

2SLGBTQ Recreational Sport Participation: Mental Health, Social  
Support and Community Connection

By

Gordon “Alex” Wells

H.B.A., University of Toronto, 2011

B.S.W., York University, 2017

M.S.W., University of Toronto, 2018

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

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## **Abstract**

Community sport participation is increasingly promoted as a strategy to support people's health and wellbeing. Without strategies that account for the harassment and marginalization that many Two-Spirit, lesbian, gay, bisexual, transgender and queer (2SLGBTQ) people experience in sport, the promotion of community sport may further compound health disparities experienced by 2SLGBTQ people. Despite these experiences of harassment and marginalization, 2SLGBTQ people have created their own 2SLGBTQ recreational community sports teams and leagues to exercise, socialize and play with other 2SLGBTQ people. In this dissertation I conducted a series of analyses to understand the relationship between 2SLGBTQ recreational sports participation and the mental health and sense of community connection of 2SLGBTQ people in Canada.

My first analysis is of data from the Momentum study, a longitudinal prospective cohort study on the health of gay and bisexual men (GBM) in Metro Vancouver, comparing self-reported questionnaire findings on those who participated in 2SLGBTQ recreational sports with those who did not. I also compared outcomes between those who saw a change in their 2SLGBTQ sports participation (e.g. started or stopped 2SLGBTQ sport participation). I found no significant differences in mental health measures, but GBM who participated in 2SLGBTQ sports reported more social support and were less likely to report being in poorer health. GBM who started participating in 2SLGBTQ sports reported higher community participation and were less likely to report being in worse health. Lastly, GBM who stopped participating were less likely to have depression scores in the normal range.

The second analysis sought to understand if transgender, nonbinary and gender diverse (trans) people's participation in 2SLGBTQ recreational sports is associated with improved mental health, social support and sense of connection with 2SLGBTQ communities. My analysis is conducted on data drawn from the 2019 and 2022 cycles of the community-based, cross-sectional Sex Now study. Compared with those who did not participate in 2SLGBTQ recreational sports, trans people did not report a significant difference in anxiety symptoms, but did report lower depressive symptoms and higher satisfaction with their relationship to the 2SLGBTQ community.

My final analysis is of data from the Our Health study, a cross-sectional, community health survey on 2SLGBTQ people across Canada. I sought to understand the relationship between 2SLGBTQ recreational sport participation and 2SLGBTQ people's mental health, social support and sense of 2SLGBTQ community connection. I also sought to understand if age moderated any of these potential associations. I found that while participants of 2SLGBTQ recreational sports reported similar levels of anxiety and depression symptoms as non-participants, they demonstrated significantly higher social support and 2SLGBTQ community connection. These associations held for younger and older 2SLGBTQ people.

My research has found a strong relationship between 2SLGBTQ people's participation in 2SLGBTQ sport and improved mental health, social support and sense of connection to 2SLGBTQ communities. This dissertation provides insights for social service and healthcare policy and practice to engage 2SLGBTQ recreational sport to support the health and wellbeing of 2SLGBTQ people across Canada.

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## **Dedication**

I would like to dedicate this to my family, in all its messiness and refusal to be contained. To Chris and Bo and the home we have created together. To the family whom I have made family through extended hugs. To my parents and my brother whom I have felt behind me at every step. To my grandmothers, Clara Wells and Elizabeth Vance, whose faces I have always looked for in the crowd. I love you all.

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## **Chapter One**

### **Introduction**

For decades, Two-Spirit<sup>1</sup>, lesbian, gay, bisexual, transgender and queer (2SLGBTQ) people have participated in community-based, recreational sports teams and leagues specifically for 2SLGBTQ people in Canada (Travers & Derri, 2011). These sites of recreation, activities that people participate in during their unpaid time to achieve a socially acceptable goal (e.g. therapeutic benefit) (Kelly, 2012), are coordinated by volunteer boards and executive members outside of municipal support and professional sports organizations (Mock et al, 2019). 2SLGBTQ recreational teams and leagues exist in almost every province in the country and boast thousands of actively engaged 2SLGBTQ people who participate in a diverse range of sports including but not limited to hockey, running clubs, swimming, rugby, bowling and volleyball. Despite the commitment to participation, and the large number of 2SLGBTQ people who do participate, there is little research documenting the impact that these community-based sports organizations have on the health and wellbeing of 2SLGBTQ people. As there are growing calls from policymakers, researchers and practitioners to use community-based sports, that which is predominantly provided by non-profit and volunteer organizations (Doherty & Misener, 2008; Doherty & Cousens, 2013), to support people's health and wellbeing (Jenkin et al., 2021; Eather et al., 2023; Eime et al., 2013), this erasure within the academic literature will only serve to further compound the numerous health disparities that 2SLGBTQ people

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<sup>1</sup> A term created by Indigenous peoples to recognize the diverse sexualities, gender identities, expressions and roles across Indigenous Nations (Pruden & Salway, 2020)

already experience (Ross et al., 2018; Gorczyński & Fasoli, 2022; Garcia et al., 2020; Ferlatte et al., 2020; Wells et al., 2024). My doctoral research fills this gap in the research evidence by documenting the relationship between participation in 2SLGBTQ recreational sports and teams and the mental health and feelings of community connection for 2SLGBTQ people, illuminating opportunities for social services to engage these community-based recreational sports in their work to support 2SLGBTQ people across Canada.

## **Background**

Sports represent a complicated and contested space for 2SLGBTQ people. For many 2SLGBTQ people, sports participation is associated with experiences of homophobia, sexism, transphobia and harassment, including in recreational sports spaces (Braumüller et al., 2020; Baiocco et al., 2018; Symons et al., 2017; Greenspan et al., 2019). 2SLGBTQ people report experiencing bullying and harassment within recreational sports spaces, and one study found that 36% of lesbians and 64% of gay men who were recreational athletes reported witnessing instances of homophobia within sports (Baiocco et al., 2018; Symons et al., 2017). Even if they are not the targets of that homophobia, one study found that just witnessing homophobia can negatively impact lesbian and gay people's sense of self (Symons et al., 2017). These experiences of harassment, and the associated diminished sense of self, have been identified as central reasons that push 2SLGBTQ people out of sports, often to never return (Baiocco et al., 2018; Symons et al., 2017; Doull et al., 2018). Predominantly, however, the research on 2SLGBTQ people's experiences in sport has focused on school-based settings (Symons et al., 2017; Zipp,

2010) and athletes at the university/collegiate level (Kroshus & Davoren, 2016; Kavoura & Kokkonen, 2020), with little focus paid to 2SLGBTQ experiences in community-based, 2SLGBTQ recreational sport.

Transgender athletes face unique barriers to participating in sport. Narratives about fairness are weaponized against transgender athletes, and trans women in particular, to enact policies barring them from participating in sport and subjecting them to harmful sex testing processes (Elling & Collot d'Escury, 2017; Braumüller et al., 2020). This is despite the lack of clear evidence to suggest that trans women have a competitive edge over their cisgender women peers (Elling & Collot d'Escury, 2017; Braumüller et al., 2020). Sex-segregated spaces within sports, like changerooms, are also sites of intense gender policing, exposing transgender and nonbinary people to scrutiny and creating further barriers to accessing sports (Hargie et al., 2017; Greey, 2022). While most of the rhetoric and public examples used to justify these transphobic policies target trans women, trans men and nonbinary athletes also must contend with fairness discourses, transphobic sex segregation policies and infrastructure, and feeling invisible in sports (Elling & Collot d'Escury, 2017; Braumüller et al., 2020).

Despite experiences of harassment and marginalization, 2SLGBTQ people still have benefitted from mainstream recreational sport participation. 2SLGBTQ young people, for example, have used sport as a way of travelling outside of their home community, giving them the opportunity to meet other 2SLGBTQ youth and to form their identities as 2SLGBTQ people (Kivel et al., 2000). Transgender people also use sport to support their physical health and gender transition processes, and those sports have become sites for referral for

healthcare providers that work with trans patients (Elling & Collot d'Escury, 2017; Lopez-Canada, 2021).

To support their mental, physical and social health, many 2SLGBTQ people have started, participated in and organized community-based 2SLGBTQ recreational sports leagues, teams and clubs (Mock et al., 2019). 2SLGBTQ recreational sports have been identified in the literature as places that facilitate social networks and support 2SLGBTQ people's mental health (van Ingen, 2004; Mock et al., 2019). In her study on a 2SLGBTQ running group, van Ingen (2004) found that participation in the running group helped people feel less alienated from the gay community and build a reliable network of social support. 2SLGBTQ sports teams and leagues have also been identified as places where 2SLGBTQ people who do not drink alcohol can meet that is outside of 2SLGBTQ bars, clubs and other spaces organized around substance use (Caetha et al., 2019; Gaston & Dixon, 2019). Research has identified 2SLGBTQ recreational sports as safe, welcoming spaces (in contrast with non-2SLGBTQ sports spaces) that can facilitate the development of both romantic and platonic relationships (Elling et al., 2003; Lopez-Canada et al., 2021; Travers & Derri, 2011). Participants in 2SLGBTQ recreational sports report positive mental health outcomes, such as increased confidence and a more positive sense of self, improved self-esteem and a heightened sense of self-mastery (Mock et al., 2019; Symons et al., 2017). This improved sense of self may be a result of 2SLGBTQ people feeling as though they are able to reconcile different parts of their identities, such as athlete and queer person, for the first time (van Ingen, 2004; Watson et al., 2013; Gaston & Dixon, 2019; Krane et al., 2002). 2SLGBTQ people also report that, by participating, they feel a sense of purpose and are

challenging homophobic or transphobic beliefs about 2SLGBTQ people by being visible in sport (Mock et al., 2019; Krane et al., 2002; Watson et al., 2013).

While there have been benefits identified in research on 2SLGBTQ people's participation in recreational sport, research has also identified negative impacts and experiences. Tensions across subgroups of 2SLGBTQ people (e.g., gay men and lesbian women, competitive and non-competitive players) who participate have been identified, and these have led to conflict that can negatively impact players' feelings of community connection (Elling et al., 2003). Research has also identified that 2SLGBTQ recreational sports teams and leagues can create policies and cultures that discourage or negatively impact subgroups of 2SLGBTQ people including Black, Indigenous and other People of Colour; trans and nonbinary people; and women (van Ingen, 2004; Waitt, 2003; Travers & Deri, 2011). Though many 2SLGBTQ people participate in these sport sites to support their health, 2SLGBTQ recreational sports cultures can reinforce hierarchies of healthy and desirable bodies or sexualities, marginalizing fat people and those who might participate in substance use or nightlife culture (van Ingen, 2004; Oliver & Cameron, 2021; Gaston & Dixon, 2019).

### **Research Questions**

Across my dissertation, I document how 2SLGBTQ recreational sports participation may impact the health and wellbeing of 2SLGBTQ people in Canada. Through a series of analyses, I examine who can access these sites of community and what relationships their participation has with their mental and social health. In undertaking this project, I seek to answer the following three research questions:

- 1) What is the demographic profile of 2SLGBTQ people who participate in 2SLGBTQ recreational sports teams and leagues in Canada?
- 2) Do 2SLGBTQ people who participate in 2SLGBTQ recreational leagues or teams have better mental health outcomes than those who do not?
- 3) Do 2SLGBTQ people who participate in 2SLGBTQ recreational leagues or teams report higher community connection than those who do not?

In the following section I outline the theory, methodology and methods that support my analysis and that I use to address these research questions.

### **Theory, Methodology, and Methods**

To address the research questions that guide my investigation I rely on three theoretical frameworks to understand how 2SLGBTQ recreational sports operate to impact the health and wellbeing of 2SLGBTQ people. The first, McMillan's Sense of Community (1996), defines the factors that shape 2SLGBTQ people's relationships to their communities. The second is Ungar's socioecological framework for social work practice (2002), which identifies the need for a critical lens on the broader social spheres of influence on a person's health. Last, I engage Merten's (2003) transformative emancipatory approach to research that prioritizes paradigmatic choices in service of improving the material conditions of marginalized people's lives.

There are many potential factors that may play a role in impacting the health of 2SLGBTQ participants in 2SLGBTQ recreational sports, such as the impact of physical exercise on mental health. Chief among these factors is the potential community connection and social support (Eime et al., 2013). While "community" is a contested

concept and has been conceived of in different ways as it pertains to sports, it is fundamental to understanding the ways in which people engage in and are impacted by sport (Rich et al., 2021). Within the literature on sport, there is a growing corpus that explores concepts of community sport as the context in which most people engage in organized sports (Doherty & Misener, 2008; Doherty & Cousens, 2013). Community sport is the local, physical spaces and regional organizations that provide opportunities for participation in sport, allowing for the interrogation of differences and tensions between high performance or school-based athletes and the sport participation of the broader public (Sam, 2009; Stenling & Fahlén, 2009). McMillan's (1996) Sense of Community framework provides strong insight into how 2SLGBTQ recreational sports may foster stronger community connection. In his theory on what determines the strength of connection that people feel to a community, he outlines nine elements that shape how people understand and relate to their communities (McMillan, 1996). I have listed them below, with my own summarized definition of each element:

- *Spirit* – the relationship between other members.
- *Emotional Safety* – the creation of a sense of security to facilitate connection and sharing.
- *Boundaries* – the group is bound by criteria as to who is included.
- *Faith I will Belong* – the belief that a member is wanted and welcome in the community.
- *Acceptance* – the belief that the member is wanted and welcome in the community is affirmed by others.

- *Paying Dues or Cognitive Dissonance* – membership has expectations of service.
- *Trust* – the explicit or implicit rules that govern the boundaries and dues are followed and appropriately enforced.
- *Trade* – that members can expect support from each other.
- *Art* – the collective creation of symbols and culture.

I have chosen McMillan's theory of community connection because the facets outlined above provide a roadmap for understanding the complex ways 2SLGBTQ people can benefit from, or be negatively impacted by, 2SLGBTQ recreational sports teams and leagues. For example, transgender people who participate in 2SLGBTQ sports may not find leagues and teams places of emotional safety or have little sense of their belonging due to trans-exclusive policies that do not ensure access to appropriate changing facilities. This in turn may result in lower feelings of connection and support from the team or league. By using McMillan's framework for community connection, and its explicit acknowledgement that communities are dependent on a relationship between members and boundaries that exclude others, my research challenges the idea that there is one singular, inclusive 2SLGBTQ community. Rather, it acknowledges that teams and leagues will differentiate between who belongs and who does not, potentially excluding others who identify under the 2SLGBTQ umbrella.

My contention that 2SLGBTQ people's sense of community, and by extension their participation in 2SLGBTQ recreational sports, impact their health and wellbeing and should be considered as sites of future social service provision, is further informed by Ungar's socioecological approach to health and social work practice (2002). A social ecological

approach to health argues for an understanding of a person's health and wellbeing as being fundamentally impacted by the broader social ecologies in which they live (Ungar, 2002). This includes at an individual level (e.g. the personal relationships that a person engages with every day), at a policy level (e.g. provincial policy on primary care providers), and at an institutional level (e.g. school environment; Ungar, 2002). By bringing a socioecological lens to my research, I argue that the communities that 2SLGBTQ people engage in (of which 2SLGBTQ recreational sports teams and leagues are one) and their sense of belonging to those communities are an important influence on the health and wellbeing of 2SLGBTQ people in Canada.

