An examination of physical activity participation among LGBTQ+ adults through the integrated perspective of self-determination theory and the minority stress model

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Abstract (English)

LGBTQ+ individuals face an array of challenges to physical activity participation, such as discrimination and exclusion. The purpose of this thesis was to gain an understanding of diverse LGBTQ+ experiences within physical activity. The research program represented by this thesis employed a mixed-methodology and was composed of two distinct studies. The first was a qualitative study in which we explored LGBTQ+ individuals' experiences with physical activity through eight focus group discussions ($N = 42$). Using a semi-structured interview guide, participants were encouraged to broadly discuss their personal physical activity experiences. All focus groups were audio-recorded, transcribed verbatim, and subject to thematic analysis. Three main themes emerged: (a) intersectionality within physical activity - an intersectional approach is required to explore the complexity of LGBTQ+ experiences within physical activity, (b) the contested concept of "athlete" - LGBTQ+ communities have unique conceptions associated with "athlete" that can render sport, and by extension physical activity contexts as elitist and inaccessible, and (c) "a safe space for us" - LGBTQ+ friendly physical activity practices should be explored to provide practical suggestions for inclusivity. These three resulting themes were interpreted as significant research considerations that were used to inform the second study in this thesis. Given that the majority of participants in study 1 spoke about specific instances of LGBTQ+ minority stress within physical activity contexts, study 2 was designed to explore the relationship between LGBTQ+ minority stress and motivation to participate in physical activity. Study 2 proposed a theoretical model to better understand LGBTQ+ experiences in physical activity, that explored whether LGBTQ+ minority stressors, as indicators of the social-environmental context, would relate to the basic psychological needs—motivation—physical activity pathway, as per self-determination theory. An online cross-sectional survey was

completed by 798 self-identifying LGBTQ+ adults. Structural equation modelling analyses suggest that LGBTQ+ minority stressors are statistically significantly and negatively related to need satisfaction within physical activity, which in turn is related to lower levels of motivation and physical activity. Together these two studies provide a novel, in-depth exploration of how diverse LGBTQ+ experiences, specifically LGBTQ+ minority stressors, influence experiences within physical activity contexts.

Abstract (French)

Les personnes LGBTQ + font face à un éventail de défis à la participation à l'activité physique, tels que la discrimination et l'exclusion. Le but de cette thèse était de comprendre les différentes expériences LGBTQ + dans l'activité physique. Le programme de recherche représenté par cette thèse utilisait une méthodologie mixte et était composé de deux études distinctes. La première était une étude qualitative dans laquelle nous avons exploré les expériences des personnes LGBTQ + en matière d'activité physique au moyen de huit discussions de groupe (N = 42). À l'aide d'un guide d'entrevue semi-structuré, les participants ont été encouragés à discuter largement de leurs expériences personnelles d'activité physique. Tous les groupes de discussion ont été enregistrés, retranscrits textuellement et soumis à une analyse thématique. Trois thèmes principaux ont émergé: (a) l'intersectionalité dans l'activité physique - une approche intersectionnelle est requise pour explorer la complexité des expériences LGBTQ + dans l'activité physique, (b) le concept contesté d '«athlète» - les communautés LGBTQ + ont des conceptions uniques associées à «athlète» (c) «un espace sûr pour nous» - les pratiques d'activités physiques amicales LGBTQ + devraient être explorées pour fournir des suggestions pratiques pour l'inclusivité. Ces trois thèmes résultants ont été interprétés comme des considérations de recherche importantes qui ont été utilisées pour éclairer la deuxième étude dans cette thèse. Étant donné que la majorité des participants à l'étude 1 parlaient de cas particuliers de stress LGBTQ + minoritaire dans des contextes d'activité physique, l'étude 2 visait à explorer la relation entre le stress minoritaire LGBTQ + et la motivation à participer à l'activité physique. L'étude 2 a proposé un modèle théorique pour mieux comprendre les expériences LGBTQ + dans l'activité physique, explorant si les facteurs de stress minoritaires LGBTQ +, en tant qu'indicateurs du contexte socio-environnemental, se rapporteraient aux besoins

psychologiques fondamentaux - motivation - activité physique, selon l'autodétermination théorie. Une enquête transversale en ligne a été menée auprès de 798 adultes LGBTQ + auto-identifiés. Les analyses de modélisation des équations structurelles suggèrent que les facteurs de stress minoritaires LGBTQ + sont statistiquement significativement et négativement liés à la satisfaction des besoins dans l'activité physique, qui est elle-même liée à des niveaux inférieurs de motivation et d'activité physique. Ensemble, ces deux études offrent une exploration inédite et approfondie de la façon dont les diverses expériences LGBTQ +, en particulier les facteurs de stress minoritaires LGBTQ +, influencent les expériences dans les contextes d'activité physique.

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Author Contributions

I was the primary author for the two manuscripts included within this thesis. As such, I conceptualized and developed each study, and sought support from various co-authors as needed. My supervisor, Dr. Lindsay Duncan was a co-author across both studies, and advised me in the conceptualization and development of research questions, conduct and analysis of each study, and reporting of the results study. Dr. Meredith Rocchi, a co-author for study 2, provided feedback and advise specific to my application of structural equation modeling. Dr. Shane Sweet, another co-author for Study 2, operated as a second advisor on structural equation modeling. Dr. Rocchi and Dr. Sweet also read and edited the manuscript of Study 2. This thesis was funded by SSHRC Canada Graduate Scholarships—Master's Program (CGSM) from the Social Sciences and Humanities Research Council.

Table of Contents

CHAPTER ONE

GENERAL INTRODUCTION

Background

Western society was born out of, and continues to perpetuate, complex systems of oppression (Cho, Crenshaw, & McCall, 2013; Collins, 2002; Crenshaw, 1991). Heterosexism is one such system that, historically, has been used to intimidate sexual minorities in order to maintain social control, and uphold the current sexual paradigm of Western culture, which is focused on sexual reproduction (Flowers & Buston, 2001; Herek, 1990). Heterosexism is enacted through a variety of institutions and operates across multiple levels. Heterosexuality has historically depended on the exclusion of other sexualities to uphold its legitimacy (Jackson, 2006). For example, homosexuality was classified as a mental illness by the American Psychiatric Association (APA), until 1973 when it was removed from the APA's Diagnostic and Statistical Manual of Mental Disorders. Framing sexual orientations that deviated from heterosexuality as illnesses prior to 1973 ultimately justified the use of conversion therapies and encouraged discrimination against and persecution of homosexuals (Haldeman, 2002). Heterosexism has also been institutionalized in Western society through national bans on gay marriage (Lewis, 2011) and the Don't Ask, Don't Tell military policy (Burks, 2011). These policies, which have only recently been revoked, serve as powerful reminders of how society can misuse legislation to police citizens into conforming to a standardized way of life. In this light, heterosexuality is not just a form of sexual expression, it is an institutional organizing structure that confines sexuality to one orientation while simultaneously restricting gender to the rigid division between men and women (Jackson, 2006; Seidman, 2009). Due to the institutionalized nature of these systems of oppression, it is often difficult to confront or reject them. Instead,

scholars are forced to analyze these naturalized systems in the hopes that eventually society will be able to move beyond them. The institutionalization and normalization of heterosexuality, is characterized by the term "heteronormativity", which places heterosexuality as the normative, default sexuality (Jackson, 2006). When heterosexuality is the norm, all other sexualities are cast outside of what society deems acceptable. It is well documented that individuals with minority sexual orientations and gender identities that do not subscribe to heteronormativity, experience discrimination, stigmatization, and marginalization on a variety of institutional and personal levels (Jackson, 2006; Yep, 2002).

LGBTQ+ is a catch-all abbreviation that is used to encapsulate lesbian, gay, bisexual, transgender, queer, and other experiences beyond cis-heterosexuality such as identifying as having no particular gender (i.e., agender) or identifying as having no sexual attraction to others (i.e., asexuality). The constant adversity experienced by LGBTQ+ persons culminates into a unique form of stress, commonly referred to as LGBTQ+ minority stress (Meyer, 2003). Minority stress is the unique product of a minority identity, generated by the distinct experiences associated with belonging to a minority group in a society that has been built to favour the majority, or the norm. Some sources of LGBTQ+ minority stress, or LGBTQ+ minority stressors, are homophobia, exclusion, harassment, rejection, and other forms of discrimination. LBGTQ+ minority stress often manifests in the form of mental and physical health consequences, such as depression, anxiety, and various self-destructive behaviors including substance abuse and self-harm (Cochran & Mays, 2007; Conron, Mimiaga, & Landers, 2010; Daniel & Butkus, 2015; King, 2008; Mereish & Poteat, 2015). Research has also begun to suggest that compared to their heterosexual counterparts, LGBTQ+ adults are subject to higher rates of chronic diseases and health concerns such as diabetes, hypertension, and limited mobility

later in life (Daniel & Butkus, 2015; Fredriksen-Goldsen, Kim, Emlet, et al., 2011; Institute of Medicine Committee on Lesbian Gay Bisexual and Transgender People, 2011). These emerging health issues are further augmented by social conditions, like the increased likelihood of LGBT individuals to live in poverty and have limited access and/or increased barriers to adequate public health coverage (Redman, 2010).

Regular physical activity can minimize the physiological effects of an otherwise inactive lifestyle and increase active life expectancy by limiting the development and progression of chronic disease and disabling conditions, like depression, hypertension, obesity, and diabetes (Chodzko-Zajko et al., 2009; Warburton, Nicol, & Bredin, 2006). Many of the chronic diseases being diagnosed at higher rates among members of LGBTQ+ communities can be prevented or mitigated through regular engagement with physical activity. In addition to the physiological benefits, physical activity has been shown to have a positive impact on overall psychological health, personal well-being, and quality of life (Chodzko-Zajko et al., 2009; Penedo & Dahn, 2005; Warburton et al., 2006). Regular physical activity has also been identified as an essential protective factor in the general health of older LGB individuals (Fredriksen-Goldsen, Kim, Emlet, et al., 2011), and as a valuable coping mechanism for dealing with minority stress among LGBTQ+ adults (Iwasaki, Mackay, Mactavish, Ristock, & Bartlett, 2006). However, LGBTQ+ adults experience unique and disproportionate barriers to physical activity participation, such as homophobia, exclusion, and discrimination (Denison & Kitchen, 2015) that reduce physical activity levels and exacerbate health disparities (Brittain, Baillargeon, McElroy, Aaron, & Gyurcsik, 2006; Brittain & Dinger, 2015; Cary et al., 2016) Consequently, current physical activity programming for LGBTQ+ individuals may be insufficient, insensitive to the needs of, or ineffective at reaching diverse LGBTQ+ communities. Therefore, several researchers have

been begun to acknowledge the growing need for tailored health interventions to help the historically disadvantaged LGBTQ+ population (Barefoot, Warren, & Smalley, 2015; Cary et al., 2016; Fogel, Young, Dietrich, & Blakemore, 2012; Fredriksen-Goldsen, Kim, & Barkan, 2011; Garbers et al., 2015; Grogan, Conner, & Smithson, 2006).

In this thesis, I will explore the diverse experiences of individuals from LGBTQ+ communities within a physical activity context using a mixed methodology. By studying the LGBTQ+ experiences within physical activity, I will begin to build the foundational understanding necessary to address how to adapt physical activity to be more inclusive of LGBTQ+ communities. More specifically, I will investigate how the LGBTQ+ minority experience, specifically how minority stressors, affect physical activity motivation and participation. By using a mixed methodology, I will be able to engage with LGBTQ+ communities without oversimplifying the wide range of experiences within this diverse population. The first manuscript is a qualitative study that will allow me to connect with LGBTQ+ adults and form an in-depth understanding of their experiences with physical activity. The second manuscript is a quantitative study that will be informed by my qualitative findings, and will allow me to look for trends that emerge in the experiences of the broader LGBTQ+ population.

Literature Review

Research is being conducted to better understand LGBTQ+ experiences within physical activity, and the unique barriers that may challenge their participation. Physical activity can be defined broadly as any type of bodily movement. Within physical activity research, great emphasis has been placed on the exploration of LGBTQ+ experiences within sport and physical education (e.g., Cunningham, 2012; Elling & Janssens, 2009; Sykes, 2011). The issues LGBTQ+

athletes experience within sport occur across multiple levels from cultural norms that have become institutionalized discriminatory practices (macro-level; Cunningham, 2008) to leadership behaviors (meso-level; Fink, Burton, Farrell, & Parker, 2012) to individual sexual and gender identities (micro-level; Cunningham, 2012). At the micro-level, prevailing sport stereotypes rooted in gender discrimination about effeminate gay cis-men (Fink, 2008) and masculine lesbian cis-women (Kauer & Krane, 2006) often provide the foundations for sexual prejudice within sport (Hekma, 1998). Consequently, sexual prejudice has become cemented as part of Western sport culture and is commonplace throughout sporting contexts (Gill, Morrow, Collins, Lucey, & Schultz, 2006). Alternatively, LGBTQ+ friendly sporting leagues (e.g., softball; Travers, 2006) and international sporting events (e.g., The Gay Games; Davidson, 2007) have actively sought to create sporting contexts free of heterosexism. However, these alternative LGBTQ+ practices often reiterate white homonormativity (Davidson, 2014) and continue to privilege gay cis-men and lesbian cis-women—the "LG" of LGBTQ+ (Caudwell, 2014). Locker rooms have also been identified as the most traumatic spaces by LGBTQ+ athletes and physical education students (e.g., Devís-Devís, Pereira-García, López-Cañada, Pérez-Samaniego, & Fuentes-Miguel, 2018; Jones, Arcelus, Bouman, & Haycraft, 2017; Sykes, 2011). In general, researchers have reported that sport and physical education structures ultimately failed to recognize the multiplicity and complexity of gender and sexuality (Caudwell, 2014, p. 406). Researchers have called for the complete reorganization away from the traditional gender binary within physical education (Sykes, 2011) and sport (Symons, Sbaraglia, Hillier, & Mitchell, 2010; Travers & Deri, 2011). However, physical activity is not limited to sport and physical education. Sport and physical education are organized by specific rules, regulations, and governing bodies that complicate processes of restructuring. A broader definition of physical activity (i.e.,

exercise, leisure-time activities, etc.) may provide the initial space and flexibility necessary to move away from traditionally heterosexual and cisgender practices.

A recent scoping review of the experiences of LGBTQ+ adults within physical activity contexts (which excluded articles specifically about sport and physical education) suggested that sexual orientation affects engagement in physical activity differentially by gender (Herrick & Duncan, 2018). For sexual minority men, the literature suggested that increased physical activity levels (Brittain & Dinger, 2015; Cary et al., 2016; Mor, Parfionov, Davidovitch, & Grotto, 2014) are due to an external drive predicated on an ideal body type that is both thin and muscular (Brewster, Sandil, DeBlaere, Breslow, & Auckland, 2017; Brown & Graham, 2008; Edmonds & Zieff, 2015; Mor et al., 2014; Roper & Polasek, 2006; Sykes, 2009). Specifically, this drive for muscularity is sought through the use of two extreme behaviors: steroid use (Brewster et al., 2017; Mor et al., 2014) and compulsive exercise (Brewster et al., 2017; Brown & Graham, 2008). The emphasis on thinness and muscularity among sexual minority men is coupled with a prevalent fat stigma (Edmonds & Zieff, 2015; Sykes, 2009). This primary narrative of aesthetically driven physical activity was juxtaposed against prevalent stereotypes that describe gay men as non-athletic, physically weak, and 'feminine' (Brown & Graham, 2008; Edmonds & Zieff, 2015; Grogan et al., 2006). Homophobia was identified as a harmful process that perpetuates these stereotypes (Brittain & Dinger, 2015; Cary et al., 2016; Mor et al., 2014). Physical activity settings (e.g., fields) and spaces related to physical activity (e.g., locker rooms) were also found to be sites of increased homophobic harassment for male students (Gill et al., 2006; Gill, Morrow, Collins, Lucey, & Schultz, 2010).

