

WANTING TO SWEAT TOGETHER: THE RELATIONSHIP BETWEEN
COMMUNITY AND CROSSFIT

by

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ABSTRACT

Introduction: Physically-active leisure offers numerous physical, psychological and social benefits (Shiraev & Barclay, 2012). Further, there are heightened benefits when physically-active leisure occurs in community environments (Iwasaki, Zuzanek & Mannell, 2001). CrossFit is a community-oriented fitness program growing in popularity, with two to four million participants (Wang, 2016). This study examined the relationship between sense of community and intrinsic motivation within CrossFit.

Methods: Through a mixed-methods, cross-sectional design, participants (N = 235) were recruited from CrossFit gyms to respond to an online survey. Participants completed measures of sport motivation and sense of community and responded to open-ended questions related to their participation and experiences of community within CrossFit. Quantitative data was analyzed with a Pearson Correlation analysis, and written responses were analyzed using thematic analysis. Participants were categorized based on upper and lower scores on the variables of interest and qualitative responses were compared across categories.

Results: Data analysis indicated a correlation between intrinsic motivation and sense of community ($r = .413$, $n = 227$, $p < .001$). Using a thematic analysis of the written responses, *active living*, *mental health*, *personal fulfilment*, and *social connections* contributed to individual motivation. *Belonging*, *mutual support* and activity 'outside' the gym were evident within participants' experiences of sense of community in the context of CrossFit. Triangulation findings segmented CrossFitters into two unique groupings.

Significance: This study suggests that the social aspects of CrossFit may serve as intrinsic motivators.

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CHAPTER 1: INTRODUCTION

In the past 50 to 70 years, both physical inactivity and sedentary behaviour have increased in Canada (Spence, Faulker, Costas Bradstreet, Duggan & Tremblay, 2015). The World Health Organization (2016) states that one in every four adults worldwide is not currently active enough, and this insufficient physical activity is the leading risk factor of one in ten deaths worldwide. Aside from the physical health benefits of physical activity, it is correlated with positive mental and social health outcomes (Herman, Hopman & Sabiston, 2015), as well as serving as a healthy coping strategy for stress (Cairney, Kwan, Veldhuizen & Faulkner, 2014).

Physical activity and physically-active leisure

A common avenue for physical activity is participation in physically-active leisure pursuits, which deliver numerous physical, social and mental health benefits (Hogan, Mata, Carstensen & Mayr, 2014; Shiraev & Barclay, 2012). Physical activity refers to any bodily movement resulting in an energy expenditure (Caspersen, Powell & Christenson, 1985), and commonly physical activity has been performed primarily in an individual's leisure time (Iwasaki, Zuzanek & Mannel, 2001). While leisure has commonly been connected to notions of 'free-time', Shaw (1985) found that leisure can be experienced during almost any activity, and that time-based definitions are just one way of defining leisure. Primary characteristics for defining leisure are concepts such as enjoyment, freedom of choice, relaxation, and intrinsic motivation (Shaw, 1985). These characteristics may not always be present (e.g., relaxation), and individuals' freedom of choice typically has various constraints; however, leisure is defined as such based on how activities are experienced for an individual. For the purpose of this study, physically-

active leisure is defined as physical activity aligning with the characteristics of leisure (Iwasaki et al., 2001; Shaw, 1985).

Henderson and Bialeschki (2005) discuss physical activity by choice as a prominent way of connecting leisure and physical activity. In leisure literature, the terms physically-active leisure (Arai, Mock & Gallant, 2012), and leisure-time physical activity (Lloyd & Little, 2010) have both been used to discuss this concept. Individuals' leisure experiences are based around the nature of their experience (e.g., autonomy, enjoyment) which doesn't necessarily have a 'time' based focus (Lee, Datillo & Howard, 1994). Therefore, this study will use the term physically-active leisure because its definition is rooted in the qualities of the leisure experience, rather than in time-based definitions of leisure. Physically-active leisure is positively related to physical health and well-being, along with positive emotional affect and mental health (Rasmussen & Laumann, 2014). Since many physically-active leisure opportunities include social elements, there is also a strong relationship between physically-active leisure and an individual's social interactions (Iwasaki, et al., 2001).

Physically-active Leisure and Intrinsic Motivation

One factor related to an individual's choice to partake in physically-active leisure is intrinsic motivation. Intrinsic motivation is not just significant in getting people physically active, but also in ensuring they remain active (Aaltonen, Rottensteiner, Kaprio & Kujala, 2014). Deci and Ryan (1985) developed Self-Determination Theory (SDT) which suggests that motivated behaviour is based on satisfying three needs: competence, autonomy and relatedness. These three needs, which describe an individual's free choice (autonomy), how well they feel they do at a task (competence)

and how connected they feel with others and the task (relatedness), together describe an internalized continuum from intrinsic to extrinsic motives (Deci & Ryan, 1985). When a person participates in an activity because it is considered enjoyable, pleasant, or satisfying, then it is generally viewed as intrinsically motivated. In contrast, when they participate in order to reap external outcomes or rewards (e.g., praise or money), their behaviour is seen as externally motivated (Deci & Ryan, 1985; Ryan & Deci, 2000). In a physically-active leisure setting, intrinsic rewards include positive feelings, happiness and enjoyment; whereas extrinsic rewards are focused on factors such as weight loss, appearance and social pressures.

Being intrinsically motivated is one factor contributing to individuals' participation in physically-active leisure that may lead to important physical, social and mental health benefits. Characteristics of leisure such as enjoyment and freedom of choice lend to the decision to participate in physical activity as an individual's choice of leisure. One key motivator for participation in physically-active leisure is participation in a social setting, which may also provide further health benefits. Several studies suggest that exercising with others results in an increased adherence to physical activity programs, higher level of enjoyment during the activities, and strong and healthy connections with others (Darlow & Xu, 2011; Davis, Taylor & Cohen, 2015; Mendoca, Cheng, Melo & De Farias 2014).

CrossFit as a Physical Activity and Physically-active Leisure

CrossFit is a physical activity that consists of constantly varied, functional movements performed at a high intensity (Glassman, 2007). It is generally performed in a class-structured community environment, providing a relevant context for understanding

social and community models of physical activity. Recently becoming relatively popular, CrossFit has grown quickly to over 14,000 locations in over 120 countries worldwide.

CrossFit was developed and conceived by Greg Glassman, who created the physical activity program by attempting structure a program that would provide increased work capacity across broad times and modal domains (Eather, Morgan & Lubans, 2016; Knapp, 2015). CrossFit incorporates five of the top 10 American College of Sport Medicine's trends of 2016 (Thompson, 2015) through its use of bodyweight training, high-intensity interval training, strength training, functional fitness and group personal training. This broad incorporation of popular fitness trends allows CrossFit to appeal to a wide demographic of participants. These fitness aspects are also promoted through a strong community experience, and the community within CrossFit is often mentioned as a prominent aspect of participation in the activity (Eather et al., 2016).

CrossFit and Sense of Community

McMillan and Chavis (1986) define sense of community as “a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together” (p. 9). Pickett, Goldsmith, Damon and Walker (2015) investigated sense of community within three fitness contexts: traditional gym-goers, group exercise classes (e.g., Zumba, Yoga), and CrossFit classes. The study by Pickett et al., (2015) found that among the three groups, the members of the CrossFit gym had a significantly higher sense of community than members of the other two groups. This study suggests that CrossFit is a relevant context for exploring sense of community and its relationship to intrinsic motivation.

Purpose and Research Questions

The overall purpose of this study was to examine the relationship between sense of community and intrinsic motivation for individuals who participate in CrossFit. The two research questions explored in this study were:

1. How do individuals who participate in CrossFit define and connect to their gym community?
2. What is the relationship of sense of community with intrinsic motivation to participate in CrossFit?

Methods Overview

Data were collected through an online survey that generated responses from 235 CrossFit members. The first part of the survey asked participants to respond to statements measuring sense of community and sense of motivation by providing Likert scale rankings, in order to generate data to quantitatively analyze the relationship between intrinsic motivation and sense of community. The second part of the survey asked participants to respond to qualitative questions relating to how they experience sense of community at their CrossFit gym and how it affects their motivation.

Recruiting participants from multiple gyms was intended to ensure variability in sense of community, addressing the potential that any single gym might have a significantly stronger sense of community than another. Individuals participating in the study filled out an online survey answering brief demographic information followed by completing the Sport Motivation Scale – II (SMS-II) developed by Pelletier et al., (2013) and the Community Organization Sense of Community Scale - Revised (COSOC-R) developed by Hughey, Speer, and Peterson (1999). Once these two quantitative scales

were completed, participants answered written responses assessing their motivations and experiences of community within CrossFit. Once data was collected, qualitative data were examined using thematic analysis (Braun & Clarke, 2006; Creswell, 2013), and quantitative data were analyzed using correlational methods using SPSS. Triangulation was performed between the two methodologies to assess group differences in motivation and sense of community.

Significance

While there is research investigating motivations, community, and physically-active leisure in group physical activity settings, there is presently little research linking all three together. Furthermore, there is little research linking these motivations together in a CrossFit setting, especially in understanding CrossFitters' motivations and sense of community through qualitative research. The relationship between community, motivation and impacts on participation in physically-active leisure are important ideas to examine to increase our understanding of ways to motivate people to participate in physical activity. The impact of inactivity is studied intensely from a health perspective, but researchers are still attempting to define the motivational variables behind increasing physical activity levels (Aaltonen et al., 2014; Awruk & Janowski, 2016). As well as motivations to participate, intrinsic motivation also holds significance in understanding commitment and adherence to physical activity (Backman & Crompton, 1991). The relationship between intrinsic motivation and adherence has been further studied by Thogersen-Ntoumani et al., (2016), who found that intrinsic motivation predicted program adherence, which in turn lead to significant physical benefits for participants.

Implications for Leisure and Recreation

This thesis is a leisure thesis because of the foundational connection of intrinsic motivation to an individual's leisure along with physically-active leisure being noted as an important component of a person's leisure lifestyle (Iso-Ahola, 1997). This study contributes to both the inter- and intra-personal social psychology of leisure by further exploring individuals' motivations to participate in CrossFit. While not all individuals may engage in CrossFit as a form of leisure, it is likely that CrossFit aligns with the characteristics of leisure for some CrossFitters. Concurrently, this research furthers our understanding of physically-active leisure and the motivations to partake in these activities. As one component of leisure is its intrinsically-motivated nature, there is an inherent link between leisure and intrinsic motivation, so, it is important to further conceptualize this connection in different realms.

Additionally, leisure provides numerous physical, mental and social health benefits for many individuals, physically-active leisure being one of the avenues to achieve such benefits. Promoting healthy behaviour is an important social cause as the rise of unhealthy and physically-inactive behaviours is increasing (Spence et al., 2015). Understanding the connection between sense of community and intrinsic motivation will allow us to make better informed decisions regarding the promotion of physically-active leisure opportunities.

Furthermore, as CrossFit is an increasingly popular method of physical activity, it is also an understudied one in terms of the benefits it may offer (Knapp, 2015; Partridge, et al., 2014). Few studies have connected elements of CrossFit to leisure, especially considering the community and social-aspects around the activity (Pickett et al., 2016). As

more and more individuals choose to engage in CrossFit, it becomes important to situate this population in the literature as it offers a unique community environment for individuals to participate in physical activity. This study explores motivation and sense of community within a CrossFit population through both qualitative and quantitative methods. This serves to situate CrossFit within the leisure literature and offer a qualitative foundation for avenues of research into the social benefits of CrossFit.

Background Overview

Physical inactivity is on the rise in society and the importance of promoting healthy activities, such as physically-active leisure, is becoming very important (Spence et al., 2015). This study is significant to both the field of leisure and recreation and other health-related fields by understanding the motivations behind why individuals partake in physical activity and how to support this behaviour. Through a mixed-methods design we will be able to assess whether there is a relationship between sense of community and intrinsic motivation in CrossFit, and how individuals who partake in CrossFit describe and feel about their community.

CHAPTER 2: LITERATURE REVIEW

For this study, which explores the relationship between sense of community and intrinsic motivation in the context of CrossFit, it is important to review key literature that sets the stage for this work. Thus, this chapter begins with an overview of motivation and motivational concepts in relation to leisure. Understanding the importance of motivation is key in linking to physical activity and physically-active leisure. Finally, this chapter concludes with linking these broad concepts to both sense of community and the CrossFit community.

Motivation

The concept of motivation refers literally to being moved to perform an action (Mannell & Kleiber, 1997). One predominant theory in the field of motivational studies is Self-Determination Theory (SDT), which explains that people's behaviour is based on satisfying three needs: autonomy, relatedness and competence (Deci & Ryan, 1985). When an individual participates in an activity due to feelings of satisfaction or enjoyment, it is referred to as being intrinsically motivated; when the same activity is participated in for a reward or in response to outside pressure it is extrinsically motivated (Ryan & Deci, 2000). Further, based on SDT, motivation occurs on a continuum from amotivation (which refers to lack of motivation such as not feeling value towards performing the activity) (Deci & Ryan, 1985) through four types of extrinsic regulation (i.e., outside pressures): external, introjected, identified and integrated, and finally intrinsic motivation (Deci & Ryan, 1985). As SDT conceptualizes intrinsic and extrinsic motivations along a continuum rather than as dichotomous, individuals' motivations are not necessarily one or the other, but individual actions may have elements of both

intrinsic and extrinsic motivation. Extrinsic motivation is a broad term for motivation encompassing four forms of regulation. External regulation is the first of these forms of regulation, which refers to an individual being purely motivated by an external reward or force. Introjected regulation refers to internally driven behaviour, but with a causality that does not come internally, such as performing a behaviour to avoid guilt or shame.

Moving closer towards intrinsic motivation, identified motivation refers to valuing an external goal or motivator so much that the motivation is considered personally important (e.g., participating in physical activity for weight loss). Finally, closest to intrinsic motivation is the element of integrated regulation, where the regulations are fully assimilated to the person, but the goals are still extrinsic, rather than just for inherent enjoyment (e.g., valuing a health and fitness lifestyle) (Deci & Ryan, 1985; Ryan & Deci, 2000). Although in the broad conceptualization of SDT, identified and integrated regulation are considered extrinsic motivators, they have some characteristics of internalized motivations, and Ryan and Deci (2000) state that they are occasionally combined with intrinsic motivation to be considered autonomous motivators in various studies.

Self-determination theory is formed around a primary assumption that humans are active with tendencies towards growth, mastering challenges and seeking new experiences which are incorporated into their sense of self. The relationship between individuals' active search for this growth and new experiences along with the social context around them is the basis for SDT's prediction and theories concerning behaviour (Ryan & Deci, 2000). The extent to which the three basic needs of SDT are met results in

individuals developing and functioning more effectively and experiencing greater wellness (Deci & Ryan, 1985; Ryan & Deci, 2000).

Leisure motivations. Mannell and Kleiber (1997) were some of the first researchers to summarize foundational concepts by Deci and Ryan (1985) and connect the concepts of intrinsic motivation and extrinsic motivation to leisure activities. Most significant was the understanding and importance of intrinsic motivation in the context of leisure activities, with the importance of freedom of choice being instrumental in how an individual decides to spend their leisure time. Alternatively, Ryan and Deci (2000) also discussed important aspects of extrinsic motivations and how social pressures and external rewards can negatively affect individuals' motivations. Ryan and Deci (2000) emphasize the importance of understanding what forms of external pressures can negatively affect individuals' autonomous motivations. Ryan and Deci (2000) further explored SDT in relation to relatedness and belonging and found those two aspects critically important in individuals' free choice to perform an action. Individual's sense of relatedness and belonging to a social group were important in individuals' autonomous motivation to partake in an activity (Ryan & Deci, 2000). It is important to promote autonomous motivation within individual leisure times, and understanding social aspects is a key element. Motivation to partake in leisure is an important concept, and it is important to understand this motivation in terms of how individuals choose to spend their leisure time.

