Discrimination at work and symptoms of mental disorders among nurses in British Columbia

by

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Thesis Submitted in Partial Fulfillment of the
Requirements for the Degree of
Master of Science

in the
Master of Science Program
Faculty of Health Sciences

SIMON FRASER UNIVERSITY

Fall 2020

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Abstract

Nurses belonging to equity-seeking groups, including people of colour, Indigenous people, people with disabilities, and people identifying as 2SLGBTQIA+, face barriers to opportunities and resources, and might more frequently experience workplace discrimination. Whether these experiences are associated with adverse mental health outcomes is unknown. This study examines factors associated with workplace discrimination and relationships between discrimination and mental health outcomes, using survey data from nurses in British Columbia, Canada. Using logistic regression, I investigated relationships between workplace discrimination and symptoms of mental disorders, adjusting for personal and work/role characteristics. Of 4545 respondents, 12.5% reported experiencing discrimination, rising to between 19.6% and 24.4% among those who identify with equity-seeking groups. Overall, 45.8% of nurses reported symptoms of post-traumatic stress disorder, 28.1% reported symptoms of anxiety, and 31.1% reported symptoms of depression. Nurses reporting workplace discrimination were more than twice as likely to report symptoms of mental disorders, with similar results across mental disorders. Experiences of discrimination in the workplace are common for nurses in BC, and symptoms of post-traumatic stress disorder, anxiety, and depression are prevalent in this population. Worker psychological health and safety is often treated as an individual issue and responsibility, but we must instead consider how it is related to working conditions both embedded in, and reflecting, societal inequalities.

Keywords: nurse; discrimination; post-traumatic stress; anxiety; depression; workplace

For my mom, Nan Wardrop.

Thank you for making it all possible.

Acknowledgements

Thank you to the BCNU nurse members who participated in this research. You have my enduring gratitude both for your contributions to the research, and for your immeasurable contributions to the health and wellness of our society. To the BCNU leadership and the UBC researchers responsible for the larger research project from which the data in this work were drawn, thank you for engaging in this important work.

Ruth Lavergne, I cannot adequately express my gratitude for your dedication to guiding me through this work. With you as my supervisor, I have felt supported, cared for, and confident that I'm in eminently capable hands. I appreciate your ability to stay flexible and to keep a sense of humour at even the most challenging times. Your belief in me has allowed me to grow more towards being my best self. My thanks also to David Whitehurst and Maura MacPhee for your work and guidance as committee members.

To my little family: Chris, Lili, and Kate. You are my greatest loves, so taking time away from you to complete this project was no easy thing. Thank you for understanding when I had to slip away from movie nights and game nights and all the rest to fix my code or to revise another paragraph. To my sisters Alison and Amanda, from birth you have lent me your support, your encouragement, and your laughter and I am so grateful to have sisters I like as well as love.

Marie and Tarya, my endless appreciation to you for lending me your ears, your shoulders, your expertise, your intellect, your good sense, and your levity. This would have been a much lonelier endeavour without you. And lastly, thanks to Gene Roddenberry for creating *Star Trek: The Next Generation*, reruns of which kept me company during late nights of populating data tables.

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List of Acronyms

BC	British Columbia
DSM-IV	Diagnostic and Statistical Manual, 4th Edition
GAD-7	Generalized Anxiety Disorder 7-item scale
PHQ-9	Patient Health Questionnaire 9-item scale
PTSS-14	Posttraumatic Stress Symptoms 14-item scale

Glossary

2SLGBTQIA+	“Two Spirit, Lesbian, Gay, Bisexual, Trans, Queer (or Questioning), Intersex, Asexual (or sometimes Ally). The placement of Two Spirit (2S) first is to recognize that Indigenous people are the first peoples of this land and their understanding of gender and sexuality precedes colonization. The ‘+’ is for all the new and growing ways we become aware of sexual orientations and gender diversity.” (UBC Equity & Inclusion Office, n.d.)
Discrimination	“Discrimination is an action or a decision that treats a person or a group badly for reasons such as their race, age or disability.” (Canadian Human Rights Commission, n.d., a)
Equity-seeking	“Communities that experience significant collective barriers participating in society. This could include attitudinal, historic, social and environmental barriers based on age, ethnicity, disability, economic status, gender, nationality, race, sexual orientation and transgender status, etc. Equity-seeking groups are those that identify barriers to equal access, opportunities and resources due to disadvantage and discrimination and actively seek social justice and reparation.” (UBC Equity & Inclusion Office, n.d.)
Marginalization	“A social process by which individuals or groups are (intentionally or unintentionally) distanced from access to power and resources and constructed as insignificant, peripheral, or less valuable/privileged to a community or “mainstream” society.” (UBC Equity & Inclusion Office, n.d.)
Microaggressions	“Subtle forms of discrimination in which brief, daily, behavioral, verbal, or environmental injustices may occur.” (Sue et al., 2007)
Racialization	“The process through which groups come to be socially constructed as races, based on characteristics such as race, ethnicity, language, economics, religion, culture, politics, etc.” (Canadian Race Relations Foundation, 2019)
Transgender	“A term used to describe people whose gender identity differs from the sex they were assigned at birth. People in the transgender community may describe themselves using one (or more) of a wide variety of terms, including (but not limited to) transgender, transsexual, and non-binary.” (Glaad, n.d.)

Chapter 1. Introduction

Nurses are integral to the Canadian healthcare system. In 2018, there were 418,404 nurses employed in Canada (Registered Nurses, Licensed Practical Nurses, and Registered Psychiatric Nurses), with 52,996 (13%) of those working in British Columbia (Canadian Institute of Health Information; CIHI, 2019). By comparison, there were 12,553 physicians (CIHI, 2019b) and 5677 pharmacists working in British Columbia the same year (CIHI, 2019c). Prevalence of mental disorders, including post-traumatic stress disorder, depression, and anxiety, are higher among nurses in Canada than population averages (Stelnicki et al., 2020). Psychological health can be described as "our ability to think, feel and behave in a manner that enables us to perform effectively in our work environments, our personal lives, and in society at large" (Gilbert et al., 2018). Workplace psychological health and safety, including experiences of discrimination, may shape adverse mental health outcomes (Brandford & Reed, 2016; Enns et al., 2015; Ohler et al., 2010; Spence Laschinger, 2004). Nurses who belong to equity-seeking groups, including Indigenous people, other people of colour, people with disabilities, and people who identify as Two-Spirit, lesbian, gay, bisexual, trans, queer/questioning, intersex, asexual/ally (2SLGBTQIA+), may more frequently experience discrimination, but the extent of this is unknown, as is the degree to which experiences of discrimination in the workplace contributes to adverse mental health outcomes.

1.1. Purpose of this Study

This study aimed to document factors predicting experiences of workplace discrimination and to determine if there is a relationship between discrimination at work and symptoms of mental disorders among nurses in British Columbia, Canada.

1.2. Research Questions and Hypotheses

I used quantitative data from a survey of nurses in British Columbia. My research questions and hypotheses were as follows:

1. What factors predict experiences of discrimination at work for nurses?

- Hypothesis 1: In the Canadian nursing context, those nurses who identify as being part of an equity-seeking community are at higher risk of experiencing discrimination.

2. Is discrimination at work associated with symptoms of mental disorders in nurses?
    - Hypothesis 2: Experiences of discrimination at work are positively associated with symptoms of mental disorders in nurses.
3. Does this vary depending on the type of mental disorder (post-traumatic stress disorder, anxiety, or depression)?
    - Hypothesis 3: Any relationship between discrimination at work and mental disorder is similar across types of mental disorder.

1.3. Significance of the Study

The prevalence of discrimination at work among nurses has not been directly researched in British Columbia. Discrimination can be defined as "an action or a decision that treats a person or a group badly for reasons such as their race, age or disability" (Canadian Human Rights Commission, n.d., a). Although mental disorders, including post-traumatic stress disorder, anxiety, and depression among nurses have been researched internationally (Gallego-Alberto et al., 2018; Jacobowitz, 2013; Letvak et al., 2012; Mealer et al., 2009; Stelnicki et al., 2020; Zerach & Shalev, 2015), their relationship to experiences of discrimination in the workplace has not been adequately explored. While there is evidence of associations between experiences of workplace discrimination and adverse mental health outcomes from other settings (e.g., Soto et al., 2011; Bhui et al., 2005), we don't know the degree to which discrimination might shape the symptoms of mental disorder among nurses, or whether this may differ between disorders (post-traumatic stress disorder, anxiety, and depression). I accessed survey data covering a large sample from British Columbia's nursing population, including acute, long-term, and community care sectors. The survey collected information on respondents' equity-seeking identities and experiences of discrimination. These data allowed me to shed light on how discrimination at work and symptoms of mental disorder in nurses might be related. Psychological health and safety in nursing workplaces is an issue not only for nurses and their loved ones, but also has implications in terms of quality, safe nursing care (Adler et al., 2006; Letvak et al., 2012; McHugh et al., 2011).

By investigating the relationships between workplace discrimination and symptoms of mental disorders in nurses, I have aimed to help improve nurses' workplaces, and in turn, their mental health. Considering effects of discrimination is important for addressing issues of equity in the workplace, such as unfair treatment based on aspects of a person's identity (to be described in greater detail in section 2.1). The first set of analyses, exploring which nurses are most likely to experience discrimination at work, can inform strategies to address workplace discrimination. The second set of analyses, exploring the relationship between workplace discrimination for nurses and symptoms of mental disorders, can inform action to address existing mental health impacts.

Chapter 2 is a review of relevant literature about discrimination at work for nurses, and risk of adverse mental health outcomes. Chapter 3 includes a description of the study methods (i.e., participant population, recruitment procedures, measures, data collection procedures, operational definitions, and statistical analyses). Study results, including participant characteristics and results of regression analyses are described in Chapter 4 (first for factors associated with discrimination at work, and then for the relationship between discrimination at work and symptoms of mental disorders). Chapter 5 summarizes findings of the research, placing them in the context of published literature, as well as proposing related recommendations and describing limitations of this study.

Chapter 2. Literature Review

In this chapter I review relevant literature about discrimination at work for nurses, and factors shaping adverse mental health outcomes. First, in section 2.1, I review literature on equity-seeking group status in nursing and discrimination. In section 2.2 I discuss mental health in nurses.

2.1. Discrimination and Equity-Seeking Group Status

Equity-seeking groups are

> communities that experience significant collective barriers participating in society. This could include attitudinal, historic, social and environmental barriers based on age, ethnicity, disability, economic status, gender, nationality, race, sexual orientation and transgender status, etc. Equity-seeking groups are those that identify barriers to equal access, opportunities and resources due to disadvantage and discrimination and actively seek social justice and reparation (UBC Equity & Inclusion Office, n.d.).

There are many potentially intersecting equity-seeking group identities an individual might hold (e.g., person of colour; Indigenous; person with a disability; Two-Spirit, lesbian, gay, transgender, queer/questioning, intersex, asexual/ally (2SLGBTQIA+)). Any or all of these identities can shape experiences of discrimination in the workplace. Workers who are part of an equity-seeking group might experience discriminatory behaviour in the workplace, which is an occupational stressor (Offermann et al., 2014), and can lead to decreased wellbeing, increased job turnover, and increased intention to leave an employer (Bergman et al., 2012). Sources of discriminatory behaviour at work for nurses might include (but are not limited to) employer representatives (e.g., managers), nursing colleagues, other healthcare colleagues, those accessing services, and family members or friends of those accessing services.

Discriminatory behaviours can be overt or covert but are damaging regardless of which form they take (Ontario Human Rights Commission, n.d.). Overt acts are open expressions of prejudice such as verbal abuse, exclusion, withholding of benefits, or imposing extra burdens for no valid reason (Ontario Human Rights Commission, n.d.). Covert discrimination often takes the form of microaggressions, which are subtle acts of discrimination. Microaggressions might be unintentional or intentional. As described by

Sue and colleagues (Sue et al., 2007), microaggressions take three forms: microassaults, microinsults, and microinvalidations. Microassaults are instances of explicit derogation through attacks (verbal or non-verbal). Microinsults are communications that degrade a person's identity, and microinvalidations are communications which deny the thoughts, feelings, and/or reality of a person. Although originally focused on racialized groups, research on microaggressions has more recently been applied to considerations of other equity-seeking groups (Chang & Chung, 2015).

Discrimination also arises from systemic structures and historical disadvantage. Systemic discrimination includes discrimination "embedded in patterns of behaviour, policies and practices that are part of the administrative structure or informal culture of an organization, institution or sector" (Ontario Human Rights Commission, n.d.). Systemic discrimination can result in both overt and covert discriminatory behaviours and is often not recognized by those who do not experience it (Ontario Human Rights Commission, n.d.).

Within the British Columbia nursing setting, the following are identified as equity-seeking groups: Indigenous people and other racialized people; those who are 2-Spirit, lesbian, gay, bisexual, transgender, queer/questioning, intersex, asexual/ally (2SLGBTQIA+); and those with disabilities. In the following sections I review literature about discrimination at work relevant to each of these groups.

2.1.1. Indigenous and Other Racialized People

Racialization is "the process through which groups come to be socially constructed as races, based on characteristics such as race, ethnicity, language, economics, religion, culture, politics, etc." (Canadian Race Relations Foundation, n.d.). Racialized communities are those composed of people who are non-white (Homeless Hub, n.d.). The term "racialized" has been used in this research as opposed to the term "minorities" to reflect that in any given geographic area, people who are non-white might be a statistical majority as opposed to a statistical minority (Homeless Hub, n.d.). In the Canadian workplace, Indigenous and other racialized people are more likely than their non-racialized counterparts to face workplace discrimination as well as low representation in leadership positions (Canadian Centre for Diversity and Inclusion, 2018). Yet racialization of the healthcare workforce remains an under-researched area.

Baptiste (2015) has asserted that the dearth of research on discrimination in healthcare supports a false impression that discrimination in healthcare (and specifically in nursing) does not exist, which in turn leads to the topic of discrimination not receiving the attention it should.