In contrast to the dominant narrative of a clearly defined body ideal among sexual minority men, dominant body norms for sexual minority women were significantly more fluid (Herrick &

Duncan, 2018). Unlike sexual minority men, body norms among sexual minority women were not reducible to rigid aesthetic standards of attractiveness. Instead, the body norms among sexual minority women were predicated on the all-encompassing acceptance of diverse bodies (Brittain et al., 2006; Garbers et al., 2015; Sykes, 2009). The alternative body norms endorsed by sexual minority women, combined with the presence of homophobia, and exclusive sport stereotypes, culminated in a dominant trend of decreased physical activity (Barefoot et al., 2015; Boehmer & Bowen, 2009; Brittain et al., 2006; Brittain & Dinger, 2015; Garbers et al., 2015; Laska et al., 2015; McElroy & Jordan, 2014; Yancey, Cochran, Corliss, & Mays, 2003). The literature also identified specific sub-groups among sexual minority women, explained by a butch-femme continuum, which endorse different variations of these body norms (Bowen, Balsam, Diergaarde, Russo, & Escamilla, 2006; Garbers et al., 2015). It was suggested that sexual minority women with a more 'femme' gender expression were more likely to adhere to the standards of attractiveness traditionally held by heterosexual women (i.e., being thin), whereas butch-identified sexual minority women tended to deviate and embrace larger sizes, traditionally associated with masculinity (Garbers et al., 2015; Sykes, 2009).These findings indicate that although body norms appear to be more flexible among sexual minority women, they may be heavily influenced by gender expression (Herrick & Duncan, 2018).

The presence of homophobia in physical activity settings is commonly cited as a contributing factor to the decreased physical activity levels found among sexual minority women (Brittain et al., 2006; Fogel et al., 2012; Molina, Lehavot, Beadnell, & Simoni, 2014; Yancey et al., 2003). The experience of sexual minority women often contrasts with prevalent sport-specific stereotypes typically refered to as the "athletic lesbian" trope. The stereotype suggests that sexual minority women are (1) competitive and, (2) clique-ish (Bowen et al., 2009; Brittain

et al., 2006; Kauer & Krane, 2006). Studies suggest that these stereotypes are potential deterrents for non-athletic sexual minority women to engage in sport and physical activity (Bowen et al., 2009; Brittain et al., 2006). The stereotype that sexual minority women are more athletically talented than their heterosexual counterparts generates high levels of expectations for success that are considered unrealistic and stressful for many sexual minority women (Herrick & Duncan, 2018).

In summary, the literature suggests that sexual orientation affects engagement in physical activity differentially across the traditional gender binary (Herrick & Duncan, 2018). At present, the majority of the literature focuses on homonormative representations of lesbian cis-women and gay cis-men. There is a relative dearth of literature on bisexual, queer, and transgender individuals engaging in physical activity. By glossing over the bisexual experience, researchers are systematically contributing to a phenomenon known as bi-erasure or bi-invisibility (Elia, 2014). Findings from the few studies that have treated the bisexual experience as unique (Bowen et al., 2009; Laska et al., 2015; VanKim et al., 2015) suggest that physical activity may be incredibly complicated with respect to the gender of the participant as well as the gender of their current partner. With regard to transgender individuals, it has been found that changing rooms in public areas, such as fitness centers, are particularly anxiety-inducing (e.g., Hargie, Mitchell, & Somerville, 2017). In a study comparing transgender (n = 33) and cisgender (n = 47) adults, it was also found that transgender people were less physically active, had a more negative self-image, and self-reported lower social support than their cisgender peers (Muchicko, Lepp, & Barkley, 2014). However, it should be noted that of the few studies focused on transgender experiences in physical activity, the majority have focused on ‘gender-conforming’ transgender people who have switched across the binary without attempting to disrupt it (Caudwell, 2014;

Hargie et al., 2017; Jones et al., 2017).

Over time, Western society's understanding of LGBTQ+ identities have shifted away from rejection and slowly towards tolerance (Renn, 2010). Increased societal understanding has helped diverse LGBTQ+ identities become more visible as they are gradually integrated from the margins (Renn, 2010). Future research needs to explore these processes of changing identity politics and their effects on physical activity participation. Considering this, my thesis will explore all gender identities and sexual orientations across LGBTQ+ communities. By engaging with the full spectrum of identities within the umbrella term LGBTQ+ we acknowledge that there is a risk of perpetuating the assumption that a coherent LGBTQ+ collective exists (Caudwell, 2014). However, in not limiting our research to one specific community, we are able to engage with the hierarchy of invisibility that seems to relegate the remaining "BTQ+" to the sidelines.

Although there seems to be a relationship between diverse LGBTQ+ experiences and physical activity engagement, at present we are unsure as to what specific instances deter LGBTQ+ adults from physical activity participation. Moving forward, researchers need to explore and elucidate how the diverse LGBTQ+ minority experience affects relationships with physical activity to fully understand how to effectively make safer spaces and accessible programs for members of LGBTQ+ communities to engage in physical activity. Although alternatives are a good starting point, to combat homophobia, transphobia, and queerphobia we need to generate an integrated physical activity paradigm that is inclusive for all. Our review of the literature suggests that physical activity interventions need to be targeted to the unique sub-groups that comprise the LGBTQ+ population. However, to facilitate this tailoring of interventions, we first need a deep, functional understanding of the diverse LGBTQ+ context

within physical activity.

Theoretical Background

This research program will be guided by two prominent frameworks: the minority stress model and self-determination theory.

The Minority Stress Model

The minority stress model (MSM) is a well-established psychological model that was developed specifically to describe the complex experience of the LGB population (Herek, Gillis, & Cogan, 2009; Mereish & Poteat, 2015; Meyer & Frost, 2013; Meyer, 2003, 2015). In the case of minority populations, MSM implies the existence of unique minority stressors that ultimately have a detrimental effect on mental and physical health (Meyer & Frost, 2013; Meyer, 2003). MSM maintains that sexual minorities are subject to unique experiences that manifest as psychological stressors (Meyer, 2003) and vary in the degree to which they are distal or proximal to the individual. Distal stressors can be caused by discrimination, victimization, and stigmatization on an institutional as well as personal levels (Mereish & Poteat, 2015a). For self-identifying LGBTQ+ persons, distal stressors can be acute or chronic (Meyer, 2003). Acute distal stressors typically encompass singular events, like instances of verbal or physical violence in the form of hate crimes (Herek, Cogan, & Gillis, 2002). Chronic distal stressors such as family rejection of sexual orientation can result in long-standing, prevalent effects such as homelessness (Cochran, Stewart, Ginzler, & Cauce, 2002; Rosario, Schrimshaw, & Hunter, 2012). Proximal stressors rely on an individual's perceptions (Meyer, 2003). For LGBT communities, proximal stressors include the internalization of sexual prejudice, the concealment of ones' own sexual or gender identity, and the development of expectations for future sexual prejudice to occur (Mereish & Poteat, 2015a). For example, internalized homophobia (i.e., negative feelings

directed at the self because of a homosexual identity) is related to depression and anxiety among LGB persons (Igartua, Gill, & Montoro, 2003).

In the past few decades, western society's perspective on LGB individuals and the academic discourses involving LGB communities have shifted significantly (Lovaas, Elia, & Yep, 2006). These societal shifts, namely the increased acceptance of homosexuality, have enabled LGBTQ+ communities to increase visibility and representation within mainstream western culture. With this increased visibility, the various expressions of sexuality and gender have been able to move beyond the traditional dichotomies of heterosexuality/homosexuality and male/female.

The MSM conceptual framework was first applied to understand the psychological stresses experienced by LGB individuals (Meyer, 2003). However, in recent years MSM has been adapted and applied to transgender and gender non-conforming individuals (Breslow et al., 2015; Hendricks & Testa, 2012). This demonstrates that MSM has the potential to incorporate the increasing fluidity of sexuality and gender identity as it emerges in society. At present, there is no instance of the MSM framework being applied to a physical activity context.

Self-Determination Theory

Self-determination theory (SDT; Ryan & Deci, 2000) is a well-established theory of human motivation that has been used extensively to guide research in the context of physical activity promotion (Teixeira, Carraça, Markland, Silva, & Ryan, 2012). In practice, autonomous motivation (a central concept within SDT) has been found to be a robust predictor of long-term participation in physical activity (Teixeira et al., 2012), which directly coincides with my research interests in LGBTQ+ physical activity participation and engagement. SDT is comprised six sub-theories, including organismic integration theory and cognitive evaluation theory (Deci

& Ryan, 1985). Given their relevance to my research I have chosen to focus on these two sub-theories.

Organismic integration theory was developed to explain the quality of an individual's motivation towards their behaviors (Deci & Ryan, 1985). Within organismic integration theory, motivation is not viewed as a unitary concept but instead can be represented as a continuum of three distinct motivational types, ranging from amotivation which represents a relatively low-quality type of motivation, through extrinsic motivation, to intrinsic motivation which represents the highest quality of motivation. Amotivation, represents the state of lacking intention to act, or of not being motivated (Ryan & Deci, 2000). Amotivation occurs when you do not have the motivation to perform a behavior, but you perform the behavior anyways (e.g., having to walk up flights of stairs because there is no escalator). People do not generally report amotivation for physical activity because if they are not motivated they often do not take up or continue with physical activity, nor do they participate in research that documents motivation for physical activity. The second state of motivation, extrinsic motivation, is externally regulated and further differentiated into four sub-types of regulatory style: external regulation, introjected regulation, identified regulation, and integrated regulation (Ryan & Deci, 2000). External regulation occurs when you are motivated to perform a behavior to satisfy an external command (e.g., exercising because your family physician says that you should). Introjected regulation is the process of integrating an external regulation into yourself, but not fully accepting it as one's own (Ryan & Deci, 2000). An example of introjected regulation, is exercising because you will feel guilty if you don't. Identified regulation, or regulation through identification, takes place when you consciously value a behavior (e.g., exercising because you have a personal goal of being healthy). Lastly, integrated regulation occurs when identified regulations are fully assimilated

into the self (Ryan & Deci, 2000). For example, the integrated regulation of physical activity would be exercising because it is a consistent part of your identity. The last of the three motivational types, intrinsic motivation, also referred to as self-determined motivation, is the state of being motivated by the inherent joy and satisfaction that comes from engaging in the activity itself (Ryan & Deci, 2000). The more a behavior is integrated into the self (i.e., the further along the continuum it is toward intrinsic motivation), the higher the quality of motivation. These more self-determined, higher qualities of motivation (i.e., identified regulation, integrated regulation, and intrinsic motivation), culminate in increased adherence to a target behavior like physical activity (Ryan & Deci, 2000).

SDT is unique in that it considers the influence that the social and environmental context has on motivation. Another sub-theory of SDT, cognitive evaluation theory, proposes that environmental circumstances explain variability in motivation through a process referred to as need satisfaction (Deci & Ryan, 1985). Social and environmental conditions dictate the degree to which the three basic psychological needs for (1) competence, (2) autonomy, and (3) relatedness, are satisfied (Ryan & Deci, 2000). Competence is the need to feel like you possess the necessary ability, knowledge and/or skills to do something successfully, and is related to the need to feel in control of an outcome. An example of competence, is the feeling of confidence resulting from being able to adequately to perform a specific exercise (e.g., being able to deadlift correctly). Autonomy, having a sense of free will when acting out of our own interests, speaks to the universal urge to be individualized casual agents (e.g., choosing what exercises to do for a workout). Relatedness is the need to interact and feel connected to others (e.g., joining a fitness class with your friend). Given that our daily actions involve other people, it is through our everyday interactions that we seek the feeling of belongingness. The satisfaction of the three

basic psychological needs facilitates increased levels of self-determined, or intrinsic, motivation (Ryan & Deci, 2000). It has also been found that basic psychological need satisfaction contribute significantly to maintaining and improving general well-being (Martela & Ryan, 2016; Milyavskaya, Philippe, & Koestner, 2013). It should be noted that need satisfaction is context-specific, meaning that the three basic psychological needs must be satisfied in a physical activity setting to contribute to optimal motivation to be physically active.

Within a physical activity context, SDT has been used to explain motivational processes and adherence. Intrinsic, or self-determined motivation plays an important role in physical activity engagement and long-term exercise maintenance (Duncan, Hall, Wilson, & O, 2010; Friederichs, Bolman, Oenema, & Lechner, 2015). Furthermore, the satisfaction of the three basic psychological needs has been shown to lead to higher qualities of (i.e., more self-determined) motivation within physical activity contexts (Edmunds, Ntoumanis, & Duda, 2006; McDonough & Crocker, 2007). For example, in a qualitative, longitudinal case study of previously inactive adult women enrolled in a workplace lunchtime walking intervention (n = 15), it was found that the satisfaction of the needs for competence and relatedness was integral for the adoption of physical activity, whereas the satisfaction of the need for autonomy facilitated adherence to physical activity programming (Kinnafick, Thøgersen-Ntoumani, & Duda, 2014). In summary, within the SDT framework, all three psychological needs must be satisfied to facilitate self-determined motivation to engage in physical activity.

Rationale and Overall Objective

LGBTQ+ adults face unique challenges when it comes to engaging in physical activity, which may be reflected by minority stressors in this context. Thus, there is a need to understand how LGBTQ+ minority stressors impact motivation and engagement in physical activity. The

purpose of this thesis is to examine the diverse LGBTQ+ experiences within physical activity. Specifically, I am interested in how the unique stress of self-identifying as LGBTQ+ influences physical activity experiences. To do this, I will employ a mixed-methods framework comprised of two studies. The first study is qualitative and is designed to engage with LGBTQ+ communities and explore common themes across experiences with physical activity. Study 1 has two goals: (a) the exploration of LGBTQ+ experiences within physical activity and (b) the pilot-testing of a survey to be administered in the second study. Study 2 is quantitative and will involve exploring data from a broad sample of LGBTQ+ individuals collected via an online survey. The main purpose of Study 2 is to examine how LGBTQ+ minority stress affects psychological need satisfaction, motivation, and physical activity levels across a large-scale sample. Together, these studies will provide valuable insight into the experience of diverse LGBTQ+ communities within physical activity.

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CHAPTER TWO

A QUALITATIVE EXPLORATION OF ADULT LGBTQ+ AND INTERSECTING IDENTITIES WITHIN PHYSICAL ACTIVITY CONTEXTS

Authors: Shannon S. C. Herrick and Lindsay R. Duncan

Abstract

LGBTQ+ individuals face an array of challenges to physical activity participation, such as discrimination and exclusion. The purpose of this study was to gain an understanding of LGBTQ+ experiences within physical activity. Eight focus groups of LGBTQ+ individuals (N = 42) were conducted using a semi-structured interview guide, and broad discussions about personal physical activity experiences were encouraged. All focus groups were audio-recorded, transcribed verbatim, and subject to thematic analysis. Three main themes emerged: (a) intersectionality - an intersectional approach is required to explore the complexity of LGBTQ+ experiences within physical activity, (b) the contested concept of "athlete" - LGBTQ+ communities have unique conceptions associated with "athlete" that can render sport, and by extension physical activity contexts as elitist and inaccessible and (c) "a safe space for us" - LGBTQ+ friendly physical activity practices should be explored to provide practical suggestions for inclusive practices.

Introduction

Western society is built upon structural inequalities that perpetuate the oppression of minorities through 'isms', such as racism, ableism, sexism, and heterosexism (Grant & Zwier, 2011). Minority stress is generated by distinct experiences of these 'isms' for people belonging to minority groups in a society that favours the 'majority' (Meyer, 2003), or those in positions of power. It is well documented that individuals who belong to LGBTQ+ communities experience LGBTQ+ specific minority stress because of homophobia, exclusion, and other forms of discrimination (e.g., Meyer, 2003). LBGTQ+ minority stress often manifests as mental and physical health consequences, such as depression, anxiety, and self-destructive behaviors including substance abuse and self-harm (Conron et al., 2010; Daniel & Butkus, 2015; Mereish & Poteat, 2015b).

Researchers have begun to suggest that compared to their heterosexual counterparts, LGBTQ+ adults have higher rates of chronic diseases and health concerns, such as diabetes, hypertension, and limited mobility later in life (Daniel & Butkus, 2015; Fredriksen-Goldsen, Kim, & Barkan, 2011; Institute of Medicine Committee on Lesbian, Transgender Health, 2011). Many of the chronic diseases being diagnosed at higher rates across LGBTQ+ communities can be prevented or mitigated through regular engagement with physical activity. However, LGBTQ+ adults experience unique and disproportionate barriers to physical activity participation, such as discrimination (Denison & Kitchen, 2015), that reduce physical activity levels and exacerbate health disparities (e.g., Brittain & Dinger, 2015). Consequently, current physical activity programming may be insufficient, insensitive to the needs of, or ineffective at reaching LGBTQ+ communities.