With the current interest on encouraging physical activity, there has been strong interest from both academics and policy makers on motivations to engage in physical activity. An overview of key concepts related to physical activity will be provided before

delving into a review of current literature related to motivation to engage in physical activity and physically-active leisure.

Physical Activity and Physically-active Leisure

The World Health Organization (2016) states that one in four adults worldwide are not currently physically active enough, and further, that one in ten deaths worldwide are the result of insufficient physical activity. Physical activity has been shown through multiple studies to improve physical and mental health (Herman, Hopman & Sabiston, 2015; Spence et al., 2015). Connected to this is the understanding of exercise which exists as a subcategory of physical activity that is planned, structured, repetitive and purposive in improving physical health (Capersen, et al., 1985). Alongside this is the notion of 'sport' which refers to a competitive physical activity with a defined structure and set of rules (Caddick & Smith, 2014). In connection with our understanding of physical activity, sport and exercise are both sub-categories under physical activity, so while sport and exercise are always physical activity, not all physical activity is sport or exercise.

It is important to conceptually understand that while frequency of physical activity varies among individuals on a continuum from low to high, no individual engages in no activity. As well, it is possible to be physically active but still meet the criteria for living a sedentary lifestyle (Maher, et al., 2016). Most notably, there is strong evidence that physical activity contributes to the primary and secondary prevention of diseases as well as being associated with a reduced risk of premature death (Awruk & Janowski, 2016; Shiraev & Barclay, 2012). Where some individuals may partake in physical activity through employment (e.g., military, hard labour jobs) predominantly

people engage in physical activity as a form of leisure (Kirk & Rhodes, 2011). Another form of physical activity participation can consist as a form of 'self work' (Maguire, 2008). The concept of 'self work' refers to an individual putting in work (e.g., exercising) as a form of obligation in order to meet a standard that they feel is required (Maguire, 2008). This concept speaks more to an outward motivation, whereas the element of leisure being a 'freely' chosen activity is associated with intrinsic motivation.

Exercise is simply one of many forms that physical activity can take; other forms have been studied through activities such as active transportation (Dill, McNeil, Broach & Ma, 2014), dog walking (Feng, et al., 2014) and dancing (Vahabi, Beanlands, Sidani and Fredericks, 2012). Physically-active leisure is physical activity that meets an individual's subjective criteria of leisure based around elements of enjoyment, freedom of choice, relaxation, and intrinsic motivation (Iwasaki et al., 2001; Shaw, 1985). Through this definition, it is inherent that not all physical activity constitutes leisure.

Physical activity and physically-active leisure have been researched from diverse gender perspectives (Muchicko, Lepp & Barkley, 2015), ages (Arai et al., 2012; Gavin, et al., 2015), economic status (Beaulac, Bouchard & Kristjansson, 2010), and race (Burk, Shinew & Stodolska, 2011; Doherty & Taylor, 2007). These characteristics can affect individuals' constraints to participation in certain leisure activities where the cost may be too high or various socio-cultural implications can impede participation (Beaulac, et al., 2010; Doherty & Taylor, 2007). While there are various social and cultural constraints inherent to different groups in their participation in physically-active leisure, one important finding by Henderson (2003) is the value of enjoyment of the activity across marginalized groups. Enjoyment was also connected to physically-active leisure by

Craike, Hibbins and Cuskelly (2010) with the recommendation that government and practitioners should aim to increase activity enjoyment to increase participation. Because enjoyment is a defining characteristic of leisure experiences, exploring how physical activity can be experienced as leisure is a potential avenue for increasing physical activity participation.

Motivations to engage in physical activity. Understanding motivations for engaging in physical activity is key to understanding the extent to which physical activity aligns with leisure. Thompson (2006) explored preferred recreational leisure activities within New Zealand women in order to understand their motivations for participating. Immediate social circles and friends had a significant impact on initiating participation in the activity, but through participation, aspects relating to fun and personal satisfaction led to more intrinsic enjoyment of the activity (Thompson, 2006). This study by Thompson (2006) connects with Ednie and Stibor's (2017) work suggesting that social circles and friends (e.g., extrinsic motivators influencing participation), can eventually develop into intrinsic motivations (e.g., enjoyment). In another physical activity context, Joesaar, Hein & Hagger (2012) explored motivation using SDT; this study found that among young athletes, perceived autonomy and intrinsic motivation were associated with closer and stronger relationships amongst teammates. The motivational climate of the team and the peers around the individuals were also connected to the intrinsic motivation for participation in the sport (Joesaar, et al. 2012). This study is important in that it connects aspects of the social environment and autonomous motivation to elements of intrinsic motivation in a physical activity context.

Pelletier et al. (1995) developed the Sport Motivation Scale in order to directly apply the SDT to motivation in terms of sport and physical activity. The scale assesses intrinsic and extrinsic motivation in a physical activity context, along with assessing amotivation for sport or physical activity (Pelletier et al., 1995). As discussed, the existence of a strong social network and sense of community can lead to higher levels of intrinsic motivation to perform and continue to sustain activities. The important aspect of Pelletier et al.'s work (1995) and that of researchers who subsequently used the scale (Perreault & Vallerand, 2007; Riemer, Fink, & Fitzgerald, 2002) is the focus on the 'why' individuals participate in sport.

One aspect of the 'why' people engage in sport and physical activity is because of autonomous motivations. Pelletier et al. (2013) re-tested and revised the scale into the SMS-II which is an 18-item scale as opposed to the initial 28-items to further assess more specific criteria regarding autonomous motivation. A study by Rocchi, Pelletier and Couture (2013) utilized the SMS-II in a study of autonomous behavior of coaches. The coaches completed a revised scale of the SMS-II designed to assess their perceptions of their athlete's motivations. The study found that the more autonomous the coaches felt, the more autonomous style of coaching they used and perceived within their athletes (Rocchi, Pelletier & Couture, 2013). This finding is significant in understanding how individuals' autonomous motivation can affect others around them.

Further in the context of the 'why' people participate, intrinsic motivation offers very unique benefits in terms of physical activity. As Deci and Ryan (1985) included relatedness as a key component of SDT, the social aspects within physical activity becomes very important in terms of an individual's motivation. Darlow and Xu (2011)

researched how individuals' social support and relatedness to those around them could affect their motivations and physical activity participation. Key findings demonstrated that individuals who were intrinsically motivated showed increased adherence to physical activity programs and had higher levels of enjoyment during the exercise. In connection with this, Davis, Taylor, and Cohen (2015) found intrinsic motivation was important in terms of supporting social bonding during physical activity. This relationship between the social aspects of motivation has existed since the early research of Zuckerman, Porac, Lathin, Smith & Deci (1978) but is often used as an individual level attribute, where community is seen as a wider social phenomenon. Where relatedness is typically seen as close social relationships between individuals (e.g., friends, relatives), a sense of community focuses on the experience of being connected to a broader group that may not necessarily be defined through close personal relationships (McMillan and Chavis, 1986).

Motivations to engage in CrossFit. The motivational principles within CrossFit were examined through a study by Partridge, Knapp and Massengale (2014). The primary purpose of this study was to explore the relations between gender and membership time on motivational climate and goals. The goal types found to be important in the study were self-improvement type goals, or goals in comparison to others. While the study by Partridge et al., (2014) did not specifically use SDT, these motivational goals for an individual to participate in CrossFit link to elements of Ryan and Deci's theory (2000) through elements of competence (i.e., self-improvement and mastery goals) and relatedness (i.e., goals and achievements in-comparison to others). However, Partridge et al., (2014) described the motivational climate as how the trainers and gym set the goal climate; this offers some insight into motivation in a CrossFit facility, but is a uniquely

different construct than sense of community. As previously mentioned, individuals participate in physical activity for a variety of reasons (e.g., employment, self-work), CrossFit and physical activity may not be considered as leisure to everyone who participates.

Social aspects of physical activity and their influence on motivation. In terms of social connections, Iwasaki et al., (2001) researched how physically-active leisure influenced relationships between health and stress, along with how social and psychological resources could mitigate and impact these relationships. This study is significant because it connected important elements of social interaction to benefits of physically-active leisure. However, the study employed a population health survey, and the researchers noted the potential for response bias toward socially-desirable responses. Additionally, the researchers identified in the limitations that the population health survey questions may not have directly targeted the specific constructs they were exploring. Iwasaki, et al. (2001) used the already completed population health survey and connected the constructs, rather than targeting specific connections. Overall, this study provides an important link in the understanding of social interactions and its relationship with physically-active leisure, although there is further opportunity to explore these issues using primary data.

Laverie (1998) explored individuals' motivations in participating in an aerobic spin class, and found that atmosphere, social connections, and physical and psychological benefits resulted in longer commitment to the aerobics classes than outcome focused motivations such as weight loss. Further, in a study of 1,885 participants and their physically-active leisure preferences across the life-span, Gavin et al. (2015) found an

eight-factor categorization of physically-active leisure preferences. Importantly in relation to this proposed study is that over half of the factors consisted of social physical activities (e.g., group exercise, sports). This study by Gavin et al. (2015) is important because it emphasizes the value of social elements in an individual's choice to participate in physically-active leisure. Shannon (2014) explored leisure preferences more in-depth in overweight children with significant findings that the social group and support surrounding the child was the most important in facilitating a positive relationship with physically-active leisure.

Social support is one element of sense of community where individuals have influence over each other within the group. Social support in a physical activity context is defined as actions which help a person adopt and maintain particular physical activity practise, and may occur in in two different ways (Kollerde Paiva, de Camargo, de Paula da Silva, Siqueria Reis, 2016). Social support can be participation-based (e.g., where friends/family participate alongside each other), or external (e.g., friends/family are supportive, but don't participate) (Darlow & Xu, 2011). External social support has been identified as being key in encouraging physical activity participation through providing encouragement and reinforcement (Anderson, et al., 2006; Eyler et al., 1999; Eyler et al., 2002). However, the social support of having friends and/or family participate in the physical activity alongside you has been connected to more positive feelings of enjoyment, happiness and long-term commitment to the physical activity (Darlow & Xu, 2011; Racknow, Scholz & Hornug, 2014). Together, these two forms of social support are important in connecting and understanding physical activity participation and motivations.

Where the previous studies were all performed using quantitative methodology, qualitative methodologies add an important dimension to understanding individual experiences. Bruton, Vurnakes, Martin, Perry & Henderson (2012) performed a case study within a workplace physically-active leisure program; their qualitative study used a social ecological approach to wellness and collected important data from documents, observations and interviews with current, past and potential participants. The findings of their study emphasized several important themes: leadership, social support and bonding (e.g., social interactions with individuals sharing similar values) along with trading off constraints such as time and money for health and social-related benefits all emerged as central themes. The impact of the social support was key within the workers where it developed both hierarchically and laterally within the workplace environment. This participation-based social support was listed as a strong motivator for individuals' physical activity participation (Bruton et al., 2012).

An experiment by Scarapicchia, et al. (2013) explored whether performing physical activity next to an individual offering either externally motivated (e.g., "If I were to exercise more often, I would do so only to look better"), or intrinsically motivated (e.g., "I am really enjoying this exercise") verbal encouragement improved performance. The findings were such that intrinsically motivated verbal primes significantly impacted individuals' activity as measured by perceived exertion and peak heartrate. While these physical effects are important, individuals who were intrinsically primed also continued to participate past the 10 minutes required in the study (Scarapicchia, et al., 2013). This study suggests a unique connection between motivation, social support and physical activity. Where studies such as those by Iwasaki, et al., (2001) and Scarapicchia et al.

(2013) discuss the importance of physical activity and the social communities influencing participation, connecting these constructs to the impact of motivation more in-depth is key in understanding the context of physically-active leisure.

Sense of Community

Social aspects of physical activity, and particularly physically-active leisure, have been studied in several different contexts and populations. (e.g., Moscardino, Scrimin, Capello & Altoe, 2010; Tang, Chi & Dong, 2017). Fowler, Wareham-Fowler and Barnes (2013) identified a distinction between social support and a sense of community. Where social support is seen as being more proximal (e.g., associated with individual relationships), sense of community connects individuals to a broader community network. Further research has suggested that the proximal variable of social support is encompassed through the broader variable of sense of community (Brehem & Rah, 1997; Hendry & Reid, 2000).

Doing early research on community, Hillery (1955) found 94 unique definitions in use; the concept of community has been valued for many years, with a strong area of interest being the potential of community to provide a social support system for many individuals. While having existed for many years, the study of community is still a newer field of research, with the concept of 'sense of community' introduced in the 1970s (McMillan & Chavis, 1986). Where community has been defined as a meaningful system of cultural practices, patterns and values providing members with a sense of belonging (Cohen, 1985); the related concept of *sense of community* has been examined a four-factor model by McMillan and Chavis (1986) encompassing: membership, influence, fulfillment of needs and shared emotional connection.

The four-factor model developed by McMillan and Chavis (1986) comprises of membership, which consists of five attributes: boundaries, emotional safety, sense of belonging, personal investment and a common symbol system. This sense of membership is linked to the concept of identifying with a community and has been studied in various forms, both in sport (Warner, et al., 2012; Warner & Leierer, 2015) and other contexts such as online (Obst & Stafurik, 2010) and local communities (Frank, Engelke & Schmid, 2003). Influence is the second factor, describing a reciprocal relationship between individuals and community; community members must feel they have some influence in the community, and there must be some influence on the group members which is needed for improving group cohesion (McMillan & Chavis, 1986). The final two components include the fulfillment of needs, leading the members to feel rewarded for participation in the community, and a shared emotional connection which has been referred to as the “definitive element for true community” (McMillan & Chavis, 1986, p. 14). This shared emotional connection refers to the emotional history of a social group, and the belief that more experiences together in the future will contribute to the formation of a long lasting, emotional connection (McMillan & Chavis, 1986).

McMillan and Chavis (1986) are responsible for one of the seminal studies on community and synthesized the research in the field towards the direction of community psychology. The research theorizes the four-factor model previously mentioned and emphasizes the importance of having an empirically validated understanding of sense of community. Hughey, Speer, and Peterson (1999) expanded on this foundation set by McMillan and Chavis (1986) and their initial Sense of Community Index (Chavis, Hogge, McMillan & Wandersman, 1986) in the context of community organization. Through the

development of the Community Organization Sense of Community Scale (COSOC) their findings related the sense of community within organizations to four components: relationship to the organization (i.e., interpersonal bonding and relationships of SOC), organization as a mediator (i.e., connections between the individual, community organization and the broader community), influence of the community organization (i.e., community organization's influence and engagement on a broader community), and bond to the wider community (i.e., individuals attachments to a broader town or city). Through their research they found this scale exhibited high validity and reliability and provided insight in understanding individual's relationship to community organizations.

Quantitatively the research by Hughey, Speer and Peterson (1999) has been used in multiple community organizations. A study by Hughey, Peterson, Lowe and Oprescu (2008) used the scale in a large (N = 561) randomized study which found that sense of community within an organization significantly predicted intrapersonal empowerment. This was done after controlling for basic demographic information and other specific empowering characteristics. Gallant, Arai and Smale (2013) further used the COSOC in a study on serious leisure volunteering and its role in nurturing community. The study linked sense of community to aspects of social cohesion, and found sense of community was more affected by aspects of leisure participation than any base aspects of demographics (Gallant, Arai & Smale, 2013).