Baptiste (2015) has suggested that discrimination also affects patient safety, via at least two channels. The first of these is the potential effect of nurses' experiences of perceived discrimination on their self-esteem, self-perception, and role function. In turn, the group cohesion and mutual respect among colleagues required for safe patient care is eroded in environments that foster isolation, exclusion, and hostility through discrimination. The second channel that Baptiste described is that of experiences of discrimination contributing to nurses' decisions to separate from their employers (external turnover), which can lead to short-staffing, inadequate nursing skill mix, or use of agency staff. This is supported by other research, such as Moceri's (2012) findings that Latinx nurses in the United States who reported higher levels of perceived bias planned to leave their employment sooner than those with fewer negative experiences.

Due to the history of colonial practices and racism against Indigenous people in Canada (e.g., Truth and Reconciliation Commission of Canada, 2015; Walkem QC, 2020), the experience of Indigenous nurses might differ from that of other racialized communities in British Columbia and across Canada. In 2016, 5.9% of the population of British Columbia identified as "Aboriginal" (First Nations people, Métis, and/or Inuk; Government of Canada, 2017), but only 3% of nurses in that same year identified as Aboriginal (University of Saskatchewan, 2018). This indicates that there is further progress to be made in British Columbia to achieve appropriate representation in nursing which is important for Indigenous nurses and wider Indigenous communities alike.

In their exploration of long-term care work (i.e., providing healthcare in care homes), Braedley and colleagues (2018) argued that the increasing racialization of this work in Canada can be seen as an extension of long-standing arrangements where paid domestic work has been largely done by Indigenous and immigrant women from racialized groups. Although there is an increasing number of men working in long-term care settings, these men are also more likely to be from racialized immigrant communities (Braedley et al., 2018). Research undertaken with Canadian nurses has suggested that internationally educated nurses experience their Canadian-born

colleagues as treating them like “outsiders” in the workplace, as well as questioning the adequacy of their education and nursing skills (Tregunno et al., 2009). Similarly, compared to those born in Canada, nurses who were born elsewhere reported experiencing more physical and verbal violence at work (O’Brien-Pallas & Wang, 2006).

Since the landscape of race relations varies by region, it is important to understand the specifics of discrimination against Indigenous and other racialized communities within a given geographical region, such as the province of British Columbia.

2.1.2. Two-Spirit, Lesbian, Gay, Bisexual, Queer/Questioning, Intersex, Asexual/Ally (2SLGBTQIA+)

People who identify as sexual minorities experience discrimination in the workplace, sometimes in the form of microaggressions and ostracism, that leads to decreased physical and emotional wellbeing (DeSouza et al., 2017). In their research on lesbian, gay, bisexual, and transgender physicians in the United States, Eliason and colleagues found that these physicians experience discriminatory practices in the healthcare institutions in which they work (Eliason et al., 2011). These experiences included not only direct employment issues such as exclusionary employee policies, but 65% also reported frequently hearing derogatory remarks about LGBT patients at work and 35% reported witnessing discriminatory care of an LGBT patient.

Trans people (those whose gender identity does not match their sex assigned at birth, including but not limited to transgender and non-binary people) in Canada report high levels of harassment and discrimination in housing, employment, health, and/or social services (Canadian Mental Health Association, 2020). Chang and Chung (2015) have reported that people who are transgender often experience microaggressions, and Nadal and colleagues (2012) identified 12 microaggression themes in their study of transgender people. These categories include (1) use of transphobic and/or incorrectly gendered terminology (e.g., utilization of disparaging language and incorrect gender pronouns), (2) assumption of universal transgender experience, (3) exoticization, (4) discomfort/disapproval of transgender experience, (5) endorsement of gender-normative and binary culture of behaviors, (6) denial of existence of transphobia, (7) assumption of sexual pathology or abnormality, (8) physical threat or harassment, (9) denial of

individual transphobia, (10) denial of bodily privacy, (11) familial microaggressions, and (12) systemic and environmental microaggressions. With the exception of familial microaggressions, any of these could be present in the nursing workplace. Furthermore, in the United States, unemployment rates have been found to be about double those of cisgender people and approximately half of transgender people have reported experiencing adverse job outcomes as a result of their gender identity or gender expression (Grant, et al., 2011).

With regards to those who identify as non-binary or gender non-conforming, Fiani and Han (2019) have pointed out that even the root word of transgender ("trans" meaning "across") implies crossing from one end of a binary to the other, which is not representative of those people who identify as non-binary or gender non-conforming. Furthermore, although it might be possible for a transgender man or a transgender woman to present as cisgender, in order to have their gender identity recognized, those people who are non-binary have to identify themselves as transgender (i.e., they must be "out" about their gender identity; Davidson, 2016).

There is very limited data available to determine how many Canadian nurses identify as 2SLGBTQIA+. Eliason and colleagues (Eliason et al., 2011) stated that "lesbian, gay, bisexual, transgender, and queer/questioning (LGBTQ) nurses are often invisible in the nursing workforce, absent from discourses of professional nursing organizations, ignored or pathologized in the nursing curriculum, and only rarely found on the pages of nursing journals." (p.237). The facets of sexual identity can often be invisible and might therefore be considered a "concealable stigma" (Waite & Denier, 2009), which can present methodological challenges for researchers wishing to study discrimination against 2SLGBTQIA+ populations. Even for those whose 2SLGBTQIA+ identities are not obvious or known, they might hear offensive jokes about sexual orientation or gender identity, which are a form of harassment (Canadian Human Rights Commission, n.d., b), and being "closeted" can lead to feelings of disconnection from coworkers and ostracism from the organizational culture (DeSouza et al., 2017).

2.1.3. Disabilities

Statistics Canada (2018) reported that in 2017, 22% of Canadians over the age of 14 (6.2 million people) had disabilities. People with disabilities are less likely to be in

the workforce than their counterparts without disabilities and are more likely to be working part-time (Trupin & Yelin, 1999). In fact, Statistics Canada found that in 2017, the employment rate for working age adults was 59% in people with disabilities, as opposed to 80% in those without.

Workers with disabilities might need accommodations to be able to work. In 2017, 37% of workers aged 25 to 64 needed workplace accommodation to be able to work, with the most commonly required accommodations being flexible work arrangements (27%), workstation modifications (15%), and human or technical supports (6%; Statistics Canada, 2018b). However, needing accommodations might not be the greatest barrier to Canadians with disabilities being able to secure and maintain employment. In a study of 56 workers with disabilities in Calgary and Regina, the researchers found that perceptions of disability had a greater impact on securing and maintaining employment than did a lack of accommodations in the workplace (Shier et al., 2009).

Research with Canadian federal public service employees indicated that 25.9% of those with disabilities report experiences of discrimination, which is nearly four times as often as those with no disability (6.7%; Jones et al., 2018). They were also more than twice as likely to report experiences of harassment (37.0% vs. 17.1%; Jones et al., 2018). Furthermore, 52% of all complaints to the Canadian Human Rights Commission in 2019 identified disability as the grounds of discrimination, up 36% that year compared to a ten-year average (Canadian Human Right Commission, 2019).

With regards to nursing specifically, nursing education and regulation in Canada is based largely on a generalist model, which assumes an able-bodied person as the norm. This assumption has been affirmed by the College of Registered Nurses of British Columbia regulations that set forth fitness parameters that they have framed as necessary for practising nursing (Anyinam, 2018). Anyinam (2018) has asserted that the population of nurses with disabilities is largely a hidden one, likely due in large part to fears surrounding disclosure of disability in work environments that are hostile in various ways towards those who have disabilities. Even when disabilities are not disclosed, it is plausible that they might affect these nurses in ways that could leave them open to more experiences of discrimination (e.g., needing help with certain tasks, etc.).

2.2. Mental Disorders in Nurses

Due to the nature of nursing work (e.g., frequency of bearing witness to and/or experiencing traumatic events, highly gendered care work), post-traumatic stress disorder, anxiety, and depression are relevant disorders, and the focus of the research in this thesis.

Numerous studies have outlined the difficult working conditions that many Canadian nurses encounter on a regular basis, including demanding workloads, bullying, and violence (e.g., Reichert, 2017; Havaei & MacPhee, 2020; Stelnicki et al., 2020). Such conditions have been linked to various physical and psychological health outcomes. There are many reasons why nurses might be at increased risk of mental disorder as a result of their work, and research on the topic has suggested that this is so (de Boer et al., 2011; Janda & Jandová, 2015; Stelnicki et al., 2020). For instance, Braedley and colleagues suggested that impacts of work overload might be greater for those who work in caring professions than those who do not, since leaving tasks undone often means that the care recipients might suffer as a result (Braedley et al., 2018). In fact, in their study of long-term care workers, Braedley and colleagues (2018) found that the biggest concern for care staff in the area of work conditions was not having enough time to attend to residents' comfort and loneliness. Furthermore, with healthcare being required 24 hours per day, many nurses work shift work. Shift work has been shown to negatively affect psychological, social, and physical health (Vogel et al., 2012), and Braedley and colleagues (2018) have pointed out that since the majority of care workers are women, they are more likely to bear family responsibilities which are additionally affected by shift work.

Daily experiences of marginalization have been linked to symptoms of depression, and discrimination has been found to act as a barrier to getting help with depression once the depression is recognized and help is sought (Williams et al., 2017). Discrimination and harassment in the workplace in general have been linked to poor mental health (Roberts et al., 2004; Rospenda et al., 2009), so it is likely that experiences of discrimination and marginalization in healthcare workplaces might shape symptoms of post-traumatic stress disorder, anxiety, and depression, but this has not been examined in a nursing population.

2.2.1. Post-traumatic Stress

The nature of nursing work is such that many nurses will grapple with trauma in their everyday duties (e.g., major illness, death). The recognition of this fact has led to the study of post-traumatic stress disorder in nurses, characteristics of which include intrusive symptoms associated with the traumatic event (e.g., re-experiencing of traumatic events through flashbacks and nightmares), avoidance of reminders of traumatic events (e.g., avoidance of thoughts, feelings, physical sensations, people, places, or situations that bring up memories of such events), negative changes in thought and mood (e.g., emotional numbness, self-blame, loss of interest in activities), and changes in arousal (e.g., hypervigilance, difficulty concentrating, irritability, difficulties sleeping) lasting for more than a month and causing considerable distress and/or interfering significantly with several different areas of life (Tull, 2019). Evidence about post-traumatic stress disorder in nurses is varied, with reported prevalence estimates of 9-10% (Jacobowitz, 2013), 18% (Mealer et al., 2009), and as high as 23% (Stelnicki et al., 2020). Similarly, Zerach and Shalev (2015) found levels of secondary trauma of 24.1% in their study of psychiatric nurses. In contrast, in 2008, a study of Canadians aged 18 years and older estimated a 2.4% prevalence rate in the general population (one-month prevalence; Van Ameringen et al., 2008).

In their study of university hospitals in the United States, Mealer and colleagues (2009), found that 35% of nurses reported having nightmares that were related to their experiences at work such as providing end of life care, feeling overextended, caring for combative patients or family members, and visualizing open wounds or massive bleeding. Furthermore, those researchers found that work-related psychological symptoms of burnout syndrome (characterized by emotional exhaustion, depersonalization, and lack of personal accomplishment that results from stressors experienced at work) and post-traumatic stress disorder resulted in increased likelihood of perceptions of difficulty in various areas of life when compared to those suffering from burnout syndrome alone. This might suggest that whereas burnout is more localized to work-life, the effects of post-traumatic stress disorder are more general and pervasive throughout areas of an individual’s life. Furthermore, work-related issues are more likely to impact the personal lives of nurses with burnout syndrome and post-traumatic stress disorder, interfering with their ability to complete household duties, relationships with

friends and family, participation in fun and leisure activities, schoolwork, sex life, general life satisfaction, and overall functioning in all areas of life (Mealer et al., 2009).

The Public Health Agency of Canada (2020) states that Indigenous health care providers work within contexts and structures that can increase their risk of mental disorders including post-traumatic stress disorder. Historical and current trauma related to colonial policies and racist systems continue to impact the mental health of Indigenous peoples, including care providers, placing them at higher likelihood for post-traumatic stress disorder. In addition, because of the integral and embedded services they provide, communities often have high expectations of Indigenous care providers which can make it difficult to navigate boundaries between personal and work-life. Risk is increased in cases where, due to systemic underfunding of services, they are the only person providing specialized services in their communities where they have little choice but to take on multiple roles and treat family members or friends in traumatic situations.

2.2.2. Anxiety

Generalized Anxiety Disorder is a mental disorder that is characterized by excessive anxiety or worry, lasting at least six months, and that is very challenging to control. Accompanying this anxiety and worry is at least three physical or cognitive symptoms such as restlessness, tiring easily, impaired concentration, irritability, muscle aches/soreness, and difficulty sleeping (Glasofer, 2020). Prevalence rates for anxiety in nurses have been estimated at 16% (Mealer et al., 2009), and up to 26.1% in a recent study of Canadian nurses (Stelnicki et al., 2020). In comparison, the one-year prevalence of Generalized Anxiety Disorder in Canada for people aged 15 years and older was estimated to be 2.5% in 2012 (Pelletier et al., 2017). Mealer and colleagues (2009) found that 19% of nurses reported having feelings of anxiety that were related to their experiences at work. Triggers for nurses' anxiety include feeling overextended at work, end of life issues, and combative patients or family members (Mealer et al., 2009). In their study of nursing home workers, Gallego-Alberto and colleagues found that anxiety was related not only to factors that have typically been studied, such as burden and burnout, but also guilt feelings related to care provision (not providing care as well as desired) and difficulties with residents' relatives (Gallego-Alberto et al., 2018). Relationships between anxiety and workplace factors of psychological health and safety, such as discrimination, remain underexplored.

2.2.3. Depression

Criteria for a diagnosis of major depression include feelings of sadness, low mood, and loss of interest in usual activities persisting for at least two weeks, accompanied by symptoms such as changes in appetite, oversleep or insomnia, fatigue/low energy, feeling guilty, worthless, and hopeless, inability to concentrate, slow or agitated movements, and/or thoughts of death and dying (including suicidal ideation). These symptoms must represent a marked change from the individual's usual functioning and cause significant distress or impairment in functioning (Schimelpfening, 2020).

Anxiety and depression are estimated to be approximately twice as prevalent in women as in men (Kessler, 2003), and nursing is a gendered profession (predominantly female; Canadian Institute of Health Information; CIHI, 2019). However, even among women, nurses seem to be more likely to have depression than non-nurses. In 2015, Enns and colleagues reported a 9.3% 12-month prevalence rate of depression in nurses in Canada, which was almost twice that of Canadian women in general (Patten et al., 2006). In their study of hospital-employed nurses in the United States, Letvak and colleagues (Letvak et al., 2012) found depressive symptomatology at a rate of 18%, which is almost double the United States national average as reported by the Centers for Disease Control and Prevention (CDC, 2010). Finally, in a 2019 web-based self-report survey of over 7000 Canadian nurses, 36.4% screened positive for Major Depressive Disorder (Stelnicki et al., 2020).

