restrictive to more restrictive models was also indicative of invariance across them.

**Table 2.3. Measurement invariance for estimates of racial discrimination**

| Level of measurement invariance | Model parameters/Fit Index | p for comparison of models |
|---|---|---|

|  | $\chi^2$ | df | p | RMSEA | CFI | TLI | Metric against Configural | Scalar against Metric |
|---|---|---|---|---|---|---|---|---|
| **Race/Ethnicity*** |  |  |  |  |  |  |  |  |
| Configural | 179.02 | 74 | <0.001 | 0.118 | 0.994 | 0.991 | - | - |
| Metric | 189.94 | 90 | <0.001 | 0.105 | 0.994 | 0.993 | 0.691 | - |
| Scalar | 292.21 | 160 | <0.001 | 0.090 | 0.993 | 0.995 | - | 0.000 |
| **HIV status** |  |  |  |  |  |  |  |  |
| Configural | 145.34 | 48 | 0.000 | 0.090 | 0.998 | 0.997 | - | - |
| Metric | 148.53 | 56 | 0.000 | 0.081 | 0.998 | 0.997 | 0.877 | - |
| Scalar | 151.93 | 91 | 0.000 | 0.052 | 0.999 | 0.999 | - | 0.344 |

*Analysis excluded white respondents because low endorsement of the scale among this group (<45% reported experiences of everyday racial discrimination) resulted in non-convergence in the model. Thus n=304 for this model
Note: df = Degrees of freedom; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TLI = Tucker Lewis Index; $\chi 2$ =Chi-squared

## 2.5. Discussion

The EDS has been used widely to assess and compare experiences of everyday racial discrimination among racialized populations in Canada, including women living with and without HIV (7,16,64,65). Yet the pivotal step of assessing the scale's validity and cross-group invariance was lacking. This thesis chapter aimed to fill this research gap by conducting CFA and mCFA to assess the validity and cross-group invariance of the EDS in a sample of women in Canada. Findings led to three main conclusions: (1) The EDS is a valid and reliable measurement tool of perceived everyday racial discrimination among racially diverse women living with and without HIV in BC; (2) some pairs of EDS items may be redundant; (3) the EDS is invariant across race/ethnicity-based and HIV status-based groups.

CFA estimated reasonably good fitting models within race/ethnicity- and HIV status-based groups. This finding is consistent with literature from the USA that found that the EDS adequately measures everyday racial discrimination within race-based groups (28,29). This is an important finding, as it indicates that prior research done in Canada using this scale, including with samples of racialized women living with HIV can be considered useful and satisfactory in measuring the construct of everyday racial discrimination even though the scale was originally developed and used extensively in American contexts.

While I estimated good fitting models, extremely high reliability coefficients and residual correlations suggest the need to address issues of item redundancy, particularly for item pairs *(a) You are treated with less courtesy* and *(b) You are treated with less respect*; and *(h) You are called names of insulted* and *(i) You are threatened or harassed*. Scale items should measure different dimensions of the same underlying construct, but these findings suggest that these item pairs are being interpreted by respondents as being very similar, or as alluding to the same type of mistreatment. Thus, scale scores may be imbalanced across groups because more weight is being given to a specific type of unfair treatment in some groups more than others. This local dependency in the EDS has been flagged by other researchers (28,57). In a study conducting cognitive tests in adults with various racial backgrounds in the USA, participants indicated that items *(a)* and *(b)* were redundant, and “respect” was a more encompassing term for both experiences (57). The authors therefore suggested exclusion of item *(a)* from the EDS. There is a need for future research utilizing similar qualitative methods to understand the nuanced experiences of everyday racial discrimination among racialized women in Canada to inform modified and refined versions of the scale. Based on these findings, I also suggest that researchers using the 9-item EDS in similar samples combine the redundant item pairs and take their average, resulting in a 7-item version of the scale. By so doing, extra weight is not given to these forms of mistreatment while acknowledging the reported experiences of these forms of mistreatment by respondents.

I also endeavored to assess the invariance of the EDS across race/ethnicity-based and HIV status-based groups. These analyses yielded positive results, showing measurement invariance of the scale. These findings are somewhat dissimilar to a previous study conducted in Texas that found substantial non-invariance across race/ethnicity-based groups (28). Such conflicting findings are however not concerning given that the racial categories, and the historical and social landscape of the USA is vastly different from that of Canada. Findings of this analysis suggest that the EDS measures the same underlying construct of everyday racial discrimination and does so in the same way across various racial/ethnic groups of women, and also between women living with and without HIV in BC. This suggests that while the lived the experiences of these groups are likely different, the way they perceive experiences of day-to-day race-based mistreatment is similar. These findings are important for research that investigates and compares the prevalence of racial discrimination and its associations with health outcomes across these groups. Without evidence that the EDS is invariant across race/ethnicity- and HIV status-based groups, estimates of perceived discrimination may be attenuated or exaggerated in some groups more than others making comparisons of subsequent associations with health outcomes misleading (28). Therefore, these findings enable researchers to make unbiased claims about the associations between racial discrimination and health in these populations.

While this analysis provides novel insights into the validity of the EDS in a Canadian context, it has some limitations. Firstly, the data on racial discrimination were based on self-reports in an interviewer-administered survey. This approach introduces the possibility of under- or over-reporting due to factors such as participants' prior experiences with discrimination, socioeconomic status, or the race/ethnicity of the interviewer (66,67). However, these potential biases may have been attenuated by reminding participants at the beginning of the survey that their responses were confidential. Additionally, surveys were administered by one of four Community Research Associates with diverse racial/ethnic backgrounds and lived experiences, and extensive training in culturally sensitive survey administration, which may have further minimized self-reporting biases (49).

Secondly, the investigation into the measurement invariance of the EDS by race/ethnicity excluded white participants because of model non-convergence. This means that I could not provide evidence that the EDS produces estimates of racial discrimination that are meaningfully comparable to the other racialized groups presented. This issue of non-converging models for white subgroups has been noted by other researchers (27). I therefore recommend that future research with larger and more diverse samples of white respondents who may have more variability be conducted to further assess the scale among them.

Further, sub-group sample sizes, especially by race/ethnicity were relatively small and unequal (62 for ACB, 152 for Indigenous, and 90 for Other Racialized). This means that aspects of the models such as fit statistics and modification indices may have been differentially impacted by the unbalanced group sizes (56). Future research should evaluate the psychometric properties of the EDS in larger samples. This study also relies on data from women disproportionately facing socioeconomic disadvantages and marginalization, which may not be representative of all racialized women in Canada. There is also considerable racial diversity across provinces, so in addition to larger sample sizes, future studies should also use nationally representative samples of racialized women.

Finally, the way racial/ethnic identity was measured and categorized is a limitation. To allow meaningful cross-group comparisons with reasonable sample sizes, I had to collapse respondents into four distinct categories. This means that, for example, participants who selected “African, Caribbean, and Black” were categorized as ACB regardless of any other racial identity they selected. While this method was necessary for power considerations and in alignment with prior research in the field, the approach is flawed because it groups together people who may have different day-to-day experiences of racial discrimination. This obstacle when defining Black populations in health research has been noted by other researchers and warrants investments into having more accurate and precise data collection and standardized methods of collecting race/ethnicity data for health research (68).

Nonetheless, the research presented has notable implications and strengths. This study addresses critical gaps in the literature and stands as the first psychometric evaluation of the EDS in Canada, particularly within a sample of women. Our findings suggest that racially/ethnically diverse women in BC perceive and report everyday discrimination in similar ways, which supports the meaningful comparison of perceived discrimination across them with relatively minimal risk of bias. The scale has been widely used to measure this form of racism in various racial/ethnic populations in Canada and also to compare these experiences across groups (7,16,22,37,64), but evidence that the scale measures what it purports to measure, and does so similarly across these groups was previously lacking. To this end, the findings presented contribute valuable insights that can contextualize and substantiate existing knowledge on the experiences of everyday racial discrimination among ACB, Indigenous and other racialized women living with and without HIV in Canada.

The community engaged principles employed in the BCC3 study are also a key strength. By using a ‘research by, with, and for’ rather than a ‘research on’ approach, the study meaningfully and actively engages women with HIV from study conception to knowledge translation (39). Such community engaged research approaches have been shown to produce research outputs that are rigorous, accessible, and reflective of the priorities of the communities the research is meant to serve (49).

## 2.6. Conclusions

Findings of this chapter suggest that the EDS adequately measures the underlying construct of everyday racial discrimination among ACB and other racialized women in Canada. The results also indicate that the EDS assesses everyday racial discrimination in the same way and to the same extent across race/ethnicity- and HIV status-based groups. This allows for meaningful cross-group comparisons when assessing perceived racial discrimination and its relationship to health. However, future research should investigate potential redundancy between items of the EDS and extend this work to larger and nationally representative samples. The study lays a crucial groundwork for future inquiry in this area.

Ultimately, researchers can confidently use the scale to assess and compare prevalence of everyday racial discrimination among racially diverse women living with and without HIV in BC and compare associations with priority health outcomes such as sexual pleasure.

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# Chapter 3. Everyday Racial Discrimination and Sexual Pleasure: Examining the experiences of women living with and without HIV in Canada

## 3.1. Abstract

Sexual pleasure is a key component of sexual health, and research suggests that women living with HIV (WLWH) experience low pleasure. Everyday Racial Discrimination (daily indignities faced by racial/ethnic minorities) can negatively impact various health outcomes. Racialized women are disproportionally affected by HIV in Canada, warranting investigations into whether racism, rather than HIV, influences sexual pleasure. Survey data from racially diverse women living with and without HIV were analyzed using ordinal logistic regression. Sexual pleasure was measured on a 5-point Likert scale, and racial discrimination using the Everyday Discrimination Scale. Among 355 recently sexually active women, 58% were racialized and 37.5% were WLWH. Overall, 67.6% "always/usually", 13.2% "sometimes", and 19.2% "seldom/never" experienced sexual pleasure. Higher discrimination was associated with lower odds of experiencing frequent sexual pleasure (aOR= 0.95; 95%CI=0.93-0.98). HIV status did not modify this association. Findings suggest that racism, rather than HIV status, drives sexual pleasure inequities among women in Canada

## 3.2. Introduction

The World Health Organization defines sexual health as not merely the absence of sexually transmitted infections or sexual dysfunction, but as a health state that also requires positive and respectful approaches to sexuality and sexual experiences, including the possibility of deriving pleasure from these experiences (1). Although long neglected, sexual pleasure is a significant motivator for people's sexual behaviors (2,3), and can be considered an important marker of not only sexual health, but also an element of overall health and wellbeing (2). Sexual pleasure can be defined as the "*physical and/or psychological satisfaction and enjoyment derived from solitary or shared erotic experiences, including thoughts, dreams and autoeroticism*" (4).

The World Association for Sexual Health (WAS) and Global Advisory Board for Sexual Health and Wellbeing have been instrumental in leading efforts to advocate for the recognition of sexual pleasure as a priority in global efforts towards health equity and human development such as in the Sustainable Development Goals and Millenium Development Goals (3,5,6). In 2019, the WAS unveiled the Declaration of Sexual Pleasure which among six declarations, asserted that "*the possibility of having pleasurable and safe sexual experiences free of discrimination, coercion, and violence is a fundamental part of sexual health and well-being for all,*" and "*sexual pleasure is a fundamental part of sexual rights as a matter of human rights*" (3). Similar endorsements and sentiments have been shared by sexual health and rights activists and scholars (2,6–8). In Canada, there has also been a growing recognition of the value of considering and incorporating pleasure into sexual and reproductive health discussions. Statistics Canada, through their sexual and reproductive health initiative, held consultations with stakeholders – including advocacy and civil society organizations, clinicians, and academic researchers to meet the federally recognized demand for comprehensive data on sexual and reproductive health, with a specific focus on women's health (9). Participants of these consultations expressed a need for data on sexual satisfaction and pleasure (9). Evidently, there is growing recognition of sexual pleasure as an essential component of overall health and wellbeing, and a necessary tenet of sexual rights.