Physical activity and sense of community. In the context of community sport organizations, Warner, Dixon and Chalip (2012) explored sense of community in both formal and informal sport. Their qualitative research found that sense of community was very impactful in the context of sport, and noted the importance of voluntary activity and

intrinsic motivation in building a stronger sense of community within both informal and formal sport organizations. Balish and Cote (2014) studied a small community (646 residents) in Nova Scotia that had a prominent history of producing successful athletes. Through a qualitative descriptive framework, Balish and Cote (2014) demonstrated the importance of community influence on athletic development and the links between an individual's physical activity and a broader social network. Further, Balish and Cote (2014) emphasize that a more localized and smaller community affects individual's identity and feeling of belonging more than larger towns and cities. This assertion may be significant in understanding how proximal aspects of community (such as the organization) may be more prominent than more distal aspects (a broader city).

Sport and physical activity can be integral to individuals' sense of self and provide numerous physical and mental health benefits (Downs & Ashton, 2011; Taliaferro, Rienzo, Miller, Pigg & Dodd, 2008). While feeling a sense of belonging to a community can offer similar benefits (Chavis et al., 1986; Gallant, Arai & Smale, 2013), the impact of overlapping a sports atmosphere with a strong sense of community can have significant impacts. Rich, Bean and Apriman (2014) explored the impact of community development through leisure and sport in a small rural community. Sport was highly prominent in building community and developing social connections and identities for many individuals. Through exploring a recreational hockey tournament in a rural community, Rich et al., (2014) identified that individual's identities and social structures went beyond tournament and into the broader community. The social aspects of this recreational hockey tournament (including such behaviour as excessive drinking) led to shared experiences and the development of a sense of community amongst the group

(Rich et al., 2014). MacLean and Hamm (2010) researched volunteer motivations in connection to sporting events, finding that volunteers' connection to the community strongly influenced their motivation to volunteer. This study emphasized that individuals felt they could be active participants in the community (e.g., through volunteering), and the influence that the sense of community had on motivating the individuals to volunteer. Where sense of community can be a powerful motivator for individuals and offer a sense of belonging and relatedness, one area where this has yet to be explored fully is in the context of CrossFit.

CrossFit as a growing method of physical activity also includes a sport and competition experience for many participants, so it is important to understand how these influences can affect community and motivation. Warner, et al. (2012) linked competition to sense of community in both formal and informal sport, finding competition motives can be both internal (i.e., challenge, or fulfilment) and external (i.e., social pressure) to the individual. While Warner et al. (2012) found that occasionally competition can impede an individual's sense of community through elements such as exclusion or social conflict, the research found that a formalized coaching structure can mitigate the negatives of competition in the context of sense of community. This study is important in emphasizing that elements of competition can be salient in increasing an individual's sense of community within a formalized structure. Additionally, in the study of a small communities sporting experience, Balish and Cote (2011) found that a sense of competition within a physical activity environment and community could foster a stronger sense of identity within the group. The findings by Warner et al., (2012) and Balish and Cote (2011) emphasize that a sense of competition through sport (possibly

seen through CrossFit individuals partaking as a sport) may foster identity and social cohesion.

CrossFit and the cultivation of community. One key component of CrossFit is the community that arises around the activity; Through participating in a competition-based system around the workouts it pushes people's intensity and leads to a shared experience that forges strong bonds (Knapp, 2015; Partridge, Knapp & Massengale, 2016). This allows for the workouts to develop shared histories and experiences that give the group a shared emotional connection. While the physical benefits of CrossFit have been explored, this community aspect and the motivational understanding of CrossFitters is a missing piece in understanding this growing physical activity. Knapp (2014; 2015), in two separate studies concerning gender differences in CrossFit, noted a strong aspect of community within the sport that was emphasized from both leaders in the individual gym and from CrossFit's corporate leaders.

A study by Heinrich, Carlisle, Kehler and Cosgrove (2017) interviewed six CrossFit gym owners and coaches to assess their understanding and interpretation for what encouraged participation in CrossFit. The study used an Integrated Theory of Health Behavior Change (ITHBC) which includes various motivational aspects, along with linking to McMillan and Chavis' (1986) sense of community characteristics. While their thematic analysis deductively coded for many aspects of sense of community, their participants were CrossFit coaches and owners themselves, and thus they were relying on second-hand interpretations of why their members participated in CrossFit. Additionally, while the ITHBC includes aspects relating to motivation and social facilitation, it is a model that is primarily focused on health outcomes of behaviour changes, which limits

the connections to intrinsic motivation (Ryan, 2009; Ryan, Weiss, Traxel & Brondino, 2011). Overall, this study by Heinrich et al., (2017) is important because it builds upon the strength of the sense of community in CrossFit, along with connecting a motivational model to participation. Bailey, Benson and Bruner (2017) explored organisational culture within CrossFit, specifically noting that participants' descriptions of the culture of CrossFit remained consistent among new members, veteran members, coaches and owners, indicating one strong community as opposed to smaller sub-cultures.

Further research in a CrossFit gym was done by Pickett et al. (2016) in exploring sense of community in connection to value of various forms of physical activity. One key finding was that sense of community was significantly higher for CrossFitters compared to group-exercise classes, or traditional gym-goers. Finding a significant difference in the sense of community by Pickett et al. (2016) supports the previous assertion by Knapp (2014; 2015) that community is formulated within CrossFit through organizational support for sense of community. This study is important because previous studies (e.g., Warner & Dixon, 2011) explored SOC as an outcome from participation, Pickett et al., (2016) demonstrated that a perceived SOC could encourage participation through valuing the activity higher. A perceived limitation in this is that the focus of encouraging participation was on the value of the fitness product (i.e., coaching, facilities, classes), rather than an inherent enjoyment or motivation for the activity.

Important in relation to this proposed study, Davies, Coleman and Stellino (2016) used SDT to explore specific motivational variables within CrossFit facilities. Significant data showed that individuals found relatedness to be strongly linked to autonomous motivation. One possible limitation the authors put forward is there was no way to assess

the directionality of these variables. Individuals who were motivated autonomously may have spent more time in the gym and developed more sense of relatedness through increased time spent with others, or conversely they felt more connected with others so they spent more time in the gym and felt more autonomous. Additionally, the authors note that the sample was predominantly homogeneous and common demographic characteristics could have formed this basis for relatedness. This study by Davies et al., (2016) connects the value of relatedness to autonomous motivation, however, this is not as conceptually broad as sense of community and does not necessarily involve the organization and the connection broader social community as it was addressed in Pickett et al. (2016). Two areas which are lacking in the research surrounding CrossFit are the interplay between motivation and sense of community; and the use of qualitative research in a CrossFit environment to describe individual experiences and perceptions of sense of community.

Sense of community and motivations to engage in physical activity.

Pickett et al. (2015) discussed how promoting physical activity with a social and community focus could lead to increased participation; however, without understanding motivations to participate, and whether these are related to sense of community, we do not have a full understanding of a relationship between intrinsic motivators and sense of community. While community and social factors are often viewed in a positive light, these forces can serve as intrinsic motivators for some, and extrinsic motivators for others, or a mixture of both (Ednie & Stibor, 2017). A study by Ednie and Stibor (2017) found that extrinsic motivators (such as social pressure) can often develop into intrinsic

motivations in supportive social situations. This builds to the first two hypotheses for this study, in that:

H₁: Individuals who have a higher sense of community within CrossFit will have a higher intrinsic motivation to participate in the activity.

H₂: Individuals who have a higher sense of community within CrossFit will have a higher extrinsic motivation to participate in the activity.

Community elements can affect an individual from a variety of levels (proximal to distal), and these variables may have unique impacts on an individual's motivation. Where sense of community is associated with motivation to participate in physical activity, then this creates opportunities for recreation practitioners to focus on the value of social and community aspects of participation as opposed to focusing purely on health-related benefits. If individuals begin participating in a physical activity with a strong community emphasis, regardless of their initial motivation, it may eventually lead to it being considered leisure by the participants. Evans, Cooke, Murray and Wilson (2014) explored intrinsic motivation in relation to proximal and distal motivational forces, finding that the more proximal to the individual, the more likely to be intrinsically motivated.

As CrossFit is a community-based organization, the COSOC-R is a useful scale for assessing the impact of sense of community for CrossFit participants. The four subscales of the COSOC-R measure sense of community at various levels: at a proximal level (Relationship to Organization), moving through Organization as a Mediator and Influence of the Organization to the most distal form (Bond to the Community).

Exploring the proximal and distal forms of community and their associations with motivation forms the basis of the third hypothesis:

H₃: Sense of community among CrossFitters will be felt most strongly at the most proximal levels of community. Therefore, the community variable closest to the individual (Relationship to the Organization) will be more strongly related to motivation than the variable furthest (Bond to the Community)

While motivating people to begin participating in physical activity is significant, having them sustain their activity for over time is of equal importance (Hawley-Hague et al., 2014). The importance of intrinsic motivation on these activities cannot be overstated, as intrinsically motivated individuals participate more consistently and longer than those who are externally motivated (Neilsen, et al., 2014; Ramey, Lawford, & Rose-Krasnor 2016). Backman and Crompton (1991) explored recreation participants and adherence in physical activity programs, finding intrinsically motivated individuals exhibited higher levels of both behavioural loyalty and adherence. Additionally, elements of sense of community resulting in members' need fulfilment through social support has been shown to increase physical activity adherence and longevity, so the interplay between the two is very important to understand (Davis, Taylor & Cohen, 2014; Neilsen et al., 2014).

Literature Review Overview

While participation in CrossFit can be understood in connection to physical activity, sport and exercise, understanding how individuals conceptualize their participation in CrossFit with characteristics of leisure is important for situating CrossFit in both a leisure context and a motivational context. Exploring the relations between individuals' intrinsic motivation and the concept of sense of community is important to

promote participation in the activity along with understanding why individuals choose to engage in CrossFit.

CHAPTER 3 METHODS

The primary purpose of this study was to examine the relationship between sense of community and intrinsic motivation for individuals who participate in CrossFit. The two research questions explored in this study were:

1. How do individuals who participate in CrossFit define and connect to their gym community?
2. What is the relationship of sense of community with intrinsic motivation to participate in CrossFit?

To focus on most practical approach to our research question, the paradigm of pragmatism was applied to our research questions. Pragmatism typically advocates for the use of mixed methods research, and avoids debate about the nature of “truth” and “reality” to instead focus on what works best to address the research question(s) of interest (Tashakkori & Teddlie, 2003). Pragmatism suggested a mixed-methods approach as it provides us with the most practical approach to addressing the topic of this research (Tashakkori & Teddlie, 2003). While the second research question is best addressed using quantitative data to explore the relationship between sense of community and intrinsic motivation for CrossFitters, qualitative data will aid in understanding why and how CrossFitters feel a sense of community within their gym communities (or not), and how this shapes their motivations to engage in CrossFit. Within the quantitative portion of this work, this research tests the following hypotheses:

- H₁: Individuals who have a higher sense of community within CrossFit will have a higher intrinsic motivation to participate in the activity.

H₂: Individuals who have a higher sense of community within CrossFit will have a higher extrinsic motivation to participate in the activity.

H₃: Sense of community among CrossFitters will be felt most strongly at the most proximal levels of community. Therefore, the community variable closest to the individual (Relationship to the Organization) will be more strongly related to motivation than the variable furthest (Bond to the Community)

Methodology, Method & Design

The research questions in this study were addressed through a mixed-methods design, featuring both quantitative correlational methods and qualitative thematic analysis. While there is some debate over method and methodology of mixed methods, this study abides by the definition that mixed methods research is “the collection or analysis of both quantitative and qualitative data in a single study in which the data are collected concurrently or sequentially...” (Creswell, Plano Clark, Gutmann & Hanson, 2003, p. 212). While there is only one data collection method for this study, there are two methodologies (quantitative and qualitative), and thus this study fits well into Creswell et al.’s (2003) definition of mixed methods research. Using a mixed-method study design offers a breadth of depth and understanding into community and motivation while offsetting the inherent weaknesses in both individual methods (Creswell, 2013). The central premise underlying mixed-methods research is that using both quantitative and qualitative approaches in combination allow for a better understanding than either approach when used alone (Creswell & Plano Clark, 2007).

This study was conducted through online survey questionnaires, which allowed for anonymity in responses and facilitated convenient access to a larger sample of

CrossFitters, required for the correlational analysis, than would have been possible using paper surveys. Typically, online surveys may have issues with non-response rates for specific questions, with Paolo et al. (2000) finding that 27% of electronic survey participants did not respond to at least one question, which is 18% higher than those surveyed using pen and paper methods. In contrast to both conventional surveys and online survey questionnaires, this study had a very low non-response rate of 1.5% of questions asked (between both the quantitative and qualitative questions). As well, a common critique of web-based surveys is that there may be sampling error when compared to conventional surveys (i.e. due to individual access to computers), however Fricker and Schonlau (2002) found that this error was the same for both methods. This finding by Fricker and Schonlau (2002) indicates that whether the survey is web or paper-based, the population responding to the survey will have the same biases on response rates.

As the study focused specifically at individuals' sense of community and motivation, and not changes in these behaviours over time, a cross-sectional design was appropriate for this research. Understanding these important concepts relating to motivation and sense of community will help to expand our knowledge on physically active leisure participation.

Population. CrossFit has expanded significantly since its founding in 2000, with approximately two to four million individuals participating at over 14,000 locations in over 120 countries (Wang, 2016). While it is possible that individuals outside of Atlantic Canada may have seen the survey through social media posts, the primary recruitment strategy was through contacting gyms within Atlantic Canada (N=38) (Appendix A). As

an average affiliate has approximately 100-150 members, this offered approximately 3,900 to 5,850 potential participants. Primary inclusion criteria for this study was holding a current membership at a CrossFit gym. There were no age or gender criteria, and individuals did not need to belong to the gym for any length of time. Respondents were asked to indicate their length of affiliation with CrossFit, with participation in CrossFit varying in the sample from one month to 10 years and nine months ($M =$ two years, 10 months, $SD = 25$ months).

Participants

Participants were 235 active CrossFit members (93 male, 142 female) recruited through online posters (Facebook and Reddit) and through contacts at CrossFit gyms in Atlantic Canada. Participants ranged in age from 16 to 68 ($M = 34.14$, $SD = 9.86$). Coaches ($n = 32$) and owners ($n = 8$) of CrossFit affiliates were not excluded from participation, with five identifying as both coaches and owners. As the survey was distributed online, it was possible for individuals to participate from a variety of geographic locations.

Sampling Design and Recruitment Procedure

The sampling design used in this study was a non-probability convenience sample which was based on participants' willingness and availability to take part in this research by responding to an online survey. Participants were recruited through two methods: firstly, through email to CrossFit gyms in Atlantic Canada (Appendix A) and subsequent distribution of survey information through the gyms by email to their members, and secondly through posted links on popular open-access CrossFit social media websites (Facebook & Reddit).

Email recruitment. The primary researcher contacted local affiliate gym owners within Atlantic Canada (N=38) through email as the primary point for participant recruitment. The email provided information about the study to CrossFit owners who then served as gatekeepers for distribution of information about the study to their members (Appendix B). Any gym that wished to be involved forwarded the email with an invitation letter (Appendix C) and the link to the Opinio survey to their members. This method was chosen due to the researcher's connections within the CrossFit community. Initial contact to affiliate owners began with an email sent out by the primary researcher on September 5th, 2017. The online Opinio-based survey was initially became active on September 5th, 2017 and was kept open until September 27th, 2017 for a total of 21 days. Six of the gym owners responded, noting that they had forwarded information about the research to their members. It is unknown how many besides the six passed on the information to their members. Initial plans were to conduct at most three follow up emails; however these were deemed unnecessary due to the participation rates of the online survey.