In their 2016 review of studies on depression in nurses, Brandford and Reed asserted that a major predictor of depression in registered nurses is work environment (factors such as role overload, role conflict, stress, burnout, absenteeism, intention to leave, and turnover), indicating that improvements to the work environment could ameliorate psychological health problems. Work factors that have been linked to depression include job strain (Ohler et al., 2010; Enns et al., 2015), low autonomy (Enns et al., 2015), role overload (Ohler et al., 2010), and perceptions of respect (Spence Laschinger, 2004). These findings suggest a link between nursing work and depression, but whether discrimination at work is related to depression in nurses remains unknown.

In sum, existing evidence indicates that workers who are part of an equity-seeking group such as Indigenous and other racialized people, those who identify as 2SLGBTQIA+, and those who have disabilities, might experience discriminatory behaviour in the workplace. This could in turn increase risk of mental health outcomes, but this has not been examined in a nursing population.

Chapter 3. Methods

In this chapter, I first explain my approach to the research. In the second section, 3.2, I describe the study's participant population and how they were chosen to participate in the research. In the third section, 3.3, I describe the study's recruitment procedures. Section 3.4 describes the measures used in the research. Sections 3.5, 3.6, and 3.7 outline the data collection procedures, operational definitions, and statistical analyses, respectively.

3.1. Methodology and Research Design

This research is a non-experimental, secondary analysis of cross-sectional survey data. I performed quantitative analyses to answer research questions devised in advance.

3.2. Participants

This research is part of a larger project undertaken by the BC Nurses' Union, in collaboration with researchers from the University of British Columbia, to survey their members. Additional information about the study population and findings, split by nursing sector (acute care, community care, long-term care), can be found in a report of the larger study from which data for this research were drawn (Havaei, MacPhee, McLeod, Ma, Gear, & Sorenson, 2020). All participants for this research were recruited from the BC Nurses' Union membership. BC Nurses' Union nurse members include Licenced Practical Nurses, Registered Nurses, and Registered Psychiatric Nurses who live and work in British Columbia at sites covered by a collective agreement negotiated by the BC Nurses' Union.

3.2.1. Inclusion and Exclusion

All members of the BC Nurses' Union were eligible to complete the larger survey. At the time of the survey, this was approximately 48,000 people, which was most nurses in British Columbia. Nurse Practitioners, as well as any nurses employed at non-BC

Nurses' Union-certified sites, were not included in this research since they were not BC Nurses' Union members.

The BC Nurses' Union had a small number of non-nurse members who were excluded from the present research since the focus was on nurses specifically. Furthermore, only respondents who indicated that they were actively working at the time of the survey (not on leave or retired) were included in the analyses.

3.3. Recruitment

The study was advertised through several communication channels that the BC Nurses' Union regularly uses to communicate with its members. The BC Nurses' Union advertised the study through its email listserve in their eNews mailout, word of mouth, social media, and print advertisements. There was a series of images designed by the BC Nurses' Union communications department to accompany study notices, depicting racially diverse nurses who presented as both female and male. Advertisements went out in six separate messages:

1) October 8, 2019, announcing the survey with the message "*Help us collect the evidence we need to shift psychological health and safety in the workplace*", delivered to 36,990 emails and opened by 13,625 recipients.

2) October 18, 2019, reminder with the message "*Invest 20 minutes in your future and help lead the way on psychological health and safety*", delivered to 36,970 emails and opened by 12,871 recipients.

3) October 25, 2019, reminder with the message "*Your psychological well-being is as important as your physical health and safety*", delivered to 37,033 emails and opened by 13,582 recipients.

4) November 5, 2019, reminder with the message "*Research leads to evidence leads to change*", delivered to 37,126 emails and opened by 13,004 recipients.

5) November 22, 2019, reminder with the message "*Help us identify psychological hazards in your workplace*", delivered to 37,175 emails and opened by 13,683 recipients.

6) November 29, 2019, reminder with the message "*Help us collect the evidence we need to shift psychological health and safety in the workplace*", delivered to 37,162 emails and opened by 10,826 recipients.

BC Nurses' Union advocates (e.g., site stewards, regional and executive leadership) informed members about the survey at events such as Regional Meetings, site walkabouts, the BC Nurses' Union annual Convention and the BC Nurses' Union Human Rights and Equity Conference. The advertisement visuals were posted on the BC Nurses' Union's Facebook, Instagram, and Twitter accounts during the recruitment period. One of the advertisement visuals was featured in the BC Nurses' Union's member magazine, *Update*, in the Fall 2019 issue.

3.4. Measures

This research is part of a larger study undertaken by the BC Nurses' Union in collaboration with the University of British Columbia, which collected information on psychological health and safety and nurse outcomes associated with workplace psychological health and safety, as well as nurses' work environments. This thesis focuses on a subset of the questions/measures used in that project. The questionnaire consisted of a mix of validated scales/tools and individual questions drawn from past surveys conducted by the BC Nurses' Union and/or the University of British Columbia Principal Investigator.

3.4.1. Workplace Discrimination

The presence of workplace discrimination was assessed with the yes or no question "In my workplace, I am experiencing discrimination because of my cultural/ethnic background, disability, sexual orientation, gender or age." This question was drawn from the Guarding Minds at Work survey (Gilbert et al., 2018), which is a questionnaire assessing factors of psychological health and safety at work that was included in the larger survey from which data for this research were drawn.

3.4.2. Posttraumatic Stress Symptoms (PTSS-14)

The Posttraumatic Symptom Scale (PTSS-14; Twigg et al., 2008) is a 14-item tool measuring the presence and intensity of symptoms of post-traumatic stress. Each item is rated on a scale of 1-7 ('never' to 'always'), yielding a total score ranging from 14 (i.e., no post-traumatic stress) to 98 (i.e., high post-traumatic stress). The PTSS-14 has a Cronbach's alpha of at least 0.84 (sometimes higher, depending on timeframe post-discharge; Twigg et al., 2008). I used a cut-off score of 45 to indicate the presence of post-traumatic stress disorder symptoms (i.e., scores <46 indicating absence of symptoms, and scores ≥ 46 indicating presence of symptoms), as per the developers' recommendation that this is the optimum decision threshold, with a sensitivity level of 86% and a specificity level of 97% for diagnosis of post-traumatic stress disorder (Twigg et al., 2008). The PTSS has demonstrated good test-retest reliability, as well as good levels of predictive validity when compared to the Impact of Events Scale and the Post-traumatic Stress Diagnostic Scale (Twigg et al., 2008).

3.4.3. Generalized Anxiety Disorder Scale (GAD-7)

The Generalized Anxiety Disorder scale (Spitzer, Kroenke, Williams, & Löwe, 2006) is a 7-item self-report tool developed as a brief clinical scale to measure Generalized Anxiety Disorder. The GAD-7 has a Cronbach's alpha of 0.92 (Spitzer et al., 2006). Scores range from 0 to 28. Scores of 5, 10, and 15 are taken as the cut-off points indicating mild, moderate and severe anxiety, respectively. I have used a cut-off score of 10 (i.e., scores <10 indicating no anxiety, and scores ≥ 10 indicating presence of anxiety symptoms), since when used as a screening tool, further evaluation is recommended when the score is greater than or equal to this number (Spitzer et al., 2006). Using the threshold score of 10, this tool has a sensitivity of 89% and a specificity of 82% for generalized anxiety disorder (Spitzer et al., 2006). It is also moderately good at screening three other common anxiety disorders - panic disorder (sensitivity 74%, specificity 81%), social anxiety disorder (sensitivity 72%, specificity 80%) and post-traumatic stress disorder (sensitivity 66%, specificity 81%; Spitzer et al., 2006).

3.4.4. Patient Health Questionnaire (PHQ-9)

The Patient Health Questionnaire for Depression (Spitzer, Kroenke, & Williams, 1999) is a tool used widely to screen for depression. It is based directly on the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, DSM-IV-TR, 2000) diagnostic criteria for depression, assigning scores for each diagnostic criterion ranging from 0 (not at all) to 3 (nearly every day). With nine items, the range of possible scores is 0-27, with a score of 0-4 indicating no depressive symptoms, 5-9 indicating minimal symptoms, 10-14 indicating mild to moderate symptoms, 15-19 indicating moderately severe symptoms, and 20-27 indicating severe depression. The tool shows high construct and criterion validity, with a Cronbach's alpha of 0.89 (Kroenke et al., 2001). The PHQ-9 has been shown to have acceptable diagnostic properties with cut-off scores ranging from 8-11 (Manea et al., 2012). I used a cut-off score of 10 (mild symptoms) to indicate the presence of depression symptoms (i.e., scores <10 indicating no depression, and scores ≥ 10 indicating symptoms of depression).

3.4.5. Demographic, Professional, and Worksite Questions

Respondents were asked about their demographic and professional characteristics as well as worksite information, including age, gender, professional designation, nursing area, nursing sector, employment status, nursing role (direct care provision), completion of nursing education outside of Canada, years of nursing experience, and identification with BC Nurses' Union equity-seeking caucus groups (Appendix A). All demographic, professional, and worksite questions were treated as categorical variables, as per individual variable descriptions below. Those participants missing data on demographic, professional, and worksite questions were excluded from relevant analyses, with the exception of the caucus group identification variable. Due to large numbers of missing responses on the caucus group identification variables these were treated differently, with "missing" included as a separate category. This allowed examination of whether respondents who did not endorse either a yes or no response on this question differ in meaningful ways from those who did.

Age group: Respondents entered their age in number of years. Age responses were divided into five categories for analysis: *≤30 years, 31-40 years, 41-50 years, ≥51*

years, and *missing*. The *≤30 years* category was used as the reference category for regression analyses.

Gender: There were three response options available: *female, male,* and *prefer to describe* (e.g., “My sex is female. Sex and gender are not the same thing.”). Due to a small number of respondents (ten) choosing the *prefer to describe* option, this was left as a single category, for a total of three categories used in analysis. *Female* was used as the reference category for regression analyses.

Professional designation: There were five response options available: *Licensed Practical Nurse, Registered Nurse, Registered Psychiatric Nurse, dually registered (Registered Nurse/Registered Psychiatric Nurse),* and *other.* Due to small numbers of respondents in the Registered Psychiatric Nurse and dually registered categories, as well as similar training required to obtain these designations, these two categories were collapsed. Respondents in the *other* category were excluded from analysis due to the selection criteria for the research (i.e., non-nurses were excluded) for a total of three categories used in analysis. *Licensed Practical Nurse* was used as the reference category for regression analyses.

Nursing area: There were seventeen response options available: *ambulatory care, community mental health, emergency, home and community care, intensive care, Indigenous health, long-term care, medical/surgical, mental health or psychiatry, obstetrics, oncology, OR/PACU, palliative, pediatrics, public health, rehabilitation,* and *other (please specify*). Due to low numbers of responses for available response options, as well as similarity of work between areas, some response options were grouped together to create categories for analysis, so that there were ten categories used for analysis: *acute – medical/surgical, acute – emergency, acute – psychiatry, acute – critical care, acute – other, acute – multiple areas, long term care, community care, mental health in long term or community care,* and *other* (see Appendix B for detailed coding decisions). Nursing area was coded based on responses to questions about sector of work (acute, long-term care, or community/public health) and nursing area. Where there was disagreement in responses to these questions, sector was used over nursing area (e.g., where nursing area was listed as long-term care but sector was listed as community and public health, this was coded as community and public health). Any responses that couldn’t be classified in this way were listed as *acute - other* or *other* as

appropriate. *Acute – medical/surgical* category was used as the reference category for regression analyses.

Employment status: There were three response options available: *full-time, part-time,* and *casual* for a total of three categories included in analysis. *Full-time* was the reference category for regression analyses.

Internationally educated nurse and *Direct care provider:* For each of these variables, there were two response options available: *yes,* and *no. No* was the reference category for regression analyses.

Years of nursing experience: There were 22 response options available: *less than one year, 1 year, 2 years, 3 years, 4 years, 5 years, 6 years, 7 years, 8 years, 9 years, 10 years, 11 years, 12 years, 13 years, 14 years, 15 years, 16 years, 17 years, 18 years, 19 years, 20 years, 21 years or more*. Responses were categorized as follows: *5 years or less, 6-10 years, 11-15 years, 16-20 years,* and *21 years or more* for a total of six categories included in analysis. *5 years or less* was the reference category for regression analyses.

Caucus group identification: For this variable, the four BC Nurses' Union equity-seeking caucus groups were used as categories, with a *yes* or *no* response available for each group. There was a brief description of each of these groups included in the survey:

1. The *Indigenous Leadership Circle* is for BC Nurses' Union members who are First Nations, Inuit, or Métis.

2. The *LGBTQ Caucus* is for BC Nurses' Union members who are lesbian, gay, bisexual, transgender, or queer.

3. The *Mosaic of Colour Caucus* is for BC Nurses' Union members who are workers of colour.

4. The *Workers with Disabilities Caucus* is for BC Nurses' Union members who have one or more visible and/or invisible disabilities.

No was used as the reference category for each of the BC Nurses' Union equity-seeking caucus groups for regression analyses. As explained above, unlike for the other explanatory variables, a "missing" category was included here due to a high number of respondents missing data for this variable.

3.5. Data Collection

The survey was administered online through the University of British Columbia, using the Qualtrics platform. It was open for eight weeks, from October 8 to December 2, 2019.

3.6. Operational Definitions

I measured discrimination using the yes/no responses to the question, "*In my workplace, I am experiencing discrimination because of my cultural/ethnic background, disability, sexual orientation, gender or age*" (from the Guarding Minds at Work survey). Equity-seeking group status was assessed using yes/no responses to the question, "*Do you identify with any of the following BCNU equity-seeking caucuses?*" (for each of the four equity-seeking caucus groups; *Indigenous Leadership Circle, LGBTQ Caucus, Mosaic of Colour Caucus, Workers with Disabilities Caucus*).

