We Are Here: Healthcare Experiences of LGBTQ+ Individuals with Chronic Health Conditions Assigned Female at Birth

By

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B.Sc., Saint Mary's University, 2018
M.Sc., Trent University, 2020

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We acknowledge and respect the Lək̓ʷəŋən (Songhees and Xʷsepsəm/Esquimalt) Peoples on whose territory the university stands, and the Lək̓ʷəŋən and W̱SÁNEĆ Peoples whose historical relationships with the land continue to this day.

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Abstract

People assigned female at birth (AFAB) and sexual and gender minority (SGM) individuals are disproportionately impacted by chronic health conditions. AFAB-SGM are less likely than cisgender heterosexual women or those assigned male at birth to access routine healthcare. Yet, the healthcare experiences of AFAB-SGM individuals with chronic health conditions remain largely underexplored, with most existing research focusing on a narrow range of identities and chronic health conditions.

This dissertation is a step towards filling this gap by exploring the experiences of navigating the healthcare systems by AFAB-SGM individuals living with chronic health conditions across Canada. I used data from the online cross-sectional Our Health 2022 study, the largest multilingual community health survey of the 2S/LGBTQIA+ communities in Canada, conducted by the Community Based Research Centre. I used a community-based participatory approach to this work, including convening and engaging a community advisory board.

The overall prevalence estimate of any chronic health condition among AFAB-SGM individuals was 62.9%. In subsequent analyses of various chronic health conditions applying a sex- and gender-based analysis using multivariate logistic regressions, AFAB-SGM and AFAB-GM individuals had higher odds of reporting most chronic conditions compared with assigned-male or AFAB-CSMW, respectively. Exploring how AFAB-SGM individuals manage their chronic conditions, AFAB-GM individuals and those with chronic pain or mental health conditions were more likely to rely on community supports or self-management strategies. Exploring barriers to healthcare among AFAB-SGM individuals living with chronic conditions, AFAB-GM identities and those certain chronic conditions (i.e., chronic pain, gastrointestinal, multisystem conditions) were associated with greater odds of facing barriers and experiencing

discrimination in care settings. The results across these papers highlight the range of chronic health conditions that impact AFAB-SGM individuals and ongoing systemic barriers that impede these individuals from seeking healthcare and managing their chronic health conditions. Further, these findings suggest the continued presence of sex-based biases in healthcare systems and the need to move beyond the narrow scope of identities and topics in health when we discuss and research SGM health.

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Glossary of Abbreviations

Abbreviation	Definition
2S/LGBTQIA+	Two Spirit, lesbian, gay, bisexual, trans, queer, questioning, intersex, asexual, and other sexual and gender minority individuals
AFAB	Assigned female at birth
AMAB	Assigned male at birth
CAB	Community advisory board
CBPR	Community-based participatory research
CBRC	Community-Based Research Centre
CDC	Centers for Disease Control and Prevention
CERB	Canadian Emergency Response Benefit
CHC	Chronic health condition (only used in Chapters 3 and 5)
COVID-19	Coronavirus disease of 2019
CSMW	Cisgender sexual minority women
DSM	Diagnostic and Statistical Manual
GM	Gender minority
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
LGB	Lesbian, gay, and bisexual
LGBT	Lesbian, gay, bisexual, transgender
NCHS	National Centre for Health Statistics
NIH	National Institutes of Health
SAAB	Sex assigned at birth
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2
SGM	Sexual and gender minority
TGD	Transgender and gender diverse
USA	United States of America
WHO	World Health Organization

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Chapter 1: Introduction

Sexual and gender minority individuals assigned female at birth (AFAB-SGM) are at a disproportionate risk of developing chronic health conditions, such as mental health conditions, addiction, obesity, heart conditions, and asthma (Cicero et al., 2020; Dearing & Hequembourg, 2014; Decker et al., 2025; Eliason, 2014; Patterson & Jabson, 2018). Compounding these challenges, AFAB-SGM individuals are less likely than their cisgender, heterosexual, and assigned-male-at-birth sexual and gender minority (AMAB-SGM) counterparts to have a family doctor or to seek routine medical care (Albuquerque et al., 2016; Baldwin et al., 2017; Dibble et al., 2007; Fredriksen-Goldsen et al., 2013). As chronic health conditions often require consistent and lifelong healthcare, the lack of engagement with medical professionals may increase the severity/morbidity and mortality of chronic health conditions (Dearing & Hequembourg, 2014; Eliason, 2014; Hiestand et al., 2007). There is an apparent disconnect between the healthcare needs of AFAB-SGM individuals and the healthcare they receive. My doctoral dissertation was a step towards filling this gap, exploring how AFAB-SGM individuals with chronic health conditions in Canada navigate and experience the healthcare systems in an effort to improve relationships between these individuals, with the healthcare system, and with healthcare providers. My research aimed to understand the barriers and supports to accessing care for AFAB-SGM individuals and to determine better pathways of care for this community.

My dissertation is divided into six chapters. In this chapter 1, I provide a literature review to orient the reader. I begin by defining the population of interest, offering a working definition of chronic health and disability. I also provide some contextual information about the COVID-19 pandemic as the data used in this dissertation were collected while the pandemic was still

declared a public health emergency (Roknuzzaman et al., 2024). I then outline known prevalences of chronic health conditions among Two Spirit[1], lesbian, gay, bisexual, trans, queer, questioning, intersex, asexual, and other SGM identified (2S/LGBTQIA+) communities, with a focus on AFAB-SGM people. Following this, I describe commonly reported barriers to accessing adequate healthcare and the role of supports (community-based and health services) in 2S/LGBTQIA+ communities health. Finally, I discuss community-based participatory research (CBPR) as the primary theoretical framework of my research and introduce both the feminist-of-colour disability framework and the access to healthcare framework as supporting theories that guide my understanding and analysis of chronic health conditions and barriers to healthcare.

In chapter 2, I present the methodology and methods that guided my dissertation. I describe CBPR as my overarching research approach, and how I upheld the principles of this approach throughout the project. I then detail the creation and roles of the community advisory board (CAB), the study design, and analysis plan. Chapters 3, 4, and 5 each present a manuscript formatted for submission to a peer-reviewed academic journal that addresses one of my three research objectives, respectively. In chapter 3, I examine the prevalence of chronic health conditions in AFAB-SGM individuals in comparison with AMAB-SGM individuals. In chapter 4, I explore the services and supports AFAB-SGM individuals use to manage their chronic health

[1] Two Spirit is distinct from Settler definitions of sexual and gender identity. Two Spirit prioritizes cultural connection and enables Indigenous people to reclaim traditional supra-gender roles within their nations. Two Spirit is also a generalized term, most First Nations have specific language to describe gender and sexuality and their cultural role among their people (Robinson, 2019)

conditions. In chapter 5, I explore common barriers to accessing healthcare for AFAB-SGM individuals with chronic health conditions. Each manuscript, and thus each of chapters 3-5, is written to the specifications of the peer-reviewed journal they will be submitted to. Finally, in chapter 6, I summarize and discuss the results broadly and detail the implications and limitations of my dissertation as a whole. It should be noted that a single consolidated reference list for all six chapters appears after Chapter 6, however, Chapters 3–5 contain embedded reference lists within each chapter.

Literature Review

Orienting to Language and Definitions

Before continuing, I must address a glaring limitation of the following literature review—that is, the conflation of the experiences and health of members of the 2S/LGBTQIA+ communities in extant literature with respect to sex, gender, and sexual identity. The terminology used in presenting this literature review jumps between descriptions of full spectrum 2S/LGBTQIA+ to LGBTQ+ to AFAB-SGM people to sexual minority women to gender minority people; this serves the purpose of not conflating the experiences, prevalence, or barriers of one community with another simply because there is no research to support these claims. Much of the following research reviewed uses aggregated data reporting approaches (e.g., LGB rather than reporting on lesbian, gay, and bisexual people separately or TGD [transgender and gender diverse] rather than transgender women, transgender men, and nonbinary people separately), which may or may not actually reflect the experiences or health outcomes of all sub-groups of the reported group. For accuracy, I explicitly use the language used by each publication when referring to their findings. Defining, labeling, and reporting on a study

population is an ongoing tension in this field of research (Klysing et al., 2024), where particular studies will, for example, use the term "LGBTQ+" and never speak to the experiences of gender minority people, or say "sexual minority women" and not differentiate between the experiences of cisgender and transgender women where it is applicable. Moreover, a majority of the research on LGB individuals fails to mention transgender—or cisgender—people as being included or excluded from the data. In my literature review, I could not identify any research that explicitly included the experiences of Two-Spirit, intersex, or asexual individuals. It is not my intention to be inconsistent, but rather to ensure that the experiences of the communities reported on remain tied to the community named as represented in the research, where possible. Following, I will use the terms AFAB cisgender sexual minority women (AFAB-CSMW), AFAB gender minorities (AFAB-GM), and AFAB sexual and/or gender minorities (AFAB-SGM) to specify these different populations and will use specific sexual and gender identity terminology whenever possible. There is little research on chronic health conditions or experiences in healthcare that explicitly include both AFAB-CSMW and AFAB-GM, and the experiences of these populations should not be conflated.

Definitions and Rationale

In order to gain a clear understanding of the healthcare experiences of members of 2S/LGBTQIA+ communities assigned female at birth with chronic health conditions, it is necessary first to define the community of interest and chronic health conditions and argue why those definitions are being used. Following this, I discuss two important contextual elements of this work: the COVID-19 pandemic and the country-context of Canada.

AFAB-SGM. This research is focused on members of the 2S/LGBTQIA+ community who are assigned female at birth. This term includes cisgender women who identify as lesbian, gay, bisexual, queer or something else non-heterosexual—referred to as AFAB-CSMW—as well as transgender men, nonbinary people and other nonbinary gender identities (e.g., genderfluid, genderqueer, transmasculine) of people assigned female at birth—referred to as AFAB-GM. It is important to note that sexual and gender identity communities are not mutually exclusive, and many gender minority individuals are also sexual minorities (i.e., gay trans men or queer nonbinary people).

Due to the diversity of identities within this group, research often focuses on either sexual or gender minority identities separately and rarely addresses these identities as co-occurring in a single individual (Cicero et al., 2020). This separation limits understanding of how some shared biological factors—such as reproductive health and sex-based risk factors—and social factors, including the social determinants of health, influence the experiences of AFAB-SGM individuals navigating healthcare systems, which remain heavily structured around binary sex/gender classifications (Albuquerque et al., 2016; Paine, 2018; Stewart et al., 2022). It is also important to note that some gender minority individuals may transition in adulthood (Coleman et al., 2022), and AFAB-GM individuals may continue to be perceived as women in healthcare settings, depending on factors such as gender expression and decisions regarding medical transition. As a result, these individuals may share similar healthcare experiences with cisgender SM individuals while also facing unique challenges related to their identity as GM individuals. While the division of CSMW and GM communities is largely, and theoretically, viewed as a sign of progress in understanding differences in identity and experiences, the reality is that all members

of this broader group (AFAB-SGM individuals) are often underserved, underrepresented, or completely excluded from health research (Eidelberg et al., 2024; Weideman et al., 2025). The lack of research integrating the experiences of AFAB-CSMW, AFAB-GM, and AFAB-SGM individuals in healthcare settings limits efforts to address health disparities, reinforcing systemic gaps in care.

I decided to examine all AFAB members of the 2S/LGBTQIA+ communities because health research on these communities has been primarily concerned with cisgender gay, bi, queer men who have sex with men, and other AMAB members of these communities (Coulter et al., 2014; Eidelberg et al., 2024; Pieri, 2020; Weideman et al., 2025). A review of the United States of America's National Institutes of Health's (NIH)-funded studies from 1989 to 2011 found that 86.1% of all funded LGBT-related research studied sexual minority men, where only 13.5% specifically studied sexual minority women (Coulter et al., 2014). In recent years (2012-2022), the amount of NIH-funded research on sexual minority men has reduced from 86.1% to 67.8%—although 18.1% is now allocated to transgender women. However, the proportion of NIH-funded research on sexual minority women has not changed in this time (13.5% to 13.9%; Weideman et al., 2025). Further, only 8.2% of funded research studied transgender men and 4.4% studied nonbinary people (Weideman et al., 2025). In examining the experiences of AFAB-SGM individuals together, instead of sexual minority women *or* trans and gender diverse individuals assigned female at birth, we can better understand both the shared and nuanced experiences of all group members, including those who are presently overlooked as being impacted by these health care and health research disparities—such as nonbinary and transgender men with respect to cervical, uterine, and breast cancer screening.

The necessity to study AFAB-SGM individuals is also prevalent when looking at research on different health conditions within the 2S/LGBTQIA+ communities, where the majority of research focuses on HIV/AIDS (65.5% of NIH-funded SGM health research from 2012 to 2022), followed by mental health (29.5%), illicit drug use (19.9%), and sexual health issues (17.0%) (Weideman et al., 2025). This is not to say that HIV/AIDS does not exist in AFAB members of the community (Becasen et al., 2022; Stutterheim et al., 2021), but, rather, that health research funding opportunities still prioritize research that focuses on HIV/AIDS and sexual minority men. The narrow scope of health research in 2S/LGBTQIA+ individuals means that little is known about the impact of chronic health conditions outside of HIV/AIDS and mental health conditions among these communities. Although the proportions and range of NIH-funded research was headed in a more nuanced direction, the current administration of the United States of America has cut NIH funding, particularly targeting research that focuses on or includes TGD individuals, or makes explicit references to gender (Cahill, 2025). Funding cuts reach beyond NIH-funded research, government actions have repealed many policies and programmes supporting 2S/LGBTQIA+ health equity (Cahill, 2025). Continuing to produce nuanced research that centres diverse SGM individuals health is especially imperative given the current political climate and continued attacks on TGD peoples existence and access to care (Eberman, 2022).

In articulating the rationale for examining all AFAB-SGM individuals, it is worth noting the long history of women's health being minimized, over pathologized, and poorly understood (Green, 2021; Schalk, 2021). Women's experiences within healthcare have been profoundly shaped by the concept of hysteria, a term that served as a catch-all diagnosis for a wide range of

physical and mental health issues (Green, 2021; Paulon, 2022). This ‘diagnosis’ allowed healthcare providers to label women’s experiences, especially those related to reproductive health or emotional distress, without fully investigating the underlying causes (Green, 2021; Paulon, 2022). This historical trend of disregarding women’s health needs as psychological or emotional in origin continues to impact how AFAB-SGM individuals engage with healthcare systems today (Green, 2021). While discussing the relationship between women’s health and hysteria in detail is outside the scope of this dissertation, it does warrant attention as a reason to examine all AFAB individuals and their experiences navigating healthcare systems and chronic health conditions.

Chronic Health Conditions. The World Health Organization (WHO) and the United States of America’s Centers for Disease Control and Prevention (CDC) both provide broad definitions for chronic diseases. Though the definitions may appear similar, subtle differences in language vastly change the scope and understanding of chronic health conditions. The WHO defines chronic diseases—or noncommunicable diseases—as:

> …diseases that are not passed from person to person. They are of long duration and generally slow progression. The four main types—cardiovascular diseases, cancer, diabetes and chronic respiratory diseases —impose a major and growing burden on health and development (World Health Organization, 2024, p. 1).

While this definition acknowledges that chronic health conditions are long-lasting and impact the health and development of the individual and the country/region, the language of the definition limits the inclusion of chronic health conditions stemming from communicable conditions (e.g., HIV/AIDS and SARS-CoV-2/long COVID) and conditions with acute onset. Additionally,

definitions like that of the WHO have been critiqued for continuing to centre biomedical models through the use of language like ‘disease’ and condition-based lists, rather than impact on daily activities (Gulley et al., 2018).

In contrast, the definition of chronic disease used by the CDC—“conditions that last 1 year or more and require ongoing medical attention or limit activities of daily living or both” (Centers for Disease Control and Prevention, 2024, p. 1)—offers an alternative that similarly highlights the ongoing nature of chronic health conditions while drawing attention to the impact on daily activities. Pieri (2020) explains that using a definition that centres common aspects of chronic health conditions like “they are chronic” and “they imply difficulty in everyday tasks,” aims at “privileging the embodied narratives of those who experience chronic illness [and] encourages the participation of persons with disputed diagnosis” (p. 2). Using a more expansive definition allows for conditions widely understood as chronic health conditions to be captured (e.g., auto-immune, chronic fatigue, chronic pain, lupus, fibromyalgia, Ehlers-Danlos syndrome; Pettinicchio et al., 2021; Tran et al., 2023), as well as health conditions that may not be considered as chronic health conditions but are defined as such by the WHO and the CDC (e.g., mental health conditions, eating disorders, HIV/AIDS, dementia, hearing/vision loss, asthma, cancer in remission). For these reasons, I uphold the CDC’s definition of chronic health conditions in my research.

The same critique applied to the WHO’s definition of chronic disease can be applied to the majority of the reviewed literature on chronic health, which either fails to give a definition of chronic health, or uses an operational definition based on one or a limited list of chronic health conditions (Gulley et al., 2018). For example, Pettinicchino et al. (2021) classified chronic health

conditions based on the presence of at least one of nine conditions: asthma, cancer, chronic kidney disease, chronic respiratory or lung disease, diabetes, hypertension, heart disease, immunocompromised, or obesity. Similarly, Patterson and Jabson (2018) classified participants as having a chronic disease if a healthcare provider had told them they had asthma, cancer, chronic bronchitis, diabetes, heart attack, or hypertension. While these condition-based definitions cover some of the most common chronic health conditions (Tran et al., 2023), they almost all fail to include mental health conditions, with the exception of Cicero et al. (2020) who included depressive disorders. Further, the definitions of chronic health, or lack thereof, used by these studies excluded people without a formalized diagnosis and perpetuate the lack of research on invisible[2] and rarer chronic health conditions.

Mental health conditions can be chronic health conditions. Mental health and stress can have a detrimental effect on an individual's physical health (Maguire et al., 2021; Meluch, 2022; Varin et al., 2019) and can trigger or exacerbate symptoms in people with other chronic health conditions (Decker et al., 2025). However, special consideration must be given to individuals who report having a mental health condition as their only chronic health condition. Mental health conditions have long been a focus of health research in 2S/LGBTQIA+ communities due to the

[2] Invisible chronic health conditions refers to conditions where the symptoms or impacts are difficult to visibly detect (Chae, 2024). While many chronic health conditions fall under this definition, there are many complexities to consider, see Ropski (2023). Here, invisibile chronic health conditions refers to medically invisible conditions or conditions that "evade traditional recognized medical testing or are illnesses that do not have a universally established set of diagnostic criteria yet" (Ropski, 2023, p. 12).

high prevalence of these conditions and the historical pathologization of 2S/LGBTQIA+ behaviours (Bränström et al., 2016; Dearing & Hequembourg, 2014; Eliason, 2014; Weideman et al., 2025). However, they are rarely approached through the lens of chronic health. Further, *mental* and *physical* healthcare systems remain fairly separate entities in Canada in terms of how care can be accessed and what is covered by federally- and provincially-funded health services or private insurance (Stephenson, 2023). This means that individuals who only report having a mental health condition may have a significantly different experience navigating Canadian healthcare systems than those with other types of chronic health conditions, or both mental health and other chronic health conditions together. In addition, the commonality of mental health conditions among 2S/LGBTQIA+ individuals—56% of 2S/LGBTQIA+ youth age 15-24 according to Statistics Canada (2024)—may skew statistical analyses and overshadow other chronic health conditions that have not been discussed as explicitly in prior 2S/LGBTQIA+ health research. I retain mental health conditions in my understanding of chronic health conditions, though I will differentiate between those with mental health conditions *and* other chronic health conditions and those with only mental health conditions in my future analyses and interpretation of results.

Disability. Due to the interconnectedness of chronic health and disability, it is important to define and discuss disability here as well. Both the WHO and the CDC define disability through three interconnected dimensions: impairment, activity limitation, and participant restrictions (CDC, 2025; WHO, 2013). Further, the CDC (2025) states:

> a disability is any condition of the body or mind (impairment) that makes it more difficult for the person with the condition to do certain activities (activity limitation) and interact with the world around them (participation restrictions) (p. 1).

Both organizations understand disability to encompass a diverse range of conditions as well as an interaction between the biological factors that may influence the etiology of the conditions and sociological factors that influence the persons experiences navigating the world (CDC, 2025; WHO, 2013). From both of these definitions, chronic health conditions can be classified as disabilities—or the other way around, where Krahn et al., (2021) include long-term disabilities as chronic health conditions.

Although these two concepts are similar in many ways and are often discussed together, they are not understood as one and the same. Both Pieri (2022) and Krahn et al. (2021) address the "collective affinity" (Pieri, 2022, p. 106S) of individuals with disabilities and chronic health conditions through shared experiences of ableism and systemic definitions of health. For example, WHO defines health as a state of completeness[3] that may not be achievable for all of these individuals, while still recognizing them as distinct groups. Chronic health conditions seem to occupy a medical space in these definitions, often discussed in terms of condition or disease, where disability speaks to an individual's experience. For example, Krahn et al. (2021) utilize a definition of disability developed by the WHO, which defines disabilities as experiences of limitation due to a health condition that "occur in the context of one's environment and are

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[3] WHO defines health as a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity (WHO, 1948)

influenced by personal factors" (p. 1), and then defines "chronic diseases" as "primarily noncommunicable diseases with duration of at least one year that may require medical attention" (p. 1). There is a clear change in language from the definition of disability to the definition of chronic health conditions. This may also explain why much of the research on chronic health conditions uses operational definitions based on the presence of specific conditions as outlined above.

Disability as a function of individual experience aligns with Schalk's (2021) understanding of disability as a relationship to power rather than a relationship to health. She describes disability as a social and political category in which "bodyminds[4] depart from the bodily, mental, and/or behavioural norms of society" (Schalk, 2021 p. 1). If disability is a deviation from what is considered the norm, then our understanding of disability as limitations of functioning are based on systems of power that determine what is an appropriate or acceptable level of functioning and, further, that individuals with disabilities are not capable of meeting that level. Krahn et al. (2021) also highlight that discussing concepts like disability and vulnerability in terms of difference from the 'norm' allows the norm to remain an invisible and uncontested comparison group. Individuals with chronic health conditions may then not feel as though their health condition or experiences align with their personal conceptualizations of disability or what limited functioning looks like. This distancing from the term disability may also stem from an attempt to avoid the stigma associated with a disabled identity. Attempts to create distance

[4] Bodyminds refers to the "imbrication of the entities usually called 'body' and 'mind'…and highlights how mental and physical processes not only affect each other but also give rise to each other" (Schalk, 2021, p.1)

between those with chronic health conditions from those with disabilities can only lead to further marginalization and upholding of systems of power that determine what bodyminds are of value (Schalk, 2021). In the feminist-of-colour disability framework (see further discussion of this theoretical framework below), Schalk and Kim (2020) rebuke disability as a "legible identity to which one can lay claim" (p.38). With Schalk's (2021) definition of disability in mind, for the purposes of my research, chronic health conditions, including mental health conditions, are understood as disabilities.

COVID-19 and Long COVID. Discussion of the coronavirus 2019 (COVID-19) pandemic provides crucial contextual information to this literature review as well as the experiences of the participants represented in the subsequent research as the data used for this dissertation were collected while the pandemic was still declared a public health emergency (Roknuzzaman et al., 2024). The COVID-19 pandemic, caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), emerged in late 2019 and rapidly spread worldwide, leading to a global health crisis (Ciotti et al., 2020; Egede & Walker, 2020). Declared a Public Health Emergency of International Concern by the World Health Organization (WHO) in January 2020, it resulted in widespread illness, millions of deaths, and significant disruptions to healthcare systems, economies, and daily life (Egede & Walker, 2020; Maroto et al., 2021; Pieri, 2022; Schwartz et al., 2021). To mitigate the impact and spread of the virus, governing bodies implemented various public health control measures such as masking, lockdowns, work-from-home orders, physical distancing, and vaccination mandates (Ciotti et al., 2020; Pieri, 2022). In Canada, these public health measures were implemented and lifted intermittently through the end

of 2021, rather than being continuously enforced, though this differed dramatically across provinces (Canadian Institute for Health Information, 2023).

Then, on May 5th, 2023, the WHO declared that COVID-19 no longer constituted a public health emergency (Roknuzzaman et al., 2024). As of June 2023, approximately 64% of people in Canada reported at least one COVID-19 infection and one in five have had more than one suspected COVID-19 infection (Statistics Canada, 2023). Furthermore, one in nine people in Canada have experienced long-term symptoms following their COVID-19 infection (Statistics Canada, 2023). Individuals infected with SARS-CoV-2 might experience a range of persistent or new symptoms that can impact multiple organ systems, commonly referred to as long COVID (Chou et al., 2024) or post COVID-19 condition (WHO, 2023). Due to the variation in duration, symptoms, and severity, long COVID has been difficult to define, though is understood as a "disabling illness" (Pollack et al., 2023, p. 2) that "often affects quality of life and functioning" (Chou et al., 2024, p. 929). Symptoms of long COVID can include, but are not limited to, fatigue, cognitive dysfunction, headaches, insomnia, muscle aches, immune dysregulation, neurological abnormalities, neuroinflammation, tissue and organ damage, and microbiome dysregulation (Chou et al., 2024; Pollack et al., 2023). Although long COVID has been reported among individuals of all sociodemographic identities, women and transgender people are disproportionately impacted (Pollack et al., 2023); this is detailed in the following chronic health section.

Beyond COVID-19's direct health effects, the pandemic exacerbated social inequities, highlighting disparities in healthcare access and economic stability (Maroto et al., 2021; Pieri, 2022). Individuals with chronic health conditions and disabilities have borne the brunt of these

inequities in healthcare access throughout the peak of the pandemic and continuing into the present (D'Alessandro-Lowe et al., 2024; Maroto et al., 2021; Schwartz et al., 2021; The Lancet, 2023). During the pandemic, healthcare systems had to rapidly adapt to the crisis, which included protocols concerning the scarcity of life-saving resources and judgements about survival chances (Pieri, 2022). Individuals with chronic health conditions, often referred to as people with pre-existing conditions during this time, were judged by medical professionals as "unfavourable not only for survival but also to have a livable life" (Pieri, 2022, p. 108S), and thus were less likely to receive life-saving care, such as ventilators, compared with able-bodied persons in the case of a shortage (Pieri, 2022). However, in the case of preventative measures, individuals with pre-existing conditions were among the first who were able to receive the COVID-19 vaccine in 2020 (Kholina et al., 2022). Deaths of these individuals were also dismissed by healthcare systems and media by reporting them with the caveat of having underlying conditions (Pieri, 2022). Pieri (2022) suggests that reporting the deaths of people with chronic health conditions in this way is a powerful reminder that, "some lives are more expendable [and] some deaths are less relevant" (p. 109S).

The COVID-19 pandemic also resulted in the postponement of non-urgent medical procedures, the cancellation of many routine services, and the widespread transition of primary care to virtual platforms (Ciotti et al., 2020; D'Alessandro-Lowe et al., 2024; Pieri, 2022). While some patients found virtual appointments beneficial and continue to use them, others faced barriers to access, including technological challenges and the loss of in-person support services (Grey et al., 2023; Schwartz et al., 2021). In addition, many individuals chose to delay seeking medical attention, either out of fear of exposure to SARS-CoV-2 virus in healthcare settings or to

avoid further burdening already overstretched healthcare systems (Pieri, 2022). These disruptions had a profound impact, particularly on individuals with chronic health conditions and disabilities, where healthcare service loss was associated with physical regression, increased medical complications, and pain (Schwartz et al., 2021). TGD individuals were also substantially impacted by the de-prioritization of some healthcare services during this time, as gender affirming surgeries were often cancelled or delayed due to being determined non-urgent procedures (Grey et al., 2023). Despite public health declarations related to the end of the pandemic, the availability of healthcare services did not fully recover from the disruptions caused by the COVID-19 pandemic (D'Alessandro-Lowe et al., 2024). Although many healthcare services have since resumed at or near their pre-pandemic capacity, healthcare systems and workers continue to struggle with workforce shortages, burnout, and the long-term consequences of delayed care (D'Alessandro-Lowe et al., 2024), highlighting the ongoing challenges in fully restoring healthcare accessibility and quality.

Though the social and financial impact and the inaccessibility of health and general services were ubiquitous, individuals who already experienced inequities in these sectors were further marginalized (Maroto et al., 2021; Pettinicchio et al., 2021; Pieri, 2022). People with chronic health conditions and disabilities, and other members of marginalized communities, including People of Colour, women, and 2S/LGBTQIA+ people, faced higher rates of unemployment and loss of income (Maroto et al., 2021). These individuals were also at greater risk of contracting SARS-CoV-2 due to being clustered in jobs that were deemed essential work (Egede & Walker, 2020; Maroto et al., 2021; Pieri, 2022). Outside of healthcare and emergency services, essential workers were individuals who largely worked in low-paying service jobs in

venues that were not ordered to close, such as grocery stores and some food establishments (Maroto et al., 2021). Though these essential services remained open, individuals with chronic health conditions and disabilities faced greater reductions in hours and layoffs than their able-bodied co-workers (Maroto et al., 2021; Pieri, 2022). Further, due to pre-existing economic insecurity, many individuals with chronic health conditions or disabilities were also unable to access COVID-specific income benefits (Maroto et al., 2021). The Canadian government introduced the Canadian Emergency Response Benefit (CERB), which provided Canadians who lost their jobs or who had reduced hours due to the COVID-19 pandemic a $2000 CAD/month support benefit starting in March 2020 through to October 2020 (Canadian Revenue Agency, 2022). In order to qualify for CERB, individuals must have earned $5000 CAD in the past 12 months and have lost income due to the COVID-19 pandemic. So, individuals who were not working due to disability, earned less than $5000 CAD, or were not formally employed in that time period were unable to receive the income supplement (Canadian Revenue Agency, 2022; Maroto et al., 2021). Although the COVID-19 pandemic contributed to financial instability for many, it exacerbated already prevalent economic disparities for marginalized individuals.

Although we tend to discuss the COVID-19 pandemic in the past tense, it is far from over even at my time writing this dissertation in 2025, especially for those with chronic health conditions, those who developed chronic health conditions (e.g., long COVID), and those who were already marginalized prior to the pandemic who have yet to recover (Pieri, 2022; Spence et al., 2023). SARS-CoV-2 continues to mutate and infect individuals globally, but many of the public health measures, such as social distancing and masking, once relied upon to mitigate transmission have been “largely abandoned” (Al-Aly et al., 2024, p. 830). This shift has left the

most vulnerable to navigate the pandemic with limited systemic support (Spence et al., 2023). During the early stages of the pandemic, society witnessed the rapid implementation of accessibility measures long advocated for by disabled communities: remote work, hybrid work and learning environments, widespread masking in public spaces, and vaccine mandates (Pieri, 2022). Although these accommodations benefitted many people outside of disabled communities, the desire to return to ableist normalcy as quickly as possible pushed for the reversal of these accommodations and mandates almost as quickly as they were implemented (Pieri, 2022; Spence et al., 2023). Pieri (2022) discusses the rapid implementation of structural accommodations and their subsequent repeal as a failed opportunity to address systemic ableism, emphasizing that accessibility benefits everyone and that the pandemic highlighted the fragility of health and the universality of vulnerability. Instead of fostering solidarity, the drive to restore pre-pandemic norms further deepened social inequities (Pieri, 2022). People without pre-existing conditions did not perceive COVID-19 as life-threatening and resisted, or protested in some cases, these public health mandates (Bezdecny, 2024; Spence et al., 2023). This left the responsibility of protection on the shoulders of those most at risk, who were told to self-isolate or mask themselves while the broader public moved on (Pieri, 2022; Spence et al., 2023). This individualistic mindset prioritized economic productivity and a return to pre-pandemic life over collective care and solidarity (Bezdecny, 2024; Spence et al., 2023). In this context, individuals to whom COVID-19 posed the greatest risk became scapegoats rather than a group to collectively protect. As Pieri (2022) succinctly states, “the pandemic is a magnifying lens on structural medical ableism” (p. 109S)—though I would suggest that the magnification expands beyond medical ableism to most facets of structural oppression.

Canadian Context. Similar to the importance of providing contextual information in the COVID-19 section above, situating this research within a Canadian context is essential for understanding both the experiences of participants represented in this dissertation and some of the novel contributions of this work. Much of the existing literature on AFAB-SGM individuals with chronic health conditions originates from the United States of America (USA), where healthcare systems (Tikkanen et al., 2020a, 2020b), social policies, and political climates toward SGM individuals differ substantially from those in Canada (Cahill, 2025; Eberman, 2022). For example, Canada's universal healthcare systems (Tikkanen et al., 2020a) contrasts with the largely private systems in the USA (Tikkanen et al., 2020b), shaping barriers to care in different ways. While cost may represent a more significant barrier for many in the USA (Schneider et al., 2021), people in Canada may face more challenges related to wait times and limited access to primary and specialized care (Martin et al., 2018). This is not to suggest that cost is a non-issue in Canada, or that the availability of healthcare is a non-issue in the USA, but rather that what is conceptualized as an insurmountable barrier to care may differ significantly across these countries (Martin et al., 2018; Schneider et al., 2021). Perhaps the most impactful difference for the population of this research is the broader social and policy climates toward SGM individuals. While systemic and provider-level homo-/trans-phobia remain issues in Canada, the political environment is comparatively less hostile than in the USA, where the termination of diversity, equity, and inclusion (DEI) initiatives (Cahill, 2025), bans on gender-affirming care in numerous states (Eberman, 2022), and repeals to HIV/AIDS prevention and management initiatives (Cahill, 2025) have become increasingly prominent. Although USA-based studies have offered critical insights into health disparities in Canada, their current applicability to the Canadian context is

limited given the population of interest. These contextual differences highlight the importance of developing Canadian-based evidence to understand and address better the specific experiences and needs of SGM individuals with chronic health conditions in Canada.

Defining the population of interest, chronic health, disability, and reviewing the COVID-19 pandemic and Canadian scope of this research provides context and an operational lens for the following sections of the literature review. With this in mind, I will now provide an overview of chronic health, highlighting the historical relationships between chronic health, women's health, and 2S/LGBTQIA+ health, and prevalence of chronic health conditions in AFAB-CSMW and AFAB-GM individuals.

Chronic Health

As indicated by the above definitions, chronic health conditions are long-term and can range in severity between individuals and across time (Krahn et al., 2021). Chronic health conditions are also among the leading causes of death and morbidity worldwide (Hacker, 2024). Many chronic health conditions remain poorly understood and can result from a combination of genetic, environmental, and lifestyle factors (Airhihenbuwa et al., 2021; Cockerham et al., 2017). Given the diverse pathways to developing these conditions, it may be unsurprising that chronic health conditions affect 45.1% of Canadians, with 18.4% of those individuals reporting three or more chronic health conditions (Statistics Canada, 2023).

