GETTING THE BALL ROLLING: SPORT AND LEISURE TIME PHYSICAL ACTIVITY PROMOTION AMONG INDIVIDUALS WITH ACQUIRED PHYSICAL DISABILITIES

by

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Abstract

Despite the physical health and psychosocial benefits, few individuals with acquired physical disabilities participate in sport. This manuscript-based thesis is composed of four studies that aim to provide a more nuanced understanding of the theoretical and contextual factors that influence sport participation among this population.

Study 1 investigated the predictive value of the Health Action Process Approach (HAPA). The HAPA model has been used among a variety of populations; however, it has not been used to predict sport participation among adults with acquired physical disabilities nor has athletic identity been considered as a supplement to the model. Results of the structural equation model demonstrated that the modified HAPA model explained 19% of the variance in sport participation.

Study 2 explored how athletic identity was lost or (re)developed after acquiring a physical disability. Eleven adults with an acquired physical disability participated in semi-structured interviews. Participants’ stories of sport pre- and post-injury fit into three distinct narratives. The non-athlete narrative focused on physical changes in the body; the other two narratives primarily focused on present sport behaviour.

Study 3 explored the influence of the perceived self and disability on participation in specific types of leisure-time physical activity (LTPA), such as sport, after injury. Fourteen participants completed semi-structured life story interviews. A structural and content analysis of participant narratives revealed that beliefs about disability and comparisons to peers were influential in motivating individuals to consider some LTPA while rejecting others, such as sport.
Study 4 explored peer athlete mentors’ responses to four mentee narratives. A narrative analysis of the responses revealed that peer athletes generally tailored their responses and information to the vignette’s specific view of disability. However, deeply negative and resistant narratives elicited more variant responses from the peers, including responses that accepted the resistance to those that challenged their perceptions of disability.

As a whole, this dissertation enables a more nuanced understanding of the theoretical and contextual determinants of sport among individuals with acquired physical disabilities. This dissertation will better inform and identify opportunities for interventions that increase sport participation among this population.
Co-Authorship

The manuscripts presented in this thesis are the work of Marie-Josée Perrier. Ms. Perrier was responsible for developing the: research questions; research tools including questionnaires, interview guides and vignettes; collecting, entering and analyzing data; and writing the drafts of all 4 manuscripts. The co-authors of the manuscripts included in this dissertation are Dr. Amy Latimer-Cheung (manuscripts 1-4), Dr. Shane Sweet (manuscript 1), Dr. Shaelyn Strachan (manuscripts 1-2), and Dr. Brett Smith (manuscripts 2-4).

Manuscript 1: *I act, therefore I am: Athletic identity and the Health Action Process Approach predict sport participation among individuals with acquired physical disabilities.* This manuscript is published in Psychology of Sport and Exercise and is presented according to the journal guidelines. Dr. Latimer-Cheung provided input with regards to the design, statistical analyses, interpretation of results and editorial feedback on the manuscript. Dr. Sweet provided input regarding data analyses and interpretation of the results. Dr. Strachan provided input regarding the research design and interpretation of the results.

Manuscript 2: *Narratives of athletic identity after acquiring a permanent physical disability.* This manuscript has received a tentative acceptance, pending revision, from Adapted Physical Activity Quarterly. It is presented according to the journal guidelines. Dr. Latimer-Cheung provided input with regards to the design, analysis, interpretation of results and editorial feedback on the manuscript. Dr. Smith provided input regarding the
analysis, interpretation of results and editorial feedback on the manuscript. Dr. Strachan provided input regarding the research design and interview guide.

**Manuscript 3:** *Narrative environments and the capacity of disability narratives to motivate leisure-time physical activity among individuals with spinal cord injury.*

This manuscript is currently under review at Disability and Rehabilitation and is presented according to the journal guidelines. Dr. Smith provided input regarding the analysis, interpretation of results and editorial feedback on the manuscript. Dr. Latimer-Cheung provided input with regards to the interpretation of results and editorial feedback on the manuscript.

**Manuscript 4:** *Moving stories: peer athlete mentors’ responses to mentee narratives of sport and spinal cord injury.* This manuscript is in preparation for Patient Education Counseling and is presented according to the journal guidelines. Dr. Latimer-Cheung provided input with regards to the design, analysis, interpretation of results and editorial feedback on the manuscript. Dr. Smith provided input regarding the design, analysis, interpretation of results and editorial feedback on the manuscript.
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1.1 General Introduction

The World Health Organization (2011) estimates that 16-19% of individuals have a physical disability. Given that individuals with acquired physical disabilities are living longer than previous generations, they are more susceptible to chronic diseases related to aging and sedentary lifestyles (e.g. Robbins, Vreeman, Sothmann, Wilson, & Oldridge, 2009; Warburton, Sproule, Krassioukov, & Eng, 2012). In addition to poor health outcomes, individuals with acquired physical disabilities have an increased risk of negative psychosocial outcomes including depression, isolation, and lower quality of life post-injury (e.g. Martin Ginis, Jetha, Mack, & Hetz, 2010; Migliorini, New, & Tonge, 2011; Motl, Suh, & Weikert, 2010).

A growing body of literature supports the relationship between engaging in leisure time physical activity (LTPA) and positive health and psychosocial outcomes among individuals with acquired physical disabilities (Martin Ginis, Jetha, et al., 2010; Motl & Snook, 2008). Furthermore, research with specific groups within the acquired disability population, such as spinal cord injury (SCI) and amputees, revealed that sport is a key source of moderate and vigorous leisure time physical activity (LTPA) post-injury (Bragaru, Dekker, Geertzen, & Dijkstra, 2011; Martin Ginis, Arbour-Nicitopoulos, et al., 2010). In particular, individuals who participate in sport post-injury are active for longer
durations and at higher intensities than individuals who participate in other forms of LTPA, such as recreational wheeling or other aerobic exercises (Martin Ginis, Arbour-Nicitopoulos, et al., 2010). Despite the numerous physical health and psychosocial benefits of sport, only 4% of individuals with physical disabilities currently participate in sport (Martin Ginis, Arbour-Nicitopoulos, et al., 2010). Therefore, theory-based interventions are sorely needed to draw individuals with acquired physical disabilities to sport.

However, there is a paucity of theoretical research examining sport participation among adults with an acquired physical disability. This gap in research presents a challenge to the development of sport participation interventions among individuals with acquired physical disabilities. There are a number of models that identify how to develop talent within sport (Bruner, Erickson, Wilson, & Côté, 2010; Côté, Horton, MacDonald, & Wilkes, 2009); however, these models are only relevant for individuals who are currently involved in sport. As such, no theoretical frameworks address how individuals initiate sport participation after acquiring a disability. While no theoretical models have been validated specifically for sport participation among individuals with acquired physical disabilities, a handful of studies have used behavioural theories to examine determinants of LTPA, which includes both sport and exercise, for individuals with acquired physical disabilities (e.g. Arbour-Nicitopoulos, Martin Ginis, & Latimer, 2009; Chiu, Lynch, Chan, & Berven, 2011; Latimer & Martin Ginis, 2005; Martin Ginis et al., 2011). However, these models explain a relatively low amount of variance in LTPA.
Therefore any research with the theoretical determinants of sport must also account for additional behavioural determinants and larger contextual factors to better understand sport participation among this population.

Research that examines physical activity identities, such as athletic identity and exerciser identity, suggests that these identities are connected to both short and long-term behaviour (Lamont-Mills & Christensen, 2006; Strachan & Brawley, 2008; Strachan, Woodgate, Brawley, & Tse, 2005). A few studies have explored athletic identity among a subset of individuals with acquired physical disabilities. The first study demonstrates that individuals with SCI endorse lower levels of athletic identity than their peers in the general population (Tasiemski, Kennedy, Gardner, & Blaikley, 2004). In accordance to the larger literature in the general population, athletic identity and sport participation are correlated (Tasiemski & Brewer, 2011). Therefore, the role that athletic identity plays in the context of other theoretical determinants of sport participation can reveal important avenues for future interventions to promote engagement in sport. Moreover, understanding why some individuals lose an athletic identity, particularly in comparison to individuals who (re)develop an athletic identity post-injury, may have important implications for sport promotion among individuals with acquired physical disabilities.

While athletic identity may be important for sport behaviour, the larger contextual influences that inform this identity, as well as perceptions of disability, cannot be overlooked (Smith & Sparkes, 2009a). Narratives can be defined as discourse that connects related abstract ideas, signs and events (Lieblich, Tuval-Mashiach, & Zilber,
These narratives shape individuals’ understanding of the world, identities and the lived experience (Smith & Sparkes, 2008). As such, these larger narratives representing “disability”, “athlete”, and “sport” can have important implications for sport participation as they teach individuals about the possibilities that exist for people with acquired physical disabilities (Smith & Sparkes, 2004, 2008). However the content of these athletic identities, particularly in the context of disability narratives, is not well understood nor do we understand how these narratives are circulated.

Clearly, sport presents an important opportunity to enhance LTPA participation and ultimately health and well being among adults with acquired physical disabilities. However prior to creating sport participation interventions, we must first understand the determinants of sport and particularly, how they operate in the larger context of disability. Answering these questions will better inform and identify opportunities for interventions that increase sport participation among this population.