Research is currently being conducted to better understand LGBTQ+ experiences within physical activity, and the unique barriers that may challenge their participation. Within the broad definition of physical activity, great emphasis has been placed on LGBTQ+ experiences in sport and physical education (e.g., Cunningham, 2012; Elling & Janssens, 2009; Sykes, 2011). In sport, LGBTQ+ athletes experience issues from cultural norms that have institutionalized discriminatory practices (Cunningham, 2008) to leadership behaviors (Fink, Burton, Farrell, & Parker, 2012) to individual sexual and gender identities (Cunningham, 2012). Prevailing sport stereotypes about effeminate gay cis-men (Fink, 2008) and masculine lesbian cis-women (Kauer & Krane, 2006) often provide the foundations for sexual prejudice within sport (Hekma, 1998). Locker rooms have also been identified as the most traumatic spaces for LGBTQ+ athletes and students (e.g., Devís-Devís, Pereira-García, López-Cañada, Pérez-Samaniego, & Fuentes-Miguel, 2018; Jones, Arcelus, Bouman, & Haycraft, 2017; Sykes, 2011). Researchers have found that sport and physical education structures ultimately fail to recognize the multiplicity and complexity of gender and sexuality (Caudwell, 2014, p. 406) and have called for reorganization away from the traditional gender binary within physical education (Sykes, 2011) and sport (Symons et al., 2010; Travers & Deri, 2011).

Whereas sport and physical education are organized by specific rules, regulations, and governing bodies that complicate processes of restructuring, physical activity is broader (in that it is any type of bodily movement including exercise, leisure-time activities, etc.) and may provide the space and flexibility necessary to move away from traditionally heterosexual and cisgender practices. A recent scoping review of the experiences of LGBTQ+ adults in physical activity contexts (which excluded articles specifically about sport and physical education) found that sexual orientation affects engagement in physical activity differentially by gender (Herrick

& Duncan, 2018). The dominant trend for sexual minority men was increased physical activity levels motivated by a harmful body ideal, and coupled with dangerous health behaviors like compulsive exercise and steroid use (Herrick & Duncan, 2018). The dominant trend for sexual minority women was decreased physical activity levels predicated on a social norm that emphasizes body acceptance (Herrick & Duncan, 2018). At present, the majority of literature focuses on homonormative representations of lesbian cis-women and gay cis-men with a relative dearth of literature on bisexual, queer, and transgender individuals engaging in physical activity. In line with sport-related literature, physical activity focused studies also found that changing rooms in public areas were particularly anxiety-inducing for trans participants[1] (e.g., Hargie, Mitchell, & Somerville, 2017).

The purpose of this qualitative study was to aid in our understanding of complex LGBTQ+ experiences within physical activity, and to inform our future research collaborations with LGBTQ+ communities. We acknowledge in engaging with the full spectrum of identities within the umbrella term 'LGBTQ+' there is a risk of perpetuating the assumption that a coherent LGBTQ+ collective exists (Caudwell, 2014). However, in not limiting our research to one specific community, we are able to engage with the hierarchy of invisibility (Caudwell, 2014) that seems to relegate the "BTQ+" to the sidelines. Throughout this study, we have been guided by the following questions of interest: (a) How do minority identities, specifically identifying as LGBTQ+, impact physical activity?, (b) How do past physical activity experiences

[1] It should be noted that of the few studies focused on transgender experiences in physical activity, the majority have focused on 'gender-conforming' transgender people who have switched across the binary without attempting to disrupt it (Caudwell, 2014; Hargie et al., 2017; Jones et al., 2017)

impact current and future physical activity behavior?, and (c) What factors may facilitate engagement in physical activity among LGBTQ+ adults?

Methods

This research was approved by the McGill Research Ethics Board and was conducted during the formative phase of a larger project dedicated to LGBTQ+ participation in physical activity. We conducted two separate series of focus groups, the first of which (series 1) was used to discuss the appropriateness of a survey we planned to use in a subsequent study. The second series of focus groups (series 2) focused on exploring emergent themes from series 1 that were unrelated to the survey. Data presented here are derived from both series of focus groups. A glossary of sexual orientations, gender identities, and other terms used within this study can be found within Appendix A. Terms defined within Appendix A have been marked with an asterisk.

Onto-epistemological Considerations

The first author is a settler white queer cis-femme who is admittedly still grappling with her own gender identity and expression. This research has been conducted primarily through the lens of her own personal experiences. Throughout her life, the first author has subscribed to a historical realist ontology and a transformative epistemology. A historical realist ontology assumes that realities are shaped by social, political, cultural, and economic values that determine which realities will be privileged within a research context (Mertens, 2007; Scotland, 2012). Subsequently, knowledge claims are socially constructed, are influenced by power relations, and are inherently political (Scotland, 2012). Transformative research acknowledges that power relations must be constantly addressed throughout the research process, making it necessary to forge an interactive link between researchers and participants (Mertens, 2007). Transformative mixed methodologies also realize the strength of combining qualitative and

quantitative methods to better address the complexities of research in culturally complex settings (Mertens, 2007). The research detailed in this paper is the first study of a larger mixed-methods research program which aims to provide the basis for, and contribute to social change that benefits LGBTQ+ communities within physical activity contexts.

The second author identifies as a straight, white cis-woman and she is the research supervisor of the first author. The second author participated in this research as an advisor with respect to the study design and writing, and acted as the critical friend throughout the data analysis and interpretation. Both authors would also like to directly acknowledge that their classed whiteness inherently facilitated their trajectories into academia, an institution that unwittingly contributes to systems of oppression.

Participants

Eligible participants were: (1) self-identifying LGBTQ+, (2) 18 years or older, and (3) able to read, understand, and speak English. All participants ($N = 42$, $M_{age} = 28$ years) were recruited through convenience, snow-ball sampling methods within LGBTQ+ communities in four large Canadian cities. Our participants were relatively diverse across sexual orientation (12 queer, 11 gay, 9 lesbian, 6 bisexual, 2 polysexual, 1 asexual, and 1 questioning) and gender identity (16 cis-men, 15 cis-women, 5 non-binary, 2 genderfluid, 2 trans-men, 1 trans-woman, and 1 agender). It should be noted that the majority of our participants were white ($n = 31$), and the remainder belonged to racial and ethnic minority groups such as Asian ($n = 4$), Arab ($n = 4$), Hispanic ($n = 2$), and black ($n = 1$).

Focus Groups

Focus groups were used to engage participants in stimulating discussions and promote self-disclosure of physical activity experiences (Krueger & Casey, 2014). All focus groups

ranged in size from 3-8 people, and lasted from 55-95 minutes. Smaller focus groups allowed more space and time for participants to elaborate on their lived experiences (Krueger & Casey, 2014). As LGBTQ+ communities have a long-standing history of turbulent relationships with police (Dwyer, 2014), and university campuses are surrounded by security guards, many participants did not feel comfortable coming to campus. Consequently, the focus groups primarily took place in private, off-campus sites associated with LGBTQ+ communities, which was integral to their success. All focus groups were moderated by the first author to facilitate the maintenance of LGBTQ+ only spaces for these sensitive discussions. As moderator, the first author relegated her role to asking stimulating questions, actively listening, keeping conversations on topic, and ensuring that everyone had the opportunity to speak (Krueger & Casey, 2014).

Series 1. The first series of four focus groups ($N = 22$) was used to discuss the appropriateness of a survey we planned to use in a subsequent study (Krueger & Casey, 2014) and to identify common LGBTQ+ narratives within physical activity to inform the research program. The survey was comprised of validated questionnaires that measured: (a) the intensity and amount of LGBTQ+ minority stressors experienced over the past year, (b) perceptions of social support from friends, family, and partners, (c) psychological need satisfaction in physical activity contexts, (d) motivation to engage in physical activity, and (e) current physical activity levels. The survey also asked for demographic information including age, sexual orientation, gender identity, race/ethnicity, educational level attained, annual household income, and athlete status (past/current experiences with sport). The first author, in identifying as a sexual minority, was adamant that she alone could not decide the best way to ask questions about physical activity to LGBTQ+ communities as this would reiterate the history of privileging white LG experiences

over others (G. M. Russell & Bohan, 2005). Therefore, survey questions were discussed in focus groups to better include and respect the opinions of others belonging to diverse LGBTQ+ communities. A semi-structured interview guide was used to facilitate discussion ranging in topics from the format of the survey (e.g. "How would you modify the survey to make it easier to complete?") to the personal experience of those taking the survey (e.g. "Were there questions that you found triggering or offensive?"). When relevant, participants were prompted to elaborate on their experiences (e.g., "Why was self-reporting your current physical activity levels difficult for you?"). Participants were forth-coming, and often used illustrative examples from their experiences with physical activity to better explain the difficulties they faced when answering the survey.

Series 2. Upon conducting the data analysis from the first series of focus groups, we identified three emergent themes related to past and current physical activity experiences; however, a review of the data suggested a need for deeper investigation. Therefore, we conducted another series of four focus groups ($N = 20$) using a semi-structured interview guide to further explore the three candidate themes.

Data Analysis

All focus groups were digitally audio-recorded and transcribed verbatim. Thematic analysis was used to directly and flexibly identify interpretative patterns of meaning across all focus groups (Braun, Clarke, & Weate, 2016). Thematic analysis has also been found to be "particularly suited to interpret data that reflects heterogeneous experiences about similar realities" (Devís-Devís et al., 2018, p. 108) such as the heterogeneous experiences of LGBTQ+ communities. The first author followed Braun, Clarke, and Weate's (2016) six-phase model for thematic analysis. In facilitating the focus groups, transcribing the discussions, and re-reading

finalized transcripts she became fully immersed and familiarized (Phase 1) with the data. She then coded the transcripts using semantic labels (Phase 2) in version 11 of the N-Vivo software package.

Series 1. An abductive approach was used for the analysis of the first focus groups. First, deductive content analysis was used to confirm the acceptability of the survey for LGBTQ+ participants, and to make modifications/additions to the survey for future use (Hsieh & Shannon, 2005; Mayring, 2000). Inductive thematic analysis was then used to code discussion points that were not directly related to the survey and detailed past/current experiences with physical activity (Braun & Clarke, 2006; Braun et al., 2016). The first author, reviewed the codes, clustered and organized them into three candidate themes (Phase 3-5; Braun & Clarke, 2006; Braun et al., 2016): (a) Intersectionality within physical activity, (b) Who is an athlete? and (c) Macro vs. micro-aggressions. All series 1 transcripts, codes, and candidate themes were then reviewed by the second author who served as a critical friend (Smith & McGannon, 2017). After extensive discussion, both authors acknowledged that the data collected from series 1 only seemed to skim the surface of these significantly nuanced themes, and that a follow-up series of focus groups was necessary to explore these themes in greater detail.

Series 2. Given that the discussion guide for series 2 was designed to ask about the three candidate themes from series 1, transcripts from the second series of focus groups were first deductively analyzed and coded into the three candidate themes by the first author. Codes were then subject to critical review by the second author. In collaborative discussions both authors explored the relationships and boundaries between the three candidate themes presented by all eight focus groups. It was agreed that deductive analysis into the three candidate themes felt disingenuous to the data set as a whole. The wealth of information provided by participants in

the second series of focus groups helped the authors acknowledge that the third candidate theme (macro vs. microaggressions) was more of an overarching concept that permeated the remaining two candidate themes. Subsequently, we dissolved the majority of codes previously associated with 'macro vs. microaggressions' across the remaining two themes. Both authors then revisited, critically evaluated, and discussed the codes included under the two themes and ultimately agreed upon a new third theme: "A safe space for us". Through this iterative and flexible process of thematic analysis, the authors were able to capture the contradictions and complexities present within the data (Braun et al., 2016).

Ensuring quality. To ensure the quality and rigor of our thematic analysis, we followed Braun and Clarke's (2006) 15-point "checklist" for quality thematic analysis. The first author was responsible for transcribing the audio recordings to a high level of detail, and checking all transcripts against the original audio recordings to ensure accurate representation. Having the first author moderate, transcribe, and code ensures that the context surrounding each quotation is not lost, and due diligence is paid to the identity of who is speaking at any given moment (Braun et al., 2016). The coding of all focus groups was comprehensive in that the first author identified as many potential themes and patterns as possible, including accounts that seemingly departed from the dominant story (Braun & Clarke, 2006; Clarke & Braun, 2013). Inclusivity was maintained throughout coding as the first author included relevant context from the focus groups into the individual codes. The coding process was flexible and reflexive, as demonstrated by the re-coding and reorganization of the three resulting themes to better reflect both series of focus groups. The results and the original data were compared and subject to critical review by the second author (Smith & McGannon, 2017). Both authors engaged in collaborative discussion,

and came to the consensus on how the results should be presented in a way that is reflective of the data as a whole.

Results

Theme 1: Intersectionality within Physical Activity

Intersectionality is a complex and nuanced concept that refers to the interconnectedness of social categorizations, such as class, race, sexual orientation, and gender (Cho et al., 2013; Collins, 2002; Crenshaw, 1991). Throughout our focus groups, we found that complicated intersecting minority identities uniquely influence physical activity experiences. All participants, in identifying as LGBTQ+, stressed how every aspect of identity must be taken into account when exploring physical activity (e.g., "And of course, we have to take into account, like intersectionality as well and the other factors that can influence your life too"; Alicia, 24-year-old Asian queer ciswoman). Subsequently, this theme was organized into five sub-themes: (a) "Athleticism has always been dominated by straightness", (b) "I don't wanna' be misgendered at the gym", (c) "Discriminated against more for being a woman", (d) "My race became an issue", and (e) "*If* you can". It should also be noted that although the questions asked about general experiences within physical activity, participants often spoke more specifically about their experiences within gym or sport settings.

"Athleticism has always been dominated by straightness". Participants generally viewed sports and physical activity as heteronormative*. As Jared, a 30-year-old white bisexual cis-man described: "athleticism has always been dominated by straightness." Formative past experiences with sport and physical education were dominated by instances of heterosexism. For instance, Ulrich, a 29-year-old white gay cis-man recounted how fellow classmates from elementary school singled him out in sporting contexts, "I did [basketball] layups better than

anybody in my class and the guys would laugh at me because I would point my feet when I would jump". These instances of bullying in physical education led Ulrich to distance himself from sports later in life, "If I wasn't so worried about looking like a sissy in front of my classmates, would I have joined more sports teams?" and has since culminated in his general disdain towards sports, and by extension, physical activity.

Due to participants' sexual orientation, locker rooms were viewed as dangerous places (e.g., "I feel most closeted in locker rooms"; Ray, 27-year-old white queer cis-man). Participants felt that by entering locker rooms they were transgressing heteronormative desire, and doing something shameful or wrong. Alicia, a 24-year-old Asian queer cis-woman recalled how horrible she felt entering her high school locker room to change for her mandatory physical education classes, "but like as somebody who's attracted to women… you can't like look at them, like it's horrible, you feel like a monster." Even participants that did not directly experience instances of homo or queer-phobia in locker rooms still exercised vigilance within these spaces. Candace, a 26-year-old white lesbian ciswoman, described that despite how accepting her high school environment was, "I was constantly staring at the floor, like I was uncomfortable at the idea of making them [fellow students] uncomfortable." Participants talked about how they would modify their behavior within locker rooms to avoid being 'found-out' or 'caught'. A commonly used vigilance tactic that was developed in school, and still used today was to move as quickly and as discretely as possible within locker rooms. Tanner, a 32-year-old white gay cis-man, currently works out at the gym five to six times per week, and to this day when entering locker rooms, he still exercises vigilance, "I don't look, because I don't want guys to think that I am, you know? I'm not looking. I don't want any trouble. I want to be chill, so just go to my locker, and I'm in and out." These past experiences in physical activity settings still

greatly impacted how all participants viewed sport and exercise settings. Eva, a 27-year-old white queer cis-woman, perfectly summarizes how sexual orientation complicates her current relationship with the gym:

> I think as a queer person in a relationship with exercise and gyms, with these sort of like official spaces of exercise, [these relationships] are necessarily sort of going to be complex and ambiguous. We're always going to sort of have that line where we have to walk where it's like I'm, even in spaces where I may not sort of like be visibly queer, I'm still a queer person in that space and that necessarily affects my experience of that space.