Finally, my dissertation uses a transformative emancipation approach to examine the impact of 2SLGBTQ recreational sports on the health and wellbeing of 2SLGBTQ people (Mertens, 2003). Transformative emancipation is an approach to research that is rooted in critical theory and emphasizes collaboration with marginalized communities to disrupt the forces of oppression (Mertens, 2003; 2010). It requires the researcher to create research in pursuit of improving the conditions of the communities with whom they are working, and not in pursuit of knowledge creation in and of itself (Mertens, 2003; 2010). By working from a transformative emancipation perspective, I aim to create knowledge through research that supports forms of social service and healthcare delivery that engage communities of 2SLGBTQ people, like 2SLGBTQ recreational sports teams and leagues, to support the health and wellbeing of 2SLGBTQ people. I also strive to conduct research that is of use to 2SLGBTQ people who organize and participate in 2SLGBTQ recreational sports in their

advocacy for resources from healthcare providers, foundations and charities, and municipal governments.

To address my three research questions, I have conducted analyses of three surveys on the health of 2SLGBTQ people in Canada: the Momentum Health Study (Moore et al., 2016), the Sex Now study (Rutherford et al., 2021) and the Our Health study (Community-Based Research Centre, 2022). All three projects were conducted to varying degrees of leadership and ownership by members of 2SLGBTQ communities and received human research ethics approval (Moore et al. 2016; Rutherford et al., 2021; Community-Based Research Centre, 2022). Both Sex Now and the Our Health study utilized a community-based research methodology, engaging community members and key stakeholders on both the project's aims and design, in line with my transformative emancipation approach (Mertens 2003; 2010).

My dissertation consists of five chapters. This includes three empirical chapters each formatted as publishable manuscripts for specific peer review academic journals bookended by this introductory Chapter 1 and concluding Chapter 5. In this first chapter, I provide a background to my dissertation research as well as the overarching theory, methodologies and methods employed.

In Chapter 2, I present data collected as part of the Momentum Health study, a survey on the sexual health of gay, bisexual and other men who have sex with men across Metro Vancouver, conducted by the British Columbia Centre for Excellence in HIV/AIDS (Moore et al., 2016). Momentum is a longitudinal, prospective cohort study that has been conducted since 2012. It used respondent-driven sampling to recruit sexually-active gay,

bisexual and other men who have had sex with men who were at least 16 years old (Moore et al., 2016). Data were collected through a self-administered survey and a nurse-administered survey on demographics, sexual behaviours, mental health and 2SLGBTQ recreational sports participation (Moore et al., 2016). Through my analysis, I demonstrate the relationship between 2SLGBTQ recreational sport participation and improved community connection and mental health. This chapter is formatted for publication as an article in the *Annals of LGBTQ Public and Population Health*.

In Chapter 3, I present findings from an analysis of the Sex Now survey, a community-based periodic survey conducted by the Community-Based Research Centre to understand the current state of gay, bisexual, trans, and queer men, and Two-Spirit and nonbinary people's health (Rutherford et al., 2021). The survey has been conducted both in person, at Pride festivals and community events across Canada, and online. The survey was developed in collaboration with 2SLGBTQ service providers, who also assisted in recruitment. For Chapter 3, I present data on transgender people's participation in 2SLGBTQ recreational sports, drawn from the 2019 and 2022 Sex Now survey cycles, and its associations with improved mental health, social support and community connection. This chapter is formatted for publication as an article in *Sexual and Gender Diversity in Social Services*.

In Chapter 4, I outline my analysis of data from the Our Health survey. Our Health is a community-based study conducted by the Community-Based Research Centre, in collaboration with Egale Canada, The Enchanté Network and 2 Spirits in Motion Society looking at the current state of 2SLGBTQ health across Canada in 2022 (Community-Based

Research Centre, 2022). Participants were recruited online, at Pride festivals and at other community events, and all 2SLGBTQ people aged at least 15 who lived in Canada were eligible to participate. This analysis is the result of a research gap identified by 2SLGBTQ recreational athletes and members of my 2SLGBTQ+ Recreational Sport Study Community Advisory Board (CAB), established in 2023. CAB members were recruited from 2SLGBTQ recreational sports teams and leagues from across Canada. The CAB was created to inform the development of the 2SLGBTQ+ Recreational Sport Study, a mixed-methods survey of 2SLGBTQ recreational sports participation in Canada. My CAB members advocated for research that documented the impact of 2SLGBTQ recreational sports participation during and following the COVID-19 pandemic and explored whether that impact varied by participant's age. To that end, in Chapter 4 I outline how 2SLGBTQ recreational sports participation is associated with higher community connection and social support, and no association is found with variables for mental illness symptoms. This chapter is formatted for publication as an article in the *Journal of Sport and Exercise Psychology*.

In my final chapter, I summarize the points of agreement and incongruence across my three empirical chapters as well as highlight the strengths and limitations of my analyses. I then offer the implications that my dissertation has for future sport and healthcare policy and practice with 2SLGBTQ people and how my research can be valuable for 2SLGBTQ people, communities and 2SLGBTQ recreational sports teams and leagues across Canada. Finally, I will outline how my dissertation lays the foundation for future

research on the health impacts of 2SLGBTQ recreational sport participation and how this may be used to support the health and wellbeing of 2SLGBTQ people.

### **Conclusion**

2SLGBTQ people have committed hours of unpaid labour to sustain 2SLGBTQ recreational sports teams and leagues in Canada, all to ensure that other 2SLGBTQ people can play with, exercise with, meet with and find support from other 2SLGBTQ people. So far this commitment and the impact on participants' health and wellbeing has been absent from the research literature on 2SLGBTQ people's relationships to sport. My dissertation begins to address the lack of academic research about these teams and leagues, creating knowledge that will inform future health interventions to engage 2SLGBTQ recreational sports and that will support the health and wellbeing of 2SLGBTQ people in Canada.

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## **Chapter Two**

### **Mental Health, Social Connection and Community Participation among Gay and Bisexual Cisgender and Transgender Men who Participate in LGBTQ Recreational Sports**

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**Abstract**

Despite sport being a common site of marginalization for many gay and bisexual men (GBM), LGBTQ recreational sports may offer opportunities to support the mental health of GBM through community connection and social support. This study sought to understand the impact that participation in LGBTQ recreational sports had on the mental health and sense of connection with the LGBTQ community for GBM. Using data from the Momentum Health Study, a longitudinal prospective biobehavioural cohort study on the health of GBM in Metro Vancouver, Canada, we compared self-reported questionnaire findings of those who participated in LGBTQ sports with those who did not. We also compared outcomes between those who saw a change in their sports participation (e.g. started or stopped LGBTQ sport participation). We found mixed results indicating a relationship between LGBTQ sports participation and a beneficial impact on the mental health and wellbeing of GBM. While there was no significant difference in mental health measures, those who participated in sport reported more social support and were less likely to report being in poorer health. Those that started participating in sport also reported higher community participation and were less likely to report being in worse health. Lastly, those that stopped participating were less likely to have depression scores in the normal range. LGBTQ recreational sport may be a valuable tool for public health and social services looking to support the mental health of GBM.

**Keywords:** Longitudinal Studies, Sexual and Gender Minorities, Social Support, Social Work, Mental Health, Sports, Recreation, Canada

**Statement of Public Health Significances:** Gay and bisexual men (GBM) who participate in LGBTQ recreational sport self-report higher community participation, social support and improved mental health than those who do not participate. LGBTQ recreational sport teams and leagues offer an avenue to support the mental health of GBM.

## Introduction

Gay and bisexual men (GBM) experience mental health disparities owing to the stress of discrimination and marginalization they experience based on their sexual minority status<sup>1-2</sup>. More specifically, sexual minority populations experience high rates of anxiety, depression and loneliness<sup>3-7</sup>. However, these negative mental health impacts can be mitigated by social support and connection to communities of other sexual minority people<sup>8-10</sup>.

Sport participation has been associated with mental, physical and social health benefits for LGBTQ people, potentially offering novel ways to positively impact the health and wellbeing of GBM<sup>11-12</sup>. However, despite the benefits that sport may offer, sport is a common site of violence, harassment and bullying for GBM<sup>13-14</sup>. Experiences of bullying in youth sports can drive GBM to leave sports<sup>14</sup>. This violence and bullying may further compound the minority stress experienced by GBM and stop them from accessing the benefits of sport in the future. While their heterosexual peers are more likely to continue to participate in sports as adults if they participated as youth, sexual minority people are less likely to continue participating in sport across their life span regardless of their previous participation as young people<sup>15</sup>.

Though many GBM have experienced violence and marginalization in sport, driving them away from participating, many GBM still participate in sport into adulthood through lesbian, gay, bisexual, trans and queer (LGBTQ) specific recreational sports teams, leagues and clubs<sup>11</sup>. In Canada, these community organizations have existed for decades and were created by LGBTQ people explicitly for other LGBTQ recreational athletes to play sports in

safer and more supportive environments<sup>12</sup>. There a variety of sport leagues, teams and groups in municipalities across Canada, including soccer, volleyball, baseball and water polo<sup>11</sup>. LGBTQ recreational sports also have a long history in Metro Vancouver, which hosted the first iteration of the Gay Games to happen outside of the United States in 1990<sup>16</sup>. LGBTQ recreational sports offer GBM important opportunities to build relationships, engage in physical activity, affirm their identities and connect with their communities away from the homophobia of mainstream sports spaces<sup>11-12, 17</sup>. Despite the long history of LGBTQ recreational sports, there is little research that has documented the impact of participation in LGBTQ recreational sports on the mental health of GBM.

This study had three objectives. The first was to understand if GBM who participate in LGBTQ recreational sport have different improved mental health and sense of connection with the LGBTQ community than those who do not participate. Our second objective was to understand if GBM who reported starting participation in LGBTQ recreational sport had associated improved mental health and sense of connection with the LGBTQ community than those who did not report a change in their participation. The third objective was to understand if GBM who reported stopping participation in LGBTQ recreational sport had improved mental health and sense of connection with the LGBTQ community than those who did not report a change in their participation.

## **Methods**

For our analysis, we used data from the Momentum Health Study, a longitudinal prospective cohort study of GBM in Metro Vancouver, British Columbia, Canada<sup>18</sup>.

Participants were recruited using a respondent-driven sampling technique where “seed”

participants referred further participants from their social networks through a peer chain recruitment technique<sup>18</sup>. These seed participants were purposively recruited through online advertisements and through community partner agencies<sup>19-20</sup>. Given the inability for random sampling techniques with this population, the goal of respondent-driven sampling is to help reach a more diverse and representative sample than the study team could have reached through purposive or convenience sampling alone.

Momentum study participants were eligible if they identified as a man (cisgender or transgender), were 16 years old or older, lived in Metro Vancouver and reported having had sex with a man in the previous six months<sup>18</sup>. Participants completed in-person study visits every six months at a dedicated office in Vancouver's West End neighbourhood and received a \$50 CAD honorarium for every study visit, as well as \$10 for every participant they successfully referred to the study up to a maximum of six referrals<sup>18</sup>. Data were collected from February 2012 to July 2018, with a maximum follow-up time of four years for any individual participant. The Momentum study was approved by the research ethics boards at the University of British Columbia (H11- 00673), Simon Fraser University (2011S0691) and the University of Victoria (11-459) in British Columbia, Canada. Participants provided written informed consent upon enrolment in the Momentum Health Study, reaffirming this at each subsequent study visit.

Participants completed a computer-assisted self-interview, a computer-based sexual history and data collection technique that can identify higher risk behaviour more commonly than clinician interviews<sup>21</sup>, that asked about their sociodemographic details, health, social relationships, relationship to gay communities and participation in LGBTQ

recreational sports<sup>18</sup>. Participants completed psychometric scales on social connection and mental health that have been validated with adult populations, including the Lubben Social Network Scale (LSNS;  $\alpha = 0.83$ )<sup>22</sup>, UCLA Loneliness Scale ( $\alpha = 0.72$ )<sup>22</sup> and the Hospital Anxiety and Depression Scale (HADS; anxiety subscale  $\alpha = 0.83$ , depression subscale  $\alpha = 0.82$ )<sup>24-25</sup>. All three scales have been previously used to measure the mental health and social connection of GBM in the Canadian context<sup>26-28</sup>. Participants were asked to rate the importance of being connected to and involved with the gay community as well as their agreement with the statement, "*Being part of the gay/bisexual/queer community is an important reflection of who I am*". Last, participants also answered questions about the people in their lives with whom they were open about their sexual orientation.

**Primary Explanatory Factors.** As part of the measures about social relationships connection, participants were asked how often they participated in or engaged with "gay sports teams" and herein referred to as "LGBTQ sports" to reflect the diversity of identities who participate in these sports leagues and teams<sup>11</sup>. For participation in LGBTQ sports at each study visit participants were coded as having participated in the past six months or not. Those currently participating in sports at the time of data collection are referred to as "LGBTQ sports participants" throughout this paper. To address our first objective, LGBTQ sports participants were compared to those who did not identify having participated in LGBTQ sports.

Longitudinally across study visits, we were able to indicate those who stopped and who had started participation in LGBTQ sports. To address objective two of our study, we determined which study participants that had "initiated LGBTQ sport participation" by

identifying those who indicated no participation at a previous study visit, but at the subsequent visit indicated participation in the past six months. Those who “initiated LGBTQ sport participation” were compared with those who did not report a change in their LGBTQ sport participation, also inclusive of those who identified they were not participating in LGBTQ sports and those who were participating at their last visit. Finally, to achieve objective three of our study, we identified survey participants who had “stopped LGBTQ sport participation” by grouping GBM who had indicated participation in LGBTQ sports at a previous study visit, but at the subsequent visit indicated not having participated in the past six months. Those who stopped LGBTQ sport participation were compared with those who did not report a change in their LGBTQ sport participation, inclusive of participants who identified that they were not participating in LGBTQ sports in their last visit and those who identified that they were participating in LGBTQ sports.

Descriptive statistics were derived comparing those who recently participated in LGBTQ sports versus those who did not identify participation. Given the longitudinal nature of this analysis, no respondent-driven sampling adjustments were made. Binary logistic regression was conducted to identify whether LGBTQ sport participation (including stopping or initiating) was associated with mental health and community connection outcomes<sup>29</sup>.

## **Results**

In total, 774 GBM participated in the Momentum Health Study, completing a total of 4173 study visits between February 2012 and July 2018. Of those 4173 visits, 451 study visits (6.29%) had participants identify that they participated in LGBTQ recreational sports

in the previous six months. A total 161 unique participants shared that they had participated in LGBTQ sports over the analysis period, representing 20.8% of the total study participants (n=161/774). Table 1 outlines the demographics of the sample. Of those who reported participating in LGBTQ sports, 85.8% identified their sexual orientation as gay (n=387), 6% (n=27) as bisexual and 6.2% (n=37) as another sexual identity. Most LGBTQ sport participants were white (78.7%, n=355) but others identified as Asian (10.9%, n=49), Aboriginal (9%, n=2), Latin American (3.5%, n=16) or another racial or ethnic identity (4.9%, n=22). A little more than a third of those who had participated in LGBTQ sports at any time were under the age of 30 (39.2%, n=177) while another 35.5% (n=160) were between the ages of 30 and 44 and 25.3% (n=114) were over the age of 45. Of note, there were no statistically significant differences between those who participated in LGBTQ sports in the previous six months and those who had not across any of the previously mentioned demographic variables in-text. However, GBM who lived outside of the City of Vancouver were less likely to have participated in LGBTQ sports (12.0%, n=54, p-value = 0.024) compared with those living in Vancouver's West End neighbourhood (58.1%, n=262). There was no statistical difference between those who lived elsewhere in Vancouver but outside of the West End (29.9%, n=135), compared to those who lived in the West End.