Social media recruitment. The second recruitment strategy was through posted links on popular open access CrossFit social media websites (Facebook & Reddit). The invitation letter (Appendix C) and the link to the survey were both posted Reddit's CrossFit page along with Facebook, Instagram and Twitter. The recruitment message was posted on Facebook twice, and once on all other forms of social media. The survey link received several shares on Facebook along with multiple retweets on Twitter.

Data Collection and Measures

Demographic information. Participants first reviewed information about the survey and provided informed consent to participate in the study (Appendix D). Participants then completed a brief demographic questionnaire including basic questions concerning their age and gender (Appendix E). Participants were also asked to provide information about their attendance at a CrossFit gym to provide context for data analysis and so that we could understand the study sample. Participants indicated whether they identified as a CrossFit member, coach or owner in order to assess categorical differences in motivation and sense of community.

Sport Motivation Scale – II. Following completion of the demographic information, individuals completed The Sport Motivation Scale (SMS) (Appendix E). The SMS is the most popular motivational measure in studying sport, having been used with multiple age ranges (Zahariadis, Tsorbatzoudis & Grouios, 2005), recreational and professional athletes (Beaudoin, 2006; Martens & Weber, 2002), and in numerous cultural contexts (Granero-Gallegos, Baena-Extremera, Gomez-Lopez, Sanchez-Fuentes & Abraldes, 2014). Based on the principal theory behind SDT (Deci & Ryan, 1985), the original SMS was composed of seven subscales assessing: amotivation; external, identified and introjected regulation, and intrinsic motivation in three forms (to know, to accomplish and to experience) (Pelletier et al., 1995; Pelletier et al., 2013). Because this scale has been commonly used to assess both intrinsic and extrinsic motivation in sport populations, it is relevant to assessing motivation within a CrossFit population.

Critique of the SMS is focused on the conception of three different versions of intrinsic motivation (Mallet, Kawabata, Newcombe, Otero-Forero & Jackson, 2007), and

the lack of integrated regulation which is a key component of Deci and Ryan's (1985) original SDT. Pelletier et al. (2013) re-tested and revised the scale into the SMS-II which is an 18-item scale as opposed to the initial 28-items; Along with the change in the number of questions, the subscales are re-categorized into: intrinsic regulation, integrated, identified and introjected regulation, as well as extrinsic regulation and amotivated regulation. Based on multiple studies, a factor analysis supported the validity of the SMS-II and research has demonstrated it performs just as well, or better than the original SMS scale. The SMS-II has repeatedly reported good internal consistency, as was evident in the current sample, as determined by Cronbach's alpha: $\alpha = .83$ (Intrinsic), $\alpha = .89$ (Integrated), $\alpha = .78$ (Identified), $\alpha = .65$ (Introjected), $\alpha = .79$ (External), and $\alpha = .85$ (Amotivated). Although the Introjected subscale does not meet the lower level of acceptability for Cronbach's alpha ($\alpha = .70$) (Nunnally & Bernstein, 1994), the primary subscale of focus for this study is intrinsic motivation which demonstrated adequate internal consistency as described by Cronbach's alpha.

Community Organization Sense of Community Scale. The Community Organization Sense of Community Scale (COSOC) was developed by Hughey, Speer and Peterson (1999) to measure the sense of community in connection with organizations at various levels (Appendix #). The COSOC is formulated of four subscales: Relationship to organization, organization as a mediator, influence of the organization and bond to the community. Peterson et al. (2008) investigated the COSOC and developed a revised measure of the scale (COSOC-R) through two different studies: one with 2002 data from two samples of randomly selected community residents, and the other from 2006 data of organization members of community-based programs. While study one held that the

original COSOC had some validity problems with the factor structure, through the second study and overall the COSOC-R had a strongly supported four-factor structure. In multiple studies with various community groups, the COSOC-R holds a strong reliability and validity (Speer, Peterson, Armstead, & Allen, 2013). The COSOC-R obtained good internal consistency with this current sample as determined by Cronbach's alpha: $\alpha = .83$ (Relationship to organization), $\alpha = .75$ (organization as a mediator), $\alpha = .76$ (influence of the organization), and $\alpha = .93$ (bond to the community). The Cronbach's alpha of the entire scale together also demonstrated strong internal consistency at $\alpha = .84$.

Qualitative responses. Following completion of the SMS-II and the COSOC-R, participants responded qualitatively to several questions related to their conceptualization of community (Appendix E). The qualitative questions were developed in discussion with the thesis supervisory committee to address the purpose of the research questions. The questions were developed in order to solicit responses related to participants' perceptions of their reasons for participating in CrossFit and the role of sense of community in their ongoing participation. Written responses are a powerful way for individuals to share their stories and experiences while maintaining the anonymity provided through the online delivery of questions. In an experimental study on the differences between written and spoken responses, while spoken queries offered slightly longer responses, there was no significant difference between the effectiveness of the two methods in terms of data quality (Crestani & Du, 2006).

Data Collection.

Informed consent and demographics. The online survey began with an introduction to the study and invitation to participate. Information necessary for informed

consent was outlined, including the nature of anonymous and voluntary participation, along with the intended use of the data in order to ensure informed consent before the participant continued to subsequent pages (Appendix D). Participants then filled out brief demographic questions (age, gender), whether they identify as a coach, member, or owner; and finally their length of participation in CrossFit.

Scales and written responses. Once completing the informed consent and demographic information, participants continued to a second page which contained both the SMS-II and the COSOC-R. Both scales consisted of a series of one to six Likert scale questions, with the SMS-II containing 18 questions, and the COSOC-R containing eight. Once the two scales were completed, participants continued on to answer three brief short answer questions relating to their motivations and sense of community within CrossFit.

Survey administration. Upon finishing the survey, participants were given the option to submit their email for the chance to win a \$50 Rogue Fitness Gift Card. Participants 'clicked' a link to a separate Opinio-based survey in order to submit their email address. Following the completion of data collection, two individual emails were selected using a random number generator, witnessed by an unbiased third party. Individuals at these email addresses received a prize of a \$50 gift card, sent to them by email.

Data Analysis

Descriptive analysis. Numerical data was transferred to SPSS from Opinio and then assessed for any violations of assumptions associated with statistical tests. Then, basic descriptive analysis of age, gender and length of time participating in CrossFit was

performed to provide demographic information necessary to describe the sample population.

Pearson Correlation coefficients. Mean scores of items comprising the subscales of the COSOC-R and the SMS-II were calculated, along with the COSOC-R's mean score overall. In order to address our research question and primary hypothesis, a Pearson correlational analyses was conducted between the intrinsic motivation scale, and the COSOC-R total and sub-scales. Following this, a partial correlation was performed in order to assess any influencing factors of age, gender, length of time CrossFitting or affiliation with CrossFit.

Thematic analysis. The qualitative responses were transferred from Opinio to NVivo in order to conduct the thematic analysis. As the primary goal of the qualitative analysis was to derive themes from the data, the inductive approach of thematic analysis was chosen for this process (Braun & Clarke, 2006). A six-stage coding process offered a set of guidelines to direct the data analysis process in a systematic manner.

While the coding for thematic analysis is typically an iterative process, indicating that the phases are not totally distinct, the following will outline the general phases prescribed by Braun and Clarke (2006) and how it applied to our data set. In phase one, the researcher became familiar with the data. As the qualitative data consisted of written responses, this phase involved reading and re-reading through the responses. Once familiar with the data, the researcher began phase two, which involves generating initial codes of the data. In order to systematically understand and code the data, the researcher attempted to generate as many initial codes as possible (Braun & Clarke, 2006). Once all the data was initially coded, phase two was considered complete. In consultation with the

supervisory committee, once the initial coding was complete, two of the questions (assessing motivation and reasons) were grouped together for the following phases.

The primary researcher then began the process of phase three, which involved organizing and categorizing codes into themes and sub-themes. Once these themes were conceptualized, the primary researcher consulted with the research supervisor in order to increase the trustworthiness and reliability of the process. As the themes continued to develop, the primary researcher continued to look back upon the codes to ensure consistency within the analysis, further refining the codes as the analysis transitioned to phase four of Braun and Clarke's (2006) analysis structure. This fourth phase allowed for understanding these themes in connection with both the initial codes, and the entire data set as a whole. Once a solid thematic conceptualization of the data was conceived, phase five began which involved defining and naming the individual themes in order to understand their key essence. Finally, once the themes were named, the final write-up was performed in order to provide a coherent and logical understanding of the themes within our data.

Mixed-Methods analysis. Merging the quantitative correlational data and the themes describing the qualitative data provided a means of exploring how and why participants experienced sense of community within their gym settings. This method of triangulation allowed us to identify the motivations and perceptions of sense of community of CrossFitters who reported high levels of intrinsic motivation and sense of community, as compared with other survey respondents. In order to focus on individuals who were high or low in sense of community (relative to other research participants), and high or low in intrinsic motivation (relative to other research participants), scores on the

intrinsic motivation scale and the sense of community scale were divided into upper and lower quartiles. This allowed us to categorize survey participants into one of four groups: Higher SOC/Higher Intrinsic Motivation; Higher SOC/Lower Intrinsic Motivation; Lower SOC/Higher Intrinsic Motivation; and Lower SOC/Lower Intrinsic Motivation.

The most commonly used means of converting continuous variables into categorical variables has historically been a median split (Iacobucci et al., 2015). As the scores for both the sense of community and intrinsic motivation were relatively high for the population in this study, dividing the sample into two categories (i.e., median split) based on scores on these variables would not have resulted in a meaningful distinction between categories. Additionally, while there has been some critique of upper- and lower categorizations of quantitative data with regard to statistical power and analyses (e.g., Cohen, 1983; MacCallum et al., 2002), the theoretical purpose of our study is focused on group differences (in terms of sense of community and intrinsic motivation), having categorical variables facilitates exploration of the research questions (Iacobucci et al., 2015; DeCoster et al., 2009).

Ethical Considerations Summary

While participating in this research study posed few risks, there were some minor risk that individuals may have experienced negative emotions when reflecting on their sense of community or experience participating in CrossFit. However, these risks were no higher than what the participants may experience in their everyday lives. Therefore, according to the terms of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2, 2014), this was considered minimal risk study. Conversely, individuals may have received potential indirect benefits such as being able to positively

reflect on their community and their participation in CrossFit, or feeling a sense of pride and helpfulness for assisting in a research project.

Participants responded anonymously and were not asked to provide any identifying information (aside from their email address if they wished to participate in the incentive draw). Where there were qualitative questions, participants may have unintentionally waived their anonymity by providing identifying information. However, prior to analysis, qualitative data was de-identified by removal of identifying information and the insertion of square brackets ([]) with generic information in its place. When collecting email addresses for the incentive draw, these data were not linked to individual responses and were stored in a separate Opinion-based survey file. Research participants' privacy and confidentiality were respected at all times, with data being available only to the researcher and their supervisor and stored in private and password-protected files. All researchers involved with the project completed the TCPS 2 'Course on Research Ethics' (CORE) which provided them with an overview of ethical research guidelines (Appendix E).

There was no direct conflict of interest issues associated with this study. There was an indirect conflict of interest with the primary researcher being a coach at a local CrossFit gym. This indirect conflict of interest was mitigated through two means: the anonymous nature of online survey research, and the fact that the primary researcher was not involved in direct solicitation or recruitment of members of their 'home' gym. This research received approval from the Social Sciences and Humanities Research Ethics Board on September 01, 2017 (Appendix F).

Researcher Positionality and Reflexivity

The concept of researcher positionality refers to the notion of an individual's world-view and the positions they take on specific research tasks (Creswell, 2013). Connected to this is the concept of reflexivity which refers to examining oneself as the researcher in the context of the specific research relationship. The primary researcher in this study is an avid CrossFitter and a member of the CrossFit community where the research is taking place. This is a form of 'insider research' which refers to projects where a researcher is a member or has a direct connection with the research setting (Robson, 2002). Insider research has significant benefits because insiders have a wealth of knowledge to which outsiders may not be privy (Tedlock, 2000). Another benefit of 'insider research' is that potential participants may feel more comfortable and likely to participate if familiar with the researcher (Tierney, 1994). While it is possible that respondents may have felt compelled to provide responses that they feel would be regarded positively by the researcher, as the study was done anonymously and online, there was no face-to-face interaction with the researcher, and this hopefully alleviated any response bias from individual participants.

CHAPTER 4: RESULTS

This chapter presents findings related to the relationship between sense of community and intrinsic motivation among CrossFit participants. Beginning with a description of the study population, the quantitative data analysis then explores the variables of interest (sense of community, intrinsic motivation) and the relationships between them. The chapter then proceeds to thematic analysis of participant responses followed by triangulation of the quantitative and qualitative data.

Quantitative Data Analysis

Descriptive statistics. A total of 235 active CrossFit participants participated in the study (93 male, 142 female). Participants ranged in age from 16 to 68 ($M = 34.14$, $SD = 9.86$). The duration of participation in CrossFit ranged from one month to 10 years, 9 months ($M =$ two years, 10 months, $SD =$ two years, one month). As well, participants indicated the length of affiliation with their current CrossFit gym ($M =$ two years, one month, $SD =$ one year, seven months). When asked about how many hours the individuals spent per week at their CrossFit gym ($M = 9$ hours, $SD = 8.4$ hours), participant responses ranged from one hour to 62 hours (See Table 1). Participants were asked to indicate whether they identified as a member, coach or owner of a CrossFit gym (See Table 2.).

Table 1.

Descriptive Statistics for CrossFit Participants (N = 235)

	<i>M</i>	<i>Mdn</i>	<i>SD</i>
Age	34.14	33	9.86
Length of CrossFit affiliation (in months)	34.63	29	25
Length of participation at current CrossFit gym (in months)	25.57	23	19.87
Hours spent at CrossFit gym per week (in hours)	9.39	7	11.81

Table 2.

Participant identification as member, coach or owner

	<i>N</i>
Member	200
Coach & Member	18
Coach	9
Owner, Coach & Member	4
Owner	3
Owner & Coach	1
Total	235

Participants responded to the SMS-II and the COSOC-R scales in order to assess motivation and sense of community. Descriptive analyses of these scales is contained in Table 3.

Table 3.

Descriptive Statistics for COSOC-R and SMS-II Scales

	N	M ^a	SD	Cronbach's Alpha
SMS-II				
Intrinsic	235	4.74	.97	.828
Integrated	234	4.13	1.28	.886
Identified	234	4.56	1.09	.783
Introjected	233	4.01	1.03	.654
External	233	1.86	1.05	.788
Amotivation	231	1.40	.83	.855
COSOC-R				
Relationship to Org	231	4.07	1.20	.829
Org as a mediator	230	3.84	1.38	.749
Influence of the Org	228	4.48	1.10	.765
Bond to community	232	4.96	1.16	.933

^aItems in scales measured along a 6-point Likert scale where 1="Strongly Disagree" and 6="Strongly Agree".