Some participants wanted us to understand that their aversion to physical activity could not be traced to a distinct experience (i.e., a macroaggression), but instead was due to a culmination of microaggressions (i.e., indirect, subtle and even unintentional instances of discrimination). A few examples of LGBTQ+ specific microaggressions are being congratulated for not "acting gay" or "looking trans", or being told that you are "too pretty to be a lesbian" (Sue, 2010). Due to the nature of microaggressions, they are often difficult to describe, as Mallory (33-year-old white bisexual cis-woman) articulates:

> Sometimes the stuff that happens is such a small thing that makes you super uncomfortable, so like if you try to report that, […] but if you do that, you don't know if people are going to actually believe you that it's happening, or are they even going to see that it's happening. So, like I don't know how easy it would be to make— I'm not saying we shouldn't try but I almost feel like it would be easier for like new gyms to open, instead of us trying to fix the old ones.

These results highlight the clear need to be aware of the nuances between macro and micro-aggressions in physical activity to create safer, more respectful practices because "a lot of

these things come back to like societal problems and they're not exclusive to the gym, they exist everywhere, sadly" (Cole, 23-year-old white queer cis-man).

"I don't wanna' be misgendered at the gym". Transgender participants often felt like they had to successfully pass* for a specific binary gender in order to safely use spaces associated with physical activity. Kain, a 32-year-old white bisexual non-binary transgender person, articulated how the fear of being misgendered at gyms complicated their experiences:

> When I was working out…when I started coming out as trans and binding* that became a huge problem because you can't workout in a binder and like I felt acutely uncomfortable, like I was not gonna' workout and wear like a sports bra and there's just like a lot of issues involved when you are a trans person, especially like, and I assume this problem probably goes for trans women as well where they don't wanna' be wearing a full face makeup and like sweating through that but they also don't wanna' be misgendered while at the gym and stuff like that, I know it was especially pronounced with the gym because it is sort of this enclosed environment where people are around you and occasionally they will approach you just completely unsolicited.

Participants wanted us to understand through illustrative examples, that there are nuances in experience and that the same scenario may be viewed as traumatic or inconsequential by different people, "…I mean some people are much better at like brushing off micro-aggressions" (Terrence, 28-year-old white queer non-binary). However, micro-aggressions can add up over time and have a large impact on one's self-esteem. Hayden, a 26-year-old white bisexual trans-man, is often emotionally exhausted at the end of his work day because, "I get misgendered every single day, all day." Hayden then feels like he can't muster the mental strength to enter into gym settings where he knows he will be further subjected to being misgendered, "so I'm

wanting to go to the gym, but I'm like exhausted in advance."

Transgender participants viewed locker rooms as especially problematic and traumatic spaces. Taylor, a trans-woman, does not feel like she passes enough in society as a woman, and is subsequently forced to use the male change room. "When I have to go through a space that is inherently unsafe for me, to do it. Because I'm technically, whatever that means 'man'. So, I'd be using the male change room, which is not safe." (Taylor, 25-year-old white queer trans-woman). Taylor also has had similar experiences with public washrooms, "I have security called on me at least once a week, every week, for at least six years, if I try to and use the washroom in public," and tries to avoid all overtly gendered spaces. As a result of past experiences of discrimination, Taylor, like our other trans participants, does not access common fitness settings because they are unsafe. The unnecessary burden of passing and the fear of being misgendered, complicate experiences of physical activity for trans people.

"Discriminated against more for being a woman". Cis-women participants frequently felt like they did not belong and were not welcome in physical activity contexts, "…there's like this concept of 'you're not supposed to be here' and people aren't necessarily aggressive, but people do stare and act like it's very out of the norm and that definitely brings this element of, sort of, unintentionally or intentionally, becoming the outsider" (Dylan, 23-year-old white queer cis-woman).

Getting approached at the gym, specifically by straight cis-men, regardless of the pre-tense (unsolicited fitness advice, casual conversation, sexual advances, etc.) was viewed by all participants as a huge deterrent to exercise (e.g., "People talking to me is the reason I don't go to the gym"; Nayda, 26-year-old Arab lesbian cis-woman). Participants felt that if they were cis-men instead of cis-women they wouldn't have these constant disturbances to their workouts.

Candace, a 26-year-old white lesbian ciswoman and a competitive weight-lifter, became extremely frustrated recalling gym encounters disrupting her training:

> You're the only woman in the weight room, and people are looking at like (gestures to chest) it is a very gendered space, and I have been approached by scrawny ass guys in the gym and they have given me the wrong advice, but for some reason thought I needed advice in the weight lifting, you know? Like I personally feel like I've been discriminated against more for being a woman than I do for being a lesbian.

Vivian, a heavily tattooed 23-year-old white queer ciswoman, with a shaved head and several piercings, recalls how her alternative appearance makes her more of a target for being approached at the gym:

> Exactly, which is like a huge deterrent [being approached], which is why I don't like to go to the gym very much either because people will stare at me and will talk to me about it, as well, so like being a woman you're going to be talked to at the gym and then add that level on top of that, it gets worse.

Although many of these experiences are common among cis-women, regardless of sexual orientation, it is clear that identifying as LGBTQ+ adds another level of experience that renders the gym even more inaccessible.

"My race became an issue". Within physical activity contexts, participants of colour recollected specific instances of racism that deeply affected their physical activity experiences. Alicia, a 24-year-old Asian queer cis-woman, was an avid swimmer ever since she was a child. In her teens, Alicia decided to become a lifeguard, "Yeah, and then when I wanted to become a lifeguard, my race became an issue because I was studying with like a group of all-white French-Canadian people who kind of like alienated me." This alienation was then used to justify her

removal, “And I remember like I couldn’t continue because they said you aren’t sociable enough to become a lifeguard.” To this day, Alicia does not swim.

Another participant, Anya, a 23-year-old black bisexual cis-woman, recalled a recent experience at a local gym:

> Okay, so I’m identifying as a visible minority here, so I do not go to the gym very often, um just because I feel super self-conscious. The last time I went to the gym I was with another bisexual black woman and she invited me […] and so we went and as we were leaving our class, we started to notice, you know, people—guys staring at us and like looking like they were gonna’ approach, and then there’s that moment of instinctually grabbing each other’s hand for that safety net and being like, ‘is this how it’s gonna’ be every time we go to the gym? Having all these people stare at us? Next time, we’re going to the women’s only part or I’m not going.

In being a visible minority, a sexual minority, and a cis-woman, Anya feels immediately singled out in physical activity contexts and consequently demonstrates a great deal of vigilance to protect her safety.

“*If* you can”. Mainstream physical activity practices are built to favour able-bodied people. Sophia, a 26-year-old white queer cis-woman suffers from a chronic illness that impairs her mobility. To her, physical education and physical activity, were designed to exclude her, so she in turn, has excluded physical activity from her life. Now, as a young adult, Sophia finds that her friends, even her fellow queer friends, often use physical activity to shame her body, “…when I see people writing on Facebook like ‘this has changed my life’ I’m like ‘awesome, I wish I could’ […] it kind of feels like endless punches like ‘this changed my life’ and ‘you should too.’” Sophia would like to see the narratives surrounding physical activity to change to

include the simple caveat of 'if you can' (e.g., "I think there's so much importance, like when we're talking about physical activity, it should always be like if you can").

Our first theme, 'Intersectionality within physical activity' acknowledges how formative past experiences with physical activity, that are often formed in sport and physical education settings, are complicated by the diversity of experience that emerges from overlapping and interesting minority identities. The overarching instances of heterosexism, cissexism, sexism, racism, and ableism experienced by our participants have informed their current perspectives on physical activity.

Theme 2: The Contested Concept of "Athlete"

Participants had very specific preconceived notions about what defines an athlete and by extension sport, and these notions influenced their willingness to engage in physical activity.

"So much toxic masculinity". Although participants were asked about physical activity in general, most participants based their current opinions of physical activity on their past experiences within sporting contexts. Sports, and by extension physical activity were rendered inaccessible by participants who often associated them with toxic environments. Sport was characterized by "so much toxic masculinity," (Matthew, 27-year-old white gay cis-man) which was strongly linked to instances of aggression within sports: "if there's no aggression, there's a lot of people that will not accept it as a sport," (Anya, 23-year-old black bisexual cis-woman). Participants also acknowledged that aggression was a useful mechanism to protect masculinity within sports, as well as other contexts, because "masculinity is so fragile" (Jared, 30-year-old white bisexual cis-man). By not subscribing to traditional masculinity, participants often felt like their presence in sporting contexts were viewed as a threat, "It's these insecurities [being different] that are threatening the masculinity" (Bryan, 23-year-old white queer genderfluid

person). By viewing their existence as a threat to toxic masculinity, participants were often worried about becoming targets of aggression within sport.

One participant, Mark, a 26-year-old white bisexual non-binary person, acknowledged how his association of toxic masculinity with sports affected his willingness to exercise at the gym, "even just like going to the gym is intimidating, just to have to be around and deal with people that I have come to associate with toxic masculinity through like, just my experience with some sports growing up."

Competition, in particular unhealthy or unfriendly competition, was also discussed among participants as a defining aspect of sports. Ray, a 27-year-old white queer cis-man, recalled an experience from his childhood that informs his current disassociation with sports:

> There's a story my mom tells which makes me not identify with organized sport, which is my sibling and I were in soccer for one year, and I didn't hugely like it, but my mom ended up pulling us out, in large part because of the other parents who were creating like a toxic environment of competitiveness.

It is important to note that it is not only fellow athletes, but coaches, support staff, administrators, and even parents of other athletes, that collectively build a sporting environment, which in turn can be viewed as toxic or healthy.

"I've never identified as an athlete". Most participants never identified/don't identify with the word 'athlete' and typically defined it as someone they are not. For example, Cody, a 28-year-old white gay cis-man, in being a competitive dancer as a child felt like he never fit into the athletic mold, despite his many national titles:

> Like I think of strong males, and that was so not who I was. I didn't identify with athletes in high school or college because I didn't belong with that group. So, I feel somehow

> athlete has this connotation, of like because I am male-bodied that meant that I had to be muscular and/or whatever—and like I wasn't.

Similarly, Aaron, 25-year-old Asian gay cis-man and accomplished marathon runner, confessed that even though other people consider him to be an athlete, "I wouldn't call myself an athlete, but like I do value physical activity." Despite current physical activity levels, most participants struggled with associating with the word 'athlete' (i.e., "I've never identified as an athlete. So that word has never resonated with me"; Cody, 28-year-old white gay cis-man).

Warren, a 30-year-old white queer cis-man, and self-proclaimed nerd explained that, "For me, the word athlete, in my mind, has negative connotations—I don't know why. It's just like, in the media and everything athletes are portrayed… like they're just the villains or something, that pick on the nerds." Athletes were often cast in a negative light by participants, which in turn made organized sports seem like elitist, inaccessible spaces.

"With thought, I deconstruct athlete to include far more". There were some select participants that critically engaged with their preconceived notions about sports over time in order to generate a subversive, working definition of athlete that included them.

For example, through her minority experiences Anya created a unique space to redefine athlete on her own terms:

> Just 'cause I don't look like what an athlete looks like to some people […] but I feel like that's like anything in my life, because people wouldn't think like 'cheerleader' either, like I'm a visible minority and I've always been one of the few people of color in that activity so I feel like everything in my life, like being somewhere between being poly and bi and black and femme and not necessarily seeing myself represented in anything, I've always had to sort of like decide for myself.

Similarly, over time Taylor has also broadened her definition of athlete to be more inclusive:

> I think for me an athlete is more focused on like, my definition of this has definitely changed… it's less like someone who does sports and is super-fast and more a person who is healthy in a way that works for them. So, like my friends, with AIDS are just as likely to be athletes in my opinion as my friends who don't, even if they're not involved in traditional physical activity.

In general, participants acknowledged that when they were younger they subscribed to the traditional definition of athlete that was perpetuated throughout physical education and sports. However, as participants aged and came into their own, some participants began to realize their ability to engage with the concept of 'athlete' and expand it to be more inclusive (e.g., "With thought I deconstruct athlete to include far more," Ray, 27-year-old white queer cis-man).

Subsequently, the assumption that 'athlete' means the same thing to everyone is not supported. As Karim, a 29-year-old Arab queer cis-man mused, "Athlete can pack a lot of things into it, ya' know?" Participants' notions about athletes, sports, and physical activity were informed by past experiences that rendered 'athlete/athletics' as inaccessible spaces and exclusionary practices for some. Sports, and by extension 'athletes', were defined by toxic masculinity, which enabled the deidentification with 'athlete' by the majority of participants (regardless of physical activity level). It was only over time and through critical engagement with 'athlete' that some participants were able to repurpose and expand athlete to be more inclusive of their experiences.

Theme 3: "A safe space for us"

Although the most participants shared negative experiences within physical activity contexts there were select individuals who had positive experiences with role models, safe spaces, and gender-neutral changing rooms. Anya recalled how lucky she was growing up to have a strong queer-friendly role model as her physical educator:

> I got really, really lucky because my grade nine gym teacher was out, as a fantastic, bold, butch lesbian. She was my one teacher that was like my role model through school was, you know, gender neutral and she identified as her, and her partner was transitioning, I feel like I had all these experiences and safe spaces. That class, it was just like such an amazing incredible safe space for us.

This physical educator, by leading through example, left a strong impression on how Anya views sports today. In particular, this teacher challenged how the gender binary was reinforced in classical physical education settings:

> We had the wrestling unit and she's like "we're gonna' be wrestling against the boy's gym class," and we're like shocked and we're like, "how can we wrestle against boys?" And she's like "you're being matched up by weight," and we're like, "but they're boys!" And she's like, "but are you grabbing their penises while you're wrestling?" and we're like "no!" And she's like, "then does it matter? Just grab the arms and legs!" And it was like, as you know, being 14, and growing up being like girls and boys don't play the same sports, like what? Like being encouraged to go through this experience where like ya' you can wrestle a boy that weighs the same as you and like is a beginner wrestler also, so like go for it and like making me think about things differently.

Participants that regularly engaged in physical activity often intentionally sought out explicitly queer-friendly or alternative spaces. Jared, a 30-year-old white bisexual cis-man said,

"I'm thinking about situations where I've enjoyed gyms, and they're like a different boxing gym but like an also queer friendly, like the gender-queer boxing gym." Explicitly queer-friendly helped Jared feel more comfortable and accepted when boxing, "It was great, but like yeah, so I feel like that's a big part of it, there's also that sense of community, you know, you just feel alienated a lot of the time in those kinds of spaces normally." However, it should be noted, that depending on the city, these alternative spaces may not yet exist. For example, Dara, a 23-year-old white lesbian cis-woman, commented that, "I think that if my city were to have this is the LGBTQ+ positive gym, like 'this is the one for you'. I don't care, I would like bus like extra far, I would make that trek."

Similarly, some cities have fitness spaces that have already integrated the concept of universal changing rooms. Karim, a 29-year-old Arab gay cis-man, explained why he commuted an extra thirty minutes to go to a specific gym:

> For me specifically the reason why I like the [name of gym] here is that it has an inclusive changing room, so everyone is there, and then changing happens in secluded space, individual stalls, just unmarked—so there's one space that everyone sort of uses. I find that I'm far more comfortable there.

Among the participants who engaged in physical activity, there is also a strong, conscious connection to mental health. For instance, Christian, a 32-year-old white gay cis-man, explained that, "I get so much anxiety. That's how I deal with my anxiety, is by working out." The idea that physical activity can be used as a method of self-reflection, self-love and of healing was relayed by Alicia:

> I would say definitely like as a queer person, like exercising in different spaces, like there's a huge emphasis on like mental health as well, because that's something that's always going to be attacked every day, because like your own existence is subversive.

Despite the overwhelming number of negative experiences informing attitudes towards physical activity among our participants, a select few were able to talk about positive experiences. LGBTQ+ role-models and safer, queer-friendly spaces can help to support positive engagement and experiences with physical activity. For some, physical activity was also a useful method for dealing with anxiety and protecting their mental health.

Discussion

The purpose of this study was to aid in our understanding of complex LGBTQ+ experiences within physical activity, and to inform our research collaborations with LGBTQ+ communities. Two of the questions guiding this study were found to be extensively interrelated: (a) How do minority identities, specifically identifying as LGBTQ+, impact physical activity?, and (b) How do past physical activity experiences impact current and future physical activity behavior? Our findings demonstrate how LGBTQ+ participants' current perspectives of physical activity are often strongly related to formative past experiences within physical education or sporting contexts that are often characterized by discrimination toward those with minority identities.