Although there has clearly been a widespread recognition of the value of using comprehensive and sex-positive frameworks that consider sexual pleasure, this has not always been reflected in public health research and practice (10–12), and also not equally for everyone. Specifically, binary cis-gendered scripts of sexuality have meant that women pay less attention to their own sexual desires and prioritize the pleasure of their partners instead (13–15). The pleasure of women has also been demonized, with women who engage in sexual activity purely for the pursuit of pleasure being labelled as promiscuous and sexually deviant (13), while men do not generally lose status for doing the same (16,17). These scripts may consequently influence women's sexual desires and expectations for receiving pleasure, particularly when engaging in partnered heterosexual sex (13,15,17,18). Public health literature and practice related to women's sexual health has also largely focused on deficit and risk-based perspectives, emphasizing the prevention of HIV and other sexually transmissible infections, unintended pregnancies, and condom use (19–23).

In the cases where women's pleasure is discussed, much research has placed emphasis on the physiological (e.g. orgasm and its mechanisms) (24,25) and cognitive factors (e.g. feeling "turned on" or "losing oneself") (26). Indeed, these elements are important, but they are not the sole factors, nor are they necessarily essential for all women's pleasure (27,28). Sociocultural factors are also crucial and are intrinsically linked to the physiological and cognitive aspects of pleasure (19,26,28,29). For instance, the gendered sexual scripts referred to above delegating low sexual desire, and prioritization of male sexual pleasure on women, may affect their ability to become aroused or achieve orgasm (13,15,18). It is therefore essential to consider the social, economic, and political landscapes women must contend with in their pursuits of sexual pleasure, as sexuality is shaped and expressed within these environments (13,15,19,30,31). In the definition of sexual pleasure proposed by the Global Advisory Board, "*sexual pleasure should be exercised within the context of sexual rights, particularly the rights to equality and non-discrimination…*" (6). Unfortunately, the environments in which women, and specifically racialized women exist in, often marked by negative scripting and discrimination based on various identities including race and gender, may threaten their possibilities of experiencing optimal pleasure from sexual experiences.

Recent investigations of sexual health and wellbeing of women living with HIV have highlighted the ways in which experiences of stigma and discrimination may affect sexual health outcomes, including pleasure and satisfaction (19,32). A review of quantitative literature on the sexualities of women living with HIV noted that research tends to over-pathologize them and typically focus on managing or treating sexual dysfunctions instead of addressing the stigma and harmful social contexts that women living with HIV exist in that may be disempowering as they try to navigate their sexuality (19). This review highlighted that the barriers that women living with HIV face in relation to their sexualities may have more to do with the social and political constraints they must contend with, such as HIV-stigma and non-disclosure laws, rather than the virus itself (19). For example, clinical markers of HIV poorly predicted sexual wellbeing outcomes such as sexual pleasure (19). Instead, HIV stigma in tandem with other inequities such as poverty, violence, and other social conditions played a significant role in shaping women's sexuality experiences. Given these findings, along with the fact that a considerable proportion of women living with HIV in Canada belong to racialized communities, investigations into how other systems of oppression such as racism may be shaping sexual pleasure among women are warranted.

Intersectionality, as a theoretical framework, posits that social positions, such as race, gender, sexual orientation, and socioeconomic status, do not function as distinct structures but interact to shape human experiences (33–35). As such, racialized women experience 'gendered racism' – a term coined in the early 1990s to describe the simultaneous experience of both racism and sexism which are deeply intertwined, and merge into a 'hybrid phenomenon' (35). Racialized women thus face "*gendered and classed forms of racism that are rooted in societal stereotypes and controlling images that exist to marginalize and objectify them based on racist and sexist perceptions of womanhood*" (36). For example, in Canada, Black and Indigenous women, in particular, are subjected to unique systems of oppression driven by gendered racism, which often results in harmful stereotypes related to their sexuality (37). As a direct result of colonialism and colonial tactics to regulate Indigenous women and their bodies, Indigenous women were (and continue to be) portrayed as 'sexual savages' with no sexual discipline and overt and offensive sexual desires (38). Similar scripts of 'lasciviousness' of Black women (39) that result in their over-sexualization and objectification (36) are also the products of an intersection of racist and sexist attitudes.

This gendered racism is also reflected in the scarcity of literature discussing sex-positive approaches to the sexual health and wellbeing of racialized women. Instead, much research has focused on so-called 'deviant' sexual behaviors that result in 'risky' sexual health outcomes (15,21,36). In fact, a content analysis of Black women's sexuality research in the US revealed that between 1972 and 2018, only 6.2% of the 245 identified published papers aligned with sex-positive discourses, such as pleasure (21). Furthermore, when considering the experiences of transwomen, particularly racialized transwomen, the scarcity of sex-positive literature is even more pronounced due to additional intersecting forms of oppression, including transphobia (40,41). A systematic review investigating racialized transgender people's sexual objectification experiences found that they experienced racialized sexual objectification and fetishization (41). These harmful stereotypes discussed above may negatively impact racialized women's sexual wellbeing (39), including experiences of sexual pleasure. It is therefore important to examine how other specific forms of racism, such as everyday racial discrimination, might influence sexual pleasure.

Everyday racial discrimination refers to the seemingly minor, but chronic forms of mistreatment experienced by racialized people because of their race (35). This may include experiences such as receiving poorer service in restaurants and stores compared to others, being treated with less respect, or being treated with increased suspicion by others. Growing evidence shows that this form of racism is a driver of racial health inequities with studies revealing associations with both poor physical and mental health outcomes, including cardiovascular health outcomes, depression, and anxiety (42–48). While no previous literature has determined the association between everyday racial discrimination and sexual pleasure, some research shows broader negative associations between racism and sexual and reproductive health. In an analysis of data from women who identified as Black, Latino, or white following an intersectional framework, Black and Latina women reported higher levels of 'stereotype-related gendered racism,' and this was negatively associated with sexual and reproductive health outcomes including sexual relationship power (49). Authors concluded that racism, and specifically gendered racism, is an important factor contributing to the racial/ethnic disparities in women's sexual health outcomes. This finding is crucial because interpretations of racial health inequities often imply an inherent deficit among racialized individuals that increase their susceptibility to poor health outcomes. However, race is socially constructed, and genetic or biological factors are not defining characteristics of race nor the sources of racial differences in health (50,51). Instead, it is racism, both directly and indirectly that impacts health (42,46,47).

Given the scant literature investigating the association between everyday racial discrimination and sexual pleasure in women living with and without HIV in Canada, the objectives of this chapter are to: i) Assess the association between everyday racial discrimination and sexual pleasure in women living in British Columbia (BC), controlling for potential confounders, ii) Assess whether HIV status modifies this association.

## 3.3. Methods

### 3.3.1. Study setting

I used data from the community-engaged British Columbia CARMA-CHIWOS Collaboration (BCC3) study, which includes women living with HIV, and HIV-negative controls. Established in 2020, the BCC3 study is being conducted in BC, the most ethnically diverse province in Canada (52,53). In 2020, approximately 17% of all people living with HIV in BC were female (54). Among females, the HIV epidemic in BC is markedly racialized, with Indigenous and African, Caribbean, and/or Black (ACB) women being disproportionally impacted. A 2017 BC Centre for Disease Control report highlighted that while the rate of new HIV diagnoses was higher among males than females overall, about 33% and 13.3% of new HIV diagnoses among females were Indigenous or ACB people, respectively (54). Among males, 8.5% of new diagnoses were among Indigenous and 2.4%, among Black people. This stark disparity underscores the unique marginalization faced by racialized women, which may be driving the higher HIV burden in these communities.

### 3.3.2. Study design

The BCC3 study is a collaboration between two existing studies: The Children and Women AntiRetroviral therapy and Markers of Aging (CARMA) study and the Canadian HIV Women's Sexual and Reproductive Health Cohort Study (CHIWOS). CARMA is a prospective cohort study of women living with HIV and their children, and HIV-negative women (55). The aim of CARMA is to study the effects of HIV and antiretroviral therapy on biochemical markers of aging. CHIWOS is a community-based, longitudinal study of women living with HIV in Canada, aimed at examining women-centered HIV care and sexual and reproductive health outcomes (56). BCC3 brings together the expertise from both CARMA and CHIWOS studies by implementing an interdisciplinary ‘cell-to-society’ approach to understand the interplay between biological, clinical, and sociostructural factors involved in the healthy aging of women living with and without HIV. BCC3 integrates community-engaged principles into its study design, including Greater Involvement of People living with HIV (57) and Meaningful Involvement of Women Living with HIV (58). These are principles that emphasize the value of meaningful engagement, involvement, and leadership of people (and specifically women) living with HIV in HIV treatment, prevention, care, and beyond. These principles guide the BCC3 study to ensure that research is done by, with, and for women living with HIV at every stage of the research process. The study was approved by the UBC Children’s and Women’s Hospital Research Ethics Board (H19-00896).

### 3.3.3. Participants

Individuals were eligible to participate in BCC3 if they i) self-identified as a woman (cis- and trans- inclusive), ii) were ≥16 years of age, iii) could provide written, informed consent in English, iv) could attend an in-person study visit, and v) were not currently pregnant or breastfeeding. Recruitment was done through contacting past CHIWOS or CARMA participants, in-person recruitment of patients at Oak Tree Clinic (59) (the provincial referral center for women living with HIV and their families), word of mouth, posters at community centers, and clinics, social media, and through the BCC3 Community Advisory Board (55). To ensure that women enrolled in BCC3 represented the ethnoracial makeup of women living in BC, recruitment targets were set at the beginning of participant recruitment, and carefully monitored as recruitment progressed. A majority of BCC3 participants resided in urban settings in the ‘lower mainland of BC’ because the main study site was at Oak Tree Clinic in Vancouver. However, to ensure representation from other parts of BC, recruitment drives were conducted in the cities of Victoria and Prince George where women living with HIV and HIV negative controls in those regions were recruited.

### 3.3.4. Data Collection

After providing, written, informed consent, eligible participants completed two study visits: one at Oak Tree clinic (i.e., the clinical visit) and a second done in a community setting of the participant’s choice (i.e., the community visit). In the clinical visit, biological specimens were collected (blood, urine, hair, rectal swabs, mouth swabs), and anthropometric measurement were taken (55). Next, participants completed a Research Assistant administered 'clinical' survey which queried their detailed socio-demographic information, self-reported medical and reproductive history, and substance use history. The clinical survey was primarily conducted in person but could also be completed over the phone or on a video call (e.g., Zoom). Within one month of the clinical visit, participants completed the 'community' visit which was the second half of the study survey. The community survey was primarily administered over the phone or video call, with the option to also complete it in person in a community setting. This survey focused on social determinants of health, including experiences of stigma and discrimination, sexual health and wellbeing, experiences of violence, and resilience, among others. This survey was administered by one of four Community Research Associates (CRAs) who are women living with HIV, trained in research methods and hired as part of the BCC3 team (55) in alignment with community engaged research principles (60). All survey data were collected and managed using the Research Electronic Data Capture (REDCap) software hosted by BC Children's Hospital Research Institute (61).