Cronbach's alpha was used as a measure of reliability (internal consistency), using Nunnally and Bernstein's (1994) standard of 0.70 as a lower benchmark for coefficient alpha. Cronbach's Alpha was adequate ($\alpha > .70$) for the intrinsic, integrated, identified, external and amotivation subscales of the SMS-II, but below the 0.70 threshold for introjected regulation, suggesting that this subscale was not a reliable measure for this population. With regard to the sample of CrossFitters in this study, participants, on average, had a stronger sense of intrinsic motivation to participate in CrossFit relative to extrinsic or amotivated motivations.

All subdimensions of the COSOC measure of sense of community exhibited adequate reliability ($\alpha > .70$). In relation to sense of community, participant responses indicate strong feelings of feeling bonded to the community, but slightly lower scores related to the relationship to the organization, and the organization as a mediator (bond between an organization and the broader community).

Correlational analysis. In order to answer our first hypothesis (H₁: Individuals who have a higher sense of community within CrossFit will have higher intrinsic motivation to participate in the activity), Pearson's correlation was used to assess the relationship between the intrinsic motivation sub-scale (M = 4.74, SD = .98) of the SMS, and the sense of community measure (COSOC-R, M = 4.33, SD = .91). There was a significant positive correlation between the two variables, $r(225) = .413$, $n = 227$, $p < .001$. Correlations between intrinsic motivation and sub-dimensions of the COSOC-R were also assessed for significant relationships (See Table 4.).

Table 4.

Correlational analysis between intrinsic motivation and sense of community variables amongst CrossFit participants

	SMS-II Intrinsic Motivation Subscale
Relationship to Organization	.380***
Influence of Organization	.324***
Bond to the Community	.199**
Organization as a Mediator	.339***
COSOC-R Total Scale	.413***

* $p < .05$. ** $p < .01$. *** $p < .001$.

In order to test our second hypothesis (H₂: Individuals who have a higher sense of community within CrossFit will have a higher extrinsic motivation to participate in the activity.), a Pearson correlational analysis was also performed between the extrinsic motivational subscale (M = 1.86, SD = 1.05) and the sense of community measure (COSOC-R, M = 4.33, SD = .91). There was a significant positive correlation between the two variables, $r(223) = .313, n = 225, p < .01$. Correlations between the external motivation subscale and the subscales of the COSOC-R were also assessed for significant relationships (See Table 5.)

Table 5.

Correlational analysis between extrinsic motivation and Sense of Community variables amongst CrossFit participants

	SMS-II Extrinsic Motivation Subscale
Relationship to Organization	.310**
Influence of Organization	.215**
Bond to the Community	.113
Organization as a Mediator	.352**
COSOC-R Total Scale	.313**

* $p < .05$. ** $p < .01$. *** $p < .001$.

Using the Pearson Correlation analyses allows us explore our third hypothesis (H₃: Sense of community among CrossFitters will be felt most strongly at the most proximal levels of community. Therefore, the community variable closest to the individual (Relationship to the Organization) will be more strongly related to motivation than the variable furthest (Bond to the Community)) Data addressing this hypothesis is shown in Table 6.

Table 6.

Correlational analysis between intrinsic and extrinsic motivations and sense of community subscales of relationship to organization and bond to community.

	SMS-II Intrinsic Motivation Subscale	SMS-II Extrinsic Motivation Subscale
Relationship to Organization	.380***	.310**
Bond to the Community	.199**	.113

* $p < .05$. ** $p < .01$. *** $p < .001$.

Partial correlation. Descriptive variables were assessed against both the intrinsic motivational sub-scale and the sense of community scale. There were no significant differences found for gender, length of time or affiliation, or hours spent per week at a CrossFit gym. However, correlational analysis did show that age was negatively correlated with both intrinsic motivation ($r = -.170$, $n = 234$, $p = .009$) and sense of community ($r = -.167$, $n = 226$, $p = .012$). To assess whether age impacted the relationship between sense of community and intrinsic motivation we performed a partial correlation controlling for age. When controlling for age, a significant positive correlation still remained between the two variables of interest ($r = .398$, $n = 223$, $p = .012$).

Qualitative Thematic Analysis

Three open-ended questions were asked of participants as part of the survey:

1. While you might participate in CrossFit for many reasons, what is your primary reason?
2. What motivates you to workout at your CrossFit gym? Please provide an example.

3. Do you experience (a sense of) community at your CrossFit gym? If yes, please provide an example. If no, indicate why.

With regard to the qualitative responses, 227 participants responded to the ‘reasons’ question (#1), 217 answered the ‘motivations’ question (#2), and 187 responded to the sense of community question (#3).

Individual responses varied from as brief as one word to paragraph-long responses. Responses to each of the three questions were initially coded separately, as responses to each question were considered to capture distinct data describing participants’ perceptions of their overall reasons for participating in CrossFit, their motivations, and their experiences of community. However, as coding proceeded, it was evident that there was strong overlap among the themes describing the “primary reason” and “motivation” for participating in CrossFit. Within responses to these two questions, the data were described by the themes of: *active living*, *mental health*, *personal fulfillment*, and *social connections*. A fifth theme, relating to *organizational services* was uniquely identified within the ‘motivation’ question. In relation to the question concerning individuals’ feelings related to sense of community, three themes were identified: *belonging*, *mutual support*, and *extending ‘outside’ the gym*. Each of these themes will be described in more detail below.

Reasons and motivations for participating in CrossFit. When participants were asked their ‘reasons’ for participating in CrossFit, four general themes were evident within the data: *active living*, *mental health*, *personal fulfillment*, and *social connections*, as well as a fifth theme related to *convenience and quality* of the gym services as a motivation. Further, while there was overlap among responses to the two questions,

active living was described more prominently as a reason for participating in CrossFit, whereas *social connections* were more commonly named as a motivation for involvement.

Active living. Participants' motives and reasons for participating in CrossFit strongly emphasized participating to improve physical health or leading an active lifestyle. Participants commonly responded with brief statements saying that "Fitness", "Fitness and Health" or "Health" were the primary influences for why they were participating in CrossFit. Among those who provided longer responses, this health and fitness motivation was often connected to individuals' daily lives. For example, one 28-year old female participant stated that she participated for "Personal Fitness for life. I enjoy being able to perform in any sports I like at the drop of a hat without the pain afterwards." Another participant, a 24-year-old female responded stating that she wanted to "be a fitter, stronger, better version of myself. To build self-confidence. To be healthier than yesterday."

The active living aspect of CrossFit was not only connected to leisure, but also to work, with one participant stating that their primary motivation for doing CrossFit was "my health and my job". A 28-year old male participant describes participating in CrossFit to compensate for sedentary behavior at his job. "My job requires me to sit for long periods of time and I truly believe that CrossFit with its intense workouts really allow you to get true fitness." However, several other participants noted that health and fitness improved their safety at work. A 29-year-old male participant stated "My primary reason is to allow me to feel confident with my employment. Knowing I am physically capable of taking care of myself and my co-workers is integral for me."

This concept of health, fitness and active living was also related to how some participants related to the aging process. One participant, a 33-year-old male, stated that he did CrossFit to “stay fit and try to maintain my mobility as I age.” Many other participants shared this sentiment. As one 55-year-old female participant wrote:

To get healthy, I have aging bones and hope that my bones will get stronger as I get older not weaker. Makes me feel stronger and healthier and have a tendency to eat better. All around making a healthier me, feel like younger me.

Among the responses relating to aging, several participants held views challenging stereotypes around the aging process, indicating they believed they could significantly improve their fitness as they age. One participant wrote “I’m 53 years old. I’m stronger and fitter than I’ve ever been”. Meanwhile, a 46-year-old male participant stated his primary motivation for participating was to “Reverse the decline that comes with accepting the myths of the ‘aging’ process.”

Mental health. The active living and fitness-related aspects were not the only health-related reasons evident in the data, as participant responses also focused on mental health. One female participant stated that CrossFit allows her to be “mentally strong and healthy. It improves my overall quality of life through exercise, community, helps mental health/anxiety.” Another female participant said that if she “[missed] more than three days in a row my mental health suffers. It's been a cure for anxiety for me.”.

Several participants connected their participation in CrossFit to their mental health with comments including “Gaining mental health”, “Mental health and feeling good”, or “Positive impact on mental health”. Stress relief was also a prominent emphasis within participants’ responses. Several participants offered “stress relief” as their sole

reason for participating, with one stating that it was “because it is an incredibly effective destresser”.

Personal fulfillment. A theme that emerged through participant responses to reasons and motivations was related to achieving goals, meeting challenges, and personal enjoyment of the activity. One 34-year-old female participant stated that she was “motivated by the feeling I get when I am in the gym and I am giving the best I have.” Her reasons for participating were further stated as CrossFit “[helping] me to be what I think is my best self right now”. These personal goals were further emphasized by one participant who stated that through CrossFit, they could “prove to myself that hard work and effort can get you everything you dream of”.

For some participants, this element of personal fulfillment is connected to their overall life satisfaction and wellbeing, with one 36-year-old female participant saying:

For example, last week was really bad at work. Everything was falling apart and I spent the day triaging. All I wanted to do was go home and veg, but I went to a class instead. The WOD was intense and had exercises I loathe. I pushed through and left feeling physically tired, but mentally renewed. I was able to problem-solve some issues from work, and I was able to sleep that night. I also left feeling like I had accomplished something. The WOD would have been impossible for me a few months ago, but I completed it.

This participant’s day was fulfilled through her participation in a CrossFit class and the workout positively impacted other elements of her day, such as her sleep and problem-solving abilities.

One prominent aspect relating to personal fulfillment that motivated participants in CrossFit was an element of challenge. As one participant stated, the challenges involved with the workouts provided a “feeling of accomplishment” when they were able to “finish a workout [they] didn’t think [they] were going to be able to finish” or through “setting new [personal records]”. A 42-year-old male participant described his motivation as a “constant need to improve”; however, this participant also indicated as he got more advanced, his progress slowed, stating “as the improvements become fewer and further in between, it becomes more difficult to stay motivated”.

Social connections. While the ‘motivations’ questions solicited more responses related to social connections, the theme was evident within responses to both questions. Data related to social connections offers insight to an individuals’ relationships within the gym that were able to influence their motivation to participate in CrossFit. One 28-year old female participant offered an example, writing:

My friend I met at CrossFit, we exchanged numbers and text each other to make sure we both go. And if one of us misses a day, we let them know we missed our buddy and how the workout went. Also, the coaches notice when you miss your usual classes and might jokingly call you out on it, but they also encourage you and make you feel like a badass!

This quote illustrates both social connections between two members attending the gym, as well as a personal social connection with staff.

As CrossFit is typically performed in a class-based structure, the time of day in which an individual worked out became important as they were able to interact with the

same social group. One 44-year old female participant described the importance of her class time as:

I love the camaraderie of my class and that I can go in at six in the morning with my gym friends, no judgement, great support. Great atmosphere, I feel very fit from this program - I think I would be very bored at a conventional gym now.

Another 40-year old female participant also made note of specific individuals with whom she attends class:

There is no comparing one's abilities to another. If I am not the last to complete a workout, I am second last and I really do not care. I do not feel inadequate in any way.

Inclusion. One sub-theme that was prominent throughout participant responses was an element of inclusion within the socialization at the CrossFit gyms. Several responses noted that a diverse group of individuals participated. One response from a 29-year old female participant identified this as her motivation, stating "The people there motivate me. There are people of all shapes and sizes working out and striving for better. It makes me feel like I can too, push myself and get stronger." This inclusion in a community was an important motivation for multiple participants, with one 37-year old female stating that "I don't often get to attend classes and nothing makes me feel more included or part of something than when people seem genuinely happy to see me and get to workout together." and another 42-year old male saying that "community hands down is the best motivation for me".

One participant, a 37-year old female CrossFit coach, strongly emphasized an inclusionary aspect to her participation in CrossFit. She stated her motivations as:

I love the people. I get hugs from members every day. I feel completely welcome, and integral in the community. I have a lot of fun watching people get excited about fitness, goals, and completely changing the way they feel about themselves.

Convenience and quality. While this theme was not evident within the ‘reasons’ question, within the ‘motivations’ prompt, an emergent theme related to motivations to participate in CrossFit because of proximity, ease of access, facility design, and the quality of the facilities and staff. One 25-year old female participant invokes several of these items in her response: “It is handy to where I live, which is the primary reason. But there is quite a bit of space at the gym, and great equipment compared to other CrossFit gyms nearby.” Another 23-year old female participant echoed this sentiment stating “It is well maintained. The coaching is excellent. I have been to other gyms and I am always impressed by how well my gym is organized, programmed and coached”.

Specifics of the coaching structure and programming within the gym organization were also mentioned as motivations, with one 23-year old female participant saying “The coaches and programming are fantastic. The equipment is clean and well-kept and the atmosphere is just right”. Another 34-year old male really emphasized that the organizational coaching aspect:

The majority of coaches at [my CrossFit gym]—weightlifting and mobility is second-to-none here and each coach's experience/approach really runs the gamut when concerned with scaling approach, motivational style, cues, training, and strategy. The owners and coaches really emphasize safety too, which I'm a stickler for; lift smarter, not harder!

Sense of community in CrossFit. Individuals were asked whether they felt a sense of community at their CrossFit gym, and to provide an example to support their response. Three themes describe the data: *Belonging*, *Mutual Support*, *Extending 'Outside' the Box*. The theme relating to *Belonging* also had a prominent component of individuals who felt that 'cliques' had developed within the sense of membership and belonging within the group, of which they did not feel a part. These themes are further described below.

Belonging. Throughout participant responses, the theme of 'belonging' was evident, describing feelings of connection and acceptance within the group that fostered a sense of belonging. One prominent aspect of this was knowing everyone's names. One 57-year old female participant used the metaphor of the TV show about "regulars" at the bar *Cheers* to describe her CrossFit gym: "[it's] kind of like Cheers, where everyone knows your name". A 32-year old male participant emphasized the importance of connections through names when "you walk into the gym, people know your name, they talk to you about both fitness and personal life."

This feeling of belonging offered many individuals a second family, or a place for them to feel part of a community. A 33-year old female participant stated "When I moved to a new city I knew almost nobody and joining a CrossFit gym gave me a 'third place' where I was able to meet people with similar interests and make friends". Several other participants described the connections within CrossFit as being familial. A 20-year old female referred to her CrossFit gym as "Everyone becomes a little family. Everyone supports everyone no matter if they are at an elite level or must scale most movements. No matter what everyone gets a cheer". A 43-year old female linked the feeling of

belonging with a motivational aspect by stating that “The community is what keeps me coming back, day after day. I love these people. They are my second family. My tribe”.

Within the data related to ‘belonging’, there was some evidence that some individuals felt like they were not included in this ‘family’. Study participants described CrossFitters as comprising a specific community and identity and some did not feel they belonged. As one 32-year old male participant stated: “I don’t believe I fit well with most of the other clientele at my gym”. Another 38-year old male participant linked sense of community to identity, stating that “Although there is a strong sense of overall community, I don't identify myself as a 'CrossFitter' so I don't quite gel with many members”. A 26-year old male participant attempted to sum up the sense of community at his gym, while not indicating if he was a part of these groups or felt excluded:

There is a strong sense of community in the gym, but even within the community there are cliques and groups of people who keep to themselves in a 'we are the elites/popular members' mannerism.

Mutual support. Throughout participant responses, there was a strong element of mutual support when asked their feelings on sense of community within their gym. This mutual support was demonstrated through bonds between individual members that were established through shared experiences in order to offer emotional support. A quote by a 42-year old male participant says that he “Daily shared suffering with the same pool of people creates a sense of community”. This mutual support aspect is rooted in working together for some members, as one 35-year-old female says:

We are all working together to complete a task. Folks are at different stages in life and in fitness but we support and encourage one another no matter what. Nobody leaves until everyone is done the workout.