Results of mental health, social health and community connection outcomes for LGBTQ sport participants in comparison with those who did not participate are shared in Table 1. LGBTQ sport participants were more likely to report more social support as indicated by a higher LSNS score (OR=1.10, p-value= 0.03) than those who did not participate. LGBTQ sport participants were also more likely to be open about their sexuality

at work (OR 3.76, p-value = <0.01) and were less likely to self-rate their overall health as *Fair/Poor/I Don't Know* (OR 0.46, p-value= 0.04), as opposed to *Excellent/Very Good/Good*. Sports participants were also more likely to report any level of engagement with gay newspapers, gay meetings and gay clubs in the last six months compared with those who did not participate in sports. There was no significant difference in sports participants' anxiety, depression and loneliness scores compared with non-participants. LGBTQ sport participants were more likely to disagree with the statement that *Being part of the gay/bisexual/queer community is an important reflection of who I am* than those who did not participate in sport (OR 0.35, p-value= <0.01).

**Started LGBTQ Sport Participation.** Over the course of the study period, we identified 113 (3.3%) visits that reported new engagement in LGBTQ sports while 3285 (97.7%) study visits reported no change in their LGBTQ sport participation. Results for participants who had started participating in LGBTQ sports teams and leagues are outlined in Table 2. Those who had started participating in a LGBTQ sports team or league over the course of the study period were less likely to report that their health was *somewhat worse* (OR=0.14, p-value= 0.04) than it was at their last study visit six months prior than those that did not start participating. They were also more likely to identify having attended a gay meeting more than once per month (OR 2.66, p-value= <0.01) or less than once per month (OR 2.54, p-value= <0.01). Those that were 45 or older were less likely to start participating in LGBTQ sports (OR 0.37, p-value= <0.01). Otherwise, there were no significant differences in the demographic profile of those who started participating in comparison to those who did not, apart from age.

**Stopped LGBTQ Sport Participation.** We identified 120 (3.5%) visits where participants reported having stopped participating in LGBTQ sport while 3278 (96.5%) study visits where participants reported no change in their LGBTQ sport participation. Results for survey participants who reported stopping participation in LGBTQ sports can be found in Table 3. Momentum participants who had stopped participating in LGBTQ sports were also less likely to report that their health was *about the same* (OR=0.42, p-value= <0.01) since their last study visit. On the HADS Depression measure, both groups had an average score of 3 on the HADS Depression measure, within the normal score range. However, those who had stopped participating in LGBTQ sports were less likely to have a score of 3 (OR=0.92, p-value= 0.01). When asked about the importance of connecting to the gay community, those that had stopped participating in LGBTQ sport were less likely to choose *Somewhat important* (OR=0.61, p-value= 0.04), *Not very important* (OR=0.45, p-value= 0.01) and *Not at all important* (OR=0.3, p-value= 0.02) in comparison to *Very important*) than those who had not stopped participating. Those who had stopped participating were also more likely to have gone to a gay club *less than once per month* (OR=2.44, p-value= <0.01) and *more than once per month* (OR=2.82, p-value= <0.01) than those who saw no change in their participation. Those that were 45 or older were less likely to stop participating in LGBTQ sports (OR 0.57, p-value= 0.05).

## Discussion

The results of our study paint a complicated picture about the impact of participation in LGBTQ recreational sports on the health and wellbeing of GBM in Vancouver. Those who had participated in sport had higher social engagement than those who did not participate

in sport. They also had a high engagement in gay community and culture such as clubs and newspapers. Participation in community sites also increased for GBM who reported having started participation in a LGBTQ sports team, in comparison to those who did not start, providing support to a relationship between community connection and LGBTQ sport participation. It is still unclear, however, if their LGBTQ sport participation is bolstering their broader connection with the gay community or they are drawn to participate because they are already connected.

Both social and community connectedness have been associated with increased self-esteem, self-worth, value and general wellbeing among sexual minority populations<sup>5-6</sup>. Social and community connection may also help to reduce feelings of loneliness in GBM<sup>27</sup>. In our study, however, despite participants' increased participation in gay community sites, and their more expansive social networks, they did not report significant differences in scores for loneliness, anxiety or depression scores. Several factors could explain this observation. First, it may reflect that the benefits of LGBTQ sports participation are not captured by standard psychometric tools. Second, that these benefits emerge after a certain length of time or frequency of LGBTQ sport participation. Third, as different sports have been found to have different impacts on participants' mental health<sup>30</sup>, and we are unable to differentiate between the types of LGBTQ sports GBM are participating in, it could be that the mental health benefits are obscured in our analysis.

Our results do indicate that LGBTQ sport participation is associated with a stronger sense of self for GBM. LGBTQ sport participants saw their engagement with gay communities as reflecting an important part of their identity, while those who stopped

participating in sports also identified being connected and involved in the gay community as important. These findings, and our result that sports participants are more likely to be open about their sexual orientation with coworkers, suggest that LGBTQ recreational sports participation is associated with a stronger sense of self for GBM. A stronger sense of self can also help to insulate GBM from the deleterious impacts of minority stress on their mental health<sup>9,11</sup>.

While sports participants' mental health scores do not indicate a change to their mental health, these results are contrasted by LGBTQ sport participants reporting better subjective evaluations of their health than those who do not participate. Sports participants were significantly less likely to evaluate their health as *Fair/Poor/Don't know*. GBM who had stopped playing LGBTQ sports were also significantly less likely to see their health as the same as at their last study visit, suggesting a change had occurred. Taken as a whole, there appears to be a relationship between LGBTQ sport participation and overall wellbeing for GBM, though it remains unclear what impacts it has on specific facets of GBM's health or mental health. Our results also did not find any negative mental health impact associated with sports participation.

There are limitations of this study that shape what we can say about the impact of LGBTQ sport participation on the health of GBM. First, the question on the Momentum survey does not allow for participants to identify the sport that they participate in or the frequency at which they participate. There may be differences between the type of sport or based on the frequency of participation and the impact on the health of GBM. Furthermore, while we removed those who had stopped participating in LGBTQ sports since their last

study visit, as sports participation is often seasonal, it may be that the window for playing had closed but participants were still engaged in their social networks with plans to return when the window opened again and delaying the impact of leaving LGBTQ recreational sports.

Further qualitative research is needed to illuminate how GBM understand the role of LGBTQ recreational sports in impacting their health, providing insight into the results of this study. Our research did not identify any negative impacts of LGBTQ recreational sport participation; however, we did find a relationship between LGBTQ sport participants and engagement with bars or clubs. Past research has identified a relationship between sport participation and heightened substance use among young people<sup>31</sup>. Research should explore the relationship between LGBTQ sport participation, substance use and sexuality, particularly for a population that has high rates of substance use like GBM<sup>15, 28</sup>. Previous research has also identified that sexual minority people are drawn to individual sports over team sports after adolescence, suggesting that the type or cultures of different sports impact GBM participation<sup>33</sup>. Further research is needed to understand how different types of LGBTQ sports, and the frequency of participation may impact GBM in unique ways. Lastly, further research is needed to explore how LGBTQ recreational sports can be engaged by social service and health promotion efforts with GBM<sup>7</sup>.

## **Conclusions**

LGBTQ recreational sports participation represents a popular site for GBM to connect with each other and their broader gay communities, and engage in physical exercise. Participation is associated with self-reported health and social benefits and no

identified negative health impacts. Our results suggest that gay recreational sports offer novel opportunities for social and health services to utilize gay recreational sports in supporting GBM who experience loneliness, social isolation or may benefit from stronger social relationships. LGBTQ recreational sports may also benefit GBM who experience low self-esteem or sense of self because of minority stress. Further qualitative research is needed to explore GBM's perspectives on the health impact of LGBTQ recreational sports and their utility in social service and health promotion efforts with GBM.

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### **Institutional Review Board Statement**

The study was conducted in accordance with the Declaration of Helsinki and approved by the Research Ethics Committees at the University of British Columbia (H11- 00673), Simon Fraser University (2011s0691), and the University of Victoria (11-459).

### **Informed Consent Statement**

Written informed consent was obtained from all subjects involved in the study.

**Conflicts of Interest**

The authors declare no conflicts of interest.

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**Table 1 – Momentum Survey Participants Currently Engaged in LGBTQ Recreational Sports**

	Identified LGBTQ Sport Participation				Binary Regression Analysis		
	No (n=3722)		Yes (n=451)		OR	95% CI	p-value
	N	%	N	%			
<b>Age</b>							
under 30	1010	27.1	177	39.2	ref		
30 to 44	1233	33.1	160	35.5	0.73	0.35-1.53	0.41
45 and over	1479	39.7	114	25.3	0.42	0.16-1.16	0.09
<b>Sexual Orientation</b>							
Bisexual	253	6.8	27	6.0	1.55	0.56-4.3	0.40
Gay	3227	86.7	387	85.8	ref		
Other sexual orientation	242	6.5	37	8.2	0.37	0.11-1.21	0.10
<b>Ethnicity</b>							
Aboriginal	247	6.6	9	2.0	0.34	0.02-4.93	0.43
Asian	370	9.9	49	10.9	1.16	0.24-5.58	0.86
Latin American	138	3.7	16	3.5	1.94	0.22-17.31	0.55
White	2839	76.3	355	78.7	ref		
Another ethnicity	128	3.4	22	4.9	1.70	0.16-18.12	0.66
<b>Neighborhood</b>							
Downtown	1885	50.6	262	58.1	ref		
Elsewhere in Vancouver	1029	27.7	154	34.2	1.29	0.74-2.25	0.37
Outside Vancouver	775	20.8	54	12.0	0.37	0.16-0.88	0.02
<b>Annual Income</b>							
< \$30,000	2137	57.5	200	44.4	ref		
\$30,000 to \$59,999	1029	27.7	154	34.2	1.29	0.74-2.25	0.37
\$60,000 and over	551	14.8	96	21.3	0.66	0.28-1.58	0.35
<b>Open about Sexuality at Work</b>							
No	399	10.7	28	6.2	ref		
Yes	2844	76.4	394	87.6	3.76	1.47-9.64	0.006
<b>Current Health</b>							
Excellent/very good/good	3193	85.8	415	92.2	ref		
Fair/poor/I don't know	529	14.2	35	7.8	0.46	0.22-0.96	0.037
<b>Read Gay Newspaper</b>							
Not in past 6 months	1209	32.5	80	17.7	ref		
Less than once per month	1144	30.7	164	36.4	2.98	1.72-5.16	<0.001
About once per month	723	19.4	86	19.1	3.03	1.58-5.80	<0.001

More than once per month	646	17.4	121	26.8	7.36	3.72-14.54	<0.001
<b>Visited Gay Club</b>							
Not in the past 6 months	1085	29.2	27	6.0	ref		
Less than once per month	1104	29.7	118	26.2	4.60	2.18-9.70	<0.001
About once per month	591	15.9	107	23.7	6.61	2.88-15.20	<0.001
More than once per month	942	25.3	199	44.1	8.47	3.71-19.31	<0.001
<b>Attended Gay Meetings</b>							
Not in the past 6 months	2632	70.7	220	48.8	ref		
Less than once per month	455	12.2	108	23.9	3.46	2.13-5.61	<0.001
About once per month	252	6.8	47	10.4	2.57	1.32-5.02	<0.001
More than once per month	382	10.3	76	16.9	4.70	2.51-8.81	<0.001
<b>Being Part of Community is an Important Reflection of my Identity</b>							
Strong agree	562	15.1	117	25.9	ref		
Agree	1629	43.8	234	51.9	0.69	0.38-1.26	0.22
Disagree	1153	31.0	73	16.2	0.35	0.16-0.76	0.008
Strongly disagree	378	10.2	27	6.0	0.60	0.21-1.71	0.34

**Table 2 – Momentum Survey Participants Who Started Participation in LGBTQ Recreational Sports since last Study Visit**

	Started Participation in LGBTQ Sports since last Study Visit				Binary Regression Analysis		
	No (n=3285)		Yes (n=113)		OR	95% CI	p-value
	N	%	N	%			
<b>Health Compared to Previous Visit</b>							
Much better	359	10.9	20	17.7	ref		
Somewhat better	807	24.6	32	28.3	0.72	0.37-1.42	0.34
About the same	1613	49.1	49	43.4	0.57	0.30-1.07	0.08
Somewhat worse	481	14.6	11	9.7	0.40	0.17-0.96	0.04
Much worse	25	0.8	1	0.9	0.69	0.07-7.06	0.75
<b>Read Gay Newspaper</b>							
Not in past 6 months	1130	34.4	25	22.1	ref		
Less than once per month	1043	31.7	38	33.6	1.67	0.93-2.99	0.09
About once per month	595	18.1	23	20.4	1.97	1.01-3.87	0.048

More than once per month	518	15.8	27	23.9	2.73	1.37-5.43	0.004
<b>Visited Gay Club</b>							
Not in the past 6 months	946	28.8	9	8.0	ref		
Less than once per month	990	30.1	33	29.2	3.31	1.50-7.31	0.003
About once per month	530	16.1	31	27.4	5.68	2.50-12.94	<0.001
More than once per month	820	25.0	40	35.4	5.13	2.29-11.50	<0.001
<b>Attended Gay Meetings</b>							
Not in the past 6 months	2320	70.6	58	51.3	ref		
Less than once per month	425	12.9	28	24.8	2.54	1.49-4.31	<0.001
About once per month	227	6.9	8	7.1	1.41	0.61-3.28	0.42
More than once per month	313	9.5	19	16.8	2.66	1.38-5.12	0.003

**Table 3 – Momentum Survey Participants Who Stopped Participating in LGBTQ Recreational Sports since last Study Visit**

	Stopped Participation in LGBTQ Sports since last Study Visit				Binary Regression Analysis		
	No (n=3278)		Yes (n=120)		OR	95% CI	p-value
	N	%	N	%			
<b>Age</b>							
under 30	856	26.1	42	35.0	ref		
30 to 44	1096	33.4	41	34.2	0.77	0.45-1.31	0.33
45 and over	1327	40.5	37	30.8	0.57	0.32-1.00	0.049
<b>Health Compared to Previous Visit</b>							
Much better	356	10.9	12	19.2	ref		
Somewhat better	805	24.6	34	28.3	0.69	0.37-1.25	0.21
About the same	1620	49.4	42	35.0	0.42	0.23-0.75	0.003
Somewhat worse	472	14.4	20	16.7	0.70	0.35-1.38	0.30
Much worse	25	0.8	1	0.8	0.67	0.08-5.93	0.72
<b>Read Gay Newspaper</b>							
Not in past 6 months	1113	33.9	42	35.0	ref		
Less than once per month	1039	31.7	42	35.0	1.02	0.63-1.64	0.94
About once per month	607	18.5	11	9.2	0.44	0.21-0.90	0.024
More than once per month	520	15.9	25	20.8	1.17	0.65-2.11	0.61
<b>Visited Gay Club</b>							
Not in the past 6 months	939	28.6	16	13.3	ref		
Less than once per month	980	29.9	43	35.8	2.44	1.31-4.53	0.005
About once per month	541	16.5	20	16.7	1.83	0.88-3.78	0.10

More than once per month	819	25.0	41	34.2	2.82	1.47-5.38	0.002
<b>Importance of Connecting to Gay Community</b>							
Very important	665	20.3	38	31.7	ref		
Somewhat important	1621	49.4	59	49.2	0.61	0.38-0.98	0.04
Not very important	705	21.5	18	15.0	0.45	0.24-0.85	0.01
Not at all important	288	8.8	5	4.2	0.30	0.11-0.83	0.02

### **Chapter Three**

#### **Mental Health and Community Connection Impacts of 2SLGBTQ Recreational Sport Participation among Transgender and Nonbinary People in Canada**

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**Abstract**

Transgender, nonbinary and gender diverse (trans) people experience worse mental health outcomes in comparison with their cisgender peers, owing to their experiences of marginalization and discrimination. Many trans people use sport participation to support their mental health and transition processes. Two-Spirit, Lesbian, Gay, Bisexual, Trans and Queer (2SLGBTQ) recreational sports may offer unique opportunities to support the mental health of trans people by encouraging physical activity and connecting them with 2SLGBTQ community and social networks. Our study examined if trans people's participation in 2SLGBTQ recreational sports has an impact on trans people's mental health, sense of connection with the 2SLGBTQ community and social support. Data were drawn from the community-based Sex Now cross-sectional survey cycles of 2019 and 2022, which recruited participants aged 15+ who live in Canada. Of 1882 trans participants, 125 (6.6%) reported participation in 2SLGBTQ recreational sports in the past six months. Compared

with those who did not participate in 2SLGBTQ recreational sport, trans people did not report significant differences in anxiety symptoms, but did report lower depression symptoms and higher satisfaction with their relationship to the 2SLGBTQ community. 2SLGBTQ recreational sport complements social service efforts to support the mental health and social needs of trans people.