### 3.3.5. Measures

***Outcome variable: Sexual pleasure***

The sexual health survey section was contained in the community survey. This section was introduced with a note reminding participants that their responses were confidential, and that if there was something they were uncomfortable answering, they could select 'prefer not to answer.' Participants were also given the option to complete this section on their own or continue completing it with a CRA. The sexual health section enquired about participants' sexual health history including whether they had ever had consensual sex and the types of sexual relationships they were in recently, among others. Participants were then asked about their sexual pleasure experiences.

Sexual pleasure was measured using the sexual pleasure item from the 22-item Brief Index of Sexual Functioning for Women (BISF-W) scale (62). The BISF-W is a self-report instrument for assessing current levels of female sexual functioning and satisfaction. BCC3 participants were asked: "*During the past one month, have you felt pleasure from any forms of sexual experience (including self-pleasure or* *masturbation)?*". Response options were: "Have had no sexual experience (solo or partnered)," "Always felt pleasure," "Usually, about 75% of the time," "Sometimes, about 50% of the time," "Seldom, less than 25% of the time," "Have not felt any pleasure." Respondents are also given the option to select "Prefer not to answer" or "Don't know."

### *Explanatory variable: Everyday racial discrimination*

Everyday racial discrimination was measured using the 9-item Everyday Discrimination Scale (EDS), a tool that captures self-reported frequency of discriminatory experiences in a variety of everyday social situations (50). In the BCC3 survey, respondents were asked directly "In your day-to-day life, how often have any of the following things happened to you because of your race?" Scale items are: *(a) "You are treated with less courtesy," (b) "You are treated with less respect," (c) "You receive poorer service," (d) "People act as if you are not smart," (e) "People act as if they are afraid of you," (f) "People act as if you are dishonest," (g) "People act as if they are better you," (h) "You are called names or insulted,"* and *(i) "You are threatened or harassed."* Responses were coded on a 6-point Likert scale with the following options: "Never," "Less than once a year," "A few times a year," "A few times a month," "A few times a week," and "Almost every day". Based on findings from the psychometric analysis conducted in *Chapter Two* of this thesis, item pairs *(a)* and *(b),* and *(h)* and *(i)* appeared to be redundant, which may result in scale scores that are biased towards those specific types of mistreatments. Thus, for this analysis, the average of these pairs was considered (i.e., average of items *(a)* and *(b)*, and average of *(h)* and *(i)*), resulting in a 7-item scale). With this modified version of the scale (Cronbach's alpha: 0.96), the total score range was 7 to 42 with a score of 7 meaning never experiencing any discrimination, and higher scores representing more frequent experiences of racial discrimination. Item means by race/ethnicity are shown in **Appendix Table B.1**.

### *Sociodemographic characteristics and covariates*

Sociodemographic variables and covariates included age in years; race/ethnicity (ACB; Indigenous; other racialized; white), HIV status (living with HIV; HIV-negative), annual household income before taxes in Canadian dollars (≤$20,000; >$20,000), gender identity (cis-gender; gender queer [which included those who self-identified as Two-Spirit, transgender, gender queer or non-binary]), sexual orientation (heterosexual; Two-Spirit, lesbian, gay, bisexual, transgender, queer, intersex, asexual

[2S/LGBTQIA+]), education (completed only highschool or less; more than high school), and employment status (employed; unemployed; student/retired). HIV viral load (detectable; undetectable) and whether participants were currently on an antiretroviral therapy regimen (yes; no) were HIV-related clinical markers of interest applicable only to women living with HIV, and based on self-report.

### *Final Analytic Sample*

A total of 539 women had completed the BCC3 community survey at the time of analyses. Of them, 19 were excluded because they had missing data for at least one of the EDS items, did not report their race/ethnicity, or selected prefer not to answer for the sexual pleasure question. Of the remaining 520 participants with complete data, 165 reported not having had a sexual experience in the last one month, resulting in a final analytic sample of 355 women.

## 3.3.6. Analyses

Absolute and relative frequencies were estimated to describe baseline characteristics of the sample overall, and stratified by sexual pleasure. Baseline differences by sexual pleasure were compared using analysis of variance (ANOVA) for continuous variables and Pearson $\chi 2$ or Fisher's exact test (if cell size<5) for categorical variables.

After testing for and confirming the proportional odds assumption, ordinal logistic regression modelling was used to assess the association between everyday racial discrimination and experiences of sexual pleasure, while accounting for potential confounders. Sexual pleasure was assessed as a 5-level ordered categorical variable with the following levels: no pleasure, seldom, sometimes, usually, and always. Multivariable models included only people with non-missing data on confounding variables. Known or hypothesized potential confounders associated with both everyday racial discrimination and sexual pleasure were included in a directed acyclic graph (**Figure 3.1**). Selected confounding variables were age, HIV status, race/ethnicity, gender identity, sexual orientation, income, employment status and education. As the main objective of this analysis was to assess the total effect of everyday racial discrimination on sexual pleasure, potential mediating variables (e.g. depression, history of violence, body satisfaction) were not included in the models.

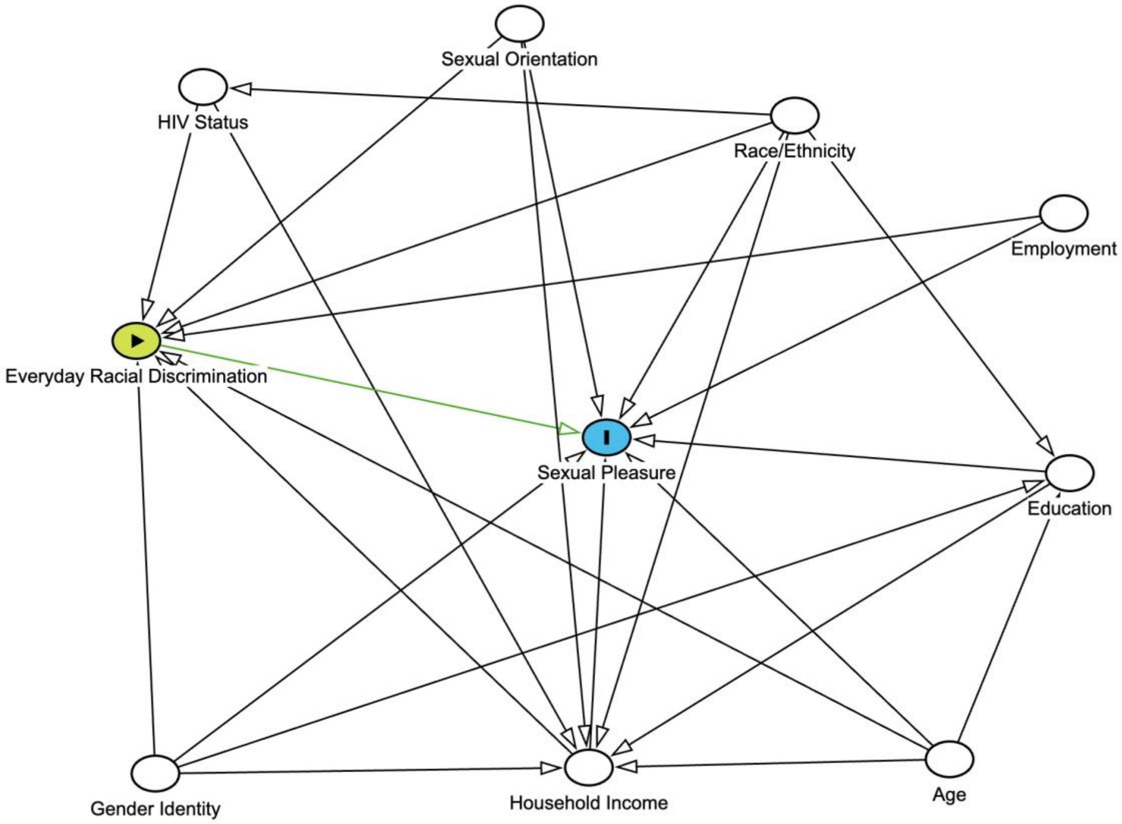

**Figure 3.1. Directed Acyclic Graph of the conceptualized relationship between everyday racial discrimination and sexual pleasure**
Created using 'DAGitty'; Textor et al, 2016

To assess the potential effect modification of HIV status on the association between everyday racial discrimination and sexual pleasure, an interaction term between HIV-status and everyday racial discrimination was added to the regression equation.

Since the investigations of cross-group invariance in *Chapter Two* excluded white participants, it could not be definitively concluded whether the EDS measured racial discrimination equally among white and racialized respondents. Therefore, I also ran the ordinal logistic regression models exclusively among racialized women to assess if the association held consistent for groups where there is evidence the scale functions invariantly. All statistical tests were considered statistically significant at $\alpha<0.05$ and were run in R Studio.

## 3.4. Results

### Baseline characteristics

**Appendix Table B.2** presents the differences in baseline characteristics of participants included in the analysis (n=355) compared to those excluded because they reported no sexual experience in the past one month (n=165). Those who had a sexual experience were more likely to be younger, be living without HIV, have an education greater than highschool, be employed, and have an annual household income greater than $20,000 Canadian dollars.

Of the 355 women included in this analysis, 43 (12.1%) were ACB, 97 (27.3%) Indigenous, 66 (18.6%) other racialized, and 149 (42.0%) white women (**Table 3.1**). The mean age of participants was 44.9 years (standard deviation [SD] = 13.6), and 133 (37.5%) women were living with HIV. Of note, 60.5% of all ACB women in the sample were living with HIV, in contrast to 39.2% of Indigenous, 18.2% of other racialized and 38.3% of white women. Overall, the sample was well educated, with 70.4% having attained an education greater than highschool. Approximately 65.4% had an annual household income of at least $20,000 Canadian dollars and 60.0% were either employed or students/retired. Women living with HIV in the sample had good HIV-related clinical markers, with 96.2% reporting currently being on an antiretroviral therapy regimen, and an approximate 88.0% reporting that they were virally suppressed. BCC3 participant self-report of HIV-related clinical markers, such as viral load, has been found to be concordant with clinical chart review data.