This element of support is evident for some members from the first day they walk through the door, as a 36-year old female participant states:

I knew one person at the CrossFit gym when I joined. Other members quickly introduced themselves and provided encouragement and camaraderie throughout the workout. I thought it was a one-time thing because I was new, but members are always supportive and friendly.

One 28-year old female indicated a lengthy response discussing the forms that this mutual support could take on, in both highs and lows of her life:

When something in my life happens the gym is where I go to relax, blow off steam, and re-center my focus. Whether it be a heartbreaking event like the sudden tragic suicide of a good friend of mine and I felt distraught and lost; or the joyful news that I was going to be an auntie, as my best friend was pregnant—the gym is where I go to be with friends, my CrossFit family. We support each other through life's highs and lows. We may just be a group of people that all workout in the same building.

Extending 'Outside' the Box. The aspects relating to sense of community were not just present within the CrossFit gym itself. Many of these relationships extended into activities 'outside' the box. These activities varied in scope, including important life milestones, such as weddings, to smaller social events. One participant wrote “My CrossFit gym made up the majority of my wedding attendees and they planned my baby

shower”. Another participant indicated that “The members of my box often get together to do things outside of the gym, like parties or watching a UFC fight at someone’s house or go for breakfast after a Saturday morning WOD.”

The sense of community that extends outside the gym also connects to the theme of mutual support, as several of the examples offered are members offering support outside the gym. One 22-year old female says that her CrossFit gym:

all support each other's activities outside of CrossFit. If a member has an important game or event going on we will all go and support them. Another example is a member had a baby and her husband was away at work and could not be there for there for the first month so we took turns staying and helping her out.

Another 20-year-old female participant offered several supportive examples, writing “On a whim, I have helped people move, talked about romantic relationships and school struggles, and chow down after a hard workout. The relationships go beyond the walls of the gym.”.

Mixed-Methods Triangulation

As our primary research questions were focused on relationship between sense of community and intrinsic motivation, merging participants’ quantitative and qualitative data allowed for deeper knowledge of these relationships. This phase of analysis involved categorizing participants based on their scores on the intrinsic motivation and sense of community measures and re-examining the qualitative data in terms of similarities and differences between participants in the same category in comparison with other categories. In other words, categorization of participants facilitated identification of

exemplary “cases”. Typically, quantitative data is categorized into higher and lower subcategories using a median split of the data (Iacobucci et al., 2015; DeCoster et al., 2009). Where our data had means that were generally high, along with slight skews in a positive direction for both the COSOC-R and SMS-II, a median split may not have separated individuals into groups with distinct characteristics. In order to attempt to more clearly define distinct motivational and community groupings, our analysis, the top and bottom quartiles of the data was used to identify exemplary cases based higher and lower categorizations of the variables of interest.

The median of the COSOC-R total scale was 4.375 on a six-point scale, with individuals in the bottom 25% scoring under 3.75, and those over 75% scoring greater than 5.00. For the SMS-II Intrinsic Motivation subscale, the scale median was 5.00 on a six-point scale, with the bottom 25% scoring under 4.33 and those over 75% scoring 5.33. As the theoretical purpose of our study is focused on group differences (in terms of sense of community and intrinsic motivation), converting continuous variables to categorical variables allowed comparison of variations in sense of community and intrinsic motivation and associated qualitative responses. While these groups are labelled as a high and low categorization, it more closely relates to a ‘higher’ and ‘lower’ category, as even in the ‘low’ group, the mean for sense of community and intrinsic motivation was still relatively high.

Following categorization into quartiles based on the sense of community and motivational measures, a subset of participants who had a complete score on both the COSOC-R and the SMS-II were further divided into four separate cases:

1. High Sense of Community + High Intrinsic Motivation (N = 37),

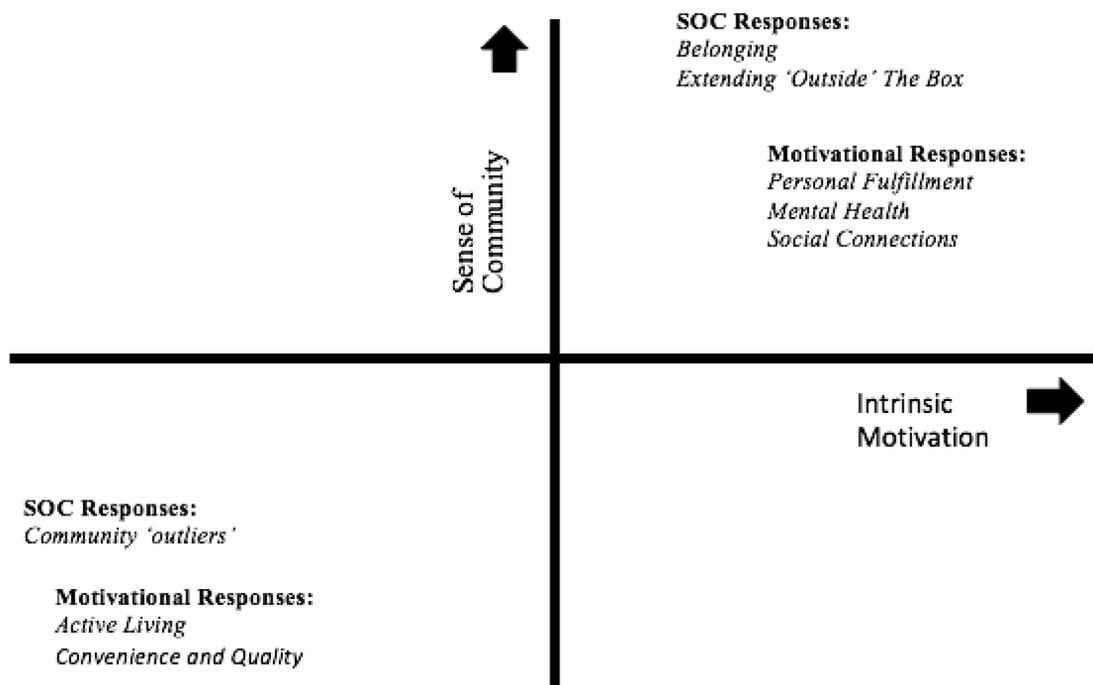
2. High Sense of Community + Lower Intrinsic Motivation (N = 8),
3. Lower Sense of Community + High Intrinsic Motivation (N = 9), and
4. Lower Sense of Community + Lower Intrinsic Motivation (N = 33).

Based on these four case groupings, the participants' written responses that were previously thematically coded were re-examined to explore any between group differences in order to provide further contextualization for the research questions.

Participants who were categorized into being high in both sense of community and intrinsic motivation category provided written responses in terms of motivations or reasons for participating in CrossFit coded to *personal fulfillment* (e.g., "It allows me to express myself through fitness"), or *social connections* (e.g., "The support from the coaches, and members in your class, make working out more fun"). In terms of sense of community, individuals more often offered responses that were coded to *belonging* (e.g., "It's more of a family") or *extending outside the box* (e.g., "We attend each others' important events, e.g., weddings, birthdays"). This is in a distinct contrast to the participants grouped in the "lower" category in terms of both sense of community and intrinsic motivation, who were more likely to offer responses coded to *active living* (e.g., "Fitness") as their primary motivator. As well, all of the *convenience and quality* (e.g., "It is 2 minutes away from my house") responses fell within individuals who were grouped as low in both sense of community and intrinsic motivation. This 'low' group also consisted of the community outliers whose responses suggest that they recognized that there was a community within the gym they attended, but did not feel a part of that community.

In terms of the mixed cases of higher intrinsic motivation and lower sense of community (and vice versa), very few individuals fell into these categories. This potentially suggests overlap between the two variables of interest, intrinsic motivation and sense of community. Within the small sample size of mixed grouping, there was no discernable pattern of individual responses (See Figure 1.).

Figure 1. Four Quadrant Grid of Thematic Responses



Summary

A significant positive correlation was found between CrossFit participants' intrinsic motivation and their sense of community, as well as extrinsic motivation and sense of community. Four primary themes were identified in connection to participant responses on their motivations and reasons for participating in CrossFit: *Active Living*, *Mental Health*, *Social Connections* and *Personal Fulfillment*. A fifth theme was

specifically added for the motivational question relating *Convenience and Quality* being a motivator to participation. In connection to participant responses surrounding sense of community in their CrossFit gyms, the primary researcher identified three key themes: *Belonging, Mutual Support, and Extending 'Outside' the Box*. Participants were grouped into high and lower categories for sense of community and intrinsic motivation to assess any unique differences in the thematic coding of responses. Individuals high in both sense of community and intrinsic motivation typically gave responses coded to personal fulfillment, social connections, and mental health, whereas those low in both reported motivations related to active living and convenience and quality of the gym. Findings in relation to the research questions and previous literature will be discussed in the following chapter.

CHAPTER 5: DISCUSSION

The overall purpose of this study was to examine the relationship between sense of community and intrinsic motivation for individuals who participate in CrossFit. The study addressed two primary research questions:

1. How do individuals who participate in CrossFit define and connect to their gym community?
2. What is the relationship of sense of community with intrinsic motivation to participate in CrossFit?

This chapter will discuss the findings of this study in relation to these research questions. Firstly, the quantitative and qualitative data will be discussed in relation to the first research question, including elements of triangulation between the two methods. Next, the implications of the findings of the qualitative thematic analysis of written responses will be discussed in connection with the second research question. Findings in the present study will be situated within the current literature, and implications will be discussed as they pertain to the field of leisure and recreation.

In examining the demographic information within our sample, there were more females who responded to the survey (N = 142) than males (93). Anecdotally, this gender distribution closely resembles typical participation and membership rates within CrossFit gyms. Previous research by Nlerl and Hughes (2016) emphasizes that women may be more likely to participate in social and group exercise classes.

Motivation and Sense of Community

The first research question explores the relationship between sense of community and intrinsic motivation to be physically active among individuals who participated in

CrossFit. Correlational analysis confirms the first hypothesis associated with this research question, which was that individuals who have a higher sense of community within their CrossFit gym will have a higher intrinsic motivation to participate in CrossFit. As it was theorized that community variables could also motivate individuals extrinsically, hypothesis two was also confirmed where extrinsic motivation was correlated with overall sense of community, and three out of the four COSOC-R subscales (the exception being bond to community). When exploring individual's qualitative responses, primarily the responses given in relation to motivation were also external (e.g., active living). There were elements within the qualitative data which would trend align in some ways with 'internal' forms of extrinsic motivation (e.g., mental health, social connections), and intrinsic motivation (personal fulfillment).

Prior to discussing the implications of this finding in connection to the literature, it must be acknowledged that a causal link between sense of community and intrinsic motivation cannot be drawn through a purely correlational analysis. While evidence in the literature would support the assertion that the sense of community affects individuals' intrinsic and extrinsic motivation, it is also possible that individuals who felt more intrinsically motivated felt more included and felt a higher sense of community within their CrossFit gyms. While a correlational analysis can provide information about associations among variables, directionality cannot be inferred or implied. This critique is similar to the critique of Davies et al., (2016) in that the effect of relatedness on autonomous motivation could be bidirectional.

Relatedness and elements of sense of community. One key aspect of motivation as described within self-determination theory is the concept of 'relatedness', which

describes people as seeking a sense of connection to others through their activities (Deci & Ryan, 1985). While the element of relatedness is more narrow, it holds some overlap with conceptualizations of sense of community. As relatedness refers to close personal interactions with others; sense of community incorporates this aspect to connect to a larger group. Elements of relatedness can be seen within aspects of the shared emotional connection and fulfillment of needs dimensions of sense of community, but sense of community also offers important aspects of influence and membership. Within Self-determination theory, while optimal motivation is formed through relatedness, autonomy and competence, several scholars cite relatedness and autonomy as being somewhat dichotomous and not always occurring together (Hofstede, 2001; Hodges, Finnegan & Perry, 1999). This study supports Deci & Ryan's (1991) assertion that aspects of autonomy and relatedness can support each other in connection to intrinsic motivation. As previously mentioned, these connections between elements of relatedness and intrinsic motivation offer connections to specific elements of sense of community; where these components of relatedness have significant overlap with fulfillment of needs and shared emotional connections (McMillan and Chavis, 1986; Peterson et al., 2008). Additionally, relatedness is shown to be the most prominent variable of SDT in an individual's internalization of motivations (Deci & Ryan, 1991), therefore connecting this construct with community variables allows for a more holistic understanding of individual motivations.

Within the triangulation component of the data analysis, individuals higher in sense of community and intrinsic motivation often listed intrinsic motivators as reasons for engaging in CrossFit (i.e., *Personal Fulfillment*) or motivations that may be classified

as closer to intrinsically motivated on the SDT continuum (*Mental Health, Social Connections*). CrossFitters with lower sense of community and intrinsic motivation scores (relative to others in the study) were motivated by their desire to maintain an active lifestyle and characteristics of the gym itself, such as its location or the quality of coaching staff. While they identified a strong community within the gym, they often did not feel part of that community. While it is not surprising that individuals high in intrinsic motivation listed intrinsic reasons for participating, and those with relatively lower scores of intrinsic motivation noted extrinsic motivators as reasons for engaging in CrossFit, this research highlights strong alignment between sense of community and intrinsic motivation. This finding also serves to distinguish between two distinct population segments who may be participating in CrossFit. While intrinsically motivated individuals are theorized to participate and adhere longer, those low in intrinsic motivation and sense of community were still participating, indicating other variables and motivators for participation.

The present study was the first to qualitatively assess a population of CrossFitters in relation to their motivations to participate and feelings of community. Several of the themes describing motivations to participate directly relate to key conceptualizations of SDT through competence, autonomy and relatedness. While previous researchers such as Mannell and Kleiber (1997) emphasized the aspects of autonomy within intrinsic motivation and physical activity, our participant themes did not explicitly confirm this. Where intrinsic motivation as described by SDT has complete autonomy for participation, aspects of social pressures may have played a role in participants' motivations. Through participants' responses, these external pressures from social

support were evident through various individual responses referencing how they felt they would 'be missed' or 'stand out' for not attending classes or participating in CrossFit.

Ednie and Stibor (2017) linked intrinsic motivation to exercise commitment, but also found that extrinsic aspects of motivation could develop into intrinsic motivators given a socially supportive environment. Further, competence and relatedness can be seen through the themes of *personal fulfillment* and *social connections*. Elements of personal fulfillment linking to competence have been shown in the participant responses through individuals stating they participated to feel better, or meet personal goals. Relatedness and social connections showed links in our participant responses through individuals stating that they enjoyed having similar friends and a social group that shared similar values.

Participation for health versus enjoyment. Our findings support Warner, Dixon and Chalip's (2012) emphasis on the importance of community in sport. While the present study was focused primarily on participants engaging in physical activity, as there are some competitive elements within CrossFit, there is some overlap with elements of sport. Warner et al., (2012)'s study utilized recreational sport as one means to assess elements of community within a physical activity environment. While Warner et al. (2012) do not explicitly describe their participants as engaging in leisure, these individuals were participating recreationally, were not paid to do so, and were participating by choice. Where individuals are not being paid, or competing professionally, this level of recreational sport is most likely experienced as leisure activity. Much like in this present study, Warner et al., (2012) found that participation could build social connections and a sense of community through physical activity.