## Introduction

Transgender, nonbinary and gender diverse (herein “trans”) people experience worse mental health outcomes in comparison with their cisgender peers. These well documented negative mental health impacts are owing to trans people’s experiences of social marginalization and discrimination, resulting in distress (Meyer, 1995; 2015; Bauer et al., 2013). Research has identified that trans individuals report higher scores for depression (Ferlatte et al., 2020) and anxiety (Millet et al, 2016) than their cisgender peers and are at elevated risk for suicidal ideation (Bauer et al., 2013).

Despite these mental health disparities, trans people have also developed social strategies and resources to blunt the effects of marginalization and ameliorate the impact on their mental health and wellbeing. There is a growing body of research documenting how social support, and connection to the Two Spirit, lesbian, gay, bisexual, trans and queer (2SLGBTQ) community can positively impact trans people’s mental health (O’Handley & Courtice, 2022; Bauer et al., 2015; Austin & Goodman, 2017). Social support and community connection advance trans people’s access to social services and healthcare resources (Bowling et al., 2020; Sherman et al., 2020). Social connection and support are also associated with improved self-esteem, lower psychological distress and reduced suicidal ideation for trans people (Bauer et al., 2015; Austin & Goodman, 2017; O’Handley & Courtice, 2022).

Participation in community sport, predominantly provided by non-profit and volunteer organizations (Doherty & Misener, 2008; Doherty & Cousens, 2013), can be a protective factor for supporting the mental health of marginalized people such as people of colour,

people with disabilities and those who are low-income (Karstensen et al., 2024).

Community-based sports participation can help foster social inclusion and political engagement and support the development of strong social networks and social support (Maxwell et al., 2013; Frost et al., 2013; Skinner et al., 2008). Participation in community sports has also been associated with lower rates of ill mental health such as depression, anxiety and stress in the general adult population (Eather et al., 2023; Eime et al., 2013).

Unfortunately, there is a well-documented history of trans people experiencing harassment and exclusionary policies that seek to limit their participation in sports (Elling & Collot d'Escury, 2017; Braumüller et al., 2020). Despite these violent and oppressive histories, there is also a growing body of research that captures how trans people also use sport in ways that are supportive of their health (Elling & Collot d'Escury, 2017; Lopez-Canada et al., 2021; LaRocca et al., 2022). For some trans people, sport participation has helped facilitate their access to healthcare providers, supported their transition process, is associated with decreased depression and suicidal ideation and has been beneficial to their broader sense of wellbeing (Elling & Collot d'Escury, 2017; Lopez-Canada et al., 2021; LaRocca et al., 2022). Despite this growing body of literature, however, there is a dearth of research on trans people's involvement in specifically 2SLGBTQ recreational sports and its impact on their health.

2SLGBTQ recreational sports teams and leagues have existed in Canada for the last half century, allowing 2SLGBTQ people opportunities to socialize and exercise away from the harassment and violence of mainstream athletic spaces (van Ingen, 2004). Mock et al. (2019) found that 2SLGBTQ recreational sports participation has been found to improve

self-esteem, confidence and build a more positive sense of self, but was drawn from a sample that was 97.8% cisgender, limiting the utility of the data for trans people.

Furthermore, as 2SLGBTQ recreational sports teams and leagues are organized by and for members of 2SLGBTQ communities, they may have the added benefit of facilitating trans people's connection to 2SLGBTQ communities and social support.

The current study seeks to understand if trans people's participation in 2SLGBTQ recreational sports has an impact on trans people's mental health, sense of connection with the 2SLGBTQ community and social support.

## **Methods**

Data for this analysis were drawn from the Sex Now survey, a community-based, periodic survey that is conducted annually by the Community-Based Research Centre to understand the state of gay, bisexual, queer and trans men as well as Two Spirit and nonbinary people's health in Canada (Rutherford et al., 2021). Multiple survey cycles were combined to increase statistical power and to enhance the generalizability of the findings, allowing for a more robust dataset. Participants may have completed multiple cycles of the survey but given the anonymous nature of participation we are unable to address this in the combined dataset. The 2022 survey cycle was conducted in-person at Pride festivals and other community events across Canada, and the 2019 survey cycle was conducted online with recruitment through social media (Facebook, Twitter, etc.), sexual networking sites (Grindr, Squirt, Scruff, etc.) and community-based organization and service provider networks. Both Sex Now cycles were conducted in English and French, and the 2022 cycle included Spanish. The survey was developed in partnership with members of 2SLGBTQ

communities and service providers following community-based research principles (Community-Based Research Centre, 2024). To participate in Sex Now, participants were required to be 15 years of age or older, live in Canada, identify as a man (either cisgender or trans) or as nonbinary or as Two Spirit and either report a non-heterosexual sexual orientation (identity) or report having had sex with a man in the last 5 years (behaviour). The Sex Now study was reviewed and approved by the research ethics boards at the University of Victoria (BC17-487), the University of British Columbia (BC17-487), and the University of Toronto (35929). All participants provided informed consent prior to self-completing the survey.

Sex Now participants completed questions identifying their sociodemographic details, including their age, race or ethnic identity, sexual orientation, gender identity and how they would describe their financial situation at the time of the survey. Participants were able to choose multiple responses for race or ethnicity, sexual orientation and gender identity and these categories are not mutually exclusive in our analysis. To ensure statistical strength, the financial variable was recoded to a binary outcome where those who identified “*Cannot Make Ends Meet*” and “*Have to Cut Back*” were coded as high financial strain whereas “*Enough, but no Extra*” and “*Comfortable with Extra*” were coded as low financial strain (Okechukwu et al., 2012). The primary explanatory variable for these analyses comes from a question that asked participants “*What are you CURRENTLY involved in...*” with a list of close-ended options to capture social and recreational activities, which included the option “*2SLGBTQQIA+ sports leagues or recreational activities*”. Selecting this option was coded as *2SLGBTQ recreational sports participation*

for this study as a binary variable. The questionnaire also assessed participants' mental health, using the Patient-Health Questionnaire-2 (PHQ-2) and Generalized Anxiety Disorder-2 (GAD-2) where a score of three or higher indicates a possible depressive or anxiety disorder respectively (Kroenke et al., 2009). Participants were also asked questions about their relationship to 2SLGBTQ communities, such as "*Are you satisfied with your connection to 2SLGBTQQA+*", and "*how many people can you count on for support*" with numerical response options. Both the PHQ-2 and GAD-2 variable were coded into binary outcomes, where scores of less than 3 were coded as "*Low*" for mental health symptoms and scores of 3 or higher were coded as "*High*" for mental health symptoms. The variable for social support was also recoded to "*Low*", representing 0 to 3 people who can be relied on for support, and "*High*" when 4 or more people could be relied on. Participants were allowed to skip any question when completing the survey to support autonomy.

Sex Now participants who identified their gender identity as Trans Man (includes participants who identified both "man" and "trans man"), Nonbinary, or Other Gender Identity (includes participants that wrote in a gender identity that was not listed) were grouped into a new trans identified variable. Descriptive statistics were prepared for the overall sample, and for those who were trans. We compared those who completed the question on sports participation with those who did not to determine any potential bias. We then assessed differences in sociodemographics, and outcome factors based on sports participation or not but did not assess effect size. We used logistic regression to identify whether sport participation was associated with mental health and community connection outcomes while controlling for financial strain as a potential confounder (Sari,

2021). All analyses were conducted using IBM SPSS (Version 29.0.2) with statistical significance set at  $p < 0.05$ .

## Results

This Sex Now sample included 13,808 cisgender and 2,324 trans participants. Among the trans participants, 442 (19%) did not respond to the question about current participation in 2SLGBTQ recreational sports. There were select differences between trans people who completed the question on 2SLGBTQ sports participation versus those who did not. Those that reported high financial strain (versus low,  $p < 0.001$ ), and identified as gay (versus not,  $p = 0.004$ ) or straight (versus not,  $p = 0.008$ ) were more likely to complete the question. Those with high anxiety symptoms were less likely to answer the sports question ( $p = 0.037$ ), but no other mental health or community connection variables included in this analysis were significantly different.

Notably, there was no statistical difference in the prevalence of current participation in 2SLGBTQ recreational sports reported between trans ( $n = 125/1882$ , 6.6%) and cisgender ( $n = 563/8100$ , 7.0%) participants ( $p = 0.63$ ). *Table 1* describes the overall sample of trans participants, as well as this stratified by current 2SLGBTQ sports participants versus not. In terms of sexual orientation, bisexual ( $p = 0.005$ ; OR 0.52) participants were less likely to have participated in 2SLGBTQ recreational sports while queer-identified participants ( $p = 0.05$ ; OR 1.44) were more likely. Otherwise, there were no statistically significant sociodemographic differences in sports participation among trans participants. Among trans participants who reported currently participating in 2SLGBTQ recreational sports, 36 identified their gender identity as a trans man, 68 as nonbinary and 40 as another gender

identity. In terms of sexual orientation among trans participants in 2SLGBTQ recreational sports, 68 were queer, 42 were pansexual, 40 were gay, and 23 were bisexual. Participants identified their racial or ethnic identity as Arab/West Asian/Middle Eastern/North African (n=3), Black/African (n=4), East Asian/Southeast Asian (n=8), Indigenous (n=12), Latin American (n=6), South Asian (n=4), and white (n=91). The mean age of trans-identified 2SLGBTQ recreational sports participants was 27 years old (standard deviation: 8.3) with 81 aged 29 years old or younger, 37 between the ages of 30 and 44, and seven between the ages of 45 and 59 years old. No trans participants aged 60 or older reported current 2SLGBTQ sports participation; however, only 1.1% (n=21) of the total trans sample were in this age group. Last, with respect to financial strain among trans sports participants, 16 reported they *Cannot make ends meet*, 43 said they *Have to cut back*, 47 said they have *Enough but no extra*, and 18 reported they were *Comfortable with Extra*.

**Table 1 – Trans and Nonbinary Sex Now Survey Participants and Their Participation in 2SLGBTQ+ Recreational Sports by Sociodemographics**

	All Trans and Non-Binary People (N=1882)		Sport Participants (n=125)		Non-Participants (n=1757)		Participants vs. Non-Participants p-value
	n	%	n	%	n	%	
<b>Gender Identities*</b>							
Trans Man	678	36%	36	5.3%	642	94.7%	p=0.09
Nonbinary	855	45.4%	68	8%	787	92%	p=0.20
Other Gender Identity	624	33.2%	40	6.4%	584	93.6%	p=0.62
<b>Sexual Orientations*</b>							
Bisexual	552	29.3%	23	4.2%	529	95.8%	<b>p=0.005 (OR 0.52)</b>
Gay	555	29.5%	40	7.2%	515	92.8%	p=0.52
Pansexual	552	29.3%	42	7.6%	510	92.4%	p=0.28
Queer	864	45.9%	68	7.9%	796	92.1%	<b>p=0.05 (OR 1.44)</b>

<b>Ethnoracial Identities*</b>							
Arab/West Asian/Middle Eastern/North African	47	2.5%	3	6.4%	44	93.6%	p=0.94
Black/African	81	4.4%	4	3.3%	119	96.7%	p=0.53
East Asian/Southeast Asian	108	5.8%	8	7.4%	100	92.6%	p=0.74
Indigenous	269	14.5%	12	4.5%	257	95.5%	p=0.12
Latin American	75	4%	6	8%	69	92%	p=0.63
South Asian	42	2.3%	4	9.5%	38	90.5%	p=0.45
White	1432	77.2%	91	6.4%	1341	93.6%	p=0.37
<b>Age group</b>							p=0.19
</=29 years old	1329	70.6%	81	6.1%	1248	93.9%	
30-44 years old	432	23.0%	37	8.6%	395	91.4%	
45-59 years old	100	5.3%	7	7%	93	93.0%	
>/= 60 years old	21	1.1%	0	0%	21	100.0%	
<b>Financial Strain</b>							p=0.20
Cannot Make Ends Meet	345	18.4%	16	4.6%	329	95.4%	
Have to Cut Back	526	28.1%	43	8.2%	483	91.8%	
Enough but no Extra	692	36.9%	47	6.8%	645	93.2%	
Comfortable with Extra	311	16.6%	18	5.8%	293	94.2%	

\*These variables provided select all that apply options, and therefore row are not mutually exclusive.

Results of mental health, 2SLGBTQ community connection and social support as well as the potential moderating effect of participants' financial strain are outlined in *Table 2*. Fewer trans sports participants reported high depressive symptoms (29.7%) as indicated by PHQ-2 than those who did not participate in sport (42.5%,  $p < 0.01$ ). There was no significant difference in reporting high anxiety symptoms (54.4% overall), as measured by the GAD-2, based on sports participation ( $p = 0.20$ ). In terms of satisfaction with their connection to the 2SLGBTQ community, trans people who participated in 2SLGBTQ

recreational sport were more likely to report being satisfied (72.7%) than their peers who did not participate in sport (59.6%,  $p=0.01$ ). Last, there was no statistically significant difference in the number of people who participants could count on for support based on sports participation (overall 52.7% reported 4 or more,  $p=0.43$ ). Financial strain did impact the relationship between sports participation and both depressive symptoms and satisfaction with 2SLGBTQ community connection. Despite the potential to confound the results, the relationship between sports participation and community satisfaction and depressive symptoms remained significant when controlling for financial strain.