1.2 Overview and Purpose of the Dissertation

The objective of this dissertation is to provide an understanding of the theoretical and contextual factors that influence sport participation among individuals with acquired physical disability by: (1) testing the Health Action Process Approach and athletic identity for the prediction of sport participation; (2) exploring how athletic identity can be lost or (re)developed after acquiring a physical disability; (3) exploring the importance of disability narratives and narrative environment on sport and LTPA post-injury; and (4)
further exploring how peer athlete mentors respond to individuals who use different
disability narratives and express hesitance or resistance to sport.

The next section of this dissertation consists of a literature review that examines
the current literature pertaining to the four objectives listed above. Four manuscripts
follow the literature review; each manuscript will address one dissertation objective. The
first manuscript addresses the relationship between sport participation and its’ theoretical
predictors, as outlined by the Health Action Process Approach (Schwarzer, 1992), as well
as athletic identity, a possible contextual determinant of sport. This manuscript uses
structural equation modeling to test this theoretical framework. The second manuscript
uses narrative inquiry (Smith & Sparkes, 2009b) to address how and why athletic identity
is lost or (re)developed after acquiring a permanent physical disability. This approach
allows for the exploration of athletic narratives in the context of disability. The third
manuscript addresses the importance of the narrative environment in circulating disability
narratives and broader LTPA participation post-injury. This manuscript uses narrative
inquiry to explore disability narratives and their impact on LTPA. The final manuscript
explores how peer athletes respond and promote sport in response to different disability
narratives. This manuscript uses narrative inquiry, with vignettes, to address the
dialogical nature of narratives and behaviour (Frank, 2010). The final chapter of the
dissertation is a general discussion that highlights the key findings of each manuscript as
well as the findings as a whole. Given the relevance of the results for sport promotion
practice, important implications and future directions are discussed.
1.3 References


Chapter 2

Literature Review

2.1 Introduction

This chapter reviews the literature that explores the theoretical and contextual factors related to disability and participation in leisure time physical activity (LTPA), including sport. The chapter is divided into 5 sections. The first section (2.2) provides a brief overview of the selected model of disability that was used throughout the dissertation. The second section (2.3) briefly highlights the physical health and psychosocial outcomes of disability and the role of LTPA, namely sport, in promoting health and positive psychosocial outcomes, such as increased life satisfaction. The third section (2.4) provides an overview of the use of theory in disability and LTPA research. The fourth section (2.5) highlights the role of identity, from a cognitive psychology perspective, in LTPA and sport promotion. The fifth section (2.6) highlights the contributions that narrative theory can make in sport and disability research. The final section (2.7) presents the rationale for the mixed methods approach used within this dissertation.
2.2 Understanding Disability: Tensions within Sport and Exercise Psychology

Definitions and models of disability have been the source of a contentious debate among scholars and activists since the disability movement began in the 1960s (e.g. Gill, 1994; Whalley Hammell, 2006). Until the 1980s, the World Health Organization defined disability as the point where health ends (2002); this definition is representative of the medical model, which views disability as an individual problem. From this perspective disability resides within individuals as a form of impairment (Whalley Hammell, 2006). As a contrast, the social model defines disability as the result of socio-structural barriers that oppress individuals (Dewsbury, Clarke, Randall, Rouncefield, & Sommerville, 2004). These two models have dominated past discussions about the nature and root “cause” of disability.

More recently, the World Health Organization (WHO; 2002) has extended their definition of disability to extend beyond health. Rather, the WHO defines disability as a complex interaction between the body and the society in which one lives. This concept is embodied in more recent models of disability that consider the embodied experience of impairment in addition to the socially constructed nature of disability. The interactional model focuses on the relationship between internal factors within the individual, such as physiological impairment, and the wider context in which individuals live, such as the social, political and cultural context (Albrecht, Seelman, & Bury, 2001; Dewsbury, et al., 2004). However, it is important to note that internal factors extend beyond the nature and severity of individuals’ impairments. Rather, internal factors also include personal
abilities, personality and attitudes towards impairment. The wider context includes the attitudes of others in society towards impairment, social support systems, and the accessibility of the environment (Albrecht, et al., 2001). The interactional model also incorporates broader factors such as the current cultural and economic issues that can influence how disability operates in society. As such, disability is not strictly based in impairment as it is in the medical model. Rather impairment is a necessary, but not sufficient, condition for disability in the interactional model (Albrecht, et al., 2001). In this sense, impairment exists within broader sociocultural, political or historical contexts that construct disability (Albrecht, et al., 2001).

Within this dissertation, disability is defined using the interactional model. As such, disability is understood as the experience of individuals with acquired physical impairments, such as spinal cord injuries (SCI) and amputations, in the broader sociocultural, political and historical context of North America and the United Kingdom in the 21st century.

2.3 Wheeling in the Right Direction: LTPA and Sport Among Individuals for Acquired Physical Disabilities

When compared to the general population, individuals with acquired physical disabilities have a higher risk for many negative physical health outcomes, such as cardiovascular disease (e.g. Motl, et al., 2010; Robbins, et al., 2009; Teasell et al., 2012; Warburton, et al., 2012). In addition to the negative health impact, individuals with
acquired physical disabilities have an increased risk of negative psychosocial outcomes including an increased risk of depression, lower scores on quality of life and life satisfaction measures, and decreased levels of community integration, in comparison to individuals in the general population (Bragaru, et al., 2011; McKinley & Meade, 2004; Tonack et al., 2008). For example in comparison to the general population, individuals with amputations have higher levels of anxiety and depression two years post-injury (Bragaru, et al., 2011). These health and secondary complications can have a considerable impact; individuals with physical disabilities are less likely to report being in good or excellent health than individuals in the general population (McColl, 2005).

Participating in LTPA, activities done in an individual’s spare time such as sport and exercise, is related to better physical health, fitness, and well-being among people with acquired physical disability (Bragaru, et al., 2011; Galea, 2012; Motl & Snook, 2008). For example, engaging in LTPA can reduce the risk for cardiovascular disease and Type 2 diabetes among individuals with SCI (Galea, 2012). Furthermore, individuals who participate in a regular exercise program experienced reduced pain and depression (Hicks et al., 2005; Latimer, Martin Ginis, Hicks, & McCartney, 2004). Recently, research has also revealed significant, positive relationships between LTPA, life satisfaction and subjective well being among individuals with acquired physical disabilities (Bragaru, et al., 2011; Martin Ginis, Jetha, et al., 2010; Motl & Snook, 2008). Moreover, people with acquired physical disabilities who engage in LTPA are perceived more positively than those who do not engage in LTPA (Arbour, Latimer, Martin Ginis, & Jung, 2007;
Therefore participating in LTPA, and specifically sport, can challenge the negative stereotypes and attitudes that circulate about disability. Emerging evidence suggests other unique benefits of sport, such as the development of important friendships (Giacobbi, Stancil, Hardin, & Bryant, 2008; Slater & Meade, 2004); the re-establishment of a connection with the perceived self that was considered lost after experiencing an acquired physical disabilities (Levins, Redenbach, & Dyck, 2004); and a way to develop comfort with the body post-injury (Bragaru, et al., 2011; Sousa, Corredeira, & Pereira, 2009). As such, sport can be a source of positive development after acquiring a physical disability (McVeigh, Hitzig, & Craven, 2009).

Despite the benefits of living an active lifestyle, people with acquired physical disabilities are among the most sedentary. Martin Ginis and colleagues (2010) estimate that approximately 50% of individuals with SCI engage in no LTPA whatsoever; individuals who participated in LTPA engaged in approximately 55 minutes of LTPA per day. However it is important to note that this was highly variable and in particular, individuals engaged in more mild and moderate LTPA than heavy intensity LTPA (Martin Ginis, Arbour-Nicitopoulos, et al., 2010). When further examining the types of LTPA that individuals engaged in, those who participated in sport were active for longer durations and at higher intensities than their peers who participated in other forms of LTPA (Martin Ginis, Arbour-Nicitopoulos, et al., 2010). Moreover, individuals who participate in sport are more likely to engage in moderate and vigorous LTPA over
winter, a season where LTPA typically decreases, than those who participate in other forms of LTPA (Perrier, Latimer-Cheung, Martin Ginis, & Team, 2012). Therefore sport is a key source of moderate and vigorous LTPA for people with SCI.

Given that individuals who participate in sport are active for longer durations and higher intensities than people who do not, engaging in sport presents an important opportunity to enhance LTPA participation, and ultimately health and well-being, among adults with acquired physical disabilities. Despite the unique and numerous benefits of participating in sport, only 3% of individuals with disabilities engaged in sport (e.g. Brown, Yore, Ham, & Macera, 2005; Martin Ginis, Arbour-Nicitopoulos, Latimer, Buchholz, Bray, Craven et al., 2010a). Thus, sport promotion strategies are sorely needed to assist this population access the sport system.

2.4 Theoretical Road Maps: Determinants of LTPA Among Individuals with Acquired Physical Disabilities

A number of models have been proposed to understand sport participation and development among the general population (e.g. Bruner, et al., 2010; Côté, et al., 2009). However there are a number of limitations to using these models. First, none of these models have explicitly been tested for use among athletes with physical disabilities. Secondly, these models are based on the assumption that individuals are a) interested and motivated to engage in sport and b) are already engaged in the sport system. In the
absence of sport specific models for individuals with disabilities, it is possible to turn to other behavioural theories that have been validated among this population.

No research has examined the use of theory specifically for sport participation among individuals with acquired physical disabilities. As such, it is necessary to use broader behavioural theories used for LTPA within this population. Among the most common are the Theory of Planned Behaviour (TPB; Ajzen, 1991) and Social Cognitive Theory (SCT; Bandura, 1986). More recently, the Health Action Process Approach (HAPA; Schwarzer, 1992) has also been used in the context of LTPA and disability. This section will briefly outline each theory and its extant literature among individuals with acquired physical disabilities, followed by a brief rationale for the selection of HAPA as a guiding framework for a portion of this dissertation.