I defined symptoms of mental disorder (absent/present) using cut-off scores for the screening tools for post-traumatic stress disorder (PTSS-14), anxiety (GAD-7) and depression (PHQ-9). I determined absence vs. presence of symptoms of each mental disorder separately, as well as an overall absence vs. presence of symptoms of any mental disorder (i.e., when cut-off was reached on any of the three disorder measures).

3.7. Statistical Analysis

I analysed the data with SAS version 9.4 (SAS Institute, Cary, NYC, 2013). I performed descriptive analyses (counts and percentages) on all demographic, professional, and worksite factors (as described in section 3.4.1), as well as on each of the tools used to measure symptoms of mental disorders described in section 3.4. All outcomes were categorical variables. To inform analysis under research question 1 (*What factors predict experiences of discrimination at work for nurses?),* I report

descriptive statistics across all respondents as well as stratified by experiences of discrimination. I performed chi-square tests to explore differences in experiences of discrimination and reporting of symptoms of mental disorders by demographic, professional, and worksite characteristics. P-values are reported for all analyses, using a significance level of $p< 0.05$.

I then performed logistic regression to answer my three research questions. There were 4545 respondents included in the analysis, with respondents excluded if they were missing responses on the outcome of interest for each model (discrimination at work, PTSS-14, GAD-7, PHQ-9; listwise exclusion). Respondents missing values for relevant covariates were excluded from analysis, with the exception of caucus group identification, where missing values for covariates were instead included as separate categories (i.e., a category labelled “missing” as opposed to being excluded from analysis).

3.7.1. Factors Predicting Experiences of Workplace Discrimination

I first performed unadjusted (univariable) exploratory analyses to determine the characteristics of nurses who reported experiencing discrimination at work. I conducted chi-square analyses to check for differences between groups (those reporting discrimination vs. those not reporting discrimination) on relevant covariates. All variables with a significant association in the unadjusted analysis were retained in the adjusted (multivariable) analysis, unless colinear with another variable. I report both unadjusted and adjusted odds ratios. Odds ratios reflect odds of experiencing discrimination based on the demographic, professional, and worksite characteristics outlined in section 3.4.5. I also report confidence intervals and p-values, with p-values considered significant at the $p< 0.05$ level.

3.7.2. Association Between Workplace Discrimination and Symptoms of Mental Disorders

The outcome measures (PTSS-14, GAD-7, and PHQ-9) were scored as binary variables, as described in section 3.6. These were the outcome variables in logistic regression models using the question *“In my workplace, I am experiencing discrimination because of my cultural/ethnic background, disability, sexual orientation, gender or age.”*

(from the Guarding Minds at Work questionnaire) as the primary explanatory variable. I ran two additional logistic regression models, for symptoms of any mental illness, and symptoms of all mental illness (also scored as binary variables). The five models were therefore: symptoms of any mental disorder (one or more), symptoms of post-traumatic stress disorder (PTSS-14), symptoms of anxiety (GAD-7), symptoms of depression (PHQ-9), and symptoms of all three mental disorders together (post-traumatic stress disorder, anxiety, and depression).

Personal characteristics listed in section 3.4.5 that were associated with experiences of discrimination at work and might independently shape risk of mental disorders were included as adjustment variables. Both unadjusted (univariable) and adjusted (multivariable) parameter estimates are reported. Odds ratios reflect odds of experiencing symptoms of mental disorders among those who reported having experienced discrimination at work compared to those who did not.

Finally, to confirm that the association between workplace discrimination and symptoms of mental disorders was consistently observed within equity-seeking groups, I conducted logistic regression analyses with the outcome variable of odds of symptoms of any mental disorder, stratified by equity-seeking caucus group status. This allowed me to confirm whether a relationship between discrimination and symptoms of mental disorder held true within all equity-seeking group identities included in this study (Indigenous, 2SLGBTQIA+, Worker of Colour, and/or worker with disabilities).

Chapter 4. Results

Section 4.1 describes the participant characteristics of the sample. In section 4.2, I present results of the regression analyses, first for factors associated with discrimination at work (section 4.2.1) and then the relationship between discrimination at work and symptoms of mental disorders (section 4.2.2).

4.1. Descriptive Statistics

There were 5512 respondents, which is a response rate of approximately 11.5% based on the full BC Nurses' Union membership of approximately 48,000, and a response rate of 14.8% based on the direct email campaign with approximately 37,175 members receiving emails advertising the study. The number of members reached by email differed from the total number of members due to incomplete email records in the the BC Nurses' Union membership system.

Table 4.1 reports the characteristics of study respondents, and chi-square p-values for differences between groups (with p-values significant at the $p<0.05$ level marked in bold text). In these analyses, age was co-linear with years of experience in nursing, so years of experience was excluded from the models.

There were 21.2% of respondents who indicated that they identify with at least one of the BC Nurses' Union's four equity-seeking caucuses: Indigenous Leadership Circle (4.3%; 89.9% *no,* 5.9% *missing*), LGBTQ (4.5%; 89.0% *no,* 6.6% *missing*), Mosaic of Colour (11.2%; 83.0% *no,* 5.8% *missing*), and Workers with Disabilities (4.7%; 88.7% *no,* 6.7% *missing*). There were 2.5% of respondents who reported identifying with two or more caucuses, and 13.8% reported being internationally educated nurses. Of the internationally educated nurses, 22.2% also reported identifying with the Mosaic of Colour caucus. Most respondents identified themselves as female (91.3%), as having the Registered Nurse designation (77.5%), and as working in the acute care sector (72.8%). After exclusions due to missing data, the total sample included in regression analyses was between 4208 and 4545, depending on missing data for the outcomes examined.

Table 4.1. Participant characteristics (total and by outcome)

	Total Sample	Presence of discrimination at work	Symptoms of any mental disorder	Symptoms of post-traumatic stress (PTSS-14)	Symptoms of anxiety (GAD-7)	Symptoms of depression (PHQ-9)	Symptoms of all mental disorders
	n (% of total)	*n (row %)*	*n (row %)*	*n (row %)*	*n (row %)*	*n (row %)*	*n (row %)*
Number & percent of total sample	4545 (100)	505 (12.5)	2201 (52.02)	2000 (45.8)	1227 (28.1)	1350 (31.1)	863 (19.0)
Indigenous Leadership Circle caucus group		***p<0.001***	***p<0.001***	***p<0.001***	***p=0.001***	***p<0.001***	***p<0.001***
Yes	194 (4.3)	38 (19.6)	122 (66.3)	113 (59.8)	75 (39.9)	84 (45.2)	59 (30.4)
No	4084 (89.9)	435 (10.7)	1948 (51.2)	1763 (44.9)	1080 (27.5)	1183 (30.4)	746 (18.3)
Missing	267 (5.9)	32 (12.0)	131 (53.67)	124 (48.4)	72 (28.6)	83 (32.7)	58 (21.7)
LGBTQ caucus group		***p<0.001***	***p=0.019***	***p<0.005***	*p=0.085*	*p=0.238*	*p=0.074*
Yes	203 (4.5)	41 (20.2)	117 (61.3)	110 (56.7)	69 (34.9)	71 (36.2)	51 (25.1)
No	4043 (89.0)	420 (10.4)	1936 (51.4)	1754 (45.1)	1084 (27.9)	1187 (30.8)	756 (18.7)
Missing	299 (6.6)	44 (14.7)	148 (54.6)	136 (47.9)	74 (26.4)	92 (32.5)	56 (18.7)
Mosaic of Colour caucus group		***p<0.001***	*p=0.129*	*p=0.153*	*p=0.736*	*p=0.218*	*p=0.367*
Yes	511 (11.2)	117 (22.9)	230 (49.0)	209 (43.1)	130 (26.9)	135 (28.1)	86 (16.8)
No	3770 (83.0)	354 (9.4)	1833 (52.1)	1664 (45.8)	1029 (28.4)	1130 (31.3)	723 (19.2)
Missing	264 (5.8)	34 (12.9)	138 (57.0)	127 (50.6)	68 (27.0)	85 (34.0)	54 (20.5)
Workers with Disabilities caucus group		***p<0.001***	***p<0.001***	***p<0.001***	***p<0.001***	***p<0.001***	***p<0.001***
Yes	213 (4.7)	52 (24.4)	145 (71.8)	134 (65.4)	90 (43.7)	98 (47.6)	70 (32.9)
No	4029 (88.7)	407 (10.1)	1914 (51.0)	1736 (44.8)	1067 (27.6)	1160 (30.2)	738 (18.3)
Missing	303 (6.7)	46 (15.2)	142 (51.6)	130 (45.1)	70 (24.6)	92 (32.4)	55 (18.2)
Two or more caucus groups		***p<0.001***	***p=0.049***	***p=0.049***	***p=0.008***	***p=0.013***	***p=0.033***
Yes	112 (2.5)	33 (29.5)	64 (61.5)	58 (55.2)	42 (39.6)	45 (42.1)	30 (26.8)
No	4433 (97.5)	472 (10.7)	2137 (51.8)	1942 (45.5)	1185 (27.8)	1305 (30.8)	833 (18.8)

	Total Sample	Presence of discrimination at work	Symptoms of any mental disorder	Symptoms of post-traumatic stress (PTSS-14)	Symptoms of anxiety (GAD-7)	Symptoms of depression (PHQ-9)	Symptoms of all mental disorders
Internationally educated		***p<0.001***	***p=0.018***	*p=0.055*	***p=0.025***	***p=0.012***	*p=0.122*
Yes	625 (13.8)	130 (20.8)	265 (47.6)	243 (41.8)	138 (23.6)	159 (27.4)	100 (16.0)
No	3894 (85.7)	369 (9.5)	1921 (52.6)	1744 (46.3)	1081 (28.8)	1179 (31.6)	758 (19.5)
Missing	26 (0.6)	6 (23.1)	15 (71.4)	13 (59.1)	8 (36.4)	12 (52.2)	5 (19.2)
Gender		***p<0.001***	*p=0.524*	*p=0.644*	*p=0.197*	*p=0.687*	*p=0.426*
Female	4150 (91.3)	430 (10.4)	2017 (52.2)	1828 (45.8)	1137 (28.5)	1236 (31.2)	799 (19.3)
Male	382 (8.4)	72 (18.9)	178 (50.4)	165 (45.1)	87 (23.7)	110 (30.1)	62 (16.2)
Prefer to describe	10 (0.2)	3 (30.0)	6 (66.7)	6 (66.7)	3 (30.0)	4 (40.0)	2 (20.0)
Missing	3 (0.1)	0 (0.0)	0 (0.0)	1 (50.0)	0 (0.0)	0 (0.0)	0 (0.0)
Age group, years		*p=0.064*	***p<0.001***	***p<0.001***	***p<.001***	***p=0.034***	***p=0.001***
≤30	1093 (24.2)	101 (9.2)	592 (57.0)	534 (50.1)	355 (33.5)	362 (34.3)	248 (22.7)
31-40	1356 (30.0)	143 (10.6)	693 (54.4)	631 (48.3)	377 (28.8)	413 (31.8)	272 (20.1)
41-50	986 (21.8)	129 (13.1)	457 (50.7)	418 (44.5)	254 (27.1)	279 (30.0)	174 (17.7)
51+	1084 (24.0)	129 (11.9)	450 (45.2)	408 (39.4)	234 (22.6)	289 (28.0)	163 (15.0)
Missing	26 (0.6)	3 (11.5)	9 (39.1)	9 (39.1)	7 (30.4)	7 (29.2)	6 (23.1)
Professional designation		***p=0.038***	*p=0.384*	*p=0.169*	*p=0.330*	***p=0.002***	*p=0.121*
Licensed Practical Nurse	745 (16.4)	93 (12.5)	367 (55.0)	342 (48.9)	214 (30.4)	256 (36.7)	161 (21.6)
Registered Nurse	3522 (77.5)	379 (10.8)	1696 (51.3)	1533 (45.1)	939 (27.7)	1009 (29.9)	654 (18.6)
Registered Psychiatric Nurse or dually registered (Registered Nurse/ Registered Psychiatric Nurse)	277 (6.1)	32 (11.6)	138 (53.3)	125 (47.0)	74 (27.6)	85 (32.0)	48 (17.3)
Missing	1 (<0.1)	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

	Total Sample	Presence of discrimination at work	Symptoms of any mental disorder	Symptoms of post-traumatic stress (PTSS-14)	Symptoms of anxiety (GAD-7)	Symptoms of depression (PHQ-9)	Symptoms of all mental disorders
Nursing Area		***p<0.001***	***p<0.001***	***p<0.001***	*p=0.075*	***p=0.007***	***p=0.033***
Acute, medical/surgical	1154 (25.4)	142 (12.3)	607 (56.1)	553 (49.5)	343 (30.7)	376 (33.9)	242 (21.0)
Acute, critical care	586 (12.9)	62 (10.6)	268 (49.3)	246 (43.6)	151 (27.0)	161 (29.2)	108 (18.4)
Acute, emergency	472 (10.4)	48 (10.2)	254 (57.9)	240 (53.0)	142 (31.4)	163 (36.0)	110 (23.3)
Acute, psychiatry/mental health	271 (6.0)	34 (12.6)	141 (54.4)	130 (49.2)	67 (25.2)	77 (29.2)	42 (15.5)
Acute, other	728 (16.0)	62 (8.5)	318 (46.2)	284 (40.3)	170 (23.9)	182 (25.9)	115 (15.8)
Acute, multiple units	97 (2.1)	7 (7.2)	56 (65.9)	51 (54.8)	25 (28.1)	34 (38.6)	15 (15.5)
Long-term care	388 (8.5)	67 (17.3)	159 (46.5)	143 (39.8)	95 (26.5)	115 (32.2)	69 (17.8)
Community and public health	572 (12.6)	48 (8.4)	262 (49.1)	226 (40.9)	153 (27.9)	164 (29.9)	104 (18.2)
Long-term/community psych/mental health	249 (5.5)	33 (13.3)	123 (53.3)	113 (48.1)	73 (31.1)	71 (29.8)	51 (20.5)
Other or missing	28 (0.6)	2 (7.1)	13 (52.0)	14 (50.0)	8 (30.8)	7 (26.9)	7 (25.0)
Employment status		***p<0.001***	*p=0.426*	*p=0.493*	*p=0.086*	***p=0.023***	*p=0.098*
Full-time	2851 (62.7)	360 (12.6)	1413 (53.0)	1282 (46.7)	807 (29.4)	887 (32.5)	573 (20.1)
Part-time	1221 (26.9)	96 (7.9)	566 (50.5)	516 (44.4)	308 (26.4)	344 (29.6)	212 (17.4)
Casual	467 (10.3)	48 (10.3)	220 (50.1)	200 (44.0)	111 (24.7)	117 (26.2)	77 (16.5)
Missing	6 (0.1)	1 (16.7)	2 (50.0)	2 (40.0)	1 (25.0)	2 (50.0)	1 (16.7)
Direct care provider		*p=0.086*	*p=0.054*	***p=0.042***	*p=0.137*	*p=0.165*	*p=0.186*
Yes	4330 (95.3)	491 (11.3)	2113 (52.4)	1922 (46.2)	1173 (28.2)	1297 (31.4)	829 (19.2)
No	204 (4.5)	13 (6.4)	85 (44.5)	74 (37.2)	54 (27.4)	52 (26.7)	34 (16.7)
Missing	11 (0.2)	1 (9.1)	3 (33.3)	4 (40.0)	0 (0.0)	1 (11.1)	0 (0.0)

NOTE: P values were derived from Chi Square analyses for all reported categories of all covariates and outcomes. P values significant at 0.05 are in bold text. All predictors are categorical, and all outcomes are binary.