Our first theme, intersectionality within physical activity, acknowledges the complexity of experience that emerges from overlapping and intersecting minority identities and how pre-existing systems of oppression (e.g., cissexism) are perpetuated through sport, physical education, and gym practices. All of our participants spoke to specific incidences of homo/queer-phobia within physical education and sport that rendered these contexts unsafe. Bullying and

exclusion within sport and physical education based on sexual orientation is a long-standing phenomenon (Denison & Kitchen, 2015; Gill et al., 2006). In line with previous research, participants also viewed change rooms and locker rooms as being particularly traumatic (Devís-Devís et al., 2018; Fusco, 2006; Hargie et al., 2017; Jones et al., 2017; Sykes, 2011). Our findings speak to how dominant norms in sport, physical education, and physical activity priveledge certain bodies over others, specifically those that adhere to white, able-bodied, cis-heterosexuality (Sykes, 2009, 2011). To challenge these dominant norms a critical, systematic, intersectional examination of LGBTQ+ issues in sport, physical education, and physical activity is required (Cunningham, 2012). Challenging social-cultural norms, although a worthwhile endeavour, is incredibly difficult. Moving forward, as a small step towards this goal, researchers in sport and exercise psychology should *always* collect and report on a wide variety of demographic variables (including sexual orientation and gender identity) to better acknowledge the multiplicty and complexity of lived experiences. Failing to acknowledge sexual orientation inadvertently projects the assumption that all participants are heterosexual, when this is most likely not the case. To reiterate in the words of our participants "even in spaces where I may not sort of like be visibly queer, I'm still a queer person in that space and that necessarily affects my experience of that space," (Eva, a 27-year-old white queer ciswoman). Instead of focusing on forms of physical activity that are highly regulated and subject to higher power governing bodies (i.e., sports and physical education), research should also explore broader, more flexible conceptions of physical activity, such as active leisure, which has been shown to be an important coping strategy for people dealing with minority stress (Iwasaki et al., 2006).

Formative experiences in sport and physical education led our participants to have a distinct negative perspective on athletics and who they considered an athlete to be, that they

subsequently did not identify with (despite being physically active). In turn, this influenced their current ideas about physical activity more generally. These findings work together to make physical activity contexts seem like elitist, inaccessible spaces to our participants. We expected some of the sexual minority men within this study to self-identify as being an 'athlete' and adhere to the narrative found within our systematic review that described muscularity as a main component of attractiveness, and engagement in toxic masculine behaviors like compulsive exercise and steroid use (Herrick & Duncan, 2018). However, given that our focus groups were comprised of cis-men from a wide range of sexual orientations (i.e., bisexual, queer, asexual, etc.) our data may be indicative of a more diverse representation of sexual minority men than seen in previous studies (Herrick & Duncan, 2018).

It should be noted that none of our participants engaged in LBGTQ+-specific sport leagues or events (e.g., the Gay Games) which, through their (now problematized) emphasis on gay pride (Davidson, 2013), may have helped facilitate the negotiation between LGBTQ+ and athletic identities. Recent research has also elucidated the significantly positive effect 'trail blazers' (fellow 'out' LGBTQ+ athletes) have on encouraging LGBTQ+ individuals to identify as an athlete (Fink et al., 2012). However, there were some select participants that despite the lack of 'trail blazers' acting as personal role-models or engagement with LGBTQ+ specific sports, critically engaged with their concept of "athlete" to generate a subversive definition of athlete that was more inclusive of their identity. The contested nature of this theme is in line with recent research that has focused on how para-sport athletes construct and engage with their own athletic identity (Guerrero & Martin, 2018). Among para-sport athletes, three categories have been identified: (a) those who identify as an athlete and reject the term disability, (b) those who embrace a para-sport athletic identity, and (c) those who do not attempt to develop an athletic

identity and likely never will (Guerrero & Martin, 2018). Traditional definitions of 'athlete' governed by toxic masculinity may be at odds with participants LGBTQ+ identity, making them unreconcilable. Future research should explore the multitude of ways LGBTQ+ individuals challenge traditional conceptions of athleticism as a stepping stone to understanding how sports can be challenged to be more LGBTQ+ inclusive.

The final question guiding this study, "what factors may facilitate engagement in physical activity among LGBTQ+ adults?" is best answered through our findings in our third theme, "A safe space for us". Despite the overwhelming number of negative experiences informing attitudes towards physical activity among our participants, there were some that spoke to some positive past experiences, often facilitated by out LGBTQ+ role-models within physical education. The extensive diversity training of physical educators and people in other leadership positions (e.g., coaches) should be prioritized in the future to increase the likelihood of these positive role-models within physical activity (Cunningham, 2012). Select participants that regularly engaged in physical activity preferred to do so in safer, queer-friendly spaces such as designated boxing gyms. These findings are consistent with previous research by Roper and Polasek (2006), who conducted one-on-one interviews with 14 active LGBTQ+ gym members to explore their experiences as members of a predominantly gay fitness facility in San Francisco. For these LGBTQ+ gym members, the fitness facility was a way to connect to the gay community. Similarly, our participants also felt a greater sense of community in these specifically queer-friendly fitness settings, that in turn helped them feel more supported. Although some participants had access to LGBTQ+ friendly physical activity settings, the majority did not, and were instead forced to use a variety of unsafe spaces or to avoid participation in physical activity altogether. Future research should explore pre-existing physical

activity spaces and programs that are dedicated to encouraging LGBTQ+ participation to investigate how traditional physical activity practices can be modified to be more inclusive (e.g., gender-neutral changing rooms).

Due to convenience and snow-ball sampling methods used, this study is subject to a few limitations. Namely, the narrow age range of participants (22-32 years old) indicates that our results are limited to that specific generation. Given that the LGBT rights social movement only began in the 1970s, there exists a large generational divide amongst LGBTQ+ communities. This generational divide is widened by the rapid pace of change associated with LGBTQ+ life, and results in a discrepancy between the life of today's LGBTQ+ youth, and that of their elders when they were young (G. M. Russell & Bohan, 2005). We expect that older participants would have more solidified views on physical activity, that are informed by more extreme instances of discrimination. Given that the first author fell into the age range of the participants, she felt that in some respects this aided in her ability to moderate the focus groups and better understand their experiences.

The results from this qualitative study can be interpreted as important points of research consideration as we continue to collaborate with LGBTQ+ communities. First, an intersectional approach should be incorporated into any research project within the initial stages of planning, to better encompass the complexity and nuances of LGBTQ+ experience. Second, common language such as the word "athlete" can be alienating to some participants. We cannot assume that all participants will define athlete, sport, and by extension physical activity in a similar way. Lastly, we need to explore existing LGBTQ+ friendly physical activity spaces to determine the best practices to make all physical activity spaces friendly to everyone, regardless of sexual orientation or gender identity. Although physical activity practices may be far from inclusive,

this study provides great insight into the diverse LGBTQ+ experiences within physical activity, and acts as a strong foundational understanding for future research within these diverse communities.

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BRIDGING STUDIES

Study 1 was designed to fulfil two distinct purposes: (1) to form a deeper understanding of diverse LGBTQ+ experiences in physical activity, and (2) to inform, alter, and adapt the survey for later use in study 2. Findings from study 1, specifically the acknowledgement of heterosexism and cissexism, provide personal accounts of LGBTQ+ minority stressors within physical activity. For example, participants referred to proximal stressors such as the fear of rejection, and concealment of identity within spaces associated with physical activity like locker rooms. Participants also struggled with distal LGBTQ+ stressors like discrimination and harassment (i.e., bullying) in physical educational settings. These accounts suggest that LGBTQ+ minority stressors, as described by the minority stress model (MSM), may influence experiences within physical activity. Given that participants from study 1 also spoke about their psychological needs, specifically their need for relatedness to engage in physical activity, findings from study 1 further highlight the needs to look at LGBTQ+ physical activity through the lens of self-determination theory (SDT).

Both SDT and MSM present descriptions of how social conditions can affect various aspects of the human experience. Both speak to the underlying assumption that human nature, in its diversity of expression, is progressive, constantly working towards betterment. Consequently, both theories present the human experience in an active relationship with society where in, self-determination and minority stress, are functions of individuals engaging with and being subject to social conditions. SDT is a robust theory that acknowledges the effects of social and environmental factors on the process of basic psychological need satisfaction (Ryan & Deci, 2000). To broaden the complexity of experience explained by SDT, socio-environmental factors can be expanded to incorporate institutional factors such as heterosexism and cissexism. By

recognizing the effects of heterosexism and cissexism on the need satisfaction process of SDT, a greater diversity of alternative lived experiences within self-determination could be expressed. Systems of oppression are omnipresent and may complicate need satisfaction within minority groups in a variety of unexpected ways, which makes the incorporation of institutional factors integral to the application of SDT within minority populations. Consideration of heterosexism and cissexism could help to incorporate the minority experience of psychological need satisfaction within SDT.

Taking MSM into account within the SDT framework can facilitate this proposed incorporation of institutional factors. MSM is primarily concerned with how minority identities produce unique pernicious psychological stressors. As such, minority stressors are functions of institutional factors (e.g., heterosexism) and reflect how institutional factors are integrated into the individual. By considering minority stressors within SDT, the psychological effects of institutional factors on self-determination can be considered.

Consequently, study 2 has been designed to explore the interplay between these two prominent theories. Combining SDT and MSM will allow for a description of the nuances of the LGBTQ+ experience within physical activity, in ways that are not possible through single applications of each theory, while simultaneously acknowledging the power of political policies and practices that regulate the human body.

LGBTQ+ adults typically have already participated in countless questionnaires and surveys that constantly force them to self-identify as the 'other' in any number of categories. As an LGBTQ+ adult who has experienced this 'othering', moving forward with my research I wanted to design a survey that would not forcibly 'other' my participants. By listening to the feedback from study 1, I learned that the survey would have to be designed to incorporate as

much freedom of expression as possible. Participants expressed their frustration at being limited to choosing only one option when answering multiple choice questions asking for demographic information on sexuality, ethnicity, etc. We accommodated these concerns by allowing all multiple-choice questions to also be multi-answer, meaning that participants could pick as many responses as they saw fit to best represent themselves. Participants also expressed their desire to elaborate and contextualize their answers to the validated questionnaires. Through our focus group discussions, we had widespread requests to incorporate more open-ended questions into our survey. As a result, we added ten optional open-ended questions throughout the survey to give our participants the space they desired to fully express their experiences.

CHAPTER THREE

EXPLORING THE ELABORATION OF SELF-DETERMINATION THEORY THROUGH THE CONSIDERATION OF LGBTQ+ MINORITY STRESSORS WITHIN PHYSICAL ACTIVITY

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Abstract

LGBTQ+ is a broad term that denotes sexual- and gender-minority identities, and stands for lesbian, gay, bisexual, transgender, queer, etc. LGBTQ+ individuals experience a great number of challenges such as discrimination and other stressful instances (referred to as minority stressors) that are detrimental to their mental and physical health, and may influence their motivation for and willingness to participate in physical activity. The purpose of this study was to explore whether LGBTQ+ minority stressors, as indicators of the social-environmental context, would relate to the basic psychological needs—motivation—physical activity pathway, as per self-determination theory. An online cross-sectional survey was completed by 798 self-identifying LGBTQ+ adults. The results form structural equation modelling showed that LGBTQ+ minority stressors have a statistically significant negative relationship with need satisfaction within physical activity, which in turn is associated with lower levels of motivation, and decreased adherence to physical activity. This research provides a pivotal starting point for understanding how LGBTQ+ minority stress relates to physical activity.

Introduction

LGBTQ+ is a catch-all abbreviation that is used to encapsulate lesbian, gay, bisexual, transgender, queer, and other experiences beyond the common assumptions that everyone is, heterosexual and cisgender (where your gender identity matches your sex assigned at birth). Individuals who identify as LGBTQ+ experience discrimination, stigmatization, and marginalization on a variety of levels, from personal to institutional (Dermer, Smith, & Barto, 2010; Subhrajit, 2014). At a personal level, bullying or harassment of LGBTQ+ youth is prevalent within educational and sporting contexts (e.g., Gill, Morrow, Collins, Lucey, & Schultz, 2006). At an institutional level, bans on gay marriage (Lewis, 2011) and the Don't Ask, Don't Tell military policy (Burks, 2011) perpetuate cis-heterosexism. These stressful discriminatory experiences complicate or exclude LGBTQ+ individuals from activities that may be beneficial for their overall well-being (Fredriksen-Goldsen, Kim, Bryan, Shiu, & Emlet, 2017). When compared to their heterosexual counterparts, LGBTQ+ adults have higher rates of chronic diseases and health concerns, such as diabetes, hypertension, and limited mobility later in life (Daniel & Butkus, 2015; Fredriksen-Goldsen et al., 2011; Institute of Medicine, 2011). Many of the chronic diseases can be prevented or mitigated through regular engagement with physical activity (Warburton et al., 2006). However, LGBTQ+ adults experience disproportionate barriers to physical activity participation, such as homophobia, exclusion, and discrimination (Denison & Kitchen, 2015) that reduce physical activity levels and exacerbate health disparities (e.g., Brittain & Dinger, 2015).

Within the broad definition of physical activity, great emphasis has been placed on the exploration of LGBTQ+ experiences within sport and physical education (e.g., Cunningham, 2012; Sykes, 2011). Sexual prejudice in sport is often founded upon prevalent stereotypes that

describe gay cis-men as effeminate (Fink, 2008) and lesbian cis-woman as masculine (Kauer & Krane, 2006). Locker rooms specifically are viewed as unsafe and traumatic spaces for trans and queer individuals (e.g., Caudwell, 2014; Hargie, Mitchell, & Somerville, 2017). Generally speaking, sport and physical education contexts have been found to be exclusionary, discriminatory, and stressful for LGBTQ+ individuals (e.g., Denison & Kitchen, 2015; Sykes, 2011). Physical activity, in its broadest sense of bodily movement, is not limited to physical education and sport. To date, little research has focused on LGBTQ+ experiences with physical activity, broadly defined. A recent scoping review of 35 studies exploring the experiences of LGBTQ+ adults within physical activity contexts (which excluded sport and physical education articles) found that sexual orientation may influence physical activity engagement differentially by gender (Herrick & Duncan, 2018). Sexual minority men were often externally motivated to exercise by a harmful body ideal. Contrastingly, the dominant trend for sexual minority women was decreased physical activity levels predicated on a social norm that emphasizes body acceptance. However, a deeper understanding of how LGBTQ+ minority experiences influence motivation for physical activity is required (Herrick & Duncan, 2018).

Very few studies exploring physical activity within LGBTQ+ communities have tested theoretical frameworks to explain the emerging trends in physical activity participation. Cary et al. (2016) explored how perceived barriers, as described by social cognitive theory, can hinder physical activity participation among gay adult men. Through a cross-sectional online survey, cisgender gay men ($N = 108$) cited many general (meaning not related to sexual orientation) barriers to physical activity (e.g., lack of time) and did not report any barriers to physical activity that were specific to gay men (Cary et al., 2016). Subsequently, population-specific barriers might be related to a more complex explanation of how sexual orientation influences experiences

of physical activity that may be beyond this theoretical application (Cary et al., 2016). To assess the relationship between gender identity and physical activity behavior, Muchicko, Lepp, and Barkley (2014) conducted a study comparing transgender (n = 33) and cisgender (n = 47) adults' self-reports of leisure-time physical activity, social support, and physical self-perception. Transgender individuals reported lower levels of physical activity and social support and more negative self-images than their cisgender counterparts. Transgender participants also reported greater levels of peer victimization which was negatively associated with physical activity (Muchicko et al., 2014).

The majority of quantitative studies exploring physical activity experiences among LGBTQ+ adults have focused on analyzing disparities in weight and weight-related behaviors as a function of sexual orientation and gender (e.g., Bourne, Davey, Hickson, Reid, & Weatherburn, 2016; Laska et al., 2015; Vankim et al., 2014). Consequently, no theories have been specifically developed to explain broad LGBTQ+ experiences within physical activity contexts (Herrick & Duncan, 2018). We are exploring the potential interrelationship between two prominent theoretical frameworks: self-determination theory (SDT), a theory of motivation that has been used extensively within physical activity (Ryan & Deci, 2000), and the minority stress model (MSM; Meyer, 2003) which was designed to account for the diverse LGBTQ+ experience. Examining these theories simultaneously may help advance both theories. The MSM will allow for a greater understanding of the social-environmental context of LGBTQ+ individuals that is not captured in SDT and SDT provides a motivational pathway explaining physical activity that is not explored in MSM.