Although there is a wide range of factors that influence the development of chronic health conditions, women and 2S/LGBTQIA+ people are disproportionally affected in both prevalence and severity (Cicero et al., 2020; Decker et al., 2025; Eliason, 2014; Pollack et al., 2023). Yet, healthcare systems and research have historically overlooked the experiences of these individuals

(Eidelberg et al., 2024; Weideman et al., 2025). Sex-based biases in healthcare have contributed to the erasure and minimization of women's health, and the continued use of "wastebasket diagnoses" (Green, 2021, p. 4)—a vague diagnosis given for the sake of labelling but without sufficient medical exploration of the symptoms (Green, 2021). For example, fibromyalgia—characterized by widespread pain, fatigue, and cognitive dysfunction—has been given as a diagnosis when symptoms are poorly understood and assumed to be psychosomatic (Green, 2021; Walitt et al., 2016). Walitt et al. (2016) found that 73.5% of individuals diagnosed with fibromyalgia did not meet the diagnostic criteria and described the diagnosis as "disproportionally dependent on demographic and social factors rather than the symptoms themselves" (p. 2). Historically, women's health concerns have been pathologized and dismissed through concepts like "hysteria," a now-debunked diagnosis used for centuries to explain a wide range of physical and emotional symptoms in women (Green, 2021). Hysteria was often a catch-all explanation for conditions that were not well understood and reinforc the idea that women's health struggles were imaginary, exaggerated, or the result of the uterus (Green, 2021). Although hysteria as a diagnosis has been abandoned, its legacy persists in the ways that women—particularly those who are marginalized—continue to experience systemic neglect (Green, 2021; Schalk, 2021). Green (2021) argues that chronic health conditions like fibromyalgia, myalgic encephalomyelitis (chronic fatigue syndrome), and some mental health conditions are modern manifestations of hysteria and represent the continued use of wastebasket diagnoses in women's health.

Members of the 2S/LGBTQIA+ communities have historically—and continue to—experience a similar medical plight to women's health in the pathologization of SGM behaviours

(Schalk, 2021). Homosexuality was only removed from the *Diagnostic and Statistical Manual* (DSM) in 1973 (Eliason, 2020), while gender dysphoria, changed from gender identity disorder in 2013, remains in the current edition of the DSM (American Psychiatric Association, 2013). The availability of a clinical gender dysphoria diagnosis remains necessary for individuals' access to and medical coverage of gender-affirming healthcare (Ashley, 2024). Although the pathologization of TGD experiences has been critiqued as medical gatekeeping (Ashley, 2024), the removal of this diagnosis may mean removing access to gender-affirming care.

Similar to symptoms or wastebasket diagnoses being attributed to female reproductive organs and hysteria in women, some chronic health conditions in SGM individuals are attributed to that identity before exploring the underlying cause (Schalk, 2021). This is evident in historical medical responses to HIV/AIDS and a more contemporary phenomenon referred to as "trans broken arm syndrome" (Price, 2024; Wall et al., 2023, p. 1). Trans broken arm syndrome refers to the phenomenon where any health issue, such as a broken arm, presented by a TGD individual becomes, in part, attributed to the person's gender identity or transition (Wall et al., 2023, p. 1). Similarly, HIV/AIDS, once referred to as Gay-Related Immune Deficiency, framed the condition as a problem exclusive to gay men (Price, 2024). This labeling not only mischaracterized the virus but also ignored HIV infections in non-gay populations (Price, 2024). It was not until 1982 that the medical community recognized HIV/AIDS as a global pandemic that transcended any specific community, although the stigma of HIV/AIDS as a gay men's condition continues (Price, 2024). In both of these examples, the healthcare system's tendency to attribute health issues to the identity of the individual (group membership) rather than the symptoms highlights

the continued need for a more inclusive and nuanced approach to healthcare for SGM individuals.

Chronic Health Conditions in 2S/LGBTQIA+ Populations

SGM individuals face a heightened risk of developing chronic health conditions (Cicero et al., 2020; Dearing & Hequembourg, 2014; Decker et al., 2025; Eliason, 2014; Patterson & Jabson, 2018). However, the specifics of this risk, including prevalence estimates and contributing factors, remain challenging to determine due to limitations in data collection and reporting. Many studies provide risk and prevalence estimates across various groupings of the 2S/LGBTQIA+ communities rather than by individual identities. For instance, research has identified an increased risk for some cancers among LGBTQ individuals (Jones et al., 2020); higher levels of self-reported poor health among LGB individuals (Bakker et al., 2006; Bränström et al., 2016; Rice et al., 2019); higher levels of having at least one chronic health condition among LGB individuals (Bakker et al., 2006); and a greater risk of cognitive impairment, Alzheimer's disease, poor mental health, multiple chronic health conditions, and cardiovascular risk among TGD individuals (Ceolin et al., 2024; Decker et al., 2025; Downing & Przedworski, 2018). These reported health disparities are often not further disaggregated by SM or GM identity. Furthermore, these estimates are compared with those of heterosexual individuals, or with cisgender individuals in the case of TGD analyses. As a result, studies that reported on sexual minority individuals may have excluded gender minority individuals from analysis (e.g., Dearing & Hequembourg, 2014; Rabbitte & Enriquez, 2023); however, most studies failed to clarify whether participants were all cisgender, leaving uncertainty. Similarly, all but one study (Cicero et al., 2020) focusing on gender minority individuals did not consider

sexual orientation as a factor in health estimates. It is then worth noting that sexual minority TGD individuals reported significantly higher odds of fair to poor health, frequent physically unhealthy days, frequent mentally unhealthy days, and three or more health problems or impairments compared with heterosexual TGD individuals (Cicero et al., 2020). Although SGM identities are not mutually exclusive categories, much of health research focuses on a single element of identity or combines them as a singular group (e.g. LGBTQ).

As outlined above, chronic health research on SGM individuals also has a limited scope, with a majority of research focusing on HIV/AIDS (Bränström et al., 2016; Coulter et al., 2014; Eidelberg et al., 2024; Stranges et al., 2023; Weideman et al., 2025); AMAB-SGM individuals (Eidelberg et al., 2024; Weideman et al., 2025); mental health conditions separate from other chronic health conditions (Weideman et al., 2025); and a restricted list of specific chronic health conditions (Patterson & Jabson, 2018; Pettinicchio et al., 2021; Tran et al., 2023). This limited scope, along with the failure to distinguish between or acknowledge the intersection of sexual and gender minority identities, results in a sparse body of research on chronic health in AFAB-SGM individuals. Since sexual minority health and gender minority health are almost never presented together, I will first discuss chronic health in AFAB-CSMW, followed by chronic health in AFAB-GM individuals.

Chronic Health in AFAB-CSMW. The existing research on chronic health conditions in AFAB-CSMW demonstrates fairly consistent findings in several areas: obesity (Bränström et al., 2016; Dibble et al., 2007; Eliason, 2014; Fredriksen-Goldsen et al., 2013; Patterson & Jabson, 2018; Rice et al., 2019), asthma (Bränström et al., 2016; Dibble et al., 2007; Eliason, 2014; Fredriksen-Goldsen et al., 2013; Patterson & Jabson, 2018; Tran et al., 2023), arthritis

(Bränström et al., 2016; Patterson & Jabson, 2018), cardiovascular disease and hypertension (Bränström et al., 2016; Eliason, 2014; Fredriksen-Goldsen et al., 2013; Patterson & Jabson, 2018; Rice et al., 2019), and breast cancer (Dibble et al., 2007; Eliason, 2014; Patterson & Jabson, 2018). Across every study, lesbian and bisexual women (reported as sexual minority women [SMW] in Patterson and Jabson, 2017) were more likely to report each respective chronic health condition compared with heterosexual women. However, in some cases, obesity was only found to be significantly higher in lesbian women (Bränström et al., 2016; Patterson & Jabson, 2018), and asthma was significantly higher in bisexual women (Dibble et al., 2007). Despite these findings, only breast cancer is considered a "lesbian health issue" by the US National Gay and Lesbian Task Force, defined as "diseases or conditions which are unique, more prevalent, more serious and for which risk factors and interventions are different for lesbians" (Jowett & Peel, 2009, p. 365). This type of declaration reflects the limited availability of research on other areas of health that centre AFAB-SGM individuals. By labelling health conditions and areas of health considered to be SGM health issues as such, research continues to focus and fund research on these topics, contributing to the self-perpetuating cycles of topics in SGM health.

Sexual minority women may additionally have high incidence of some types of cancer (Dearing & Hequembourg, 2014) compared with heterosexual women. Cancers, other than breast cancer, have been found to be more prevalent or pose a greater risk in sexual minority women, but the findings are less consistent. Lung cancer (Eliason, 2014; Patterson & Jabson, 2018) and other reproductive system cancers (e.g., cervical, uterine, and ovarian cancers) (Eliason, 2014; Patterson & Jabson, 2018) are suggested to have higher prevalence in lesbian and bisexual women, but when controlling for age, race, education and income these differences become

insignificant (Eliason, 2014; Tran et al., 2023). This points to the crucial factor social determinants of health play in health outcomes for AFAB-CSMW. Notably, severity and mortality rates for reproductive system cancers remain higher in lesbian and bisexual women (Eliason, 2014). As noted above, the labelling of exclusively breast cancer as a "lesbian health issue" may have limited the availability of research on other cancers among AFAB-CSMW.

In contrast, mental health is one of the few health fields that has extensive research on sexual minorities, in no small part related to sexual minority behaviours being considered a psychiatric condition for many years. Lesbian and bisexual women experience depressive disorders more frequently than gay and bisexual men (Bostwick & Harrison, 2020; Chodzen et al., 2020) and have higher lifetime prevalence rates of anxiety disorders than heterosexual women (Bostwick & Harrison, 2020; Weiß et al., 2020). Bisexual women consistently fare worse than heterosexual women and lesbians in mental health, with a higher prevalence of post-traumatic stress disorder (Pantalone et al., 2020), lifetime personality disorders (Bostwick & Harrison, 2020; Prud'homme et al., 2020), and increased risk for developing depressive disorders (Bostwick & Harrison, 2020). Despite the availability of research on sexual minority mental health, there is limited representation of women with other identities—such as pansexual, queer, or asexual—leaving critical gaps in understanding the impact of mental health conditions in AFAB-CSMW.

Research on long COVID is still in its infancy, so there is little available information on prevalence disparities. However, there is evidence to suggest that long COVID affects twice as many women as men and female sex may play a key role in long COVID development (Pollack et al., 2023). The National Centre for Health Statistics (NCHS) in the United States of America

added questions to the Household Pulse Survey to assess the prevalence of long COVID between June 2022 and August 2024 (NCHS, 2024). The result indicated that 21% of AFAB adults had ever experienced long COVID compared with 14% of AMAB adults as of April 2024. Although there was no difference between straight and lesbian/gay individuals (17% and 17.9%, respectively), 24.6% of bisexual people reported having ever experienced long COVID (NCHS, 2024). Sexual identity was not disaggregated by gender, and given the differences reported in sex and sexual identity, it is necessary to explicitly examine the impact of long COVID in AFAB-CSMW.

Finally, reports of generalized health disparities in SGM communities also indicate increased risk factors and outcomes for the presence of chronic health conditions among AFAB-CSMW. Sexual minority women have been found to be at elevated risk for developing common health conditions (Bränström et al., 2016), bisexual women report higher mental distress and poor general health (Fredriksen-Goldsen et al., 2013), and lesbian women had a greater prevalence of chronic diseases (Patterson & Jabson, 2018) compared with heterosexual women. Next, I will discuss chronic health among AFAB-GM people.

Chronic Health in AFAB-GM. Research on chronic and general health among AFAB-GM individuals remains in its early stages. Medical documentation of sex assigned at birth and gender identity remains unreliable or non-existent (Cicero et al., 2020; Jones et al., 2020), meaning systematic reviews like that of AFAB-CSMW by Patterson and Jabson (2018) or Eliason (2014) are largely not yet possible for AFAB-GM people. Researchers are mostly unable to report the prevalence of specific conditions among TGD individuals, unless the requisite data were collected. Illustrating this persistent challenge, Ceolin et al. (2024) attempted to conduct a

systematic review of aging diseases in TGD people, which included nine articles published between 2017 and 2023. Only two of the nine articles reported on specific chronic health conditions, included AFAB-GM individuals, and reported gender identity-specific prevalence of the conditions or risk factors. It was found that AFAB transgender individuals were four times more likely to experience a myocardial infarction compared with cisgender women and twice as likely compared with cisgender men (Ceolin et al., 2024). Downing and Przedworski (2018) also found that transgender men have higher odds of cardiovascular disease compared with cisgender women. Ceolin et al. (2024) also suggest comparable incidence of breast cancer in AFAB transgender individuals and cisgender individuals; however, the authors express caution due to poor medical documentation (Cicero et al., 2020; Jones et al., 2020), significantly lower uptake of preventative cancer screenings (Ceolin et al., 2024; Cicero et al., 2020), and insufficient research on the long-term effects of hormone replacement therapy (Ceolin et al., 2024).

Similar to sexual minority individuals, there is more available research on mental health in TGD individuals than in other health areas. However, it is still severely limited and often fails to disaggregate by gender. Despite these limitations, transgender men have higher rates of anxiety symptoms (Kuper et al., 2020; Weiß et al., 2020) and have higher lifetime prevalence of eating disorder diagnoses (Kuper et al., 2020; Morrison et al., 2020) compared with transgender women. Transgender men are at increased risk for developing depression (Chodzen et al., 2020), however, transgender women report more symptoms (greater severity) of depression (Kuper et al., 2020). Nonbinary people experience higher levels of depression (50% vs 17%) and anxiety (39% vs 29%) compared with the general population (Dickey, 2020).

Long COVID also disproportionately affects transgender people (NCHS, 2024; Pollack et al., 2023). The NCHS survey found that 25.5% of transgender people reported having experienced long COVID compared with 20.7% of cisgender women and 13.6% of cisgender men (NCHS, 2024). The transgender category was not further disaggregated by gender nor sex. Similar to the overview of long COVID in AFAB-CSMW, these findings highlight a critical need to examine the impact of long COVID in AFAB-GM individuals, specifically among diverse gender identities.

General or unspecified declaration of AFAB-GM health may also indicate the presence of chronic health conditions outside of the limited range of conditions often reported. For example, transgender men have poorer overall health when compared with transgender women and nonbinary people (Cicero et al., 2020). Cicero et al. (2020) was the only study identified that documented health disparities among TGD individuals relative to other TGD individuals, rather than cisgender people. The authors indicate that their findings highlight significant health concerns for transgender men (Cicero et al., 2020). Cicero et al.'s, (2020) findings situate the health of nonbinary people as between that of transgender men (worse overall health) and transgender women (better overall health, relatively), while also stating that nonbinary people experience more unmet healthcare needs and are less likely to engage in preventive health measures than their binary transgender counterparts. It is then probable that sex assigned at birth may influence the health status of nonbinary individuals in ways not captured by an analysis that groups all nonbinary people irrespective of biological sex (Bai et al., 2025).

Aligned with general critiques of chronic health research having a limited scope, studies that explicitly investigated chronic health in AFAB-SGM individuals primarily focused on a

narrow range of chronic health conditions (i.e., obesity, cardiovascular disease, asthma, breast cancer). Moreover, this research almost exclusively reported on the health of lesbian and bisexual women, or transgender men, without recognizing the broad spectrum of other identities and experiences within the AFAB-SGM community, nor the intersections of these identities. This leaves a significant knowledge gap in prevalence estimates for other chronic health conditions (e.g., non-reproductive system cancers, autoimmune disorders, metabolic conditions, connective tissue disorders, neurological disorders) among AFAB-SGM individuals. While understanding the prevalence and range of chronic health conditions among AFAB-SGM individuals is an important step in capturing the experiences of this community, it is equally necessary to examine their access to healthcare—a factor that significantly impacts health outcomes (Baldwin et al., 2017; Ceolin et al., 2024; Cicero et al., 2020; Eidelberg et al., 2024; Scheim et al., 2021; Tran et al., 2023).

Accessing Healthcare Systems

The 2S/LGBTQIA+ communities are recognized as a "health disparity population," reflecting how stigma and barriers to care perpetuate health inequities (Eidelberg et al., 2024, p. 744). Although the reporting of chronic health conditions in AFAB-SGM individuals may be limited in scope, researchers have often concluded that increased prevalence, incidence, or risks for developing chronic health conditions are related to health inequities and, more specifically, reduced access to healthcare (Baldwin et al., 2017; Ceolin et al., 2024; Cicero et al., 2020; Eidelberg et al., 2024; Scheim et al., 2021; Tran et al., 2023). Sexual minority women are less likely than their heterosexual counterparts or men to have a family doctor or consistent healthcare providers, to have accessible routine medical care, or to have accessible preventative

screening measures (Albuquerque et al., 2016; Baldwin et al., 2017; Dibble et al., 2007; Fredriksen-Goldsen et al., 2013). While transgender men are more likely than AFAB-CSMW to have and/or access regular medical care (Albuquerque et al., 2016; Baldwin et al., 2017), AFAB-GM individuals are even less likely to access preventative cancer screening (Cicero et al., 2020; Harb et al., 2019). Further, AFAB-GM individuals have reported high rates of postponing care (Harb et al., 2019), with 50% having delayed seeking necessary care (Paine, 2018) and experiencing high levels of discrimination within healthcare settings (Cicero et al., 2020). These statistics are particularly alarming when considering this population's risk for developing chronic health conditions and, further, that chronic health conditions often require consistent and lifelong care.

Barriers to Healthcare

It is necessary to examine the barriers that AFAB-SGM individuals encounter when contemplating and attempting to seek healthcare. Albuquerque et al. (2016) conducted a systematic literature review on LGBT access to care, and identified that barriers to care could be divided into five main groups: homophobia, communication, disclosure, need for care outside of sexual health, and confidentiality. Based on this review and other barriers occurring as common themes across literature on 2S/LGBTQIA+ experiences with healthcare, I will summarize barriers to care in the following four groupings: (1) homo-/trans-phobia—structural and provider; (2) communication—language, disclosure, and interactions with healthcare providers; (3) need for care outside of sexual health; and (4) isolation from community. It is worth noting that these barriers to healthcare are discussed concerning the community as a whole, not just those with chronic health conditions, as there is little research specifically on the experiences of

AFAB-SGM individuals with chronic health conditions. That said, it is assumed that these barriers not only exist for those with chronic health conditions, but could be exacerbated based on the amount of required contact with healthcare settings and systemic discrimination experienced by these individuals (Jowett & Peel, 2009).

Homo-/Trans-phobia. Homophobia and transphobia are forms of discrimination directed toward individuals based on their actual or perceived sexual or gender identity, respectively (Hill & Willoughby, 2005; Weinberg, 1972). Homophobia and transphobia as barriers to healthcare exists on multiple levels (Albuquerque et al., 2016; Meyer, 2003). Starting at a macro level, structural homophobia and transphobia exist as part of the system that erases SGM individuals as communities in need of individualized care (Albuquerque et al., 2016; Harb et al., 2019; Logie et al., 2018; Meyer, 2003). Subsequently, at the meso and interpersonal level, healthcare providers may carry homophobic and transphobic views that affect the care given to SGM individuals (Murphy, 2016; Obedin-Maliver et al., 2011). Finally, at an individual level, internalized homophobia or transphobia within an SGM individual may delay or entirely prevent them from engaging with healthcare or seeking relevant care (Albuquerque et al., 2016; Walch et al., 2016).

Structural homo-/trans-phobia perpetuates the systemic oppression of sexual and gender minorities through the function or rule of institutions, authority, and governing bodies. Structural homophobia is evident in the lacking education of healthcare professionals on 2S/LGBTQIA+ health needs (Murphy, 2016). SGM individuals overwhelmingly feel that healthcare providers are ill-prepared, incompetent, and misinformed when treating or understanding the community's health needs (Harb et al., 2019; Logie et al., 2018). Healthcare providers echoed this sentiment,

as illustrated by Beagan, Fredericks, and Bryson's (2015) research, which explored Canadian healthcare providers' perceptions of working with SGM patients and their training needs. Many doctors cited a lack of training on 2S/LGBTQIA+ health as the main reason providers may be uncomfortable treating members of these communities. (Beagan et al., 2015). This is unsurprising when many medical doctors in both Canada and the United States of America report having received only up to 5 hours of training and education on 2S/LGBTQIA+ communities and discrimination (Kattari et al., 2020; Obedin-Maliver et al., 2011), with nursing students only receiving an average of 2.12 hours (Cornelius et al., 2017).

The reported discomfort, lack of training, and lack of education among healthcare providers are exacerbated for AFAB-SGM individuals where there are fewer resources available (Eliason, 2014) and more complex guidelines for screening (Harb et al., 2019) compared with AMAB-SGM people. The most illustrative example of this comes from cervical cancer screening. The screening guidelines for when people with cervixes should begin receiving screening continue to change, from after becoming sexually active to three years after becoming sexually active, by age 21/23/25, or any combination of these guidelines (National Cancer Institute, 2020). However, both AFAB members of the 2S/LGBTQIA+ communities and healthcare providers remain unsure how these guidelines apply to this community. The confusion surrounding definitions of sexually active is reflected in the "surprising number" (Beagan et al., 2015, p. 17) of healthcare providers who were unsure or did not believe that women who have sex with women required the same yearly exams (e.g., pap smears) as heterosexual women (Beagan et al., 2015). Based on World Health Organization (WHO) campaigns to eradicate cervical cancer by 2030 (Canfell et al., 2020) and 70% of cervical cancer being attributed to

HPV (Human Papillomavirus; Wingo et al., 2018), this misinformation and miseducation of healthcare providers may contribute to the increased severity and mortality rates of partially preventable reproductive system cancers in AFAB-SGM individuals (Beagan et al., 2015; Eliason, 2014).

The homo-/trans-phobia experienced by patients from healthcare providers tends to be more direct than systemic homo-/trans-phobia, taking the form of comments, inappropriate questions, or denial of care. While this is certainly not unique to AFAB members of the 2S/LGBTQIA+ communities, AFAB-CSMW report the highest amount of "jokes" or inappropriate comments from health care providers, specifically in reference to "correcting" their sexual orientation (Dibble et al., 2007, p. 664-665). Gender minority members of the community experience transphobia from healthcare providers in the forms of misgendering, invalidation, disembodiment, and discrimination; as well as the phenomenon of trans broken arm syndrome, where all medical issues become about their transgender identity (Wall et al., 2023). None of these experiences promote safe relationships with healthcare providers.

The barrier of homo-/trans-phobia is self-perpetuating. Structural homo-/trans-phobia drives persistent gaps in the education of healthcare providers on the community's healthcare needs. The direct homo-/trans-phobia experienced by community members results in less interaction with healthcare providers, less access to screening services, and being less likely to disclose their identity (Dibble et al., 2007). As members of the 2S/LGBTQIA+ communities have a reduced likelihood of interacting with traditional healthcare settings, they may continue to be seen as not needing individualized care (Bränström et al., 2016; Patterson & Jabson, 2018), and thus specific education for healthcare providers remains unnecessary, continuing the cycle.

Communication. Communication barriers between members of the 2S/LGBTQIA+ communities and healthcare providers stem, at least in part, from the structural homo-/trans-phobia outlined above. Communication barriers will be examined in two groups: disclosure and language.

While AFAB-CSMW reported declining to disclose, or experiencing discomfort in disclosing, their sexual identity to healthcare providers, disclosure has been recognized as a much more significant barrier for AFAB-GM individuals. Cruz (2014) and Paine (2018) examined access to care and healthcare experiences in trans and gender non-conforming individuals. Both studies found that individuals of binary trans identity (i.e., trans men and trans women) expressed discomfort in disclosing their trans identity, whether they 'passed'[5] or not. In either case, trans individuals had to correct their identity with their healthcare providers, which opened the door to discrimination, denial of care, and unnecessary or invasive questions (Cruz, 2014; Kattari et al., 2020; Paine, 2018; Wall et al., 2023).

The language, terms, and identities in the spectrum of AFAB-SGM people are ever-changing and expanding (Garrett-Walker & Montagno, 2021). With that in mind, it is easy for healthcare providers to be inconsistent with language and understanding of identities. However, the lack of understanding of these identities or even the language to ask about them then puts the burden of education on AFAB-SGM community members. Kattari et al. (2020) found that 24% of GM individuals had to educate their healthcare providers on transness in order to receive

[5] "Passing" refers to binary transgender individuals being perceived as cisgender in alignment with their gender identity.

adequate care. Nonbinary people experienced the intersection of disclosure and language as barriers to care, with healthcare providers having an even poorer understanding of these identities, how to talk about them, or how to provide care (Cruz, 2014; Kattari et al., 2020; Paine, 2018). Paine (2018) discussed this experience of nonbinary transgender-identified individuals as embodied disruption—being misrecognized as either a binary identity or healthcare providers not knowing how to provide care to the individual based on their identity. Embodied disruption provoked feelings of discomfort, confusion, stress, and fear from the patient and disengagement from the interaction from both the patient and healthcare providers (Kattari et al., 2020; Paine, 2018).

Language similarly remains an issue within 2S/LGBTQIA+ research. Two examples of problematic language issues I encountered during this literature review included the continued use of "homosexuals" to describe 2S/LGBTQIA+ communities and statements like "two women identified as nonbinary" (Pieri, 2020, p. 2). These examples highlight the disconnect between healthcare providers, healthcare research, and accurate understandings of SGM identities. Acknowledging the many differences between communities and using the appropriate language to describe those communities are direct ways for researchers to model those behaviours for healthcare providers. This also makes research more accessible to the community, who are often required to be their own health advocates (Kattari et al., 2020).

Need for Care Outside of Sexual Health. 2S/LGBTQIA+ communities are commonly understood as in need of individualized care in specific realms of healthcare, such as sexual health and mental health. Still, these realms of healthcare tend to be of a singular focus (e.g., men, HIV/AIDS, drug use; Eidelberg et al., 2024; Weideman et al., 2025). The continued narrow

focus of health research on these communities only serves to bolster the opinion that members of the 2S/LGBTQIA+ communities do not require individualized care outside of these realms by healthcare providers. For example, Beagan et al. (2015) found that many healthcare providers did not think sexual or gender identity mattered when treating patients, except in relation to sexual health.

Many healthcare providers still fail to acknowledge the link between SGM identity and many chronic health conditions because they are not viewed as lesbian (or gay) health issues (Beagan et al., 2015). While this type of attitude may allude to equality, a lack of acknowledgment of the many health risks that accompany SGM identities outside of sexual health sustains health inequities by not providing these individuals with access to adequate and culturally competent care. For AFAB-SGM individuals, this leads to a failure to recognize, monitor, and screen for health conditions that they may be at higher risk for, like cardiovascular diseases, breast cancer, mental health conditions, or asthma (Dibble et al., 2007; Eliason, 2014; Rice et al., 2019). For the TGD community, this means a failure to appropriately monitor blood, heart, and other health irregularities and complications that may result from hormone replacement therapy or gender affirmation surgeries (Beagan et al., 2015). This limited framing of SGM health not only perpetuates the narrow scope of research and individualized care, but the lack of representation contributes to broader experiences of exclusion and isolation beyond and within healthcare experiences.

Isolation from Communities. Of the barriers outlined above, isolation from communities is the barrier that may be the most applicable to individuals with chronic health conditions. Jowett and Peel (2009) examined chronic health in non-heterosexual contexts to

demonstrate the interconnectedness of sexual identity and living with chronic health conditions. Decker et al. (2025) recently published similar findings, examining the intersection of gender diversity and chronic illness/disability. The findings highlight the protective role of community support among those with shared identities—both gender-diverse and chronically ill or disabled—in mediating mental health challenges exacerbated by social isolation, even though such connections were hard to find (Decker et al., 2025). Both studies highlight two avenues in which SGM individuals experience isolation from their communities: ableism in 2S/LGBTQIA+ communities and cis-heteronormativity[6] of chronic health supports.

First, I will discuss issues of ableism within 2S/LGBTQIA+ communities. Jowett and Peel (2009) specifically address ableism in 2S/LGBTQIA+ communities in relation to body image, desirability, and acceptance, where perceptions of ableism were mixed. Generally, participants felt that chronic health conditions or disabilities that were not HIV/AIDS or breast cancer were not met with respect, inclusion, or awareness from the larger community (Jowett & Peel, 2009). Sexual minority women and trans men have articulated being more open and accepting of non-normative bodies (Jowett & Peel, 2009; Pieri, 2020) and were less likely to treat people with chronic health conditions differently (Jowett & Peel, 2009). Conversely, sexual minority men tend to be viewed as upholding body image and beauty standards (Jowett & Peel, 2009), more specifically "idealizing 'slim', 'fit' and abled bodies" (p. 462) both sexually and socially. Other critiques of ableism in 2S/LGBTQIA+ communities tend to be centred around

[6] Cis-heteronormativity is the assumption that everyone both identifies with the gender they were assigned at birth and is heterosexual, positioning any deviation from this as 'abnormal.' (Stewart et al., 2022)

events and venue choices that often reflect accessibility as an afterthought, if at all (Decker et al., 2025, p. 4). For example, SGM individuals with chronic health conditions or disabilities often referenced isolation from the community regarding queer spaces typically existing in cramped nightlife settings that are not conducive for those with chronic health conditions (Decker et al., 2025; Jowett & Peel, 2009). These individuals also expressed a greater disconnect from their 2S/LGBTQIA+ communities as they felt unable to meaningfully or regularly participate in activities or access many community spaces (Decker et al., 2025; Jowett & Peel, 2009). This is likely exacerbated among AFAB members of the community, where most bars, clubs, and other created safe spaces for the 2S/LGBTQIA+ communities tend to cater traditionally to gay, bisexual, and queer men who have sex with men (Hartless, 2018). Other referenced community events in discussions about accessibility involved amateur sports leagues, outdoor events, and Pride festivities (Colpitts & Gahagan, 2016), which may have other unique accessibility or participation barriers for people living with chronic health conditions and disabilities. For members of the 2S/LGBTQIA+ communities with chronic health conditions, this means struggling for acceptance from the community, not feeling connected, and/or not having access to spaces that uplift all parts of their lives (Jowett & Peel, 2009). Next, I will discuss the issue of heteronormative supports.

SGM individuals with chronic health conditions remarked on the scarcity of queer-affirming chronic health / disability community and community-specific supports (Decker et al., 2025; Jowett & Peel, 2009). The support groups that were available for their chronic health conditions assumed heterosexuality and being cisgender (Jowett & Peel, 2009). Further, SGM individuals with chronic health conditions feared of homophobia, transphobia, or ostracization

from chronic health and disability communities (Decker et al., 2025). The same structural homo-/trans-phobia that perpetuates the oppression of SGM individuals by failing to adequately educate health care providers on the unique health needs of the 2S/LGBTQIA+ communities flows into the unavailability of culturally competent healthcare or community based-supports for chronic health issues.

SGM individuals with chronic health conditions experience isolation from their community on both sides: SGM communities and chronic health communities (Decker et al., 2025). This is detrimental when considering the impacts of social isolation on health and well-being. Social support is associated with better psychological and physical well-being, as well as helping individuals manage the stress associated with chronic health conditions (Fiorillo et al., 2017; Maguire et al., 2021; Meluch, 2022; Repke & Ipsen, 2020). Social isolation, and loneliness in particular, has been shown to have a detrimental impact on how people cope with illness (Maguire et al., 2021). The lack of access to communities that understand, support, or share the experience of being an SGM individual with a chronic health condition contributed to feelings of isolation and exacerbated stress. For some, the stress stemming from social isolation worsened the symptoms of their chronic health condition (Decker et al., 2025). The importance of support and community with others who share both identities was explicitly discussed as a sought after, but rarely found, source of resilience (Decker et al., 2025).

In summary, the most common theme across the healthcare barriers reviewed is a burden of advocating for adequate care, supports, or spaces that relies heavily on the person seeking care (Colpitts & Gahagan, 2016; Hartless, 2018; Jowett & Peel, 2009; Kattari et al., 2020; Pieri, 2020). The discomfort observed between SGM individuals and healthcare providers indicates a

system that does not value SGM healthcare. Members of 2S/LGBTQIA+ communities with chronic health conditions appear to be in an especially vulnerable position, where there is an apparent disconnect between the required care, barriers to accessing that care, and the care received. Having reviewed the literature on chronic health conditions and barriers to care among AFAB-SGM individuals, I will now discuss the theoretical frameworks that guide my work.

Theoretical Frameworks

Community-Based Participatory Research

Community-Based Participatory Research (CBPR) is both the primary research approach of this project and serves as the guiding theoretical framework for research involving marginalized communities. CBPR highlights community members' expertise and lived experiences as invaluable to the research (Creswell & Plano Clark, 2017; Oetzel et al., 2022). CBPR is considered a branch of participatory action research (PAR), which is rooted in the emancipation of oppressed groups and emphasizes the role of community members as being more significant than collaborators and necessary for a project's success (Minkler & Wallerstein, 2011). The CBPR process is intended to be collaborative, empowering, and restorative in that the research reflects community needs and interests (Wallerstein & Duran, 2003, 2006). Considering the unique challenges and perspectives faced by AFAB-SGM individuals, CBPR guarantees that the research is, and continues to be, grounded in their needs and viewpoints, ultimately promoting a more nuanced understanding of their experiences with chronic health conditions and healthcare systems. Moreover, CBPR fosters ethical engagement, mutual trust, and reciprocal benefits, ensuring that the findings lead to actionable insights and meaningful enhancements in health policies and support systems that directly address the needs of AFAB-SGM individuals.

Feminist-of-Colour Disability Framework

My research, specifically my understanding of chronic health, is informed by the feminist-of-color disability framework articulated by Schalk and Kim (2020) and Bailey and Mobley (2019), which critique ableism, heteropatriarchy, racism, and capitalism as intersecting systems that shape how certain "bodyminds" are assigned or denied value in systems of power (Schalk & Kim, 2020, p. 32). This perspective is particularly relevant to understanding chronic health as it highlights the ways in which traditional biomedical models often fail to capture the lived realities of individuals with chronic health conditions. Rather than defining chronic health solely through diagnosis or biomedical criteria, this framework highlights the importance of lived experiences and the impact on daily lives. The feminist-of-color disability framework situates disability as a relationship to power, rather than an individual issue which then must be medically addressed (Bailey & Mobley, 2019; Schalk & Kim, 2020). This framework allows for a more nuanced understanding of how individuals experience chronic health conditions within the broader systems of power that shape access and barriers to health care, the role of diagnosis and identity, and the impact on everyday experiences. This perspective enables an exploration of how individuals understand and navigate chronic health conditions by emphasizing impact on quality of life, and systemic barriers rather than medical labels alone.