### 2.4.1 Theory of Planned Behaviour (Figure 2.1)

The TPB focuses on the relationship between intentions for behaviour and the behaviour itself. Ajzen (1991) posits that when individuals have positive attitudes, higher subjective norms and higher perceived behavioural control, these individuals will set intentions to engage in the behaviour. In the context of TPB, attitudes refer to individuals’ positive or negative evaluations of the behaviour, such as the belief that sport is fun. Subjective norms refer to individuals’ perceptions of how important others, such as family, feel about the behaviour. Perceived behavioural control refers to the extent to which individuals believe the behaviour is under their control. The presence of high
intentions will lead to a higher likelihood of the individual engaging in the behaviour itself. Ajzen (1991) posits that perceived behavioural control also directly influences behaviour.

Figure 2.1: Theory of Planned Behaviour (Ajzen, 1991)

The TPB has been applied to LTPA in the general population. A review by Hagger and colleagues (2002) revealed that for physical activity, the predictors of intentions account for approximately 45% of the variance in intentions to be active. Among these constructs, attitudes and perceived behavioural control were found to be stronger predictors of intentions than subjective norms. Moreover, intentions and perceived behaviour control account for approximately 27% of the variance in physical activity behaviours.

While no studies have used the TPB to understand sport among individuals with acquired physical disabilities, three studies have used the TPB to explain broader LTPA
among this population and to inform an LTPA intervention. Latimer, Martin Ginis and Craven (2004) used the TPB to explain LTPA intentions among individuals with SCI. Here, the TPB constructs were not good predictors of LTPA among individuals with SCI; perceived behavioural control was the only determinant of LTPA intentions and behaviour for quadriplegics. None of the TPB constructs predicted intentions and behaviour among paraplegics. However the authors noted that they used the Godin Leisure Time Exercise Questionnaire (Godin & Shepard, 1985) to assess LTPA. The Godin Leisure Time Exercise Questionnaire has not been validated as a measure of LTPA within this population (Martin Ginis, Phang, Latimer, & Arbour-Nicitopoulos, 2012).

In a follow-up study, Latimer and Martin Ginis (2005) used the TPB to explain LTPA among individuals with SCI in a prospective study design. However in this project, LTPA was measured using the Physical Activity Recall Assessment for Adults with Spinal Cord Injury (PARA-SCI), a valid and reliable LTPA measure created specifically for individuals with SCI (Latimer, Martin Ginis, Craven, & Hicks, 2006; Martin Ginis, Latimer, Hicks, & Craven, 2005). Attitudes ($\beta=.29$), subjective norms ($\beta=.29$), and perceived behavioural control ($\beta=.47$) all predicted intentions to engage in LTPA and accounted for 60% of the variance in intentions. Intentions predicted LTPA one week later ($\beta=.47$) and explained 16% of the variance in LTPA behaviour.

Finally, Latimer and colleagues (2006) tested an intervention that would bridge the intention-behaviour gap observed in theoretical research using the TPB (Sheeran &
Abraham, 2003). Using a randomized control trial, they asked the experimental group to complete implementation intentions for LTPA, which are the specific action plans an individual attaches to behaviours. In comparison to the control group, participants in the experimental group increased the amount of time they had spent engaging in LTPA (Δ=10.9 minutes) while participants in the control group decreased LTPA over time (Δ= -6.1 minutes). Moreover, LTPA intentions also explained significantly more variance in the experimental group in comparison to the control group for both LTPA duration and frequency, ΔR²=.29 and .27 respectively. Therefore, encouraging individuals to create implementation intentions helps individuals move from intending to be active to actually engaging in LTPA.

2.4.2 Social Cognitive Theory (Figure 2.2)

The SCT postulates that personal and environmental factors are necessary to motivate behaviour including but not limited to: self-efficacy, outcome expectancies, goals, and sociostructural factors (Bandura, 1986). Self-efficacy is the situation specific confidence individuals have in their ability to perform a behaviour. Within the SCT, self-efficacy is directly related to behaviour. However self-efficacy can indirectly influence behaviour through goals. Bandura also proposes that outcome expectations, an individual’s beliefs about the consequences of a given behaviour, are also essential for behaviour. In addition to these cognitive factors, Bandura also identifies socio-structural factors including perceived facilitators and perceived barriers as necessary for behaviour.
Martin Ginis and colleagues (2011) tested the tenets of SCT with respect to LTPA among individuals with SCI. Their proposed model (Figure 2.2) was consistent with the relationships outlined by the SCT. Martin Ginis and colleagues’ model subdivided perceived self-efficacy into self-regulatory efficacy, the belief that one can schedule LTPA and overcome barriers, and task self-efficacy, the beliefs in one’s ability to participate in LTPA. As SCT posits, both self-regulatory efficacy ($\beta=.30$) and task self-efficacy ($\beta=.43$) predicted outcome expectations for LTPA. Contrary to the tenets of SCT, outcome expectations did not directly predict LTPA. Rather outcome expectations
predicted self-regulatory strategies ($\beta=0.36$), a construct that incorporates Bandura’s concept of proximal goals (Conner & Norman, 2005). In turn, self-regulatory strategies predicted LTPA one month later ($\beta=0.72$).

2.4.3 Health Action Process Approach (Figure 2.3).

The HAPA model (Schwarzer, 1992) is a behavioural theory with two distinct phases. In the motivational phase, individuals set intentions to engage in a given behaviour. In order to do so, individuals must first have high outcome expectancies, risk perceptions and task self-efficacy. As in the SCT, outcome expectancies refer to an individual’s belief in the outcome of engaging in the behaviour, such as the positive health benefits of engaging in LTPA. In contrast, risk perceptions refer to the individual’s perception of the risk of not engaging in the specific behaviour, such as the increased risk of cardiovascular disease (Conner & Norman, 2005; Schwarzer, 1992). Task self-efficacy is the individual’s belief in his or her ability to do a particular task (Conner & Norman, 2005; Schwarzer, 1992), such as wheeling for 30 minutes without stopping. If individuals have high outcome expectancies, risk perceptions and task self-efficacy, they will set intentions to engage in the behaviour.

In the volitional phase, individuals translate their intentions into behaviour. Schwarzer (1992) posits that high intentions, task self-efficacy and maintenance self-efficacy will lead to the development of action and coping plans. Action plans refer to the specific plans individuals develop for the behaviour, such as creating a schedule with all
of the group exercise classes the individual will attend for the week. Coping plans are those that highlight how individuals should behave when barriers arise, such as planning to wheel around the neighbourhood for a specified duration if they cannot make it to the gym. In turn, these plans lead to the initiation and maintenance of a desired behaviour when combined with high maintenance self-efficacy. Maintenance self-efficacy refers to individuals’ confidence in their ability to schedule and maintain the behaviour, even in face of barriers. Recovery self-efficacy refers to the confidence that individuals have in their ability to get back on track with a given behaviour after a set back, such as returning to sport after an injury.

Figure 2.3: The Health Action Process Approach (Schwarzer, 1992)

One descriptive study has examined the applicability of the HAPA model in the context of LTPA and acquired physical disability. Chiu and colleagues (2011) tested the tenets of the HAPA model for LPTA among 195 individuals with multiple sclerosis
(MS). The path model that contained the relationships proposed by HAPA model generally fit the data. However, two paths in the motivational phase of the model did not predict LTPA as the HAPA outlines; only outcome expectancies predicted intentions to engage in LTPA ($\beta=.38$). As proposed in the HAPA model, intentions directly predicted planning ($\beta=.27$). In turn, planning and perceived barriers predicted LTPA ($\beta=.38$, $\beta=.11$). As a whole, the model explained 38% of the variance in LTPA.

One intervention study incorporated constructs from the HAPA model in an LTPA intervention. Arbour-Nicitopoulou and colleagues (2009) completed a ten-week RCT in which the planning-behaviour relationship from the HAPA model was tested. Individuals with SCI completed an action planning or a dual planning task (i.e. both action and coping planning) for LTPA. There was a main effect for condition on LTPA such that participants who had supplemented their action plans with coping plans for self-reported barriers reported significantly greater LTPA at both the five (M=104.62 minutes/week) and ten week (M=97.83 minutes/week) follow up periods. In particular, coping self-efficacy partially mediated the relationship between the intervention and LTPA. As Arbour-Nicitopoulou and colleague’s results suggest, planning and the self-efficacy derived from this process must be considered to successfully promote LTPA among individuals with acquired physical disabilities.
2.4.4 The Health Action Process Approach and Sport Participation Post-Injury

The HAPA model was selected for use in this dissertation because it has demonstrated utility for predicting broader LTPA in a number of sub-populations of acquired disabilities (e.g. Chiu, et al., 2011; Schwarzer, Lippke, & Luszczynska, 2011). Furthermore, the HAPA model integrates constructs from the TPB, such as intentions, as well as the SCT, such as self-efficacy and self-regulatory constructs (i.e. planning). As such, the HAPA model is a more complete model that incorporates the significant determinants of LTPA found in both the TPB and SCT.