4.1.1. Discrimination

Experiences of discrimination at work were reported by 12.5% of the sample. There were significant between-group differences in experiences of workplace discrimination by identification with BC Nurses' Union caucus groups: 19.6% of respondents who identified as Indigenous ($p<0.001$), 20.2% of respondents identifying as LGBTQ ($p<0.001$), 22.9% of respondents identifying as workers of colour ($p<0.001$), and 24.4% of respondents who identified as having disabilities ($p<0.001$) reported discrimination at work. A higher percentage of men (18.9%), and those who preferred to describe their gender (30.0%), reported experiencing workplace discrimination than women (10.4%) ($p<0.001$). A high percentage of Registered Psychiatric Nurses or respondents who indicated they were dually registered (Registered Nurse/Registered Psychiatric Nurse) reported discrimination (28.8%) in contrast with 12.5% of Licensed Practical Nurse respondents and 10.8% of Registered Nurse respondents ($p=0.032$). A higher percentage of respondents working in long-term care than those in other areas reported discrimination, with 17.5% of long-term care nurses indicating they had experienced discrimination at work ($p<0.001$). A higher percentage of respondents working full-time than those working part time or casual reported discrimination (12.6% vs. 7.9% and 10.3% respectively, $p<0.001$).

4.1.2. Symptoms of Mental Disorder

More than half the sample met the cut-off for having symptoms of one or more mental disorder (52.0%) and 19% met the cut-off for symptoms of all three mental disorders measured.

Post-traumatic stress disorder was the most frequent outcome with of 45.8% of the total sample displaying symptoms. There were significant between-group differences, with 59.8% of respondents who identified as Indigenous ($p<0.001$), 56.7% of respondents who identified as LGBTQ ($p<0.005$), and 65.4% of respondents who identified as having a disability ($p<0.001$) meeting cut-off on the PTSS-14. There were 43.1% of respondents who identified as a Worker of Colour ($p=0.153$) meeting cut-off for post-traumatic stress disorder symptoms.

Symptoms of anxiety were present in 28.1% of the total sample. There were significant between-group differences, with 39.9% of respondents who identified as Indigenous (p=0.001), and 43.7% of respondents who identified as having a disability (p<0.001) meeting cut-off on the GAD-7. There were 34.9% of respondents who identified as LGBTQ (p=0.085), and 26.9% of respondents who identified as a Worker of Colour (p=0.736) meeting cut-off for symptoms of anxiety.

Symptoms of depression were present in 31.1% of the total sample. There were significant between-group differences, with 45.2% of respondents who identified as Indigenous (p<0.001) and 47.6% of those who identified as having a disability (p<0.001) meeting the cut-off on the PHQ-9. There were 36.2% of nurses who identified as LGBTQ (p=0.238) and 28.1% of those who identified as a Worker of Colour (p=0.218) meeting the cut-off for symptoms of depression.

4.2. Regression Analyses

4.2.1. Discrimination

Table 4.2 shows the unadjusted and adjusted odds of discrimination based on respondent characteristics, as well as workplace and role characteristics. With regards to equity-seeking group status, odds of reporting discrimination among those who identified with any of the four BC Nurses' Union caucus groups were over twice as high as odds among those who did not identify with the caucus groups. However, this relationship was attenuated in the adjusted analyses for the Indigenous Leadership Circle and the LGBTQ groups. Those nurses whose responses were missing for the LGBTQ and Workers with Disabilities caucus group identification also had higher odds of discrimination in the unadjusted analyses.

Respondents who indicated that they were internationally educated were more likely to report discrimination at work in both the unadjusted (OR 2.51, 95% CI: 2.01, 3.13) and adjusted analyses (OR 2.00, 95% CI: 1.57, 2.55). Men were more likely to report discrimination than women in both unadjusted (OR 2.01, 95% CI: 1.53, 2.65), and adjusted analyses (OR 1.66, 95% CI: 1.23, 2.22). With regards to age, there were higher odds of discrimination among those 41 years of age and older, as compared to those aged 21-30, in the unadjusted analyses (ages 41-50: OR 1.48, 95% CI: 1.12, 1.95; ages

Table 4.2. Unadjusted and adjusted odds of discrimination

	N=4545		Unadjusted OR 95 % CI	Adjusted OR 95 % CI
Demographic/Personal Characteristics	Caucus group identification (vs. no)			
	Indigenous Leadership Circle caucus	*Yes*	**2.04 (1.41, 2.95)**	1.12 (0.69, 1.82)
	LGBTQ caucus	*Yes*	**2.18 (1.53, 3.12)**	1.34 (0.86, 2.10)
	Mosaic of Colour caucus	*Yes*	**2.87 (2.27, 3.62)**	**2.14 (1.63, 2.81)**
	Workers with Disabilities caucus	*Yes*	**2.88 (2.07, 4.00)**	**2.28 (1.53, 3.41)**
	Indigenous Leadership Circle caucus	*Missing*	1.14 (0.78, 1.67)	**0.37 (0.19, 0.73)**
	LGBTQ caucus	*Missing*	**1.49 (1.06, 2.08)**	1.34 (0.62, 2.90)
	Mosaic of Colour caucus	*Missing*	1.43 (0.98, 2.08)	1.15 (0.60, 2.19)
	Workers with Disabilities caucus	*Missing*	**1.56 (1.15, 2.22)**	1.67 (0.79, 3.52)
	Internationally educated nurse (vs. No)			
	Yes		**2.51 (2.01, 3.13)**	**2.00 (1.57, 2.55)**
	Gender (vs. Female)			
	Male		**2.01 (1.53, 2.65)**	**1.66 (1.23, 2.22)**
	Prefer to describe		3.71 (0.96, 14.39)	3.05 (0.58, 16.14)
	Professional Designation (vs. Licensed Practical Nurse)			
	Registered Nurse		0.85 (0.66, 1.07)	1.04 (0.78, 1.40)
	Registered Psychiatric Nurse /dually registered		0.92 (0.60, 1.40)	0.78 (0.45, 1.38)
	Age group, years (vs. ≤30)			
	31-40		1.16 (0.89, 1.51)	1.20 (0.91, 1.59)
	41-50		**1.48 (1.12, 1.95)**	1.31 (0.97, 1.76)
	51+		**1.33 (1.01, 1.75)**	1.20 (0.89, 1.62)
Professional and Workplace Characteristics	Nursing Area (vs. Acute, medical/surgical)			
	Acute, critical care		0.94 (0.71, 1.24)	0.87 (0.62, 1.23)
	Acute, emergency		0.90 (0.65, 1.23)	0.93 (0.64, 1.34)
	Acute, psychiatry or mental health		1.16 (0.80, 1.68)	1.18 (0.74, 1.89)
	Acute, other		**0.71 (0.54, 0.94)**	0.72 (0.52, 1.00)
	Acute, multiple units		0.62 (0.28, 1.34)	0.75 (0.33, 1.67)
	Long-term care		**1.78 (1.34, 2.35)**	1.43 (1.00, 2.03)
	Community and public health		**0.71 (0.52, 0.97)**	0.82 (0.57, 1.19)
	Long-term/community care, psychiatry/mental health		1.24 (0.85, 1.81)	1.14 (0.70, 1.84)
	Other		0.62 (0.15, 2.60)	0.34 (0.05, 2.56)
	Employment Status (vs. Full-time)			
	Part-time		**0.59 (0.47, 0.75)**	**0.65 (0.50, 0.83)**
	Casual		0.79 (0.58, 1.09)	0.92 (0.66, 1.29)
	Direct care provider (vs. No)			
	Yes		**1.88 (1.06, 3.32)**	**2.02 (1.11, 3.65)**

51+: OR 1.33, 95% CI: 1.01, 1.75) but these were attenuated in the adjusted analyses. Those working in the long-term care sector were more likely to report discrimination than in acute care medical/surgical (unadjusted analyses only, OR 1.77, 95% CI: 1.34, 2.35), and those working in community and public health were less likely to report discrimination than in acute care medical/surgical (unadjusted analyses only, OR 0.71, 95% CI: 0.52, 0.97). Those working part time as opposed to full time were found to be less likely to report discrimination at work than those working full time (unadjusted analyses: OR 0.59, 95% CI: 0.47, 0.75; adjusted analyses: OR 0.65, 95% CI: 0.50, 0.83) and those providing direct care reported more discrimination than those who did not provide direct care (unadjusted analyses: OR 1.88, 95% CI: 1.06, 3.32; adjusted analyses: OR 2.02, 95% CI: 1.11, 3.65).

4.2.2. Symptoms of Mental Disorder

Table 4.3 shows the odds (unadjusted and adjusted) of symptoms of mental disorders, stratified by experience of workplace discrimination. Models were structured to determine relationships between discrimination at work and symptoms of mental disorder (i.e., adjustment variables were not intended for analysis on their own, but to inform understanding of this relationship). Overall, experiences of workplace discrimination were strongly associated with meeting cut-off for symptoms of at least one mental disorder (OR 2.55, 95% CI: 2.06, 3.15, and OR 2.74, 95% CI: 2.19, 3.42, in the unadjusted and adjusted analyses respectively). Results were similar across disorders, with those respondents who identify with the Indigenous Leadership Circle and Workers with Disabilities caucus groups being more likely to meet cut-offs for symptoms of post-traumatic stress disorder, anxiety, and depression (each disorder individually, and all three together), and those who identify with the Mosaic of Colour caucus having lower odds of meeting cut-offs for symptoms of all disorders (each disorder individually, and all three together) in the adjusted models. Across all outcomes the magnitude of the association between discrimination and symptoms of mental disorder was greater in adjusted than unadjusted models.

Table 4.3. Unadjusted and adjusted odds of symptoms of mental disorders by discrimination

		Any mental disorder n = 4231		Post-traumatic Stress (PTSS-14) n = 4370		Anxiety (GAD-7) n=4363		Depression (PHQ-9) n=4338		All mental disorders n=4231	
		Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI
Discrimination (vs. No discrimination)		**2.55 (2.06, 3.15)**	**2.74 (2.19, 3.42)**	**2.58 (2.11, 3.16)**	**2.79 (2.25, 3.45)**	**2.21 (1.82, 2.69)**	**2.37 (1.93, 2.91)**	**2.22 (1.83, 2.70)**	**2.33 (1.90, 2.86)**	**2.56 (2.09, 3.13)**	**2.80 (2.26, 3.48)**
Equity-seeking group membership (vs. No)											
Indigenous	Yes	**1.87 (1.37, 2.56)**	**1.52 (1.05, 2.19)**	**1.82 (1.35, 2.46)**	**1.57 (1.11, 2.24)**	**1.75 (1.29, 2.36)**	**1.65 (1.16, 2.36)**	**1.89 (1.41, 2.54)**	**1.60 (1.13, 2.27)**	**1.96 (1.43, 2.68)**	**1.84 (1.27, 2.67)**
LGBTQ	Yes	**1.50 (1.11, 2.02)**	1.17 (0.82, 1.66)	**1.60 (1.19, 2.14)**	1.24 (0.88, 1.75)	**1.38 (1.02, 1.87)**	1.10 (0.76, 1.57)	1.28 (0.95, 1.73)	0.97 (0.68, 1.38)	**1.46 (1.05, 2.02)**	1.01 (0.68, 1.51)
Mosaic of Colour	Yes	0.89 (0.73, 1.07)	**0.73 (0.59, 0.92)**	0.90 (0.74, 1.09)	**0.74 (0.59, 0.92)**	0.93 (0.75, 1.15)	**0.75 (0.59, 0.97)**	0.86 (0.70, 1.06)	**0.68 (0.53, 0.87)**	0.85 (0.67, 1.10)	**0.65 (0.49, 0.87)**
Workers with Disabilities	Yes	**2.44 (1.79, 3.34)**	**2.13 (1.49, 3.04)**	**2.33 (1.73, 3.13)**	**1.92 (1.36, 2.69)**	**2.04 (1.54, 2.71)**	**1.73 (1.24, 2.42)**	**2.10 (1.59, 2.79)**	**2.03 (1.46, 2.82)**	**2.18 (1.62, 2.94)**	**1.80 (1.26, 2.57)**
Indigenous	Missing	1.10 (0.85, 1.43)	1.30 (0.76, 2.22)	1.15 (0.89, 1.48)	1.61 (0.95, 2.72)	1.05 (0.79, 1.40)	**2.30 (1.27, 4.18)**	1.11 (0.85, 1.46)	1.39 (0.81, 2.38)	1.24 (0.92, 1.68)	**3.08 (1.60, 5.91)**
LGBTQ	Missing	1.14 (0.89, 1.46)	1.24 (0.68, 2.26)	1.12 (0.88, 1.43)	1.13 (0.64, 2.01)	0.93 (0.71, 1.22)	0.92 (0.48, 1.74)	1.08 (0.84, 1.40)	0.80 (0.44, 1.45)	1.00 (0.74, 1.35)	0.63 (0.32, 1.25)
Mosaic of Colour	Missing	1.22 (0.94, 1.59)	1.01 (0.60, 1.70)	1.21 (0.94, 1.57)	1.03 (0.62, 1.71)	0.93 (0.70, 1.24)	0.65 (0.37, 1.14)	1.13 (0.86, 1.48)	0.72 (0.42, 1.23)	1.08 (0.80, 1.48)	0.76 (0.41, 1.42)
Workers with Disabilities	Missing	1.03 (0.80, 1.31)	0.70 (0.38, 1.29)	1.02 (0.80, 1.29)	0.61 (0.34, 1.11)	0.86 (0.65, 1.13)	0.66 (0.36, 1.23)	1.11 (0.86, 1.44)	1.38 (0.76, 2.51)	0.99 (0.73, 1.34)	0.77 (0.39, 1.49)