**Table 2 – Trans and Nonbinary Sex Now Survey Participants and Their Participation in 2SLGBTQ+ Recreational Sports by Mental and Social Wellbeing, Moderated by Financial Strain**

	All Trans and Non-Binary People (N=1882)		Sport Participants (n=125)		Non-Participants (n=1757)		Comparison of Sports Participation versus Not	Financial Strain as a Confounder
	N	Column %	N	Column %	N	Column %	p-value	p-value
<b>Financial Strain</b>							p=0.83	N/A
Low	871	46.3%	59	46.2%	812	47.2%		
High	1011	53.7%	66	53.8%	945	52.8%		
<b>Anxiety Symptoms</b>							p=0.18	<b>p&lt;0.001</b>
No (GAD <3)	824	45.6%	60	51.3%	764	45.2%		
Yes (GAD 3+)	984	54.4%	57	48.7%	927	54.8%		
<b>Depressive Symptoms</b>							<b>p&lt;0.01 (OR 0.57)</b>	<b>p&lt;0.001</b>
No (PHQ <3)	1058	58.3%	83	70.3%	975	57.5%		
Yes (PHQ 3+)	756	41.7%	35	29.7%	721	42.5%		
<b>Satisfied with Connection to 2SLGBTQ Community</b>							<b>p=0.01 (OR 1.80)</b>	<b>p&lt;0.001</b>
Yes	839	60.6%	72	72.7%	767	40.4%		
No	546	39.4%	27	27.3%	519	59.6%		
<b>Level of Social Support</b>							p=0.43	<b>p&lt;0.001</b>
Low (0-3 people)	886	47.3%	54	47.4%	832	43.2%		
High (4+ people)	988	52.7%	69	52.6%	919	56.8%		

## Discussion

The results of our study provide complex and valuable insights into trans people's participation in 2SLGBTQ recreational sports as well as the role that those sports play in trans people's health and connection to 2SLGBTQ communities. Firstly, there was no significant difference between trans and cisgender participation in 2SLGBTQ recreational sports teams or leagues. Bisexual trans people, however, were significantly less likely to participate while queer-identified trans people were more likely to participate. Bisexual trans people's lower likelihood of participation may reflect a lower sense of belonging that bisexual people feel within the broader 2SLGBTQ community (Ross et al., 2018). Queer-identifying trans people's increased likelihood to participate in 2SLGBTQ sports may reflect the important role of community participation for queer-identified people (Skakoon-Sparling et al., 2022). Otherwise, there were no statistical differences between differing identities that intersected with transgender status. This suggests that 2SLGBTQ recreational sports in the aggregate are broadly inclusive for trans-identified people. Further research, however, is needed to understand if there are differences between different sports and clubs and potential best practices for trans inclusion in recreational sports.

In terms of the mental health impact of 2SLGBTQ recreational sport participation, our study points to a complicated relationship between anxiety, depression and sports participation. While community sport participation has been documented to reduce anxiety symptoms (Eather et al., 2023), this was not true among trans participants in the Sex Now study. However, while there was no improvement in anxiety symptoms, 2SLGBTQ

recreational sports participants did not report worse anxiety symptoms as well. The lack of significant differences in anxiety symptoms may be a result of the broad diversity of sports that are captured by the category of 2SLGBTQ recreational sports and that different sports may impact experiences with anxiety differently (Pluhar et al., 2019). In contrast, trans people who reported participating in 2SLGBTQ recreational sport did see less severe depression symptoms than their peers who did not participate. Taken together, our findings suggest that participating in 2SLGBTQ recreational sports may offer opportunities to support the mental health of trans people without exasperating negative emotional experiences.

While sports participation was associated with lower scores for depression, and no statistical difference in anxiety scores, it was positively associated with feelings of satisfaction with participants' connection to the 2SLGBTQ community. This is in line with previous research that has found community connection may not moderate feelings of psychological distress among trans people in Canada (O'Handley & Courtice, 2022).

Due to the size of our sample, we were unable to explore how participation in sport may impact the mental health and social connection of subpopulations of trans people who may have differing levels of satisfaction with their connection to 2SLGBTQ communities, such as trans people of colour (Wells et al., 2024). Our results suggest that 2SLGBTQ recreational sports represent another tool for social services and healthcare that support trans people. Social service and healthcare workers should explore relationships with local 2SLGBTQ recreational sports teams to connect trans clients who may benefit from stronger connections with the 2SLGBTQ community. Furthermore, future research

should explore how social service and healthcare workers who support trans communities can effectively engage 2SLGBTQ recreational sports teams and leagues in their service delivery.

Our results support calls made previously for social service and healthcare workers to actively support stronger social networks and address transphobia within their communities (Bauer et al., 2013; Pyne, 2011). Social service and healthcare workers need to be aware of the opportunities, like 2SLGBTQ recreational sports teams and leagues, that may help to foster stronger social support and sense of connection with the broader 2SLGBTQ community.

### **Strengths and Limitations**

Aspects of this analysis need to be considered to understand the impact of this study on the literature about trans people's participation in 2SLGBTQ recreational sports. Firstly, by including financial strain as a potential moderator, we are confident that our analysis is capturing the impact of sport participation on trans people and that our analysis is not confounded by participants whose participation is limited by a lack of financial resources.

Our analysis may be hindered by how participants understand the question they were asked about sport participation. As sports participation is often seasonal (for example, baseball in the Summer), there may be those who did not identify participating as they play during the Winter, but Sex Now recruits in the Summer. The sports participation variable also includes the language "*or recreational activities*" so some may be engaged in other activities outside of 2SLGBTQ recreational sports. Furthermore, several variables

were collapsed to two levels to ensure that there were enough responses to conduct our analysis. This may result in nuance, such as the difference in anxiety and depression scores, obscuring our findings.

## **Conclusion**

Our study examined the relationship between depression, anxiety, community connection and social support for trans people who participate in 2SLGBTQ recreational sports teams and leagues. We found that participating in these community sports organizations was associated with lower depression symptoms and higher satisfaction of participants' relationship to the 2SLGBTQ community but no significant difference in anxiety or social support. Our findings underscore the importance of social service and healthcare workers who support trans people to consider 2SLGBTQ recreational sports as an opportunity to foster stronger community connection and address poor mental health.

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## **Disclosure of Interest**

The authors report there are no competing interests to declare.

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**Chapter Four**

**Title:** 2SLGBTQ Recreational Sport Participation Impacts on Social Support, Community Connection and Mental Health: a Canada-wide Study of 2SLGBTQ Younger and Older Adults

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**Target Journal:** Journal of Sport and Exercise Psychology (APA Style)

**Abstract:**

Community sport participation is increasingly cited as a strategy to support adults' healthy aging. However, without strategies that account for the harassment and marginalization that many Two-Spirit, lesbian, gay, bisexual, transgender and queer (2SLGBTQ) people experience in sport, especially as youth, this approach may further compound health disparities among 2SLGBTQ people. Our study analyzed cross-sectional trilingual Canada-wide community health survey data on 2SLGBTQ people aged 15 or older (N=4037) to examine how 2SLGBTQ-specific recreational sport participation impacted mental health, 2SLGBTQ community connection and social support. We also assessed whether age moderated these associations. While participants of 2SLGBTQ recreational sport (n=290/3180, 9.1%) reported similar levels of anxiety and depression as non-participants (n=2890/3180, 90.9%), they demonstrated significantly higher 2SLGBTQ community connection and social support. These associations held for younger and older

2SLGBTQ participants. 2SLGBTQ recreational sport offers opportunities to address loneliness and support the health of 2SLGBTQ as they age.

**Keywords:**

Recreation, Sport, Mental Health, Sexual and Gender Minority, Community Connection.

Aging

## Introduction

Participation in community sport, predominantly provided by non-profit and volunteer organizations (Doherty & Misener, 2008; Doherty & Cousens, 2013), is increasingly being identified in health policy as a strategy to support the health and wellbeing of people across the life course (Jenkin et al., 2021; Eather et al., 2023; Eime et al., 2013). Sport and physical activity can have positive impacts on the social and mental health of participants and can continue to support their health and wellbeing at all ages (Jenkin et al., 2017). Recreational sports programs have been recommended to help promote healthy older adults, and to attempt to address the reasons that people drop out of or leave sport (Jenkin et al., 2021). For many Two Spirit<sup>2</sup>, lesbian, gay, bisexual, transgender and queer (2SLGBTQ) people, general sports and physical activity spaces have historically been, and continue to be, sites of marginalization and harassment (Elling & Collot d'Escury, 2017; Symons et al., 2017; Baiocco, 2018). 2SLGBTQ people who experienced marginalization and harassment in sports as adolescents and young people are likely to stop participating and are likely to not return to sport as adults (Baiocco et al., 2018). Without inclusive opportunities for 2SLGBTQ adult participation in recreational sports these health promotion strategies might further compound the mental health disparities that 2SLGBTQ people already experience (Ross et al., 2018; Gorchynski & Fasoli, 2022; Garcia et al., 2020; Ferlatte et al., 2020; Wells et al., 2024).

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<sup>2</sup> A term created by Indigenous peoples to recognize the diverse sexualities, gender identities, expressions and roles across Indigenous Nations (Pruden & Salway, 2020)

While many 2SLGBTQ people continue to be excluded from general sports and physical activity spaces, 2SLGBTQ people have created their own 2SLGBTQ recreational community sports teams and leagues to exercise, socialize and play with other 2SLGBTQ people (van Ingen, 2004; Mock et al., 2019). These 2SLGBTQ community sports teams and leagues have existed in Canada for over 50 years and can improve the self-esteem, confidence and sense of self of those who participate (Mock et al., 2019). As 2SLGBTQ recreational sports teams and leagues are organized by and for members of 2SLGBTQ communities, they may also connect participants to robust social support networks and the broader 2SLGBTQ community, which can have a beneficial impact on the mental health of 2SGLTBQ adults (Christens et al., 2011; Hatzenbuehler, 2009; Frost & Meyer, 2012). Despite the long history of 2SLGBTQ recreational sports teams and leagues, and the calls for community sport and physical activity to be used to support the health of older adults, there is a dearth of quantitative research that captures the mental health impacts of 2SLGBTQ recreational sport participation for adults.

In our current study, we sought to understand if 2SLGBTQ people's participation in 2SLGBTQ recreational sports teams and leagues 1) varied by age, 2) had impacts on mental health and social wellbeing, and 3) had differing mental health and social wellbeing impacts for younger versus older participants.

## **Methods**

The current study is an analysis of data collected as part of the Our Health 2022 community health survey. Our Health 2022 was a Canada-wide cross-sectional community-based survey conducted between March to September 2022 by the

Community Based Research Center ([www.cbrc.net](http://www.cbrc.net)), in Vancouver, British Columbia, in collaboration with Egale Canada, The Enchanté Network and 2 Spirits in Motion Society. The survey captured data on the current state of 2SLGBTQ health across Canada. Participants were predominantly recruited online through their social media accounts (Facebook, Twitter, etc.) and social networks of the Community Based Research Center and partner 2SLGBTQ organizations. Recruitment advertisements for the study were also placed in 2SLGBTQ online media and public transportation, and in-person recruitment was conducted at Pride festivals and other community events across Canada. To be eligible for Our Health 2022, participants had to identify as 2SLGBTQ live in Canada and be 15 years of age or older at the time of participation. The survey was offered in French, English and Spanish and was self-completed online. All participants provided consent upon initiation of the survey. Participants were allowed to skip any question when completing the survey to support autonomy. Participants could participate fully anonymously. At the end of the survey, participants could opt to receive a \$10 CAD honorarium. The Our Health study was reviewed and approved by the human research ethics boards at the University of Victoria, the University of British Columbia and Simon Fraser University (H20-02842).

Our Health participants were asked to self-complete questions identifying their sociodemographic details, including their age, racial or ethnic identity, sexual orientation, gender identity and how they would describe their financial situation at the time of the survey. Participants were able to choose multiple responses for racial or ethnicity identities, sexual orientation and gender identities, and these categories are not mutually exclusive in our analysis. Participants were also asked “*Do other people in Canada usually*

*see or treat you as a person of colour/racialized person?”* with response options *yes, no, and unsure* to capture if processes of racialization and discrimination are impacting their experience. To compare age groups, responses were broken down into a new binary variable where youth were defined as anyone 29 or younger and older adults were defined as anyone 30 years of age or older, in line with the Commonwealth definition of youth (The Commonwealth, 2024).

To understand the impact of 2SLGBTQ recreational sport participation on mental health, we analyzed participant responses to the PHQ-2 and GAD-2 measures for depression and anxiety symptoms, respectively (Kroenke et al., 2009). Both PHQ-2 and GAD-2 scores were recoded into binary outcomes, where scores of less than 3 were coded as “*low*” for mental health symptoms and scores of 3 or higher were coded as “*high*” for mental health symptoms (Kroenke et al., 2009).

To gauge the impact of 2SLGBTQ recreational sport participation on social support and 2SLGBTQ community connection, participants responded to several questions: “*How much of your social time do you usually spend with 2SLGBTQQIA+ people?*”, “*How connected to 2SLGBTQQIA+ communities are you now compared to before the COVID-19 pandemic?*”, “*How connected do you feel to 2SLGBTQQIA+ communities?*”, and “*Who has provided you with support or been sources of strength for you through the COVID-19 pandemic?*” with a response option of “2SLGBTQQIA+ people” that could be indicated. Where not already the case, these variables were recoded into binary variables to delineate between high and low social and community connection.

Descriptive statistics for all variables were calculated. We compared those who completed the question on sports participation with those who did not to ascertain potential bias; while calculating non-response, those who answered the question were coded with a 0 and those who did not were coded 1. We then conducted a series of binary logistic regressions to assess whether sport participation (versus not) was associated with age, mental health, community connection and social support outcomes. As socioeconomic status was determined a priori as a potential confounder, the financial variable was recoded to a binary “high financial strain” for those who indicated “*Cannot make ends meet*” and “*Have to cut back*” versus “low financial strain” for those who indicated “*Enough, but no extra*” and “*Comfortable with extra*”. We controlled for financial strain using multivariable binary logistic regressions (Sari, 2021). To understand if age was related to the impact of sport participation, we created and tested two interaction terms using the 2SLGBTQ sport participation and age variables; the first interaction term treated age as a continuous variable and the second where participants were divided into a binary variable of younger (i.e. 29 years of age or younger) versus older (i.e. 30 years of age or older). All analyses were conducted using IBM SPSS (Version 29.0.2) with statistical significance at  $p < 0.05$ .

## **Results**

The Our Health sample included 4037 total participants, where 1374 (34.0%) were 29 years of age or under and 2663 (66.0%) were 30 years of age and older. Of total participants, 3180 (78.8%) answered the question about participation in 2SLGBTQ recreational sports while 857 (21.2%) did not. Of those who answered the question, 290

(9.1%) identified participating in 2SLGBTQ recreational sports teams and leagues while 2890 (90.9%) did not.