When comparing participants with relatively higher and lower intrinsic motivation, individuals who were low in intrinsic motivation more often described their motivations for participating in CrossFit as *active living*. These responses align with extrinsic motivations, whether they be an individual listing ‘health’ or ‘fitness’, or the several participants who stated that they performed CrossFit to be more physically-able for their occupations. The theme of *active living* within the qualitative data describing motivations confirms that many individuals participate in CrossFit in order to boost their physical health or fitness. Through a service provider and marketing outlook, this allows for organizations to view two distinct groups who may be participating in CrossFit: those who are high in community and intrinsic motivation, and those who are there for other reasons such as facility quality and physical fitness.

As well as these physical benefits, the impacts on participant *mental health* were prominent within responses. Physical activity has been shown to be correlated with positive mental health outcomes (Herman, Hopman & Sabiston, 2015), and linked to healthy stress-coping strategies (Cairney, et al., 2014). This study provides a qualitative sample which confirms that physical and mental health benefits can be strong motivators for individual participation. Both leisure (Craike & Coleman, 2010), physically-active leisure (Arai, Mock & Gallant, 2011), and participation in a community setting (Olesen & Berry, 2011) have all been shown to have positive impacts on individuals’ mental health outcomes.

As previously mentioned, there exists a grey area between the motivational dimensions of intrinsic and extrinsic motivation, and overlap occurs between the two. Where individuals often stated social aspects for being motivated, it is possible that

individual motivations may occur more within an integrated to identified form of regulation, and while these are considered extrinsic motivators, they trend towards intrinsic motivation, linking to Ednie and Stibor (2017) who state that extrinsic motivators can become intrinsic. This study showed significant overlap for motivational variables amongst individuals who participate in CrossFit, as well as several unique motivational responses for participation (*convenience and quality*). It may be that a purely intrinsic motivational framework may not be sufficient in describing participant motivations.

These social aspects within CrossFit could intrinsically motivate individuals, but it could also be a form of exterior social pressure and external motivation. Aspects of social external motivation has been researched in relation to forms of physical activity (e.g., Bollok, Takacs, Kalmer & Dobay, 2011), indicating that individuals can be motivated to participate in physical activity by social opinions.

CrossFit Community

In terms of CrossFitters' sense of community variables, mean scores on the sense of community scale were higher (M=4.33) than Peterson et al's sample of randomly selected community organization volunteers (2008) (M=3.8). Our findings help link together sense of community and motivational variables in a CrossFit population; previous studies looked at aspects of community (Pickett et al., 2016), or motivation (Davies et al., 2016), but this present study attempts to connect these two variables. Pickett et al., (2016) explored sense of community in several forms of physical activity, and found a CrossFit gym to have a significantly higher sense of community than traditional exercise classes. While the present study did not use a control group to

compare feelings of sense of community, a strong sense of community evident within the quantitative data supports Pickett et al.'s (2016) findings of high sense of community within CrossFit.

Through the themes that developed within our study, CrossFitters typically defined community as feelings of *belonging* and *mutual support* amongst their peers. Additionally, many of the relationships that occurred were not exclusive to the CrossFit gym, but extended outside into the broader community. Pickett et al., (2016) offered a foundational study in finding sense of community was significantly higher in a CrossFit population when compared with traditional gyms and exercise classes. Our present study offers context to these findings by adding qualitative data describing why the CrossFit community can be so impactful. CrossFit participants described both belonging and mutual support as key aspects to the feeling of sense of community within their gym. The two aspects of belonging and mutual support tie in closely to aspects of McMillan and Chavis' (1986) foundational model of a sense of community. Being a 'member' in a community has been shown to be a powerful influence on an individual's lives both in and outside of physical activity (e.g., Hartig & Viola, 2016; Rich, Bean & Apramian, 2014), this study situates the strength of membership on CrossFit participation. In terms of answering our third hypotheses relating to the proximity of influence of community, both intrinsic and extrinsic motivation was more strongly related to more proximal influences of community rather than more distal. As the 'bond to community' variable is relating to linking the individual to the geographic community, it may be that the CrossFit is more specific to the activity than any geographic barriers.

Through the mixed-methods triangulation, individuals in our study were classified into four separate categories: High SOC/High IM, Lower SOC/Lower IM, High SOC/Lower IM, and Lower SOC/High IM. As the individuals in this study generally scored higher on both the sense of community and the intrinsic motivation measure, these categories do not exemplify cases ‘high’ and ‘low’ in intrinsic motivation and sense of community, but rather ‘very high’ and ‘high’. Through these groupings, the qualitative data and their codes were examined for patterns within the qualitative themes. Individuals high in sense of community and intrinsic motivation more often described *personal fulfillment*, *social connections* or *mental health* as motivators for participation in CrossFit as. This is in contrast to individuals low in both sense of community and intrinsic motivation who were more likely to offer *active living* as their motivation for participation. Elements of *personal fulfillment* have distinct connections to Deci & Ryan (1981)’s conceptualization of intrinsic motivation. As individuals who ranked high on intrinsic motivation on the SMS-II tended to provide qualitative responses related to personal fulfillment as a motivator to participate in CrossFit, these findings support the validity of Pelletier et al., (2008)’s scale. Further, the elements of social connections and mental health lend evidence to the links made by Iwasaki et al., (2001) in connecting social support, physically-active leisure and stress buffering as several participant quotes linked participation directly affected their ability to manage stress.

Community in and outside of the gym. The theme of *extending outside the ‘box’*, where participants’ social relationships with people from CrossFit extend outside the gym in contexts unrelated to CrossFit, has been mentioned briefly before by Bailey et al., (2017) in a study of organizational culture within CrossFit. This phenomenon

additionally links strongly to Balish and Cote's (2014) research findings, which emphasize the link between individuals' physical activity and their broader community networks. Participants offered numerous examples of activities that were unrelated to CrossFit but were an extension of the CrossFit community that had developed, such as socials, weddings, bachelor parties, etc. The aspects of CrossFit that expand outside the gym offer a unique perspective on community where individuals' 'community' is fluid and not necessarily limited to the CrossFit gym as a physical space, but the people inside the gym.

The participants identified these social events as occurring through two primary means: facilitated by CrossFit coaches or the gym, and organically developing through friendships within the gym. Besides suggested 'coffee' hangouts, dinners, and barbeque socials, these events could also developed through CrossFit-organized social opportunities, such as CrossFit competitions, or volunteering in charity outreach. Because CrossFitters are primarily adults, CrossFit gyms are a unique setting where adults can go to make friends and build their social networks. A strong social network among adults has been linked to positive mental and physical health (Berkman, Glass, Brissette & Seeman, 2000) and greater self-esteem (Valkenburg, Peter & Schouten, 2006). As many adult friendships are shifting into online and social media forums such as Facebook (e.g., Niland, Lyons, Goodwin & Hutton, 2015), this study suggests CrossFit as a potential setting for explore in-person friendship and socialization among adults.

As outlined previously, friendship and social relationships can flourish among participants engaged in physical activity. Social relationships related to physical activity can consist of an external-based relationship around the activity (e.g., supporting friends

or family), or a participation-based relationship (friendships within the activity) (Darlow & Xu, year). Within this data, the primarily relationship structure was participation-based, with participant responses focusing primarily on the other individuals with whom they participate. It is important to note that not all qualitative data affirmed that participants experienced a sense of community within CrossFit. Interestingly, there were no direct assertions that individuals did not feel a sense of community within CrossFit, however several individuals stated that they felt excluded or chose not to engage with this community.

Several participants in this study offered '*convenience and quality*' related responses for their motivations and reasoning for participating in CrossFit. These responses were often related to the amenities that were offered within the facility. These forms of motivation suggest that the convenience and quality of a fitness facility may motivate participation in CrossFit. Potwarka, Kaczynski, and Flack (2008) mention that amenities in park facilities may be more important than proximal location. While Potwarka et al.'s (2008) study focused on free recreation access to parks, understanding how amenities affect CrossFit participation and gym choice is one area to explore in relation to participation.

Significance

This research project served to link together important aspects of individual motivations to participate in CrossFit and sense of community in a physically-active leisure context. The association between sense of community and intrinsic motivation evident in this research suggests that there is potential to motivate individuals to participate in physically-active leisure by cultivating sense of community among

participants. Through the mixed-method approach in the present study, quantitative data connecting sense of community and intrinsic motivation was supported by qualitative data about motivations to participate and how community impacts participation. This knowledge creates opportunities for recreation practitioners to focus on the value of social and community aspects of participation in physically-active leisure as opposed to purely health-related benefits.

Firstly, this thesis helps to contribute to both the inter- and intra-personal social psychology of leisure by exploring individuals' motivations to participate in CrossFit. Intrinsic motivation is foundational to how leisure is conceptualized and defined. Based on the high scores of CrossFitters on the intrinsic motivation measure, this research suggests that CrossFit aligns in at least some ways with leisure for many participants. While high levels of intrinsic motivation help to position CrossFit as a leisure activity, very few of the participants identified themselves as coaches or owners, which indicates that participants were primarily recreational participants. Individuals did reference primarily extrinsic motivators (e.g., health and fitness) in the qualitative responses. Further research should be done, perhaps through focused interviews, to explore more deeply participants' motivations in participating. Further, even if many of the motivations may be external, evidence suggests that in a supportive community environment these extrinsic motivators can often develop into more intrinsic motivations (Ednie & Stibor, 2017). This is a potential area for further research.

Additionally, as previously mentioned, health and fitness were often given as motivators to participate which may relate to elements of 'self-work'. Additionally, some individuals offered motivations and examples for participation in relation to their

employment (Maquire, 2008). As CrossFit has a significant military and law enforcement following (CrossFit Law Enforcement, n.d.), understanding how these individuals see CrossFit, whether it be leisure, or a ‘self work’ or ‘training’ could be an interesting area for future research. These unique responses build upon the assertion that a purely intrinsic motivational framework may not be sufficient to describe individual participation in CrossFit. Secondly, the present research furthers understanding of the social aspects of physically-active leisure in relation to an individuals’ sense of community. Through situating CrossFit within the leisure literature, this thesis offers a foundation for avenues into researching the social benefits of CrossFit as leisure.

The qualitative themes that developed surrounding participation in CrossFit suggest a connection to serious leisure. Elements of challenge, goal-setting, commitment and identity were all prominent throughout participant responses. While this study was not focused on serious leisure, these qualities all align with Stebbins’ (1992) conceptualization of serious leisure as committed, ongoing leisure associated with significant personal and social benefits for participants. CrossFit has already been noted to require a great deal of commitment, both physically and mentally, along with permeating into numerous aspects of a participant’s everyday life (Dawson, 2015). Other high intensity physical fitness activities such as white water kayaking (Bartram, 2001), roller derby (Breeze, 2013), and mountain bike racing (Shafer & Scott, 2013) have been connected to serious leisure, and further research could also position CrossFit within this realm.

Implications for practice. Practice implications of this research are focused on the uniqueness of the CrossFit community and how to apply it to other physical activity

settings. Partridge et al., (2016) noticed a significant difference in sense of community among CrossFit and traditional group exercise classes. The current study is also significant in relating individual motivations to adherence to physical activity. As previously mentioned, individuals who are intrinsically motivated are more likely to adhere to a physical activity (Backman & Crompton, 1991). The current study offers understanding of key aspects of the CrossFit community through the themes that describe the qualitative data in this study, and can be further explored and potentially applied to improving adherence and participation in other forms of physical activity. For example, planning specific events that may help the community extend outside the gym and increase the social connections could increase adherence.

The mixed-method analysis identified two distinct segments of CrossFitters: Those who participate in CrossFit for community and intrinsic motivational reasons, and those who participate for more externally-based motivations, such as convenience and quality of the facilities and coaching. As both groups are still participating in CrossFit, it's important to consider marketing separately to both groups in order to foster more participation in the activity.

Limitations

While the present study is fairly robust in terms of addressing the research questions, several limitations should be discussed in terms of methodology. Firstly, as with any study, there is always the risk of a response bias, especially when dealing with such constructs as motivation and sense of community. There exists the risk that individuals who are either more intrinsically motivated, or feel a higher sense of community, were more likely to participate in the survey. As previously mentioned, Nlerl

and Hughes (2016) found that women are more likely to participate in social and group exercise classes. The sample in the current research was predominantly women, and this may have possible implications on sense of community as a motivation to participate in CrossFit. Future research could explore gender differences in terms of sense of community and motivation in CrossFit.

As we did not ask for individuals to identify their location or gym, there is a possibility that a majority of the sample was from one CrossFit gym. As individuals who participate in CrossFit may have common experiences within the gym, or within specific classes they attend at the gym, there is potential that such common experiences could impede the independence within the sample. This factor could have resulted in forms of nested data which may have impacted analysis. As well, this could have resulted in a skewed sense of community within the sample, for example, if a majority of survey respondents were affiliated with a gym that cultivated a stronger sense of community among its members than other gyms. As the sense of community data was slightly skewed towards high scores of sense of community, along with previous research supporting the strength of the CrossFit community, this research suggests that CrossFitters tend to feel a strong sense of community.

One way to address the limitation of response bias would be through purposefully selecting individuals who have stopped CrossFitting and assessing their motivations for both why they initially participated and why they ceased. Beidenwig (2014) explored individual barriers and reasons for ending participation in an organized physical activity program, finding reasons for discontinuing participation often cited as not being motivated and having poor health. Understanding how the elements of community (or not

feeling a part of this community) could impact individuals who stop CrossFitting could be a future area of research. As well as assessing individuals who have stopped CrossFitting, a comparison group of purely non-CrossFitters would have helped to build more contextualization of the data in terms of sense of community and intrinsic motivation. Exploring why individuals choose not to participate (or feel excluded from participation) in CrossFit may also provide unique insight into those who do. While previous studies have compared sense of community of CrossFitters with non-CrossFitters and found significant differences, further studies could add in elements of motivations within these comparisons to address the limitations in the current study.

While the qualitative data allowed us to explore CrossFitters' motivations in more detail than was possible using scaled measures, collecting qualitative data through an online survey was limiting in the sense that we could not ask anyone to expand on their responses. While many participants offered very robust responses, some offered responses of just one word or phrase. Further qualitative research into CrossFitters' motivations and sense of community, using methods such as interviews or focus groups, would be helpful in order to potentially obtain deeper and more detailed responses. One possible limitation in the qualitative responses is that intrinsic motivation concepts may have been too abstract for participants responding in an online study. This may have resulted in participants more conveniently responding with external motivators that are more salient on a day-to-day basis.

One important aspect to note surrounding the qualitative data is that while participants were encouraged to respond regarding the entirety of their experiences within CrossFit, most likely the responses were related to their most recent experiences due to

the cross-sectional design. Future research could explore participants' motivations and sense of community through a longitudinal design in order to reduce this limitation.

Future Directions

While this mixed-methods study offers a strong foundation for understanding sense of community and motivation within CrossFit, further research should expand upon these findings. The correlational aspect of our quantitative data could be further strengthened by a follow up study employing an experimental design. Additionally, future research might also consider qualitative methodologies designed to elicit deeper data to allow for more probing into participant responses in order to foster rich and full descriptions of participant motivations and sense of community. While participants scored very high in intrinsic motivation in the SMS-II, but often stated external motivators for their participation, this incongruity could be further explored through in-depth individual interviews or focus groups.

Future research into a CrossFit population could explore sense of community at specific CrossFit locations or even class times. Additionally, understanding those who do not participate in CrossFit, or are excluded from participation should be explored. As the current study explored motivation for individuals who are currently participating in CrossFit, further exploring this motivation in regards to individuals starting versus continuing participation in CrossFit could be researched.