	Any mental disorder n = 4231		Post-traumatic Stress (PTSS-14) n = 4370		Anxiety (GAD-7) n=4363		Depression (PHQ-9) n=4338		All mental disorders n=4231	
	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI
Internationally educated nurse (vs. No)										
Yes	**0.82 (0.68, 0.98)**	**0.81 (0.67, 0.99)**	**0.83 (0.70, 0.99)**	0.82 (0.68, 1.00)	**0.77 (0.63, 0.94)**	**0.75 (0.60, 0.93)**	0.82 (0.67, 1.00)	**0.79 (0.64, 0.97)**	**0.79 (0.63, 0.99)**	**0.77 (0.60, 0.98)**
Gender (vs. Female)										
Male	0.93 (0.75, 1.16)	0.80 (0.64, 1.01)	0.97 (0.78, 1.21)	0.84 (0.67, 1.05)	0.78 (0.61, 1.00)	**0.68 (0.52, 0.89)**	0.95 (0.75, 1.20)	0.86 (0.67, 1.10)	0.81 (0.61, 1.08)	**0.71 (0.53, 0.95)**
Prefer to describe	1.84 (0.46, 7.35)	0.89 (0.18, 4.29)	2.37 (0.59, 9.48)	1.06 (0.22, 5.12)	1.07 (0.28, 4.16)	0.70 (0.13, 3.73)	1.47 (0.41, 5.22)	0.62 (0.12, 3.23)	1.05 (0.22, 4.95)	0.43 (0.05, 3.71)
Professional designation (vs. Licensed Practical Nurse)										
Registered Nurse	0.86 (0.73, 1.02)	0.84 (0.70, 1.03)	0.86 (0.73, 1.01)	0.83 (0.68, 1.00)	0.88 (0.73, 1.05)	0.89 (0.72, 1.09)	**0.74 (0.62, 0.87)**	**0.76 (0.62, 0.93)**	0.83 (0.68, 1.00)	0.82 (0.66, 1.04)
Registered Psychiatric Nurse or dually registered	0.93 (0.70, 1.24)	0.88 (0.61, 1.29)	0.93 (0.70, 1.23)	0.81 (0.56, 1.18)	0.87 (0.64, 1.19)	0.90 (0.60, 1.36)	0.81 (0.60, 1.10)	0.97 (0.66, 1.45)	0.76 (0.53, 1.09)	0.81 (0.50, 1.29)
Age group, years (vs. ≤30)										
31-40	0.90 (0.77, 1.06)	0.91 (0.76, 1.08)	0.93 (0.79, 1.10)	0.93 (0.79, 1.11)	**0.80 (0.68, 0.96)**	**0.80 (0.67, 0.96)**	0.89 (0.75, 1.06)	0.88 (0.73, 1.05)	0.86 (0.70, 1.04)	0.85 (0.69, 1.04)
41-50	**0.78 (0.65, 0.93)**	**0.77 (0.63, 0.93)**	**0.80 (0.67, 0.95)**	**0.79 (0.66, 0.95)**	**0.74 (0.61, 0.89)**	**0.71 (0.58, 0.87)**	**0.82 (0.68, 0.99)**	**0.77 (0.63, 0.94)**	**0.73 (0.59, 0.91)**	**0.70 (0.56, 0.88)**
51+	**0.62 (0.52, 0.74)**	**0.62 (0.51, 0.74)**	**0.65 (0.55, 0.77)**	**0.65 (0.54, 0.95)**	**0.58 (0.48, 0.70)**	**0.54 (0.44, 0.67)**	**0.75 (0.62, 0.90)**	**0.72 (0.59, 0.88)**	**0.60 (0.49, 0.75)**	**0.58 (0.45, 0.73)**

	Any mental disorder n = 4231		Post-traumatic Stress (PTSS-14) n = 4370		Anxiety (GAD-7) n=4363		Depression (PHQ-9) n=4338		All mental disorders n=4231	
	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI
Nursing Area (vs. Acute, medical/surgical)										
Acute, critical care	0.88 (0.74, 1.06)	0.81 (0.65, 1.00)	0.91 (0.76, 1.08)	0.85 (0.68, 1.05)	0.94 (0.77, 1.14)	0.90 (0.71, 1.14)	0.90 (0.74, 1.09)	0.88 (0.70, 1.12)	0.96 (0.77, 1.20)	0.95 (0.73, 1.24)
Acute, emergency	**1.30 (1.07, 1.59)**	1.12 (0.88, 1.41)	**1.38 (1.14, 1.68)**	1.20 (0.95, 1.50)	1.19 (0.97, 1.47)	1.05 (0.82, 1.35)	**1.28 (1.04, 1.57)**	1.12 (0.88, 1.42)	**1.34 (1.07, 1.68)**	1.19 (0.90, 1.56)
Acute, psychiatry/ mental health	1.11 (0.86, 1.43)	1.00 (0.72, 1.38)	1.16 (0.90, 1.49)	1.08 (0.79, 1.50)	0.85 (0.64, 1.13)	0.82 (0.57, 1.17)	0.91 (0.69, 1.19)	0.77 (0.54, 1.09)	0.77 (0.55, 1.08)	0.77 (0.51, 1.16)
Acute, other	**0.76 (0.64, 0.89)**	**0.73 (0.59, 0.89)**	**0.77 (0.65, 0.91)**	**0.75 (0.62, 0.92)**	**0.77 (0.64, 0.93)**	**0.75 (0.60, 0.93)**	**0.74 (0.62, 0.89)**	**0.72 (0.58, 0.90)**	**0.77 (0.62, 0.95)**	**0.76 (0.59, 0.99)**
Acute, multiple units	**1.80 (1.15, 2.83)**	**1.84 (1.13, 2.98)**	1.45 (0.96, 2.19)	1.45 (0.93, 2.25)	1.00 (0.63, 1.59)	0.98 (0.60, 1.60)	1.40 (0.91, 2.17)	1.42 (0.89, 2.25)	0.77 (0.45, 1.35)	0.76 (0.43, 1.37)
Long-term care	**0.79 (0.63, 0.98)**	**0.67 (0.52, 0.88)**	**0.77 (0.62, 0.96)**	**0.65 (0.50, 0.85)**	0.91 (0.72, 1.17)	0.83 (0.62, 1.11)	1.06 (0.84, 1.33)	0.86 (0.65, 1.14)	0.92 (0.70, 1.20)	0.83 (0.60, 1.14)
Community and public health	0.87 (0.73, 1.05)	0.88 (0.70, 1.10)	**0.80 (0.67, 0.96)**	0.81 (0.65, 1.01)	0.99 (0.81, 1.21)	0.99 (0.77, 1.26)	0.94 (0.77, 1.14)	0.93 (0.73, 1.18)	0.94 (0.75, 1.18)	0.97 (0.74, 1.28)
Long-term/ community, psychiatry /mental health	1.05 (0.81, 1.37)	0.96 (0.68, 1.36)	1.10 (0.85, 1.44)	1.04 (0.74, 1.46)	1.16 (0.87, 1.54)	1.11 (0.77, 1.60)	0.94 (0.71, 1.25)	0.78 (0.54, 1.12)	1.11 (0.81, 1.52)	1.06 (0.71, 1.60)
Other	1.00 (0.46, 2.20)	0.92 (0.40, 2.11)	1.28 (0.60, 2.73)	1.22 (0.55, 2.72)	1.14 (0.49, 2.62)	1.29 (0.54, 3.09)	0.81 (0.34, 1.94)	0.85 (0.34, 2.10)	1.50 (0.63, 3.55)	1.73 (0.70, 4.29)

	Any mental disorder n = 4231		Post-traumatic Stress (PTSS-14) n = 4370		Anxiety (GAD-7) n=4363		Depression (PHQ-9) n=4338		All mental disorders n=4231	
	Unadjusted OR	Adjusted OR	Unadjusted OR	Adjusted OR	Unadjusted OR	Adjusted OR	Unadjusted OR	Adjusted OR	Unadjusted OR	Adjusted OR
	95 % CI	95 % CI	95 % CI	95 % CI	95 % CI	95 % CI	95 % CI	95 % CI	95 % CI	95 % CI
Employment Status (vs. Full-time)										
Part-time	0.90 (0.79, 1.04)	0.93 (0.81, 1.08)	0.91 (0.80, 1.05)	0.95 (0.83, 1.10)	0.86 (0.74, 1.00)	0.88 (0.75, 1.04)	0.87 (0.75, 1.01)	0.89 (0.76, 1.04)	0.84 (0.70, 1.00)	0.86 (0.71, 1.03)
Casual	0.89 (0.73, 1.09)	0.82 (0.67, 1.02)	0.90 (0.74, 1.10)	0.84 (0.68, 1.03)	**0.79 (0.63, 0.99)**	**0.72 (0.57, 0.92)**	**0.73 (0.59, 0.92)**	**0.69 (0.55, 0.87)**	0.79 (0.61, 1.02)	**0.73 (0.55, 0.95)**
Direct care provider (vs. No)										
Yes	**1.40 (1.05, 1.87)**	1.27 (0.93, 1.73)	**1.44 (1.08, 1.92)**	1.23 (0.92, 1.71)	1.11 (0.81, 1.53)	1.00 (0.71, 1.40)	1.30 (0.95, 1.79)	1.27 (0.90, 1.79)	1.26 (0.87, 1.83)	1.06 (0.71, 1.58)

I completed an analysis of odds of symptoms of any mental disorder stratified by equity-seeking group status (full results in Appendix C) to understand in more detail relationships between discrimination at work and mental disorders across equity-seeking group identities. Although odds of mental disorder by discrimination in the stratified analysis did not meet statistical significance for all groups, these models confirm that magnitude and direction of the effects are consistent with the non-stratified analysis.

Chapter 5. Discussion

This chapter summarizes findings of this study, places them in the context of published literature, and proposes related recommendations. In section 5.1, I discuss the findings related to discrimination at work. The discussion in section 5.2 pertains to findings about the association between discrimination and symptoms of mental disorders. In sections 5.3, 5.4, and 5.5 I discuss implications, limitations, and recommendations, respectively. Section 5.6 is overall conclusions.

5.1. Discrimination at Work

As hypothesized, those nurses who identify as being part of an equity-seeking community were at higher risk of experiencing discrimination in this study. Any discrimination at work is unacceptable, and the finding that 12.5% of the sample reported experiencing discrimination in their nursing work indicates a need for immediate and sustained action in addressing workplace discrimination. It is important to draw attention to discrimination in healthcare workplaces, so as to combat the false impression that such discrimination doesn't exist (Baptiste, 2015), to mitigate possible effects of discrimination on the safety of those accessing care (Baptiste, 2015), and to ameliorate healthcare workplaces.

5.1.1. Demographic and Personal Characteristics

Identification with any of the four BC Nurses' Union equity-seeking caucus groups was associated with higher odds of discrimination, which is as expected since barriers due to disadvantage and discrimination are collective experiences across these groups (UBC Equity & Inclusion Office, n.d.). These effects were smaller for the Indigenous Leadership Circle and LGBTQ groups, and the effects were somewhat attenuated in the multivariable analyses. With regards to attenuation in the multivariable analyses, I explored this finding further using chi-square analyses (as described in section 3.7.1), revealing significant between-group differences (those who reported discrimination vs. those who did not) on workplace and role characteristics such as nursing area and being a direct care provider. This may account for the observed attenuation since these were variables that were independently related to increased

odds of discrimination at work. The smaller effects could also be related to these equity-seeking group identities being less likely to be visible, and less likely to be known or discovered through the course of regular work than a disability might be. However, this is speculative and cannot be tested with the data in the current study.

In this study, a higher percentage of those who completed their nursing training outside of Canada reported experiencing discrimination at work than those who were trained in Canada. This is somewhat surprising given that only 22.2% of those who identified as internationally educated also identified with the Mosaic of Colour caucus group and only 27.4% identified with any caucus group. This could suggest that internationally educated nurses are likely to perceive that they are discriminated against at work based on some other aspect of their identity, such as language. Finally, compared to women, a higher percentage of men reported workplace discrimination. Since the majority of nurses are women, men are a minority group (statistical minority) within the population of nurses, and might experience discrimination as a result (Nelson & Belcher, 2006).

5.1.2. Professional and Workplace Characteristics

Compared to nurses working in the acute sector, those working in the long-term care sector reported more workplace discrimination (unadjusted analyses only), which could be related to the racialization of long-term care work in Canada (Braedley et al., 2018). This is further supported by the finding in this study that among nurses of colour, a higher percentage of respondents worked in long-term care as compared to other nursing areas. This also highlights that some types of workplaces are safer and more free from discrimination than others, which speaks to a need for targeted action where incidence of discrimination is highest. Those respondents working part-time and those who do not provide direct care were less likely to report workplace discrimination at work than those working full-time and providing direct care (in both unadjusted and adjusted analyses). This is likely to be the result of differences in duration and intensity of exposure to potential sources of discrimination at work.

5.2. Likelihood of Symptoms of Mental Disorder

This research is in line with previous studies indicating that nurses have increased risk of mental disorders (e.g., de Boer et al., 2011; Janda & Jandová, 2015; Stelnicki et al., 2020). Psychological health and safety in nursing workplaces is an issue not only for nurses and their loved ones, but also has implications in terms of quality, safe nursing care. For instance, McHugh and colleagues (McHugh et al., 2011) reported that nurses' job satisfaction and perceptions of working conditions were related to patient satisfaction. Furthermore, Letvak and colleagues reported that nurses struggling with depression tended to continue coming to work despite being ill (known as presenteeism), which in turn was significantly associated with decrease in quality of care scores and an increase in patient falls and medication errors (Letvak et al., 2012).