In examining missing data for the question on 2SLGBTQ sports participation, we identified several differences across sociodemographic and mental health variables. Participants who identified as *Black* ( $p<0.001$ ; OR 1.97), *Latino/a/e/x* ( $p=0.008$ ; OR 1.62) or as being *Treated as a Person of Colour* ( $p<0.001$ ; OR 1.47) were less likely to answer the question about sports participation. Participants reporting high anxiety ( $p<0.001$ ; OR 11.91) and depressive symptoms ( $p<0.001$ ; OR 13.86) were also less likely to answer the question. Participants who identified spending 50% or more of their social time with other 2SLGBTQ people were also less likely to answer the question ( $p<0.001$ ; OR 48.40). Participants who identified as queer ( $p=0.039$ ; OR 0.85) and white ( $p<0.001$ ; OR 0.63) were more likely to answer the question about 2SLGBTQ sports participation. Otherwise, there were no significant differences across all other study variables.

When comparing 2SLGBTQ recreational sports participants by age group, there was no statistical difference ( $p=0.45$ ). Among younger participants (those aged 29 years or younger), 99 (9.3%) identified 2SLGBTQ sport participation while 970 (90.7%) did not. Among older participants (those aged 30 years or older), 191 (9%) identified 2SLGBTQ recreational sport participation while 1920 (91%) did not. The mean age of 2SLGBTQ sport participants was 36 years old (SD 13.05), with the youngest sports participants being 15 years old and the oldest being 75 years old. In terms of sexual orientation, asexual ( $p=0.006$ ; OR 0.41) and bisexual ( $p=0.012$ ; OR 0.67) participants were less likely to have participated in 2SLGBTQ recreational sports while gay-identified participants ( $p=0.036$ ; OR

1.30) were more likely to participate. For racial and ethnic identity, both Indigenous participants ( $p < 0.001$ ; OR 2.09) and participants who identified being treated as a Person of Colour ( $p = 0.02$ ; OR 1.44) were more likely to participate in 2SLGBTQ recreational sports. There were no significant differences between 2SLGBTQ recreational sport participation across gender identities or financial strain. The demographic information of the overall sample and stratified by 2SLGBTQ recreational sports participation versus not, can be found in *Table 1*.

Results of mental health, 2SLGBTQ community connection and social support and the potential confounding effect of financial strain and the potential moderating effect of age are outlined in *Table 2*. There were no significant differences between those who participated in 2SLGBTQ recreational sport and those who did not in terms of either anxiety symptoms ( $p = 0.54$ ) or depressive symptoms ( $p = 0.46$ ), including when controlling for financial strain ( $p = 0.63$  and  $p = 0.59$ , respectively). Age did not moderate these associations with depression and anxiety symptoms whether treated as a binary younger/older variable ( $p = 0.92$  and  $p = 0.77$ , respectively) or as a continuous variable ( $p = 0.67$  and  $p = 0.66$ , respectively). Those who participate in 2SLGBTQ recreational sport were more likely to report receiving support from other 2SLGBTQ people during the COVID-19 pandemic ( $p < 0.001$ ; OR 1.98), including after controlling for financial strain ( $p < 0.001$ ; OR 1.88); age did not moderate this association when binary ( $p = 0.09$ ) or continuous ( $p = 0.14$ ). 2SLGBTQ recreational sport participants were also more likely to report feeling “somewhat/very” connected to the 2SLGBTQ community in comparison with “not at all” ( $p < 0.001$ ; OR 11.14), even after controlling for financial strain ( $p < 0.001$ ; OR 10.54); age did not moderate this

association when binary ( $p=1.00$ ) or continuous ( $p=0.75$ ). 2SLGBTQ recreational sport participants were more likely to report “50%/75%/most” of their social time was spent with other 2SLGBTQ people compared with “25%/little” ( $p<0.001$ ; OR 3.63), even after controlling for financial strain ( $p<0.001$ ; OR 4.00); age did not moderate this relationship when binary ( $p=0.21$ ) or continuous ( $p=0.29$ ). Last, when asked about their level of connection to the 2SLGBTQ community compared with before the COVID-19 pandemic, 2SLGBTQ sports participants were more likely to report that it was “about the same or more” compared with “less” ( $p<0.001$ ; OR 2.20), even after controlling for financial strain ( $p<0.001$ ; OR 2.12). In this instance, older age was found to increase the likelihood that 2SLGBTQ recreational sports participants were more likely to report more community connection ( $p<0.001$ ; OR 3.01 and  $p<0.001$ ; OR 1.04). The impact of the statistical interaction between age and 2SLGBTQ recreational sport participation on community connection compared with before the COVID-19 pandemic is visualized in *Figure 1*.

## **Discussion**

The results of this analysis contribute to the literature on 2SLGBTQ people’s participation in community sport and 2SLGBTQ recreational sport teams and leagues. First, there were few sociodemographic differences in sport participation, including no difference by age group, suggesting that, at a broad level, 2SLGBTQ teams and leagues are welcoming spaces for diverse 2SLGBTQ people. This may not be true for all identities, however, as bisexual and asexual people were less likely to participate. Lower 2SLGBTQ sport participation may reflect a lower sense of belonging that bisexual and asexual people feel within the broader 2SLGBTQ community or discrimination from other 2SLGBTQ people,

as evidenced in previous research (Ross et al., 2018; Gupta, 2017). Conversely, our research also suggests a prioritizing of gay identities in community sports spaces, in line with research done in other 2SLGBTQ recreational spaces (Vo, 2021). Our study did find increased participation in 2SLGBTQ recreational sports teams and leagues among Indigenous people and people who reported being treated as a Person of Colour. This may reflect the positive relationship between sport and community connection for some Indigenous people (McHugh et al., 2015; Mansell et al., 2024) or that Indigenous people and People of Colour experience both racism (Mansell et al., 2024; Spaaj et al., 2020) and homophobia/transphobia in mainstream recreational sports, driving them to participate in 2SLGBTQ recreational sports. Further community-led research is needed to explore Indigenous and People of Colour's relationship to 2SLGBTQ recreational sports to better understand these dynamics, including examining if there are specific cultural or structural factors that make 2SLGBTQ recreational sports appealing and how experiences of racism impact the relationship that Indigenous and People of Colour have with 2SLGBTQ recreational sports and their sense of connection to 2SLGBTQ communities.

Our study found that, while the mean age of sports participants was 36 years old, participation for many continued well into some people's 70s, and there was no significant difference between participation based on age. This suggests that 2SLGBTQ recreational sports teams and leagues offer opportunities for recreational sports participation for people across the lifespan (Jenkins et al., 2021). Further qualitative research that explores the benefits, barriers and facilitators of 2SLGBTQ sports participation for 2SLGBTQ older

adults may offer novel strategies for researchers and policymakers to re-engage adults over the age of 50 in active sports participation (Jenkins et al., 2021).

In our analysis, 2SLGBTQ recreational sport participation was not associated with either depression or anxiety symptoms. This is in contrast with previous research which found that 2SLGBTQ sport participation was associated with decreased depression symptoms among gay and bisexual men (Wells et al., 2025a) and transgender people (Wells et al., 2025b). It may be that, while 2SLGBTQ sports may improve social support, the impact is not enough to improve the depressive symptoms of some sexual minority older adults (Saunders & Carr, 2022). People with severe mental health symptoms are also motivated to participate in sport to address their symptoms (Firth et al., 2016). A possible explanation for this is that those participating in 2SLGBTQ recreational sport have seen improved mental health, but their mental health is now at the baseline. While there were no differences in symptoms, it is noteworthy that those who participate also did not report worse anxiety or depression symptoms as well. This may reflect the range of sports that fall under the umbrella of 2SLGBTQ recreational sports as previous research has also found that different sports impact anxiety symptoms differently (Pluhar et al., 2019). Importantly, Our Health participants who had higher anxiety and depression scores were also more likely to not answer the question about 2SLGBTQ recreational sports participation, further obscuring our results.

In terms of social support and community connection, we found that increased support and connection was associated with participation in 2SLGBTQ recreational sports. This supports previous findings that community connection may not insulate all 2SLGBTQ

people from psychological distress (O’Handley & Courtice, 2022; Wells et al., 2025a; Wells et al., 2025b). 2SLGBTQ recreational sports, however, are associated with a broader sense of belonging to 2SLGBTQ communities and support from 2SLGBTQ people, which may contribute to participants’ sense of their overall wellbeing and is an important factor in supporting the mental health of adult and older adult 2SLGBTQ people (Jones & McCarthy, 2010; Kia et al., 2020; McLaren, 2016; Fredriksen-Goldsen et al., 2015; Austin & Goodman, 2017). Future qualitative research is recommended to explore the relationship between 2SLGBTQ community sport and participants’ senses of subjective wellbeing.

There are several factors that should be considered to better understand this study’s impact on the 2SLGBTQ sport and mental health academic literature. This study is the first national quantitative study of 2SLGBTQ recreational sport participation in Canada and represents analysis of explicitly Two Spirit, lesbian, gay, bisexual, transgender and queer identified people. Furthermore, by controlling for the confounding potential of financial strain, and its lack of statistical significance in our results, we are confident that our results are not a reflection of sport participants’ economic resources impacting their mental health or social and community connection. Further studies are needed to understand why financial strain is not associated with 2SLGBTQ sports participation while it has been a barrier to traditional sports programming (Sari, 2021). This may reflect the varied costs associated with different types of sport and that we are unable to differentiate between sports in our study. Conversely, the Our Health 2SLGBTQ recreational sports variable asks participants about their current sport involvement and sports participation is often seasonal (for example, hockey in the winter). Because of this, there may have been

Our Health participants who had participated in 2SLGBTQ recreational sports within the previous year but who were not captured in our analysis. As well, the sports participation variable also includes the language “*or recreational activities*” so some Our Health participants may be engaged in other activities outside of 2SLGBTQ recreational sports teams and leagues.

Our study has found that participation in 2SLGBTQ community recreational sports teams and leagues has a significant impact on the social support and 2SLGBTQ community connection of 2SLGBTQ people. We also found that the probability of improved connection to the 2SLGBTQ community after COVID-19 was more pronounced for older 2SLGBTQ adults. Our findings underscore the importance of 2SLGBTQ recreational sports to address feelings of loneliness and social isolation for 2SLGBTQ people, and 2SLGBTQ older adults, despite there being no significant difference in anxiety or depressive symptoms.

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## Tables and Figures

**Table 1 – Our Health Survey Participants and Their Participation in 2SLGBTQ+ Recreational Sports by Sociodemographic Information**

	All Participants (N=3,180)		Sport Participants (n=290)		Non-Participants (n=2,890)		Sports Participants vs. Not
	n	%	n	%	n	%	p-value
<b>Gender Identity*</b>							
Agender	97	3.1%	8	8.2%	89	91.8%	0.76
Genderfluid	197	6.2%	19	9.6%	178	90.4%	0.79
Genderqueer	331	10.4%	33	10.0%	298	90.0%	0.57
Man	1261	39.7%	125	9.9%	1136	90.1%	0.21
Non-binary	680	21.4%	55	8.1%	625	91.9%	0.29
Trans man	200	6.3%	17	8.5%	183	91.5%	0.75
Trans woman	119	3.7%	10	8.4%	109	91.6%	0.78
Woman	852	26.8%	72	8.5%	780	91.5%	0.43
<b>Sexual Orientation*</b>							
Asexual	238	7.5%	10	4.2%	228	95.8%	<b>0.006</b>
Bisexual	724	22.8%	49	6.8%	675	93.2%	<b>0.012</b>
Gay	1243	39.1%	130	10.5%	1113	89.5%	<b>0.036</b>
Lesbian	441	13.9%	49	11.1%	392	88.9%	0.12
Pansexual	463	14.6%	42	9.1%	421	90.9%	0.97
Queer	1164	36.6%	105	9.0%	1059	91.0%	0.88
<b>Racial Identity*</b>							
Black/African	89	2.8%	8	9.0%	81	91.0%	0.97
East Asian/Southeast Asian	184	5.8%	18	9.8%	166	90.2%	0.74
Indigenous	201	6.4%	33	16.4%	168	83.6%	<b>&lt;0.001</b>
Latina/Latine/Latino/Latinx	119	3.8%	10	8.4%	109	91.6%	0.79
Middle Eastern	63	2.0%	3	4.8%	60	95.2%	0.23

South Asian	97	3.1%	7	7.2%	90	92.8%	0.51
White	2560	81.2%	224	8.8%	2336	91.3%	0.15
Treated as Person of Colour	472	15.8%	57	12.1%	415	87.9%	<b>0.02</b>
<b>Age group</b>							0.45
</=29 years old	1069	33.6%	99	9.3%	970	90.7%	
30-44 years old	1233	38.8%	122	9.9%	1111	90.1%	
45-59 years old	597	18.8%	46	7.7%	551	92.3%	
>/= 60 years old	281	8.8%	23	8.2%	258	91.8%	
<b>Financial Strain</b>							0.07
Cannot Make Ends Meet	401	13.6%	27	6.7%	374	93.3%	
Have to Cut Back	630	21.4%	73	11.6%	557	88.4%	
Enough but no Extra	1015	34.5%	91	9.0%	924	91.0%	
Comfortable with Extra	892	30.4%	82	9.2%	810	90.8%	

*\*These variables provided select all that apply options, and therefore row is not mutually exclusive.*

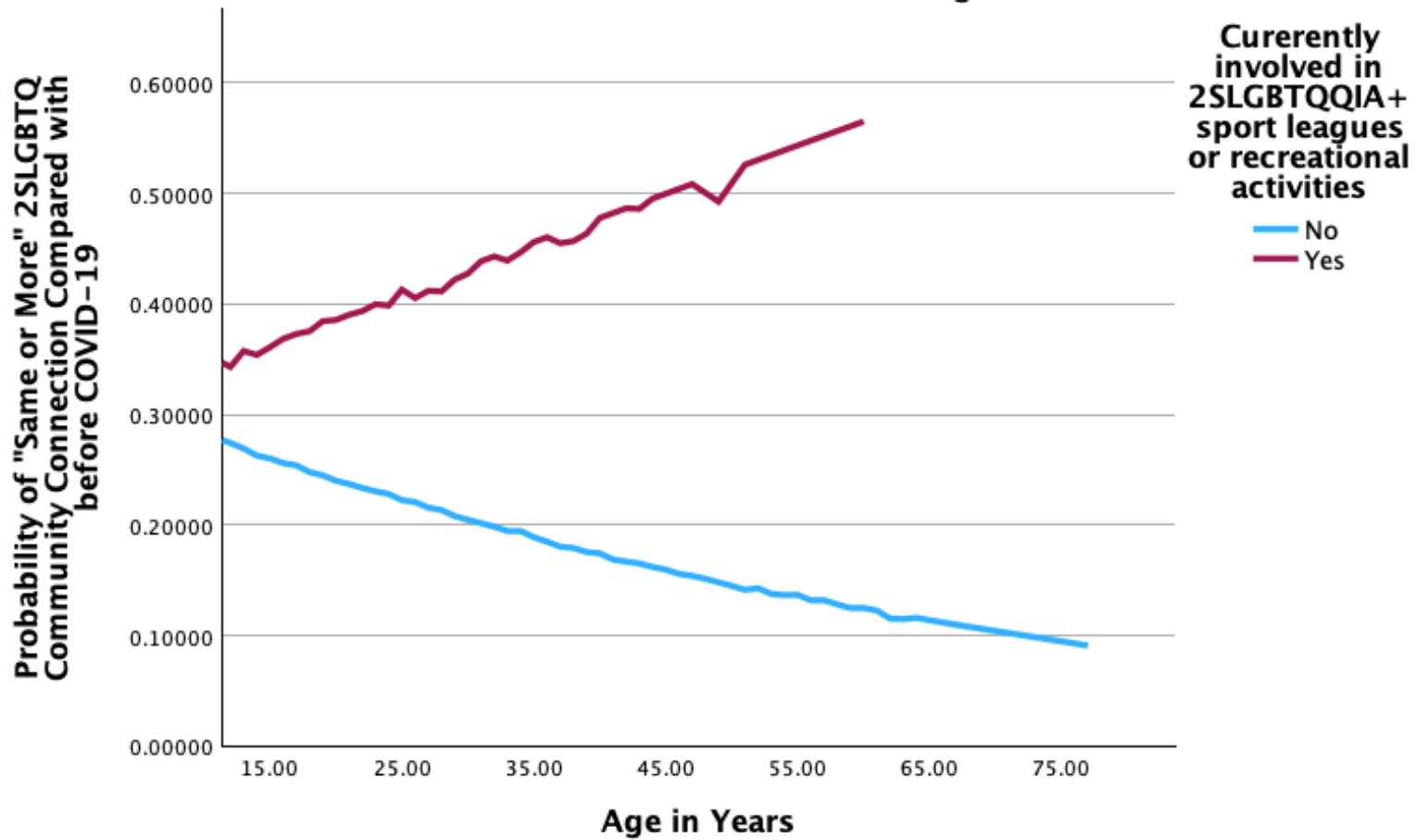
**Table 2 – Sport Participation as a Correlate of Mental and Social Wellbeing Among Younger and Older 2SLGBTQ People in the Our Health 2022 survey**