CrossFit has been identified as being 'cultish' (Dawson, 2017) and requiring a great deal of dedication and commitment (Koteles, Kollsete & Kollsete, 2016). This all-encompassing nature is purported to relate not just to the physical results, but also the social world that is generated through the activity (Hertz, 2014). As this 'cultish' identity

has been connected to CrossFitters' lives outside of the gym, it connects with the elements of our qualitative themes emphasizing participation in events and activities away from CrossFit. Additionally, the elements of *belonging*, *social connections* and *personal fulfillment* could be explored in terms of their connection to the serious leisure characteristics of personal and social identity, unique ethos and social world, and durable personal and social benefits (Stebbins, 1982).

Researchers engaged in group settings such as CrossFit must reflexively consider how their experience in the setting (or lack of it) influences their work. In this research, the primary researcher was considered an 'insider' in the CrossFit community. This insider status meant that the researcher was familiar with terminology and norms unique to CrossFit, which aided in the coding process.

Summary

The purpose of this study was to explore the relationship between sense of community and intrinsic motivation for individuals who participate in CrossFit. This study used quantitative scales and open-ended qualitative questions in a mixed-methods approach to address our two research questions:

1. How do individuals who participate in CrossFit define and connect to their gym community?
2. What is the relationship of sense of community with intrinsic motivation to participate in CrossFit?

235 CrossFit participants responded to an online survey, and analysis was performed through a Pearson Correlation coefficient and qualitative thematic analysis. Triangulation of the data was achieved using a quartile split to categorize participants as having higher

and lower intrinsic motivation and sense of community, and exploring associated trends within the qualitative data.

Data analysis indicated a correlation between both intrinsic motivation, extrinsic motivation and overall sense of community. Through a thematic analysis of the open-ended responses, individuals offered motivations relating to active living, mental health, personal fulfillment and social connections. In relation to the participants' understanding of their community, themes surrounding belonging, support and activities 'extending' outside the gym were evident within responses. A mixed-method triangulation found that participants who were high in intrinsic motivation and sense of community offered more motivational responses coded to *personal fulfillment*, *social connections* or *mental health*. This was in a distinct contrast to individuals low in intrinsic motivation and sense of community who offered responses more prominently coded to active living.

This project is significant in linking together key aspects of motivation and sense of community, along with situating CrossFit within a physically-active leisure context. This research provides a foundation to linking several large overarching concepts, along with providing a means for participants to share their experiences within CrossFit. Understanding the value of community in a physical activity context is important to promote the value of social and community interactions in physically-active leisure as opposed to purely health-related benefits.

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Appendix A
CrossFit Gym Contact List

Gym	Location	Contact
CrossFit Kinetics	Halifax, NS	info@crossfitkinetics.com
CrossFit Bardown	Hammonds Plains, NS	brian@crossfitbardown.com
CrossFit Exertion	Hammonds Plains, NS	info@crossfitexertion.net
Blended Athletics CrossFit	Dartmouth, NS	dave@blendedathletics.com
Rocky Lake CrossFit	Bedford, NS	info@rockylakecrossfit.com
CrossFit Halifax	Hammonds Plains, NS	Tannaya11@hotmail.com
CrossFit Basinview	Bedford, NS	dmacdougall@crossfitbasinview.com
CrossFit OnSide	Clayton Park, NS	info@crossfitonside.ca
CrossFit Bluenose	Truro, NS	crossfitbluenose@gmail.com
CrossFit Hubtown	Truro, NS	info@crossfithubtown.com
CrossFit Clan	New Glasgow, NS	jasonm@clancrossfit.ca
902 Athletics CrossFit	Bridgewater, NS	Jholland8989@gmail.com
Sou'Wester CrossFit	Shelburne, NS	info@souwestercrossfit.ca
CrossFit Per Ardua	Sydney, NS	cfperardua@gmail.com
CrossFit Jono	Sydney, NS	keely@crossfitd10.com
D12 CrossFit	Glace Bay, NS	info@d12crossfit.ie
Apple Valley CrossFit	Coldbrook, NS	info@applevalleycrossfit.com
CrossFit Summerside	Summerside, PEI	crossfitsummerside@gmail.com
Rapier CrossFit	Summerside, PEI	Contact through website
Court 6 CrossFit	Charlottetown, PEI	jtremer@hotmail.com
782 CrossFit	Charlottetown, PEI	Michael.ives@netlegal.cacour
CrossFit Charlottetown	Charlottetown, PEI	info@crossfitcharlottetown.com
CrossFit Quispamsis	Quispamsis, NB	crossfitquispamsis@gmail.com
CrossFit Saint John	Saint John, NB	info@crossfitsaintjohn.ca
Fundy CrossFit	Saint John, NB	info@fundycrossfit.ca
CrossFit YQM	Dieppe, NB	Crossfityqm2013@gmail.com
Maritime CrossFit	Moncton, NB	info@maritimecrossfit.com
CrossFit Dieppe	Dieppe, NB	info@crossfitdieppe.ca
CrossFit Moncton	Moncton, NB	info@crossfitmoncton.com
CrossFit Biometrics	Fredericton, NB	info@biometricssc.com
CrossFit Pound	Miramichi, NB	Brad-farah@hotmail.com
L'Asile CrossFit	Tracadie, NB	Lasilecrossfit@hotmail.com
CrossFit Chaleur	Bathurst, NB	info@crossfitchaleur.ca
CrossFit F&L	Edmunston, NB	Luccyr129@gmail.com
CrossFit Made of Steel	Grand Falls, NB	crossfitmadeofsteel@outlook.com
CrossFit Islander	Saint John's, NFLD	info@crossfitislander.ca
CrossFit 709	Saint John's, NFLD	repsfitness@outlook.com
CrossFit Heavy Timber	Cornerbrook, NFLD	crossfitheavytimber@gmail.com

Appendix B
CrossFit Email Recruitment Letter



Dear Box Owner,

My name is Brandon Blenkarn, and I am a coach and member at a CrossFit gym in Halifax. Aside from this, I am also completing a Masters degree in Leisure Studies at Dalhousie University. My study focuses on the role of sense of community and intrinsic motivation within CrossFit. While we, as CrossFit enthusiasts, may believe that sense of community motivates people to participate in CrossFit, there is little scientific literature in the area. Such evidence may be useful when gyms are trying to persuade new members or businesses to take part.

I am hoping you will help me distribute this survey to your members so that we can expand our knowledge on why people participate in CrossFit and the community associated with CrossFit. The survey will take approximately 20 minutes to respond thoughtfully, and can be completed at home at respondents' convenience. Anyone who participates in the survey is eligible for a random draw of a \$50 Rogue Fitness gift card.

As a thank you for your help, I will be sending out a summary report of my findings to your gym which you can distribute and share among your staff and members.

The following link will take you directly to further information and the survey itself:

If you have any questions, don't hesitate to contact me at brandonblenkarn@dal.ca

Cheers,
Brandon Blenkarn

Appendix C
Recruitment Message



Do you belong to a CrossFit gym?

If so, you are eligible to participate in a research study investigating relationships between community and motivation.

Participating in the research study will take approximately 20 minutes of your time, and will contribute to understanding motivation and community within CrossFit.

As a thank you for participating, you have the option of submitting your email to be entered into a draw for one of two \$50 Rogue Fitness Gift Cards.

To participate in the study or access more information, please follow the link. Note that your participation is voluntary and that you can discontinue your involvement at any time.

INSERT LINK TO OPINIO

Thank you. Questions can be addressed to the primary researcher, Brandon D. Blenkarn, at brandonblenkarn@dal.ca

Appendix D
Informed Consent Letter



CONSENT FORM

Wanting to Sweat Together: Relationship between Community and CrossFit

You are invited to take part in a research study being conducted by me, Brandon Blenkarn, a graduate student in Health and Human Performance, as part of my Masters degree at Dalhousie University. The purpose of this research is to understand connections between sense of community and motivation on participation in CrossFit. This study is open to any individual who is currently a member at a CrossFit gym.

As a participant in the research you will be asked to answer several questions in a survey conducted over the internet using Opinio software. Three questions ask for an open-ended responses, while the others ask you to pick a number corresponding to a specific answer.

Your participation in this research is entirely your choice. You do not have to answer questions that you do not want to answer, and you are welcome to stop the survey at any time if you no longer want to participate. All you need to do is close your browser if you choose to stop participating. However, if you do complete and submit your survey, and change your mind later, I will not be able to remove the information you provided because the surveys are anonymous, so I would not know which one is yours.

Information that you provide to me will be collected anonymously, which means that there will be no specific questions asked in the survey that ask for identifying details such as your name or email address. There are questions that ask for open-ended answers, and any identifying information you give in response to those questions will be removed before the data is analyzed. Quotes that do not identify any participant may be used in publications and dissemination. Only my supervisor and I will have access to the survey data. I will describe and share general findings in presentations, my written masters thesis and related publications.

In the context of full disclosure, the primary researcher is a member at a CrossFit gym. However, even if you know the primary researcher, there is no way for him to identify your survey results or to know whether or not you participated. Please remember that all questions are anonymous and there are no questions that ask you to identify the gym to which you belong.

The risks associated with this study are no greater than those you encounter in your everyday life. For example, if you have have negative experiences you may experience negative emotions when reflecting on your involvement in Crossfit. There will be no direct benefit to you in participating in this research and you will not receive compensation. However, the research might contribute to new knowledge on community

and motivation in CrossFit. If you would like to see how your information is used, I will disseminate the results to your gym owners in order for them to share the information with you. Further, as a thank you for participation, you have the option of submitting an email address, which will be entered into a randomized draw for one of two \$50 Rogue Fitness gift cards. The email address information will be stored separately from your anonymous survey information.

You should discuss any questions you have about this study with the primary researcher, Brandon Blenkarn (brandonblenkarn@dal.ca). Please ask as many questions as you like. If you have questions later, please feel free to contact me or my supervisor, Karen Gallant (Karen.gallant@dal.ca). Once the study is complete, a summary report will be sent to CrossFit gym owners for distribution, as well as re-written for submission to the CrossFit Journal.

If you have any ethical concerns about your participation in this research, you may contact Research Ethics, Dalhousie University at (902) 494-1462, or email ethics@dal.ca (and reference REB file # 2017-4287).”

If you would like to complete the survey, please follow the link here. Note that submission of a completed survey indicates your consent to participate in this research.

Appendix E
Survey

Community Motivations in CrossFit

Thank you for participating in this brief study on the influences of motivations and sense of community on participation in CrossFit. Your assistance is very valuable to us, and we greatly appreciate your contribution to the research. Below are a few brief demographic questions which will assist in framing our research questions. You may feel free to not answer any that you do not wish to; all your answers will be kept confidential and anonymous, and your name or email will never be connected to your responses.

What is your age?

What is your gender?

Do you identify as a member, coach or owner at your CrossFit Gym? (Choose all that apply)

Member Coach Owner

How long have you been a member at your CrossFit gym? (In Years & Months)

_____ years _____ months

How many classes do you attend at your CrossFit gym per week?

Zero 1 to 2 3 to 4 5 to 6 7+

How many hours would you say you spend in your CrossFit gym in an average week?

If you wish to be submitted into a draw for a Rogue Fitness Gift Card, please provide your email address (your email address will not be connected to your responses)

WHY DO YOU PARTICIPATE IN CROSSFIT ?

Using the scale below, please indicate to what extent each of the following items corresponds to one of the reasons for which you are presently practicing your sport.

Does not correspond at all	Corresponds a little	Corresponds moderately	Corresponds a lot	Corresponds exactly
1	2	3	4	5
6				

WHY DO YOU PARTICIPATE IN CROSSFIT ?

1. Because it gives me pleasure to learn more about CrossFit
1 2 3 4 5 6
2. Because it is very interesting to learn how I can improve
1 2 3 4 5 6
3. Because I find it enjoyable to discover new performance strategies
1 2 3 4 5 6
4. Because CrossFit reflects the essence of who I am
1 2 3 4 5 6
5. Because through CrossFit, I am living in line with my deepest principles
1 2 3 4 5 6
6. Because participating in CrossFit is an integral part of my life
1 2 3 4 5 6
7. Because, in my opinion, it is one of the best ways to meet people.
1 2 3 4 5 6
8. Because it is one of the best ways I have chosen to develop other aspects of myself.
1 2 3 4 5 6
9. Because I have chosen CrossFit as a way to develop myself
1 2 3 4 5 6
10. Because I would feel bad if I was not taking the time to do it
1 2 3 4 5 6
11. Because I feel better about myself when I do
1 2 3 4 5 6
12. Because I would not feel worthwhile if I did not.
1 2 3 4 5 6

13. Because people I care about would be upset with me if I did not
1 2 3 4 5 6

14. Because people around me reward me when I do
1 2 3 4 5 6

15. Because I think others would disapprove of me if I did not.
1 2 3 4 5 6

16. I used to have good reasons for doing CrossFit, but now I am asking myself if I should
continue
1 2 3 4 5 6

17. I don't know anymore; I have the impression that I am incapable of succeeding in CrossFit
1 2 3 4 5 6

18. It is not clear to me anymore; I don't really think my place is in CrossFit
1 2 3 4 5 6

Using the scale below, please indicate to what extent you agree or disagree with the statement

Strongly Agree **1** **2** **3** **4** **5** **6** **Strongly Disagree**

- 1. People have a real say about what goes on in my CrossFit gym 1 2 3 4 5
6
- 2. People in my CrossFit gym respond to what I think is important 1 2 3 4 5
6
- 3. Being in my CrossFit gym allows me to be around important people 1 2 3 4 5
6
- 4. My CrossFit gym helps me to be a part of other groups in this town/city 1 2 3 4 5
6
- 5. My CrossFit gym is respected in this town/city 1 2 3 4 5
6
- 6. My CrossFit gym gets a lot done in this community 1 2 3 4 5
6
- 7. I like living in this town/city; this is the place for me 1 2 3 4 5
6
- 8. This town/city is a good place for me to live 1 2 3 4 5
6

The following questions ask you to read the question and then give a thoughtful written response. Note that any obvious identifying information will be anonymized before analysis. Thank you for your time in answering these questions.

While you might participate in CrossFit for many reasons, what is your primary reason?

Do you experience (a sense of) community at your CrossFit gym?

Likert Scale –Agree/Disagree

If yes, please provide an example, if no, indicate why

What motivates you to workout at your CrossFit gym? Please provide an example

Appendix F
TCPS Certificate

**PANEL ON
RESEARCH ETHICS**
Navigating the ethics of human research

TCPS 2: CORE



Certificate of Completion

This document certifies that

Brandon Blenkarn

*has completed the Tri-Council Policy Statement:
Ethical Conduct for Research Involving Humans
Course on Research Ethics (TCPS 2: CORE)*

Date of Issue: **19 October, 2016**

Appendix G
Research Ethics Approval Letter



Social Sciences & Humanities Research Ethics Board

Letter of Approval : September 01, 2017

Brandon Blenkarn
Health\Health & Human Performance

Dear Brandon,

REB #: 2017-4287 **Project Title:** Wanting to Sweat Together: Relationship between Community and CrossFit

Effective Date: September 01, 2017 **Expiry Date:** September 01, 2018

The Social Sciences & Humanities Research Ethics Board has reviewed your application for research involving humans and found the proposed research to be in accordance with the Tri-Council Policy Statement on *Ethical Conduct for Research Involving Humans*. This approval will be in effect for 12 months as indicated above. This approval is subject to the conditions listed below which constitute your on-going responsibilities with respect to the ethical conduct of this research.

Sincerely,

Dr. Karen Beazley, Chair