While the HAPA model is an important framework that can address sport participation among individuals with acquired physical disabilities, it is not infallible. Among the studies that apply elements of the HAPA to LTPA (Arbour-Nicitopoulos, et al., 2009; Chiu, et al., 2011; Schwarzer, et al., 2011), the HAPA constructs accounted for an estimated 20-38% of the variance in LTPA. Therefore, other possible determinants of sport participation should be explored in conjunction with HAPA’s theoretical constructs.

2.5 I Am, Therefore I Act: The Influence of Athletic Identity on Sport Participation

Athletic identity, defined as the extent to which people identify themselves as athletes (Brewer, Van Raalte, & Linder, 1993), has a number of important ties to motivation and behaviour. As such, athletic identity may be an important component for future sport participation interventions.
2.5.1. It’s All in Your Head: “Cognitive” Identity Theory

Cognitive identity theory is useful for understanding the relationship between athletic identity and sport participation (Burke & Stets, 2009). In these perspectives, identity is located within individuals’ minds as something they possess. In one strand of cognitive identity theory, identities are counteracted by others in society during individual interactions (McCall & Simmons, 1978). The central concept is the role identity, or the meanings that people attach to the roles they occupy. Role identities are internalized and serve as the primary source for guiding everyday behaviour. When individuals do not receive the expected rewards for enacting the identity, whether intrinsic or extrinsic, they will no longer use that identity (Burke & Stets, 2009). Therefore, successful performance of a role identity requires the negotiation of roles and meanings with others (McCall & Simmons, 1978). For example, to develop an athletic identity, other individuals must recognize and treat the individual as an athlete. Stryker (1980) proposes that these role identities are organized into a salience hierarchy. Within this hierarchy, more salient identities are more likely to be used in interactions (Stryker, 1980). Furthermore, commitment to an identity is influenced by the cost the person will incur by not adopting the identity; if the costs of forgoing the identity are high, the commitment to this identity should also be high (Burke & Stets, 2009). For example, if all an individual’s social connections are tied to a sport setting, they will be motivated to maintain this athletic identity.
As a complement to these views of identity, Burke proposes that identity motivates behaviour through an internal feedback mechanism (Burke, 1991). Identity and behaviour are linked through a common meaning; the meaning represented by a behaviour should match the meaning of the identity itself (Stryker & Burke, 2000). For example, individuals who consider themselves to be athletes should engage in behaviour that is consistent with this meaning, such as attending practice on a regular basis. Burke proposes that this system has four components. The identity standard outlines that meanings are attached to an identity, such as the attributes of strength and agility for an athlete. Perceptual input, the second component, refers to the meanings individuals perceive from the environment, coming from the individuals’ own behavioural appraisals or the appraisals of others. The comparator, Burke’s third component, compares the meanings held in the individuals’ identity standard with their perceptual input. The final component of the feedback loop is the output behaviour. In the event that the perceived meanings (input) from the environment do not match the meanings held in the person’s identity standard, Burke proposes that behaviour will be modified so that the perceived meanings can be realigned with the identity standards (Burke & Stets, 2009). For this reason Burke states that behaviour is goal directed, as individuals will modify their behaviour to ensure their behaviour aligns with the meanings they have attached to a given identity. As a whole, these cognitive identity theories allow us to understand how the meanings associated with an identity, such as ‘athlete’, influences the behaviour an individual engages in.
2.5.2 Cognitive Athletic Identity and Sport Participation Among Individuals with Acquired with Physical Disabilities

Research among individuals in the general population supports the relationship between the strength of exerciser and athletic identities and maintained LTPA behaviour, even among the presence of other theoretical determinants such as self-efficacy (Lamont-Mills & Christensen, 2006; Strachan, Brawley, Spink, & Jung, 2009; Strachan, et al., 2005). Despite the relationship between these identities and behaviour in the general population, athletic identity among individuals with acquired physical disabilities is not well understood.

Two quantitative studies have specifically examined athletic identity among individuals with acquired physical disabilities (Tasiemski & Brewer, 2011; Tasiemski, et al., 2004). The first study by Tasiemski and colleagues (2004) examined the relationship between athletic identity and the level of sport competition (i.e. recreational, international). The results demonstrated that individuals with SCI endorse lower levels of athletic identity than those in the general population, even when stratified by level of competition. As an extension of this research, Tasiemski and colleagues (2011) have established positive correlations between the level of athletic identity and sport participation. Therefore, emerging evidence suggests that the same identity-behaviour link is present within this population as observed in general population.

Previous research reveals that an acquired physical disability is highly disruptive to an individual’s identity (Charmaz, 1987; Seymour, 2002). Indeed, this research can
give important context to Tasiemski and colleagues’ findings, such that disability itself may change the possibilities individuals have for (re)developing an athletic identity post-injury. However, the relationship between acquired disability, athletic identity and sport participation has yet to be explored. Furthermore, why individuals lose or (re)develop an athletic identity after acquiring a physical disability is unclear. To understand these complex relationships, it is necessary to use other theoretical frameworks and novel research methodologies.

2.6 A Different Side of the Story: Narrative Identities

In comparison to cognitive identity theory, which views identity as something that individuals develop as part of the mind, narrative theory views individuals as storytelling beings (Frank, 1995; Smith & Sparkes, 2008). Thus in contrast to cognitive identity theory, narrative theorists posit that individuals actively shape their identities through the act of story-telling itself (Atkins 2004; Smith & Sparkes, 2008). Here, identity is developed and shared through narrative. Narratives are the discourse that connects related abstract ideas, signs and events (Lieblich, et al., 1998). These narratives circulate within social environments and act on individuals by providing ‘narrative templates’, or models for a particular role. Narrative templates provide individuals with the possible identities they can assume, what behaviours are associated with these identities, and the outcomes are associated with such a role (Frank, 1995, 2010). Furthermore, narratives work for individuals by allowing them to construct identities, understand their world, and interpret
experiences from everyday life (Frank, 1995, 2010). An individual’s identity is both private and public: the events in a narrative may be personal, yet the narrative template used to interpret experience and construct the narrative is located within sociocultural, historical and political contexts (Smith & Sparkes, 2008). These public elements limit what narratives individuals can tell about themselves and others. For this reason, Frank (2010) refers to the stories individuals tell of themselves as “unchosen choices”. To understand these relationships narrative inquiry, a type of qualitative methodology that investigates narratives is used (Smith & Sparkes, 2009).

A body of research by Smith and Sparkes uses narrative inquiry to understand the experiences of former rugby players who sustained an SCI through sport (Smith & Sparkes, 2004; Smith & Sparkes, 2005; Smith & Sparkes, 2008; Sparkes & Smith, 2002, 2003). The men described difficulties accepting their bodies post-injury; SCI created a tension between the perceived self and the physical body. These individuals also expressed difficulties in accepting adapted sport as sport because of the equipment and adaptations necessary (Sparkes & Smith, 2002). Research by Brittain (2004) with an injured elite equestrian athlete also revealed even two years post-injury, some individuals can retain the meaning of “sport” and “athlete” developed before disability, as well as perceptions of what the body should be able to do. Gaps remain in our understanding of why some individuals retain pre-injury athletic identities while others are able to (re)develop a post-injury athletic identity. How individuals develop an athletic identity, including what resources inform the content of such an identity, remains unclear.
As research by Smith and Sparkes (Smith & Sparkes, 2003, 2005; Smith & Sparkes, 2008) and Brittain (2004) suggests, the changes to the body have an impact on how individuals perceive themselves post-injury. Therefore when considering athletic identity and sport participation, the way in which individuals experience disability and the body post-injury cannot be ignored. Frank’s (1995) research provides a framework with which to think about acquired physical disabilities. In particular, he proposes three broad narratives that individuals can use to frame their experience of disability. The restitution narrative is based on the desire to restore a past self in the future. By contrast, the chaos narrative focuses on the current emptiness, suffering and pain that surround the present self. Finally, the quest narrative views disability as a challenge with something to learn or gain from the experience. The presence of these narratives among individuals with SCI has been empirically supported (Smith & Sparkes, 2003; Smith & Sparkes, 2004; Smith & Sparkes, 2005). Each narrative has a very specific story line, perception of disability, expectation for what life with disability will be like, and what individuals with disabilities can do (Sparkes & Smith, 2003). However, no research has explored the role that these disability narratives play in loss or (re)development of an athletic identity and sport participation among individuals with acquired physical disabilities.
2.7 Summary: A Mixed Method Approach to Sport Promotion Among Individuals with Acquired Physical Disabilities

Past research suggests individuals with SCI have lower athletic identity than individuals in the general population (Tasiemski, et al., 2004) and has correlated athletic identity and sport behaviour (Lamont-Mills & Christensen, 2006; Tasiemski & Brewer, 2011). Cognitive identity theory, and therefore quantitative methods, can help explore the applicability of sport participation models and demonstrate the identity behaviour link in the context of behavioural theories. What cannot be understood through quantitative methods and cognitive identity theory is why athletic identity is lost or (re)developed, as well as the role in which beliefs about disability play in the development of athletic identity. Therefore, a novel approach is necessary to develop a more nuanced understanding of athletic identity, sport participation, and disability.

 Narrative inquiry, a relatively new methodology within Sport and Exercise Psychology (Smith & Sparkes, 2006, 2009), allows for the exploration of these complex relationships between athletic identity, sport participation, and disability. Exposure to narratives in the environment are seen as influential on identity and moreover, individuals construct and share their identities through stories. Adopting this approach can supplement the observed statistical relationships between athletic identity and behaviour by inviting individuals to share their stories of sport and disability. Furthermore, by adding this approach, the process of identity loss and (re)development and in particular, the sociocultural and political contexts that produce certain narratives can be understood.
The narrative complement can elucidate the “whys” and “whats” of athletic identity, disability and sport participation.