	All Participants (N=3,180)		Sport Participants (n=290)		Non-Participants (n=2,890)		Sports Participant vs Not (Unadjusted)	Sports Participant vs Not (Adjusted)	Interaction of Sport*Age (Binary)	Interaction of Sport*Age (Continuous)
	N	Column %	N	Row %	N	Row %	p-value			
<b>Age group</b>							p=0.84			
<30 years	1069	33.6 %	99	9.3 %	970	90.7%				
30 or older	2111	66.4 %	191	9.0 %	1920	91.0%				
<b>Anxiety Symptoms</b>							p=0.54	p=0.63	p=0.92	p=0.67
No (GAD <3)	1824	57.4 %	171	9.4 %	1653	90.6%				
Yes (GAD 3+)	1356	42.6 %	119	8.8 %	1237	91.2%				
<b>Depressive Symptoms</b>							p=0.46	p=0.59	p=0.77	p=0.66
No (PHQ <3)	2081	65.4 %	184	8.8 %	1897	91.2%				
Yes (PHQ 3+)	1099	34.6 %	106	9.6 %	993	90.4%				
<b>2SLGBTQ Support during COVID-19</b>							<b>p &lt;0.001</b>	<b>p &lt;0.001</b>	p=0.09	p=0.14

No	1561	49.3 %	99	6.3 %	1462	93.7%				
Yes	1605	50.7 %	190	11.8 %	1415	88.2%				
<b>2SLGBTQ Community Connection compared before COVID- 19</b>							<b>p &lt; 0.001</b>	<b>p &lt; 0.001</b>	<b>p &lt; 0.001</b>	<b>p &lt; 0.001</b>
Much less/somewhat less	2381	75.0 %	172	7.2 %	2209	92.8%				
About same/somewhat more/much more	794	25.0 %	116	14.6 %	678	85.4%				
<b>2SLGBTQ Community Connection</b>							<b>p &lt; 0.001</b>	<b>p &lt; 0.001</b>	p=1.00	p=0.75
Not at all	634	20.0 %	7	1.1 %	627	98.9%				
Somewhat/very	2541	80.0 %	281	11.1 %	2260	88.9%				
<b>2SLGBTQ Social Time</b>							<b>p &lt; 0.001</b>	<b>p &lt; 0.001</b>	p=0.21	p=0.29
Little/25%	996	31.3 %	35	3.5 %	961	96.5%				
50%/75%/most	2184	68.7 %	255	11.7 %	1929	88.3%				

Figure 1.

**Impact of 2SLGBTQ Recreational Sports Participation on Feelings of 2SLGBTQ Community Connection After COVID-19 across Age**



## **Chapter Five**

### **Introduction**

Two-Spirit, lesbian, gay, bisexual, transgender and queer (2SLGBTQ) recreational sports teams and leagues for 2SLGBTQ people to socialize, play, and exercise with other 2SLGBTQ people have existed in Canada for decades (Mock et al., 2019). Despite this long history of community sport participation, and the growing calls for the inclusion of community sport as a strategy to promote health and wellbeing (Jenkin et al., 2021), there is a lack of research that documents the impacts that 2SLGBTQ recreational sports have on the health of 2SLGBTQ people. The research I have conducted for my dissertation begins to fill this gap and makes innovative and important contributions to the emerging literature at the intersections of sport, social and community connection, and the mental health of 2SLGBTQ people in Canada.

### **Summary Key Findings by Chapter**

In Chapter 2, I outline my findings from the Momentum Health Study of gay and bisexual men's health. I found that 20.8% (n= 161/774) of Momentum participants report that they had participated in 2SLGBTQ sports over the analysis period. 2SLGBTQ sport participants were more likely to report higher social support (OR=1.10, p-value= 0.03) than those who did not participate. Sports participants were also more likely to report any level of engagement with gay newspapers, gay meetings and gay clubs in the last six months compared with those who did not participate in sports. There was no significant difference in sports participants' anxiety and depression symptoms compared with non-participants. Looking longitudinally, those who started participating in 2SLGBTQ sport were also more

likely to identify having attended a gay meeting *more than once per month*, as opposed to *not in the past six months*, (OR 2.66, p-value= 0.003) compared with those who saw no change in their 2SLGBTQ recreational sport participation. Those who stopped participating in 2SLGBTQ recreational sports over the course of the study were less likely to report that their health was *about the same* (OR=0.42, p-value= 0.003) since their last study visit. Both those who had stopped participating and those that saw no change in their 2SLGBTQ sport participation had an average score of 3 on the HADS Depression measure, within the normal score range, but those who had stopped participating were less likely to have a score of 3 (OR=0.92, p-value= 0.012; Zigmond & Snaith, 1983).

In Chapter 3's analysis of transgender participants (mainly trans men and non-binary people) in the Sex Now survey, I found no statistical difference in the prevalence of current participation in 2SLGBTQ recreational sports reported between trans (n=125/1882, 6.6%) and cisgender (n=563/8100, 7.0%) participants (p=0.63). I found that fewer trans sports participants reported high depressive symptoms (29.7%), as indicated by the PHQ-2 measure (Kroenke et al., 2009), than those who did not participate in sport (42.5%, p<0.01). There was no significant difference in reporting high anxiety symptoms (54.4% overall), as measured by the GAD-2 (Kroenke et al., 2009), based on sports participation (p=0.20). In terms of satisfaction with their connection to the 2SLGBTQ community, trans people who participated in 2SLGBTQ recreational sport were more likely to report being satisfied (72.7%) than their trans peers who did not participate in sport (59.6%, p=0.01).

In Chapter 4, I documented how 9.1% (n=290) of Our Health 2SLGBTQ survey participants identified participating in 2SLGBTQ recreational sports teams and leagues. In

terms of participation, asexual- ( $p=0.006$ ; OR 0.41) and bisexual-identified ( $p=0.012$ ; OR 0.67) participants were less likely to have participated in 2SLGBTQ recreational sports, while gay-identified participants ( $p=0.036$ ; OR 1.30) were more likely to participate. By racial and ethnic identities, both Indigenous participants ( $p<0.001$ ; OR 2.09) and participants who identified being treated as a Person of Colour ( $p=0.02$ ; OR 1.44) were more likely to participate in 2SLGBTQ recreational sports. I found no other significant associations between 2SLGBTQ recreational sport participation and other sociodemographic variables. There were also no significant differences between those who participated in 2SLGBTQ recreational sport and those who did not in terms of either anxiety symptoms ( $p=0.54$ ) or depressive symptoms ( $p=0.46$ ) (Kroenke et al., 2009). Those who participated in 2SLGBTQ recreational sport were more likely to report receiving support from other 2SLGBTQ people during the COVID-19 pandemic ( $p<0.001$ ; OR 1.98). 2SLGBTQ recreational sport participants were also more likely to report feeling “somewhat/very” connected to the 2SLGBTQ community in comparison with “not at all” ( $p<0.001$ ; OR 11.14) and were more likely to report the majority of their social time was spent with other 2SLGBTQ people compared with a minority of their social time ( $p<0.001$ ; OR 3.63). 2SLGBTQ sports participants were more likely to report that their level of connection to the 2SLGBTQ community compared with before the COVID-19 pandemic was “about the same or more” compared with “less” ( $p<0.001$ ; OR 2.20); for this association, older age was found to increase the likelihood that 2SLGBTQ recreational sports participants were more likely to report more community connection. Otherwise, age was not found to moderate the associations with any other mental health or community connection variables.

### **Agreement and Incongruence Across Empirical Chapters**

Taken as a whole, the three empirical chapters of my dissertation begin to tell a story about the popularity, access and impact of 2SLGBTQ recreational sports teams and leagues for 2SLGBTQ people in Canada. All three chapters document that these community sports organizations remain popular among 2SLGBTQ people, as between 6.6%-9.1% of survey respondents identify active participation. Furthermore, there are few sociodemographic subgroups of 2SLGBTQ people across my chapters who saw statistically different levels of participation, suggesting that 2SLGBTQ recreational sports remain broadly inclusive of diverse 2SLGBTQ people, in line with previous literature on 2SLGBTQ recreational sports (Travers & Deri, 2011). My analysis of the Our Health 2SLGBTQ survey found there were select groups (e.g., bisexual- and asexual-identified survey participants) who reported decreased likelihood of 2SLGBTQ recreational sport participation. This may reflect a lower sense of belonging that bisexual and asexual people feel within the broader 2SLGBTQ community or discrimination from other 2SLGBTQ people within 2SLGBTQ recreational sports (Ross et al., 2018; Gupta, 2017). Conversely, I found that there was more participation among Indigenous people, people who reported being treated as People of Colour and gay-identified Our Health respondents in 2SLGBTQ recreational sports. This may reflect a relationship between sport and community connection, higher levels or intersecting marginalization in mainstream sports and/or the prioritizing of gay identities within recreational spaces (Mansell et al., 2024; Vo, 2021). These findings may not have surfaced in Sex Now or Momentum due to those studies' more restrictive recruitment strategies (Rutherford et al., 2021), as opposed to Our Health which recruited all 2SLGBTQ

people regardless of their gender identity or sexual orientation (Community-Based Research Centre, 2022).

The analyses that I have conducted agree on the existence of a strong, positive relationship between participating in 2SLGBTQ recreational sports and feelings of social support, social connection and community connection. Both my Momentum and Our Health analyses found that those who participated in 2SLGBTQ recreational sports had higher levels of social support than those who did not participate in 2SLGBTQ recreational sports. Across all three studies, those who participated in 2SLGBTQ recreational sports reported higher satisfaction with their connection to 2SLGBTQ communities and had more engagement in 2SLGBTQ spaces and meetings. Taken as a whole, the findings outlined throughout my dissertation support my initial theory, outlined in Chapter 1, that 2SLGBTQ recreational sports are a strong representation of McMillan's Sense of Community theory (1996). My findings suggest that the expectations, relationships and boundaries inherent to the organizational structures of community sports foster a robust sense of community and social support for 2SLGBTQ people which in turn can support their health and wellbeing (Meyer, 2003; 1995; Morris et al., 2015). Furthermore, as evidenced by the increased engagement in 2SLGBTQ spaces and meetings, 2SLGBTQ recreational sports teams and leagues are associated with robust social and community connection across 2SLGBTQ people's broader social ecologies (Ungar, 2002).

While community and social connection outcomes saw agreement across my three chapters, there was incongruity across depression and anxiety outcomes. In terms of the association between depression measures and sport participation, findings from across

my three studies are complicated. In my analysis of Our Health surveys, sport participation was not associated with a different depression score, whereas in my Sex Now analysis, scores for depression were negatively associated with 2SLGBTQ sport participation among transgender people. In the Momentum study, recent sports participation was not associated with depression symptoms, but stopping participation in 2SLGBTQ sports was associated with being less likely to have a normal depression score (Zigmond & Snaith, 1983). Across all three studies, however, there was no significant difference in anxiety symptom scores. This contrasts with previous literature that has documented an improvement in depression and anxiety symptoms among those who participate in community sports (Eather et al., 2023; Andersen et al., 2018; Eime et al., 2013). However, the effect of sport participation has not been universal across the literature, with some studies finding no impact (Eather et al., 2023). The noted shift in depressive symptoms after stopping sport participation found in Momentum provides stronger temporally causal evidence that there is impact occurring. It may be that the impact of participating in sport on those with higher depressive symptoms brings them to a general population baseline and thus would not be captured in our other cross-sectional analyses of Sex Now and Our Health data. The same may also be true of anxiety symptoms. It is also noteworthy that while there is qualitative literature outlining the positive impact on 2SLGBTQ sport and sport participation broadly on the mental health of 2SLGBTQ people (van Ingen, 2004), there is a dearth of quantitative research that has documented the phenomenon. It may be that, while 2SLGBTQ recreational sport participation does impact 2SLGBTQ people's subjective understanding of their mental health, its impact is not captured by

psychometric measures for depression or anxiety symptoms. As 2SLGBTQ people have different relationships, experiences and histories with sports than their heterosexual and cisgender peers (Elling & Collot d'Escury, 2017; Symons et al., 2017; Baiocco, 2018; Greenspan et al., 2019), it is reasonable to assume that so too might the impact of sport on their mental health, thus requiring new methods of measurement to appropriately capture these phenomena. Last, as different sports have been found to have differing impacts on the mental health of participants (Pluhar et al., 2019), it may be that some 2SLGBTQ recreational sports clubs have a greater impact on the mental health of participants than others, but result in a statistically insignificant outcome when all sports are combined into a single measure taken as a whole.

### **Strengths and Limitations**

My dissertation makes a considerable contribution to the literature on 2SLGBTQ recreational sports and the health and wellbeing of 2SLGBTQ people in Canada. However, there are several aspects of the research design of the studies and my analyses that shape the findings of my dissertation that need to be considered. As both Our Health and Sex Now are cross-sectional studies, in isolation they are unable to speak to the directionality of the relationship between mental health and 2SLGBTQ recreational sport participation. This also means that, due to the seasonal nature of sports participation (e.g., baseball in the summer), there may be other survey participants who do participate in 2SLGBTQ recreational sports but were not at the time of survey completion, excluding them from my analysis. While Our Health and Sex Now are cross-sectional in their design, Momentum's longitudinal design has demonstrated that changes in sports participation are associated

with some changes in mental health outcomes, providing further support to the impact of sport participation on 2SLGBTQ people's health and wellbeing. Given the longitudinal design of Momentum, the sample size is significantly smaller than those of Sex Now and Our Health. Of note, the eligibility criteria for all three studies analyzed also differ. The Momentum study focused on sexually active sexual minority men only living in Metro Vancouver, an urban setting. The Sex Now study, while inclusive of Two-Spirit people of all genders and non-binary people, mainly included men (cis and trans). Only the Our Health study was inclusive of all 2SLGBTQ people irrespective of sex, gender or sexual orientation. The variations in study design, sample size and eligibility criteria provide trade-offs that benefit from my analyses of all three data sources.