**Table 3.1. Baseline characteristics of analytic sample of women living with or without HIV and residing in British Columbia, Canada (n=355)**

| Variable | Overall (N=355)<br>n (%) |
|---|---|
| **Age, years**, mean (SD) | 44.9 (13.6) |
| **Everyday Discrimination Scale score**, mean (SD) | 17.0 (9.8) |
| **HIV Status** | |
| Living with HIV | 133 (37.5) |
| HIV-negative | 222 (62.5) |
| **Currently on Antiretroviral Therapy**§ | |
| Yes | 128 (36.1) |
| No | 5 (1.4) |
| Not Applicable | 222 (62.5) |
| **Current HIV viral load**§ | |
| Undetectable | 117 (33.0) |
| Detectable | 12 (3.4) |
| Not Applicable | 222 (62.5) |
| **Race/Ethnicity** | |
| African, Caribbean, and/or Black | 43 (12.1) |
| Indigenous | 97 (27.3) |
| Other racialized | 66 (18.6) |
| White | 149 (42.0) |
| **Gender Identity** | |
| Cis-Gender | 339 (95.5) |
| Gender Queer | 16 (4.5) |
| **Sexual Orientation** | |
| Heterosexual | 277 (78.0) |
| 2S/LGBTQIA+ | 78 (22.0) |
| **Education** | |
| ≤Highschool | 105 (29.6) |
| >Highschool | 250 (70.4) |
| **Employment** | |
| Employed | 194 (54.6) |
| Unemployed | 139 (39.2) |
| Student/Retired | 20 (5.6) |
| Unknown | 2 (0.6) |
| **Household income** | |
| ≤CAD$20,000/year | 101 (28.5) |
| >CAD$20,000/year | 232 (65.4) |
| Unknown | 22 (6.2) |
| **Sexual pleasure (past one month)** | |
| Always | 138 (38.9) |
| Usually | 102 (28.7) |
| Sometimes | 47 (13.2) |

| | |
|---|---|
| Seldom | 33 (9.3) |
| No pleasure | 35 (9.9) |

§Variables only applicable for women living with HIV (n=133)

## Experiences of everyday racial discrimination

Most racialized women (93.0% of ACB, 87.6% of Indigenous, and 93.9% of other racialized) reported ever experiencing racial discrimination (an EDS score >7) in their day-to-day lives, compared to 44.3% of white women (data not presented in tables or figures). ACB and Indigenous women reported the highest levels of everyday racial discrimination (mean EDS score: 24.3; SD: 8.8 and mean EDS score: 21.9; SD: 10.3, respectively), followed by other racialized women (mean EDS score: 18.0; SD: 8.4). White women reported the lowest levels of racial discrimination with a mean score of 11.3 (SD: 6.5) (p<0.001). Women living with HIV and HIV-negative women reported similar levels of everyday racial discrimination (mean EDS scores: 16.7 and 17.5, respectively; p=0.428). **Figure 3.2** presents the distribution of EDS scores by race/ethnicity and HIV status.

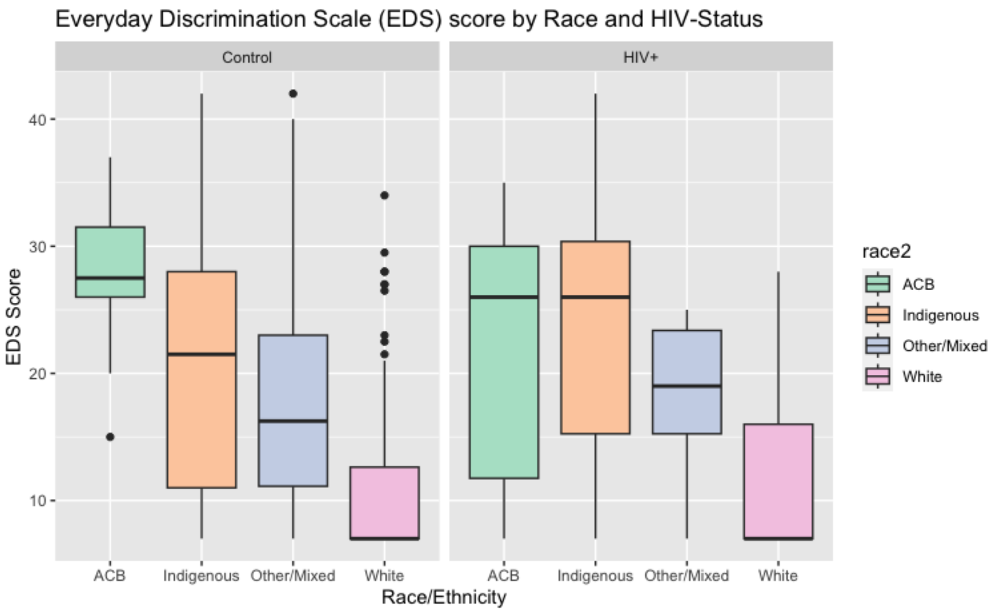

**Figure 3.2. Box plot illustrating everyday racial discrimination scale scores by race, stratified by HIV status in the sample of 355 women who had a sexual experience in the last one month**

## Experiences of sexual pleasure

**Table 3.2** presents the baseline characteristics of the 355 women who reported having had any sexual experience in the last month, stratified by experiences of pleasure. Of them, 9.9% reported never experiencing pleasure from those sexual experiences, 9.3% seldom experienced pleasure, 13.2% sometimes experienced pleasure, 28.7% usually experienced pleasure and 38.9% reported always experiencing pleasure. Those who reported always or usually experiencing pleasure in the last one month were significantly more likely to have lower EDS scores, have more than a highschool education, an annual household income greater than \$20,000 and be employed, compared to those who experienced no pleasure (all p≤0.001). Pleasure experiences did not differ significantly by HIV status or race/ethnicity.

**Table 3.2. Baseline characteristics of study sample who had a sexual experience in the last one month (N=355), stratified by experiences of sexual pleasure**

| **Variable** | **Sexual Pleasure** | | | | | **p-value** |
|---|---|---|---|---|---|---|
| | **Always** (n=138) | **Usually** (n=102) | **Sometimes** (n=47) | **Seldom** (n=33) | **Never** (n=35) | |
| | n (%) | n (%) | n (%) | n (%) | n (%) | |
| **Age, years**, mean (SD) | 45.1 (14.4) | 43.3 (14.2) | 45.1 (12.9) | 45.7 (11.6) | 48.1 (10.9) | 0.458 |
| **Everyday Racial Discrimination scale score**, mean (SD) | 14.7 (8.8) | 16.4 (9.7) | 18.0 (9.1) | 21.1 (11.4) | 22.4 (10.0) | **<0.001** |
| **HIV Status**) | | | | | | 0.127 |
| Living with HIV | 52 (37.7) | 31 (30.4) | 20 (42.6) | 11 (33.3) | 19 (54.3) | |
| Living without HIV | 86 (62.3) | 71 (69.6) | 27 (57.4) | 22 (66.7) | 16 (45.7) | |
| **Race/Ethnicity** | | | | | | 0.508 |
| ACB | 19 (13.8) | 11 (10.8) | 4 (8.5) | 2 (6.1) | 7 (20.0) | |
| Indigenous | 28 (20.3) | 29 (28.4) | 18 (38.3) | 12 (36.4) | 10 (28.6) | |
| Other race/ethnicity | 27 (19.6) | 20 (19.6) | 7 (14.9) | 6 (18.2) | 6 (17.1) | |
| White | 64 (46.4) | 42 (41.2) | 18 (38.3) | 13 (39.4) | 12 (34.3) | |
| Gender | | | | | | 0.601 |
| Cis-gender | 132 (95.7) | 99 (97.1) | 43 (91.5) | 31 (93.9) | 34 (97.1) | |
| Gender queer | 6 (4.3) | 3 (2.9) | 4 (8.5) | 2 (6.1) | 1 (2.9) | |
| **Sexual Orientation** | | | | | | 0.082 |
| 2S/LGBTQIA+ | 30 (21.7) | 24 (23.5) | 16 (34.0) | 4 (12.1) | 4 (11.4) | |
| Heterosexual | 108 (78.3) | 78 (76.5) | 31 (66.0) | 29 (87.9) | 31 (88.6) | |
| **Education** | | | | | | **<0.001** |
| ≤Highschool | 22 (15.9) | 31 (30.4) | 20 (42.6) | 14 (42.4) | 18 (51.4) | |

| | | | | | | |
|---|---|---|---|---|---|---|
| >Highschool | 116 (84.1) | 71 (69.6) | 27 (57.4) | 19 (57.6) | 17 (48.6) | |
| **Employment** | | | | | | **0.001** |
| Employed | 93 (67.4) | 55 (53.9) | 24 (51.1) | 14 (42.4) | 8 (22.9) | |
| Unemployed | 35 (25.4) | 40 (39.2) | 21 (44.7) | 17 (51.5) | 26 (74.3) | |
| Student/Retired | 9 (6.5) | 6 (5.9) | 2 (4.3) | 2 (6.1) | 1 (2.9) | |
| Unknown | 1 (0.7) | 1 (1.0) | - | - | - | |
| **Annual household income** | | | | | | **<0.001** |
| <CAD$20,000 | 29 (21.0) | 24 (23.5) | 11 (23.4) | 16 (48.5) | 21 (60.0) | |
| ≥CAD$20,000 | 102 (73.9) | 73 (71.6) | 32 (68.1) | 15 (45.5) | 10 (28.6) | |
| Unknown | 7 (5.1) | 5 (4.9) | 4 (8.5) | 2 (6.1) | 4 (11.4) | |

ACB = African, Caribbean, and/or Black; 2S/LGBTQIA+ = Two-Spirit, Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual +; EDS = Everyday Discrimination Scale, range: 7-42; SD=Standard deviation; CAD = Canadian dollar; 6m = 6 months; 1m=1 month; statistically significant differences are highlighted in bold

## Racial discrimination and sexual pleasure

**Table 3.3** presents the unadjusted and adjusted associations between everyday racial discrimination and sexual pleasure. In both unadjusted (Odds Ratio (OR) = 0.95; 95% Confidence Interval (CI): 0.93-0.97) and adjusted models (Adjusted Odds Ratio (aOR) = 0.95, CI: 0.93-0.98), women who experienced higher levels of everyday racial discrimination had significantly lower odds of experiencing more sexual pleasure than those who experienced less racial discrimination. In the multivariable model, of the selected confounding variables, only education and employment were significantly associated with sexual pleasure. Those with a highschool education or less, had significantly lower odds of experiencing more sexual pleasure than those with more than a highschool education (aOR = 0.52, CI: 0.31-0.87). Additionally, those who were unemployed had significantly lower odds of experiencing more sexual pleasure than those who were employed (aOR = 0.55, CI: 0.33-0.87). There were no significant differences in odds of experiencing of sexual pleasure by HIV status (aOR for women living with HIV=1.03, CI: 0.67-1.58). The association between racial discrimination and sexual pleasure remained the same in models that included racialized women only (OR =0.96, CI:0.93-0.98 and aOR= 0.96, CI: 0.93-0.99) (**Appendix Table B.3**).

### Table 3.3. Unadjusted and adjusted odds ratios modelling the association between everyday racial discrimination and sexual pleasure

| Variable | OR (95% CI) | aOR§ (95% CI) |
|---|---|---|
| **Everyday racial discrimination** | **0.95 (0.93-0.97)** | **0.95 (0.93-0.98)** |
| **Race/Ethnicity** | | |
| White | - | Reference (ref) |
| ACB | - | 1.81 (0.84-3.92) |
| Indigenous | - | 1.60 (0.91-2.83) |
| Other race/ethnicity | - | 1.12 (0.63-2.01) |
| **Sexual Orientation** | - | |
| Heterosexual | - | Ref |
| 2SLGBTQI+ | - | 1.20 (0.72-2.02) |
| **HIV Status** | - | |
| Living without HIV | - | Ref |
| Living with HIV | - | 1.03 (0.67-1.58) |
| **Income** | | |
| ≤CAD$20,000/year | - | Ref |
| >CAD$20,000/year | - | 1.40 (0.80-2.33) |
| Unknown | - | 1.30 (0.53-3.17) |
| **Employment‡** | | |
| Employed | - | Ref |
| Unemployed | - | **0.55 (0.34-0.87)** |
| **Education** | | |
| More than Highschool | - | Ref |
| Highschool or less | - | **0.52 (0.31-0.87)** |
| ***Age*** | - | 1.00 (0.98-1.01) |
| ***Gender*** | | |
| Cis-gender | - | Ref |
| Gender queer | - | 0.76 (0.29-2.06) |

§N=353

‡Student/retired was collapsed into "unemployed" for the multivariable model

Note: Bold values indicate a statistically significant result at p<0.05

In the multivariable model (***Table 3.4***) assessing whether HIV status is an effect modifier, the interaction term indicated a slight attenuation of the relationship between racial discrimination and sexual pleasure among women living with HIV (aOR = 0.97; 95% CI: 0.93-1.01); however, this interaction was not statistically significant. Still, the association between racial discrimination and sexual pleasure remained significant (aOR: 0.96; CI: 0.94-0.99).