While minority stress theory (Meyer, 2003) has been widely used to explain health disparities among SGM populations (e.g., Brooks et al., 2023; Comeau et al., 2023; Tran et al., 2023), I explicitly chose to move away from this framework. Though the theory includes an examination of both distal stressors—external sources of stress like discrimination and microaggressions—and proximal stressors—internalized manifestations of distal stressors, i.e.,

internalized homophobia (Meyer, 2003)—its focus on individual-level stress responses to discrimination can overlook the structural and intersectional forces shaping health outcomes (Comeau et al., 2023; Hunt, 2024). In contrast, the feminist-of-colour disability framework shifts focus to those structural forces as the systems that determine how people with disabilities and chronic health conditions experience their disabilities (Bailey & Mobley, 2019; Schalk & Kim, 2020). In essence, the feminist-of-colour disability framework does not view disability as a health outcome that would cease to exist in a world without discrimination or systemic oppression; instead, disability is an inevitability, and accessibility is structural.

The feminist-of-colour disability framework is complementary to CBPR as both frameworks prioritize lived experience and community expertise, and challenge systemically upheld avenues of knowledge production (Bailey & Mobley, 2019; Creswell & Plano Clark, 2017; Wallerstein & Duran, 2003). While CBPR focuses on these principles being upheld in the research process by ensuring that knowledge is co-constructed and will have an actionable impact on the lives of community members (Wallerstein & Duran, 2003), the feminist-of-colour disability framework interrogates the systems that shape the experiences of community members (Bailey & Mobley, 2019; Schalk & Kim, 2020). For example, through the use of CBPR, community members can guide definitions of chronic health and how those chronic health conditions are grouped or analyzed based on the data available to the research team. This process ensures that what and how this information is reported reflects community-identified concerns. The feminist-of-colour disability framework can then guide an interrogation of how concepts like health and diagnosis are defined through traditional biomedical classifications that may under-recognize chronic health conditions due to diagnostic bias, systemic neglect, or a failure to

account for culturally specific understandings of health (Bailey & Mobley, 2019). The feminist-of-colour framework adds a necessary dimension to this research when considering the nature of quantitative research and the biomedical lens inherently implied in research in health-related fields.

Access to Healthcare Framework

The final theoretical framework I draw upon for this work is Levesque's conceptual framework of access to healthcare (Levesque et al., 2013). The framework offers a model for examining how the accessibility of healthcare is shaped by both systems of power and individual capabilities (Cu et al., 2021; Levesque et al., 2013). Levesque et al. (2013) define access as an interaction between five dimensions of healthcare services (i.e., approachability, acceptability, availability and accommodation, affordability, and appropriateness) and the complementary five abilities of individuals (i.e. ability to perceive, seek, reach, pay, and engage). For example, factors like structural and provider-level homophobia can impact these dimensions of healthcare access. Structural homophobia within healthcare settings may impact the acceptability of services, such as culturally competent and well-informed care, or past negative experiences (Levesque et al., 2013). Similarly, provider homophobia can reduce an individual's ability to seek care that feels safe and affirming (Levesque et al., 2013). This framework allows for a multidimensional analysis of previously discussed healthcare barriers for AFAB-SGM people (Cu et al., 2021), highlighting the often overlapping circumstances that shape access to healthcare, especially for marginalized individuals.

Levesque et al.'s (2013) Conceptual Framework of Access to Healthcare complements both CBPR and the feminist-of-colour framework by offering a structured lens through which to

examine systemic and individual-level engagement with healthcare. Rather than challenging the legitimacy of health or healthcare systems, the framework focuses on the pathways individuals use to navigate these systems as they currently exist (Cu et al., 2021; Levesque et al., 2013). Although this framework may not be as radical in providing a lens to interpret how systems of oppression shape the current state of access to healthcare, the framework can provide a pragmatic, systems-level model for analyzing healthcare access that may be more directly applicable to understanding an individual's self-articulated experience (i.e., affordability or availability of healthcare). Moreover, the framework is valuable for informing systemic recommendations aimed at short-term improvements within existing healthcare systems. Levesque's framework is powerful when utilized in tandem with the feminist-of-colour disability framework, which adds critical depth to dimensions like "ability to perceive" and "ability to seek" by accounting for how identity and systemic oppression constrain these abilities (Bailey & Mobley, 2019) and influence their systemic counterparts (e.g., approachability and acceptability). Together, these two frameworks offer a multi-dimensional lens for analyzing access and barriers to healthcare, not only as a system of service delivery and the individual's capacity to navigate them, but also as a lived experience shaped by intersecting systems of oppression.

Dissertation Research Objectives

My dissertation seeks to examine the gap left by the exclusion and invisibilization of AFAB-SGM individuals in healthcare settings and research. I aim to explore chronic health conditions among AFAB-SGM individuals and their barriers to accessing healthcare systems in Canada. My research objectives are to:

1. Determine the prevalence of chronic health conditions within AFAB-SGM individuals and in comparison with AMAB-SGM individuals.
2. Understand what healthcare services and supports AFAB-SGM individuals are using to manage their chronic health conditions.
3. Identify common barriers to accessing healthcare for AFAB-SGM individuals with chronic health conditions.

Ultimately, my research aims to contribute evidence to establishing better pathways for healthcare system access for AFAB-SGM individuals with chronic health conditions.

Current research on chronic health conditions in 2S/LGBTQIA+ communities has only begun to scratch the surface, looking at chronic health conditions and populations through a scope that is variously too narrow or too broad. As presented in this chapter's literature review, when researchers have examined the health of SGM individuals, they tend to focus on gay, bi, and queer men who have sex with men and HIV/AIDS (Coulter et al., 2014; Eidelberg et al., 2024; Pieri, 2020; Weideman et al., 2025). The research that does centre health in AFAB-SGM individuals largely focuses on a limited set of chronic health conditions while almost exclusively reporting on lesbian and bisexual women, followed by the limited representation of transgender men. This way of understanding and reporting on chronic health conditions in AFAB-SGM individuals privileges the experiences of individuals with formal healthcare provider diagnoses and further marginalizes the health and experiences of individuals who cannot access healthcare. Further, other contextual factors of social location—like ethno-racial identity and socioeconomic status—that may affect development, access, and experiences with chronic health conditions and healthcare settings are also lacking in extant research (Bowleg, 2008; Eliason, 2014; Hsieh &

Ruther, 2016; Kinitz et al., 2021; Tran et al., 2023). This erases the intersectionality of what it means to be *queer* and managing chronic health conditions (Crenshaw, 1991). Due to the apparent disparity between need and access, AFAB-SGM individuals with chronic health conditions are in a vulnerable position within the healthcare system and health research alike.

To address these persistent gaps and disparities, this dissertation draws on theoretical frameworks that center community, equity, and access to health. The Feminist-of-Colour Disability Framework offers a critical lens for interrogating how intersecting systems of oppression shape experiences in healthcare through traditional biomedical classifications, diagnostic bias, and systemic neglect (Bailey & Mobley, 2019), while Levesque et al.'s (2013) Conceptual Framework of Access to Healthcare provides a structured model for examining both the systemic and individual dimensions of healthcare engagement. Together, these frameworks are operationalized through a CBPR approach, which grounds this work in the lived realities and priorities of AFAB-SGM individuals with chronic health conditions.

Chapter 2: Methodology

In this chapter, I outline the methodology I used in my dissertation. As this project was developed in partnership with the Community-Based Research Centre (CBRC) and uses data that pre-existed the conception of my research, I will start by introducing CBRC and the Our Health study and describe my involvement in both. Next, I will discuss my community-based participatory research (CBPR) approach and how its principles shaped the design and implementation of my dissertation. Finally, I will provide details about the participants and derived variables before briefly introducing the manuscripts that make up the following three chapters.

Community-Based Research Centre

CBRC is a non-profit research organization that "promotes the health of people of diverse sexualities and genders through research and intervention development" (CBRC, 2025). The organization champions community-led research and capacity building (CBRC, 2025), which positions their research as embodying the key principles of CBPR to create actionable change for the health of the community (Wallerstein & Duran, 2003). Since the organization was incorporated in 1999, its research activities have historically focused on HIV/AIDS and gay, bi, queer, and men who have sex with men (CBRC, 2025). This expanded over time to include trans men, then nonbinary people, as well as Indigenous Two-Spirit people. In the past five years or so, the research conducted by the organization has shifted toward full spectrum 2S/LGBTQIA+ communities and has begun to explore broader topics in community health (e.g., chronic health, reproductive health).

I started working with CBRC in 2020 as a data analyst through the Community-based Health Equity Research (CHER) Group, headed by Dr. Nathan Lachowsky at the University of Victoria, prior to beginning my doctoral degree. While in this position, I grappled with the narrow focus of the research we were working on and the lack of representation of other communities and experiences in varied areas of health. This realization coincided with the early development of the CBRC's 2S/LGBTQIA+ Our Health study and the beginning of my doctoral program, and thus shaped my dissertation research. In 2021, I started working closely with Dr. Nathan Lachowsky, my doctoral supervisor and research director at CBRC; Anu Radha Verma, the CBRC research manager for the Our Health chronic health research project; and other members of the community-based research team across CBRC and the University of Victoria on the development of Our Health 2022.

Our Health 2022 Study

Our Health 2022 was the largest multilingual community health survey of the 2S/LGBTQIA+ communities in Canada at that time (CBRC, 2022). Two major foci of the study were COVID-19 impacts and chronic health. The study was designed in collaboration with community members and academics, public health, and community partners. Ten teams of 2S/LGBTQIA+ community advisors guided the study, including on questionnaire development, recruitment materials and approaches, and knowledge mobilization. Each of these ten teams then produced community-specific reports to reflect diverse experiences across the 2S/LGBTQIA+ communities (CBRC, 2024): Indigenous people, Black people, People of Colour, newcomers, people who use substances, people living with disabilities, older adults (aged 60+), rural living

people, trans and nonbinary people, and youth. Notably, there was no AFAB-SGM report, highlighting the need and value of my dissertation research.

To have been eligible for Our Health, a participant must have been 2S/LGBTQIA+, live in Canada, and be 15 years of age or older. Convenience sampling was used to recruit the largest sample possible given the novelty of this research, its broad objectives, and the lack of a priori estimates to inform sample size or power calculations. Recruitment took place primarily online through social media and community agency email lists/newsletters, and was supplemented with some in-person advertising at Pride festivals and other 2S/LGBTQIA+ events, venues, and spaces between April and September of 2022 (CBRC, 2022). Participants were provided with a consent form and indicated their consent to participate before continuing to the questionnaire. Participants could self-complete the study online in English, French, or Spanish. Participants were offered a $10 CAD honoraria for completing the online survey. Research ethics approval for the study was provided by the University of Victoria, University of British Columbia, and Simon Fraser University (harmonized certificate BC22-0089 – see Appendix A).

The survey was comprised of questionnaire modules on sociodemographics, COVID-19, chronic health, health service access, mental health, discrimination, community connection, sexual health, reproductive health, caregiving, economic security, substance use, and housing. Of note, an extensive chronic health module was developed with the guidance of community advisors. My dissertation used data primarily from the demographic, chronic health, and health services modules of the Our Health 2022 questionnaire (CBRC, 2022). Data were also included from the discrimination module to examine discrimination and trust in healthcare systems. A full list of variables of interest can be found in the data analysis concept sheet (See Appendix B). The

entire Our Health 2022 process of securing funding, creating the survey, recruiting participants, and cleaning the data took place prior to my dissertation project. I received approval from CBRC and the study Principal Investigator (Nathan Lachowsky) to conduct the specific secondary data analyses for my dissertation.

Community Based Participatory Research

As discussed in the theory section of Chapter 1, I use a CBPR approach to inform this study's design and processes. CBPR is primarily a methodological approach that equitably involves research partners and members of the community of interest in the entire research process, from conception to dissemination of results (Israel et al., 1998, 2005; Minkler & Wallerstein, 2011). CBPR acts as a transformative approach to research that redefines the roles of researchers and communities and dismantles the current standard of top-down or traditional surveillance research approaches (Creswell & Plano Clark, 2017). The methodology is becoming more practiced in health research with the knowledge that interventions can be strengthened if they benefit from community insight and community theory of etiology (Wallerstein & Duran, 2003). Instead of having specific guidelines for researchers to implement, CBPR seeks to address power dynamics perpetuated by non-community-based or extractive research processes and what is considered valid in methods through community knowledge's unique value and strength (Wallerstein & Duran, 2003, 2006). Although my dissertation work is a secondary analysis, I utilized a community advisory board (CAB) to ensure community involvement as much as possible. I will first describe the development of the CAB, followed by presenting CAB members' engagement with the project through the goals of CBPR, as outlined by Wallerstein and Duran (2003).

Community Advisory Board

Anu Radha Verma and I founded a chronic health CAB by bringing together six 2S/LGBTQIA+ communities members with chronic health conditions from across Canada. CAB members were recruited through a combination of pre-existing community connections and additional outreach through CBRC. Further recruitment was conducted through physical and digital copies of our recruitment poster (See Appendix C) placed around the University of Victoria, at at-risk youth centres in Nova Scotia, at Summit 2024 (CBRC's annual two-day knowledge exchange and capacity building conference on the health of 2S/LGBTQIA+ people in Canada), and shared widely on CBRC's Instagram. Recruitment for the CAB occurred between November and December 2024.

Prospective CAB members were asked to fill out a brief survey containing questions about their social location, what type of chronic health condition(s) they had, why they were interested in the project, and what supports they may need to participate as a community advisor. CAB members were selected to prioritize diversity across various dimensions, including social location (e.g., race, sexual identity, gender identity), type of chronic health condition (e.g., affected body systems), life experiences (e.g., socioeconomic status), and location (e.g., Province or Territory, urban or rural areas). While these individuals did and could not fully represent the entire communities of 2S/LGBTQIA+ individuals with chronic health conditions, greater diversity within the CAB allowed us to serve these identities and communities more justly throughout the research process.

The CAB was originally created with the intention of working on several chronic health-related projects, my dissertation research being just one of them. As such, CAB member

recruitment was not limited to people assigned female at birth. Although my research primarily focuses on the experiences of AFAB-SGM individuals with chronic health conditions, I do include some comparison with AMAB-SGM people. Most, but not all, CAB members were AFAB-SGM, and all CAB members provided valuable input to this research.

Members of the CAB were asked if they were able to commit approximately 3 hours per month to the project for a 1-year term ending in December 2025. The CAB met online three times during the year (January, June, and November) to review the project's progress, ensure alignment with community priorities, and allow the board members to engage with each other in collaborative discussion. Given the Canada-wide scope and varying time zones of the CAB, full board meetings were challenging to schedule. Prior to each CAB meeting, CAB members were asked to indicate their availability and subsequently were given two possible meeting options to attend if one time was not found that worked for everybody. CAB members also received email updates and were asked to provide feedback on study materials between meetings.

CAB members were compensated for their involvement in this project. Based on previous community advisory feedback to CBRC, it was preferred for CAB members to have a set compensation for their year of involvement (e.g., $1000 total for the one-year CAB period) rather than an hourly wage. Participants were paid with consideration to not interfering with income supplements like employment insurance or Canadian Disability benefits. Although community members were not involved in the conception of my specific dissertation research project, I wanted to ensure they could provide input, guide areas of interest, and have opportunities to participate in as much of the research process as they were interested in, within the limits of a student project.

CAB engagement

Wallerstein and Duran (2003) discussed three interconnected goals that ought to be upheld by researchers and the community in any research deemed as participatory: research, action, and education. Wallerstein and Duran (2003) then go on to situate these goals as the sharing of principles, information, and capacities in both directions, stating that they are fulfilled by:

> Researchers transferring tools for community members to analyze conditions and make informed decisions on actions to improve their lives, and community members transferring their expert content and meaning to researchers in the pursuit of mutual knowledge and application of the knowledge to their communities (Hatch, Moss, & Saran, 1993 cited in Wallerstein & Duran, 2003, p. 28).

This frames the goals as interconnected rather than individual objectives, requiring a central focus in any community-led research. Here, I will briefly outline each goal and how it was achieved within my work.

The first goal, titled "research," emphasizes the community's role in research design and application. Wallerstein and Duran (2003) described the goal of research as the equitable, collaborative, and iterative process of developing and conducting community-based research. The cyclical nature of these processes in CBPR ensures that the direction of the research always reflects the community's interests and priorities. I met this goal by including CAB members in every step of the project they wish to be included in within the limits of the project. As previously mentioned, this research is a secondary analysis of the pre-established Our Health 2022 study. Although I was personally involved in the development of Our Health 2022, this

occurred both prior to and separate from my dissertation project. CAB members were asked to guide and provide feedback on the finalization of research questions, data analysis plans, data analysis outputs, and knowledge translation. Meetings and frequent project updates through the CAB's term allowed members to review the project's progress and ensure it remained aligned with the community's priorities.

The second goal of "action" refers to the notion that successful CBPR projects should elicit meaningful change for the community of interest. This means that the research should empower the community during the process and be directly actionable in benefiting the community at the end of the process. Within this research, this means prioritizing knowledge mobilization strategies that centre advocacy, policy change, and improved supports within and beyond traditional knowledge translation outputs, such as academic journal publications or conference presentations. To meet this goal, the manuscripts produced through this research are targeted at journals that prioritize holistic definitions of health and promote systemic change (i.e., *LGBT Health, Journal of Chronic Illness, BMC Health Services Research*). This focus will also apply to any conferences where this research will be presented. Beyond this dissertation, I will also create community-friendly reports using accessible language and visuals as desired by the CAB. As indicated in my literature review, AFAB-SGM individuals often must be their own advocates in healthcare systems. While this is a systemic issue that should not fall on the shoulders of the community, these manuscripts and community reports are intended to cultivate a greater understanding of chronic health condition prevalence and management, and barriers to care, which will provide the community with the information to accurately and best advocate for themselves in these systems.

The third and final goal is education. Wallerstein and Duran (2003) stated that the community should walk away from a successful CBPR project with the tools and capability to maintain these changes and apply them self-sufficiently to future issues. Further, the researchers' primary goal should be to supply these tools rather than the information gained in return. This goal was achieved through building research skills with our CAB members. In the application process, many CAB members stated a desire to become more familiar with, and participate in, research processes. Although the Our Health 2022 survey data were already collected for my project, my CAB members were provided with multiple opportunities throughout the process to provide input and participate in data analysis planning and interpretation. This included explaining various variables and analysis options to aid in mutual decision-making, creating legends to aid in understanding analysis outputs, and teaching some analytic tests and procedures to those who expressed an interest. These skill-building opportunities were available to CAB members as they chose, and I worked to provide opportunities in any area CAB members expressed interest in.

Dissertation Methods

Participants

The finalized Our Health data set included 4037 participants. I determined the primary analytic sample of my research using two Our Health 2022 survey questions: sex assigned at birth and self-reported chronic health conditions. Participants were asked, "What was your sex assigned at birth? We acknowledge that questions about one's assigned sex, in particular, may result in uncomfortable feelings or memories" with the response options of "female," "male," and "I prefer not to answer this question." Approximately half of the participants (n = 2038,

50.4%) reported being assigned female at birth, and 1889 (46.8%) reported being assigned male at birth; participants who selected "I prefer not to answer" (*n*=110, 2.7%) were not included in my analyses.

Whether participants reported any chronic health conditions was determined by a gate question to the chronic health module. Participants reported "yes," "no," or "unsure" to having a chronic health condition based on the following question:

> We define chronic health conditions as those that meet all four of the following criteria:
>
> a) Are physical, mental, cognitive, sensory, or psychological,
>
> b) have lasted at least one year (or are expected to last at least one year),
>
> c) have an impact on your daily activities or 'function,' whether daily or episodic, and
>
> d) require some kind of supports such as medical care, assistive devices, or help from someone else.
>
> We are using an expansive understanding of chronic health conditions to include conditions that are often under-represented, such as chronic pain, mental health conditions, HIV, being a cancer survivor, etc. Some people may identify as having a disability in addition to, or instead of, identifying as having a chronic health condition. (Our Health Survey 2022)

Participants who selected "No" (*n*=1377, 34.1%) were not shown any further questions about chronic health. Participants who selected "Unsure" (*n*=161, 4.0%) were shown the rest of the chronic health module, which included asking if participants had any of an extensive list of 61 chronic health conditions. I recoded participants that selected "Unsure" as a "Yes" or "No" to

having a chronic health condition on a case-by-case basis, depending on whether or not they selected “Yes” to any specific chronic health condition listed or wrote in a valid response to the open text question, “You may have a chronic health condition that has not been included in any of the lists. Please tell us what it is, and how long you have been living with it?”. In total, 145 (3.6%) participants who indicated “unsure” were recoded into “Yes” and 16 (0.4%) were recoded into “No,” bringing the total count and proportion of participants with chronic health conditions in Our Health 2022 from 2043 (50.9%) to 2188 (54.2%).

All participants ($N = 4037$) are included in prevalence estimates (Chapter 3 - Objective A), stratified by sex assigned at birth. General demographic information for each analytic sample is provided in each respective manuscript (Chapters 3, 4, and 5).

Data Analysis

I conducted data analysis in two stages. First, I performed preliminary descriptive analyses to share initial findings with CAB members. Based on the CAB’s feedback, I subsequently cleaned and refined the dataset. These revisions were applied across all manuscript chapters (see each chapter for details on data analysis). I conducted all data cleaning and analyses using SPSS Statistics (IBM Corp., 2023).

Preliminary analysis included descriptive statistics (frequency, counts, and measures of centre for numeric variables) of all the variables of interest (see Appendix B) disaggregated by sex assigned at birth (i.e. AFAB, AMAB) and for the total sample. I grouped the variables into five categories for ease of reading: demographic information, healthcare, chronic health conditions, discrimination, and community. I provided CAB members with the preliminary descriptive analysis along with a small slide deck explaining how to navigate the file. The

purpose of this preliminary analysis was to help CAB members become familiar with the data and variables, and to inform feasible analyses. The preliminary analysis aided in our decision-making for all analysis plans, including grouping of chronic health conditions and prioritization classification models.

Following the preliminary analysis, I cleaned the dataset to reflect CAB input. This primarily included creating new variables to group chronic health conditions based on the body systems affected, as endorsed by CAB feedback (see Table 2.1). I classified these chronic health conditions based on primary and secondary (where applicable) health system affected as reported by StatPearls, an UpToDate healthcare education database stored on the National Library of Medicine (StatPearls, 2025, see Appendix D). I classified chronic health conditions that did not have a *primary* body system impacted as multisystem (i.e., cancer). Further, I pulled out asthma as its own category based on this condition being one of the few consistently reported as having increased prevalence among AFAB-SGM individuals (Bränström et al., 2016; Dibble et al., 2007; Eliason, 2014; Fredriksen-Goldsen et al., 2013; Patterson & Jabson, 2018; Tran et al., 2023). As chronic health conditions can affect multiple body systems and many participants report multiple chronic health conditions, each body system category is a binary variable that are not mutually exclusive of each other, meaning some chronic health conditions may appear in multiple categories (i.e., uterine fibroids are classified as both an endocrine and gynecological condition). Finally, I created a variable to reflect if a participant reported a mental health condition as their only chronic health condition.

Table 2.1 *List of Body System Categories and Associated Chronic Health Conditions in Our Health 2022 Survey as Determined by Body System Impacted*

Body System Category	Chronic Health Condition(s)
Asthma	Asthma
Autoimmune	HIV/AIDS, alopecia areata, celiac disease, Crohn's disease, Graves' disease, Hashimoto's thyroiditis, HIV, irritable bowel syndrome (IBS), lupus, multiple sclerosis, Raynaud's syndrome, rheumatoid arthritis, Sjögren's syndrome, type 1 diabetes, ulcerative colitis, vitiligo
Cardiovascular	Heart disease, postural orthostatic tachycardia syndrome (POTS), Raynaud's syndrome, sleep apnea
Chronic pain	Chronic pain (not described elsewhere)
Connective tissue	Ehlers-Danlos syndromes (EDS), lupus, rheumatoid arthritis, osteoarthritis
Endocrine	Postural orthostatic tachycardia syndrome (POTS), uterine fibroids, gestational diabetes, type 1 diabetes, type 2 diabetes
Gastrointestinal	Celiac disease, Crohn's disease, irritable bowel syndrome (IBS), ulcerative colitis
Gynecological	Endometriosis, polycystic ovary syndrome (PCOS), premenstrual dysphoric disorder (PMDD), uterine fibroids
Inflammatory	Ankylosing spondylitis, gout, psoriasis or psoriatic arthritis, Sjögren's syndrome
Mental Health	Mental health conditions, premenstrual dysphoric disorder (PMDD)
Multisystem	Cancer(s), Ehlers-Danlos syndromes (EDS), HIV/AIDS, long COVID, myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS)
Musculoskeletal	Amyotrophic lateral sclerosis (ALS), carpal tunnel syndrome, dystonia, fibromyalgia, muscular dystrophy, osteoarthritis, osteoporosis, scoliosis, tendonitis
Neurological	Amyotrophic lateral sclerosis (ALS), cerebral palsy, dystonia, epilepsy, fibromyalgia, Huntington's disease, hydrocephalus, mild cognitive impairment, muscular dystrophy, neurotrauma, Parkinson's disease, scoliosis, spina bifida, traumatic brain injury (TBI), dementia
Respiratory	Asthma, chronic obstructive pulmonary disease (COPD), cystic fibrosis, long COVID, sleep apnea
Sensory (Auditory & Visual)	Hearing and vision loss
Other	Kidney disease, hepatitis B & C

Based on CAB feedback, I made additional changes by reclassifying sexual orientation and gender identities. Reclassification of these select-all-that-apply variables followed a prioritization classification system as outlined by Lachowsky et al. (2020). A prioritization approach reclassifies individuals who select multiple responses into a single response category based on a predetermined hierarchy, which was vetted by the CAB. The prioritization classification model was explained to CAB members, with example hierarchical structures for the sexual orientation and gender variables, along with visualizations of how the classification model impacted the variable categories and frequencies. Following discussions of over- and under-representation of sexual and gender identities in research, CAB members endorsed the proposed hierarchies for reclassification, which I then implemented as follows.

For sexual identity, specific identities (e.g., lesbian or bisexual) were prioritized over broad identities (e.g., queer). The final priority order was lesbian, bisexual, pansexual, asexual, straight/heteroflexible, gay, homoflexible, queer, questioning, other. Additionally, women who selected 'gay' (*n*=5) or 'homoflexible' (*n*=1) were recoded as 'lesbian,' men who selected 'homoflexible' (*n*=5) were recoded as 'gay,' and the remaining three people who selected 'homoflexible' were recoded as 'queer'. Finally, any participant who solely selected 'heteroflexible' (n = 9) was recoded as 'straight.' Ultimately, due to small sample size, 'straight/heteroflexible' (n=12), 'questioning' (n=10) and 'other' (n=3) were collapsed into the 'other' category. Of note, frequency counts above are specific to the AFAB-SGM individuals with chronic health conditions sub-sample.

A similar classification model was used for gender, prioritizing specific gender identities over broader identities. For example, if a participant selected both 'trans man' and

'nonbinary,' they were coded as a trans man in the final dataset. We made this decision because nonbinary individuals remain the second largest gender group for AFAB individuals, so prioritizing other gender identities when multiple are selected helps create larger sample sizes among other groups. Individuals who selected 'trans femme' (n=8) or 'trans masc' (n = 30) were recoded as 'trans women' or 'trans men,' respectively. The decision to recode these individuals into their respective binary transgender categories rather than into the nonbinary category was made by majority vote of CAB members. CAB members emphasized that these individuals explicitly aligned their identities with a trans experience, which they felt would be more accurately represented within the binary transgender categories, as this alignment may not apply to all nonbinary individuals. It is important to note that this was not a unanimous decision. The final priority order was trans woman, trans man, woman, man, genderqueer, genderfluid, agender, other, nonbinary. This concluded the general data cleaning and preparation that apply to all subsequent dissertation analyses.

Next, I will briefly describe each paper and its target publication. In Chapter 3, I address my first dissertation research objective and report the prevalence of a range of chronic health conditions among AFAB-SGM individuals and compare these with AMAB-SGM individuals. This manuscript is formatted for submission to the *Journal of Chronic Illness*. In Chapter 4, I address my second dissertation research objective and explore how sexual orientation, gender identity, and type of chronic health conditions impact the types of care AFAB-SGM individuals use to manage their chronic health conditions. This manuscript is written for submission to *BMC Health Services Research*. In Chapter 5, I address my third dissertation research objective and examine the common barriers that AFAB-SGM individuals with chronic health conditions face

within healthcare systems. This manuscript is written for submission to *LGBT Health*. Following these three empirical chapters, I then conclude my dissertation in Chapter 6.

Chapter 3: Prevalence of Chronic Health Conditions among 2S/LGBTQIA+ People Assigned Female at Birth in Canada

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Abstract

Background: People assigned female at birth (AFAB) and sexual and gender minority (SGM) individuals are disproportionately impacted by chronic health conditions (CHCs). Yet, research that has investigated chronic health among AFAB-SGM individuals has primarily focused on a narrow range of identities and CHCs. We aimed to extend this body of research by providing prevalence estimates for a wide range of CHCs across sex assigned at birth (SAAB), gender, and sexuality groups.

Methods: We analyzed data from the Canada-wide, multi-lingual, cross-sectional 2022 Our Health community survey of 2S/LGBTQIA+ people in Canada. We calculated prevalence estimates for 11 types of CHCs and ran multivariate logistic regressions to compare AFAB-SGM with AMAB-SGM participants and to examine within-group differences across AFAB-SGM identity subgroups.

Results: Of 4037 respondents, 2188 (54.2%) reported at least one CHC. AFAB-SGM participants had higher odds of reporting nearly all CHCs compared with AMAB-SGM individuals. Within AFAB-SGM, AFAB gender minority (GM) participants reported significantly higher prevalence of autoimmune, cardiovascular, chronic pain, and neurological conditions compared with AFAB cisgender sexual minority women (CSMW).

Discussion: Chronic health research needs an expanded scope of health and identities. Healthcare systems must urgently and more adequately address health disparities for and across AFAB-SGM communities.

Introduction

Chronic health conditions (CHCs) affect 45.1% of people in Canada, with 18.4% of those individuals reporting three or more CHCs.[1] Although there is a wide range of genetic, environmental, and lifestyle factors that influence the development of CHCs,[2,3] people assigned female at birth and members of the Two-Spirit, lesbian, gay, bisexual, transgender, queer, intersex, asexual, and other sexual and gender minority communities (2S/LGBTQIA+) are disproportionally affected by these conditions in both prevalence and severity.[4–7] Yet, health research has historically overlooked the experiences of AFAB and 2S/LGBTQIA+ individuals.[8,9]

Sexual and gender minority individuals assigned female at birth (AFAB-SGM) include cisgender sexual minority women (AFAB-CSMW) who identify as lesbian, gay, bisexual, queer or something else non-heterosexual; and AFAB people who are gender minorities (AFAB-GM), including transgender men, nonbinary people and other nonbinary gender identities (e.g., genderfluid, genderqueer, transmasculine). Notably, AFAB-SGM people are reported to be at increased risk of developing CHCs, such as mental health conditions,[10,11] long COVID,[7] heart conditions,[12] and asthma.[12,13] However, limitations in data collection and reporting on sex, gender, and sexual identity obfuscate risks and population-specific prevalence estimates. Many prior studies provide risk and prevalence estimates across various groupings of SGM communities (i.e., LGBTQ+; LGB; GM), but these reports do not further disaggregate by nuanced gender and sexual identity groups.[14–16]

Extant research on CHCs in AFAB-CSMW demonstrates fairly consistent findings, with lesbian and bisexual women reporting higher prevalence of asthma,[12–14] arthritis,[12–14] cardiovascular conditions,[12,14,16] as well as breast cancer[12] compared with heterosexual women.

Cancers, other than breast cancer, have also been found to be more prevalent among sexual minority women, but the findings are less consistent.[6,12,13] Lesbian and bisexual women also have higher lifetime prevalence rates of anxiety disorders than heterosexual women.[10,17] Bisexual women also have higher prevalence of post-traumatic stress disorder,[18] lifetime personality disorders,[10,19] and are at increased risk for developing depressive disorders[10] compared with lesbian and heterosexual women. There is also evidence to suggest that AFAB-CSMW are disproportionately impacted by long COVID.[7,20] Notably, much of this extant research does not state whether the participants were all cisgender or if transgender women were included.

Research on chronic health among AFAB-GM individuals is limited, as medical documentation of both sex assigned at birth (SAAB) and gender identity remains unreliable, poorly reflective of lived experience, or non-existent.[4,15] Nevertheless, AFAB-GM individuals are four times more likely to experience a myocardial infarction compared with cisgender women.[21] Transgender men also have higher odds of cardiovascular disease compared with cisgender women,[22] have higher prevalence of anxiety symptoms,[17,23] are at increased risk for developing depression,[11] and have higher lifetime prevalence of eating disorder diagnoses[23,24] compared with transgender women. Nonbinary people experience higher levels of depression and anxiety compared with the general population.[25] Long COVID may also disproportionally affect transgender people.[7,20] Still, these bodies of research are inconsistent in comparison groups and often express caution in interpreting results due to the aforementioned methodological issues, leaving significant gaps in understanding how chronic health conditions impact AFAB-GM populations.

Research that has explicitly investigated chronic health among AFAB-SGM individuals is primarily focused on a narrow range of CHCs (i.e., cardiovascular disease, asthma, breast cancer, mental health conditions). Moreover, this research has almost exclusively reported on the health of lesbian and bisexual women, or transgender men, without recognizing the broad spectrum of other sexual and gender identities within the AFAB-SGM communities such as nonbinary or genderqueer people; or pansexual, asexual, and queer identities. This leaves a significant knowledge gap in prevalence estimates for a wide range of CHCs among AFAB-SGM individuals. We sought to fill this gap by comparing AFAB-SGM prevalence estimates with those of AMAB-SGM individuals, and secondarily, determining the prevalence of CHCs among AFAB-SGM people, including stratifications by sexual and gender identities.

Methods

Chronic Health Community Advisory Board

For these analyses, we formed a chronic health community advisory board (CAB) consisting of six 2S/LGBTQIA+ individuals with CHCs. CAB members were selected to prioritize diversity across various dimensions, including identity (race, sexual and gender identity), type of CHC, and geography. CAB members were asked to review the project's progress and ensure alignment with community priorities over a one-year term. CAB members received an honorarium for their involvement in this project.