This dissertation will address current gaps in the literature by examining the theoretical determinants of sport participation and the specific role of athletic identity (Study 1), exploring the role of athletic and disability narratives in identity development and LTPA participation (Studies 2 and 3), and the role peer athletes play in the circulation of narrative resources to individuals with acquired physical disabilities (Study 4).

2.8 References


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Chapter 3

I act, therefore I am: Athletic identity and the Health Action Process Approach predict sport participation among individuals with acquired physical disabilities.
Abstract

Objective: The study had two objectives 1) to test the fit of the Health Action Process Approach (HAPA) model for sport participation among individuals with acquired physical disabilities and 2) to estimate the extent to which athletic identity predicts intentions to engage in sport within the context of HAPA. Design: Prospective cohort of 82 women and 119 men with acquired permanent disabilities ($M_{\text{age}}=44.0$; $M_{\text{years post-injury}}=16.2$; % in sport = 61.7%). Method: All HAPA indicators and athletic identity were assessed at baseline and sport participation was assessed using the Leisure Time Physical Activity Questionnaire for People with Spinal Cord Injury two weeks later. Structural equation modeling was used to test the HAPA model. Results: The HAPA constructs explained 15% of the variance in sport participation and 18% of the variance when athletic identity was added to the model. Instrumental ($\beta=0.21$), affective ($\beta=0.15$), and negative outcome expectancies ($\beta=-0.20$) were significant predictors of intentions to participate in sport, as was athletic identity ($\beta=0.25$). Intentions to participate in sport significantly predicted planning ($\beta=0.54$) yet there was no direct relationship between planning and sport participation ($\beta=-0.008$; $p>0.05$). When the relationship between planning and maintenance self-efficacy was reversed, planning had a significant indirect effect on sport participation through maintenance self-efficacy ($\beta=0.33$). Conclusion: The HAPA model is a good predictive model for sport participation among those with acquired physical disabilities; furthermore, athletic identity accounts for additional
variance in sport participation. These constructs can be valuable components of sport promotion programs for this population.

*Keywords*: Athletic identity, structural equation modeling, physical disability, sport promotion
Introduction

Approximately 16 to 19% of individuals worldwide experience a physical disability (World Health Organization, 2011). Given the medical advances of the 21st century, individuals with physical disabilities are living longer than ever before but now are faced with preventing and managing chronic disease such as diabetes and cardiovascular disease (National Spinal Cord Injury Association, 2001). These complications are worth noting as individuals with disabilities are considerably less likely to report being in good or excellent health and often require more services and medications than persons without disabilities (McColl, 2005). Furthermore, these individuals often suffer from increased secondary complications (e.g. Hetz, Latimer, Arbour-Nicitopoulos, Martin Ginis, & the SHAPE-SCI Research Group, 2011). Individuals with acquired physical disabilities also face a number of psychosocial concerns including depression, lower quality of life and isolation (e.g. McKinley & Meade, 2010; Tonack & Hitzig, 2008). Many of these negative outcomes of disability can be mitigated by participating in moderate to vigorous leisure time physical activity (LTPA) (e.g. Giacobbi, Stancil, Hardin, & Bryant, 2008; Martin Ginis, Jetha, Mack, & Hetz, 2010; Motl & Gosney, 2008). Unfortunately, nearly 50% of individuals with acquired physical disabilities are inactive (e.g. Brown, Yore, Ham, & Macera, 2005; Martin Ginis, Arbour-Nicitopoulos, Latimer, Buchholz, Bray, Craven, et al., 2010a).

Sport is a promising source of moderate and vigorous LTPA for people with acquired, physical disabilities. For example, recent work by Martin Ginis and colleagues
demonstrated that individuals with a spinal cord injury (SCI) who participate in sport are active for longer durations as well as active at higher intensities than their peers who participate in other forms of LTPA. Therefore, individuals who are active in sport may be closer to achieving the important physical and mental health benefits associated with a physically active lifestyle than their peers who are inactive (e.g. Martin Ginis et al., 2010b; Slater & Meade, 2004). Yet, only 3% of individuals with a physical disability participate in sport as compared to 30% of the general population (ParaSport Ontario, 2009). This low participation rate may be due to barriers this population faces, such as access to adapted equipment and adapted sport teams (Slater & Meade, 2004). Indeed, this population is sorely in need of theory-based, innovative interventions that work to reduce both actual and perceived barriers to sport participation.

The Health Action Process Approach (HAPA; Schwarzer, 1992) is one theory that may provide a foundation for intervention. The HAPA constructs are arranged into two distinct stages: the motivational phase and the volitional phase (Schwarzer, Lippke, & Luszczynska, 2011). In HAPA, the motivational phase is characterized by an individual setting intentions to behave in a certain way, such as participating in LTPA. High task self-efficacy, outcome expectancies, and risk perceptions are required to get the individual to set intentions for action. In the volitional phase of HAPA, the individual begins to implement intentions into behaviour. Intentions, along with high task and maintenance self-efficacy, are necessary for the individual to set action and coping plans that guide behaviour. Setting action and coping plans foster both the initiation and
maintenance of behaviour over time, particularly when combined with high levels of coping and recovery self-efficacy. For the current research, the HAPA model was selected given its demonstrated utility for predicting broader LTPA in a number of populations including those with disabilities (Schwarzer et al., 2011). Indeed, LTPA in these contexts includes sport such as running, wheeling and other activities; however, to our knowledge there have been no theory-based studies that focus solely on sport participation. In studies that examine the HAPA model and LTPA, HAPA constructs account for approximately 20% of the variance in LTPA and thus other determinants of physical activity and sport should be explored in conjunction with the HAPA model (Schwarzer et al., 2011).

Athletic identity is one construct not captured by HAPA that may contribute to the prediction of sport participation. Athletic identity refers to the extent to which people identify themselves as athletes (Brewer, Van Raalte, & Linder, 1993). Identity theory is useful for understanding how athletic identity develops and influences sport behaviours (Burke & Stets, 2009). Individuals develop and internalize an identity standard, which is the understanding of what it means to be an athlete. Behaviour is compared to this identity standard and when the two do not align, individuals will change their behaviour to align themselves with the identity standard (Burke & Stets, 2009). Previous research with athletic and exerciser identity in the general population supports the association between identity and behaviour. Strachan and Brawley (2008) found that in the face of multiple barriers to LTPA, individuals who strongly endorse their identity as an athlete
list more solutions to the barriers they perceive and develop more plans to put these solutions into action. Having solutions and plans to address barriers suggests that individuals with a strong identity as an athlete are likely to take steps to change their behaviour to ensure they are acting in line with their identity. Accordingly, individuals who identify as an athlete are more likely to maintain sport behaviour over the long term than individuals who do not consider themselves athletes (Strachan, Woodgate, Brawley, & Tse, 2005).

A few studies have examined the concept of athletic identity among individuals with an acquired disability. For example, Tasiemski and colleagues (2004) assessed athletic identity for individuals with SCI based on level of sport competition: none, recreational, provincial, and international. The results demonstrated that individuals with a SCI have lower levels of athletic identity than what is seen in the general population. A recent publication by Tasiemski and colleagues (2011) has established positive correlations between the level of athletic identity and sport participation. Qualitative investigations revealed that individuals who competed in sport prior to acquiring their disabilities retained some conceptualization of what it means to be an athlete and what their bodies should be capable of (Brittain, 2004; Sparkes & Smith, 2002). However, to our knowledge no studies have prospectively or explicitly examined the relationship between athletic identity and sport participation within the context of a health behaviour theory for this population.
To date, identity has not been incorporated in the HAPA model. However, research testing theories with constructs similar to HAPA (e.g., Theory of Planned Behaviour; Ajzen, 1985) supports the inclusion of identity as an additional independent predictor of behavioural intentions beyond standard measures of outcome expectancies and self-efficacy (Terry, Hogg, & White, 1999). Building upon this research and the notion that identity standards set the expectation for behaviour, in the current study athletic identity was incorporated into the motivational phase of HAPA such that athletic identity should predict intentions to engage in sport. Demonstrating that athletic identity is a predictor of intentions to engage in sport will provide direction for developing sport promotion interventions that not only target HAPA constructs but also foster athletic identity.

Accordingly, the objectives of the current study were twofold. The primary objective of this study was to validate the HAPA model as a predictive model for sport participation among individuals with acquired physical disabilities. Furthermore, given the potential role of athletic identity in sport promotion for individuals with acquired physical disabilities, the second objective was to estimate the extent to which athletic identity predicts intentions to engage in sport in the context of the broader HAPA model. Two hypotheses were put forth: 1) the HAPA model would fit sport participation with adequate fit statistics and 2) the addition of a path between athletic identity and intentions to participate in sport would increase the variance accounted for by the model. The second hypothesis was based on the notion that individuals who see themselves as
athletes would likely set intentions to be involved in sport so that they can maintain behaviour consistent with their identity standard. Thus, intentions will mediate the influence of identity such that people who see themselves as athletes will form intentions to perform behaviours, in this case sport, to be consistent with the roles held in the identity.