**Table 3.4. Multivariable ordinal logistic regression model for the association between everyday racial discrimination and sexual pleasure, with an interaction term between HIV status and everyday racial discrimination**

| Variable | aOR§ (95% CI) |
|---|---|
| Everyday racial discrimination | **0.96 (0.94-0.99)** |
| ***Interaction terms*** | |
| Everyday racial discrimination*Living without HIV | Ref |
| Everyday racial discrimination*Living with HIV | 0.97 (0.93-1.01) |

§Adjusted for age, gender identity, sexual orientation, race/ethnicity, HIV status, annual household income, employment status and education

Note: Bold values indicate a statistically significant result at $p<0.05$

## 3.5. Discussion

Among a sample of recently sexually active women living with and without HIV in BC, nearly three-quarters reported always or usually experiencing pleasure from sexual activities (38.9% and 28.7%, respectively). The prevalence of pleasure was similar between women living with HIV and women living without HIV. The observed prevalence of always experiencing sexual pleasure in this study is similar to that reported in a similar cohort of women living with HIV across three Canadian provinces (31). In that study, 41.3% of 675 women reported always experiencing pleasure from any forms of sexual experiences in the past one month (31). Additionally, another general population study in the US found that approximately 35% of 883 women reported experiencing extreme pleasure from their most recent partnered sexual encounter (63). My findings contribute to a growing body of literature that challenges dominant narratives of poor sexual health and wellbeing outcomes, particularly in the context of HIV and within a highly racialized sample. They demonstrate that women living with HIV, or those assumed to not have enjoyable sexual lives, can and do have pleasurable sexual lives. This is significant because it challenges pervasive stereotypes and deficit-based narratives that often frame research of the sexual health and wellbeing of women living with HIV or racialized women. By highlighting the prevalence of sexual pleasure in these populations, findings underscore the importance of recognizing and affirming the capacity and existence of positive sexual experiences.

Almost all racialized women (87%-93%) in the sample reported experiencing racial discrimination in their daily lives, and had the highest discrimination scores, indicating frequent and chronic exposure. These findings align with broader evidence that racism is endemic to Canada with racialized people enduring high levels of race-based discrimination. A study of over a thousand self-identifying ACB individuals in Ontario found that six of every ten participants had experienced everyday racial discrimination in the past year (64). Additionally, a 2019 survey on racism in Canada revealed that 53% of Indigenous people and 54% of ACB individuals reported race-based discrimination. Other racialized groups, such as South Asians (38%), Chinese (36%), and others (32%), also reported significant levels of discrimination, compared to only 12% of white people (65). Evidence also suggests that the frequency of racial discrimination is not only high, but is also increasing. According to the 2019 General Social Survey on Canadian's Safety, between 2014 and 2019, discrimination due to race among ACB people rose sharply from 23% to 41%, with a similar rise among Indigenous people, from 8% to 14% (66). Addressing anti-Black, anti-Indigenous, anti-Asian, and other forms of racism should be considered urgent public health priorities.

This study also found that experiencing everyday racial discrimination was negatively associated with experiencing sexual pleasure. This is consistent with a large and growing body of research that has found that everyday racial discrimination is associated with poorer health outcomes (43–45,48,67–69). For every unit increase in the racial discrimination score, the odds of being in a higher category of sexual pleasure (i.e. moving from 'never' to seldom' or from 'seldom' to 'sometimes') decreased by approximately 5% both before and after controlling for potential confounders. This finding suggests that even a slight reduction of racial discrimination could make a drastic difference in the odds of women experiencing more frequent sexual pleasure. This potential dose-response effect of everyday racial discrimination has also been seen in previous research. For example, a study investigating the correlates of depression among Black people in Canada reported a "gradual increase in the prevalence of depressive symptoms relative to the increase in the score of daily racial discrimination" (44). Alarmingly, those who experienced the highest levels of everyday racial discrimination were 36 times more likely to report significant symptoms of depression compared to those experiencing lower levels of discrimination (44). Similarly, a study in New Zealand, which examined two dimensions of racial discrimination ('ethnically motivated physical or verbal attack' and 'unfair treatment because of ethnicity by a health professional, in work or when gaining housing'), found a dose-response relationship between the number of reported discrimination types and outcomes such as self-rated health, physical functioning, mental health, cigarette smoking, and self-reported cardiovascular disease (70). My study therefore contributes to a growing body of evidence that suggests a potential dose-response relationship between everyday racial discrimination and health outcomes, particularly sexual pleasure. However, future research using rigorous methods such as cubic spline analyses are needed to substantiate this, allowing a better understanding of how varying levels of discrimination may affect sexual health (71).

Additionally, while I found a significant association between racial discrimination and sexual pleasure, race/ethnicity itself was not significantly associated with sexual pleasure. This finding underscores the significant impact of everyday racial discrimination on the sexual health and well-being of women living in Canada. It reinforces the notion that poor health outcomes among racialized people are not inherent or due to natural biological differences. Rather, it is the process of racialization and the consequential hostile environments that racialized women face that are more influential in shaping health outcomes, including those related to sexual health. Other scholars have highlighted the dangers of research that explicitly or implicitly frames race/ethnicity as the causal determinant of health disparities (72). Suggesting that certain racial/ethnic groups are at greater risk of specific health outcomes without exploring the underlying reasons or mechanisms for these inequities perpetuates false assumptions that disparities are either biological and thus unchangeable, or cultural and therefore the “fault” of group members themselves (72). This thesis chapter contributes to the critical discourse challenging such framings of racial health inequities.

Racial discrimination has been described as an unpredictable and uncontrollable chronic stressor (42,43,73). According to stress researchers, stress levels rise and harm health when events are ambiguous, unpredictable, and uncontrollable (as is the case with everyday racial discrimination). Additionally, while the types of mistreatment included in the EDS, such as being treated with less respect or others acting as if you are not smart, may seem minor, these repeated stressors can accumulate, wear down a person, and negatively impact health (73). Unlike stressors that are expected or controllable, these day-to-day experiences may be particularly harmful as they can also lead to anticipatory anxiety, hypervigilance, and rumination (73). The constant vigilance against potential future discrimination can be just as damaging to health as the mistreatment itself. This prolonged physiological activation may result in dysregulation of emotional and physical functioning, increasing susceptibility to illness. Indeed, sexual pleasure involves both emotional and physiological aspects (26), so everyday racial discrimination may impact sexual pleasure through similar pathways. This study thus adds to the growing body of literature highlighting the detrimental effects of everyday racial discrimination on priority health outcomes (44,47,48,50). Future research conducting mediation analyses and guided by intersectionality as a theoretical framework should explore the pathways through which racial discrimination influences women's sexual pleasure.

HIV status was not significantly associated with sexual pleasure, and the effect of everyday racial discrimination on sexual pleasure did not differ significantly by HIV status. These findings contrast with previous research on experiences of orgasm in women living with HIV compared to women living without HIV. A 2001 Australian study using the Sexual Health Questionnaire found that among women who had engaged in sexual activity in the past month, those living with HIV were more likely to report not having or seldom having orgasms than women living without HIV (74). Additionally, women living with HIV who did report orgasms described lower intensity and greater difficulty reaching orgasm (74). Research specifically comparing sexual pleasure between women living with HIV and women living without HIV is scarce. So, the discrepancy between my finding and previous research may be due to differences in how pleasure was measured and operationalized. Measuring orgasm may not fully capture the experience of sexual pleasure, making comparisons across studies challenging.

Another reason that differences in sexual pleasure by HIV status were not found in this analysis, compared to the earlier study, could be the period in which the research was conducted. The experience of being a woman living with HIV in high-income settings like Australia and Canada in 2020-2024 is vastly different from what it was in 2001. My study provides a contemporary comparison of sexual pleasure experiences between women living with HIV and women living without HIV, showing that in an era of increased access to antiretroviral therapy (ART), heightened activism supporting the sexual rights and positive sexual experiences of women living with HIV (75–77), and when provided women-centered healthcare environments, women living with HIV do not differ in their experiences of sexual pleasure compared to women living without HIV.

Approximately three quarters of the women living with HIV in our sample were patients at Oak Tree Clinic and had optimal HIV-related clinical markers. Oak Tree is an HIV clinic in Vancouver specializing in providing women centered HIV care to women living with HIV and their families (59). Women receive specialized and comprehensive healthcare, including access to psychiatrists, dieticians, pharmacists, social workers, gynecologists, and obstetricians, among others. Some patients even have outreach staff visiting their homes to support ART adherence (78). This care model, which is coordinated, recognizant and responsive to the structural barriers that limit women's access to care, and which fosters peer support and leadership was envisioned by women living with HIV across Canada, and is put into practice at Oak Tree Clinic (59,79). However, this model of care is not yet standard across the province nor across Canada. Therefore, findings of this chapter may not be applicable to women in resource-scarce settings without women-centered and HIV-centered supports and facilities available. Nonetheless, the findings presented highlight that when women living with HIV are provided these supports, HIV itself may have little influence on sexual pleasure. Rather, racial discrimination experienced by the disproportionate number of racialized women living with HIV in Canada, may be a more significant factor.

These findings, however, should still be cautiously interpreted. As previously mentioned, the health care environments and supports available to the women in this study may not reflect the lived experiences of the majority of women living with HIV in Canada. Additionally, despite the advancements in HIV treatment and increase in sex-positive messaging in HIV research, women living with HIV in Canada still experience HIV-related stigmatization and must navigate discriminatory HIV non-disclosure laws, which can influence their sexual activity decisions (32,80), and may also impact sexual pleasure. It is also important to note that the women living with HIV in this analysis are all sexually active, meaning they may have already overcome some HIV-related barriers to sexual activity itself. Prior research has suggested that some women living with HIV experience unwanted changes in sexual activity after diagnosis, such as a reduction in frequency of intercourse and masturbation (19). Although the reasons why sexually inactive women in this cohort made that decision were not explored— which for many, may be a conscious and empowering choice that should be respected— I can theorize that for those who choose to engage in sexual activity (partnered or not), HIV status ceases to influence whether or not they experience pleasure. Future research should thoroughly investigate these complex dynamics in large, nationally representative samples.

To the best of my knowledge, this study is the first to investigate the associations between everyday racial discrimination and sexual pleasure among women. However, it has limitations. Firstly, given the personal and often taboo nature of discussing women's sexual lives, social desirability bias may exist in the data. Participants may have underreported the amount of pleasure they derive from sexual experiences due to the prevailing negative scripting that women's sexual pleasure is hedonistic, dangerous and undesirable (13,15,81). However, this bias may have been minimized by the community engaged methodology employed in the BCC3 study to consult with women living with HIV in the design of the sexual health section of the survey, as well as in creating a safe and empowering environment during survey data collection.