Our Health Survey

We used data from the Community-Based Research Centre's "Our Health" cross-sectional online study.[26] Our Health was the largest community health survey of the 2S/LGBTQIA+ communities in Canada. To be eligible, a participant must have identified as

2S/LGBTQIA+, live in Canada, and be 15 years of age or older. The self-completed questionnaire featured extensive demographic and chronic health modules. Participants were recruited through advertisements via 2S/LGBTQIA+ community-based organizations, social media, news media, and social networking sites/apps. Data collection occurred online between April and September of 2022. The University of Victoria, the University of British Columbia, and Simon Fraser University's Research Ethics Boards reviewed and approved the study protocol (H20-02842). Eligible participants provided informed consent prior to self-completing the online questionnaire.

Variables

Sex assigned at birth: Participants were asked to indicate their SAAB, given the options "female," "male," or "I prefer not to answer." Participants who selected "I prefer not to answer" (n=110, 2.7%) were not included in the analysis.

Chronic health: We defined CHCs as health conditions that were physical, mental, cognitive, sensory, or psychological; had lasted at least one year (or were expected to last at least one year); had an impact on daily activities or 'function,' whether daily or episodic; and required some kind of supports such as medical care, assistive devices, or help from someone else. Participants who selected "Yes" or "Unsure" to having a CHC based on this definition were shown a list of 61 alphabetically listed CHCs. We later grouped these CHCs based on primary health system affected as reported by the National Library of Medicine[27]; CHCs without a *primary* body system impacted were classified as multisystem (i.e., cancer(s) and long COVID).[28] Asthma was kept as a standalone category given consistent report of increased prevalence among AFAB-SGM individuals.[12–14] Finally, we created a specific "only mental

health" condition when there were no other reported CHCs. As CHCs can affect multiple body systems and many participants report multiple CHCs, the body system categories were individual binary variables that were not mutually exclusive. For the list of body systems and how each CHC was classified, see Supplemental Table 1.

Gender and sexual identity: We reclassified select-all-that-apply gender and sexual identity variables based on a prioritization classification system to support statistical analyses,[29] which reclassified individuals who selected multiple identities into a single identity based on a predetermined hierarchy in order to produce a single variable. For sexual identity, the priority order was lesbian, bisexual, pansexual, asexual, straight/heteroflexible, gay, homoflexible, queer, questioning, other. For gender, the priority order was trans woman, trans man, woman, man, genderqueer, genderfluid, agender, other, nonbinary.

Covariates: We report other demographic variables, including age, location of residence, whether they were a person of colour, education, and financial situation, as covariates. We recategorized location of residence into Ontario, Québec, British Columbia (and Yukon Territory), Prairies (Alberta, Manitoba, Saskatchewan, Northwest Territories, Nunavut), and Atlantic (New Brunswick, Newfoundland and Labrador, Nova Scotia, Prince Edward Island). We recoded all other covariates into binary variables as per Table 3.1.

Data Analysis

We produced descriptive statistics with 95% confidence intervals. CHC body systems measures that were reported by less than 10% of the total sample were excluded from comparison models; however, prevalence estimates were retained.

For between-group comparisons, we used a series of multivariate logistic regressions to compare CHC body systems between AFAB-SGM and AMAB-SGM individuals. For AFAB-SGM within-group comparisons, we used a series of multivariate logistic regressions to compare CHC body systems between AFAB-GM individuals and AFAB-CSMW. Only variables that were found to be significantly different for comparison groups were included in the multivariate models as covariates. Given that multiple tests were conducted for within- and between-group comparisons, we applied a Bonferroni correction, giving a corrected α of 0.0045. All statistical analyses were performed using SPSS Version 29.0.2.0.[30]

Results

Demographics

Of 3927 Our Health participants, 2038 (51.9%) reported being assigned female at birth, 1889 (48.1%) reported being assigned male at birth, and 2188 (55.7%) reported having a CHC. Detailed sociodemographic information and CHC body systems stratified by SAAB are shown in Table 1. AFAB participants were largely cisgender women (49.2%), lesbian (23.4%), not people of colour (77%), and living in Ontario (35.6%). Similarly, AMAB participants were largely cisgender men (80.5%), gay (68.1%), not people of colour (72.9%), and living in Ontario (38.3%). Compared with AMAB participants, AFAB participants were younger (median age, 30 vs. 40) and more likely to report having at least one CHC (62.9% vs 43.7%). AFAB and AMAB groups differed significantly in sexual identity, gender identity, location of residence, and financial situation

Table 3.1. Demographic information for Our Health 2022 sample stratified by sex assigned at birth and gender identity for AFAB participants (N = 3927)

	AFAB			AMAB	Total		
	AFAB-GM (n = 1005) n (%)	AFAB-CSMW (n = 1031) n (%)	Total (N = 2038) *N (%)*	(n = 1889) n (%)	(N = 3927) *N (%)*	[a]*p*	[b]*p*
Sexual identity						**< .001**	**< .001**
Lesbian	110 (10.9)	365 (35.4)	477 (23.4)	69 (3.7)	546 (13.9)		
Bisexual	251 (25.0)	361 (35.0)	612 (30.0)	255 (13.5)	867 (22.1)		
Pansexual	187 (18.6)	101 (9.8)	288 (14.1)	85 (4.5)	373 (9.5)		
Asexual	67 (6.7)	44 (4.3)	111 (5.4)	32 (1.7)	143 (3.6)		
Gay	58 (5.8)	—	58 (2.8)	1287 (68.1)	1345 (34.3)		
Queer	301 (30.0)	128 (12.4)	429 (21.1)	105 (5.6)	534 (13.6)		
Other	28 (2.8)	32 (3.1)	60 (2.9)	52 (2.8)	112 (2.9)		
Gender						**< .001**	**< .001**
Trans Woman	—	—	—	164 (8.7)	164 (4.2)		
Trans Man	296 (29.5)	—	296 (14.5)	—	296 (7.5)		
Man	—	—	—	1521 (80.5)	1521 (38.7)		
Woman	8 (0.8)	994 (96.4)	1002 (49.2)	—	1002 (25.5)		
Genderqueer	214 (21.3)	0 (0.0)	214 (10.5)	61 (3.2)	275 (7.0)		
Other	146 (14.5)	37 (3.6)	183 (9.0)	59 (3.1)	242 (6.2)		
Nonbinary	341 (33.9)	0 (0.0)	341 (16.7)	81 (4.3)	422 (10.7)		
Location						**< .001**	**< .001**
Ontario	342 (34.0)	383 (37.1)	726 (35.6)	724 (38.3)	1450 (36.9)		
Prairies	169 (16.8)	177 (17.2)	347 (17.0)	285 (15.1)	632 (16.1)		
British Columbia	209 (20.8)	202 (19.6)	411 (20.2)	415 (22.0)	826 (21.0)		
Atlantic	152 (15.1)	173 (16.8)	325 (15.9)	166 (8.8)	491 (12.5)		
Québec	133 (13.2)	96 (9.3)	229 (11.2)	299 (15.8)	528 (13.4)		
Person of colour						0.752	0.194

No	813 (80.9)	837 (81.2)	1650 (81.0)	1483 (78.5)	3133 (79.8)		
Yes	148 (14.7)	146 (14.2)	295 (14.5)	299 (15.8)	594 (15.1)		
Education						0.008	0.161
Highschool or less	230 (22.9)	188 (18.2)	418 (20.5)	348 (18.4)	766 (19.5)		
Post secondary	727 (72.3)	797 (77.3)	1525 (74.8)	1423 (75.3)	2948 (75.1)		
Financial situation						**0.004**	0.032
Strained	307 (30.5)	260 (25.2)	567 (27.8)	444 (23.5)	1011 (25.7)		
Comfortable	461 (45.9)	529 (51.3)	990 (48.6)	919 (48.7)	1909 (48.6)		

p-values obtained through chi-square.

[a]p indicates significant value for AFAB-GM and AFAB-CSMW comparison; [b]p indicates significant value for AFAB and AMAB comparison.

Values in bold are statistically significant ($p < 0.0045$).

AFAB, assigned female at birth; AMAB, assigned male at birth; GM, gender minority; CSMW, cisgender sexual minority woman.

Chronic Health Conditions in AFAB-SGM and AMAB-SGM

AFAB-SGM participants were significantly more likely to report having at least one CHC compared with AMAB-SGM participants (62.9% vs. 43.7%, $p < .001$). After adjusting for age and location, multivariable logistic regression analyses showed that AFAB-SGM participants had significantly higher odds of reporting every type of CHC except multisystem conditions compared with AMAB-SGM participants (see Table 3.2).

Table 3.2. Prevalence estimates of AFAB and AMAB participants' chronic health conditions by body system using multivariate logistic regressions

	AFAB (*n* = 2038)		AMAB (*n* = 1889)		Total (*N* = 3927)			
	n (%)	95% CI	n (%)	95% CI	N (%)	95% CI	*OR* [95%CI]	*AOR* [95%CI][a]
Has a chronic health condition								
Yes	1282 (62.9)		825 (43.7)		2188 (54.2)			
No	561 (27.5)		814 (43.1)		1393 (34.5)			
Chronic health condition body system								
Asthma	309 (15.2)	(13.7 - 16.8)	121 (6.4)	(5.4 - 7.6)	430 (10.9)	(10.0 - 12.0)	**0.38 (0.31 - 0.48)**	**0.34 (0.27 - 0.43)**
Autoimmune	488 (23.9)	(22.1 - 25.8)	372 (19.7)	(17.9 - 21.5)	860 (21.9)	(20.6 - 23.2)	**0.78 (0.67 - 0.91)**	**0.62 (0.52 - 0.73)**
Cancer(s)	51 (2.5)	(1.90 - 3.20)	59 (3.1)	(2.4 - 4.0)	110 (2.8)	(2.3 - 3.4)	—	—
Cardiovascular	253 (12.4)	(11.0 - 13.9)	221 (11.7)	(10.3 - 13.2)	474 (12.1)	(11.1 - 13.1)	0.93 (0.77 - 1.13)	**0.61 (0.49 - 0.75)**
Chronic Pain	440 (21.6)	(19.8 - 23.4)	165 (8.7)	(7.5 - 10.1)	605 (15.4)	(14.3 - 16.6)	**0.35 (0.29 - 0.42)**	**0.26 (0.21 - 0.32)**
Connective Tissue	162 (7.9)	(6.8 - 9.2)	84 (4.4)	(3.6 - 5.4)	246 (6.3)	(5.5 - 7.1)	—	—
Endocrine	86 (4.2)	(3.4 - 5.2)	5 (0.3)	(0.1 - 0.6)	91 (2.3)	(1.9 - 2.8)	—	—
Gastrointestinal	364 (17.9)	(16.2 - 19.6)	158 (8.4)	(7.2 - 9.7)	522 (13.3)	(12.3 - 14.4)	**0.42 (0.34 - 0.51)**	**0.40 (0.32 - 0.49)**
Gynecological	299 (14.7)	(13.2 - 16.3)	—	—	302 (7.7)	(6.9 - 8.6)	—	—
Inflammatory	92 (4.5)	(3.7 - 5.5)	64 (3.4)	(2.6 - 4.3)	156 (4.0)	(3.4 - 4.6)	—	—
Mental health	921 (45.2)	(43.0 - 47.4)	451 (23.9)	(22.0 - 25.8)	1372 (34.9)	(33.5 - 36.4)	**0.37 (0.33 - 0.43)**	**0.37 (0.32 - 0.43)**
Mental health (sole)	182 (8.9)	(7.8 - 10.2)	105 (5.6)	(4.6 - 6.7)	287 (7.3)	(6.5 - 8.2)	—	—
Multisystem	213 (10.5)	(9.2 - 11.8)	252 (13.3)	(11.9 - 14.9)	465 (11.8)	(10.9 - 12.9)	1.30 (1.07 - 1.58)	0.81 (0.65 - 1.01)
Musculoskeletal	396 (19.4)	(17.8 - 21.2)	194 (10.3)	(9.0 - 11.7)	590 (15.0)	(13.9 - 16.2)	**0.47 (0.39 - 0.57)**	**0.29 (0.23 - 0.36)**
Neurological	342 (16.8)	(15.2 - 18.5)	179 (9.5)	(8.2 - 10.9)	521 (13.3)	(12.2 - 14.4)	**0.52 (0.42 - 0.62)**	**0.37 (0.30 - 0.46)**
Respiratory	440 (21.6)	(19.8 - 23.4)	294 (15.6)	(14.0 - 17.3)	734 (18.7)	(17.5 - 19.9)	**0.67 (0.57 - 0.79)**	**0.53 (0.44 - 0.63)**
Sensory	130 (6.4)	(5.4 - 7.5)	130 (6.9)	(5.8 - 8.1)	260 (6.6)	(5.9 - 7.4)	—	—

Bold values significant after Bonferroni correction, $p < 0.0045$

[a]The final model uses AFAB participants as the reference level, and is adjusted for age, and province.

AFAB, assigned female at birth; AMAB, assigned male at birth.

Prevalence of Chronic Health Conditions among AFAB-SGM

AFAB-GM participants reported significantly higher odds of having at least one CHC compared with their AFAB-CSMW counterparts (68.8% vs 57.2%, $p < .001$). After adjusting for age, location, education, and financial situation, multivariable logistic regression analyses showed that AFAB-GM individuals had higher odds of reporting autoimmune, cardiovascular, chronic pain, gastrointestinal, musculoskeletal, neurological conditions, and mental health conditions in addition to other CHCs compared with AFAB-CSMW (see Table 3.3); no CHCs were significantly more prevalent in AFAB-CSMW.

Tables 3.4 and 3.5 present the prevalence of CHC body systems in AFAB-SGM participants by sexual identity and gender identity, respectively. Mental health conditions in those who also reported another CHC were the most prevalent CHC across all sexual and gender identity groups, ranging from 47% to 56.8%. Cisgender women and lesbians had significantly lower odds of reporting at least one CHC compared with other gender and sexual identity groups, respectively.

Table 3.3. Comparison of AFAB-GM and CSMW chronic health conditions by body system using multivariate logistic regressions (N = 2038)

	AFAB-GM (*n* = 1005)		AFAB-CSMW (*n* = 1031)			
	n (%)	*95% CI*	*n (%)*	*95% CI*	*OR [95%CI]*	*AOR [95%CI]*
Has chronic health conditions						
Yes	691 (68.8)		590 (57.2)			
No	218 (21.7)		343 (33.3)			
Chronic health condition body system						
Asthma	162 (16.1)	(13.9 - 18.5)	147 (14.3)	(12.2 - 16.5)	0.84 (0.64 - 1.09)	0.79 (0.60 - 1.03)
Autoimmune	272 (27.1)	(24.4 - 29.9)	215 (20.9)	(18.5 - 23.4)	**0.71 (0.56 - 0.89)**	**0.65 (0.51 - 0.82)**
Cancer(s)	20 (2.0)	(1.3 - 3.0)	31 (3.0)	(2.1 - 4.2)	—	—
Cardiovascular	149 (14.8)	(12.7 - 17.1)	104 (10.1)	(8.4 - 12.0)	0.67 (0.51 - 0.90)	**0.56 (0.41 - 0.76)**
Chronic Pain	256 (25.5)	(22.9 - 28.2)	183 (17.7)	(15.5 - 20.2)	**0.60 (0.47 - 0.76)**	**0.54 (0.42 - 0.69)**
Connective Tissue	94 (9.4)	(7.7 - 11.3)	68 (6.6)	(5.2 - 8.2)	—	—
Endocrine	44 (4.4)	(3.2 - 5.8)	42 (4.1)	(3.0 - 5.4)	—	—
Gastrointestinal	204 (20.3)	(17.9 - 22.9)	160 (15.5)	(13.4 - 17.8)	0.72 (0.56 - 0.93)	**0.66 (0.51 - 0.86)**
Gynecological	148 (14.7)	(12.6 - 17.0)	151 (14.6)	(12.6 - 16.9)	1.01 (0.77 - 1.31)	1.04 (0.80 - 1.37)
Inflammatory	55 (5.5)	(4.2 - 7.0)	37 (3.6)	(2.6 - 4.9)	—	—
Mental health	515 (51.2)	(48.2 - 54.3)	405 (39.3)	(36.3 - 42.3)	**0.57 (0.47 - 0.70)**	**0.55 (0.45 - 0.68)**
Mental health (sole)	103 (10.2)	(8.5 - 12.2)	79 (7.7)	(6.2 - 9.4)	—	—
Multisystem	116 (11.5)	(9.7 - 13.6)	96 (9.3)	(7.7 - 11.2)	0.78 (0.57 - 1.06)	0.70 (0.51 - 0.97)
Musculoskeletal	216 (21.5)	(19.0 - 24.1)	179 (17.4)	(15.1 - 19.8)	0.76 (0.59 - 0.97)	**0.62 (0.48 - 0.82)**
Neurological	189 (18.8)	(16.5 - 21.3)	153 (14.8)	(12.8 - 17.1)	0.71 (0.55 - 0.93)	**0.63 (0.48 - 0.83)**
Respiratory	239 (23.8)	(21.2 - 26.5)	201 (19.5)	(17.2 - 22.0)	0.79 (0.63 - 1.00)	0.72 (0.56 - 0.92)
Sensory	78 (7.8)	(6.2 - 9.5)	51 (4.9)	(3.7 - 6.4)	—	—

Bold values significant after Bonferroni correction, $p < 0.0045$.

The final model adjusted for age, financial situation, education, and province.

For AFAB-SGM total prevalence estimates with confidence intervals, see table 2.

AFAB, assigned female at birth; GM, gender minority; CSMW, cisgender sexual minority women.

Table 3.4. Prevalence of chronic health conditions among AFAB participants by sexual identity (N = 2038)

	Lesbian (*n* = 471)			Bisexual (*n* = 600)			Pansexual (*n* = 287)			Asexual (*n* = 111)			Queer (*n* = 422)		
	n	*%*	*95%CI*	*n*	*%*	*95%CI*	*n*	*%*	*95%CI*	*n*	*%*	*95%CI*	*n*	*%*	*95%CI*
Chronic health condition body system															
Asthma	59	12.4	(9.6 - 15.5)	107	17.5	(14.7 - 20.7)	43	14.9	(11.2 - 19.4)	18	16.2	(10.3 - 23.9)	66	15.4	(12.2 - 19.0)
Autoimmune	114	23.9	(20.2 - 27.9)	140	22.9	(19.7 - 26.4)	66	22.9	(18.3 - 28.0)	28	25.2	(17.9 - 33.9)	115	26.8	(22.8 - 31.1)
Cancer(s)	15	3.1	(1.8 - 5.0)	15	2.5	(1.4 - 3.9)	5	1.7	(0.7 - 3.8)	2	1.8	(0.4 - 5.7)	11	2.6	(1.4 - 4.4)
Cardiovascular	48	10.1	(7.6 - 13.0)	65	10.6	(8.4 - 13.3)	47	16.3	(12.4 - 20.9)	15	13.5	(8.1 - 20.8)	60	14	(10.9 - 17.5)
Chronic Pain	87	18.2	(15.0 - 21.9)	123	20.1	(17.1 - 23.4)	72	25	(20.3 - 30.2)	29	26.1	(18.6 - 34.8)	103	24	(20.2 - 28.2)
Connective Tissue	31	6.5	(4.5 - 9.0)	43	7	(5.2 - 9.3)	26	9	(6.1 - 12.7)	13	11.7	(6.7 - 18.7)	40	9.3	(6.8 - 12.3)
Endocrine	12	2.5	(1.4 - 4.2)	26	4.2	(2.9 - 6.1)	16	5.6	(3.3 - 8.7)	5	4.5	(1.7 - 9.6)	25	5.8	(3.9 - 8.3)
Gastrointestinal	83	17.4	(14.2 - 21.0)	105	17.2	(14.4 - 20.3)	51	17.7	(13.6 - 22.4)	22	19.8	(13.2 - 28.0)	85	19.8	(16.3 - 23.8)
Gynecological	59	12.4	(9.6 - 15.5)	83	13.6	(11.0 - 16.5)	51	17.7	(13.6 - 22.4)	15	13.5	(8.1 - 20.8)	76	17.7	(14.3 - 21.5)
Inflammatory	18	3.8	(2.3 - 5.8)	22	3.6	(2.3 - 5.3)	17	5.9	(3.6 - 9.1)	4	3.6	(1.2 - 8.3)	29	6.8	(4.7 - 9.4)
Mental health	193	40.5	(36.1 - 44.9)	274	44.8	(40.9 - 48.8)	157	54.5	(48.7 - 60.2)	53	47.7	(38.6 - 57.0)	201	46.9	(42.2 - 51.6)
Mental health (sole)	30	6.3	(4.4 - 8.7)	61	10	(7.8 - 12.5)	25	8.7	(5.8 - 12.3)	10	9	(4.7 - 15.4)	45	10.5	(7.9 - 13.7)
Multisystem	40	8.4	(6.1 - 11.1)	56	9.2	(7.1 - 11.6)	35	12.2	(8.8 - 16.3)	18	16.2	(10.3 - 23.9)	55	12.8	(9.9 - 16.2)
Musculoskeletal	101	21.2	(17.7 - 25.0)	88	14.4	(11.8 - 17.4)	74	25.7	(20.9 - 31.0)	28	25.2	(17.9 - 33.9)	81	18.9	(15.4 - 22.8)
Neurological	86	18	(14.8 - 21.7)	86	14.1	(11.5 - 17.0)	61	21.2	(16.8 - 26.2)	25	22.5	(15.5 - 30.9)	70	16.3	(13.1 - 20.0)
Respiratory	86	18	(14.8 - 21.7)	132	21.6	(18.5 - 25.0)	72	25	(20.3 - 30.2)	23	20.7	(14.0 - 29.0)	98	22.8	(19.1 - 27.0)
Sensory	28	5.9	(4.0 - 8.3)	31	5.1	(3.5 - 7.0)	23	8	(5.3 - 11.5)	13	11.7	(6.7 - 18.7)	27	6.3	(4.3 - 8.9)

AFAB, assigned female at birth

Table 3.5. Prevalence of chronic health conditions among AFAB participants by gender identity (N = 2038)

	Trans Man (*n* = 296)			Woman (*n* = 1001)			Genderqueer (*n* = 214)			Nonbinary (*n* = 341)			Other (*n* = 183)		
	n	*%*	*95%CI*	*n*	*%*	*95%CI*	*n*	*%*	*95%CI*	*n*	*%*	*95%CI*	*n*	*%*	*95%CI*
Chronic health condition body system															
Asthma	47	15.9	(12.1 - 20.4)	138	13.8	(11.7 - 16.0)	39	18.2	(13.5 - 23.8)	52	15.2	(11.7 - 19.4)	33	18	(13.0 - 24.1)
Autoimmune	73	24.7	(20.0 - 29.8)	205	20.5	(18.0 - 23.0)	67	31.3	(25.4 - 37.7)	87	25.5	(21.1 - 30.3)	55	30.1	(23.8 - 37.0)
Cancer(s)	9	3	(1.5 - 5.5)	31	3.1	(2.2 - 4.3)	4	1.9	(0.6 - 4.4)	5	1.5	(0.6 - 3.2)	2	1.1	(0.2 - 3.5)
Cardiovascular	53	17.9	(13.9 - 22.6)	100	10	(8.2 - 12.0)	35	16.4	(11.9 - 21.7)	41	12	(8.9 - 15.8)	24	13.1	(8.8 - 18.6)
Chronic Pain	75	25.3	(20.6 - 30.5)	169	16.9	(14.6 - 19.3)	63	29.4	(23.6 - 35.8)	83	24.3	(20.0 - 29.1)	49	26.8	(20.8 - 33.5)
Connective Tissue	30	10.1	(7.1 - 14.0)	66	6.6	(5.2 - 8.2)	22	10.3	(6.7 - 14.9)	27	7.9	(5.4 - 11.1)	17	9.3	(5.7 - 14.1)
Endocrine	8	2.7	(1.3 - 5.0)	39	3.9	(2.8 - 5.2)	13	6.1	(3.4 - 9.9)	15	4.4	(2.6 - 7.0)	11	6	(3.2 - 10.2)
Gastrointestinal	52	17.6	(13.6 - 22.2)	151	15.1	(13.0 - 17.4)	56	26.2	(20.6 - 32.3)	64	18.8	(14.9 - 23.2)	41	22.4	(16.8 - 28.8)
Gynecological	31	10.5	(7.4 - 14.3)	143	14.3	(12.2 - 16.5)	47	22	(16.8 - 27.9)	49	14.4	(11.0 - 18.4)	29	15.8	(11.1 - 21.7)
Inflammatory	11	3.7	(2.0 - 6.3)	33	3.3	(2.3 - 4.5)	25	11.7	(7.9 - 16.5)	14	4.1	(2.4 - 6.6)	9	4.9	(2.5 - 8.8)
Mental health	142	48	(42.3 - 53.7)	386	38.5	(35.5 - 41.6)	117	54.7	(48.0 - 61.2)	171	50.1	(44.9 - 55.4)	104	56.8	(49.6 - 63.9)
Mental health (sole)	32	10.8	(7.7 - 14.7)	77	7.7	(6.2 - 9.5)	18	8.4	(5.2 - 12.7)	41	12	(8.9 - 15.8)	14	7.7	(4.5 - 12.2)
Multisystem	30	10.1	(7.1 - 14.0)	88	8.8	(7.1 - 10.7)	21	9.8	(6.4 - 14.3)	44	12.9	(9.7 - 16.8)	29	15.8	(11.1 - 21.7)
Musculoskeletal	65	22	(17.5 - 26.9)	173	17.3	(15.0 - 19.7)	54	25.2	(19.8 - 31.4)	61	17.9	(14.1 - 22.2)	42	23	(17.3 - 29.4)
Neurological	43	14.5	(10.9 - 18.9)	144	14.4	(12.3 - 16.6)	54	25.2	(19.8 - 31.4)	57	16.7	(13.0 - 20.9)	44	24	(18.3 - 30.6)
Respiratory	74	25	(20.3 - 30.2)	189	18.9	(16.5 - 21.4)	56	26.2	(20.6 - 32.3)	74	21.7	(17.6 - 26.3)	47	25.7	(19.8 - 32.4)
Sensory	23	7.8	(5.1 - 11.2)	47	4.7	(3.5 - 6.1)	14	6.5	(3.8 - 10.4)	29	8.5	(5.9 - 11.8)	16	8.7	(5.3 - 13.5)

AFAB, assigned female at birth

Discussion

Summary of Main Findings

Overall, we found that 62.9% of AFAB-SGM individuals reported at least one CHC compared with 43.7% of AMAB-SGM people. Compared with AMAB-SGM people, AFAB-SGM people had significantly higher prevalence of asthma, chronic pain, and mental health conditions, as well as conditions that impact autoimmune, cardiovascular, musculoskeletal, gastrointestinal, neurological, and respiratory systems; no CHCs were reported at significantly higher levels among AMAB-SGM individuals.

Notably, our study sheds light on within-group differences among AFAB-SGM communities. AFAB-GM individuals had significantly higher odds of reporting at least one CHC, as well as higher prevalence of chronic pain, autoimmune and nervous system conditions compared with AFAB-CSMW. Mental health conditions, musculoskeletal, respiratory, chronic pain, and autoimmune conditions were among the most prevalent across all AFAB gender and sexual identity groups.

Extending the literature

This study supports and extends upon previous research by highlighting the breadth of CHCs that disproportionally impact AFAB-SGM individuals through nuanced prevalence estimates and novel comparison groups. Previous research on CHCs in AFAB-SGM individuals has focused on a limited set of conditions, consistently reporting higher prevalences of asthma,[12–14] cardiovascular,[12,14,16] and mental health[10,23] conditions among this population. Our results are consistent with this body of research, finding increased odds of reporting these conditions, as

well as autoimmune, chronic pain, gastrointestinal, musculoskeletal, neurological, and respiratory conditions, compared with AMAB-SGM individuals. Long COVID and some cancers, specifically breast cancer, have also been shown to have increased prevalence among AFAB-SGM individuals; however, our sample sizes for these conditions were too small to be included in comparative analyses.

There is very little research that provides CHC estimates for AFAB-GM individuals outside of mental health conditions or generalized declarations of health. To our knowledge, no other research has provided comparisons of CHCs in AFAB-GM individuals and AFAB-CSMW specifically. Although comparison groups differ, our findings align with some previous research, which reported higher odds of cardiovascular[4] and mental health conditions[22] in transgender men and gender nonconforming individuals compared with cisgender women. However, our findings also contradict those of Downing and Przedworski,[22] who found no significant difference in reports of multiple CHCs or asthma in transgender men compared with cisgender women. In contrast to Downing and Przedworski,[22] our study does not compare against cis-heterosexual women, nor did it strive to have a nationally representative sample distribution.

Additionally, research on this topic has rarely been situated in a Canadian context. The large majority of studies were conducted using national data from the United States of America (USA).[6,12,13,16] While there are certainly similarities between Canada and the USA, the USA has been found to have a higher prevalence of many of the CHCs included in this study (see Hernandez et al.[31]) compared with Canada. Our findings that AFAB-SGM individuals report a

higher prevalence of CHCs than their AMAB-SGM counterparts and the Canadian national prevalence estimate[1] are consistent with research from USA and Sweden.[14]

Strengths and Limitations

This study makes a significant contribution to the field by estimating the prevalence of CHCs impacting a range of body systems across a spectrum of sexual and gender identities of SGM individuals in Canada, with a focus on AFAB individuals. Statistically, by producing prevalence estimates with 95% confidence intervals and using multivariable logistic regression models to account for potential confounding variables, we reported more reliable estimates and robust comparisons. In looking at AFAB-GM individuals or variations across sexual and gender identity groups, the differences in prevalence reinforce the necessity of disaggregating health data within 2S/LGBTQIA+ populations to capture both shared and unique risks and experiences rather than relying on aggregate categories that obscure heterogeneity. Additionally, this study drew on the insights and contributions of people with lived experience, which are lacking in quantitative-based health research. Our CAB provided input in the method of categorization of CHCs and ensured that the direction of the research was beneficial to the community.

However, this study is not without limitations. First, participants did not need to have a clinical diagnosis of the CHC(s) they selected. While we see this as a strength that allows us to acknowledge that a diagnosis is not always attainable for people with CHCs due to barriers to healthcare, by instead relying on lived experience, this may introduce information biases or limit comparability with other work. Additionally, the creation of the chronic health categories based on primary body system(s) impacted is imperfect[27]; many CHCs vary in presentation and

severity, do not have a clear etiology, and impact body systems differently from individual to individual. Thus, categorizing these conditions based on body system impacted may misrepresent how some individuals experience their CHCs. Finally, our use of a prioritization model for identity classification flattened the complexities of gender and sexual identity of individuals who selected multiple responses. However, the creation of body system categories and prioritization classification allowed for the creation of sample sizes necessary to be able to expand upon the limited scope of research on CHCs in AFAB-SGM individuals.

Implications for Future Research

The major implications of these findings are twofold. First, this study highlights the necessity of expanding the representation of sexual and gender identities included in research, especially chronic health research. This is crucial among AFAB-SGM communities, where there is significant sexual and gender heterogeneity, with 49% identifying as a gender minority and 44% identifying sexually as something other than lesbian or bisexual. Despite the shared biological risk factors of SAAB, these findings suggest heightened vulnerability among GM individuals and other less-prevalent identity groups (i.e., genderqueer, nonbinary, queer, pansexual, asexual). Individuals in these groups face "double discrimination,"[32(p2)] where they lack acceptance from both 2S/LGBTQIA+ and cisgender heterosexual communities.[32] For some of these people, the stress stemming from social isolation can trigger or worsen the symptoms of their CHC.[5] However, the limited representation of diverse genders and sexual identities in health research, often reduced on basis of sample size, means that little is known about the health of these marginalized minority identity groups.

Second, this study challenges the narrative that sexual and gender identity are only relevant to sexual and mental health[8,9] and underscores the urgent need for healthcare systems and research to more adequately address chronic health disparities across AFAB-SGM and 2S/LGBTQIA+ communities. Previous researchers have concluded that increased prevalence, incidence, or risk level for developing CHCs in AFAB-SGM individuals was related to health inequities, and more specifically, reduced access to healthcare.[4,8,13,21,33] Despite acknowledgement that SGM individuals are disproportionately impacted by social determinants of health (e.g., social economic status, housing, discrimination), [34] prevention and health promotion strategies that target health concerns related to these identities are often limited to sexual and mental health, drug use, and AMAB-SGM communities. [34] This study, highlighting the increased prevalence of a range of CHCs across AFAB-SGM individuals, suggests a need to expand health initiatives toward the prevention and management of CHCs in this population, and SGM individuals more generally. By recognizing the specific needs of AFAB-SGM individuals in policy and health promotion, both research and healthcare systems can more effectively address health disparities experienced by this population. More research is needed to examine specific barriers to healthcare across this diverse group.

Conclusion

Among 2S/LGBTQ+ people, CHCs disproportionally impact AFAB-SGM individuals across a range of diverse sexual and gender identities. These CHCs range beyond the foci of extant research—e.g., asthma,[12–14] mental health,[10,23] cardiovascular,[12,14,16] and breast cancer[12]—to also include asthma, chronic pain, and mental health conditions, as well as conditions that

impact autoimmune, cardiovascular, musculoskeletal, gastrointestinal, neurological, and respiratory systems. Future research should prioritize the expansion of both the types of conditions examined and nuance within sexual and gender identity variables to comprehensively understand chronic health inequities.

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Supplementary Table 3.1. Chronic health conditions included in each body system category

Primary Body System Categories	Chronic Health Condition
Asthma	Asthma
Autoimmune	HIV/AIDS, Alopecia areata, Celiac disease, Crohn's disease, Graves' disease, Hashimoto's thyroiditis, Irritable bowel syndrome (IBS), Lupus, Multiple Sclerosis, Rheumatoid arthritis, Sjögren's syndrome, Ulcerative colitis, Vitiligo
Cardiovascular	Heart disease, Postural Orthostatic Tachycardia Syndrome (POTS), Raynaud's syndrome
Chronic pain	Chronic pain (not described elsewhere)
Connective tissue	Ehlers-Danlos syndromes (EDS)
Endocrine	Postural Orthostatic Tachycardia Syndrome (POTS), Uterine fibroids, Gestational Diabetes, Type 1 Diabetes, Type 2 Diabetes
Gastrointestinal	Celiac disease, Crohn's disease, Irritable bowel syndrome (IBS), Ulcerative colitis
Gynecological	Endometriosis, Polycystic ovary syndrome (PCOS), Uterine fibroids
Inflammatory	Ankylosing spondylitis, Gout, Psoriasis or psoriatic arthritis
Mental Health	Mental Health conditions, Premenstrual dysphoric disorder (PMDD)
Mental Health ONLY	Mental Health conditions, Premenstrual dysphoric disorder (PMDD)
Multisystem	Long COVID, Cancer, Myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS)
Musculoskeletal	Carpal tunnel syndrome, Fibromyalgia, Muscular dystrophy, Osteoarthritis, Osteoporosis, Scoliosis, Tendonitis
Neurological	Amyotrophic lateral sclerosis (ALS), Cerebral palsy, Dystonia, Epilepsy, Huntington's disease, Hydrocephalus, Mild cognitive impairment, Neurotrauma, Parkinson's disease, Spina bifida, Traumatic brain injury (TBI), Dementia
Respiratory	Asthma, Chronic Obstructive Pulmonary Disease (COPD), Cystic fibrosis, Long COVID, Sleep Apnea
Sensory (Auditory & Visual)	Hearing and Vision Loss
Other	Kidney disease, Hepatitis B & C

Chapter 4: Chronic health condition management in sexual and gender minority individuals assigned female at birth across Canada

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Abstract

Background: Sexual and gender minority individuals assigned female at birth (AFAB-SGM) are less likely than cisgender heterosexual women or those assigned male at birth to access routine healthcare. These individuals are also at an increased risk of developing chronic health conditions, which often require consistent and lifelong management. This study explores how AFAB-SGM individuals manage their chronic health conditions, with a particular focus on primary care, self-management, and community supports, and examines correlates with gender, sexual identity, and type of chronic health condition.