5.2.1. Discrimination

As has been observed in other populations settings (e.g., Soto et al., 2011; Bhui et al., 2005,) I found that experiences of discrimination at work are positively associated with symptoms of mental disorder. The five regression models for likelihood of symptoms of mental disorder as a function of workplace discrimination (any mental disorder, post-traumatic stress disorder, anxiety, depression, and all three mental disorders) all showed very similar results, indicating a similar relationship across disorders. In all five models of symptoms of mental disorder, the likelihood was more than doubled for those who reported experiencing workplace discrimination (in both the unadjusted and adjusted analyses). This is in line with previous research indicating that discrimination negatively affects mental health and wellbeing (e.g., Bergman et al., 2012; Roberts et al., 2004; Rospenda et al., 2009). Given the relatively homogenous socioeconomic standing of nurses, some of the difficulties typically encountered in considering differences across groups in experiences of discrimination and symptoms of mental disorders are minimized in the current study. Although any workplace discrimination is unacceptable, regardless of sequelae, these results underscore the extent of the of harm in the form of adverse mental health outcomes for nurses who are experiencing discrimination. Over and above efforts to address ongoing workplace discrimination, supports are needed to enhance workplace psychological safety, as well as to address existing mental disorders among nurses.

5.2.2. Equity-Seeking Group Identification

For all regression models there were statistically significant increased odds of symptoms of mental disorder among those who reported identifying with the Indigenous Leadership Circle and Workers with Disabilities caucus groups. This is consistent with previous work which has shown that Indigenous health care providers encounter particular challenges that can increase their likelihood for mental disorders such as post-traumatic stress disorder (e.g., difficulty maintaining appropriate boundaries, multiple roles, trauma related to colonialist policies; Public Health Agency of Canada, 2020).

Although nurses who reported that they identify with the BC Nurses' Union Mosaic of Colour equity-seeking caucus were more than twice as likely to report experiencing discrimination at work than those who reported not identifying with that caucus, in all five models this equity-seeking group status was inversely related to odds of symptoms of disorder (any mental disorder unadjusted OR 0.89, 95% CI: 0.73, 1.07; any mental disorder adjusted OR 0.73, 95% CI: 0.59, 0.92; post-traumatic stress disorder unadjusted OR 0.90, 95% CI: 0.74, 1.09; post-traumatic stress disorder adjusted OR 0.74, 95% CI: 0.59, 0.92; anxiety unadjusted OR 0.93, 95% CI: 0.75, 1.15; anxiety adjusted OR 0.75, 95% CI: 0.59, 0.97; depression unadjusted OR 0.86, 95% CI: 0.70, 1.06; depression adjusted OR 0.68, 95% CI: 0.53, 0.87; all mental disorders unadjusted OR 0.85, 95% CI: 0.67, 1.10; all mental disorders adjusted OR 0.65, 95% CI: 0.49, 0.87). This is in line with the findings of other studies examining race and mental disorders. For instance, research by Wu and colleagues indicated that East, South, and South East Asian, Chinese, and black Canadians have less depression than white "English" Canadians (as opposed to French, Jewish, or "other" white, non-Hispanic Canadians; Wu et al., 2003). Similarly, Soto and colleagues found that non-Hispanic White Americans had 2.5 times the odds as African Americans to meet criteria for lifetime prevalence of generalized anxiety disorder (Soto et al., 2011). With regards to the stratified analyses investigating odds of symptoms of mental disorder by equity-seeking group identification status, it should be noted that the statistically non-significant results were likely due to lack of power from low numbers of participants.

5.2.3. Workplace and Role Characteristics

The only significant findings in terms of odds of disorder by nursing area were that respondents working in acute care emergency had increased odds of symptoms of mental disorder, and those in long-term care had decreased odds. This is contradictory to the findings of Enns and colleagues who found that hospital-based nurses have a lower likelihood of depression versus those in other settings (Enns et al., 2015). However, my findings are in keeping with some other research, such as Mealer and colleagues' (2009) finding that inpatient nurses are more likely to display post-traumatic stress disorder than outpatient nurses (Mealer et al., 2009), and evidence from several studies indicating that nurses in intensive and psychiatric care show higher depressive symptomatology than those in other settings (Arafa et al., 2003; Bjorvatn et al., 2012; Chiang & Chang, 2012; de Leo et al., 1983; Gong et al., 2014). Furthermore, since there was a higher percentage of respondents who identified being workers of colour in long-term care, along with having lower odds of symptoms of mental disorder than other groups, it follows that there would be lower odds of mental disorder symptoms in long-term care.

5.3. Implications

The findings of this study indicate a need for actions to stem the discrimination that is occurring in nurses' workplaces in British Columbia. Furthermore, over and above discrimination, I found a high prevalence of symptoms mental disorders which shows a large and significant association with discrimination. The fact that over half of the study respondents met cut-off indicating the presence of symptoms of at least one mental disorder (52.0%) reinforces the urgency for further work to be done to explore and protect workers' psychological health and safety in healthcare workplaces.

5.4. Limitations

This study is subject to the limitations inherent in cross sectional research, including an inability to infer causation, and the possibility that the snapshot of these individuals at this particular point in time is not representative of the population of British Columbia nurses at other points in time. Furthermore, given that this was a secondary data analysis, I was limited to using the data collected in the original University of British

Columbia-BC Nurses' Union partnership study. For instance, I did not have access to information about respondents' experiences of discrimination outside of the workplace, nor to determine timing of onset of symptoms of mental disorders. There is also potential for reverse causality since mental disorders are a form of disability, and experiences of discrimination reported by respondents might have stemmed from these disabilities as opposed to, or in addition to, symptoms of disorder resulting from discrimination.

Only nurses who were members of the BC Nurses' Union at the time of the study were recruited to participate. Although a majority of nurses in British Columbia are BC Nurses' Union members, not all are. Notably, Nurse Practitioners do not belong to the BC Nurses' Union and were therefore not included in this study. Furthermore, respondents in this research are likely to be those nurses who are most involved with their union and with advocacy efforts. This group might differ in significant ways from nurses who are either not part of a union, or who do not interact with their union in a meaningful way.

I cannot know which British Columbia nurses either did not see or chose not to respond to the study advertisements or invitations to participate. Those who are not strongly connected to the BC Nurses' Union might not imagine their input to be important, and members who were displeased with either the BC Nurses' Union or the University of British Columbia might decide not to participate for that reason. It is possible that these individuals could differ significantly from those who participated in the survey, but it is unknown if this is so, or to what extent, since information about the characteristics of the full membership is limited. There was no provision for completing the survey on work time, so those members with greater responsibilities and time commitments outside of work might have been less likely to have time to complete a survey.

With regards to the promotional materials used for study recruitment, it is important to note that not all nurses who saw the images would have seen their identities represented. Although there were workers of colour, and both men and women depicted on the promotional materials, there were no promotional materials that had perceptible representation of other equity-seeking group identities (i.e., Indigenous, 2SLGBTQIA+, with a disability). Furthermore, although there were several promotional materials made with different pictures and messages, any given potential respondent might have only

seen one of those promotional materials and would therefore not have seen any breadth in representation of identities. Finally, since promotional materials focused on psychological health and safety, it is plausible that nurses who were experiencing symptoms of illness might be more likely to respond than those who were not.

Since the measures of equity-seeking group status and discrimination at work are single-item questions, and since I have limited information about factors shaping likelihood of mental disorders for respondents outside the workplace, these results should be interpreted cautiously. Furthermore, in this research I did not explore potential relationships between discrimination or mental disorders with incidences of violence or traumatic events at work. Since the measures of mental disorder are all self-report, it is not possible to know if participants who met cut-off for the various mental disorders would receive a formal diagnosis if assessed by a clinician.

Identification with a BC Nurses' Union equity-seeking caucus is only one facet of identity. Due to the small numbers of respondents identifying with various configurations of equity-seeking group statuses, I was not able to engage in intersectional analysis that moves beyond additive models of discrimination (a list of social designations of sorts), to consider intersections of marginalized identities as multiplicative, as Williams and colleagues (2017) suggest. Finally, each equity-seeking group studied was considered as a homogenous group (e.g., not differentiating between transgender and lesbian people within the 2SLGBTQIA+ cluster of identities), when of course variation in identities and experiences exist within these groups.

By using only quantitative analyses in this study, I was not able to tap into the richness of participants' stories that might be captured with a qualitative or mixed-methods approach. Furthermore, the measurement of mental disorder is limited to post-traumatic stress disorder, anxiety, and depression, which is not an exhaustive list of mental disorders nurses might experience.

5.5. Recommendations

5.5.1. Workplace Discrimination

To address issues of racism in the workplace, the Canadian Centre for Diversity and Inclusion (2018) has suggested the following: 1) Protect workers by developing anti-racism/race-equity workplace policies and training; 2) Invest in race-focused diversity and inclusion initiatives; 3) Partner with specific racialized communities in and outside of the workplace; 4) Develop mentorship and sponsorship programs for racialized employees; 5) Target anti-racism/racial equity initiatives to address Islamophobia, anti-Black racism, anti-Indigenous racism. Similarly, with regards to discrimination against those who are 2SLGBTQIA+, Davidson (2016) has pointed to a need to improve employment policies. For instance, they note that policies often don't offer specific and/or adequate protections for transgender people. One example of this is that non-binary or gender non-conforming identities might not be formally acknowledged, forcing those who hold these identities to affiliate with a binary gender option, making it more difficult for them to fit in at work. And finally, Shier and colleagues have pointed to a need to pay more mind to educating employers about issues facing people with disabilities (Shier et al., 2009).

Employers should implement policies and practices that proactively increase inclusivity, promote diversity, and prevent discrimination at work on any aspect of identity. Unions and other bodies supporting worker rights can and should advocate for the implementation of employer-supported policies and practices. One such practice is creating and maintaining a group within the organization that is dedicated to addressing workplace inclusion and discrimination such as an inclusion council (Gurchiek, 2018) and/or caucus groups (such as the BC Nurses' Union has established for its members) which serve to support those who face increased discrimination and/or barriers to full participation and inclusion in their workspaces, by giving them space to speak freely about issues relevant for them. Addressing workplace inclusivity should not always fall to individuals from underrepresented groups of the workforce, but often does. Inclusion groups being embedded in the organizational structure helps relieve this burden as well as lending power or influence needed to make change (Gurchiek, 2018). It is important for the membership of such groups to be diverse in order to represent a broad array of identities and perspectives (Gurchiek, 2018).

Support for diversity and inclusion efforts should come from the organizational leadership, so it is important for leaders to receive education and training on diversity and inclusion, as well as to be held accountable for outcomes in inclusive behaviour as a core leadership competency (Gurchiek, 2018). Finally, addressing inclusion, diversity, and discrimination should not be a one-time effort. Progress should be measured by examining outcomes of any policies and practices implemented in relation to goals of the initiatives, and regularly communicated to staff members (Gurchiek, 2018).

5.5.2. Psychological Health and Safety for Nurses

Increasing psychological safety in the workplace involves implementing precautional measures to avert risks of injury to psychological wellbeing of workers/employees (Gilbert et al., 2018). Braedley and colleagues (2018) explain that in Canada, unlike countries such as the United Kingdom, Germany, Australia, Spain and France there is no federal legal requirement to protect the psychological health and safety of workers. The Government of Canada did introduce a National Standard for Psychological Health and Safety in the Workplace in 2013 (Mental Health Commission of Canada, 2016), but this is a voluntary measure only (employers are not required to implement it). Also, it is important to note that although the standard outlines how hazards to psychological hazards might be prevented, for example by pointing to general workplace conditions such as “the degree to which a work environment is characterized by trust, honesty and fairness” (Gilbert et al., 2018b), it does not identify specific hazards (Braedley et al., 2018). Canada’s provinces each have their own occupational health and safety regulations, but these vary province to province. In 2014, the *Workers Compensation Amendment Act, 2011* was enacted in British Columbia, establishing a duty by employers to prevent harassment (Samra, 2017), but the prevention of harassment alone is not nearly enough to adequately support psychological health and safety in the workplace.

To address post-traumatic stress disorder in the nursing workforce, the Manitoba Nurses Union (2015) makes the following recommendations: 1) presumptive legislation for Workers Compensation coverage, 2) comprehensive employer and organizational supports, 3) creating a healthier work environment within the nursing profession, 4) mandatory education and awareness of post-traumatic stress disorder, and 5) effective tracking and analysis of post-traumatic stress disorder reporting. In 2019, a change was

made to the Workers Compensation Act in British Columbia which added nurses to the list of occupations that have presumption of workplace mental injury, addressing the first of the Manitoba Nurses Union recommendations for nurses working in British Columbia. However, the remaining four Manitoba Nurses Union recommendations continue to be relevant for British Columbia nurses, and should be broadened to include mental disorders other than post-traumatic stress disorder, such as anxiety and depression.

A 2020 report published by the Canadian Federation of Nursing Unions (Stelnicki et al., 2020) includes recommendations for protecting nurses' mental health, considering a broader range of outcomes (not only post-traumatic stress disorder). That report details recommendations for health care employers, as well as for provincial and federal governments. The recommendations for health care employers focus on 1) early intervention and support, including timely critical incident debriefing, a recognized critical incident management system, and evidence-based return-to-work programs that recognize potential long-term impacts of psychological injuries, 2) training, including mental health training for all nurses throughout their careers, training aimed at building peer support capacity, and policies ensuring that training is reviewed regularly, 3) education, including access mental health screening tools to help nurses recognize when they are at risk, and programs focused on stigma reduction throughout the organization, and 4) proactive strategies and activities, including psychosocial risk assessment of the work environment, policies to address staffing shortages, regular workplace violence risk assessments and workplace violence prevention programs employing appropriately trained and resourced security, and reducing administrative burden on nurses. The recommendations for provincial and federal governments centre mainly on funding and coordination of knowledge-sharing. I echo these recommendations for enhancing psychological health and safety for nurses in British Columbia.

5.6. Conclusion

This research indicates that experiences of discrimination in the workplace are common for nurses in British Columbia, and that symptoms of post-traumatic stress disorder, anxiety, and depression are prevalent in this population. Furthermore, there is a strong and consistent association between experiences of discrimination at work and symptoms of mental disorder.