Another limitation of this analysis is the use of a single item to measure sexual pleasure. The dynamic and multidimensional nature of sexual experiences and sexual pleasure is such that a single item may not comprehensively capture these various components (8,82). Future research should assess sexual pleasure using multidimensional scales that also assess sexual pleasure over longer periods of time, such as the Amsterdam Sexual Pleasure Inventory (82). Additionally, the analytic sample (n=355) was relatively small, with small subgroup sizes. This may have reduced the statistical power of the analyses and the ability to detect smaller effect sizes resulting in potentially biased estimates.

These limitations notwithstanding, this analysis holds many strengths and meaningfully contributes to the growing body of literature on sexual wellbeing of women, and the adverse effects of everyday racial discrimination on the health of racialized populations. A key strength of this analysis is the use of a modified version of the EDS, informed by a psychometric test of the measure in this population. This is important because there is evidence that the measure of racism used to predict sexual pleasure in this study is valid, reliable, and invariant across groups, further substantiating our findings.

The community engaged research approach of the BCC3 study is also a strength. Women with lived and living experience informed every part of this study from study conception, study design, and data collection. Research has shown that using community based participatory (or community engaged) research frameworks allow for rigor and validity and research data that are accessible and reflective of the priorities of the community (60,83).

Another strength of this study is the sex-positive operationalization of sexual pleasure. Participants were asked if they recently felt pleasure from any form of sexual experience. It was not restricted to only partnered penetrative heterosexual sex, but included solo experiences which are important contexts in which women pursue pleasure (29). It also allowed women to narrate their own pleasure experiences without limiting it to or conflating it with orgasm, as has been done in some previous research (84). Sexual pleasure includes a variety of positive feelings derived from sexual stimulation and these feelings are subjective and may include diverse sexual activities that may or may not end with orgasm (28,29). I believe that the approach taken in this study is not only sex-positive, but is also empowering, allowing women to define their own sexuality and pleasure experiences, which has often been taken away from them.

While this study lays some important groundwork on the consequences of everyday racial discrimination on sexual pleasure, future research should expand on this work by investigating the mechanisms and pathways through which everyday racial discrimination negatively impacts sexual pleasure. A thorough understanding of the causal pathways involved in this association will allow for more targeted interventions to address the deleterious impacts racism has on health. In addition, future research should assess other dimensions of racism and their implications on the sexual health and wellbeing of racialized women in Canada. Racialized women not only experience ‘microaggressions’ or minor forms of racial discrimination in their day to day lives, but live in a society where racism is also institutional and systemic (85,86). All these forms and dimensions of racism may also negatively impact the sexual health and wellbeing of women, and more evidence is needed to ultimately inform policy and practice.

## 3.6. Conclusion

This research offers novel insights into how everyday racial discrimination influences the sexual well-being of women in Canada, with a particular focus on sexual pleasure — a key aspect of a sex-positive approach to sexuality. My findings reveal that women who experience higher levels of everyday racial discrimination are less likely to experience frequent sexual pleasure compared to those who face little to no discrimination, regardless of their HIV status. This underscores the need to address racism as a significant health risk factor that undermines the sexual rights of racialized women in Canada.

## 3.7. References

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# Chapter 4. Summary and Discussion

## 4.1. Summary of Thesis

### 4.1.1. Summary of Thesis Rationale and Objectives

While blatant and overt racism may be less common in modern Canadian society, interpersonal racism often manifests in more subtle and covert forms (1). Examples include being ignored, treated with less respect, or perceived as dishonest because of one’s race (1). This ‘everyday racial discrimination’ has increasingly been recognized as a significant and independent driver of racial health inequities (2–6). The Everyday Discrimination Scale (EDS) is the most commonly used tool in epidemiological research to measure this form of racism (7). It has been widely used in Canadian studies to examine and compare associations between everyday racial discrimination and various health outcomes such as depressive symptoms, anxiety and quality of life among racialized people, including racialized women living with HIV (4,6,8). However, the key step of assessing the validity of this scale within this population has been overlooked. Moreover, there has been a lack of research evaluating the cross-group invariance of the EDS across racial/ethnic groups and by HIV status. That is, no studies have explored whether the scale measures the same construct of everyday racial discrimination and measures it to the same extent across different racial/ethnic groups or by HIV status. Chapter 2 of this thesis sought to address these research gaps.

Previous research has also suggested that women living with HIV experience poorer sexual health and wellbeing compared to their HIV-negative counterparts, reporting outcomes such as lower sexual desire (9), more difficulty achieving orgasm (10), and increased ‘sexual problems’ (11). Additionally, risk- and deficit- based narratives have dominated the discourse around the sexuality of women living with HIV and of racialized women, focusing on risks and negative outcomes while neglecting positive aspects including sexual pleasure (12–14). When sexual pleasure is discussed, it has mostly focussed on the individual physiological or cognitive aspects of pleasure, overlooking how broader social factors, such as racism, shape and regulate the sexual lives of racialized women, including those living with HIV. Sexual pleasure is considered a fundamental component of sexual health and wellbeing, and a key tenet of sexual rights (15–17), yet it remains underexplored in the literature. Given that racialized women in Canada are disproportionately impacted by HIV, and that racial discrimination is linked to a myriad of health problems, Chapter 3 of this thesis investigated the relationship between perceived everyday racial discrimination and sexual pleasure among women living with and without HIV in British Columbia (BC), Canada. This chapter also explored whether HIV status modified this relationship.

### 4.1.2. Summary of findings

Confirmatory Factor Analyses (CFA) conducted in Chapter 2 revealed that the EDS is a reliable and valid instrument for measuring daily race-based mistreatment experienced by women living in BC. This was true overall, and also within racial/ethnic groups (African, Caribbean and/or Black [ACB], Indigenous, other racialized, and white), and by HIV status. Despite the EDS being originally developed to measure racial discrimination among African Americans, it remains an efficient tool for assessing racism among women in BC from diverse racial/ethnic backgrounds. However, high reliability coefficients and residual correlations between certain EDS items suggested redundancy. Specifically, the item pairs *(a) You are treated with less courtesy* and *(b) You are treated with less respect*; and *(h) You are called names of insulted* and *(i) You are threatened or harassed*, appeared to be redundant. In tests of measurement invariance, the EDS was found to be invariant across race/ethnicity-based groups (except white) and by HIV status, meaning that the scale measures the same construct, and it does so equally across these groups.

The analyses from Chapter 3 revealed that everyday racial discrimination is significantly associated with lower odds of experiencing frequent sexual pleasure, both before and after adjusting for potential confounders. Specifically, the odds of being in a higher category of sexual pleasure decreased by approximately 5% for every unit increase in the EDS score. Additionally, socioeconomic factors such as education and employment were significantly associated with lower odds of sexual pleasure in the multivariate model, while race/ethnicity and HIV status were not. When an interaction term between everyday racial discrimination and HIV status was introduced in the model, no significant difference in the association between discrimination and sexual pleasure by HIV status was found. These findings suggest that among recently sexually active women, racism – rather than race/ethnicity itself – is a risk factor for reduced sexual pleasure. Furthermore, HIV status appeared to have little to no impact on the likelihood of experiencing pleasure.

## 4.2. Discussions

### 4.2.1. Implications for policy, public health practise, and future research directions

To the best of my knowledge, this thesis presents the first comprehensive psychometric analysis of the EDS within a Canadian context, particularly among women. By establishing the validity and the cross-group invariance of the scale, the findings affirm the reliability of prior research using the EDS to compare the health impacts of racial discrimination among women living with and without HIV in Canada. This validation also offers valuable evidence for future studies aiming to measure and compare levels of everyday racial discrimination, and its associations with health outcomes. Without such psychometric evidence, researchers would risk assuming that the EDS measures racial discrimination uniformly across groups without substantiating this claim. This is subsequently crucial for policy and public health practise because addressing racial health inequities through targeted interventions depends on the use of robust tools in the research that informs said interventions. For policy interventions to be effective, the instruments used to measure racial discrimination and its impacts on health must be both valid and reliable. They should also perform equally across different social groups, ensuring that estimates of discrimination are meaningfully comparable, which is essential for identifying and guiding policies regarding where resources should be allocated to reduce racial health disparities.

While the models estimated in the CFA demonstrated reasonably good fit, there were some areas of misfit, particularly in one of the fit indices (RMSEA). This may be due to sample size considerations as discussed in Chapter 2. However, it is also possible that certain aspects of the 9-item EDS do not fully capture the specific and unique dimensions of everyday racial discrimination experienced by racialized women in BC. Racism has “geographic, social and historical specificity”(1) and its manifestation is shaped by the context in which it occurs. For example, compared to the United States (US), where the EDS was developed, Canada has a notably larger population of foreign-born residents – 23% in Canada versus 14% in the US as of 2021(18). This is even more poignant in BC, which is the most ethnically diverse province in Canada (19). This may mean that experiences of racial discrimination intersect more frequently with other forms of discrimination, such as those related to immigrant status. For instance, qualitative research with Asian international students in Canada found that accent-based discrimination was a common microaggression experienced (20). These contextual factors underscore the need for future research to employ qualitative methods, such as cognitive interviews, to better understand the specific experiences of racialized people in Canada. Such research could inform the development of a modified version of the EDS that better reflects the local context. Furthermore, qualitative methods could also shed light on the redundant items identified in my analyses, providing guidance on which items to retain or discard in a revised EDS to better reflect the Canadian context.

Indigenous women also experience a particularly pernicious form of racism shaped by Canada's colonial history, which includes forced assimilation through residential schools, violence and abuse, and perpetuation of prejudiced attitudes and beliefs about Indigenous women's identities (1,21, 22). Anti-Indigenous racism refers to the ongoing race-based discrimination, negative stereotyping, and injustice experienced by Indigenous people that contributes to the maintenance and perpetuation of power imbalances and structural obstacles in Canada as a result of colonial policies and practises (23). Empirical evidence on anti-Indigenous racism in Canada presents accounts of Indigenous people feeling ignored by healthcare providers or being avoided by non-Indigenous peers due to fears of saying the wrong thing (24,25). Thus, there are likely other dimensions of everyday racial discrimination that may resonate specifically with Indigenous women, and future research may benefit from qualitative evidence on EDS dimensions that are, again, more relevant for a Canadian context.

This research also aligns with the objectives of the BC Anti-Racism Data Act, which was unveiled in 2022. Informed by extensive consultations with Indigenous Peoples and racialized communities across BC, this legislation recognizes the importance of safely collecting and analysing disaggregated race-based data to expose racial health inequities and address systemic racism in government services, including healthcare (26). The BC government acknowledges that racism exists and causes measurable harm to individuals and must be actively addressed. Disaggregated data allows for more nuanced understanding of which demographic groups are most affected by health inequities, enabling policymakers to create more effective, targeted interventions. This thesis validates a tool that can be employed in both academic studies and provincial-level public health research to better understand the impacts of racism on health outcomes.

Furthermore, this thesis highlights the often-overlooked impacts of racism on sexual health. Findings suggest that racism, not race/ethnicity in itself or HIV status, is a critical determinant of sexual pleasure among women. While this adds to the growing body of literature on the health impacts of racial discrimination (2-7), it also underscores the need to recognize racism as a serious public health issue that threatens the sexual rights of racialized women. Future research is necessary to explore the mechanisms through which everyday racial discrimination affects sexual pleasure. I hypothesize that pathways may involve mental health such as depression, self-esteem, and body satisfaction. Scientific investigations into these mechanisms will provide a more comprehensive understanding of how racism shapes sexual pleasure. This, in turn, could highlight potential intervention points along these pathways for public health policies and programs to target.