Methods: A total of 1282 AFAB-SGM individuals with chronic health conditions completed *Our Health 2022*, an online cross-sectional Canada-wide 2S/LGBTQIA+ health survey. We ran multivariate logistic regressions to examine the associations between gender and sexual identity, and 11 types of chronic health conditions, on the use of primary care, self-management, and community supports as methods of managing chronic health conditions. A community advisory board of people with lived experience contributed to decision-making and reviewed this study.

Results: A majority of participants reported using primary care to manage their chronic health conditions (71.1%) and self-managing their chronic health conditions (64.8%). All AFAB-gender minority (GM) subgroups (compared with cisgender sexual minority women) and those with chronic pain conditions had higher odds of self-managing their chronic health conditions. Genderqueer individuals and those with mental health conditions had higher odds of using

community supports. Neither gender, sexual identity, nor type of chronic health conditions significantly impacted the use of primary care.

Conclusions: Our findings indicate that individuals with identities and chronic health conditions prone to discrimination in healthcare are more likely to use community supports or self-manage their health. This suggests that health management strategies may function not only for symptom management, but also as a way to respond to discrimination and healthcare barriers. Research, policy, and practice reform is needed to ensure healthcare is accessible and affirming to the complex realities of marginalized communities managing chronic health conditions.

Introduction

Chronic health conditions are defined by the United States Centres for Disease Control and Prevention as "conditions that last one year or more and require ongoing medical attention or limit activities of daily living or both" (1). These conditions are often managed through a combination of healthcare services and supports, largely primary care and self-management interventions (2). Given the ongoing nature of chronic health conditions, primary care (e.g., family doctors or nurse practitioners) is most often how people with chronic health conditions manage their health (2). However, self-management interventions—ranging in behaviours from taking an active role in their care process; managing their diet, activity, and mental health; engaging with community; and being informed about their condition and treatment (3,4)—have become increasingly implemented in the care plans of people with chronic health conditions (2). Engaging with these healthcare services and supports has been found to improve health outcomes for people with a range of chronic health conditions (2,4), yet little is known about how health disparity populations, like sexual and gender minority individuals assigned female at birth (AFAB-SGM; 5), engage with these services and supports.

AFAB-SGM individuals—including both cisgender women who identify as lesbian, gay, bisexual, queer or something else non-heterosexual (AFAB-CSMW) and transgender men, nonbinary people and other nonbinary gender identities (e.g., genderfluid, genderqueer, transmasculine) of people assigned female at birth (AFAB-GM)—are at a disproportionate risk of developing chronic health conditions, such as mental health conditions, cardiovascular conditions, and asthma (6–10). Although reporting of chronic health conditions in AFAB-SGM

individuals is limited, researchers have often concluded that increased prevalence, incidence, or risk level is related to health inequities, and more specifically, reduced access to healthcare (5,6,11–14). These inequities can be further exacerbated by broader systemic disruptions, most contemporarily the COVID-19 pandemic.

The COVID-19 pandemic further magnified disparities in healthcare access worldwide (15,16). Rapid shifts in service delivery, including the postponement of non-urgent medical procedures, the cancellation of many routine services, and the widespread transition of primary care to virtual platforms, reshaped how individuals could engage with healthcare (16–18). Additionally, many individuals chose to delay seeking medical attention, either out of fear of exposure to the virus in healthcare settings or to avoid further burdening already overstretched healthcare systems (16). These disruptions had a profound impact, particularly on individuals with chronic health conditions, where healthcare service loss was associated with physical regression, as well as increased medical complications and pain (19). Although reduced access to healthcare during the COVID-19 pandemic was a ubiquitous experience, the magnification of systemic inequities meant that AFAB-SGM individuals, who already have a precarious relationship with healthcare, were likely to be disproportionately affected (5,20).

Indeed, these disruptions to care during COVID-19 reflect broader, ongoing inequities in access to care. Despite the critical role of primary care and self-management in health outcomes for individuals with chronic health conditions (2,4), a limited body of research has disaggregated healthcare access based on sex, gender, and sexual identity. To date, these studies have largely focused on primary care and preventative cancer screening uptake. Sexual minority women are

less likely than their heterosexual counterparts or men to have a family doctor or consistent healthcare providers, to access routine medical care, or to access preventative screening measures (11,21–23). While transgender men are more likely than AFAB-CSMW to have and/or access regular medical care, AFAB-GM individuals are even less likely to access preventative cancer screening (6,24). This notable lack of engagement with healthcare may not only increase the severity and morbidity of chronic health conditions (7,9,25), but also increase reliance on other healthcare services and supports, like self-management and community supports (3).

The use of self-management interventions for chronic health conditions has only been explicitly explored in SGM individuals in relation to mental health (3) and HIV (26); respectively, these studies do not disaggregate findings by sex, gender, or sexual identity, or only include AMAB-SGM individuals. Nevertheless, these studies highlight self-management as both a prescribed healthcare intervention and an outcome of experienced or perceived discrimination in healthcare settings for SGM individuals (3,26). That is, SGM individuals engage in self-management practices as a method of maintenance and prevention in terms of their chronic health condition, as well as avoidance of settings in which they may experience discrimination (3,26). SGM individuals engage in a range of self-management behaviours including self-care behaviours (e.g., cooking, exercising, showering, journaling, participating in hobbies), stress-management behaviours (e.g., balancing emotions, meditation, applying therapeutic techniques), and engaging with community (e.g., friends, family, SGM support groups; 3). Several previous studies emphasize the use and importance of community supports among SGM individuals with chronic health conditions (3,26,27). Although this research does not speak directly to the

experiences of AFAB-SGM individuals, it suggests that self-management and community supports may play a significant role in the management of chronic health conditions within this population (3,26,27).

The extant literature illustrates that there remains an apparent disconnect between the healthcare needs of AFAB-SGM individuals and the healthcare they receive. Despite being disproportionally impacted by chronic health conditions (6–10) and having reduced engagement with healthcare (6,11,21,24), there is a dearth of available information on the healthcare services and supports AFAB-SGM individuals use to manage their chronic health conditions. We draw on Levesque et al.'s Conceptual Framework of Access to Health (28), which outlines the interaction between healthcare system characteristics—approachability, acceptability, availability and accommodation, affordability, and appropriateness—and individual abilities to perceive, seek, reach, pay for, and engage with care. Applying this framework allows us to situate AFAB-SGM individuals' use of primary care, community supports, and self-management strategies within broader systemic dynamics of access to healthcare (28). Through this study, we aim to examine the healthcare services and supports used by AFAB-SGM individuals to manage their chronic health conditions and how the use of these services and supports are shaped by gender, sexual identity, and different types of chronic health conditions.

Methods

Community Based Participatory Research Approach

We utilized a community-based participatory research approach, which included establishing a community advisory board (CAB) to guide the project and ensure alignment with

community priorities. The CAB was comprised of six 2S/LGBTQIA+ individuals with CHCs. CAB members were selected to prioritize diversity across various dimensions, including identity (race, sexual identity, gender), type of chronic health condition (affected body systems), life experiences (social economic status), and geography. CAB members guided decision-making analysis planning, variable selection and reclassification, data interpretation and framing, and reviewed and provided feedback on this manuscript.

Our Health

We used data from the Community-Based Research Centre's 2022 Our Health cross-sectional study (29). Our Health is the largest multilingual community health survey of 2S/LGBTQIA+ communities in Canada (29). The 2022 online survey included extensive questionnaire modules on COVID-19 and chronic health, as well as general health, healthcare services, discrimination, and socio-demographics. To have been eligible, a participant must have identified as 2S/LGBTQIA+, lived in Canada, and have been 15 years of age or older. Participants were recruited through advertisements via 2S/LGBTQIA+ community-based organizations, social media, news media, and social networking sites/apps. Data collection for this study occurred online between April and September of 2022. The University of Victoria, the University of British Columbia, and Simon Fraser University's Research Ethics Boards reviewed and approved the study protocol (H20-02842). Eligible participants provided informed consent prior to self-completing the online questionnaire. For the current study, only data pertaining to participants who reported being assigned female at birth and having a chronic health condition were included.

Variables

The primary outcomes of interest included three binary variables assessing how participants managed their chronic health conditions. Participants responded "Yes" or "No" to using primary health care (e.g. physician, nurse practitioner, etc.), community supports (e.g. support groups, wellness activities) or self-managing their chronic health conditions (e.g. self-medicating, finding their own resources). These methods of managing chronic health conditions were not mutually exclusive and were selected out of a larger list of types of care based on relevance to SGM experiences in health as outlined in the introduction. We provide descriptive statistics for all types of care used to manage chronic health conditions in Table 4.1.

The primary explanatory variables for this analysis were gender identity, sexual identity, and type of chronic health condition. Reclassification of gender and sexual identity variables followed a prioritization classification system (30), which reclassified individuals who selected multiple response options into a single category based on a predetermined hierarchy that was vetted by our CAB. For sexual identity, the priority order was lesbian, bisexual, pansexual, asexual, straight/heteroflexible, gay, homoflexible, queer, questioning, other. Similarly, for gender, the priority order was trans man, woman, genderqueer, genderfluid, agender, other, nonbinary. For chronic health, participants selected "Yes" or "No" to having a list of 61 alphabetically listed chronic health conditions; chronic health conditions with no responses were removed from analysis. We later grouped the remaining conditions based on primary and secondary health systems affected, as reported by the National Library of Medicine (31). chronic health conditions not impacting a *primary* body system, such as cancer(s) and long COVID, were

classified as multisystem. Asthma remained a standalone category, given that prior literature has consistently reported increased prevalence among AFAB-SGM individuals (10,12,32). As chronic health conditions can affect multiple body systems and many participants reported multiple chronic health conditions, these body system categories were individual binary variables that are not mutually exclusive. For the list of body systems and how each chronic health condition was classified, see Supplementary Table 4.1.

We report other demographic variables, including age, location of residence, whether a participant was a person of colour, education, financial situation, and how participants received primary care as covariates. We recategorized province of residence into Ontario, Québec, British Columbia (and Yukon Territory), Prairies (Alberta, Manitoba, Saskatchewan, Northwest Territories, Nunavut), and the Atlantic (New Brunswick, Newfoundland and Labrador, Nova Scotia, Prince Edward Island). We derived a single three-level primary care variable with those who selected family doctor, naturopath or holistic care, or nurse practitioner grouped as receiving care from a *regular or recurring healthcare provider*; participants who selected telephone health service, virtual health apps, or walk-in clinic and none of the regular provider options as receiving care from an *irregular healthcare provider*; and those who indicated that they did not receive primary care as having *no primary care provider*. We recoded all other covariates into binary variables (see Table 4.1).

Data analysis

We ran a multivariate logistic regression for each of the three outcome variables. For each model, we included all 11 chronic health condition body system categories, gender and

sexual identity variables, and all covariate variables. Correlation matrices were examined for multicollinearity; no correlation exceeded ± 0.8 (33). We used a backward selection model with a significance threshold of $p < 0.10$ to determine which variables would be included in the final model. Given that multiple tests were conducted, we applied a Bonferroni correction, giving a corrected α of 0.017. All statistical analyses were performed using SPSS Version 29.0.2.0 (34).

Results

A total of 1282 AFAB-SGM individuals with chronic health conditions comprised the final analytic sample (see Table 1). The average age of participants was 33.4 years (range: 15 - 92, *SD* = 10.8). The largest sub-groups were AFAB-CSMW (43.8%), bisexuals (30.0%), those living in Ontario (37.4%), and not people of colour (84.6%). A majority of participants report using primary care to manage their chronic health condition (71.1%), as well as self-managing their chronic health condition (64.8%); roughly one in four (29.4%) reported using community supports.

Table 4.1. Demographic information for AFAB-SGM individuals with chronic health conditions (*N* = 1282)

Variable	*n*	*%*
Gender		
Genderqueer	155	12.1
Nonbinary	236	18.4
Trans man	200	15.6
Woman	565	44.1
Other	125	9.8
Sexual identity		
Asexual	70	5.5
Bisexual	384	30.0
Gay	40	3.1
Lesbian	282	22.0

Pansexual	194	15.1
Queer	284	22.2
Person of Colour		
No	1084	84.6
Yes	188	14.7
Location		
Ontario	480	37.4
Prairies	216	16.8
British Columbia	267	20.8
Atlantic	209	16.3
Québec	110	8.6
Education		
Highschool or less	276	21.5
Post-secondary	1005	78.4
Financial situation		
Strained	442	34.5
Comfortable	619	48.3
Chronic health condition body system		
Asthma	309	15.2
Autoimmune	488	23.9
Cardiovascular	253	12.4
Chronic Pain	440	21.6
Gastrointestinal	364	17.9
Gynecological	299	14.7
Mental health	921	45.2
Multisystem	213	10.5
Musculoskeletal	396	19.4
Neurological	342	16.8
Respiratory	440	21.6
Healthcare services and supports		
Alternative health care	310	24.2
Personal Support workers	79	6.2
Community supports	377	29.4
Complementary health care supports	456	35.6
Mental health supports	824	64.3
Primary health care	912	71.1
Self-managed care	831	64.8

AFAB-SGM, sexual or gender minority individual assigned female at birth

The results of our multivariable logistics regressions analyses are shown in Table 4.2 through 4.4. As shown in Table 4.2, age was the only significant predictor of using primary health care to manage chronic health conditions, with older participants having significantly higher odds of using primary care.

In the multivariate model for self-management (Table 4.3), participants with chronic pain had significantly higher odds of self-managing their chronic health condition compared with those without chronic pain. Further, all AFAB-GM identity groups had higher odds of self-managing their chronic health conditions compared with AFAB-CSMW. Older participants had higher odds of self-managing their chronic health conditions. In contrast, participants from Québec (versus Ontario) and those in comfortable financial situations had lower odds of self-managing their chronic health condition.

In the multivariate model for community supports (Table 4.4), participants with mental health conditions, in addition to another type of chronic health condition, had higher odds of using community supports to manage their chronic health condition compared with those without mental health conditions. Genderqueer individuals also had higher odds of using community supports to manage their chronic health condition compared with AFAB-CSMW. Additionally, participants from the Atlantic had lower odds of using community supports compared with participants from Ontario.

Table 4.2. Logistic Regression Analyses Examining the Association of Gender, Sexual Orientation, and CHC body system on use of primary care among AFAB-SGM participants living with chronic health conditions (N = 1282)

Variable	*n (%)*	*OR [95%CI]*	*AOR [95%CI]*	*p*
Chronic health condition body system				
Asthma	240 (77.7)	1.66 (0.81 - 3.38)	—	—
Autoimmune	372 (76.2)	0.91 (0.51 - 1.61)	—	—
Cardiovascular	202 (79.8)	1.73 (0.99 - 3.04)	1.52 (0.98 - 2.36)	0.062
Chronic Pain	318 (72.3)	0.7 (0.49 - 1.00)	0.69 (0.49 - 0.96)	0.030
Gastrointestinal	277 (76.1)	1.42 (0.77 - 2.62)	1.42 (0.98 - 2.05)	0.067
Gynecological	231 (77.3)	1.23 (0.83 - 1.82)	—	—
Mental health	678 (73.6)	0.88 (0.58 - 1.33)	—	—
Multisystem	163 (76.5)	1.14 (0.7 - 1.87)	—	—
Musculoskeletal	312 (78.8)	1.31 (0.83 - 2.07)	1.43 (0.97 - 2.11)	0.074
Neurological	271 (79.2)	1.27 (0.8 - 2.02)	—	—
Respiratory	340 (77.3)	0.78 (0.39 - 1.58)	—	—
Gender				
Woman	403 (71.3)	*ref.*	—	—
Trans man	144 (72.0)	1.03 (0.61 - 1.71)	—	—
Genderqueer	115 (74.2)	0.98 (0.58 - 1.64)	—	—
Nonbinary	155 (65.7)	0.97 (0.62 - 1.5)	—	—
Other	95 (76.0)	2.06 (1.04 - 4.08)	—	—
Sexual identity				
Lesbian	205 (72.7)	*ref.*	—	—
Bisexual	272 (70.8)	1.26 (0.81 - 1.96)	—	—
Pansexual	137 (70.6)	1.21 (0.71 - 2.05)	—	—
Queer	209 (73.6)	1. (0.62 - 1.61)	—	—
Location				
Ontario	349 (38.3)	*ref.*	—	—
Prairies	152 (16.7)	0.84 (0.52 - 1.37)	—	—
British Columbia	191 (20.9)	0.83 (0.54 - 1.29)	—	—
Atlantic provinces	145 (15.9)	0.69 (0.43 - 1.09)	—	—
Québec	75 (8.2)	0.74 (0.4 - 1.36)	—	—
Education				
Highschool or less	176 (19.3)	*ref.*	—	—
Post-secondary	736 (80.7)	1.08 (0.71 - 1.64)	—	—
Person of colour				
No	783 (85.9)	*ref.*	—	—
Yes	119 (13.0)	0.72 (0.46 - 1.13)	—	—
Financial situation				
Strained	327 (35.9)	*ref.*	—	—
Comfortable	476 (52.2)	1.24 (0.88 - 1.73)	—	—
Age (continuous, in years)		1.02 (1. - 1.04)	**1.02 (1.01 - 1.04)**	**0.008**

Values in **bold** are statistically significant after the Bonferroni correction ($p < 0.017$).
N (%) represented the frequencies of each group who indicated they used primary care to manage their chronic health condition.
CHC, chronic health condition; OR, odds ratio; AOR, adjusted odds ratio; CI, confidence interval; Ref., Reference category.

Table 4.3. Logistic Regression Analyses Examining the Association of Gender, Sexual Orientation, and CHC body system on the use of self-management among AFAB-SGM participants living with chronic health conditions (N = 1282)

Variable	*n (%)*	*OR [95%CI]*	*AOR [95%CI]*	*p*
Chronic health condition body system				
Asthma	216 (69.9)	1.41 (0.73 - 2.71)	—	—
Autoimmune	344 (70.5)	1.2 (0.7 - 2.07)	—	—
Cardiovascular	183 (72.3)	0.96 (0.58 - 1.59)	—	—
Chronic Pain	326 (74.1)	1.55 (1.08 - 2.22)	**1.57 (1.11 - 2.23)**	**0.011**
Gastrointestinal	259 (71.2)	1.06 (0.59 - 1.91)	—	—
Gynecological	220 (73.6)	1.43 (0.98 - 2.08)	1.44 (0.99 - 2.08)	0.057
Mental health	637 (69.2)	1.34 (0.91 - 1.96)	1.45 (1.02 - 2.04)	0.037
Multisystem	159 (74.6)	1.69 (1.03 - 2.76)	1.75 (1.09 - 2.79)	0.02
Musculoskeletal	293 (74.0)	1.29 (0.84 - 1.98)	—	—
Neurological	251 (73.4)	0.85 (0.55 - 1.32)	—	—
Respiratory	304 (69.1)	0.78 (0.41 - 1.5)	—	—
Gender				
Woman	320 (56.6)	*ref.*	ref.	ref.
Trans man	141 (70.5)	2. (1.22 - 3.28)	**2.05 (1.28 - 3.28)**	**0.003**
Genderqueer	119 (76.8)	2.73 (1.58 - 4.71)	**2.64 (1.57 - 4.45)**	**<.001**
Nonbinary	159 (67.4)	2.2 (1.42 - 3.42)	**2.12 (1.39 - 3.23)**	**<.001**
Other	92 (73.6)	2.81 (1.51 - 5.23)	**2.8 (1.52 - 5.14)**	**<.001**
Sexual identity				
Lesbian	167 (59.2)	*ref.*	—	—
Bisexual	248 (64.6)	1.32 (0.87 - 1.99)	—	—
Pansexual	133 (68.6)	1.13 (0.69 - 1.87)	—	—
Queer	198 (69.7)	1.07 (0.67 - 1.7)	—	—
Location				
Ontario	319 (38.4)	*ref.*	ref.	ref.
Prairies	146 (17.6)	1.06 (0.65 - 1.71)	1.05 (0.65 - 1.69)	0.834
British Columbia	186 (22.4)	0.88 (0.58 - 1.34)	0.87 (0.58 - 1.32)	0.519
Atlantic	121 (14.6)	0.66 (0.43 - 1.01)	0.66 (0.44 - 1.01)	0.055
Québec	59 (7.1)	0.43 (0.25 - 0.77)	**0.44 (0.26 - 0.77)**	**0.004**
Education				
Highschool or less	171 (20.6)	*ref.*	—	—
Post-secondary	660 (79.4)	1.35 (0.9 - 2.03)	—	—
Person of colour				
No	705 (84.8)	*ref.*	—	—
Yes	118 (14.2)	0.94 (0.6 - 1.46)	—	—
Financial situation				
Strained	331 (39.8)	*ref.*	ref.	ref.
Comfortable	400 (48.1)	0.62 (0.45 - 0.87)	**0.66 (0.48 - 0.9)**	**0.01**
Healthcare provider				
None	31 (3.7)	*ref.*	—	—
Regular	706 (85.0)	0.95 (0.44 - 2.05)	—	—
Irregular	81 (3.7)	0.81 (0.34 - 1.95)	—	—
Age		1.02 (0.99 - 1.03)	**1.02 (1.00 - 1.03)**	**0.01**

Values in bold are statistically significant after the Bonferroni correction ($p < 0.017$).
N (%) represented the frequencies of each group who indicated they self-managed their chronic health condition.
CHC, chronic health condition; OR, odds ratio; AOR, adjusted odd ratio; CI, confidence interval; Ref., Reference category.

Table 4.4. Logistic Regression Analyses Examining the Association of Gender, Sexual Orientation, and CHC body system on use of community supports among AFAB-SGM participants living with chronic health conditions ($N = 1282$)

Variable	*n (%)*	*OR [95%CI]*	*AOR [95%CI]*	*p*
Chronic health condition body system				
Asthma	104 (33.7)	1.24 (0.69 - 2.2)	—	—
Autoimmune	163 (33.4)	0.99 (0.58 - 1.67)	—	—
Cardiovascular	87 (34.4)	1.06 (0.68 - 1.64)	—	—
Chronic Pain	148 (33.6)	1.1 (0.79 - 1.51)	—	—
Gastrointestinal	125 (34.3)	1.13 (0.66 - 1.94)	—	—
Gynecological	98 (32.8)	1.15 (0.82 - 1.62)	—	—
Mental health	307 (33.3)	1.5 (1.01 - 2.24)	**1.69 (1.19 - 2.41)**	**0.004**
Multisystem	77 (36.2)	1.29 (0.86 - 1.92)	1.4 (0.97 - 2.03)	0.073
Musculoskeletal	136 (34.3)	0.94 (0.64 - 1.4)	—	—
Neurological	125 (36.5)	1.26 (0.85 - 1.87)	—	—
Respiratory	147 (33.4)	0.84 (0.47 - 1.51)	—	—
Gender				
Woman	143 (25.3)	*ref.*	*ref.*	*ref.*
Trans man	66 (33.0)	1.5 (0.94 - 2.4)	1.38 (0.89 - 2.14)	0.147
Genderqueer	62 (40.0)	1.69 (1.06 - 2.71)	**1.78 (1.15 - 2.76)**	**0.01**
Nonbinary	61 (25.8)	1.09 (0.71 - 1.65)	1.09 (0.73 - 1.62)	0.687
Other	44 (35.2)	1.36 (0.8 - 2.31)	1.36 (0.82 - 2.26)	0.238
Sexual identity				
Lesbian	75 (26.6)	*ref.*	—	—
Bisexual	112 (29.2)	0.89 (0.59 - 1.34)	—	—
Pansexual	57 (29.4)	0.89 (0.55 - 1.44)	—	—
Queer	101 (36.6)	1.03 (0.66 - 1.6)	—	—
Location				
Ontario	166 (44.0)	*ref.*	*ref.*	*ref.*
Prairies	61 (16.2)	0.77 (0.5 - 1.19)	0.77 (0.5 - 1.18)	0.226
British Columbia	74 (19.6)	0.67 (0.45 - 1.)	0.68 (0.46 - 1.01)	0.054
Atlantic	47 (12.5)	0.55 (0.35 - 0.86)	**0.54 (0.35 - 0.84)**	**0.006**
Québec	29 (7.7)	0.67 (0.37 - 1.2)	0.65 (0.37 - 1.13)	0.126
Education				
Highschool or less	71 (18.8)	*ref.*	—	—
Post-secondary	306 (81.2)	1.18 (0.79 - 1.75)	—	—
Person of colour				
No	305 (80.9)	*ref.*	*ref.*	*ref.*
Yes	67 (17.8)	1.58 (1.05 - 2.4)	1.5 (1. - 2.24)	0.05
Financial situation				
Strained	146 (38.7)	*ref.*	—	—
Comfortable	177 (46.9)	0.88 (0.65 - 1.2)	—	—
Healthcare provider				
None		*ref.*	—	—
Regular		1.53 (0.69 - 3.39)	—	—
Irregular		1.95 (0.79 - 4.79)	—	—
Age		1.01 (0.99 - 1.03)	—	—

Values in bold are statistically significant after the Bonferroni correction ($p < 0.017$).
N (%) represented the frequencies of each group who indicated they used community supports to manage their chronic health condition.
CHC, chronic health condition; OR, odds ratio; AOR, adjusted odds ratio; CI, confidence interval; Ref., Reference category.

Discussion

We examined how AFAB-SGM individuals in Canada managed their chronic health conditions, focusing on primary care, community supports, and self-management. Our findings suggest that these individuals use a variety of healthcare services and supports to manage their health but rely most commonly on primary care (71% of participants) and self-management (65% of participants). Further, about half of the participants (50.6%) used both primary care and self-management for their chronic health condition; roughly a quarter (29%) of participants used community supports. Gender identity, as well as certain chronic health conditions, significantly impacted the odds of using community supports and self-management. Conversely, sexual identity did not significantly impact the odds of using primary care, community supports, or self-management.

Previous research has suggested that AFAB-SGM individuals have lower engagement with healthcare systems and providers compared with their heterosexual or AMAB counterparts (6,11,21,24). Although our findings may seem to counter this research, with most participants having a regular care provider and using primary care to manage their chronic health conditions, it is important to highlight that every participant in our sample has a chronic health condition. As such, these individuals should be expected to have increased engagement with healthcare compared with AFAB-SGM individuals without chronic health conditions.

A novel finding is the high proportion of AFAB-SGM participants who were self-managing their chronic health conditions (64.8%). There has been a marked increase in the use of self-management interventions to manage chronic health conditions in an attempt to offload

care from overburdened healthcare systems (2). However, there is little consensus on what self-management of chronic health conditions means (4). Among SGM individuals, self-management practices range from therapeutic and self-care practices to self-harm and self-medication (3). Further, the use of self-management has been described as a method to manage the symptoms of chronic health conditions as well as attempts to reduce experiences of systemic discrimination (3,26,27). Although self-management activities were not specified in the survey, our findings that all AFAB-GM individuals have higher odds of self-managing their chronic health conditions may be reflective of the high level of discrimination GM individuals face in healthcare settings (6), and the subsequent avoidance of these settings (3).

Additionally, research on self-management of chronic health conditions through self-medication often focuses primarily on chronic pain conditions (35,36). Several previous studies suggest that chronic pain conditions not only disproportionately impact AFAB individuals (37–40), but are often not taken seriously by healthcare provider (39,40). Such conditions are sometimes presumed to be psychosomatic in nature (38,40) and thus may be directed toward mental health treatment rather than appropriate medical management (38,40,41). It is then unsurprising that participants who reported chronic pain conditions had high odds of self-managing their chronic health conditions; however, the role of self-medication in these findings remains unclear.

Levesque et al.'s (28) Conceptual Framework of Access to Health offers a valuable perspective for further interpreting these findings. While the approachability, or the degree to which care is seen as available and relevant, of primary care was generally high, with most participants indicating they had a regular primary care provider (79.6%), differences based on condition type and identity may point to inequities in acceptability, accommodation, appropriateness, or affordability of care. This may also be reflected in approximately half of participants (50.6%) using both primary care and self-managing their chronic health condition(s), suggesting many participants require additional care or support alongside any primary care they are receiving.

The implications of these findings are twofold. First, given the increased implementation of self-management interventions in the care plans of people with chronic health conditions (2), it is necessary to both better define what these practices entail and explore their use and effectiveness among different populations for different conditions. This is particularly crucial among minority populations who experience well-documented health disparities, such as AFAB-SGM individuals (5). There is a marked difference between self-managing stress levels to reduce the severity of symptoms related to chronic health conditions and self-medicating to avoid discrimination in healthcare settings; yet these practices both fall under the umbrella of self-management in current research (3,4). Increased odds of self-managing chronic health conditions among those with identities and conditions prone to discrimination (i.e., GM individuals and those with chronic pain conditions) suggest that healthcare inaccessibility or avoidance may be playing a role in who is self-managing. Further research is needed to determine what self-

management behaviours these individuals are engaging in and why; to better understand how identity and type of chronic health condition are shaping factors like the approachability, acceptability, accommodation, or appropriateness of healthcare (28).

Second, research must broaden the identities and health concerns addressed when discussing health disparities among SGM individuals. Despite a growing body of research indicating that AFAB and SGM individuals are disproportionately impacted by chronic health conditions (6–10) and have reduced engagement with healthcare (6,11,21,24), AFAB-SGM individuals remain largely invisible in the literature on chronic health management. By continuing to focus on a narrow range of identities and health concerns, we perpetuate the health disparities experienced by these communities by failing to provide the necessary information to reform policy and practice. Beyond expanding representation in research, policy reform is needed to better educate healthcare providers about the health needs of SGM individuals and to ensure healthcare systems are accessible, safe, and affirming.

The greatest strength of this research is the ability to shed light on both the unique and shared experiences within AFAB-SGM individuals, an often under-researched population (20). We achieve this by examining intra-group differences rather than comparing with cisgender heterosexual or AMAB populations. Although the use of a prioritization model for identity classification flattens the complexities of multiple gender and sexual identities, these models allow for the creation of sample sizes necessary for feasible analyses to be able to expand upon the limited scope of research on AFAB-SGM individuals, specifically those with chronic health conditions. Additionally, the proportion and diversity of GM individuals in the sample allow for

a nuanced examination of how gender identity shapes chronic health management when these individuals are often collapsed or removed from analyses (7,42).

However, this study is not without limitations. While we were able to draw attention to the proportionate number of participants who are self-managing their chronic health conditions, we also are unable to differentiate the types of self-management behaviours these individuals are using. As previously mentioned, the range of behaviours included in self-management are diverse as are the implications of those behaviours. Because we did not inquire about the specifics of these behaviours, we express caution with our interpretation. Additionally, the context of this data being collected while the COVID-19 pandemic was still considered a public health emergency (40) may also have impacted the proportion of participants who were self-managing their health. While the question was not explicitly asked in the context of COVID-19, but rather how they manage their chronic health conditions more generally, poor availability of healthcare services at the time of data collection may be reflected in the results.

Conclusion

This study highlights how AFAB-SGM individuals manage their chronic health conditions through a combination of healthcare services and supports, namely, primary care, community supports, and self-management. Identifying that those with identities and chronic health conditions prone to discrimination in healthcare settings were more likely to use community supports or self-manage their health suggests that methods of health management may serve not only as a tool for symptom management, but also as a response to discrimination and barriers to healthcare. This research contributes to the extant literature on AFAB-SGM

individuals with chronic health conditions, emphasizing the need to further examine self-management behaviours and expand research, policy, and practice to ensure healthcare is accessible and affirming for marginalized communities managing chronic health conditions.

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Supplementary Table 4.1. Chronic health conditions included in each body system category

Primary Body System Categories	Chronic Health Condition
Asthma	Asthma
Autoimmune	HIV/AIDS, Alopecia areata, Celiac disease, Crohn's disease, Graves' disease, Hashimoto's thyroiditis, Irritable bowel syndrome (IBS), Lupus, Multiple Sclerosis, Rheumatoid arthritis, Sjögren's syndrome, Ulcerative colitis, Vitiligo
Cardiovascular	Heart disease, Postural Orthostatic Tachycardia Syndrome (POTS), Raynaud's syndrome
Chronic pain	Chronic pain (not described elsewhere)
Connective tissue	Ehlers-Danlos syndromes (EDS)
Endocrine	Postural Orthostatic Tachycardia Syndrome (POTS), Uterine fibroids, Gestational Diabetes, Type 1 Diabetes, Type 2 Diabetes
Gastrointestinal	Celiac disease, Crohn's disease, Irritable bowel syndrome (IBS), Ulcerative colitis
Gynecological	Endometriosis, Polycystic ovary syndrome (PCOS), Uterine fibroids
Inflammatory	Ankylosing spondylitis, Gout, Psoriasis or psoriatic arthritis
Mental Health	Mental Health conditions, Premenstrual dysphoric disorder (PMDD)
Mental Health ONLY	Mental Health conditions, Premenstrual dysphoric disorder (PMDD)
Multisystem	Long COVID, Cancer, Myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS)
Musculoskeletal	Carpal tunnel syndrome, Fibromyalgia, Muscular dystrophy, Osteoarthritis, Osteoporosis, Scoliosis, Tendonitis
Neurological	Amyotrophic lateral sclerosis (ALS), Cerebral palsy, Dystonia, Epilepsy, Huntington's disease, Hydrocephalus, Mild cognitive impairment, Neurotrauma, Parkinson's disease, Spina bifida, Traumatic brain injury (TBI), Dementia
Respiratory	Asthma, Chronic Obstructive Pulmonary Disease (COPD), Cystic fibrosis, Long COVID, Sleep Apnea
Sensory (Auditory & Visual)	Hearing and Vision Loss
Other	Kidney disease, Hepatitis B & C

Chapter 5: Barriers to healthcare for sexual and gender minority individuals assigned female at birth who are living with chronic health conditions

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Abstract

Purpose: Sexual and gender minority individuals assigned female at birth (AFAB-SGM) face unique and compounded barriers to accessing healthcare. This is particularly concerning as this community is also disproportionately affected by chronic health conditions (CHCs), which often require consistent and lifelong care. This study aimed to explore the barriers to healthcare faced by AFAB-SGM individuals with various CHCs and their correlates with various gender and sexual identities.