Self-Determination Theory

SDT (Ryan & Deci, 2000) is a well-established theory of human motivation that has been used extensively in the context of physical activity promotion (Teixeira et al., 2012). Within SDT, motivation is viewed as a multidimensional concept ranging from controlled to autonomous (Ryan & Deci, 2000). Controlled motivation relates to motivation that arises from external contingencies (e.g., exercising because your family physician says you have to) and integrating a regulation within the self but not fully accepting it as your own (e.g., exercising because you will feel guilty if you don't). Autonomous motivation relates to motivation that arises from consciously valuing a behavioral regulation (e.g., exercising because you have a personal goal of being healthy), from integrating a behavioral regulation into the self (e.g., exercising because being physically active is a consistent part of your identity) and from engaging in a behavior because of the inherent satisfaction derived from behavior itself (e.g., exercising because you enjoy it). These higher qualities of motivation are associated with increased behavioral adherence (Ryan & Deci, 2000). A systematic review of 66 empirical studies found autonomous motivation to be a robust predictor of long-term participation in physical activity (Teixeira et al., 2012).

In SDT, the social and environmental context is theorized to influence motivation. Social and environmental circumstances explain variability in motivation through the satisfaction of three basic psychological needs: (a) competence, (b) autonomy, and (c) relatedness (Ryan & Deci, 2000). Competence is the need to feel like you possess the necessary ability, knowledge and/or skills to do something successfully. Autonomy, having a sense of free will when acting out of our own interests, speaks to the universal urge to be individual casual agents (Ryan & Deci, 2000). Relatedness is the need to interact with and feel connected to others. Within the

SDT framework, all three psychological needs must be satisfied to facilitate autonomous motivation (Ryan & Deci, 2000).

SDT has been applied to LGBTQ+ communities in contexts outside of physical activity (Igreja et al., 2000; Legate, Ryan, & Weinstein, 2012). Igreja et al. (2000) used SDT to predict the psychological well-being and distress in 48 gay men diagnosed with HIV and AIDS. Findings from this study suggested that adjustment to a life-threatening illness is influenced by feelings of autonomy (Igreja et al., 2000). In a study conducted by Legate, Ryan, and Weinstein (2012) autonomy support was explored in the context of coming out publicly as lesbian, gay, or bisexual. LGB adult participants ($N = 161$) completed a cross-sectional online survey designed to measure autonomy support, level of 'outness', and well-being across social relationships. Findings from multilevel modeling revealed that LGB individuals were more likely to disclose their sexual orientation in autonomy supportive contexts. However, SDT has yet to be confirmed in the context of physical activity within the LGBTQ+ population.

In previous studies involving LGBTQ+ participants there has been some suggestion that the basic psychological needs are associated with motivation towards engaging in physical activity (e.g., Herrick & Duncan, 2018; Muchicko et al., 2014). In a qualitative exploration of a predominantly gay fitness facility in San Francisco ($N = 14$), members described the facility as a safe space to engage with their bodies as well as the gay community (Roper & Polasek, 2006). Participants found this sense of relatedness added to their experience and encouraged them to exercise. Similarly, an investigation into a lesbian weight-loss group ($N = 20$) found that the main reason members continued to attend weekly check-in meetings was due to the fostered sense of community (Fogel et al., 2012). These findings speak to the importance of satisfying the need for relatedness among members of minority communities when engaging in physical

activity. Members of LGBTQ+ communities have distinct experiences with physical activity that seem to suggest that minority experiences are uniquely related to their perceived competence in physical activity settings (Herrick & Duncan, 2018). For sexual minority women, it was found that the stereotype of being naturally athletic generated unrealistic expectations for success that undermined feelings of competence (Herrick & Duncan, 2018; Kauer & Krane, 2006). For sexual minority men, active rejection of the sport stereotype of being weak and un-athletic culminated in an increased desire to feel and appear more competent in physical activity settings, which led to compulsive exercise behaviors (Herrick & Duncan, 2018). To our knowledge, research exploring the concept of autonomy in physical activity among LGBTQ+ adults has yet to be conducted.

The Minority Stress Model

The Minority Stress Model (MSM) is a psychological framework that was designed to predict the increased prevalence of mental health disorders within the LGB population and has since been expanded to incorporate transgender experiences (Meyer, 2003, 2015). MSM implies the existence of unique minority stressors that ultimately have a detrimental effect on mental and physical health (Frost, Lehavot, & Meyer, 2015; Meyer, 2003, 2015). MSM maintains that sexual minorities are subject to unique experiences that manifest as psychological stressors (Meyer, 2003), which are divided along a distal-proximal axis. Different types of minority stressors have distinct effects on health. Distal stressors can be caused by direct instances of discrimination, victimization, and stigmatization (Mereish & Poteat, 2015). Proximal stressors result from an individual's own perceptions of themselves, an event, or society (Meyer, 2003). For LGBTQ+ communities, proximal stressors include the internalization of sexual prejudice, the concealment of ones' own sexual or gender identity, and the development of expectations for

future sexual prejudice to occur (Mereish & Poteat, 2015). For example, internalized homophobia[2] is related to depression and anxiety among LGB persons (Igartua et al., 2003). Physical activity contexts in particular have been found to facilitate increased levels of minority stressors, such as homophobia, exclusion, and discrimination against LGBTQ+ participation (Denison & Kitchen, 2015). For example, the presence of homophobia in physical activity settings, and in general, was commonly cited as a contributing factor to the decreased physical activity levels among sexual minority women (Fogel, Young, Dietrich, & Blakemore, 2012; Molina, Lehavot, Beadnell, & Simoni, 2014).

Proposed Model

The MSM is primarily concerned with how minority identities, by virtue of their status in the world, produce pernicious psychological stressors (minority stressors). These minority stressors can be interpreted as indicators of the social environment influencing LGBTQ+ communities. Given that SDT acknowledges how social environments influence need satisfaction, minority stressors as proposed by MSM can be incorporated into the SDT framework (as seen in supplemental figure 1), in order to represent LGBTQ+ experiences. We propose that distal and proximal minority stressors from the MSM framework can be used to represent the social environment of an LGBTQ+ individual, and therefore predict the process of need satisfaction and subsequent motivation for physical activity within SDT (figure 1). We hypothesized that within this model, higher levels of distal and proximal LGBTQ+ minority stressors would inhibit the satisfaction of the three basic psychological needs within physical activity, which in turn would lead to lower qualities of motivation and lower likelihood of engaging in physical activity. Therefore, the purpose of this study was to explore whether

[2] Negative feelings directed at the self because of a homosexual identity

LGBTQ+ minority stressors, as indicators of the social-environmental context, would relate to the basic psychological needs—motivation—physical activity pathway, as per self-determination theory.

Methods

Participants and Procedures

To participate in the study, participants were required to be 18 years or older and self-identify as LGBTQ+. Participants also needed to understand written English and have access to the Internet to participate in an online survey. Participants were recruited online through LGBTQ+ community forums and groups.

This study received institutional approval from the Research Ethics Board (REB-II). After reading a brief overview of the study, its purpose, and potential risks, participants provided their informed consent for participation in the online survey.

Measures

Demographics. Data were collected about participant's sexual orientation, current gender identity, gender assigned at birth, and how many years they have publicly identified as LGBTQ+. Participants were also asked about their age, ethnicity, highest level of education, annual household income, and relationship status.

LGBTQ+ minority stressors. Eight subscales from the Daily Heterosexist Experience Questionnaire (DHEQ; Balsam, Beadnell, & Molina, 2013) were used to assess the LGBTQ+ specific minority stressors (the HIV subscale was not used). Thus, we administered a 44-item scale that uses the stem "How much has this problem distressed or bothered you in the past year?". Participants respond on a six-point scale of 0 (*not at all*) to 5 (*extremely*). The eight subscales were: (a) gender expression ($\alpha = 0.82$), (b) vigilance ($\alpha = 0.86$), (c) parenting ($\alpha =$

0.68), (d) discrimination/harassment ($\alpha = 0.87$), (e) vicarious trauma ($\alpha = 0.89$), (f) family of origin ($\alpha = 0.88$), (g) victimization ($\alpha = 0.88$), and (h) isolation ($\alpha = 0.76$). The parenting subscale was removed from our analyses because it applied to very few people ($n = 60$). We combined the sub-scales to represent proximal stressors (vigilance, vicarious trauma, isolation) and distal stressors (discrimination/harassment, family of origin, victimization). Gender expression includes mixture of distal and proximal items and could not be assigned to either proximal or distal.

Psychological need satisfaction. To measure the psychological need satisfaction within physical activity contexts the Psychological Need Satisfaction in Physical Activity questionnaire (PNSE-PA; Gunnell, Wilson, Zumbo, Mack, & Crocker, 2012; Wilson, Rogers, Rodgers, & Wild, 2006) was used. The PNSE-PA is comprised of 18 items, divided equally across three subscales (perceived competence, autonomy, and relatedness). Each item is rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). All subscales were confirmed to have high internal consistency: perceived competence ($\alpha = 0.94$), perceived autonomy ($\alpha = 0.93$), and perceived relatedness ($\alpha = 0.93$). The PNSE can be scored by assessing the mean of each sub-scale independently. The indicators of each subscale for need satisfaction were represented by three random aggregates or parcels created from the items of each scale. The use of item parcels is acceptable when the set of parcels reflects a unidimensional factor structure (Hagtvet & Nasser, 2004).

Motivation. The Behavioral Regulation in Exercise Questionnaire, version 3 (BREQ-3; Markland & Tobin, 2004; Wilson, Rodgers, Loitz, & Scime, 2007) was used to assess exercise motivation according to the SDT framework. The BREQ-3 was adapted from the original BREQ (Mullan et al., 1977), and the modified BREQ-2 (Markland & Tobin, 2004). In line with

previous research we replaced all instances of the word "exercise" with "physical activity" (Aelterman et al., 2012; Gunnell et al., 2012; Verloigne et al., 2011). The BREQ-3 is a 24 item self-report measure in which each item is rated on a 5-point scale ranging from 0 (*not true for me*) to 4 (*very true for me*). The BREQ-3 can be categorized into autonomous ($\alpha = 0.89$) and controlled ($\alpha = 0.88$) motivation. Parceling was used to create three indicator variables representing autonomous motivation, as well as three indicator variables representing controlled motivation (D. Russell, Kahn, Spoth, & Altmaier, 1998).

Physical activity levels. The modified Godin Leisure Time Exercise Questionnaire (Godin & Shephard, 1985) was used to measure the current physical activity levels of the participants. Participants were given three headings that indicate the type of physical activity: (a) strenuous/vigorous, (b) moderate, and (c) mild. Under each heading, they were asked to indicate (a) how many times they had done each type of physical activity for more than 15 minutes during their free time, and (b) for each type of physical activity, how many minutes did they participate per session?" We multiplied the times per week by the number of minutes per session, to ascertain the total number of minutes of strenuous, moderate, and mild physical activity per week. Then, we calculated the weekly moderate-vigorous physical activity (MVPA) by combining the total minutes of strenuous and moderate physical activity per week.

Given the length of the survey, six check-point questions were incorporated throughout (e.g., "Please select 'Agree Strongly' if you are reading this question). People that did not correctly answer three or more of these check questions were excluded.

Analyses

The data were standardized to identify univariate outliers, which were recoded to the most extreme, but within normal range, value (Tabachnick & Fidell, 2001). The scoring

distributions of the models' variables were examined (skewness range: -0.749 – 3.160; kurtosis range: -1.210 – 10.481), and although the distributions were problematic, this was expected as non-normal distributions occur frequently in social science data (Barnes, Cote, Cudeck, & Malthouse, 2001). As the models would be tested using maximum likelihood robust estimation, which is robust to non-normality, no adjustments were made to the variable distributions (Muthén & Muthén, 2010). Model fit was assessed using the Satorra–Bentler (SB) scaled chi-square and the standardized root mean square residual (SRMR) as absolute fit indices; the Tucker–Lewis index (TLI) as a relative fit index; and finally, the comparative fit index (CFI) and the root mean square error of approximation (RMSEA) as noncentrality-based indices. Values below .08 (SRMR and RMSEA) and above .90 (CFI and TLI) represented adequate fit (Hooper, Coughlan, & Mullen, 2008).

Results

Demographics

The final sample retained after data cleaning included responses from 778 participants (M = 29.4 years; SD = 9.2 year; range = 18-69). For a detailed demographic breakdown of our sample see figure 2. Although our sample was comprised of many cis-women (n = 370; 47.6%), our sample also consisted of a high percentage of genderqueer[3] people (n =172; 22.1%). Our sample was quite diverse in terms of sexual orientation, with the majority of participants identifying as homosexual (n = 228; 29.3%) or queer (n = 204; 26.3%). All participants that submitted multiple sexual orientations, but also selected "questioning/unsure" were coded as questioning (n =18; 2.3%). On average, participants had been publicly identified as a member of

[3] Genderqueer is an umbrella term that denotes a person who does not subscribe to the gender binary and conceptions of cis-normativity.

an LGBTQ+ community or "out" for 8.5 years (SD = 7.7; range: 0 - 49). Our sample was also primarily white (*n* = 605; 77.8%), had a college or university degree (*n* = 303; 39%), and had an annual household income of less than $50,000 (*n* = 362; 50%). Out of the 798 respondents, 141 reported zero minutes of physical activity for all three of the intensities asked in the Godin Leisure Time Exercise Questionnaire. Given that the PNSE-PA and BREQ-3 are difficult to answer if you do not engage in physical activity, we limited our sample to those that reported engaging in some amount (i.e., more than zero minutes) of weekly physical activity (*n* = 657).

Main Analyses

We first sought out to test a model to examine the full sequence of minority stressors, psychological needs, motivation, and physical activity levels (see figure 1). In early analyses the original model (figure 1) had many suppression effects between the distal and proximal minority stressors, and the basic psychological needs. To minimize these effects, we decided to collapse the variables, and separate distal and proximal minority stressors into two models. Distal subscales, comprised of the mean of all corresponding subscale items, were collapsed into three observed variables for a single latent variable for distal minority stressors. Proximal subscales were also collapsed into observed variables to create a single latent variable for proximal minority stressors. Even with the separation into two independent models (see supplemental figure 3), the relationship between stressors and need satisfaction resulted in Heywood[4] cases. To resolve this, the three psychological needs were placed as observed variables to create one latent variable, representing a general measure of total basic psychological need satisfaction.

Distal Stressor Model

A structural model predicting how distal minority stressors relate to the motivational

[4] When communality estimates exceed 1.

sequence as proposed by SDT was examined. Specifically, this 5-factor model tested the role of (a) distal minority stressors on (b) participants' need satisfaction and how this was related to (c) autonomous and (d) controlled motivation and predicted (e) MVPA levels (see figure 4a). First, the measurement model was tested and demonstrated good fit, (SB $\chi^2(48) = (1.1303)$; $p < .001$; RMSEA = .06, 90% CI [.05, .08]; SRMR = .05; CFI = .97; TLI = .96). Item loading coefficients suggested that all indicator variables related to their intended construct. Next, the distal structural model was tested. Results suggested that this model had a good fit, (SB $\chi^2(71) = 186.857$ (1.0806); $p < .001$; RMSEA = .06, 90% CI [.05, .07]; SRMR = .05; CFI = .96; TLI = .95). In this model, distal minority stressors were found to have a negative relationship with need satisfaction within physical activity. Need satisfaction had a positive relationship with autonomous motivation, and a negative relationship with controlled motivation. Only autonomous motivation had a statistically significant positive relationship with MVPA. Overall, this model (figure 4a) accounted for a small-to-moderate amount of variance in need satisfaction (8%), autonomous motivation (54%) and MVPA levels (10%). The psychological needs were found to mediate the distal stressors and autonomous motivation relationships (indirect effect coefficient = -0.20; 95% CI: -0.29, -0.12), and autonomous motivation mediated the relationship between the psychological needs and MVPA (indirect effect coefficient = 0.24; 95% CI: 0.09, 0.38).