The variable used to measure sport participation in both Sex Now and Our Health may also obscure the impact on the health of 2SLGBTQ people as it asked participants if they had participated in a 2SLGBTQ sports team "*or recreational activities*". This may result in participants responding in the affirmative but having participated in another type of non-sport recreational activity, such as the ballroom scene or 2SLGBTQ choir (Arnold & Bailey, 2009; Ceatha et al., 2019). While this may impact my results, I am confident that my findings are representative of 2SLGBTQ sports participation, as the variable specifically identifies sports first, and no other example of a recreational activity is given. Previous research has also documented how different sports and sport cultures may have different impacts on mental health (Pluhar et al., 2019). As the variable does not differentiate between sports, I cannot say for certain that the associations I document are universal across all 2SLGBTQ sports. Finally, across all three of my chapters, I have collapsed several

variables to binary forms to conduct my analysis. I did this to ensure that I had the response distributions necessary to feasibly run my analyses, but it may result in some nuance being lost in the findings.

My dissertation has many strengths in its design that lend support to my findings and encourage future research on 2SLGBTQ recreational sport. My analysis is the result of calls from communities of 2SLGBTQ people for further study of 2SLGBTQ recreational sports teams and leagues in Canada. Sex Now and Our Health both utilized a community-based survey design, where 2SLGBTQ people have advocated for the inclusion of variables on 2SLGBTQ recreational sport. Furthermore, my Community Advisory Board for the 2SLGBTQ Recreational Sport Study called for the Our Health data analysis to examine the impact of sports participation across the life span (by younger and older age group). These calls for research support my findings as 2SLGBTQ people have demanded research that documents the positive impacts from participation that they have experienced in their own lives. My approach also demonstrates my dissertation's rigorous commitment to community-based research on 2SLGBTQ health to improve the conditions of the people and communities with whom I collaborate (Mertens, 2003; 2010).

The analyses in my dissertation also offers many novel additions to the literature on 2SLGBTQ recreational sports and its impact on 2SLGBTQ people's health and wellbeing. By using the Sex Now and Our Health data sets, I have conducted the first national study of 2SLGBTQ recreational sports participation and its health impacts in Canada. Across all three studies, I have captured the positive impact of participation across sociodemographic subpopulations of 2SLBGTQ people (e.g., gay and bisexual men, trans

people and older adults) but, through Our Health, I have also conducted analysis that includes representation from across the 2SLGBTQ population in Canada. Last, by including financial strain in my analysis of Sex Now and Our Health data sets, I am confident that my results are not confounded by participants' access to economic resources (Sari, 2021).

### **Implications for Policy, Practice and Community**

My dissertation research into 2SLGBTQ recreational sports teams and leagues has implications for sport and health policy across Canada. There are growing calls for the inclusion and expansion of sport programming to improve people's health and wellbeing. There is also a growing call for community-based interventions, like social prescribing (Nowak & Mulligan, 2021), that connect clients/patients with social and community opportunities to support their health and wellbeing. Without specific consideration given to the historic and continuing marginalization that 2SLGBTQ people experience in sport, policies aimed at fostering sport participation to improve the health of people in Canada may only serve to compound the numerous health disparities that 2SLGBTQ people already face. My research has demonstrated that 2SLGBTQ recreational sports are not only popular among 2SLGBTQ people, and broadly inclusive of diverse 2SLGBTQ people, but they also provide opportunities to strengthen social and community connection. Sport and health policymakers must support the formation and continued organizing of 2SLGBTQ recreational sports teams and leagues as part of their commitment to sports participation and community-based programming.

From my perspective, the most important finding in my dissertation is the documented associations between social support and community connection with

2SLGBTQ recreational sports participation. In particular, I see the great value of that association for service provision with 2SLGBTQ people. There have been growing concerns about the negative impact of loneliness on the health of 2SLGBTQ people (Marziali et al., 2020). My findings suggest that 2SLGBTQ recreational sports offer novel opportunities to improve the social connection and support of 2SLGBTQ people who experience loneliness. Social service workers who work with 2SLGBTQ people must be aware of and build relationships with their local 2SLGBTQ recreational sports groups to connect their clients who are experiencing loneliness and social isolation to be able to intervene and refer appropriately. Further research is also needed to examine best practices to facilitate the relationship between social services and 2SLGBTQ recreational sports clubs.

It is my hope that the research I have conducted will also be of value to the communities of 2SLGBTQ people who took the time to advocate for research on 2SLGBTQ recreational sports' impact on 2SLGBTQ people's health, as well as those who participated in the Momentum Health Study, Sex Now surveys and Our Health surveys. My research lays the foundation for further advocacy by 2SLGBTQ athletes for better access to recreational sports facilities and funding to support the growth of 2SLGBTQ recreational sports clubs. It also demonstrates the positive impact that sport participation can have for transgender people and supports advocacy for trans-inclusive sport policies. Last, it is my hope that the research I have presented in this dissertation provides comfort and validation to the scores of 2SLGBTQ people whom I have met over the last ten years, who have shared how important their 2SLGBTQ recreational sports team, league or club has been to their mental health and wellbeing. I am grateful to have heard from so many people about how their

league has given them a place to feel a sense of belonging and I am honoured to have captured some of that impact in this dissertation.

### **Future Research**

The research I have documented in this dissertation has captured some of the benefits of participating in 2SLGBTQ recreational sports teams and leagues. Notably, none of the studies conducted have identified any negative impacts of sport participation. If 2SLGBTQ recreational sports teams and leagues can be considered as part of a broad social service practice that accounts for the socioecological health factors in 2SLGBTQ people's lives, a better understanding of the potential negative impacts of participation in these sports spaces is necessary. For example, previous research has identified how sports participation with young people is correlated with higher rates of alcohol and substance use (Kwan et al. 2014). As queer and trans people have been found to already have high rates of substance use, and I found that gay men's participation in 2SLGBTQ sports was also associated with increased bar and club visitation in the Momentum Health Study, 2SLGBTQ recreational sports teams and leagues may compound substance use disparities or adversely impact participants who have harmful relationships with substance use. Further research is needed on possible negative impacts of participation, which I will begin to address through the 2SLGBTQ Recreational Sport Study that will begin data collection in 2025.

In the Momentum Health Study, gay and bisexual men who lived outside of the City of Vancouver/elsewhere in Metro Vancouver were less likely to participate in 2SLGBTQ sports; otherwise, there were no statistically significant differences in participation across

other sociodemographic variables. In Sex Now, trans people who were bisexual were less likely to participate in 2SLGBTQ sports while queer-identified trans people were more likely to participate but no statistical differences between sociodemographic variables were found. Our Health documented how asexual and bisexual people were less likely to participate in 2SLGBTQ recreational sports, while gay, Indigenous and participants who identified being treated as People of Colour were more likely to participate. Beyond the previously mentioned differences, however, no other demographic characteristics were found to be statistically significant in terms of sport participation in Our Health. While these findings suggest that 2SLGBTQ recreational sports teams are broadly inclusive of diverse 2SLGBTQ identities, it does not capture how different social and geographic locations within the diversity of the 2SLGBTQ population may experience unique harms within 2SLGBTQ recreational sports differently and face unique barriers or facilitators to participation (Travers & Deri, 2011). Further research is needed to understand the experiences of specific subpopulations of 2SLGBTQ people, such as trans women or 2SLGBTQ people in rural areas. My upcoming 2SLGBTQ+ Recreational Sport Study survey will help to address some of these gaps in our understanding, but further qualitative research needs to be conducted with diverse 2SLGBTQ recreational athletes to better illuminate the impact of 2SLGBTQ recreational sports participation.

While my work suggests that there is a relationship between the social and mental health of 2SLGBTQ people and participating in 2SLGBTQ recreational sports, I was limited in how I was able to capture participants' mental health due to the nature of my secondary data analyses. There is a growing body of research that has documented the important role

that identity formation is for 2SLGBTQ people in protecting them from negative mental health (Mock et al., 2019). Many 2SLGBTQ people have negative experiences with sport as young people that shape their relationships to their bodies, identities, genders, sexualities and sport (Elling & Collot d'Escury, 2017; Symons et al., 2017; Baiocco, 2018; Greenspan et al., 2019). Participation in sports teams and leagues, such as 2SLGBTQ ones, that are affirming of their identities may serve to contribute to healthier identity formation and reforming relationships to sports that help protect participants' mental health. Research that gauges how 2SLGBTQ recreational sports will further illuminate the holistic impact of participation on 2SLGBTQ mental health is needed.

As previously mentioned, one of the limitations of the work that I have presented is the wording of the survey questions that capture participants' experiences in 2SLGBTQ sports. My analysis is unable to parse if that impact may differ across the various sports and organizations that make up the single, homogenized sports category. Previous research has identified how participating in team sports like soccer, for example, can have a bigger impact on reducing negative mental health symptoms than participating in individual sports like running (Pluhar et al., 2019). Furthermore, as the organizational structure of each club and team is different, there may be some teams and leagues that are more beneficial for their participants than others. More research is necessary that will allow us to see how different sports cultures, rules and organizational structures may have differing impacts on the health of 2SLGBTQ people. This will not only allow for service providers to better understand the potential impact of 2SLGBTQ recreational sports teams

and leagues in their practice, but also inform best practice resources for the teams and leagues themselves.

To expand on the knowledge created over these three studies, more explicit evaluation and intervention studies should be conducted to understand more conclusively whether participating in a 2SLGBTQ team or league impacts the health of 2SLGBTQ people. Furthermore, any intervention study being conducted should include research questions that explore possible best practices for including 2SLGBTQ recreational teams and leagues in service delivery that supports 2SLGBTQ people. This in turn can help guide future resources for social work and public health efforts to support the health of 2SLGBTQ people.

Lastly, there have been calls for 2SLGBTQ health research to shift away from a deficit focus (which can compound the stigma that 2SLGBTQ people already experience) and examine the processes and resources that support 2SLGBTQ people's resilience and their sense of thriving (Colpitts & Gahagan, 2016; Crawford, 2024). Future qualitative research with 2SLGBTQ recreational athletes should explore how their participation in 2SLGBTQ sports supports their resilience (their ability to withstand significant stress or adversity [Colpitts & Gahagan, 2016; Fergus & Zimmerman, 2005]), and their sense of thriving (a multi-faceted understanding of positive development [Brown et al., 2017; Crawford, 2024]).

## **Conclusion**

For many 2SLGBTQ people, sport is a complicated space. It can be a site of homophobia, transphobia, bullying and marginalization (Elling & Collot d'Escury, 2017;

Symons et al., 2017; Baiocco, 2018; Greenspan et al., 2019). It can also, as my dissertation demonstrates, be a site for 2SLGBTQ people to build social support and stronger connections to 2SLGBTQ communities, and bolster their mental and physical health.

Through the research that I have outlined in this dissertation, I have laid a foundation for future policymakers, researchers and service providers to engage 2SLGBTQ community-based recreational sports teams and leagues to support the health and wellbeing of 2SLGBTQ people in Canada.

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**Appendix 1: 2SLGBTQ+ Recreational Sport Study Ethics Certificate**

**University of Victoria**

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

**Certificate of Ethical  
Approval for Harmonized  
Minimal Risk Behavioural  
Study**

**Also reviewed and approved by:**

- Simon Fraser University



<b>Principal Investigator:</b> Nathan Lachowsky	<b>Primary Appointment:</b> University of Victoria	<b>Board of Record REB Number:</b> BC24-0317 <b>Board of Record:</b> University of Victoria	<b>UBC REB Number:</b> H24-00652
<b>INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT:</b>			
<b>Institution</b>		<b>Site</b>	
<b>Non-UBC Institution</b>		<b>Site</b>	
University of Victoria		Main Campus	
Simon Fraser University		Vancouver	
<b>Other locations where the research will be conducted:</b> Research will be conducted online via UVic, and will not use SFU campus, servers, or software. SFU is included on this proposal to reflect the involvement of Dr. Travers in the development of the survey and it's analysis following data collection.			
<b>Study Title:</b> A Community-Based Mixed Methods Study on the Health Benefits and Barriers for Participation in 2SLGBTQI-Specific Recreational Sports for 2SLGBTQI+ Youth in Canada			
<b>Study Approved: March 21, 2025</b>		<b>Expiry Date: March 21, 2026</b>	
<b>Research Team Members:</b>	Jean Buckler, Co-principal Investigator, UVic Renee Monchalin, Co-investigator, UVic Travers Travers, Co-investigator, SFU Rusty Souleymanov, Co-investigator, U of Manitoba Gordon (Alex) Wells, Graduate student/Co-principal Investigator, UVic Tyrone Curtis, Post-doctoral Fellow, UVic Anthony Amato, Data analyst, UVic Kimia Rohani, Data analyst, UVic Jacqueline Gahagan, Mount Saint Vincent University Sylvie Parent, Université Laval Martin Blais, Université du Québec à Montréal Carmen Logie, UofT Ivan Leonce, YouthCo		
<b>Sponsoring Agencies:</b>	- Canadian Institutes of Health Research (CIHR) - "(#FN-9381) A Community-Based Mixed Methods Study on the Health Benefits and Barriers for Participation in 2SLGBTQ-Specific Recreational Sports for 2SLGBTQ Youth in Canada"		
<b>Documents included in this</b>			

approval:	Document Name	Version	Date
	<b>Protocol:</b>		
	CIHR Grant Application	N/A	July 3, 2024
	<b>Consent Forms:</b>		
	Consent Form	2	March 19, 2025
	<b>Advertisements:</b>		
	League Email	2	March 19, 2025
	Instagram Ad 7	1	March 19, 2025
	Recruitment Poster 3	3	March 19, 2025
	Instagram Ad 5	2	March 19, 2025
	Recruitment Poster 1	N/A	July 3, 2024
	Instagram Ad 6	2	March 19, 2025
	Recruitment Poster 2	N/A	July 3, 2024
	Instagram Ad 1	N/A	July 3, 2024
	Instagram Ad 2	N/A	July 3, 2024
	Instagram Ad 3	N/A	July 3, 2024
	Instagram Ad 4	N/A	July 3, 2024
	Instagram Post	1	March 19, 2025
	<b>Questionnaire, Questionnaire Cover Letter, Tests:</b>		
	Survey	3	March 19, 2025
	<b>Other:</b>		
	Website: <a href="https://onlineacademiccommunity.uvic.ca/healthcbr/project/2slgbtq-recreational-sport-study/">https://onlineacademiccommunity.uvic.ca/healthcbr/project/2slgbtq-recreational-sport-study/</a> Instagram: @2slgbtq.rec.sport.study		
<p>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.</p> <p>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).</p> <p>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.</p>			
<p>The application for ethical review and the document(s) listed above have been reviewed and the procedures were found to be acceptable on ethical grounds for research involving human subjects.</p>			
<p><b>This study has been approved either by the Board of Record's full REB or by an authorized delegated reviewer.</b></p>			