**Methods**

**Participant recruitment**

Individuals, regardless of current participation in sport, who acquired a physical disability through an acute onset event such as an accident or through an illness were invited to participate. Participants were required to be English-speaking; have a permanent physical disability acquired at the age of 16 or older; be finished with inpatient rehabilitation; be 18+ years of age; and self-report to have no cognitive or memory impairments. A convenience sample was recruited through two means. With the assistance of disability and adapted sport specific organizations, recruitment emails were sent to coaches and athletes. Furthermore, announcements were posted in rehabilitation centres and adapted gyms. Secondly, individuals were recruited through a database of individuals with SCI who agreed to be contacted for research purposes. All procedures and materials were approved by the General Research Ethics Board prior to commencement.
Data collection and measures

Participants who met the screening requirements completed two questionnaires approximately two weeks apart. Questionnaires were primarily filled out via telephone interview with the principal investigator or a trained research assistant; however, participants were given the opportunity to fill out the questionnaire online if that better suited their needs. The first questionnaire contained scales to assess the HAPA constructs for the next two weeks (e.g. planning over the course of two weeks) and athletic identity. This prospective design in which the HAPA constructs and athletic identity were measured two weeks prior to behaviour allowed for prediction of sport behaviour over time.

Athletic identity: Athletic identity was measured using the 10-item Athletic Identity Measurement Scale (AIMS), where each item, such as “others see me as an athlete”, is measured on a 7-point scale (1= strongly disagree; 7= strongly agree), (Brewer et al., 1993). The scale has demonstrated good test-retest reliability (r=.89) as well as discriminant and construct validity (Brewer et al., 1993). The AIMS has been validated for use with athletes with both acquired and congenital disabilities (Groff & Zabriskie, 2006; Martin, Eklund, & Adams-Mushett, 1997). In our sample, the Cronbach’s alpha was .91 which suggests the scale has good internal consistency (Nunnally, 1978). A confirmatory factor analysis with our data revealed only one factor for athletic identity; only one eigenvalue was greater than 1 (=5.62). Therefore the AIMS score was kept as a single factor.
**Outcome expectancies:** Both the affective component, the emotional beliefs about a behaviour (e.g. sport would be enjoyable), and the instrumental component, the beliefs about the utility of performing sport (e.g. sport would improve my general health) were measured (e.g. French et al., 2005). Affective outcome expectancies were measured using four items, each assessed on a 7-point scale (1= not at all; 7= definitely) ($\alpha = .94$). Instrumental outcome expectancies were measured by five items, also on a seven point scale using (1= no change; 7= certain to happen), ($\alpha = .75$). There is also evidence to suggest that individuals consider the possible negative outcomes of engaging in strenuous LTPA and sport such as worsening pain or putting themselves at risk for injuries (Tasiemski, Kennedy, Gardner, & Blaikley, 2004; Schelza, Kalpakjian, Zemper, & Tate, 2005; Couture, Caron, & Desrosiers, 2010). Therefore, the possible negative outcomes of engaging in sport, such as experiencing pain or injury were also assessed using eight items on a 7-point scale (1= no chance; 7= certain to happen), ($\alpha = .77$).

**Risk perceptions:** Previous research with individuals with physical disabilities indicates that the main reason they engage in LTPA, such as sport, is to achieve physical health benefits (Tasiemski et al., 2004; Schelza et al., 2005; Couture et al., 2010). Therefore risk perception items referred to the perceived severity and susceptibility to chronic diseases caused by sedentary behaviour, such as the risk of developing cardiovascular disease. Health risk perceptions were measured using four of the conditions that individuals are at increased risk for after acquiring a disability. These four items were measured on a 7-point scale (1= no chance; 7= certain to happen), ($\alpha = .75$).
Task self-efficacy: Task self-efficacy was measured using six items that assessed confidence in the ability to play certain sports, at the recreational level. Items were assessed on a 10-point scale (1= not at all confident; 10= completely confident), ($\alpha = .88$) (Foulon, Martin Ginis, Benedict, & Latimer, 2010).

Intentions: Intentions to participate in sport were measured using four items of varying commitment to sport, such as “I will try to participate in sport”. Each item was assessed using a 7-point scale (1= no chance; 7= certain to happen), ($\alpha = .97$).

Maintenance self-efficacy: Scheduling self-efficacy was collected as part of the maintenance self-efficacy construct. Three items were used to assess individuals’ confidence in their ability to schedule one, two, and three or more practices and/or games throughout the week. Items were assessed on a 10-point scale (1= not at all confident; 10= completely confident), ($\alpha = .92$). Barrier self-efficacy was also collected as part of the maintenance self-efficacy construct. Seven items were used to measure participants’ confidence to overcome the common barriers to sport, such as the cost of sport and access to facilities. Items were measured on the same 10-point scale ($\alpha = .89$).

Planning: Action plans were measured using a four item scale that queries the details of the action plan including when, where, what activities, and how often the individual plans to engage in a sport. Responses were rated on a 7-point scale was used (1= no chance; 7= certain to happen) ($\alpha = .97$). The presence of coping plans was measured with two items that asked about the consideration of potential barriers and the development of plans to get around those barriers. A 7-point scale was used (1= no
chance; 7= certain to happen). The two items were strongly and significantly correlated
\((r = .68, p < 0.01)\).

*Recovery self-efficacy:* Recovery self-efficacy was measured by posing the
following question: “Assuming you were participating in sport, how confident are you in
your ability to return after a two week absence?” Responses to this item was measured on
a 10-point scale (1= not at all confident; 10= completely confident).

Participation in sport was assessed two weeks after the HAPA constructs and
athletic identity were assessed. Participation in sport was assessed using a modified
version of the seven day short-form Leisure Time Physical Activity Questionnaire for
People with Spinal Cord Injury (LTPAQ-SCI) by replacing the phrase “physical activity”
with the word “sport” (Martin Ginis, Latimer, Hicks, & Craven, 2005). Participants were
asked to recall both the number of minutes and days in the last week that they
participated in mild, moderate and heavy intensity sport; the total amount of time spent
engaging in sport was determined by calculating the sum of the mild, moderate and heavy
intensity minutes of sport per week. The LTPAQ-SCI has demonstrated test-retest
reliability (ICC=.83) as well as criterion validity within the SCI population (Latimer,
Martin Ginis, Craven, & Hicks, 2006; Martin Ginis et al., 2005).

**Data management**

Since missing data were less than 5% (<1.5%), problems associated with missing
data were not a concern and thus a single imputation by a mean replace was used for
variables with missing data (Tabachnick & Fidell, 2007). The risk perception item regarding physiotherapy was missing 46 responses because it was not relevant for many participants and was thus deleted. Correlation matrices were examined for possible collinear items and tolerance was used to examine possible collinear items. To correct for the large ratio between variances, mean scale scores were calculated by dividing the total score by the number of items within the scale to standardize the scales (Kline, 2005).

**Data analysis**

The analyses were conducted in two phases. In the first phase we conducted preliminary analyses to establish the optimal model for Phase 2, which tested the study hypotheses. Some of the general constructs within the HAPA model can be further divided into specific constructs that may uniquely predict LTPA participation. For example, outcome expectancies may be best modeled specifically as affective, instrumental, and negative components rather than as a general outcome expectancy construct (Rhodes & Courneya, 2003). Planning (action planning; coping planning) and maintenance self-efficacy (barrier self-efficacy; scheduling self-efficacy) may also be modeled best as specific constructs as well. Given the possibility of constructs fitting best as specific latent constructs rather than general ones, measurement models for outcome expectancies; planning; and maintenance self-efficacy were examined. To specify the latent constructs, a scale was created by fixing each latent construct’s first indicator to 1 (Kline, 2005). The latent constructs were left free to correlate. In step 1, a model with the
general latent construct and its dependent variable (e.g. intentions, planning) were compared to a model with the specific, subdivided constructs. Model fit was determined by assessing the change in Chi-square from the model, as well as by changes in the Comparative Fit Index (CFI) that were greater than .01 (Rhodes & Courneya, 2003). To ensure consistency across concepts, if the change in CFI was not greater than .01, the component was kept as a general construct to maintain parsimony.

Once the discriminant construct validity of latent constructs was determined, structural equation modeling was used as a second step to assess whether the relationships between sport participation and the latent constructs would be best modeled in the HAPA as general constructs or as specific constructs. The full HAPA model was built with the four general constructs and compared to four specificity models. To test the specificity models, each construct was left as a general construct with the exception of one, which was modeled as the specific construct. Model fit was assessed using the CFI, the Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Square Residual (SRMR); CFI values higher than .94, RMSEA values less than .07 and SRMR values less than .10 indicate models with good fit (Hu & Bentler, 1999).

Upon completion of both the discriminant validity and specificity analyses, a final predictive model was set and used to assess the utility of the HAPA constructs in predicting sport participation. A second model was created with the addition of athletic identity to determine its contribution to sport participation. All descriptive statistics were calculated using PSAW 18 (SPSS Inc.). The paths between latent constructs were
estimated using maximum likelihood estimations in Mplus version 5 (Muthen & Muthen, 2006).