Proximal Stressor Model

A structural model predicting how proximal minority stressors relate to the motivational sequence as proposed by SDT was examined. Specifically, this 5-factor model tested the role of (a) proximal minority stressors on (b) participants' need satisfaction and how this was related to (c) autonomous and (d) controlled motivation and predicted (e) MVPA levels (see figure 4b). First, the measurement model demonstrated good fit, (SB $\chi^2(48) = 136.191$ (1.0733); $p < .001$;

RMSEA = .07, 90% CI [.05, .08]; SRMR = .05; CFI = .97; TLI = .96). Item loading coefficients suggested that all indicator variables related to their intended construct. Next, the distal structural model had a good fit, (SB $\chi^2(71) = 207.406(1.0579)$; $p < .001$; RMSEA = .07, 90% CI [.06, .08]; SRMR = .07; CFI = .95; TLI = .94). In the model, proximal minority stressors were shown to have a negative relationship with need satisfaction within physical activity. Need satisfaction had a positive relationship with autonomous motivation, and a negative relationship with controlled motivation. Only autonomous motivation had a statistically significant positive relationship with MVPA. Overall, this model (figure 4b) accounted for a small-to-moderate amount of variance in need satisfaction (13%), autonomous motivation (53%) and MVPA levels (10%). The psychological needs were found to mediate the relationships between the proximal stressors and autonomous motivation (indirect effect coefficient = -0.26; 95% CI: -0.35, -0.17), and autonomous motivation mediated the relationship between the psychological needs and MVPA (indirect effect coefficient = 0.23; 95% CI: 0.09, 0.38).

Discussion

In this study we tested whether LGBTQ+ minority stressors, as indicators of the social-environmental context, would relate to the basic psychological needs – motivation – physical activity pathway, as per self-determination theory. We hypothesized that higher levels of LGBTQ+ minority stressors would inhibit need satisfaction, culminating in lower quality of motivation and lower likelihood of engaging in physical activity. Despite the necessary modification of the original model (figure 1), our findings corroborated our hypothesis and suggested there is merit to our proposed model. In a systematic review, Teixeira et al. (2012) found autonomous motivation to be a robust predictor of physical activity across a variety of socio-environments, including different minority groups such as people of color and other

special populations like breast cancer survivors. Given that our proposed model was a novel inclusion of LGBTQ+ minority stress as the social-environmental context linking to SDT variables and physical activity, our findings corroborate the conclusions drawn by Teixeira et al.

Theoretically, the split of proximal and distal LGBTQ+ stressors into two separate models is sound, as proximal stressors are rooted in one's perception whereas distal stressors are classified as external events (Meyer, 2003). In this study, proximal stressors were found to be negatively associated with need satisfaction within physical activity. Across studies exploring LGBTQ+ engagement in physical activity, the most commonly discussed proximal stressors were concealment of LGBTQ+ identity and fear of rejection (Herrick & Duncan, 2018). Specifically, adults often feel that they have to conceal their LGBTQ+ identity in order to safely use locker rooms and changing rooms (Hargie et al., 2017; B. A. Jones et al., 2017; Sykes, 2011). Participants in our study may have developed similar vigilance tactics when engaging in physical activity to avoid harassment. Sexual orientation disclosure, or 'coming out' has previously been explored within the framework of SDT (Legate et al., 2012). Findings from a cross-sectional online survey with 161 LGB participants revealed that individuals were more likely to disclose their sexual orientation in autonomy-supportive contexts, regardless of their gender, age, or sexual orientation (Legate et al., 2012). The study by Legate et al. (2012) highlighted the complex relationship between LGBTQ+ proximal stressors and psychological needs satisfaction, specifically autonomy. In a qualitative case study of an LGBTQ+ friendly fitness center, participants ($N = 14$) compared their fear of rejection when using predominantly heterosexual fitness settings with their new-found sense of belonging and community fostered at the LGBTQ+ friendly fitness center (Roper & Polasek, 2006). Given that LGBTQ+ proximal stressors (i.e., identity concealment, fear of rejection) were found to be negatively associated

with need satisfaction in this study, future research should explore how the social context of physical activity can be altered to better support the satisfaction of LGBTQ+ persons need for autonomy and relatedness. For example, the improvement of diversity training programs for physical activity practitioners (trainers, staff, coaches, etc.; Cunningham, 2012) and issuance of 'safe space' stickers to physical activity spaces (Ballard, Bartle, & Masequesmay, 2008) may greatly improve LGBTQ+ experiences with physical activity. By supporting LGBTQ+ need satisfaction, we can improve the quality of motivation experienced and subsequently the likelihood of LGBTQ+ to engage in regular physical activity.

In this study, distal stressors (e.g., discrimination) were also found to be negatively associated with need satisfaction in physical activity. Previous studies suggested that overt homo/queer/trans-phobia and discrimination are common LGBTQ+ distal stressors within physical activity settings (e.g., Atteberry-Ash & Woodford, 2018; Denison & Kitchen, 2015). Subsequently, participants in our study may have experienced similar instances of overt cis-heterosexism within physical activity. In a large-scale cross-sectional study of self-identifying gay and bisexual men ($N = 5799$), the effects of homophobia within physical activity were not felt equally across other axes of inequality (Bourne et al., 2016). Although Bourne et al.'s large-scale sample was predominantly white (94.6%) these results suggested that LGBTQ+ people of color, specifically Asian males, may experience more homophobia within physical activity (Bourne et al., 2016). Given that minority identities overlap and intersect, minority stressors may also interact and exacerbate each other. If you belong to multiple minority groups, then an external instance of discrimination (distal stressors) may be difficult to classify as solely attributed to your LGBTQ+ identity. For example, a qualitative study exploring the experiences of lesbian athletes of color ($N = 12$) found that the majority of participants were subjected to

harmful threats from their teammates based on sexual and racial prejudice (Melton & Cunningham, 2012). To help decrease the frequency of LGBTQ+ and other distal stressors within physical activity current practices should be examined. For example, the implementation of policies supporting the protection of LGBTQ+ persons within physical activity settings (Atteberry-Ash & Woodford, 2018) would encourage coaches, personal trainers, and administrators to intervene, instead of ignore, discrimination. Through reducing LGBTQ+ distal stressors, LGBTQ+ adults may have a better opportunity to satisfy their psychological needs, foster their autonomous motivation, and engage in regular physical activity.

Although 44 people chose to by-pass the DHEQ, it is possible that those who did not by-pass still struggled with these potentially traumatic questions. This hesitancy to respond is mirrored in our data, as distal sub-scales were composed of items that had a large percentage of missing data. For example, the victimization sub-scale had up to 22% missing data ($N = 169$) on any given item (e.g., "being punched, hit, kicked or beaten because you are LGBTQ+"). In the future, we suggest that if the DHEQ is used, all questions pertaining to assault be separated and subject to another content warning. Separating these questions would allow participants to answer the majority of the DHEQ and decide after engaging with survey if they feel comfortable answering questions about traumatic incidences.

Our proposed model (figure 1) was modified mostly due to the integration of minority stressors (as measured by the DHEQ) into the SDT framework. We hypothesize the analytical anomalies of suppression effects and Heywood cases was because the DHEQ was a general measure of distal and proximal minority stressors and not contextually specific to physical activity. Given that need satisfaction is context specific (Ryan & Deci, 2000), measuring the social environment in that context would likely strengthen its relationship with need satisfaction.

Despite this is measurement limitation, there is no physical activity specific measure of LGBTQ+ minority stressors. Moving forward, a measure of LGBTQ+ minority stressors within physical activity could be constructed and validated.

Within SDT, the three basic psychological needs can be satisfied or frustrated (Vansteenkiste & Ryan, 2013). Given that LGBTQ+ minority stressors were hypothesized to have a negative relationship with need satisfaction, future research should examine the association between minority stressors and psychological need frustration. Although the Psychological Need Thwarting Scale (PNTS) has been adapted to sport contexts (Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011), no need frustration scale, to our knowledge, has been adapted to physical activity settings. Therefore, there is a need for questionnaires like the Basic Psychological Need Satisfaction and Frustration Scale (Chen et al., 2015) to be adapted to physical activity contexts.

Participants in this study were mostly Caucasian, educated volunteers and all had Internet access to complete the survey. Consequently, our large-scale sample may perpetuate classed white homonormativity that contributes to hierarchies of invisibility present within LGBTQ+ communities (Logie & Rwigema, 2014). Future research should continue to explore how multiple minority identities (e.g., people of color, etc.) culminate in additional minority stressors (e.g., racial prejudice), that may negatively influence physical activity (Melton & Cunningham, 2012). All study information was also self-reported by participants, which could have resulted in biased reporting. Furthermore, the current study was a cross-sectional design, which did not allow for cause and effect conclusions to be postulated.

Despite limitations, our study was the first to test constructs of SDT within physical activity among a large-scale sample of LGBTQ+ adults. Our study is also the first to suggest that

constructs of minority stress are negatively associated with psychological need satisfaction and subsequently motivation within physical activity. With continued testing, our proposed model could be used to assess how minority stressors (beyond just LGBTQ+ minority stressors) are related to psychological need satisfaction, motivation, and physical activity levels. Armed with a greater understanding of minority stress within physical activity, future research can focus on how to alter physical activity spaces, programs and policies to better support marginalized groups by reducing the impact or frequency of stressors.

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Table 1

Descriptive Statistics for Model Variables

Measure	Observed Variables	*M*	*SD*	Range
Distal Minority Stressors	1. Discrimination	1.93	1.14	1.00-6.00
	2. Family of Origin	2.23	1.32	1.00-6.00
	3. Victimization	1.43	0.94	1.00-6.00
Proximal Minority Stressors	1. Isolation	2.89	1.17	1.00-6.00
	2. Vicarious Trauma	3.86	1.14	1.00-6.00
	3. Vigilance	2.63	1.12	1.00-6.00
Psychological Needs	1. Competence	3.23	1.16	1.00-5.00
	2. Autonomy	3.86	1.00	1.00-5.00
	3. Relatedness	3.20	1.17	1.00-5.00
Autonomous Motivation	1. Parcel 1	3.58	1.06	1.00-5.00
	2. Parcel 2	2.91	1.24	1.00-5.00
	3. Parcel 3	3.47	1.07	1.00-5.00
Controlled Motivation	1. Parcel 1	2.29	0.86	1.00-5.00
	2. Parcel 2	2.78	0.99	1.00-5.00
	3. Parcel 3	2.53	1.03	1.00-5.00
MVPA	1. Strenuous PA	94.45	116.25	0.00-357
	2. Moderate PA	125.53	128.90	0.00-426

Table 2

Latent Factor Correlations for Distal Stressor Model

Factor	1.	2.	3.	4.
1. Distal Minority Stressors	--	-0.282	-0.198	-0.003
2. Psychological Needs	-0.282	--	0.731	-0.123
3. Autonomous Motivation	-0.198	0.731	--	0.026
4. Controlled Motivation	-0.003	-0.123	0.026	--

Table 3

Latent Factor Correlations for Proximal Stressor Model

Factor	1.	2.	3.	4.
1. Proximal Minority Stressors	--	-0.383	-0.199	0.269
2. Psychological Needs	-0.383	--	0.733	-0.122
3. Autonomous Motivation	-0.199	0.733	--	0.027
4. Controlled Motivation	0.269	-0.122	0.027	--

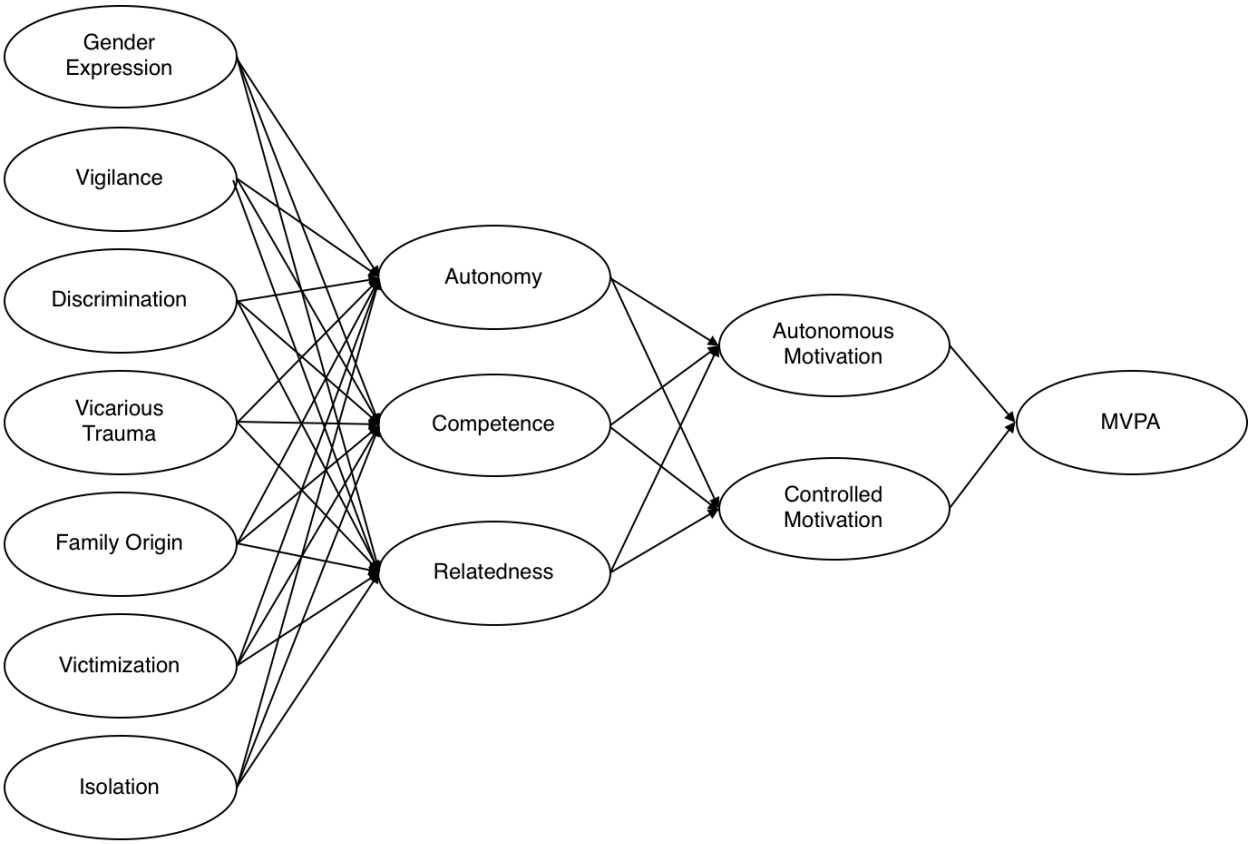


Figure 1. Proposed hybrid model of SDT-MSM.