Care workers' psychological health and safety is often treated as an individual issue and responsibility (Braedley et al., 2018), with mental health issues seen as problems workers carry with them into the workplace or as a function of individuals' behaviour and relationships. We must instead understand these as problems related to working conditions both embedded in, and reflecting, societal inequalities. Given the impacts of workplace factors and systemic issues such as discrimination, it is incumbent upon both healthcare employers and society at large to dismantle oppressive power structures, and work towards equity at a systems level.

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Appendix A.

Study Questionnaire

Psychological Health & Safety Survey

Thank you for taking the time to complete this survey; it should take approximately 20 minutes to complete. The information you provide will be used to inform research, policy, and advocacy regarding psychological health and safety in your workplace.

Q1.2 What is your work status?

- ○ Actively working
- ○ On leave due to work-related injury
- ○ On leave, non work-related (e.g., maternity)
- ○ Retired or non-active

Below is a list of questions about you and your current experiences in your primary workplace. Your **primary workplace** is where you work the most often.

Q3.2 How old are you?

▼ 20 (1) ... 70 or older (59)

Q3.3 What is your gender?

- ○ Female
- ○ Male
- ○ Prefer to describe _____

Q3.4 What is your professional designation?

- ○ Licensed Practical Nurse (LPN)
- ○ Registered Nurse (RN)
- ○ Registered Psychiatric Nurse (RPN)
- ○ Dually registered (RN/RPN)
- ○ Other (e.g., non-nursing), please describe_____

Q3.5 Your primary workplace is in which health authority?

- ○ First Nations Health
- ○ Fraser Health

- ○ Interior Health
- ○ Northern Health
- ○ Providence Health
- ○ Provincial Health Services
- ○ Vancouver Coastal Health
- ○ Vancouver Island Health
- ○ Non-health authority site
- ○ I don't know

Q3.6 Would you describe your primary workplace as:

- ○ Urban
- ○ Suburban
- ○ Rural

Q3.7 Your primary workplace is in which nursing sector?

- ○ Acute care
- ○ Community care
- ○ Long-term care

Q3.8 What is the nursing area of your primary workplace?

- ○ Ambulatory care
- ○ Community mental health
- ○ Emergency
- ○ Home and community care
- ○ Intensive care
- ○ Indigenous health
- ○ Long-term care
- ○ Medical/surgical
- ○ Mental health or psychiatry

- ○ Obstetrics
- ○ Oncology
- ○ OR/PACU
- ○ Palliative
- ○ Pediatrics
- ○ Public health
- ○ Rehabilitation
- ○ Other, please specify _____

Q3.9 Which option best describes your employment status in your primary workplace?

- ○ Full-time
- ○ Part-time
- ○ Casual

Q3.10 In your nursing role, do you provide direct patient/client care?

- ○ Yes
- ○ No

Q3.11 Which option best describes your primary nursing role?

- ○ Direct care provider
- ○ Nurse leader
- ○ Educator
- ○ Other _____

Q3.12 What is your highest level of education completed?

- ○ Diploma
- ○ Undergraduate degree
- ○ Graduate degree
- ○ Other _____

Q3.13 Did you complete some or all of your nursing education outside of Canada?

- ○ Yes, please describe where _____
- ○ No

Q3.14 How many years of nursing experience do you have?

▼ Less than one year (1) ... 21 years or more (22)

Q3.15 Do you identify with any of the following BCNU equity-seeking caucuses?

	Yes (1)	No (2)
1. Indigenous Leadership Circle (First Nations, Inuit, Metis members).	○	○
2. LGBTQ Caucus (Lesbian, gay, bisexual, transgender, queer members).	○	○
3. Mosaic of Colour Caucus (Workers of colour).	○	○
4. Workers with Disabilities Caucus (Members who have one or more visible and/or invisible disabilities).	○	○

Appendix B.
Nursing Area Coding Details

Nursing area category used in analysis	Nursing area – response options in survey	Sector - response options in survey
Acute - Medical/surgical	Medical/surgical	Acute care
Acute - Emergency	Emergency	Acute care; Missing
Acute - Critical care	Intensive care; OR/PACU	Acute care; Missing
Acute - Mental health or psychiatry	Mental health or psychiatry	Acute care
Acute - multiple	Other, mixed	Acute care
Acute - other	Ambulatory care; Indigenous health; Obstetrics; Oncology Palliative; Pediatrics; Rehabilitation; Other; Missing	Acute care
Long-term care	Oncology; Palliative; Public health; Rehabilitation; Other; Missing	Long-term care
	Long-term care	Long-term care; Missing
Mental health in long-term care or community care	Community mental health; Mental health or psychiatry	Long-term care; Community care
Community	Ambulatory care; Home and community care; Indigenous health; Long-term care; Obstetrics; Oncology; OR/PACU; Palliative; Pediatrics; Public health; Rehabilitation; Other	Community care
Other/missing	Community mental health; Home and community care; Long-term care; Public health	Acute care
	Home & community care; Medical/surgical; OR/PACU	Long-term care
	Palliative; Missing	Missing

Appendix C.
Stratified Analysis Results

Odds of symptoms of any mental disorder, stratified by equity-seeking group status

		Indigenous Leadership Circle n=182		**LGBTQ n=189**		**Mosaic of Colour n=466**		**Workers with Disabilities n=201**	
		Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI
Discrimination (vs. No discrimination)		**3.40 (1.24, 9.29)**	3.00 (0.86, 10.52)	**4.27 (1.69, 10.80)**	**4.22 (1.41, 12.64)**	**1.60 (1.03, 2.48)**	**1.78 (1.12, 2.86)**	1.55 (0.71, 3.38)	1.52 (0.59, 3.95)
Caucus group identification (vs. No)									
Indigenous Leadership Circle	Yes	**-**	-	1.09 (0.52, 2.30)	1.24 (0.39, 3.94)	1.02 (0.50, 2.10)	0.56 (0.19, 1.63)	0.49 (0.24, 1.03)	**0.30 (0.09, 0.97)**
LGBTQ	Yes	0.76 (0.35, 1.66)	2.43 (0.65, 9.10)	-	-	1.18 (0.64, 2.18)	1.21 (0.53, 2.74)	0.63 (0.30, 1.31)	1.66 (0.52, 5.25)
Mosaic of Colour	Yes	**0.35 (0.16, 0.79)**	0.30 (0.09, 1.22)	0.57 (0.28, 1.14)	0.53 (0.19, 1.48)	-	-	**0.43 (0.22, 0.85)**	0.73 (0.27, 1.98)
Workers with Disabilities	Yes	0.58 (0.27, 1.23)	0.78 (0.20, 3.15)	1.05 (0.51, 2.17)	2.16 (0.61, 7.68)	1.50 (0.85, 2.66)	1.87 (0.81, 4.30)	-	-
Indigenous Leadership Circle	Missing	**-**	-	0.59 (0.27, 1.29)	0.87 (0.05, 15.17)	0.88 (0.52, 1.48)	1.56 (0.31, 7.84)	0.83 (0.35, 1.97)	<0.01 (<0.01, >999.99)
LGBTQ	Missing	0.53 (0.25, 1.11)	0.89 (0.05, 17.28)	-	-	0.90 (0.54, 1.51)	1.66 (0.28, 9.94)	1.12 (0.46, 2.73)	>999.99 (<0.01, >999.99)
Mosaic of Colour	Missing	0.51 (0.24, 1.06)	0.48 (0.01, 18.15)	0.63 (0.29, 1.35)	0.68 (0.03, 13.48)	-	-	0.94 (0.36, 2.45)	2.38 (0.21, 26.47)
Workers with Disabilities	Missing	0.54 (0.26, 1.12)	1.47 (0.05, 47.95)	0.71 (0.33, 1.54)	1.50 (0.04, 63.48)	0.75 (0.44, 1.28)	0.41 (0.10, 1.59)	-	-

		Indigenous Leadership Circle n=182		LGBTQ n=189		Mosaic of Colour n=466		Workers with Disabilities n=201	
		Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI
Internationally educated (vs. No)									
	Yes	**0.20 (0.06, 0.69)**	**0.12 (0.02, 0.71)**	0.55 (0.22, 1.36)	0.48 (0.15, 1.52)	0.75 (0.49, 1.13)	0.93 (0.58, 1.49)	**0.32 (0.15, 0.67)**	**0.28 (0.11, 0.73)**
Gender									
	Male	0.81 (0.32, 2.08)	0.50 (0.14, 1.79)	0.91 (0.46, 1.79)	0.96 (0.41, 2.27)	0.77 (0.43, 1.38)	0.76 (0.40, 1.47)	0.93 (0.31, 2.76)	2.05 (0.46, 9.10)
	Prefer to describe	-	-	>999.99 (<0.01, >999.99)	>999.99 (<0.01, >999.99)	-	-	0.39 (0.02, 6.30)	<0.01 (<0.01, >999.99)
Designation									
	RN	1.32 (0.66, 2.65)	1.42 (0.48, 4.22)	0.59 (0.26, 1.32)	0.42 (0.14, 1.25)	0.97 (0.60, 1.56)	0.79 (0.45, 1.38)	0.68 (0.32, 1.43)	**0.27 (0.09, 0.79)**
	RPN/dual	**0.58 (1.18, 1.92)**	0.73 (0.10, 5.59)	0.46 (0.13, 1.60)	0.32 (0.05, 1.98)	1.51 (0.70, 3.25)	0.99 (0.34, 2.88)	0.90 (0.25, 3.31)	0.25 (0.03, 2.16)
Age									
	31-40	0.85 (0.36, 1.98)	1.25 (0.45, 3.45)	1.36 (0.63, 2.96)	1.51 (0.59, 3.87)	0.95 (0.58, 1.56)	0.93 (0.55, 1.57)	1.92 (0.60, 6.10)	1.58 (0.41, 6.07)
	41-50	0.50 (0.21, 1.18)	1.05 (0.35, 3.16)	0.80 (0.32, 1.98)	0.69 (0.22, 2.15)	**0.53 (0.32, 0.90)**	**0.50 (0.28, 0.89)**	0.72 (0.26, 2.02)	0.50 (0.14, 1.81)
	51+	0.46 (0.18, 1.20)	0.46 (0.14, 1.59)	**0.36 (0.15, 0.85)**	**0.18 (0.05, 0.62)**	**0.53 (0.31, 0.90)**	**0.50 (0.27, 0.91)**	0.40 (0.15, 1.05)	**0.18 (0.05, 0.63)**
Nursing area									
	Acute, critical care	0.53 (0.20, 1.37)	**0.17 (0.04, 0.69)**	0.73 (0.30, 1.79)	0.61 (0.17, 2.20)	0.94 (0.51, 1.76)	0.88 (0.42, 1.81)	3.27 (0.40, 26.74)	10.36 (0.92, 116.20)
	Acute, emergency	4.20 (0.93, 19.0)	1.97 (0.32, 12.07)	**4.02 (1.14, 14.24)**	3.86 (0.86, 17.42)	**3.50 (1.26, 9.72)**	**3.62 (1.21, 10.83)**	2.71 (0.59, 12.40)	**9.67 (1.51, 61.90)**

		Indigenous Leadership Circle n=182		LGBTQ n=189		Mosaic of Colour n=466		Workers with Disabilities n=201	
		Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI	Unadjusted OR 95 % CI	Adjusted OR 95 % CI
	Acute, psychiatry /mental health	**0.31 (0.10, 0.90)**	0.34 (0.06, 1.83)	0.70 (0.24, 2.03)	0.95 (0.21, 4.23)	1.45 (0.71, 2.96)	1.40 (0.55, 3.60)	1.05 (0.27, 4.11)	3.21 (0.37, 28.03)
	Acute, other	1.60 (0.55, 4.62)	0.96 (0.23, 3.98)	0.90 (0.33, 2.46)	1.28 (0.36, 4.56)	0.95 (0.58, 1.57)	0.94 (0.52, 1.71)	0.63 (0.28, 1.43)	1.63 (0.49, 5.44)
	Acute, multiple units	1.02 (0.09, 11.43)	0.35 (0.02, 5.22)	>999.99 (<0.01, >999.99)	>999.99 (<0.01, >999.99)	>999.99 (<0.01, >999.99)	>999.99 (<0.01, >999.99)	1.18 (0.12, 11.62)	1.38 (0.10, 19.13)
	Long-term care	0.74 (0.25, 2.19)	0.52 (0.11, 2.42)	0.94 (0.32, 2.77)	1.23 (0.26, 5.95)	0.72 (0.43, 1.20)	0.75 (0.39, 1.42)	1.08 (0.43, 2.72)	1.85 (0.48, 7.13)
	Community and public health	0.79 (0.33, 1.85)	0.54 (0.15, 2.00)	0.75 (0.30, 1.91)	1.10 (0.29, 4.13)	0.90 (0.48, 1.68)	0.92 (0.44, 1.94)	1.03 (0.46, 2.29)	1.95 (0.53, 7.16)
	Long-term /community psych/mental health	1.76 (0.47, 6.62)	1.31 (0.23, 7.49)	1.30 (0.50, 3.39)	1.00 (0.27, 3.69)	1.04 (0.52, 2.10)	1.09 (0.43, 2.75)	1.29 (0.45, 3.70)	2.15 (0.46, 10.11)
	Other	0.50 (0.03, 8.20)	0.23 (0.01, 4.25)	0.63 (0.04, 10.22)	0.41 (0.02, 7.45)	-	-	>999.99 (<0.01, >999.99)	>999.99 (<0.01, >999.99)
Employment Status									
	Part time	1.15 (0.57, 2.32)	1.09 (0.46, 2.62)	1.23 (0.59, 2.59)	0.93 (0.37, 2.33)	1.31 (0.83, 2.05)	1.19 (0.72, 1.96)	0.89 (0.44, 1.81)	0.53 (0.21, 1.35)
	Casual	0.95 (0.30, 3.01)	0.34 (0.08, 1.35)	1.02 (0.44, 2.37)	0.91 (0.33, 2.52)	0.90 (0.47, 1.72)	0.77 (0.38, 1.55)	0.95 (0.28, 3.21)	0.46 (0.10, 2.23)
Direct care									
	Yes	**6.43 (1.26, 32.86)**	6.67 (1.00, 44.65)	3.29 (0.59, 18.41)	3.10 (0.39, 24.46)	1.43 (0.65, 3.15)	1.26 (0.51, 3.09)	1.30 (0.42, 3.98)	1.10 (0.24, 5.10)