The finding that HIV status had little influence on sexual pleasure has critical implications for public health and clinical practise. Sexuality in the context of HIV has been predominantly framed around disease prevention, often neglecting sexual health promotion, desire, and pleasure of women living with HIV themselves (12). Women living with HIV have frequently been seen as “risky bodies” whose primary focus in sexual activity (if they must engage in sexual activity) should be preventing HIV transmission (27). This risk-focussed narrative has obscured the fact that women living with HIV are sexual beings who like others, have the capacity and desire for pleasure (27). The results presented in this thesis challenge this narrative by showing that women living with HIV can, and do, experience pleasurable sexual lives. HIV status may not be the barrier to sexual pleasure – racism is. Other social determinants of health, such as education and income, are also likely barriers to sexual pleasure, as they were significantly associated with lower odds of pleasure in the multivariate model. This shift in understanding should inform public health efforts, especially in sexual health programming and clinical practice, encouraging a move beyond risk- and deficit-based approaches to prioritize and support the sexual rights and wellbeing of women with HIV. Such efforts should also address the social inequities that shape their sexual health outcomes.

Furthermore, the value of women-centred HIV care is another key implication of this thesis. As discussed in Chapter 3, the lack of association between HIV status and sexual pleasure may not be generalizable to all women living with HIV in Canada, as most of the women living with HIV in this sample (73.7%) were patients of Oak Tree Clinic. This clinic provides comprehensive HIV care that aligns with the Women-Centred HIV Care (WCHC) model (28–30). Conceptualized by Canadian researchers, clinicians, and women living with HIV, this model was designed to meet the gender-specific needs of women living with HIV in Canada, including gaps in sexual health support. The WCHC model emphasizes care that enables women living with HIV to achieve their best health and wellbeing, as defined by themselves (29). It recognizes the interconnectedness and symbiosis of women's social identities and health concerns, and the subsequent need for responsive care. Central to this model is the recognition of women's rights to competent sexual and reproductive healthcare. Although this thesis did not directly analyse the impact of receiving care at Oak Tree Clinic on sexual pleasure, approximately 71% of women living with HIV who were Oak Tree patients reported always or usually experiencing pleasure, while only 37% women who were not Oak Tree patients reported the same. Thus, it is plausible that the WCHC model played a role in neutralizing HIV status as a determinant of sexual pleasure. This suggests that investing in, and expanding this model that prioritizes holistic wellbeing across the province and country could lead to overall improved sexual health outcomes for women living with HIV. Future studies should more fulsomely compare sexual health outcomes between women who have access to women-centred HIV care and those who do not, to better understand the impact of this care model on sexual health.

Finally, extant research does not fully explore the extent to which race-based mistreatment affects health in ways that are distinct from other forms of mistreatment such as those related to gender, sexual orientation or other social identities (30). Some studies suggest that perceptions of racial and non-racial discrimination are similarly related to health (31). This could be due to the 'attributional ambiguity' of covert forms of racial discrimination in modern Canadian society, whereby individuals may struggle to fully elucidate which part of their identity is driving the mistreatment they experience (1,31,32). From an intersectionality theoretical perspective, this is understandable, as people's lived experiences are jointly shaped by their intersecting identities (33,34). The discrimination experienced by racialized women is unlikely due to a single aspect of their identity; instead, it is the product of overlapping factors such as race, gender and others, which are difficult to disentangle. This a crucial area for future research, which should examine discrimination across multiple domains using intersectional frameworks to assess how exposures in one domain may interact with others and amplify the adverse impacts on health, using tools like the Intersectional Discrimination Index (35). Future studies should also systematically evaluate how racial discrimination differs in its mechanisms and consequences from other forms of mistreatment, and the extent to which capturing attribution affects our understanding of the health consequences of discrimination.

### 4.2.2. Limitations

While this thesis addresses important gaps in literature, its limitations must be noted. Specific limitations related to individual analyses have been discussed in their respective chapters, but here, I outline some broader limitations of the study as a whole.

First, the BCC3 study inclusion criteria required participants to speak English to give informed consent and complete the surveys. According to the 2021 census, approximately 5% of BC residents do not speak or understand English (36). Additionally, patient data from the Oak Tree Clinic indicates that approximately 10-15% of patients are not fluent in English and require translators for their appointments. This exclusion criterion may have introduced a bias, as women who do not speak English – and thus were not included – may be systematically different than those who do. Linguistic racism, an intersection of language, racism and inequality, particularly affects non-dominant language speakers(37). So, this means that racialized non-English speakers in BC may have unique experiences of discrimination that may be associated differently with sexual pleasure but were not captured in this thesis. Therefore, the findings may not be generalizable to all racialized women in BC. Future research studies should prioritize expanding languages eligibility to ensure non-English speakers are not continually excluded from important studies in Canada. Additionally, since most BCC3 participants were recruited from the Lower Mainland of BC, the results may not be generalizable to women from other parts of the province, such as many Indigenous women living in rural communities or on reserves.

Another limitation of this thesis is the sample size for Black women, and particularly Black women living without HIV (controls). Black women made up approximately 12% of the analytic samples for both analyses presented in this thesis. This smaller sample size may have reduced the statistical power of the analyses, potentially leading to biased effect estimates. Despite intentional efforts made to recruit more Black women through tailored recruitment materials and outreach to community organizations, participation remained low. This likely reflects two main factors. Firstly, BC has one of the smallest and dispersed Black populations of all provinces in Canada. According to the 2021 census, Black people made up about 1.3% of BC's population, compared to 5.5% in Ontario, 5.1% in Quebec, and 4.3% in Alberta (38). As such, the BCC3 participant profile may simply reflect BC's overall population. Secondly, mistrust of research among historically disenfranchised groups such as Black communities, may have also played a role. Literature highlights how Black communities have historically been exploited by health research, which has led to deep-rooted mistrust (39–41). Atrocities such as non-consensual experiments on Black women's bodies (42), unethical withholding of lifesaving treatment (39), and a lack of engagement in sharing results with the communities involved have contributed to this mistrust. In BC, a study found that mistrust accounted for 30.6% of barriers to research participation among Black individuals (43). Moving forward, researchers must make intentional efforts to build trust through anti-racist community-engagement (43). Community-based research methods, which engage community members from the study design stage through to the dissemination of results, have been identified as key to fostering trust and increasing participation of Black communities (44–46). While these methods undoubtedly take time and require more resources, they are a worthwhile investment and endeavour and are key to shifting power and democratising research and health services development.

Another limitation relates to how race/ethnicity was categorized in this thesis. Participants were grouped into four main categories: ACB, Indigenous, other racialized, and white. The ACB group, as previously described, included those who identified as Black African, Black Caribbean, Black Other, or any combination of Black with another racial identity. Similarly, the Indigenous group included those who identified as Indigenous, whether alone or in combination with another racial identity. All other non-white participants were categorized under "other racialized identity". While these categorizations were informed by commonly used groupings in Canadian HIV research and also because of sample size and power considerations, they have limitations. Grouping people in this manner can obscure important differences in their lived experiences. For instance, the “other” category combined individuals with very different racial/ethnic identities and, likely, different experiences of racialization. Someone of South Asian descent, who may be visibly racialized, could be grouped with someone who identifies as white and Iranian, but may be “white assumed”; meaning that because of their skin colour, they are perceived by others as being white (47). This example illustrates how this grouping of individuals with potentially different experiences of interpersonal racism into a single "Other" category can mask nuanced differences.

Additionally, while the term “African, Caribbean, and/or Black’, is commonly used terminology in Canadian HIV research, it also has limitations. The term is used for inclusivity, aiming to capture the rich diversity within Black communities, including the various ethnic, cultural, and linguistic backgrounds that exist (48,49). However, the term conflates race with ethnicity or nationality. For example, some Hispanic/Latino-Caribbean individuals from Spanish-speaking countries may not consider themselves Black, despite being under the Caribbean label. I do not, however, believe this conflation would have introduced significant misclassification biases in this thesis because of how the data was collected. BCC3 participants were asked to self-identify their racial/ethnic background using specific options: “Black African (e.g., Nigerian, Somali),” “Black Caribbean (e.g., Haitian),” and “Black Other (e.g., Black Canadian)”. The inclusion of "Black" in these options likely minimized the chances of individuals who do not identify as Black but are Caribbean for example, being misclassified within the ACB group.

Nonetheless, the abbreviation “ACB” remains somewhat unspecific and vague, and does not fully capture the diverse identities within these communities (49). Furthermore, I believe that even the use of abbreviations like “ACB” to refer to Black people can be reductive. Just as HIV education and advocacy organizations have recommended using person-centred language and avoid using abbreviations to describe people (e.g., “people living with HIV” instead of PLHIV), a similar approach could be applied to discussions of Black communities in Canada (50). Careful and precise definitions of Black populations informed by qualitative research and feedback from those communities, are essential to better reflect their lived experiences (49).

### 4.2.3. Researcher Reflections

A recurring thought throughout this research has been the inclusion of white respondents in a thesis about experiences of racism. Fundamentally, racism is an ideology deeply ingrained in the fabric of society to assert the dominance and superiority of whiteness over non-whiteness (1). According to this view, white people cannot be victims of racism, however, ‘reverse racism’ or ‘anti-white racism’ has emerged as an ideology, dating back to the late 1800s in the US (1,51). This concept refers to the perception of white victimhood, where white individuals believe that they experience discrimination because they are white (51). Scholars argue that this ideology draws false parallels by ignoring the profound power differences between white and racialized people at the group level, undermining the empirical evidence of racial inequities in material resources and structural power (51).

Nevertheless, in BCC3, all participants completed the EDS to measure experiences of everyday racial discrimination. But if fundamentally, they cannot experience racism, why, then, include them in this research? Several other studies testing the psychometric properties of the EDS or investigating associations with health outcomes have included white individuals in their samples (52–56). And interestingly, 44% of white respondents in Chapter 3 of this thesis reported ever experiencing race-based discrimination. Some researchers have presented a stress coping model for studies of the biopsychosocial effects of perceived racism among African American people and proposed that it is the perception of environmental stimuli as racist that triggers heightened psychological and physiological stress responses (57). So, the question becomes whether it matters if white people actually experience racism (which they cannot), or if the mere perception of racism leads to health consequences, and is thus, important to study. While perceptions of ‘reverse-racism’ or racial discrimination by white women was not the focus of this thesis, it is an interesting avenue for future research.

Another perspective on the inclusion of white respondents could be that including white respondents provides a benchmark for comparison. Because white people do not, or should not experience racism, their responses on scales like the EDS can offer valuable insight into the magnitude of racialized people’s experiences. This comparison would further highlight racial disparities and the need for equity. However, on the other hand, social science researchers and bioethicists have critiqued the use of white people as a reference category in health research, implicitly asserting that they are the norm to which others must be compared (58,59). This dilemma – whether white respondents experience discrimination and in ways that are meaningfully comparable to racialized individuals – was reflected in the multi-group CFA conducted to test for cross-group invariance by race/ethnicity in Chapter 2. White respondents were excluded due to low item endorsement, which resulted in model non-convergence. Consequently, I could not conclude whether the EDS measures the same construct among white women and racialized women. Despite these interesting complexities, the central question of this thesis remained: how, if at all, do the experiences of perceived everyday racial discrimination shape women's sexual health outcomes?