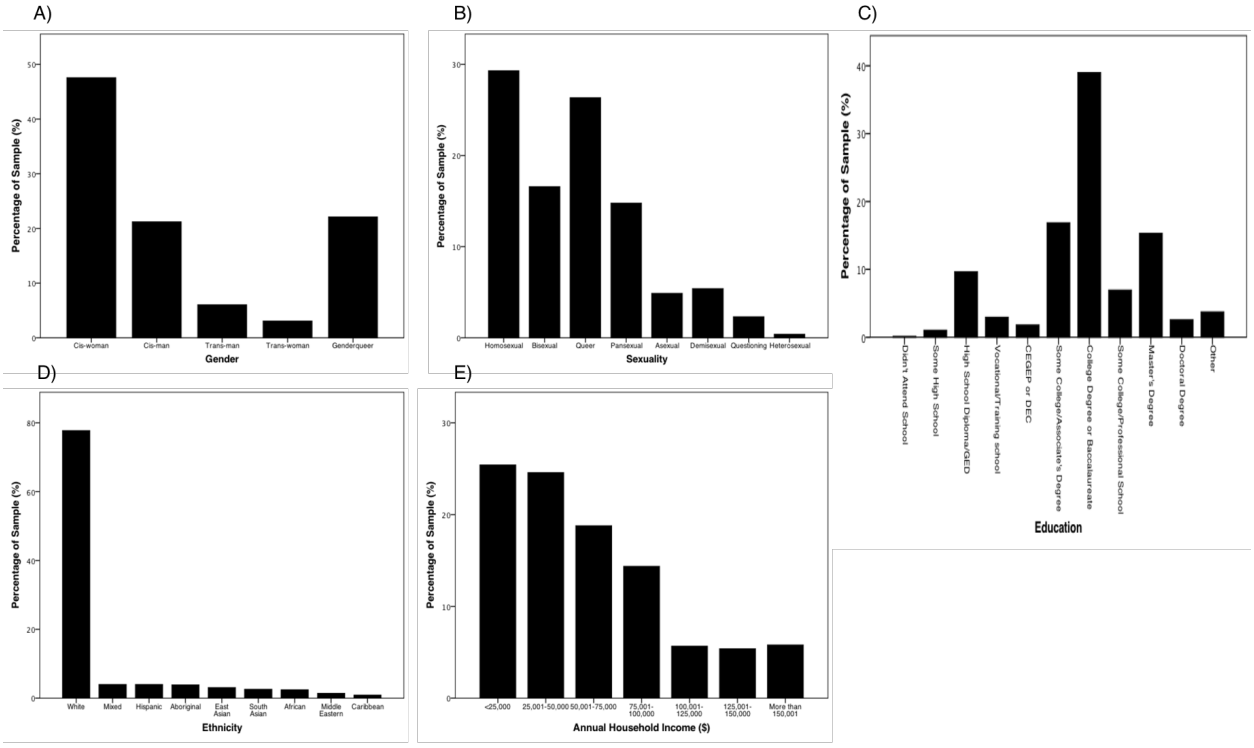
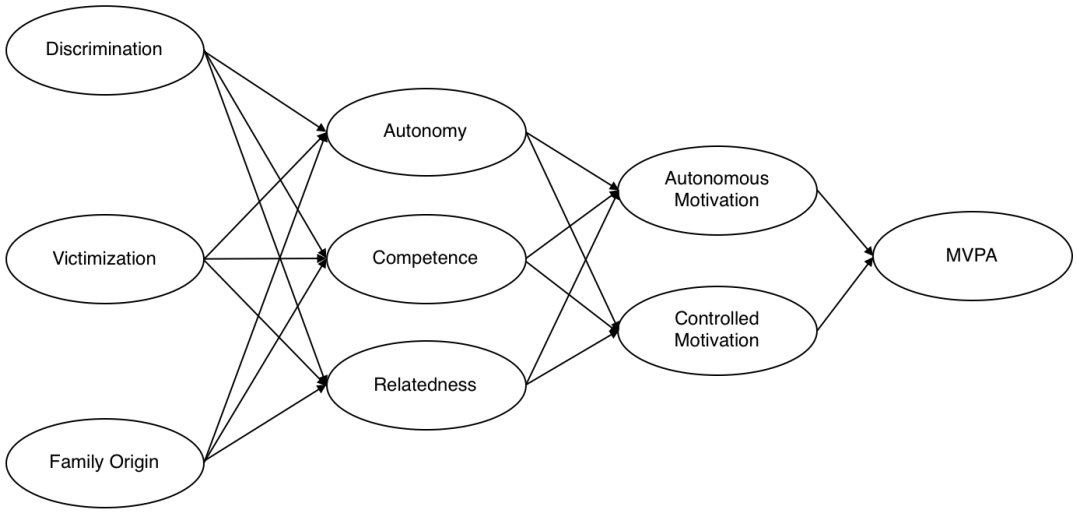


Figure 2. Demographic breakdown of our sample across 5 variables: a) gender, b) sexuality, c) education, d) ethnicity, and e) annual household income.

a)



b)

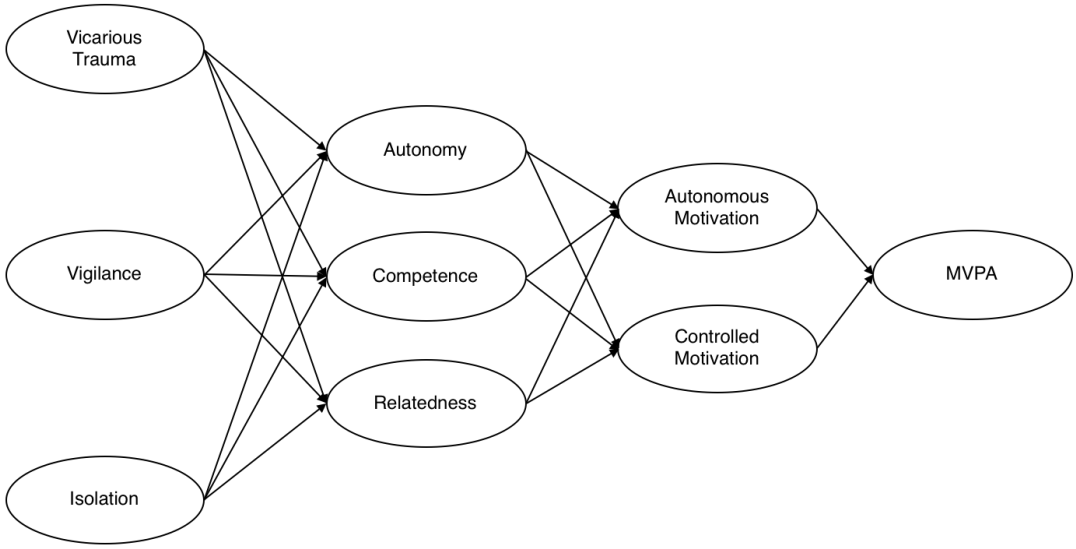


Figure 3. Separation of proposed model in a) distal and b) proximal models.

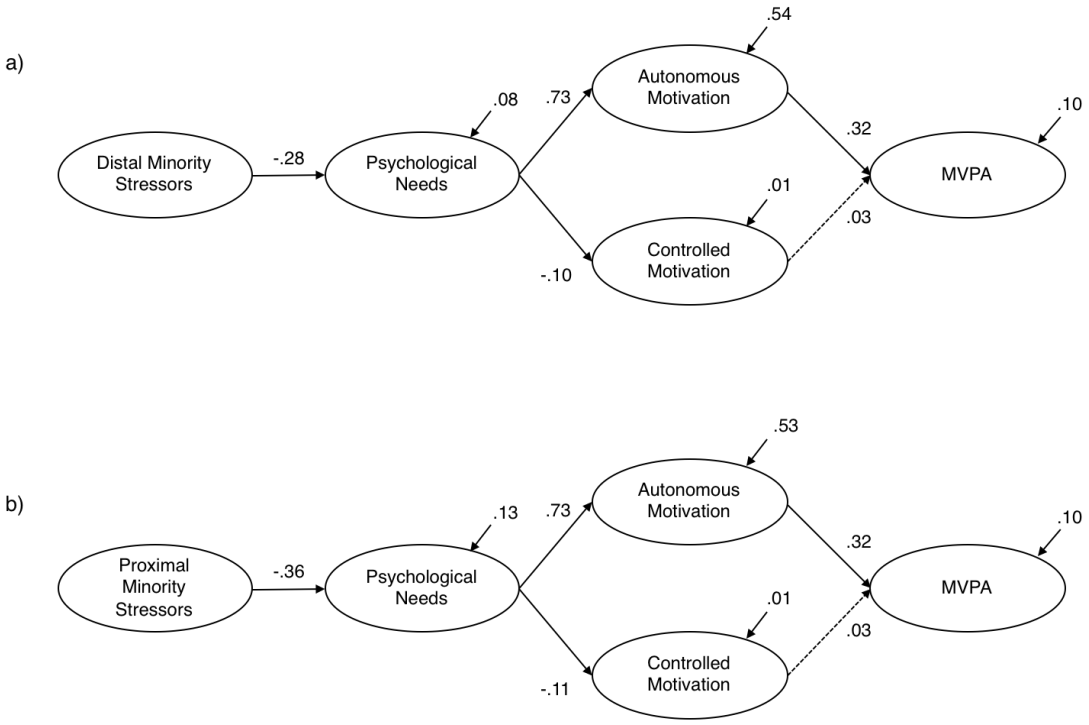


Figure 4. Final (a) distal and (b) proximal minority stressors models. Solid lines represent $p<.01$. Dotted lines represent nonsignificant values. Values to the latent constructs represent the standardized residuals.

CHAPTER FOUR

GENERAL DISCUSSION

Summary of Findings and Original Contributions

This research program explores the inherent minority stressors associated with LGBTQ+ experiences, and how these minority stressors influence experiences with physical activity. Both studies corroborate the proposed theory that LGBTQ+ minority stressors negatively impact experiences of physical activity. Within study 1, when asked to talk about their experiences with physical activity, LGBTQ+ adults recalled stressful experiences (e.g. discrimination) that culminated in their avoidance or dislike of physical activity. Similarly, study 2 provides evidence for a potential model that describes how LGBTQ+ stressors may be related to motivation and physical activity. In summary, this research program shows that LGBTQ+ minority stressors are related to physical activity experiences through negatively impacting need satisfaction.

Contrary to the findings of our scoping review, no distinct narratives for sexual minority men and women emerged from our studies (Herrick & Duncan, 2018). However, this is understandable as we recruited participants from all LGBTQ+ communities for both studies. Unlike previous studies, we did not limit our findings to cisgender persons, or to a specific sexual orientation. Interestingly, both studies in this research program have a large percentage of queer and genderqueer participants, which are previously unrepresented LGBTQ+ sub-groups within physical activity research. In study 1, 28% of the participants identified as queer (n = 12) and 19% of participants identified as genderqueer (n =8). In study 2 there was a similar breakdown with 26% of participants identifying as queer (n = 204) and 22% of participants identifying as genderqueer (n = 172). Queer in itself is more of an umbrella term used to describe someone who resists norms and social structures that limit individuals, specifically norms that

govern conventions of gender and sexuality (Jones, 2018; Meyer, 2010). Queer identities, represented by the last letter in LGBTQ+, have grown more visible, more accepted and more diverse in the past few decades (Jones, 2018). Subsequently, recent generations such as millennials and generation Z have increasing percentages of self-identified queer people (Jones, 2018). This aligns with our studies, as the average range of participants fell within the millennial generation with average ages of 28 and 29 years for studies 1 and 2 respectively.

Previous research has also suggested that specific sporting stereotypes about gay and lesbian athletes adversely affect how sexual minority men and women view sporting contexts, and by extension physical activity contexts (Herrick & Duncan, 2018). The sporting stereotypes conveyed within the literature are reflected in the second theme, the contested concept of "athlete", discussed in study 1. This emergent theme demonstrates how participants tie sport and physical activity experiences closely together and often have a specific image of an athlete (i.e., masculine, macho, etc.). These results are similar to the sport stereotype ascribed to sexual minority women (Herrick & Duncan, 2018; Fusco, 1998; Kauer & Krane, 2006). As in previous literature, this stereotypical concept of an 'athlete' was often rejected by LGBTQ+ participants, regardless of their current physical activity levels. Participants also viewed sports as a generally toxic environment, defined by masculinity, aggression, and competitiveness. Consequently, sporting contexts, and by extension physical activity contexts, were viewed as elitist, and inaccessible spaces.

There were some participants that critically engaged with their concept of "athlete" to generate a subversive definition of athlete that was more inclusive. This critical engagement, questioning, and challenging of norms is a hallmark of queer identities (Meyer, 2010). Queer, in being an inherently fluid and political identity, empowers people to resist labels and stereotypes,

like those associated with athletes. Subsequently, this subversive conception of who an athlete is may be viewed as the queering of 'athlete'. By queering athletes and athletics, participants are able to actively include themselves. As both studies had a larger percentage of queer participants, one potential reason for the high percentage of respondents meeting the Canadian MVPA guidelines (55%) in study 2, is that queer participants may have similarly critically engaged with physical activity to make it more inclusive of them.

Implications for Practice

Given that our research program was designed to inform practical as well as academic applications I have presented our findings as: (a) implications for physical activity programming, and (b) implications for research.

Implications for physical activity programming. The findings from this program of research provide several key implications for working with LGBTQ+ communities within physical activity contexts. The findings of study 1 and 2 suggest that LGBTQ+ minority stressors do influence experiences of physical activity adversely. Results of study 1 suggest that LGBTQ+ minority stressors, especially past experiences with distal stressors (e.g., instances of discrimination in physical education) influences participants' current perceptions of physical activity. Namely, these formative distal stressors have marked spaces associated with physical activity as being inherently unsafe for LGBTQ+ adults. Subsequently, LGBTQ+ adults may not engage in physical activity because they are exercising avoidance as a vigilance tactic. Results of study 2 elucidate a possible pathway through which LGBTQ+ stressors are influencing physical activity participation. Specifically, study 2 provides some evidence that LGBTQ+ minority stressors negatively impact satisfaction of the three basic psychological needs (autonomy, relatedness, and competence), and this in turn leads to lower qualities of motivation and a

decreased likelihood of adhering to physical activity. Therefore, to improve LGBTQ+ participation in regular physical activity, current spaces and practices need to be evaluated and adapted to: (a) reduce the likelihood of LGBTQ+ stressors specific to physical activity contexts, and (b) better support autonomy, relatedness, and competence of LGBTQ+ adults in physical activity contexts.

Implications for research. When working with LGBTQ+ communities, considerations of intersectionality should be integrated into the design of the research program. All interlocking systems of oppression need to be acknowledged within any context as they are omnipresent. Due to the many nuances introduced by intersectionality, mixed methodologies have been found to be ideally suited to guide intersectional approaches (Cuadraz & Uttal, 1999; Hankivsky & Christoffersen, 2008). This research program, in applying mixed methods, allowed great flexibility and subsequently great strength in our approach. Study 1, our qualitative piece, allowed for individualized exploration of the nuanced LGBTQ+ experience within physical activity and directly influenced our procedures and materials of study 2. Qualitative research is imperative when working with minority groups, because as researchers we are often trying to circumvent a history of exploitation (Punch, 2013). Through pilot-testing and directly engaging with people from LGBTQ+ communities, we were able to considerably improve our research by making it more accessible, more intersectional, and in turn, more beneficial to LGBTQ+ adults. Although it was conceptually difficult to take an intersectional approach using an online survey, by listening to the feedback from study 1 participants we were able to modify our study 2 materials to acknowledge complex systems of oppression. Without first pilot-testing and consulting with LGBTQ+ adults, it is entirely possible that the response rate associated with study 2 would have been greatly diminished. Findings from study 1 can also be used to aid in the

interpretation of our quantitative results. Study 2 through its online cross-sectional design allowed us to further our reach and engage with a large-scale sample of LGBTQ+ adults. Study 2, in turn, effectively gives us a powerful snapshot of how LGBTQ+ adults, as a minority population, experience stressors and physical activity. In short, the wealth of information retained within this research program would not have been possible without it's mixed methods design. Consequently, an intersectional approach should be incorporated into any research project within the initial stages of planning, to better encompass the complexity and nuances of LGBTQ+ experience.

Directions for Future Research

Findings from this program of research provide a foundation for research to further explore LGBTQ+ experience in physical activity through the integrated perspective of self-determination theory and the minority stress model. This research program has provided novel insight into the diverse range of LGBTQ+ experiences within physical activity. Future research should expand on the results of study 1 and focus on exploring and identifying LGBTQ+ minority stressors that are specific to physical activity contexts. Working in collaboration with LGBTQ+ communities, improved questionnaires should then be created and validated to better assess LGBTQ+ minority stressors within physical activity. Using these improved measures, the proposed hybrid model describing how LGBTQ+ stressors influence psychological needs within physical activity can be more thoroughly tested. With these improvements, it is possible that specific stressors may be identified as negatively impacting certain psychological needs more than others. Increased theoretical and practical understanding of how LGBTQ+ stressors influence physical activity experiences can then be used to inform physical activity practices that are more supportive of LGBTQ+ participation. Given that the minority stress model has been

applied to other minority groups (e.g., people of color), the proposed hybrid SDT-MSM model could be used to understand how other minority stressors influence psychological need satisfaction and motivation within physical activity.

Conclusions

Findings from this research program strongly suggest that physical activity practices should be approached through an intersectional lens in order to truly make them more inclusive and accessible. Furthermore, although some participants from study 1 had access to LGBTQ+ friendly physical activity settings, the majority did not, and were instead forced to use a variety of unsafe spaces or to avoid participation in physical activity altogether. Subsequently, future research should examine pre-existing LGBTQ+-specific or friendly physical activity programs to better inform how practices and spaces associated with physical activity can be modified to be more inclusive and welcoming.

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