Results

Participants

A total of 216 individuals with acquired physical impairments met eligibility criteria and set a date to complete the first questionnaire (Table 1). The mean age of participants was 44.0 years (SD=12.8) with approximately 16.2 years (SD=11.5) since their injury/impairment diagnosis. Seventy-five percent of the recruited participants had an SCI, 15% had an amputation and 8% had other mobility impairments resulting from a medical event such as stroke or polio. Fifty-nine percent of respondents were male. Consistent with our efforts to adequately predict sport participation, athletes were overrepresented (61.7%) to ensure variance in the outcome. Of the recruited participants, 201 completed the first questionnaire (Table 2) and 187 completed the two-week follow-up. Comparisons using t-tests and Chi-square tests did not reveal any differences between those who were lost to follow-up after the first questionnaire and those who were not. Additional testing also did not reveal any differences between the injury types or method of survey administration.
Table 1. Participant demographics

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Mean (Standard Deviation)</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>44.0 (12.8)</td>
<td></td>
</tr>
<tr>
<td>Years post-injury</td>
<td>16.2 (11.5)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>119 (59.2)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>82 (40.8)</td>
<td></td>
</tr>
<tr>
<td>Injury type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCI (n=164)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1-C4, ASIA A-C</td>
<td>9 (6.1)</td>
<td></td>
</tr>
<tr>
<td>C5-C7, ASIA A-C</td>
<td>44 (29.7)</td>
<td></td>
</tr>
<tr>
<td>T1 and lower, ASIA A-C</td>
<td>68 (45.9)</td>
<td></td>
</tr>
<tr>
<td>ASIA D</td>
<td>27 (18.2)</td>
<td></td>
</tr>
<tr>
<td>Amputee (n=33)§</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above the elbow</td>
<td>4 (12.1)</td>
<td></td>
</tr>
<tr>
<td>Above the knee</td>
<td>14 (42.4)</td>
<td></td>
</tr>
<tr>
<td>Below the knee</td>
<td>15 (45.5)</td>
<td></td>
</tr>
<tr>
<td>Other impairment (n=19)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mode of mobility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk independently</td>
<td>36 (18.0)</td>
<td></td>
</tr>
<tr>
<td>Cane/crutches/braces</td>
<td>7 (3.5)</td>
<td></td>
</tr>
<tr>
<td>Manual chair</td>
<td>120 (60.0)</td>
<td></td>
</tr>
<tr>
<td>Power chair</td>
<td>37 (18.5)</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>174 (87.0)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>26 (13.0)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school or less</td>
<td>39 (19.4)</td>
<td></td>
</tr>
<tr>
<td>College/university</td>
<td>119 (59.2)</td>
<td></td>
</tr>
<tr>
<td>Post graduate</td>
<td>43 (21.4)</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>64 (31.8)</td>
<td></td>
</tr>
<tr>
<td>Married/common law</td>
<td>113 (56.2)</td>
<td></td>
</tr>
<tr>
<td>Divorced/widowed</td>
<td>24 (11.9)</td>
<td></td>
</tr>
<tr>
<td>Currently involved in sport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>124 (61.7)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>77 (38.3)</td>
<td></td>
</tr>
</tbody>
</table>

*N > 201 for some scales as not all participants wanted to answer each question

**ASIA: American Spinal Injury Association Classification

§2 above the knee and 2 below the knee amputees had bilateral amputations; one person had both a leg and arm amputation
Table 2.
Mean scores for sport predictors and two-week follow-up

<table>
<thead>
<tr>
<th>Construct (range)</th>
<th>Mean (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athletic identity (7-70)</td>
<td>36.8 (14.7)</td>
</tr>
<tr>
<td>Instrumental expectancies (4-28)</td>
<td>22.1 (4.7)</td>
</tr>
<tr>
<td>Affective expectancies (4-28)</td>
<td>23.4 (5.5)</td>
</tr>
<tr>
<td>Negative expectancies (7-49)</td>
<td>24.6 (8.1)</td>
</tr>
<tr>
<td>Health risk perceptions (4-28)</td>
<td>13.1 (5.4)</td>
</tr>
<tr>
<td>Task self-efficacy (6-60)</td>
<td>33.7 (16.7)</td>
</tr>
<tr>
<td>Intentions (4-28)</td>
<td>20.1 (9.6)</td>
</tr>
<tr>
<td>Scheduling self-efficacy (3-30)</td>
<td>22.1 (9.0)</td>
</tr>
<tr>
<td>Barrier self-efficacy (7-70)</td>
<td>39.5 (16.8)</td>
</tr>
<tr>
<td>Action planning (4-28)</td>
<td>19.6 (8.9)</td>
</tr>
<tr>
<td>Coping planning (2-14)</td>
<td>7.3 (4.2)</td>
</tr>
<tr>
<td>Recovery self-efficacy (1-10)</td>
<td>8.1 (2.6)</td>
</tr>
<tr>
<td>Sport Participation (minutes/week)</td>
<td>289.9 (557.7)</td>
</tr>
</tbody>
</table>

Preliminary Analyses

*Measurement model.* The proposed measurement model demonstrated acceptable fit [CFI=.93; RMSEA=.061; SRMR=.070]. However, four items had low factor loadings (< .40) indicating poor fit. Three items were related to the risks of health and sport (osteoporosis; developing pressure sores; and losing weight). The last item was related to coping planning (developed a list of barriers to sport). Poor fit of these items is likely the result of the heterogeneity of disability types within the sample. For example, osteoporosis and pressure sores were likely not considered as risky by participants with amputations in comparison to those with SCI. Moreover among people with amputations, losing weight may not have been perceived as a benefit of sport because they need to keep their weight consistent in order to be able to use the same prosthesis. There also was
some confusion about the first coping planning item among participants; many participants reported that they did not have a list of barriers to sport despite reporting the presence of coping plans. The measurement model was re-specified by dropping these items; the adjusted measurement model’s fit indices reached levels that indicate acceptable fit [CFI=.960; RMSEA=.049; SRMR=.062]. Therefore, the discriminate validity and hypothesized structural model testing were completed using the adjusted measurement model.

*Discriminant validity for model constructs.* The discriminant validity analysis suggested that the HAPA model could be conceptualized with outcome expectancies and risk perceptions as specific constructs while maintenance self-efficacy and planning were best conceptualized as a general latent constructs (Table 3). Structural equation models were then fit for the different conceptualizations of each HAPA construct as either a general construct or as specific constructs. Both analyses suggested that outcome expectancies could be incorporated into the HAPA model as specific constructs. These analyses also suggested that planning and maintenance self-efficacy fit best as general constructs. The specificity models with outcome expectancies met the RMSEA requirement but not for the CFI or SRMR (Hu & Bentler, 1999; Kline, 2005). Therefore, a structural model was built with risk perceptions, intentions, planning, task self-efficacy and maintenance self-efficacy as general latent constructs as the discriminant validity analysis suggests while outcome expectancies was included as three specific latent constructs. When this model was built, the fit indices indicated good fit [CFI=.96;
RMSEA=.049; SRMR=.063] which was better than the general model and any of the structural models with only one specific construct. Thus, this was the model used for testing.

Table 3.
Discriminant validity analysis for HAPA constructs

<table>
<thead>
<tr>
<th>Model</th>
<th>$X^2$</th>
<th>df</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome expectancies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General construct</td>
<td>633.0***</td>
<td>134</td>
<td>.842</td>
</tr>
<tr>
<td>Instrumental, affective &amp; negative expectancies</td>
<td>197.4***</td>
<td>129</td>
<td>.978</td>
</tr>
<tr>
<td><strong>Planning</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General construct</td>
<td>17.2*</td>
<td>9</td>
<td>.992</td>
</tr>
<tr>
<td>Action &amp; coping planning</td>
<td>16.8*</td>
<td>8</td>
<td>.992</td>
</tr>
<tr>
<td><strong>Maintenance self-efficacy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General construct</td>
<td>25.0</td>
<td>18</td>
<td>.995</td>
</tr>
<tr>
<td>Barrier &amp; scheduling self-efficacy</td>
<td>25.0</td>
<td>17</td>
<td>.993</td>
</tr>
</tbody>
</table>

* p<.05, **p<.01, ***p<.001

Hypothesis Testing

The structural model demonstrated good fit [CFI=.96; RMSEA=.049; SRMR=.063] supporting the hypothesis that the HAPA model fits sport behaviour for persons with acquired, physical disabilities.

*Predictor of intentions.* In most instances, the observed relationships followed the hypothesized HAPA relationships with intentions (Figure 1). Greater task-self efficacy, as well as more positive instrumental and affective outcome expectancies, were associated with increased intentions for sport. Negative outcome expectancies negatively predicted intentions to participate in sport ($\beta=-.24; p=.001$). Health risks did not predict...
intentions to participate in sport ($\beta=-.090; p=.17$). This model explained 47% of the variance in intentions. Similar relationships were found when the HAPA was modified by adding athletic identity to the model. Athletic identity had a comparable effect on intentions such that increases in athletic identity were associated with increased intentions to engage in sport (Figure 1, italicized betas) and did not change model fit. Athletic identity explained an additional 3% of variance in intentions to participate in sport (i.e. objective 2).

**Predictors of planning.** With regards to planning, the model accounted for 74% of the variance in planning. In accordance with the HAPA model, intentions to participate in sport and higher maintenance self-efficacy were positively associated with sport. Contrary to HAPA, higher task self-efficacy was associated with decreases in planning ($\beta=-.22; p=.015$). However, task self-efficacy did have a positive indirect effect on planning through intentions ($\beta=.13, p=.002$). In relation to Objective 2, the addition of athletic identity to the model did not change model fit.

**Predictors of behavior.** The only statistically significant predictor of sport participation in this model was maintenance self-efficacy ($\beta=.48; p=.003$). Individuals with higher scores on the self-efficacy latent construct reported more minutes of sport involvement after two weeks. The relationship between the planning latent construct and sport participation was small and non-significant ($\beta=.052; p=.65$). Contrary to HAPA, the path between recovery self-efficacy and sport was negative, albeit non-significant ($\beta=-.19; p=.11$). The HAPA indicators explained 15% of the variance in sport participation.
With regards to Objective 2, the addition of athletic identity to this model increases the total $R^2$ for sport participation to 18%.