Methods**:** A community-based research approach was used to inform analyses of data from 1282 AFAB-SGM participants with CHCs who participated in *Our Health*, a large, online, cross-sectional, multi-lingual, Canada-wide community health survey of 2S/LGBTQIA+ people. We ran multivariate logistic regressions to examine associations between gender identity, sexual identity, and 11 CHC body system types on five barriers to healthcare and three types of discrimination.

Results: Most participants (85.6%) reported at least one barrier to healthcare. A majority of participants reported experiencing difficulty obtaining diagnoses (70.8%) and getting an appointment (64.3%). All AFAB-GM subgroups had higher odds of experiencing discrimination in healthcare settings compared with AFAB-CSMW. Certain CHCs were associated with higher odds of experiencing barriers to diagnosis (e.g., chronic pain, gastrointestinal conditions) and CHC-based discrimination (e.g., chronic pain, multisystem conditions).

Conclusion: Gender identity and certain chronic conditions—particularly those that disproportionately affect AFAB individuals—have a persistent association with discrimination in healthcare and barriers to getting a diagnosis. Healthcare system reform is needed to address health inequities and systemic discrimination to improve access and experiences in healthcare for AFAB-SGM individuals with CHCs.

Introduction

The 2S/LGBTQIA+ community has been classified as a health disparity population, with stigma and systemic barriers impacting equitable access to healthcare (1). While prior work has looked at this population as a whole, sexual and gender minority individuals assigned female at birth (AFAB-SGM)—cisgender women who identify as lesbian, gay, bisexual, queer or something else non-heterosexual (AFAB-CSMW); and transgender men, nonbinary people and other nonbinary gender identities (e.g., genderfluid, genderqueer, transmasculine) of people assigned female at birth (AFAB-GM)—face distinct and often compounded challenges within healthcare systems (2–4) that warrant a population-specific approach.

Compared with their heterosexual and assigned male at birth (AMAB) counterparts, AFAB-CSMW are less likely to have a family doctor, to access routine medical care, or to access preventative screening measures (2,5). While transgender men are more likely than AFAB-CSMW to access routine healthcare, AFAB-GM individuals are even less likely to access preventative cancer screening (6,7). Further, AFAB-GM individuals have reported high rates of postponing seeking healthcare (7) and experience high levels of discrimination within healthcare settings (6). These statistics are particularly alarming as this community is also disproportionately affected by chronic health conditions (CHC) in both prevalence and severity (6,8–10), with cascading consequences for health, given that CHCs often require consistent and lifelong care.

Although the reporting of CHCs in AFAB-SGM individuals are limited in availability and in scope, researchers have often concluded that increased prevalence, incidence, or risks for

developing CHCs in this population are related to health inequities and, more specifically, reduced access to healthcare (1,5,6,11–13). Prior research has examined barriers to care for the 2S/LGBTQIA+ population as a whole, which fails to purposely explore the heterogeneity of experiences across diverse identity sub-groups. In contrast, a population-specific approach focused on AFAB-SGM individuals recognizes the historical and contemporary impact of sex-based biases within healthcare systems (14,15). This approach also advances understandings of how shared biological and social factors may uniquely shape the experiences of AFAB-SGM individuals in healthcare systems (2,3,16).

Despite a growing body of research on the impact of reduced healthcare access on adverse health outcomes for AFAB-SGM individuals (5,6,12), limited research exists specifically for those managing a broad range of CHCs. Only three studies explicitly discussed the experiences of SGM individuals with CHCs navigating healthcare systems (8,17,18). However, Decker et al. (8) focused only on gender minority individuals and the limited social supports available to those with the shared identity of having a CHC and being a gender minority. The other two studies, Jowett and Peel (17) and Dibble et al (18), are somewhat dated and almost exclusively report on the experiences of lesbian and bisexual women or provide minimal disaggregation across SGM identities. Given disparities between need and access to healthcare systems, AFAB-SGM individuals with CHCs are particularly vulnerable within healthcare and research alike. In this study, we sought to examine associations between gender identity, sexual identity, and CHC type on barriers to healthcare.

Methods

Community Based Participatory Research Approach

We utilized a community-based participatory research approach, which included establishing a community advisory board (CAB) to guide the project and ensure alignment with community priorities. The CAB was comprised of six 2S/LGBTQIA+ individuals with CHCs. CAB members were selected to prioritize diversity across various dimensions, including identity (race, sexual identity, gender), type of CHC (affected body systems), life experiences (social economic status), and geography. CAB members guided decision-making for analysis planning, variable selection and reclassification, data interpretation and framing, and reviewed and provided feedback on this manuscript.

Our Health

We used data from the Community-Based Research Centre's 2022 Our Health cross-sectional online study (19). Our Health is the largest multilingual community health survey of 2S/LGBTQIA+ communities in Canada (19). The 2022 online survey included extensive questionnaire modules on COVID-19 and chronic health, as well as general health, healthcare services, discrimination, and socio-demographics. To have been eligible, a participant must have identified as 2S/LGBTQIA+, lived in Canada, and have been 15 years of age or older. Participants were recruited through advertisements via 2S/LGBTQIA+ community-based organizations, social media, news media, and social networking sites/apps. Data collection for this study occurred online between April and September of 2022. The University of Victoria, the University of British Columbia, and Simon Fraser University's Research Ethics Boards reviewed

and approved the study protocol (H20-02842). Eligible participants provided informed consent prior to self-completing the online questionnaire. For the current study, only data pertaining to participants who reported being assigned female at birth and having a CHC were included.

Variables

The primary outcomes of interest included five binary variables addressing barriers to healthcare and three binary variables addressing relevant experiences of discrimination. See Table 5.1 for variable names, response options, and frequencies.

Table 5.1. Question and response options for outcome variables

Variable Name	Response Options	*n* (%)
Barriers to Healthcare		
Have you faced barriers in getting a diagnosis?	Yes/No	908 (70.8)
In the last 2 years, have you ever skipped/stopped taking, reduced, or delayed filling/refilling your medication because you could not afford it?	Yes/No	490 (38.2)
Since the beginning of the COVID-19 pandemic, did you experience… difficulty getting an appointment	Yes/No*	824 (64.3)
Since the beginning of the COVID-19 pandemic, did you experience …difficulty contacting a physician, nurse practitioner or nurse to get information or advice	Yes/No*	548 (42.7)
Since the beginning of the COVID-19 pandemic, did you experience … service was not available at time required (i.e., reduced hours of operation)	Yes/No*	509 (39.7)
Experiences of Discrimination		
Since the start of the COVID-19 pandemic, have you experienced discrimination… in health care settings?	Yes/No*	388 (30.3)
What do you feel were the reason(s) for the discrimination… My chronic health condition(s)	Yes/No*	291 (22.7)
What do you feel were the reason(s) for the discrimination… My sex (I.e., assigned at birth)	Yes/No*	224 (17.5)

* Variable came from a select-all-that-apply type question; non-selections were coded as "No." Cases with no selections across the list were treated as missing.

The primary explanatory variables for this analysis were gender identity, sexual identity, and CHCs. Reclassification of gender and sexual identity variables followed a prioritization classification system (20), which reclassified individuals who selected multiple response options into a single category based on a predetermined hierarchy that was vetted by our CAB. For sexual identity, the priority order was lesbian, bisexual, pansexual, asexual, straight, gay, homoflexible, queer, questioning, other. Similarly, for gender, the priority order was trans man, woman, genderqueer, genderfluid, agender, other, nonbinary. For chronic health, participants selected "Yes" or "No" to having a list of 61 alphabetically listed CHCs, any CHCs with no responses were removed from analysis. We later grouped the remaining conditions based on primary and secondary health systems affected, as reported by the National Library of Medicine (21). CHCs not impacting a *primary* body system, such as cancer(s) and long COVID, were classified as multisystem. Asthma remained a standalone category given that prior literature has consistently reported increased prevalence among AFAB-SGM individuals (11,22,23). As CHCs can affect multiple body systems and many participants reported multiple CHCs, these body system categories were individual binary variables that are not mutually exclusive. For the list of body systems and how each CHC was classified, see Supplementary Table 5.1.

We report other demographic variables, including age, location of residence, whether they were a person of colour, education, and financial situation as covariates. We recategorized location of residence into Ontario, Québec, British Columbia (and Yukon Territory), Prairies (i.e., Alberta, Manitoba, Saskatchewan, Northwest Territories, Nunavut), and the Atlantic (i.e.,

New Brunswick, Newfoundland and Labrador, Nova Scotia, Prince Edward Island). We recoded all other covariates into binary variables (see Table 5.2).

Data analysis

After preparing appropriate descriptive statistics for all variables, we ran a series of univariate logistic regressions with each explanatory variable (gender, sexual identity, CHC body systems) on each outcome variable. A multivariate logistic regression model was constructed for each outcome variable using explanatory variables that were significant at an α of 0.05 in the univariate model. Cofounders (age, financial situation, education, location, and being a person of colour) were forced into each multivariate regression model as there are no a priori hypotheses about their individual predictive value (24). Correlation matrices were examined for multicollinearity; no correlation exceeded $\pm$ 0.8 (25). Given that multiple tests were conducted, we applied a Bonferroni correction, giving a corrected α of 0.01 for barriers to care outcomes and 0.017 for discrimination outcomes. All statistical analyses were performed using SPSS Version 29.0.2.0 (26).

Results

Of 1282 AFAB-SGM individuals with CHCs, the average age was 33.4 years (range = 15-92, SD = 10.8). The largest sub-groups were AFAB-CSMW (43.8%), bisexuals (30.0%), those living in Ontario (37.4%), and not people of colour (84.6%). The vast majority (85.6%) of participants reported experiencing at least one barrier to accessing healthcare and 70.8% had experienced a barrier to getting a diagnosis.

Table 5.2. Demographic information for AFAB-SGM individuals with chronic health conditions ($N = 1282$)

Variable	*n*	*%*
Gender		
Genderqueer	155	12.1
Nonbinary	236	18.4
Trans man	200	15.6
Woman	565	44.1
Other	125	9.8
Sexual identity		
Asexual	70	5.5
Bisexual	384	30.0
Gay	40	3.1
Lesbian	282	22.0
Pansexual	194	15.1
Queer	284	22.2
Person of Colour		
No	1084	84.6
Yes	188	14.7
Location		
Ontario	480	37.4
Prairies	216	16.8
British Columbia	267	20.8
Atlantic	209	16.3
Québec	110	8.6
Education		
Highschool or less	276	21.5
Post-secondary	1005	78.4
Financial situation		
Strained	442	34.5
Comfortable	619	48.3
Chronic health condition body system		
Asthma	309	15.2
Autoimmune	488	23.9
Cardiovascular	253	12.4
Chronic Pain	440	21.6
Gastrointestinal	364	17.9
Gynecological	299	14.7
Mental health	921	45.2
Multisystem	213	10.5
Musculoskeletal	396	19.4
Neurological	342	16.8
Respiratory	440	21.6

AFAB-SGM, sexual or gender minority individual assigned female at birth

See Table 5.3 for correlates of barriers to care and Table 5.4 for correlates of experiences of discrimination (supplemental tables 5.2 and 5.3 depict differences between unadjusted and adjusted odds ratios). Across all multivariate models, chronic pain, gastrointestinal, and neurological conditions had the most consistent impact across barriers to care and experiences of discrimination. Those with chronic pain conditions had significantly higher odds of reporting a barrier to getting a diagnosis and experiencing discrimination based on their CHC compared with those without chronic pain conditions. Participants with gastrointestinal conditions also reported significantly higher odds of reporting a barrier to getting a diagnosis and experiencing discrimination in healthcare settings compared with those without gastrointestinal conditions. Participants with neurological conditions reported significantly higher odds of skipping or delaying taking their medication over the last two years and having difficulty getting an appointment with a healthcare provider compared with those without neurological conditions. Finally, those with multisystem conditions reported higher odds of experiencing discrimination based on their CHCs compared with those without multisystem conditions.

In the multivariate models, AFAB-CSMW had lower odds of experiencing barriers to healthcare and discrimination compared with some AFAB-GM identities. All AFAB-GM identity groups reported higher odds of experiencing discrimination in healthcare settings compared with AFAB-CSMW. Additionally, genderqueer individuals had significantly higher odds of experiencing barriers to getting a diagnosis, skipping or delaying taking their medication over the last two years, and having a service not be available, compared with AFAB-CSMW. Trans men and nonbinary individuals both reported significantly lower odds of experiencing

discrimination based on their CHC(s) compared with AFAB-CSMW. There were no significant differences found for sexual identity groups in the multivariate models.

Table 5.3. Logistic Regression Analyses Examining the Associations of Gender, Sexual Identity, and Chronic Health Condition on Various Barriers to Healthcare among AFAB-SGM participants living with a chronic health condition (N = 1282)

	Barriers to diagnosis		Skipped or reduced medication		Difficulty getting an appointment		Difficulty contacting a physician		Service was not available	
	n (%)	AOR [95%CI]	*n* (%)	AOR [95%CI]	*n* (%)	AOR [95%CI]	*n* (%)	AOR [95%CI]	*n* (%)	AOR [95%CI]
Chronic health condition body system										
Asthma	233 (75.4)	—	140 (45.3)	1.39 (0.77 - 2.50)	221 (71.5)	1.5 (0.86 - 2.59)	151 (48.9)	1.34 (0.80 - 2.25)	143 (46.3)	0.82 (0.50 - 1.36)
Autoimmune	381 (78.1)	0.85 (0.50 - 1.43)	208 (42.6)	—	322 (66.0)	—	235 (48.2)	0.82 (0.51 - 1.34)	203 (41.6)	—
Cardiovascular	199 (78.7)	1.40 (0.89 - 2.20)	115 (45.5)	0.92 (0.59 - 1.45)	165 (65.2)	—	118 (46.6)	—	117 (46.2)	0.90 (0.62 - 1.32)
Chronic Pain	365 (83.0)	**2.83 (1.90 - 4.21)**	214 (48.6)	1.37 (0.98 - 1.90)	313 (71.1)	1.27 (0.92 - 1.76)	230 (52.3)	1.48 (1.09 - 2.02)	211 (48.0)	1.22 (0.92 - 1.61)
Gastrointestinal	301 (82.7)	**2.53 (1.39 - 4.58)**	156 (42.9)	—	245 (67.3)	—	188 (51.6)	1.36 (0.81 - 2.28)	159 (43.7)	1.09 (0.81 - 1.46)
Gynecological	242 (80.9)	1.50 (1.00 - 2.24)	137 (45.8)	1.13 (0.80 - 1.61)	219 (73.2)	1.32 (0.93 - 1.88)	151 (50.5)	1.26 (0.91 - 1.75)	139 (46.5)	1.25 (0.93 - 1.69)
Mental health	700 (76.0)	1.00 (0.69 - 1.45)	377 (40.9)	0.87 (0.59 - 1.28)	604 (65.6)	—	426 (46.3)	1.01 (0.70 - 1.45)	383 (41.6)	—
Multisystem	176 (82.6)	1.56 (0.94 - 2.58)	116 (54.5)	1.71 (1.13 - 2.60)	156 (73.2)	1.57 (1.00 - 2.44)	115 (54.0)	1.36 (0.91 - 2.03)	104 (48.8)	1.22 (0.85 - 1.74)
Musculoskeletal	302 (76.3)	1.01 (0.65 - 1.57)	179 (45.2)	0.80 (0.53 - 1.21)	269 (67.9)	—	207 (52.3)	1.53 (1.05 - 2.22)	186 (47.0)	1.09 (0.77 - 1.54)
Neurological	261 (76.3)	1.05 (0.67 - 1.66)	183 (53.5)	**1.91 (1.28 - 2.85)**	251 (73.4)	**1.67 (1.15 - 2.42)**	181 (52.9)	1.11 (0.76 - 1.62)	171 (50.0)	1.46 (1.03 - 2.06)
Respiratory	333 (75.7)		200 (45.5)	0.82 (0.45 - 1.47)	307 (69.8)	0.82 (0.50 - 1.36)	214 (48.6)	0.85 (0.53 - 1.38)	209 (47.5)	1.61 (0.98 - 2.65)
Gender										
Woman	358 (63.4)	*Ref.*	187 (33.1)	*Ref.*	339 (60.0)	*Ref.*	223 (39.5)	*Ref.*	201 (35.6)	*Ref.*
Trans Man	147 (73.5)	1.79 (1.06 - 3.00)	84 (42.0)	1.43 (0.89 - 2.31)	133 (66.5)	1.11 (0.69 - 1.78)	75 (37.5)	0.88 (0.57 - 1.39)	83 (41.5)	1.23 (0.85 - 1.64)
Genderqueer	126 (81.3)	**3.07 (1.66 - 5.69)**	73 (47.1)	**2.12 (1.29 - 3.48)**	115 (74.2)	1.56 (0.92 - 2.64)	83 (53.5)	1.45 (0.91 - 2.31)	80 (51.6)	**1.80 (1.18 - 1.98)**
Nonbinary	180 (76.3)	1.81 (1.15 - 2.87)	87 (36.9)	1.04 (0.68 - 1.60)	151 (64.0)	0.95 (0.63 - 1.43)	103 (43.6)	1.03 (0.70 - 1.53)	92 (39.0)	1.15 (0.80 - 1.18)
Other	97 (77.6)	2.20 (1.15 - 4.22)	59 (47.2)	1.93 (1.13 - 3.29)	85 (68.0)	1.48 (0.83 - 2.64)	64 (51.2)	1.79 (1.07 - 3.00)	53 (42.4)	1.25 (0.80 - 1.99)
Sexual identity										
Lesbian	180 (63.8)	*Ref.*	94 (33.3)	*Ref.*	166 (58.9)	*Ref.*	109 (38.7)	*Ref.*	113 (40.1)	—
Bisexual	263 (68.6)	0.82 (0.54 - 1.26)	147 (38.3)	1.24 (0.81 - 1.89)	234 (60.9)	0.97 (0.65 - 1.44)	158 (41.1)	0.97 (0.66 - 1.42)	138 (35.9)	—
Pansexual	152 (78.4)	1.32 (0.76 - 2.28)	87 (44.8)	1.50 (0.92 - 2.45)	127 (65.5)	1.05 (0.66 - 1.69)	78 (40.2)	0.79 (0.50 - 1.25)	78 (40.2)	—
Queer	209 (73.6)	0.86 (0.53 - 1.40)	105 (37.0)	**1.00 (0.63 - 1.59)**	204 (71.8)	1.64 (1.04 - 2.59)	150 (52.8)	1.54 (1.01 - 2.34)	114 (40.1)	—

Values in **bold** are statistically significant after the Bonferroni correction ($p < 0.01$).
Variables that were not significant ($p > 0.05$) in the univariate models were not included in multivariate models.
The final model adjusted for age, financial situation, education, province, and whether the person is a person of colour.
n (%) represented the frequencies of each group who indicated they has experienced that barrier to healthcare.
CHC, chronic health condition; AOR, adjusted odds ratio; CI, confidence interval; Ref., Reference category.

Table 5.4. Logistic Regression Analyses Examining the Associations of Gender, Sexual Identity, and Chronic Health Condition on Various Experiences of Discrimination among AFAB-SGM participants living with a chronic health condition (N = 1282)

	In health care settings		Based on chronic health condition		Based on sex assigned at birth	
	n (%)	AOR [95%CI]	*n* (%)	AOR [95%CI]	*n* (%)	AOR [95%CI]
Chronic health condition body system						
Asthma	113 (36.6)	1.09 (0.60 - 1.98)	84 (27.2)	—	59 (19.1)	—
Autoimmune	183 (37.2)	0.78 (0.44 - 1.36)	151 (30.9)	1.64 (0.88 - 3.03)	91 (18.6)	—
Cardiovascular	106 (41.9)	1.31 (0.83 - 2.07)	92 (36.4)	1.28 (0.80 - 2.04)	56 (22.1)	—
Chronic Pain	165 (37.5)	1.23 (0.87 - 1.73)	164 (37.3)	**2.56 (1.75 - 3.73)**	88 (20.0)	—
Gastrointestinal	149 (40.9)	**2.16 (1.21 - 3.86)**	117 (32.1)	0.89 (0.46 - 1.70)	77 (21.2)	—
Gynecological	106 (35.5)	—	93 (31.1)	1.24 (0.82 - 1.88)	64 (21.4)	—
Mental health	319 (34.6)	1.21 (0.80 - 1.84)	250 (27.1)	0.95 (0.58 - 1.57)	173 (18.8)	—
Multisystem	92 (43.2)	1.54 (1.00 - 2.35)	83 (39.0)	**1.94 (1.19 - 3.15)**	45 (21.1)	—
Musculoskeletal	151 (38.1)	1.02 (0.67 - 1.56)	134 (33.8)	1.23 (0.77 - 1.96)	79 (19.9)	—
Neurological	141 (41.2)	1.45 (0.96 - 2.19)	133 (38.9)	1.60 (1.02 - 2.52)	69 (20.2)	—
Respiratory	170 (38.6)	1.37 (0.75 - 2.50)	138 (31.4)	1.43 (0.95 - 2.16)	84 (19.1)	—
Gender						
Woman	124 (21.9)	Ref.	121 (21.4)	Ref.	75 (13.3)	—
Trans Man	67 (33.5)	**1.99 (1.21 - 3.26)**	41 (20.5)	**0.49 (0.28 - 0.83)**	34 (17.0)	—
Genderqueer	68 (43.9)	**2.58 (1.57 - 4.26)**	46 (29.7)	0.78 (0.45 - 1.35)	37 (23.9)	—
Nonbinary	85 (36.0)	**2.15 (1.40 - 3.32)**	46 (19.5)	**0.49 (0.30 - 0.82)**	46 (19.5)	—
Other	44 (35.2)	**2.01 (1.16 - 3.51)**	37 (29.6)	0.97 (0.54 - 1.76)	32 (25.6)	—
Sexual identity						
Lesbian	70 (24.8)	Ref.	54 (19.1)	—	39 (13.8)	Ref.
Bisexual	104 (27.1)	0.95 (0.61 - 1.48)	88 (22.9)	—	80 (20.8)	1.71 (1.04 - 2.79)
Pansexual	65 (33.5)	1.00 (0.60 - 1.66)	45 (23.2)	—	40 (20.6)	1.62 (0.91 - 2.88)
Queer	105 (37.0)	1.11 (0.70 - 1.77)	72 (25.4)	—	43 (15.1)	1.07 (0.62 - 1.83)

Values in **bold** are statistically significant after the Bonferroni correction ($p < 0.017$).
Variables that were not significant ($p > 0.05$) in the univariate models were not included in multivariate models.
The final model adjusted for age, financial situation, education, province, and whether the person is a person of colour.
n (%) represented the frequencies of each group who indicated they has experienced that barrier to healthcare.
CHC, chronic health condition; AOR, adjusted odds ratio; CI, confidence interval; Ref., Reference category.

Discussion

This study explored the barriers faced by AFAB-SGM individuals with CHCs in accessing healthcare in Canada. Our results suggest that these individuals face high levels of barriers to healthcare—with a majority reporting difficulty accessing appointments and getting a diagnosis—as well as high levels of perceived discrimination in healthcare settings. Both CHC body systems and gender identity significantly impacted the odds of experiencing certain barriers to healthcare and experiences of discrimination. Sexual identity was not a statistically significant correlate of any barriers to healthcare nor discrimination experienced, which we will discuss later. Overall, this study contributes a more nuanced understanding of barriers to healthcare in 2S/LGBTQIA+ communities by disaggregating AFAB-SGM populations into gender subgroups and examining a range of CHCs simultaneously (in comparison with each other).

Gender identity, specifically GM identities, significantly impacted experiences of discrimination and some barriers to care. All AFAB-GM individuals reported higher odds of discrimination in healthcare settings compared with AFAB-CSMW. AFAB-GM individuals experience explicit forms of discrimination in healthcare systems (4,7,27,28); particularly relevant to GM individuals with CHCs is “trans broken arm syndrome” (4). Trans broken arm syndrome refers to the phenomenon experienced by GM individuals where all health concerns become about their transgender identity, even if the two are unrelated, like being trans and having a broken arm (4). This may be reflected in trans men and nonbinary individuals experiencing higher odds of discrimination in healthcare settings but lower odds of experiencing discrimination based on their CHCs. That is, if their health condition is often attributed to or

overshadowed by their transgender identity, then it may be more challenging to distinguish the perceived source of discrimination. Regardless, these experiences do not promote safe or comfortable relationships with healthcare providers and may perpetuate delays or avoidance of seeking care (3).

Further, previous research suggests that healthcare providers feel that they have a poor understanding of GM identities, including how to talk about them or how to provide care (3,29,30), with many GM individuals having to educate their healthcare providers on transgender identities in order to receive adequate care (30). Heightened perception of discrimination in healthcare settings among AFAB-GM individuals may also be reflective of healthcare providers' discomfort and lack of education in the health needs of GM individuals (7,27,28). Paine (3) discusses this disconnect in the understanding of identities in healthcare providers as particularly salient in nonbinary and gender non-conforming individuals, which may explain higher odds of experiencing barriers to care in genderqueer individuals, who are rarely explicitly discussed in research and thus even more poorly understood.

Despite a body of research highlighting AFAB-SGM individuals having a strained relationship with healthcare systems and providers (2,3,5–7), sexual identity did not significantly impact the likelihood of experiencing barriers to healthcare or discrimination. The lack of significance here is surprising given the literature that suggests that bisexual individuals, particularly bisexual women, are at increased risk for physical (31,32) and mental (33) health disparities, and more reluctant to use healthcare services compared to other sexual minority individuals (32). This finding, or lack thereof, may be because of the heterogeneity of sexual

identity groups in this study, where variation in gender within the sexual identity groups may obscure previously found inequities when looking at cisgender sexual minority individuals alone. Further, as healthcare systems remain heavily structured around binary sex/gender classifications (2,3,16), sexual identity may have a lesser impact on experiences in healthcare as opposed to gender identity and CHCs in this group. This is not to say that sexual minority individuals do not experience barriers to healthcare or discrimination in healthcare settings, but rather these experiences may be more strongly shaped by gender in our sample.

In addition to identity-based differences, CHC body systems were significantly associated with some barriers to care and experiences of discrimination. Participants with chronic pain and gastrointestinal conditions had higher odds of experiencing barriers to getting a diagnosis. These types of CHCs have a long history of minimization, delayed diagnosis, and misdiagnosis in AFAB people (34,35), despite these conditions disproportionately impacting this population (14,34–36). Several previous studies(34-36) suggest that delayed and misdiagnosis of these conditions stem from systemic sex-based biases that more frequently attribute symptoms of these conditions to "functional rather than organic disorders" in AFAB individuals (35), meaning conditions without a clear medical cause, often associated with being psychosomatic (37). The healthcare system's treatment of these conditions has been likened to modern-day hysteria (14). It is then unsurprising that participants who reported chronic pain conditions or multisystem conditions had high odds of experiencing CHC-related discrimination. This finding may be capturing the intersection of the pathologization of women's (14,15) and 2S/LGBTQIA+ communities' (4,15,38,39) health.

Finally, it is worth noting that many of the barriers to healthcare reported by 2S/LGBTQIA+ individuals have less to do with logistical barriers like getting an appointment or accessing a service, and more with systemic oppression, like homophobia and transphobia (2,7), language and communication with healthcare providers (3,18,29,30), and the need for culturally appropriate healthcare outside of sexual health (27,40). Nevertheless, these experiences in healthcare settings—illustrated by the logistic barriers to care and experiences of discrimination—may represent tangible manifestations of the systemic barriers at the root of the precarious relationship between AFAB-SGM individuals and power within healthcare systems.

Strengths and Limitations

There are several strengths in this study that make it an important contribution to the field. First, this research explores the experiences of an often under-researched population (41) through a broad and inclusive lens. Although using an ASAB lens is imperfect, this approach allowed us to examine both the unique and shared experiences of AFAB-SGM individuals across a wide range of identities and CHCs that have not been well-represented in contemporary literature, particularly in relation to barriers to healthcare. Importantly, this lens allowed us to explore how forms of discrimination, such as transphobia and medical sexism, may intersect to impact access to healthcare. Second, participants did not need to have a clinical diagnosis of the CHC(s) they selected. With a large majority of the sample (70.8%) reporting barriers to getting a diagnosis, this allows us to acknowledge that a diagnosis is not always easily attainable for people with CHCs.

This study is not without limitations. Data for the Our Health study were collected while the COVID-19 pandemic was still considered a public health emergency (39). Due to the ubiquity of healthcare inaccessibility during this time, healthcare disparity differences across explanatory variables may have been suppressed, particularly in barriers to healthcare. Future research is needed to explore disparities in barriers to healthcare within this population so that we can transform healthcare systems as we attempt to recover from the COVID-19 pandemic. Statistically, multiple univariate and multivariate logistic regression models were run. Our approach to model building, using statistical significance at the univariate level, risks excluding variables that may be part of complex relationships between explanatory variables. Although we applied a Bonferroni correction to account for family-wise error, this correction is conservative and may obscure meaningful associations. For this reason, we included 95% confidence intervals.

Conclusion

This study highlights the continued presence of sex-based biases and how identity and CHCs can shape access to healthcare. Despite limited differences by sexual identity, multiple differences based on gender identity and certain chronic conditions, particularly those that disproportionately impact AFAB individuals (31–33), underscore ongoing discrimination in healthcare settings and difficulty getting diagnoses. As both gender differences in diagnosis (32) and experiences of discrimination (4,18,40) can be attributed to healthcare provider biases, these health disparities must be addressed through reforming healthcare systems and provider education to challenge structural sexism, homophobia, and transphobia (41). Future research

should examine systemic biases in healthcare providers and how these biases are perpetuated through provider education, practice, and policy.