This thesis highlighted the insidious nature of racism. The findings reveal that experiences like being treated with less respect or being called names because of one's race are not just minor, unpleasant incidents, but have significant sexual health consequences. This challenges the belief that racism must be overt, extreme, or violent to affect health and quality of life. The results align with growing evidence that racism is a public health threat. Canada's historical "colour-blind" approach, which disregards the existence and impacts of racism, is called into question by this research (1,60). However, the Anti-Racism Data Act and Anti-Racism Act in BC are encouraging steps in the right direction.

Additionally, as I engaged with scientific literature throughout this research, I realised just how much of it focuses on health disparities between racial/ethnic groups, while failing to examine or discuss the underlying causes of these disparities. By not linking racial health disparities to the mechanisms that produce them like interpersonal racism, or other social determinants that are driven by structural racism, these studies may inadvertently endorse biological essentialism or cultural inferiority. It is imperative that researchers avoid implying that race itself—rather than racism and other social determinants of health—is the cause of health inequities. Moving forward, research must carefully consider and address the root causes of disparities to ensure that marginalized communities are not further harmed by misinterpretation.

Finally, an important reflection pertains to my dual role as both a research assistant on the BCC3 study and a researcher, which has had a significant influence on how I approached this thesis. Administering the clinical survey to many of the participants gave me unique insights into their lived experiences. Many women shared stories beyond what was asked of them in survey questions, ranging from joyful moments to painful accounts of trauma and inequity. These interactions deepened my empathy and allowed me to approach my analyses with greater care, ensuring that participants' experiences were accurately and respectfully reflected in the findings. Working closely with Community Research Associates (CRAs) further enriched my understanding of the diverse experiences of women living with HIV in British Columbia. Their contributions not only broadened my perspective on the data but also helped highlight the resilience, capacity, and strength among them.

My firsthand experience administering surveys also provided insight into how participants engaged with certain questions. For instance, participants of mixed racial/ethnic backgrounds often expressed uncertainty when identifying themselves, which influenced my considerations on the complexities of collecting race/ethnicity data in health research. Moreover, I believe my role in administering the clinical survey helped build rapport with participants who may have been initially sceptical about research. CRAs frequently relayed feedback that participants felt supported and safe during their clinical visits, which may have contributed to higher data quality in the community survey, particularly for sensitive questions related to discrimination and sexual health.

However, I also recognize that my dual role as both a researcher and data collector may have introduced some biases. For example, I find that I focus more heavily on the experiences of Black women, particularly in this discussion chapter. This focus may be shaped by not only my active role in recruitment efforts, but also my positionality as a Black woman. While this perspective offers valuable insights, it is important to remain mindful of potential biases and strive for balanced interpretations of the data.

## 4.3. Conclusion

Racism, in all its forms, including interpersonal racism, continues to be pervasive within Canadian society, emphasizing the need for reliable and valid tools to measure it. While extant research has explored the associations between everyday racial discrimination and health outcomes, there had been little focus on the implications for the sexual health and wellbeing of women in Canada. This thesis has contributed to the evidence that the Everyday Discrimination Scale is a reliable and valid measure of everyday racial discrimination among racially diverse women living with and without HIV in BC, though it may benefit from refinement.

By centring sexual pleasure as an important marker for health, this research demonstrates how racism can limit women's opportunities for sexual pleasure, underscoring the need to address racism as a public health issue that threatens women's sexual health and rights. Furthermore, this thesis contributes to a growing body of literature that promotes a more holistic perspective on the sexual health of women living with HIV, reinforcing the need to highlight pleasure as a legitimate focus of research and public health programming.

The findings also challenge common narratives of HIV as a hinderance to sexual pleasure. Among women living with HIV who predominantly received women-centred HIV care, HIV status did not significantly influence their experiences of sexual pleasure, pushing back against risk- and deficit- based narratives of sexuality in the context of HIV. Instead, it is the frequent exposure to racism that racialized women face in their day-to-day lives that poses a threat to their sexual health.

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# Appendix A. Chapter 2 Appendices

**Table A.1. Response options for race/ethnicity question in BCC3 survey, and corresponding category assigned for this analysis**

| **Self-Identification** | **Category assigned** |
|---|---|
| ‘Indigenous person living in Canada’ | Indigenous |
| ‘Indigenous person from a country outside of Canada’ | Other racialized |
| ‘Black African’, ‘Black Caribbean’, ‘Black Other’ | African, Caribbean and/or Black |
| Chinese or Taiwanese’, ‘Filipino’, ‘Japanese’, ‘Korean’, ‘Latin American’, ‘South Asian’, ‘Southeast Asian’, ‘Arab’, ‘West Asian’, ‘Central Asian’, ‘Multiracial/Mixed’ | Other Racialized |
| ‘White’ [a] | ‘White’ |
| Black African, Black Caribbean, or Black Other **and** any other identity [b] | African, Caribbean and/or Black |
| ‘White’ **and** any other racialized identity | Other Racialized |

a People who selected an “other” option and named European identities such as “German” or “Polish” were assigned “white”.

b There were no persons who self-identified as both Indigenous and Black

### Table A.2. Everyday Discrimination Scale items and item means by race/ethnicity

| | **African, Caribbean and/or Black** | **Indigenous** | **Other racialized** | **White** |
|---|---|---|---|---|
| You are treated with less courtesy | 3.61 | 3.32 | 2.84 | 1.65 |
| You are treated with less respect | 3.50 | 3.32 | 2.88 | 1.67 |
| You receive poorer service | 3.23 | 3,34 | 2.73 | 1.68 |
| People act as if you are not smart | 3.44 | 3.26 | 2.77 | 1.65 |
| People act as if they are afraid of you | 3.13 | 2.84 | 2.18 | 1.60 |
| People act as if you are dishonest | 3.11 | 3.11 | 2.19 | 1.56 |
| People act as if they are better | 3.87 | 3.58 | 3.27 | 1.79 |
| You are called names or insulted | 2.76 | 3.05 | 2.36 | 1.71 |
| You are threatened or harassed | 2.63 | 2.85 | 2.10 | 1.63 |
| **Overall mean score (SD)*** | 29.27 (11.00) | 28.77 (13.13) | 23.31 (11.07) | 14.92 (8.75) |

Note: Each scale item has a score range of 1-6 with 1 being the lowest frequency of experiencing each form of everyday racial discrimination and 6 representing the highest frequency.

*Range: 9-56

# Appendix B. Chapter 3 Appendices

## Table B.1. Modified Everyday Discrimination Scale items and item means by race/ethnicity

| | ACB¶ | Indigenous | Other racialized | White |
|---|---|---|---|---|
| ab§. You are treated with less courtesy / You are treated with less respect | 3.51 | 3.31 | 2.89 | 1.68 |
| You receive poorer service | 3.23 | 3.30 | 2.75 | 1.70 |
| People act as if you are not smart | 3.45 | 3.26 | 2.80 | 1.70 |
| People act as if they are afraid of you | 3.10 | 2.82 | 2.15 | 1.63 |
| People act as if you are dishonest | 3.11 | 3.11 | 2.21 | 1.58 |
| People act as if they are better | 3.85 | 3.59 | 3.25 | 1.83 |
| hi‡. You are called names or insulted / You are threatened or harassed | 2.72 | 2.93 | 2.24 | 1.69 |

¶African, Caribbean and/or Black

§Item *ab* is an average of items *a* and *b* from the original version of the scale

‡Item *hi* is an average of items *h* and *i* from the original version of the scale

Note: Each scale item has a score range of 1-6 with 1 being the lowest frequency of experiencing each form of everyday racial discrimination and 6 representing the highest frequency

**Table B.2. Baseline characteristics of BCC3 participants who had any form of sexual experience in the past one month compared to those who did not**

| Variable | Excluded: Reported not having a sexual experience in the past one month (n=165) | Analytic sample: Reported having a sexual experience in the past one month (n=355) | p-value |
|---|---|---|---|
| | n (%) | n (%) | |
| **Age, years**, mean (SD) | 51.3 (13.2) | 44.9 (13.6) | **<0.001** |
| **Everyday Discrimination Scale score**, mean (SD) | 18.6 (10.0) | 17.0 (9.8) | 0.079 |
| **HIV Status** | | | |
| Living with HIV | 88 (53.3) | 133 (37.5) | **0.001** |
| Living without HIV | 77 (46.7) | 222 (62.5) | |
| **Race/Ethnicity** | | | |
| African, Caribbean, and/or Black | 29 (17.6) | 43 (12.1) | |
| Indigenous | 57 (34.5 | 97 (27.3) | 0.055 |
| Other race/ethnicity | 24 (14.5) | 66 (18.6) | |
| White | 55 (33.3) | 149 (42.0) | |
| **Gender Identity** | | | |
| Cis-Gender | 163 (98.8) | 339 (95.5) | 0.098 |
| Gender Queer | 2 (1.2) | 16 (4.5) | |
| **Sexual Orientation** | | | |
| Heterosexual | 142 (86.1) | 277 (78.0) | 0.006 |
| 2S/LGBTQIA+ | 21 (12.7) | 78 (22.0) | |
| **Education** | | | |
| ≤Highschool | 82 (49.7) | 105 (29.6) | **<0.001** |
| >Highschool | 83 (50.3) | 250 (70.4) | |
| **Employment** | | | |
| Employed | 57 (34.5) | 194 (54.6) | |
| Unemployed | 99 (60.0) | 139 (39.2) | **<0.001** |
| Student/Retired | 9 (5.5) | 20 (5.6) | |
| Unknown | - | 2 (0.6) | |
| **Household income** | | | |
| ≤CAD$20,000/year | 78 (47.3) | 101 (28.5) | **<0.001** |
| >CAD$20,000/year | 75 (45.5) | 232 (65.4) | |
| Unknown | 12 (7.3) | 22 (6.2) | |

Note: ACB = African, Caribbean, and/or Black; 2S/LGBTQIA+ = Two-Spirit, Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual +; EDS = Everyday Discrimination Scale, range: 7-42; SD=Standard deviation; CAD = Canadian dollar; 6m = 6 months; 1m=1 month

### Table B.3. Unadjusted and adjusted odds ratios modelling the association between everyday racial discrimination and sexual pleasure among non-white respondents

| Variable | OR (95% CI) | aOR§ (95% CI) |
|---|---|---|
| **Everyday racial discrimination** | **0.96 (0.93-0.98)** | **0.96 (0.93-0.99)** |
| **Race/Ethnicity** | | |
| African, Caribbean, and/or Black | - | Ref |
| Indigenous | - | 1.01 (0.45-2.25) |
| Other race/ethnicity | - | 0.73 (0.33-1.61) |
| **Sexual Orientation** | - | |
| Heterosexual | - | Ref |
| 2SLGBTQI+ | - | 0.78 (0.41-1.50) |
| **HIV Status** | - | |
| Living without HIV | - | Ref |
| Living with HIV | - | 1.01 (0.56-1.80) |
| **Income** | | |
| ≤CAD$20,000/year | - | Ref |
| >CAD$20,000/year | - | 0.78 (0.40-1.50) |
| Unknown | - | 1.13 (0.37-3.51) |
| **Employment‡** | | |
| Employed | - | Ref |
| Unemployed | - | 0.57 (0.30-1.05) |
| **Education** | | |
| More than Highschool | - | Ref |
| Highschool or less | - | **0.40 (0.20-0.78)** |
| **Age** | - | 0.99 (0.97-1.01) |
| **Gender** | | |
| Cis-gender | - | Ref |
| Gender queer | - | 1.08 (0.31-3.97) |

§N=205

‡Student/retired was collapsed into “unemployed” for the multivariable model

Note: Bold values indicate a statistically significant result at p<0.05