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Supplementary Table 5.1. Chronic health conditions included in each body system category

Primary Body System Categories	Chronic Health Condition
Asthma	Asthma
Autoimmune	HIV/AIDS, Alopecia areata, Celiac disease, Crohn's disease, Graves' disease, Hashimoto's thyroiditis, Irritable bowel syndrome (IBS), Lupus, Multiple Sclerosis, Rheumatoid arthritis, Sjögren's syndrome, Ulcerative colitis, Vitiligo
Cardiovascular	Heart disease, Postural Orthostatic Tachycardia Syndrome (POTS), Raynaud's syndrome
Chronic pain	Chronic pain (not described elsewhere)
Connective tissue	Ehlers-Danlos syndromes (EDS)
Endocrine	Postural Orthostatic Tachycardia Syndrome (POTS), Uterine fibroids, Gestational Diabetes, Type 1 Diabetes, Type 2 Diabetes
Gastrointestinal	Celiac disease, Crohn's disease, Irritable bowel syndrome (IBS), Ulcerative colitis
Gynecological	Endometriosis, Polycystic ovary syndrome (PCOS), Uterine fibroids
Inflammatory	Ankylosing spondylitis, Gout, Psoriasis or psoriatic arthritis
Mental Health	Mental Health conditions, Premenstrual dysphoric disorder (PMDD)
Mental Health ONLY	Mental Health conditions, Premenstrual dysphoric disorder (PMDD)
Multisystem	Long COVID, Cancer, Myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS)
Musculoskeletal	Carpal tunnel syndrome, Fibromyalgia, Muscular dystrophy, Osteoarthritis, Osteoporosis, Scoliosis, Tendonitis
Neurological	Amyotrophic lateral sclerosis (ALS), Cerebral palsy, Dystonia, Epilepsy, Huntington's disease, Hydrocephalus, Mild cognitive impairment, Neurotrauma, Parkinson's disease, Spina bifida, Traumatic brain injury (TBI), Dementia
Respiratory	Asthma, Chronic Obstructive Pulmonary Disease (COPD), Cystic fibrosis, Long COVID, Sleep Apnea
Sensory (Auditory & Visual)	Hearing and Vision Loss
Other	Kidney disease, Hepatitis B & C

Supplementary Table 5.2. Odds Ratio and Adjusted Odds Ratio for Logistic Regression Analyses Examining the Associations of Gender, Sexual Orientation, and Chronic Health Condition on Barriers to Healthcare (N = 1282)

	Barriers to diagnosis		Skipped or reduced medication		Difficulty getting an appointment		Difficulty contacting a physician		Service was not available	
	OR [95%CI]	AOR [95%CI]	OR [95%CI]	AOR [95%CI]	OR [95%CI]	AOR [95%CI]	OR [95%CI]	AOR [95%CI]	OR [95%CI]	AOR [95%CI]
CHC										
Asthma	1.21 (0.9 - 1.63)	—	**1.37 (1.05 - 1.79)**	1.39 (0.77 - 2.50)	**1.56 (1.15 - 2.12)**	1.5 (0.86 - 2.59)	**1.36 (1.05 - 1.78)**	1.34 (0.80 - 2.25)	**1.36 (1.05 - 1.78)**	0.82 (0.50 - 1.36)
Autoimmune	**1.76 (1.34 - 2.3)**	0.85 (0.50 - 1.43)	1.26 (0.99 - 1.59)	—	1.13 (0.88 - 1.47)	—	**1.45 (1.15 - 1.84)**	0.82 (0.51 - 1.34)	**1.45 (1.15 - 1.84)**	—
Cardio	**1.57 (1.12 - 2.2)**	1.40 (0.89 - 2.20)	**1.33 (1.00 - 1.77)**	0.92 (0.59 - 1.45)	0.94 (0.69 - 1.28)	—	1.15 (0.87 - 1.53)	—	1.15 (0.87 - 1.53)	0.90 (0.62 - 1.32)
Chronic Pain	**2.63 (1.95 - 3.55)**	**2.83 (1.90 - 4.21)**	**1.81 (1.42 - 2.31)**	1.37 (0.98 - 1.90)	**1.51 (1.16 - 1.98)**	1.27 (0.92 - 1.76)	**1.74 (1.37 - 2.21)**	1.48 (1.09 - 2.02)	**1.74 (1.37 - 2.21)**	1.22 (0.92 - 1.61)
Gastrointestinal	**2.53 (1.83 - 3.49)**	**2.53 (1.39 - 4.58)**	1.24 (0.96 - 1.6)	—	1.27 (0.96 - 1.69)	—	**1.74 (1.35 - 2.25)**	1.36 (0.81 - 2.28)	**1.74 (1.35 - 2.25)**	1.09 (0.81 - 1.46)
Gynecological	**1.85 (1.34 - 2.57)**	1.50 (1.00 - 2.24)	**1.37 (1.04 - 1.79)**	1.13 (0.80 - 1.61)	**1.54 (1.13 - 2.09)**	1.32 (0.93 - 1.88)	**1.39 (1.07 - 1.82)**	1.26 (0.91 - 1.75)	**1.39 (1.07 - 1.82)**	1.25 (0.93 - 1.69)
Mental health	**2.09 (1.6 - 2.75)**	1.00 (0.69 - 1.45)	**1.33 (1.02 - 1.74)**	0.87 (0.59 - 1.28)	1.04 (0.78 - 1.37)	—	**1.58 (1.22 - 2.06)**	1.01 (0.70 - 1.45)	**1.58 (1.22 - 2.06)**	—
Multisystem	**1.93 (1.32 - 2.83)**	1.56 (0.94 - 2.58)	**2.13 (1.56 - 2.89)**	1.71 (1.13 - 2.60)	**1.66 (1.16 - 2.38)**	1.57 (1.00 - 2.44)	**1.71 (1.25 - 2.32)**	1.36 (0.91 - 2.03)	**1.71 (1.25 - 2.32)**	1.22 (0.85 - 1.74)
Musculoskeletal	1.43 (1.08 - 1.9)	1.01 (0.65 - 1.57)	**1.46 (1.14 - 1.88)**	0.80 (0.53 - 1.21)	1.21 (0.92 - 1.59)	—	**1.74 (1.36 - 2.22)**	1.53 (1.05 - 2.22)	**1.74 (1.36 - 2.22)**	1.09 (0.77 - 1.54)
Neurological	1.42 (1.05 - 1.91)	1.05 (0.67 - 1.66)	**2.27 (1.75 - 2.95)**	**1.91 (1.28 - 2.85)**	**1.64 (1.22 - 2.21)**	**1.67 (1.15 - 2.42)**	**1.67 (1.29 - 2.16)**	1.11 (0.76 - 1.62)	**1.67 (1.29 - 2.16)**	1.46 (1.03 - 2.06)
Respiratory	1.31 (1. - 1.71)		**1.43 (1.12 - 1.82)**	0.82 (0.45 - 1.47)	**1.39 (1.06 - 1.81)**	0.82 (0.50 - 1.36)	**1.39 (1.09 - 1.76)**	0.85 (0.53 - 1.38)	**1.39 (1.09 - 1.76)**	1.61 (0.98 - 2.65)
Gender										
Woman	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*
Trans Man	**1.63 (1.13 - 2.37)**	1.79 (1.06 - 3.00)	**1.5 (1.07 - 2.12)**	1.43 (0.89 - 2.31)	1.32 (0.91 - 1.9)	1.11 (0.69 - 1.78)	0.89 (0.63 - 1.25)	0.88 (0.57 - 1.39)	0.89 (0.63 - 1.25)	1.23 (0.85 - 1.64)
Genderqueer	**2.74 (1.71 - 4.39)**	**3.07 (1.66 - 5.69)**	**1.86 (1.28 - 2.71)**	**2.12 (1.29 - 3.48)**	**2.08 (1.33 - 3.25)**	1.56 (0.92 - 2.64)	**1.79 (1.24 - 2.61)**	1.45 (0.91 - 2.31)	**1.79 (1.24 - 2.61)**	**1.8 (1.18 - 1.98)**
Nonbinary	**2.04 (1.41 - 2.96)**	1.81 (1.15 - 2.87)	1.2 (0.86 - 1.66)	1.04 (0.68 - 1.60)	1.17 (0.83 - 1.64)	0.95 (0.63 - 1.43)	1.17 (0.85 - 1.61)	1.03 (0.70 - 1.53)	1.17 (0.85 - 1.61)	1.15 (0.80 - 1.18)
Other	**2.11 (1.31 - 3.41)**	2.20 (1.15 - 4.22)	**1.79 (1.2 - 2.69)**	1.93 (1.13 - 3.29)	1.54 (0.97 - 2.44)	1.48 (0.83 - 2.64)	**1.69 (1.12 - 2.54)**	1.79 (1.07 - 3.00)	**1.69 (1.12 - 2.54)**	1.25 (0.80 - 1.99)
Sexual identity										
Lesbian	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	—
Bisexual	**1.31 (0.93 - 1.83)**	0.82 (0.54 - 1.26)	1.31 (0.94 - 1.82)	1.24 (0.81 - 1.89)	1.15 (0.82 - 1.62)	0.97 (0.65 - 1.44)	1.15 (0.83 - 1.59)	0.97 (0.66 - 1.42)	1.15 (0.83 - 1.59)	—
Pansexual	**2.21 (1.42 - 3.43)**	1.32 (0.76 - 2.28)	**1.75 (1.18 - 2.58)**	1.50 (0.92 - 2.45)	1.38 (0.92 - 2.08)	1.05 (0.66 - 1.69)	1.07 (0.73 - 1.57)	0.79 (0.50 - 1.25)	1.07 (0.73 - 1.57)	—
Queer	**1.73 (1.19 - 2.52)**	0.86 (0.53 - 1.40)	1.17 (0.82 - 1.66)	1.00 (0.63 - 1.59)	**1.86 (1.27 - 2.73)**	1.64 (1.04 - 2.59)	**1.79 (1.27 - 2.53)**	1.54 (1.01 - 2.34)	**1.79 (1.27 - 2.53)**	—

Values in bold are statistically significant.

Variables that were not significant ($p > 0.05$) in the univariate models were not included in multivariate models.

The final model adjusted for age, financial situation, education, province, and whether the person is a person of colour.

CHC, chronic health condition; AOR, adjusted odds ratio; CI, confidence interval; Ref., Reference category.

Supplementary Table 5.3. Odds Ratio and Adjusted Odds Ratio for Logistic Regression Analyses Examining the Associations of Gender, Sexual Orientation, and Chronic Health Condition on Experiences of Discrimination (N = 1282)

	In health care settings		Based on chronic health condition		Based on sex assigned at birth	
	OR [95%CI]	AOR [95%CI]	OR [95%CI]	AOR [95%CI]	OR [95%CI]	AOR [95%CI]
CHC						
Asthma	**1.51 (1.13 - 2.02)**	1.09 (0.6 - 1.98)	1.28 (0.92 - 1.79)	—	1.03 (0.73 - 1.47)	—
Autoimmune	**1.75 (1.35 - 2.26)**	0.78 (0.44 - 1.36)	**2.08 (1.54 - 2.81)**	1.64 (0.88 - 3.03)	0.98 (0.71 - 1.35)	—
Cardio	**1.71 (1.27 - 2.32)**	1.31 (0.83 - 2.07)	**2.13 (1.51 - 3.01)**	1.28 (0.8 - 2.04)	1.16 (0.81 - 1.67)	—
Chronic Pain	**1.61 (1.24 - 2.09)**	1.23 (0.87 - 1.73)	**3.49 (2.56 - 4.75)**	**2.56 (1.75 - 3.73)**	1.06 (0.77 - 1.46)	—
Gastrointestinal	**2.04 (1.55 - 2.68)**	**2.16 (1.21 - 3.86)**	**2.01 (1.47 - 2.75)**	0.89 (0.46 - 1.7)	1.25 (0.9 - 1.75)	—
Gynecological	1.21 (0.91 - 1.61)	0. (0. - 0.)	**1.68 (1.21 - 2.33)**	1.24 (0.82 - 1.88)	1.23 (0.86 - 1.74)	—
Mental health	**2.09 (1.54 - 2.85)**	1.21 (0.8 - 1.84)	**2.52 (1.71 - 3.71)**	0.95 (0.58 - 1.57)	1.05 (0.73 - 1.53)	—
Multisystem	**2.32 (1.66 - 3.23)**	1.54 (1. - 2.35)	**3.4 (2.3 - 5.02)**	**1.94 (1.19 - 3.15)**	1.28 (0.86 - 1.92)	—
Musculoskeletal	**1.67 (1.28 - 2.18)**	1.02 (0.67 - 1.56)	**2.33 (1.71 - 3.17)**	1.23 (0.77 - 1.96)	1.07 (0.77 - 1.48)	—
Neurological	**2.07 (1.57 - 2.74)**	1.45 (0.96 - 2.19)	**3.12 (2.27 - 4.3)**	1.6 (1.02 - 2.52)	1.01 (0.72 - 1.42)	—
Respiratory	**1.83 (1.41 - 2.37)**	1.37 (0.75 - 2.5)	**1.92 (1.42 - 2.59)**	1.43 (0.95 - 2.16)	0.98 (0.71 - 1.35)	—
Gender						
Woman	*Ref.*	*Ref.*	*Ref.*	*Ref.*	*Ref.*	—
Trans Man	**1.84 (1.27 - 2.68)**	**1.99 (1.21 - 3.26)**	**0.62 (0.4 - 0.97)**	**0.49 (0.28 - 0.83)**	0.99 (0.62 - 1.59)	—
Genderqueer	**3.04 (2.03 - 4.56)**	**2.58 (1.57 - 4.26)**	0.99 (0.63 - 1.55)	0.78 (0.45 - 1.35)	1.44 (0.89 - 2.32)	—
Nonbinary	**2.04 (1.44 - 2.89)**	**2.15 (1.4 - 3.32)**	**0.6 (0.39 - 0.91)**	**0.49 (0.3 - 0.82)**	1.24 (0.8 - 1.92)	—
Other	**2.19 (1.4 - 3.43)**	**2.01 (1.16 - 3.51)**	1.09 (0.67 - 1.78)	0.97 (0.54 - 1.76)	1.76 (1.05 - 2.94)	—
Sexual identity						
Lesbian	*Ref.*	*Ref.*	*Ref.*	—	*Ref.*	*Ref.*
Bisexual	1.21 (0.84 - 1.75)	0.95 (0.61 - 1.48)	1.24 (0.81 - 1.89)	—	1.68 (1.07 - 2.65)	1.71 (1.04 - 2.79)
Pansexual	**1.64 (1.08 - 2.51)**	1. (0.6 - 1.66)	1.28 (0.77 - 2.1)	—	1.67 (0.99 - 2.84)	1.62 (0.91 - 2.88)
Queer	**1.87 (1.28 - 2.74)**	1.11 (0.7 - 1.77)	1.35 (0.86 - 2.1)	—	0.99 (0.6 - 1.64)	1.07 (0.62 - 1.83)

Values in bold are statistically significant.
Variables that were not significant ($p > 0.05$) in the univariate models were not included in multivariate models.
The final model adjusted for age, financial situation, education, province, and whether the person is a person of colour.
CHC, chronic health condition; AOR, adjusted odds ratio; CI, confidence interval; Ref., Reference category.

Chapter 6: Discussion

The purpose of this chapter is to provide a summary of the research I conducted for this dissertation and place my findings within a broader context. As the three previous chapters were each written as a self-contained manuscript for publication, in this chapter, I will discuss the results broadly and explore the overall implications of this work. First, I will provide a brief summary of each manuscript before discussing the implications of this work as a whole. I will then address the limitations of this research. Finally, I will suggest directions for future research to build upon these topics and ensure that health disparities among AFAB-SGM individuals are adequately addressed in health research.

Manuscript 1: Prevalence of Chronic Health Conditions in 2S/LGBTQIA+ Individuals Assigned Female at Birth in Canada

The goal of this paper was to address the significant knowledge gap in the reporting of chronic health conditions among AFAB-SGM individuals. Although comparisons to AMAB-SGM individuals were made, most notably, this manuscript explored intra-group differences by sexual and gender identity in AFAB individuals. Our results show that significantly more AFAB-SGM individuals (62.9%) report having at least one chronic health condition compared with AMAB-SGM individuals (43.7%) and the Canadian national prevalence estimate (45.1%, Statistics Canada, 2023). AFAB-SGM and AFAB-GM individuals had significantly increased prevalence of specific types of chronic health conditions compared with AMAB-SGM individuals and AFAB-CSMW, respectively. These findings underscore the urgent need for healthcare systems and research to more adequately address chronic health disparities across AFAB-SGM communities. Further, this study highlights the necessity of expanding the representation of sexual and gender identities included in health research.

Manuscript 2: Chronic health condition management in sexual and gender minority individuals assigned female at birth in Canada

The second manuscript explored the types of care AFAB-SGM individuals with chronic health conditions use to manage their health conditions, with a focus on primary care, self-management, and community supports. A majority of participants reported using primary care (71.1%) and self-management of their chronic health conditions (64.8%). Further, approximately half (50.6%) used both primary care and self-managed their chronic health condition. All AFAB-GM subgroups and those with chronic pain conditions had higher odds of self-managing their chronic health conditions. Genderqueer individuals and those with mental health conditions had higher odds of using community supports. Neither gender, sexual identity, nor type of chronic health conditions significantly impacted the use of primary care. Our findings suggest that health management strategies may function not only for symptom management, but also as a response to experiences of discrimination. Research, policy, and practice reform are needed to ensure healthcare is accessible and affirming for AFAB-SGM individuals managing chronic health conditions.

Manuscript 3: Barriers to healthcare for sexual and gender minority individuals assigned female at birth with chronic health conditions

The final manuscript examined common barriers to healthcare services experienced by AFAB-SGM individuals with chronic health conditions. Most participants (85.6%) reported experiencing at least one barrier to care and a majority of participants reported difficulties obtaining a diagnosis (70.8%) and getting an appointment (64.3%). Some chronic health

conditions and gender-minority identities were associated with higher odds of experiencing barriers to diagnosis and chronic health condition-based discrimination. These findings highlight the continued presence of sex-based biases and how identity and chronic health conditions can shape access to healthcare. Future research should examine systemic biases in healthcare providers and how these biases are perpetuated through provider education, practice, and policy.

Summative Contributions

Collectively, the findings presented in these papers provide a necessary and overdue exploration of the experiences of AFAB-SGM individuals with chronic health conditions that are important for healthcare providers and researchers working with this community. The results of this project highlight the range of chronic health conditions that impact AFAB-SGM individuals and ongoing systemic barriers that impede these individuals from seeking healthcare and managing their chronic health conditions. As highlighted in Chapter 1, there is a dearth of information on the health and healthcare experiences of this group as a whole, let alone within the nuanced sexual and gender identity subgroups of AFAB-SGM; the results of this dissertation then comprise a significant contribution to the field.

I identified several themes across the three papers that build upon the extant body of research on AFAB-SGM individuals with chronic health conditions. First, I suggest that the findings of these studies highlight the necessity of moving beyond sexual and mental health when we examine the impacts of SGM identities on health. I then discuss how differences in health management and barriers to care based on type of chronic health condition may be

reflective of the continued presence of sex-based biases in healthcare systems. Finally, I discuss the limited differences among sexual and gender identity groups across the three papers.

Moving Beyond Sexual and Mental Health

Health disparities in 2S/LGBTQIA+ individuals have historically been examined through a relatively narrow lens, focusing primarily on sexual or mental health (Eidelberg et al., 2024; Weideman et al., 2025). Research that does explore chronic health conditions among these individuals includes only a limited range of conditions (Cicero et al., 2020; Eliason, 2014; Patterson & Jabson, 2018), despite evidence suggesting a higher prevalence of chronic health conditions in 2S/LGBTQIA+ and AFAB individuals (Cicero et al., 2020; Decker et al., 2025; Pollack et al., 2023). Previous research on chronic health conditions in AFAB-SGM individuals almost exclusively reported on asthma, cardiovascular disease, obesity, breast cancer, and mental health conditions (Cicero et al., 2020; Eliason, 2014; Patterson & Jabson, 2018; Pettinicchio et al., 2021); in contrast, autoimmune (23.9%), chronic pain (21.6%), musculoskeletal (19.4%), gastrointestinal (17.9%), and neurological (16.8%) conditions were among the most prevalent conditions in this sample, in addition to mental health conditions (54.2%). The results of this research, particularly Chapter 3, expand upon this body of research by reporting prevalence across a wide range of conditions, including asthma, chronic pain, autoimmune, cardiovascular, connective tissue, musculoskeletal, neurological, respiratory, gastrointestinal, and endocrine system conditions in both AFAB-SGM and AMAB-SGM individuals. The findings of this study are a key step in challenging the narrative that sexual and gender identity are only relevant to research on sexual and mental health (Eidelberg et al., 2024; Weideman et al., 2025).

Although Chapters 4 and 5 provide a less direct commentary on the importance of extending the reach of 2S/LGBTQIA+ health research, they highlight the substantial proportion of AFAB-SGM individuals with precarious engagement with healthcare systems. A majority of participants reported facing barriers to getting a diagnosis (70.8%), difficulty getting an appointment (64.3%), and engaging in self-management of their chronic health conditions (64.8%), all while seemingly accessing primary care (71.1%). Further, the absence of significant differences across sexual identity for these outcomes—which I will discuss in further detail below—points to the ubiquitous nature of these experiences for AFAB-SGM individuals. These findings demonstrate how SGM identities shape individuals' experience of health and healthcare systems, reinforcing the importance of broadening the scope of 2S/LGBTQIA+ health research.

Sex-Based Bias in Healthcare

The results of this dissertation also add to the pertinent discussion about the continued presence of sex-based biases in healthcare, particularly the presence and treatment of conditions Green (2021) labels as "wastebasket diagnoses" (p. 4)—a vague diagnosis given for the sake of labelling but without sufficient medical exploration of the symptoms (Green, 2021). As discussed in previous chapters, chronic health conditions that have been shown to disproportionately affect AFAB individuals (e.g., chronic pain, fibromyalgia, Myalgic encephalomyelitis/chronic fatigue syndrome, and gastrointestinal conditions; Green, 2021) have been likened to contemporary manifestations of hysteria, where symptoms are frequently initially associated with being psychosomatic (Green, 2021; Walitt et al., 2016) or diagnosis is "disproportionally dependent on demographic and social factors rather than the symptoms

themselves" (Walitt et al., 2016, p. 2). Aligned with this body of research, our findings suggest not only an increased prevalence of these conditions among AFAB-SGM individuals, particularly among AFAB-GM individuals, but also higher odds of reporting difficulties in healthcare systems. In fact, despite finding significantly higher prevalence of nearly every type of chronic health condition among AFAB-SGM individuals, significant differences in barriers to care and health management were almost exclusively found among those with these types of chronic health conditions (e.g., chronic pain, gastrointestinal, and mental health conditions). These results point to persistent challenges in how the health of AFAB individuals with chronic health conditions is recognized, taken seriously, and supported in healthcare settings.

Mental health conditions may represent an interesting intersection of persistent bias in healthcare systems among AFAB-SGM individuals with chronic health conditions. Aligned with previous research (Bostwick & Harrison, 2020; Cicero et al., 2020; Kuper et al., 2020; Statistics Canada, 2024; Weiß et al., 2020), mental health conditions were the most commonly reported type of chronic health condition (42.2% of the total sample), with significantly higher prevalence in AFAB-SGM individuals and AFAB-GM individuals compared with their AMAB and CSMW counterparts, respectively. It is important to note that these differences in prevalence represent individuals with mental health conditions *and* another type of chronic health condition. These patterns may reflect the genuine mental health impacts of systemic and interpersonal homo-/trans-phobia (Walch et al., 2016), the isolation of managing chronic health (Decker et al., 2025), and the ways in which healthcare systems continue to pathologize SGM behaviours (Weideman et al., 2025) and the health of AFAB individuals (Green, 2021). It is then unsurprising that

AFAB-SGM individuals with mental health conditions were more likely to use community-based supports to manage their health. The presence of a mental health condition may further minimize the recognition or legitimacy of other chronic health conditions among AFAB-SGM individuals, as symptoms may then be more easily dismissed as "functional rather than organic" (Sempere et al., 2023, p. 1892). While community supports can offer meaningful and affirming support to AFAB-SGM individuals with chronic health conditions (Reynolds et al., 2018; Sematlane et al., 2021; Town et al., 2022), they likely function similarly to, or within, self-management interventions (Sematlane et al., 2021; Town et al., 2022; Van de Velde et al., 2019), as both are pivotal to health management and serve avoidance of traditional healthcare settings (Town et al., 2022). This layering of bias—rooted in historic bias toward both sex and SGM identity—may exacerbate the existing difficulties AFAB-SGM individuals face in receiving diagnosis, treatment, and support for chronic health conditions.

Together, these findings demonstrate how the feminist-of-colour disability framework situates disability or chronic health as a relationship to power (Bailey & Mobley, 2019; Schalk & Kim, 2020). From a feminist-of-colour disability perspective health and experiences in healthcare are shape through structurally upheld oppression that perpetuate barriers to care (Bailey & Mobley, 2019). As evident through the findings of this research, these barriers are not necessarily the direct inaccessibility of healthcare, but can be experienced through diagnostic bias and systemic neglect (Bailey & Mobley, 2019). While this may be the most apparent in the presence of diagnostic bias as outlined above, disparities in access to care and health management strategies for AFAB-GM individuals and those with conditions that

disproportionally impact AFAB individuals highlight the compounded effects of marginalization on how an individual may experience or manage their chronic health conditions. Although some factors, like ethnicity, were controlled for in these analyses, racism, ableism, heteropatriarchy, and capitalism all intersect to shape the lived realities of people with chronic health conditions (Bailey & Mobley, 2019; Schalk & Kim, 2020) and should be intentionally explored in individuals with chronic health conditions and their experiences in healthcare.

Gender and Sexual Identity

In addition to focusing on AFAB-SGM individuals as an under-researched population generally, the analyses of all three manuscripts were disaggregated by both sexual and gender identity. By examining identity subgroups within this population, this research highlights significant intra-group differences as well as important similarities across identity groups.

Gender Identity. Gender identity emerged as a more influential factor than sexual identity across all three papers. The findings of this work suggest a higher prevalence of most chronic health conditions among AFAB-GM individuals compared with AFAB-CSMW (i.e., autoimmune, cardiovascular, chronic pain, gastrointestinal, musculoskeletal, and neurological conditions). While there is a dearth of research on chronic health conditions among GM individuals, there is a significant and growing recognition of the discrimination these individuals face in healthcare settings and the subsequent impact on their engagement with healthcare (Cicero et al., 2020; Eidelberg et al., 2024; Harb et al., 2019; Paine, 2018). Poor healthcare provider education and exacerbated explicit and structural transphobia result in lower engagement with healthcare (Beagan et al., 2015; Murphy, 2016; Paine, 2018). Our findings

across Chapters 4 and 5 provide support for these conclusions, where all AFAB-GM subgroups had higher odds of experiencing discrimination in healthcare settings and self-managing their chronic health conditions compared with AFAB-CSMW. Although research on chronic health management among SGM individuals has primarily focused on mental health, these findings support the suggestion that self-managing chronic health conditions may function, in part, as a way to circumvent traditional healthcare settings where these individuals experience high levels of discrimination (Town et al., 2022).

Interestingly, genderqueer individuals emerged as the only gender group to have significantly different healthcare experiences than the other AFAB-GM subgroups and CSMW. This finding was particularly salient in the barriers to care paper, where AFAB genderqueer individuals had higher odds of facing barriers to getting a diagnosis, having to skip or reduce medication due to cost, and having a needed service not be available. Very little health research has disaggregated gender identity beyond cisgender, transgender, and nonbinary due to the aforementioned unreliable or non-existent measurement/documentation of diverse gender identities (Cicero et al., 2020; Jones et al., 2020). However, previous research indicates that healthcare providers often have poorer understandings of nonbinary and gender-diverse identities compared with binary transgender identities (Kattari et al., 2020; Paine, 2018), with genderqueer identities perhaps functioning as the strongest dose-response example of this. This lack of knowledge can result in providers feeling unsure of how to talk about or provide care to these individuals, leading to disengagement from the interaction from both the patient and healthcare providers (Cruz, 2014; Kattari et al., 2020; Paine, 2018). Given the even greater lack of

representation of identities like genderqueer in health literature, the disconnect between these individuals and healthcare providers may be exacerbated. This may be reflected in our findings that AFAB genderqueer individuals had higher odds of using community supports to manage their chronic health condition(s). Taken together, these findings serve as a crucial foundation for the further examination of health among AFAB-GM individuals and the importance of recognizing a more fulsome spectrum of identity in future health research.

Sexual Identity. Our findings revealed scant differences across sexual identity subgroups of AFAB-SGM individuals. Sexual identity was either nonsignificant enough to be removed from the model or was a non-significant factor for all outcomes in Chapters 4 and 5. Given the more developed body of research on the health and healthcare experiences of lesbian, gay, and bisexual individuals, especially those comparing lesbian with bisexual women (Bränström et al., 2016; Dearing & Hequembourg, 2014; Dibble et al., 2007; Eliason, 2014; Jowett & Peel, 2009; Patterson & Jabson, 2018), the lack of difference found across these papers is somewhat unexpected and may suggest that other factors, such as gender identity or type of chronic health condition, play a more significant role in the healthcare experiences of AFAB-SGM individuals.

I can rationalize these findings, or lack thereof, in two ways. First, as discussed in the introduction, AFAB-SGM includes a wide range of sexual and gender identities; further, these identities are not mutually exclusive. For example, the bisexual subgroup includes bisexual women, bisexual trans men, and other gender minority individuals who are bisexual. The heterogeneity of these sexual identity subgroups may obscure differences within gender identity groups (e.g., lesbian versus bisexual women or queer versus pansexual trans men). Given the

greater diversity of sexual and gender identity among AFAB-SGM individuals in the Our Health sample and the significance of gender identities—especially GM identities—across these studies, the lack of difference among sexual identity groups may not be so surprising in hindsight. Future research should explicitly examine sexual identity within gender subgroups rather than including AFAB-GM individuals across various sexual identities. Nonetheless, these findings may underscore ubiquitous experiences of discrimination, barriers to care, and health management strategies across members of these sexual identity subgroups.

Second, our focus on those with chronic health conditions and their experiences in healthcare lends to factors that more directly impact how a person engages with healthcare systems and providers. Both the type of chronic health condition a person has, and their gender identity are forward-facing in healthcare experiences, where sexual identity may not be. This is reasonably straightforward in terms of chronic health conditions, both as the presumed reason the person is seeking care and for influencing the types of care that may be required. Similarly, gender identity impacts every interaction with healthcare systems and providers for GM individuals in terms of recognition and appropriately gendered language, disclosure of gender identity, and dysphoria in discussions and examinations of anatomy. However, sexual identity is considered irrelevant to many healthcare providers when treating patients outside of sexual health (Beagan et al., 2015), and thus may not be asked about or acknowledged. This is not to say that sexual identity cannot or does not impact how a person engages with healthcare but rather those impacts are reasonably lesser than that of chronic health condition or gender identity in the current sample.

Varied acceptance of SGM identities may also be playing a role in the different impact of sexual and gender identity in this sample. Over the past decade, we have witnessed the rise in transgender visibility and the subsequent political moral panic that has attacked the rights and safety of transgender people (Eberman, 2022; Lagos, 2022). This political moral panic has fostered a divide in acceptance across SGM individuals, where there tends to be lower support for transgender individuals than lesbian, gay, and bisexual individuals across social groups (Burke et al., 2023). The rise in anti-transgender discourse, discrimination, and legislation globally (Eberman, 2022; Khonina, 2024) not only impacts the availability and accessibility of gender-affirming care but the safety of accessing any type of healthcare or public space for GM individuals in a way that may greatly outweigh the impact of navigating healthcare as a sexual minority. However, given the current attempts to overturn marriage equality (Dwyer, 2025) and funding cuts to HIV/AIDS research (Willenberg et al., 2025) in the USA, I am hesitant to suggest how significant a factor difference in acceptance across these communities may be in future research.

Understandably, previous research rarely examined all AFAB-SGM individuals together or used a reductive approach to disaggregate identities, mostly reporting on lesbian and bisexual women or transgender men (Dibble et al., 2007; Eliason, 2014; Pantalone et al., 2020; Patterson & Jabson, 2018). The results of this work not only showcase the importance of including all members of this diverse group in future research, but also draw attention to the importance of examining how gender identity impacts a wide range of topics in health, including chronic health, barriers to healthcare, and health management strategies. Despite limited findings based

on our nuanced sexual identity analyses, I remain in support of the necessity of expanding the representation of both sexual and gender identities included in research, particularly among AFAB-SGM individuals where there appears to be greater diversity of identity. Importantly, the lack of difference among these identity groups point to the importance of shared experiences in healthcare systems that remain structured around binary sex/gender classifications and how sex-based biases in healthcare continue to shape the experiences of AFAB individuals regardless of sexual or gender identity. While further research is needed to gain a deeper understanding of the healthcare experiences of each identity subgroup, the results of this dissertation provide an essential foundation for the further examination of health disparities faced by AFAB-SGM individuals.

Recommendations

This body of work has important implications for healthcare providers, policy makers, researchers, and community members, extending beyond what is discussed in the summative contributions. The results of these manuscripts draw attention to gaps in healthcare accessibility as well as ongoing experiences of discrimination for AFAB-SGM individuals with chronic health conditions. Additionally, the novel population in this work displays not only the necessity of nuance in understanding the experiences of multiply marginalized individuals navigating the healthcare system, but also calls for a shift in what and who we talk about when we discuss 2S/LGBTQIA+ health in healthcare systems and research alike. My hope is that this work highlights the experiences of these individuals as far from singular and provides community members with the necessary information to best advocate for themselves within and outside

healthcare systems. In this section, I will outline recommendations for healthcare providers, policy makers, researchers, and community members.

For Healthcare providers

For healthcare providers working with AFAB-SGM individuals with chronic health conditions, our results point to a need to examine biases both in diagnostic assumptions and approaches to care. While these biases may originate from systemic homo/trans-phobia perpetuated through the undereducation of healthcare providers on 2S/LGBTQIA+ health needs (Harb et al., 2019; Kattari et al., 2020; Logie et al., 2019), or the continued presence of sex-based biases in chronic health care (Green, 2021; Schalk, 2021), they are experienced through individual practice. At an individual level, this can primarily be addressed by seeking education on providing culturally competent care that considers the intersecting effects of sex assigned at birth, sexual and gender identity, other identities, and chronic health conditions. Providers can improve accessibility and competence of care by avoiding diagnostic assumptions based on sex or identity, taking patient reports seriously, and creating affirming environments that reduce the risk of discrimination for these individuals when seeking care. Indeed, addressing these gaps in healthcare requires not only provider-level changes in practice, but also a commitment to systemic reform of healthcare provider education and healthcare systems to tackle accessibility and competency as barriers to care for AFAB-SGM individuals with chronic health conditions.

The findings of this dissertation also underscore a need to examine and evaluate the recommended use of self-management interventions as a keystone in the care plans of people with chronic health conditions (Reynolds et al., 2018; Van de Velde et al., 2019). While self-

management interventions have been found to improve health outcomes for people with chronic health conditions and may be particularly helpful in relieving overburdened healthcare systems (Van de Velde et al., 2019), the widespread use of self-management among AFAB-SGM individuals may indicate an overreliance on this form of care. Though I cannot speak to the use of self-management out of healthcare provider suggestion or avoidance of healthcare settings, nor what self-management behaviours individuals are engaging in, the increased use of self-management and community support among those with identities and chronic health conditions prone to high levels of discrimination in healthcare warrants further evaluation (Cicero et al., 2020; Green, 2021). Healthcare systems should interrogate to whom, and why, self-management interventions are being recommended, and what those interventions entail, to ensure that these recommendations are rooted in autonomy without further perpetuating inequities in healthcare access. Further, healthcare providers should clearly define the behaviours included and encouraged in self-management interventions to ensure they promote informed choice, equitable access to resources, and act in tandem with other healthcare supports, rather than shifting the responsibility of care onto individuals.

For policy

For policymakers, it is imperative that health documentation consistently collects and reports data disaggregated by both sex and gender identity. The results of this research demonstrate that sex assigned at birth and gender identity influence how individuals navigate and experience healthcare systems. Both the Government of Canada and the Canadian Institutes of Health Research (CIHR) have committed to using Gender-Based Analysis Plus (GBA+) and

Sex- and Gender-Based Analysis (SGBA) as a tool to develop and assess the impacts of policies, programs, and other health initiatives while explicitly taking sex and gender into account (CIHR, 2025a; Government of Canada, 2024). While GBA+ or SGBA have been heavily integrated in health research funding mechanisms, explicitly asking researchers about the inclusion and analysis of sex and/or gender within their proposed research (CIHR, 2025a), there remains an absence of reliable data on sex and gender in health databases (e.g., Health Infobase Canada, Public Health Agency of Canada, 2024 ; Epic Systems Corporation, MEDITECH, IBM; Lau et al., 2020; Witowski, 2025). For example, Health Infobase Canada—a data tool available on the Government of Canada's health website to explore infographics, charts, and blogs about health data in Canada—provides no information on gender, no ability to filter by gender, and only disaggregates data by sex (Public Health Agency of Canada, 2024). Policy initiatives should be targeted at health data collection systems to ensure comprehensive and inclusive measures of sex, gender, and sexual identity are consistently collected and reported.

Further, funding agencies must also broaden their mandates to support research and interventions that reflect the full spectrum of 2S/LGBTQIA+ communities, moving away from the historic disproportional focus on AMAB-SGM populations and sexual and mental health outcomes (Coulter et al., 2014; Weideman et al., 2025). However, recent cuts to NIH funding—particularly those targeting research on SGM identities and health (Cahill, 2025)—combined with escalating political and legislative attacks on the healthcare access and livelihood of GM individuals (Eberman, 2022; Khonina, 2024), place all 2S/LGBTQIA+ health research funding at risk. The Government of Canada and Tri-Council Agencies must renew, and ideally expand,

their commitments to GBA+, SGBA, and 2S/LGBTQIA+ health and health research (CIHR, 2025b). Additionally, chronic health–specific funders, such as the Canadian Cancer Society, Diabetes Canada, the Canadian Society for Intestinal Research, and the Canadian Pain Society, can play a critical role by prioritizing 2S/LGBTQIA+ health within their funding or by ensuring inclusive and diverse representation of sexual and gender identities within their existing and future research.

For researchers

The results of this work also underscore the need to shift—or rather, expand—the topics, identities, and experiences represented in health research. For 2S/LGBTQIA+ health researchers, the health information biases that influence how and when sexual and gender identity are taken into account in healthcare settings are perpetuated by the narrow scope of 2S/LGBTQIA+ health research (Weideman et al., 2025). As previously mentioned, 2S/LGBTQIA+ health research has been primarily concerned with AMAB-SGM individuals, HIV/AIDS, mental health, and other sexual health topics, with little change in focus since the 1980s (Coulter et al., 2014; Weideman et al., 2025). By continuing to focus on and almost exclusively fund research on these topics (Weideman et al., 2025), we contribute to the notion that sexual and gender identity are only relevant to understanding and providing care for sexual and mental health. The narrow scope of available health research on these communities subsequently impedes how healthcare providers can incorporate identity into their scope of practice as recommended above. Our findings demonstrate that AFAB-SGM individuals are disproportionately impacted by a wide range of chronic health conditions, and moreover, that identity subgroups can experience these conditions

and healthcare systems differently. In order to accurately assess how sexual and gender identity impact health and healthcare access, as well as equip healthcare providers with the necessary knowledge to deliver competent and affirming care, health researchers must expand who and what we talk about when we discuss 2S/LGBTQIA+ health.

For chronic health and disability researchers, this dissertation contributes to growing conversations about the importance of embodiment and identity in shaping health outcomes and experiences (Cornelius et al., 2017; Crenshaw, 1991; Pieri, 2022; Schalk, 2021; Schalk & Kim, 2020). Researchers should examine sexual and gender identity as key analytic variables, rather than just optional demographic categories, to explore how factors like sex-based biases and systemic discrimination affect both health outcomes and healthcare experiences. Further, researchers should incorporate community-based approaches to ensure that research priorities, language, and knowledge translation strategies reflect community needs and promote accessibility. For example, CAB members endorsed chronic health-based language as opposed to 'chronic illness' or 'chronic disease' and supported the use of a broad definition that did not rely on diagnosis as essential to acknowledging that diagnosis is not always accessible to those with chronic health conditions. Together, these approaches can strengthen chronic health and disability research by ensuring it is more inclusive, accessible, and grounded in the lived experiences of those disproportionally impacted yet underrepresented in the research.

In a more general sense, all researchers conducting primary data collection should ask inclusive and comprehensive demographic questions regarding sex, gender, and sexual identity. At minimum, this should include items asking about sex assigned at birth, current gender

identity, whether participants identify as transgender, and sexual identity. Each of these questions should include an "I prefer not to answer" and an open-text response option. Moreover, gender and sexual identity should be asked using both select all that apply and single response type questions for those who select multiple identities. Collecting data in this way not only produces more precise and affirming demographic information but also provides participants with as much autonomy as possible when data collapsing inevitably occurs.

For community members

Finally, the results of this dissertation may also have important implications for community members. One of the primary motives behind this research was to draw attention to experiences that were not well understood or represented in health research with the intent of improving access to quality care. Our findings not only draw attention to disparities in healthcare experienced by AFAB-SGM individuals with chronic health conditions, but also point to a reliance on support from outside traditional healthcare settings across all sexual and gender identity groups. Previous research has highlighted the protective factors of community-based supports for SGM individuals with chronic health conditions or other disabilities (Decker et al., 2025; Jowett & Peel, 2009; Maguire et al., 2021). However, community supports that cater to both of these identities simultaneously are difficult to find (Decker et al., 2025; Jowett & Peel, 2009), particularly for AFAB-SGM individuals (Hartless, 2018). Without the availability of these supports, these individuals can experience isolation from 2S/LGBTQIA+ communities and ostracization from chronic health and disability support groups (Decker et al., 2025; Jowett & Peel, 2009). For some, the stress stemming from social isolation can exacerbate the symptoms of

their chronic health condition (Decker et al., 2025). My hope is that AFAB-SGM individuals with chronic health conditions feel represented in this research in a way that helps combat the isolation often experienced by members of this group. Moreover, the prevalence and range of chronic health conditions experienced by AFAB-SGM individuals and the use of community-based supports point to a community in need of intentional, accessible, and culturally competent supports that can address the intersecting health and social needs of this group.

Moreover, AFAB-SGM individuals often must be their own advocates within healthcare systems (Kattari et al., 2020). The results of this dissertation provide crucial information to AFAB-SGM individuals about the range of chronic health conditions that impact their communities, and how members of their communities manage their health conditions or experience barriers to care. While this information is essential for the purpose of representation, as outlined above, it may also aid AFAB-SGM individuals with chronic health conditions' ability to advocate for themselves. It is clear that the experiences of these individuals are not well reflected in the education of healthcare providers (Cornelius et al., 2017; Kattari et al., 2020; Obedin-Maliver et al., 2011), current healthcare practices (Eliason, 2014; Harb et al., 2019; Logie et al., 2019), or health research (Weideman et al., 2025). It is especially crucial to supply this information directly to community members within the current political climate, when discrimination against 2S/LGBTQIA+ communities members is on the rise, and research, policies, and programmes supporting health equity among these communities are being defunded (Cahill, 2025). By conducting this research in areas identified as important by community members, we can provide information that will directly benefit the community while advocating

for provider-level and systemic changes to address the health disparities experienced by individuals in these communities.

Collectively, the recommendations outlined above emphasize that improving the health and healthcare experiences of AFAB-SGM individuals with chronic health conditions requires coordinated action across all levels of the health system—from healthcare providers to policy and research. These findings highlight that health disparities among AFAB-SGM individuals are not peripheral concerns but crucial to broader discussions of health equity and systemic discrimination.

Limitations

As discussed in each manuscript, my dissertation is not without limitations. The self-reported nature of the chronic health conditions and imperfection of classification models are comprehensively covered in the discussion sections of those manuscripts, so for the sake of redundancy, I will not elaborate further here. However, the impact of the COVID-19 pandemic on the results of this study warrants further discussion, as do some of my personal reflections.

COVID-19

The data used in this research came from the Our Health 2022 study by the Community-Based Research Centre. As described in Chapter 2, these data were collected throughout the summer of 2022, while the COVID-19 pandemic was still considered a global public health emergency (Roknuzzaman et al., 2024). Not only does this mean that most of the survey questions were posed explicitly within the context of the COVID-19 pandemic (e.g., “Since the beginning of the COVID-19 pandemic, did you experience… difficulty getting an appointment”

or “Since the start of the COVID-19 pandemic, have you experienced discrimination… in health care settings?”), but questions that were not contextualized within the pandemic were likely influenced by how participants were thinking about the accessibility of healthcare at the time (Petrucci & Palombo, 2021). Therefore, the results of this dissertation are inextricably shaped by this period.

The COVID-19 pandemic led to significant disruptions in the availability of healthcare services (Ciotti et al., 2020; D’Alessandro-Lowe et al., 2024; Pieri, 2022) that exacerbated social inequities, highlighting disparities in healthcare access (Maroto et al., 2021; Pieri, 2022). Further, individuals with chronic health conditions bore the brunt of these inequities (D’Alessandro-Lowe et al., 2024; Maroto et al., 2021; Schwartz et al., 2021; The Lancet, 2023). As our entire analytic sample for Chapters 4 and 5 had at least one chronic health condition, they were likely all similarly impacted by the pandemic. This may be reflected in the limited differences found based on identity subgroups when examining barriers to care, as well as the substantial proportion of participants who reported self-managing their chronic health condition. However, significant differences were still found that reflect the presence of healthcare disparities for AFAB-SGM individuals with chronic health conditions, particularly GM individuals. Consequently, the results of this dissertation set a precedent for further examination of the experiences of AFAB-SGM individuals with chronic health conditions navigating healthcare systems in Canada as we attempt to restore the accessibility and functioning of healthcare systems.

Personal Reflections

Beyond discussing the traditional limitations of this research, I would also like to discuss some of my personal reflections on this dissertation as a whole. Many of the aspects of this dissertation that I struggled with were both sources of personal turmoil and some of its greatest strengths, namely, the population of interest and the community-based aspects of this work.

Throughout this work, I have grappled with my decision to apply a sex-assigned-at-birth lens. As a trans person, I recognize that using sex assigned at birth can feel both uncomfortable and reductive when exploring the experiences of any individual, let alone GM individuals. Sex assigned at birth carries with it a history of medical and social classification systems that continue to erase, invalidate, and restrain the lived realities of GM people. My intent was not to use this lens to conflate the experiences of AFAB-CSMW and AFAB-GM individuals, but rather to highlight both the shared and unique experiences within this often overlooked and under-researched population. While the experiences of GM individuals and SGM women each warrant their own focused exploration, prior research on one or both of these communities has often failed to capture the full range of identities and experiences that exist between and within them. Though imperfect, this lens draws attention to the ways in which sex assigned at birth continues to have significant impacts on health equity. Ultimately, this decision allowed for some of the most novel and significant contributions of this dissertation.

Similarly, I believe the community-based aspect of this work is both its greatest strength and an area that could be substantially improved upon by future researchers undertaking community-based quantitative research. The guidance, expertise, and general support provided

by the CAB members were invaluable to this project, and none of the limitations discussed here reflect their individual contributions. Indeed, the greatest limitation of the community-based aspects of this work lies in how constrained that engagement ultimately became. To begin, the CAB was originally convened with the intention of advising on several chronic health related projects, but unforeseen circumstances led to a substantial hiatus in communication with the CAB and my dissertation becoming the sole focus of their work. These circumstances understandably led to CAB participation drop-off. Further, as described in Chapter 2, this dissertation is a secondary analysis of data from the *Our Health 2022* study. Given the preexisting data and the nature of dissertation research, I had already determined the dissertation's direction, population of interest, and areas of focus prior to convening the CAB. I recognize that beginning with a predetermined dataset and research plan is not ideal practice in CBPR. Additionally, the quantitative nature of this project meant that much of our limited meeting time was spent discussing statistics and making decisions about variables and analysis plans. While some CAB members, especially those with high attendance and participation, expressed an interest in this, other CAB members were less engaged and needed more time to digest information before being able to engage in conversation about it. These exchanges still served as valuable opportunities for mutual learning and skill-building.

While I understand that many of these constraints were not personal failings but rather the result of circumstance, given the opportunity to do things differently, I would have convened the CAB earlier in the research process with a sole focus on this dissertation. This would have allowed community members to engage more deeply with the overall direction of the project,

rather than joining at the stage of manuscript planning. Those interested in quantitative analysis could have participated in that aspect optionally, while others could have contributed more to the planning and contextual elements of the research. Despite these constraints, the community-based approach was essential to this project, particularly given its focus on marginalized communities and the aforementioned challenges of using a sex-assigned-at-birth lens. The CAB's insights were crucial in ensuring these identities and experiences were handled with care.

Future Research

The analyses conducted as part of this dissertation represent a significant step toward understanding and addressing the health disparities experienced by AFAB-SGM individuals with chronic health conditions in Canada. Yet, this research mostly serves as a foundation and a call for future studies to expand on the dearth of information currently available on the experiences of these individuals.

This dissertation primarily examined intra-group differences among AFAB-SGM individuals with chronic health conditions. As this research intended to report on the experiences of these underrepresented and under-researched communities, external group comparisons were outside the scope of this project. Future research should include comparative analyses with cis-heterosexual, AMAB-SGM, and those without chronic health conditions to truly understand the state of health disparities experienced within these communities.

Additionally, this research provides a foundation for more intentional and expansive exploration of chronic health conditions among these communities. The findings of this work suggest that the breadth of chronic health conditions that disproportionally impact AFAB-SGM

individual extends far beyond the asthma, cardiovascular disease, breast cancer, and mental health conditions that are currently represented in the literature (Cicero et al., 2020; Eliason, 2014; Patterson & Jabson, 2018; Pettinicchio et al., 2021). The prevalence and impact of chronic pain and gastrointestinal conditions on barriers to care, discrimination, and health management indicate that further research is needed to explore how these chronic health condition body systems shape AFAB-SGM individuals' broader healthcare experiences, as well as to examine the specific conditions within these categories in greater depth.

Further research on these communities and access to care is also necessary, now that we are several years removed from the COVID-19 pandemic being a global emergency. During this time, disability and crip scholars pointed to the widespread implementation of structural accommodations as an opportunity to address systemic ablism and rebuild a more equitable health system in COVID-19's wake (Pieri, 2022). Many healthcare systems and services have yet to fully return to their pre-pandemic functioning and continue to utilize flexible care options, such as virtual appointments. Research is needed to understand how the accommodations implemented during the height of the COVID-19 pandemic and the subsequent transition away from those accommodations impact barriers and accessibility of care for AFAB-SGM individuals with chronic health conditions contemporarily.

Conclusion

Taken together, the results of this dissertation provide an important and overdue exploration of the experiences of AFAB-SGM individuals with chronic health conditions in Canada. By offering a widened scope of chronic health conditions impacting these communities

as well as an examination of how they navigate healthcare systems, we can begin to create a more complete picture of the health of these communities and the health disparities they face. Ultimately, addressing these disparities will require systemic change that dismantles structural sexism, ablism, homo/trans-phobia, and a commitment to competent and affirming care for SGM individuals.

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Appendix A: Our Health REB Approval Certificate

University of Victoria

Certificate of Ethical Approval: Amendments for Harmonized Above Minimal Risk Clinical Study

University of Victoria
Human Research Ethics Board
Michael Williams Building, R. B202 PO Box 1700
STN CSC
Victoria, BC V8W 2Y2
Tel: 250-472-4545

Also reviewed and approved by:

- **UBC Clinical Research Ethics Board**
- **Simon Fraser University**

Principal Investigator:	Primary Appointment:	Board of Record REB Number:	REB Number: H20-02842
Nathan Lachowsky	University of Victoria	BC22-0089	PAA #: H20-02842-A009

INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT:

Institution	Site
UBC	Vancouver (excludes UBC Hospital)
Non-UBC Institution	**Site**
University of Victoria	Main Campus
Simon Fraser University	Burnaby

Other locations where the research will be conducted:
Community-Based Research Centre (CBRC): Test kits will be sent from CBRC to participants' homes, then returned to CBRC and batch shipped to the PHAC National Microbiology Laboratory for testing. UVic and CBRC have finalized a sub-grant agreement to partner on this research project. Public Health Agency of Canada's National Microbiology Laboratory: DBS samples will be tested and stored here, with participant consent. Participants homes: DBS samples will be collected at home by participants, and returned to participants, if requested.

Study Title:
Our Health: Canada-Wide 2SLGBTQQIA+ Community Study

Approval Date: April 28, 2025 **Expiry Date: April 23, 2026**

Research Team Members:	Olivier Ferlatte, Université de Montréal, Co-Applicant; Jorge Flores-Aranda, UQAM, Co-Applicant; Aidan Ablona, BCCDC Co-Applicant; Kristopher Wells, MacEwan University, Co-Applicant; Kiffer Card, SFU, Co-Applicant; Jacqueline Gahagan, MSVU, Co-Applicant; David Brennan, University of Toronto, Co-Applicant; Francisco Ibanez-Carrasco, University of Toronto, Co-Applicant; Travis Salway, SFU, Co-Applicant; Daniel Grace, University of Toronto, CoApplicant; Cindy Holmes, UVic, Research Staff; Beth Jackson, PHAC, Knowledge-User; Jody Jollimore, CBRC, Knowledge-User; Ben Klassen, CBRC, Research Coordinator; Ada Sinacore, McGill, Research Staff; Mattie Walker, UVic, Research Staff; Meera Dhebar, UVic, Postdoctoral Fellow; Coady Babin, PhD Student, UVic.
Sponsoring Agencies:	- Canadian Institutes of Health Research (CIHR) - "Acceptability, Feasibility, and Bias Assessment in Administrative Health Data Linkage among 2SLGBTQQIA+ Communities" - Canadian Institutes of Health Research (CIHR) - "The COVID-19 Pandemic

	Among Sexual and Gender Marginalized Populations in Canada: Physical Distancing Impacts, SARS-CoV-2 Seroprevalence, and Health and Wellness Needs" - Canadian Institutes of Health Research (CIHR) - "Understanding the intersectional impacts of living through the COVID-19 pandemic on the mental health and sexual and reproductive health (SRH) of 2SLGBTQ BIPOC communities (Postdoctoral Fellowship)" - Public Health Agency of Canada - "Community-Based Participatory Surveillance of Chronic Health Outcomes and Determinants among Lesbian, Gay, Bisexual, Trans, Queer, and Two-Spirit People (LGBTQ2+) under Enhanced Surveillance for Chronic Disease Program" - Social Sciences and Humanities Research Council of Canada (SSHRC) - "The Intersecting Impacts of COVID-19 on Housing: A National Online Survey of Older LGBTQI2S Canadians"
Documents included in this approval:	**Document Name** / **Version** / **Date**
Document(s) acknowledged with this submission:	N/A

This ethics approval applies to research ethics issues only and does not include provision for any administrative approvals required from individual institutions before research activities can commence.

The Board of Record (as noted above) has reviewed and approved this study in accordance with the most recent requirements of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS2).

The "Board of Record" is the Research Ethics Board delegated by the participating REBs involved in a harmonized study to facilitate the ethics review and approval process.

In respect of clinical trials:

1. The membership of this Research Ethics Board complies with the membership requirements for Research Ethics Boards defined in Part C Division 5 of the Food and Drug Regulations;
2. This Research Ethics Board carries out its functions in a manner consistent with Good Clinical Practices.
3. This Research Ethics Board has reviewed and approved the clinical trial protocol and informed consent form for the trial which is to be conducted by the qualified investigator named above at the specified clinical trial site. This approval and the views of this Research Ethics Board have been documented in writing.

This study has been approved either by the Board of Record's full REB or by an authorized delegated reviewer.

Appendix B: Data Analysis Concept Sheet

CBRC Analysis Concept Sheet – QUANTITATIVE

CBRC's research is community-based and fundamentally rooted in working with and for our diverse communities. Please complete this form prior to any analysis of CBRC quantitative data. The information you provide will be used to connect related projects together, to keep our analysis tracker up to date, and our research community aware of all ongoing analyses.

<table>
<tr><td colspan="2">Working Title/Focus: Health care access for AFAB folks with chronic health conditions</td></tr>
<tr><td>Your name: Coady Babin

Email: cbabin@uvic.ca</td><td>Anticipated completion date (month, year):

August 2025</td></tr>
<tr><td>Collaborators (if any, including CBRC staff and CHER Analysts at UVic):

Anu Radha Verma</td><td rowspan="3">Are you working with any CBRC research affiliates? If so, check all who apply:
__ Aidan Ablona
__ Jorge Flores-Aranda
__ Kiffer Card
__ Olivier Ferlatte
__ Mark Gilbert
__ Daniel Grace
__ William Hébert
__ Rod Knight
__ Nathan Lachowsky
__ Jeffrey Morgan
__ Matthew Numer
__ Harlan Pruden
__ Travis Salway
__ Rusty Souleymanov
__ Darrell Tan</td></tr>
<tr><td>Who will conduct this analysis?
X We will conduct the analysis ourselves
_ We need you to conduct the analysis</td></tr>
<tr><td>Is this part of an Investigaytors program?:
_ Yes X No

If yes, which city?</td></tr>
<tr><td colspan="2">For the next 2 questions please tell us how 2SLGBTQQIA+ people will be involved in this work. Additionally, please explicitly discuss how Indigenous and Two-Spirit, gender diverse (trans, nonbinary, etc.), and people living with HIV will be considered in your work.</td></tr>
</table>

How will community members and lived experience be represented in your approach and analysis?
The project is about community members experiences in healthcare systems so their lived experiences are centred in the approach and will be centred in the analysis. The project is also community-based so after preliminary descriptive analysis the community advisory board with guide the final variables of interest and how the data is aggregated.

Is anyone in the study included or excluded in your work? Please provide a rationale.
The population of the study is 2S/LGBTQIA+ folks with chronic health conditions. I will be comparing the experiences of AFAB and AMAB people with chronic health conditions. People who did not report having a chronic health condition will not be included.

What data will you use?
__ Sex Now Linked (includes 2012-onwards)
__ Sex Now 14/15
__ Sex Now 2018 (in-person)
__ Sex Now 2019
__ Sex Now 2020 (COVID Edition)
__ Sex Now 2021 (Baseline)
__ Sex Now 2021 (Test@Home Follow-Up)
__ Sex Now 2022 (in-person)
_X_ Our Health 2022

How do you expect to share your findings (e.g., community event, report, infographic, journal article, conference)? *Please provide specific plans for academic outputs. We ask that you consider sharing this work at CBRC's Summit.*
_X_ At a conference
_X_ At the CBRC Summit
_X_ In an academic journal
_X_ In a community report/event
__ Other. Please briefly describe:

Research questions (and hypotheses): What do you want to know? What relationship do you want to explore? What do you expect to find/learn?

- Determine and compare the prevalence of chronic health conditions among AFAB sexual and gender minorities to those of AMAB sexual and gender minorities. I expect there to be higher reported chronic health conditions among AFAB people, but the primary purpose of this research question is to provide prevalence estimates on a range of chronic health condition for AFAB people outside what are commonly reported for AFAB and 2S/LGBTQIA+ people (mental health, obesity, addiction, heart conditions, asthma)
- demonstrate common barriers to accessing healthcare AFAB sexual and gender minorities.
- Understand the desired and used healthcare services for sexual and gender minorities. I expect to see a significant gap in the healthcare services needed versus those actually used. This gap will likely be greater for AFAB people, trans people, people of colour, people who live rurally, people who live in provinces other than Ontario and BC, and people with lower SES

Main indicators/outcomes: Which specific survey questions or dependent variables are you looking at using? Please list the specific question number, copy and paste the question text or attach a copy of the survey (hyperlinked above) with the variables highlighted.

Analysis 1 - Prevalence:

- 3.4-3.15, 3.17 what chronic health condition do you have?
- 3.3 what terms do you use?
- 3.16 how long have you been living with your chronic health condition?
- Do you identify as a person w/ a disability

Analysis 2 - Barriers:

- 3.20-3.21 Have you faced barriers in getting a diagnosis?
- 3.24 How do you manage the costs?
- 3.25 In the last two years, have skipped/stopped/reduced medication because you couldn't afford it?
- 6.4 what challenges did you have with these services?
- 8.1 in what types of situations have you experiences discrimination or been treated unfairly by others in Canada?
    - In health care settings
- 8.2 What do you feel were the reasons for the discrimination and unfair treatment?
- 8.13 On a scale of 1 to 5, where 1 means "No trust at all" and 5 means "A great deal of trust", how much trust do you have in the following institutions in Canada?
    - The health care system
    - Public Health agencies

Analysis 3 - Services:

- 3.22 What types of care do you use to manage your CHC?
- 3.23 what kinds of aid and medications do you use to manage your CHC?
- 6.9 Pap smear
- 7.7 who has provided you with support
- 9.2 How connected do you feel to 2SLGBTQQIA communities?
- 10.17 Have you EVER been vaccinated against HPV?
- Have you EVER been diagnosed with HIV?
- 10.13 Have you EVER taken PrEP?
- 10.15 How have you accessed your regular HIV care?
- 6.1 & 6.2 have you or someone you cared for NEEDED any of the following services
- 6.3 Have you USED the following services

Explanatory factor(s): Which independent variables or variables of interest (e.g., demographics such as age, education, income, gender) would be associated with your outcome? Please list the specific question number, copy and paste the question text or attach a copy of the survey (hyperlinked above) with the variables highlighted.

- Do you currently live in…?
- Do you identify as Indigenous?
- How do you identify your race and ethnicity?
- Do you identify as a racialized person?
- What is your gender identity?
- Are you trans?
- What was your sex assigned at birth?
- Are you an intersex person?
- How do you identify your sexual orientation?
- Do you identify as a person w/ a disability
- Rurality
- eco_fin_strain
- How do you receive primary care?

Statistical plan: (e.g. descriptive statistics, bivariate comparison, Chi square test, regression)

Basic descriptive statistics will be run on all proposed variables for preliminary analysis. This is for the purpose of showing the CAB what data is available, as well as determine groupings for variables like chronic health conditions, gender, and sexuality. All following analysis plans also include basic descriptive statistic of demographics/explanatory variables and some main indicators for each analysis.

Analysis 1:
Based on community discussion the chronic health conditions will be grouped into larger categories (e.g., body systems). If the groups can be created in a way that they are mutually exclusive, a chi-square will compare sex assigned at birth and reported chronic health conditions to determine if there is a difference between AFAB and AMAB reporting of chronic health conditions as well as a different between the types of chronic health conditions reported by each group. If they cannot be created in a mutually exclusive manner, individual chi-square (for each chronic health condition group) will be run instead.

Analysis 2:
For each of the binary (yes/no) variable (3.20, 3.24, 3.25, 6.4, 8.1 8.2) I'll run a logistic regression with sex assigned at birth and chronic health conditions as predictors.

A MAVONA with be run to examine the differences between sex assigned at birth and chronic health conditions (IV's) on trust in the health care systems and public health agencies (DV's).

Analysis 3:
A series of logistic regressions will be run on 6.3 (which of the services were you able to access). This variable is based off participants stating the needed a service in the previous question. Participants were only shown services they indicated needing leaving a binary variable of yes/no if they were able to access it. The explanatory factors will show us what factors may significantly impact a person's ability to access each specific service listed in 6.1 and 6.2. This logistic regression will first be run on only people assigned female at birth and will include variable 6.9 (have you had a pap smear). The logistic regression will be run a second time on everyone and use sex assigned at birth as a predictor but remove 6.9.

Appendix C: CAB Recruitment Poster

Appendix D: Chronic Health Condition Classification

Chronic Health Condition	Primary Body System Categories	Secondary Body System Categories (if applicable)	Citation
HIV/AIDS	Autoimmune	Multisystem	Swinkels HM, Justiz Vaillant AA, Nguyen AD, et al. HIV and AIDS. [Updated 2024 Jul 27]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK534860/
Alopecia areata	Autoimmune		Zhou, C., Li, X., Wang, C., & Zhang, J. (2021). Alopecia areata: an update on etiopathogenesis, diagnosis, and management. *Clinical reviews in allergy & immunology*, *61*(3), 403-423.
Amyotrophic lateral sclerosis (ALS)	Neurological	Musculoskeletal	Brotman RG, Moreno-Escobar MC, Joseph J, et al. Amyotrophic Lateral Sclerosis. [Updated 2024 Feb 12]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK556151/
Ankylosing spondylitis	Inflammatory		Wenker KJ, Quint JM. Ankylosing Spondylitis. [Updated 2023 Jun 20]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK470173/
Asthma	Respiratory		Hashmi MF, Cataletto ME. Asthma. [Updated 2024 May 3]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK430901/

Carpal tunnel syndrome	Musculoskeletal	Nervous	Sevy JO, Sina RE, Varacallo MA. Carpal Tunnel Syndrome. [Updated 2023 Oct 29]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK448179/
Celiac disease	Autoimmune	Gastrointestinal	Daley SF, Posner EB, Haseeb M. Celiac Disease. [Updated 2025 Feb 4]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK441900/
Cerebral palsy	Neurological		Hallman-Cooper JL, Rocha Cabrero F. Cerebral Palsy. [Updated 2024 Feb 24]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK538147/
Chronic Obstructive Pulmonary Disease (COPD)	Respiratory		Agarwal AK, Raja A, Brown BD. Chronic Obstructive Pulmonary Disease. [Updated 2023 Aug 7]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK559281/
Chronic pain (not described elsewhere)	Chronic pain	Nervous	Vergne-Salle, P., & Bertin, P. (2021). Chronic pain and neuroinflammation. *Joint Bone Spine*, *88*(6), 105222.
Crohn's disease	Autoimmune	Gastrointestinal	Ranasinghe IR, Tian C, Hsu R. Crohn Disease. [Updated 2024 Feb 24]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK436021/
Cystic fibrosis	Respiratory		Yu E, Sankari A, Sharma S. Cystic Fibrosis. [Updated 2024 Dec 11]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK493206/

Dystonia	Neurological	Musculoskeletal	Pana A, Saggu BM. Dystonia. [Updated 2023 Sep 4]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK448144/
Ehlers-Danlos syndromes (EDS)	Connective tissue	Multisystem	Miklovic T, Sieg VC. Ehlers-Danlos Syndrome. [Updated 2023 May 29]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK549814/
Endometriosis	Gynecological		Tsamantioti ES, Mahdy H. Endometriosis. [Updated 2023 Jan 23]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK567777/
Epilepsy	Neurological		0 Patel PR, De Jesus O. Partial Epilepsy. [Updated 2023 Aug 23]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK564376/
Fibromyalgia	Musculoskeletal	Neurological	Bhargava J, Goldin J. Fibromyalgia. [Updated 2025 Jan 31]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK540974/
Gestational Diabetes	Diabetes		Sapra A, Bhandari P. Diabetes. [Updated 2023 Jun 21]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK551501/

Gout	Inflammatory		Fenando A, Rednam M, Gujarathi R, et al. Gout. [Updated 2024 Feb 12]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK546606/
Graves' disease	Autoimmune		Pokhrel B, Bhusal K. Graves' Disease. [Updated 2023 Jun 20]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK448195/
Hashimoto's thyroiditis	Autoimmune		Kaur J, Jialal I. Hashimoto Thyroiditis. [Updated 2025 Feb 9]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK459262/
Hearing Loss	Sensory (Auditory & Visual)		
Heart disease	Cardiovascular		
Hepatitis B	Liver infection/disease		Tripathi N, Mousa OY. Hepatitis B. [Updated 2023 Jul 9]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK555945/

Hepatitis C	Liver infection/disease		Basit H, Tyagi I, Koirala J. Hepatitis C. [Updated 2023 Mar 26]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK430897/
HIV	Autoimmune	Multisystem	Swinkels HM, Justiz Vaillant AA, Nguyen AD, et al. HIV and AIDS. [Updated 2024 Jul 27]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK534860/
Huntington's disease	Neurological		Ajitkumar A, De Jesus O. Huntington Disease. [Updated 2023 Aug 23]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK559166/
Hydrocephalus	Neurological		Koleva M, De Jesus O. Hydrocephalus. [Updated 2023 Aug 23]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK560875/
Irritable bowel syndrome (IBS)	Autoimmune	Gastrointestinal	Ranasinghe IR, Tian C, Hsu R. Crohn Disease. [Updated 2024 Feb 24]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK436021/
Kidney disease	Urinary		Shamam YM, Hashmi MF. Autosomal Dominant Tubulointerstitial Kidney Disease. [Updated 2023 Jun 26]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK568710/
Long COVID	Respiratory	Multisystem	

Lupus	Autoimmune		Justiz Vaillant AA, Goyal A, Varacallo MA. Systemic Lupus Erythematosus. [Updated 2023 Aug 4]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK535405/
Mild cognitive impairment	Neurological		Anand S, Schoo C. Mild Cognitive Impairment. [Updated 2024 Jan 11]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK599514/
Multiple Sclerosis	Autoimmune	Neurological	Tafti D, Ehsan M, Xixis KL. Multiple Sclerosis. [Updated 2024 Mar 20]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK499849/
Muscular dystrophy	Musculoskeletal	Neurological	LaPelusa A, Asuncion RMD, Kentris M. Muscular Dystrophy. [Updated 2024 Feb 26]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK560582/
Myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS)	Multisystem		Sapra A, Bhandari P. Chronic Fatigue Syndrome. [Updated 2023 Jun 21]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK557676/
Neurotrauma	Neurological		
Osteoarthritis	Musculoskeletal		Sen R, Hurley JA. Osteoarthritis. [Updated 2023 Feb 20]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK482326/

Osteoporosis	Musculoskeletal		Porter JL, Varacallo MA. Osteoporosis. [Updated 2023 Aug 4]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK441901/
Parkinson's disease	Neurological		Bloem, B. R., Okun, M. S., & Klein, C. (2021). Parkinson's disease. *The Lancet*, *397*(10291), 2284-2303.
Polycystic ovary syndrome (PCOS)	Gynecological		Rasquin LI, Anastasopoulou C, Mayrin JV. Polycystic Ovarian Disease. [Updated 2022 Nov 15]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK459251/
Postural Orthostatic Tachycardia Syndrome (POTS)	Cardiovascular	Endocrine	Zhao S, Tran VH. Postural Orthostatic Tachycardia Syndrome. [Updated 2023 Aug 7]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK541074/
Premenstrual dysphoric disorder (PMDD)	Mental Health	Gynecological	Mishra S, Elliott H, Marwaha R. Premenstrual Dysphoric Disorder. [Updated 2023 Feb 19]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK532307/
Psoriasis or psoriatic arthritis	Inflammatory		Nair PA, Badri T. Psoriasis. [Updated 2023 Apr 3]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK448194/
Raynaud's syndrome	Cardiovascular	Autoimmune	Klein-Weigel, P., Sander, O., Reinhold, S., Nielitz, J., Steindl, J., & Richter, J. G. (2021). Raynaud's phenomenon: a vascular acrosyndrome that requires long-term care. *Deutsches Ärzteblatt International*, *118*(16), 273.

Rheumatoid arthritis	Autoimmune	Inflammatory	Chauhan K, Jandu JS, Brent LH, et al. Rheumatoid Arthritis. [Updated 2023 May 25]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK441999/
Scoliosis	Musculoskeletal	Neurological	Lee, G. B., Priefer, D. T., & Priefer, R. (2022). Scoliosis: causes and treatments. *Adolescents*, *2*(2), 220-234.
Sjögren's syndrome	Autoimmune	Inflammatory	Carsons SE, Patel BC. Sjogren Syndrome. [Updated 2023 Jul 31]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK431049/
Sleep Apnea	Respiratory	Cardiovascular	Cumpston E, Chen P. Sleep Apnea Syndrome. [Updated 2023 Sep 4]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK564431/
Spina bifida	Neurological		Brea CM, Munakomi S. Spina Bifida. [Updated 2023 Aug 13]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK559265/
Tendonitis	Musculoskeletal		Charnoff J, Ponnarasu S, Naqvi U. Tendinosis. [Updated 2022 Oct 17]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK448174/
Traumatic brain injury (TBI)	Neurological		Ginsburg J, Huff JS. Closed Head Trauma. [Updated 2023 Aug 8]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK557861/

Type 1 Diabetes	Diabetes	Autoimmune	Sapra A, Bhandari P. Diabetes. [Updated 2023 Jun 21]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK551501/
Type 2 Diabetes	Diabetes		Sapra A, Bhandari P. Diabetes. [Updated 2023 Jun 21]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK551501/
Ulcerative colitis	Autoimmune	Gastrointestinal	Ranasinghe IR, Tian C, Hsu R. Crohn Disease. [Updated 2024 Feb 24]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK436021/
Uterine fibroids	Gynecological	Endocrine	Florence AM, Fatehi M. Leiomyoma. [Updated 2023 Jul 17]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK538273/
Vision Loss	Sensory (Auditory & Visual)		
Vitiligo	Autoimmune		Ahmed jan N, Masood S. Vitiligo. [Updated 2023 Aug 7]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK559149/
Cancer(s)	Cancer	Multisystem	
Mental Health conditions	Mental Health		

Dementia	Neurological		Emmady PD, Schoo C, Tadi P, et al. Major Neurocognitive Disorder (Dementia) (Nursing) [Updated 2022 Nov 19]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK570552/