*Exploratory analyses.* Given the weak predictive relationship between planning and behaviour, we explored alternate pathways between planning and sport. Because sport is already a planned activity, self-efficacy to schedule and overcome barriers to sport in light of planning may be more predictive of sport than planning itself. Therefore, the HAPA model was modified so that planning predicts maintenance self-efficacy (Figure 2; CFI=.94; RMSEA=.058; SRMR=.081; $R^2=19\%$). The most notable change was a significant indirect effect from planning to sport through maintenance self-efficacy such that greater planning was associated with an increase in maintenance self-efficacy ($\beta=.33$, $p=.002$) which in turn contributed to an increase in sport participation.
Figure 1. Structural model predicting sport participation using the HAPA model constructs. Standardized betas demonstrate the size of the relationship between constructs. These betas are shown for both the HAPA (plain text) and the HAPA model with athletic identity incorporated (italicized betas).

* p<.05, **p<.01, ***p<.001
Discussion

This study was the first to predict sport participation among individuals with acquired, physical disabilities using a prospective, theory-based design. Furthermore, this study was the first to assess the utility of the addition of athletic identity in the context of a behaviour theory in a sample of persons with acquired, physical disabilities. This study
confirmed many of the theorized predictions of the HAPA model lending support to the model and its utility for predicting for sport behaviour. However, our results also suggest that the relationship between planning and maintenance self-efficacy, at least in the context of pre-planned behaviours such as sport, may not be best represented as initially hypothesized; rather, it may be that greater planning increases maintenance self-efficacy. Moreover, our results suggest that contextual factors surrounding HAPA constructs, such as identity, are important for understanding behaviour and cannot be ignored. Below we consider the implications of our findings for promoting sport participation among adults with an acquired disability.

We determined that three types of outcome expectancies (instrumental, affective, sport risk) had important contributions to intentions to participate in sport. Thus to promote sport in this population, informational interventions should focus on the benefits of sport rather than the health risks of being sedentary. Attention to decreasing perceived negative outcomes, such as overuse injuries, and providing information about how to avoid them must also be considered.

The findings from this study also indicate self-efficacy as a potential target for sport promotion interventions. As HAPA proposes, task self-efficacy was an important predictor of intentions to engage in sport. Therefore, when promoting sport among beginners interventions should include components that aim to build task-self efficacy such as having peers model techniques or providing opportunity for beginners to try different sports thus creating potential for mastery experiences (Bandura, 1982). For
people who have moved into the volitional phase, interventions should target maintenance self-efficacy as our study findings indicate that maintenance self-efficacy is a key determinant of sport behaviour. In accordance with our finding that increased planning was associated with greater confidence to schedule sport and overcome common barriers to sport, encouraging the formation of plans (action and coping) may be one strategy to including in interventions fostering maintenance self-efficacy. Future work is necessary to understand how planning works to increase self-efficacy and sport participation over time and in the face of barriers.

While a number of the HAPA tenets were supported in the current study, there were some divergences from predicted relationships. Health risk perceptions did not predict intentions to participate in sport. A similar finding has been demonstrated in the context of LTPA (Scholz, Keller, & Perren, 2009). No direct or indirect relationships as specified by HAPA between planning and sport participation were found in this study. Yet in other LTPA research, the relationship between planning and LTPA has been demonstrated in both disability and general populations (Martin Ginis et al., 2011; Scholz et al., 2005; Williams & French, 2011). Given the pre-planned nature of sport, the relationship between planning and behaviour may not work in the same manner as it does for other physical activities. Because sport is already planned, it may not necessarily be the presence of plans but rather the self-efficacy to schedule activities around sport and to overcome those barriers to sport such as the deadline at work. As revealed in our exploratory analysis, once the relationship between planning and maintenance self-
efficacy was reversed, there was an indirect effect of planning on sport and a stronger relationship between planning and maintenance self-efficacy. Indeed, other research with HAPA constructs has found a similar effect (e.g. Barg, Latimer, Pomery, & Salovey, In Press). An alternate construct to consider in the prediction of behaviour is that of action control. Scholz and colleagues (2009) found that “action control” such as self-monitoring, rather than planning, predicted LTPA participation. This style of action control was not measured in the present study; however, this may be an important construct to consider because in most instances, sport is pre-planned and thus the monitoring of these plans may be more important for behaviour. These aspects of the volitional phase merit further investigation.

As per identity theory, viewing oneself as an athlete was associated with increased intentions to be involved in sport and explained additional variance in sport participation, these findings are in line with previous research (Strachan, Woodgate, Brawley, & Tse, 2005; Strachan & Brawley, 2008). It is not surprising that athletic identity explains a small amount of variance in sport participation given its placement in the model. Indeed, there are many mediators, such as planning and self-efficacy that lie between identity and behaviour. However, increasing individuals’ level of athletic identity may be a valuable component of sport promotion programs because of the influence on intentions, an important predictor of behaviour. Though the exact components of an athletic identity intervention have not yet been tested, identity theory would suggest that these interventions should change how individuals think of athletes
with acquired disabilities. This could occur through exposure to a variety of athletes with acquired, physical disabilities stories of sport participation along with increasing commitment and perceived ability in sport (Kendzieski & Morganstein, 2009). However, these types of interventions require that individuals engage in sport. Therefore, these identity interventions would need to be held in conjunction with interventions to promote sport using HAPA constructs.

Indeed, relatively little is known about athletic identity among those with acquired physical disabilities. Given its relationship to sport promotion, future research that aims to specifically examine the possible multi-dimensionality of this concept is necessary. While our factor analysis revealed that only one factor best represented identity, it is important to note this was among a mixed population of athletes and non-athletes. Previous research, such as that from Ferreira and Fox (2008) as well as Shapiro and Martin (2010a) revealed the multi-dimensional nature of athletic identity in their respective populations; therefore, future research further examining the best conceptualization of athletic identity among individuals with acquired physical disabilities is warranted. Moreover, recent research by Shapiro and Martin (2010b) suggests that athletic identity and friendships built within sport contribute to quality of life and positive affect; thus, future research specific to the experience of athletes with acquired physical disabilities and the positive impact of sport on post-injury development is also of interest.
Limitations

There were a few limitations in this study. First, since solely sport was measured we do not know the other physical activities that individuals participated in when they could not make it to practice or were off-season. Therefore, it is possible that we may have underestimated the importance of athletic identity on sport participation. Furthermore, coping plans were not investigated in depth and thus the relationship between coping planning, maintenance self-efficacy and sport participation remains unclear. Because there was a mix of athletes and non-athletes, some of the questions (e.g. recovery self-efficacy) were difficult for non-athletes to answer. Furthermore, this study only examined sport after two weeks; future research should examine the context of the HAPA and athletic identity for long-term sport participation. Finally, the data are self-reported data within an observational study; thus future research should incorporate interventions to determine the cause-effect relationship between constructs and sport.

Conclusion

This study was the largest, prospective study which used a theory to frame sport participation among individuals with acquired, physical disabilities. Indeed as hypothesized, the HAPA model’s constructs offer insight into predictors of sport participation for this population. However, given that the HAPA model did not fit exactly as Schwarzer (1992) postulates, further research is necessary to understand the relationship between maintenance self-efficacy, planning and behaviour in the context of
pre-planned behaviours such as sport. Fostering athletic identity through increasing thoughts of the self as an athlete, along with increasing positive outcome expectancies and reducing beliefs that sport is a risky behaviour will increase individuals’ intentions to participate in sport. Furthermore, building multiple types of self-efficacy through comprehensive action and coping planning can help actors maintain their involvement in sport. Given the preliminary nature of this research, future work should focus on testing interventions that incorporate these constructs to determine the effectiveness in real world contexts.
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When considering the motivational phase of the Health Action Process Approach (HAPA) model, I found that athletic identity was the strongest predictor of intentions to engage in a sport in comparison to the other HAPA constructs ($\beta=0.25$). However, past research suggests that in comparison to individuals in the general population, those with acquired physical disabilities demonstrate less endorsement of an athletic identity. Some studies with individuals with acquired disabilities suggest that elite and competitive athletes may retain a solidified view of what an athlete is, what counts as a sport and what bodies with disabilities can do. However, no research has explored how athletic identity is built or recovered post-injury and how this occurs. Given the link between athletic identity and the motivational phase for HAPA, it is necessary to further unpack “athletic identity”.

Therefore, my second dissertation study aims to deepen our understanding of athletic identity and sport promotion among people with acquired physical disability and in particular, possible reasons that individuals with acquired physical disabilities score lower on quantitative measures of identity.
Chapter 4

Narratives of athletic identity after acquiring a permanent physical disability
Abstract

Individuals who identify as athletes are more likely to participate in sport, particularly in the face of barriers. However individuals with acquired physical disabilities report lower levels of athletic identity; this difference may lead to individuals avoiding sport post-injury. The study objective was to explore the structure and content of athletic identity narratives from individuals with an acquired physical disability. Eleven individuals participated in hour long, semi-structured interviews. The structural analysis revealed three narrative types: non-athlete, athlete as a future self, and the present self as an athlete. The non-athlete narrative focused on physical changes in the body; the other two narratives primarily focused on present sport behaviour and performance goals. Athletes in a team environment supported identity, yet engaging in sport and competition were identified as more influential in building athletic identity. The structure and content of these narrative types are useful for guiding sport promotion among people with acquired physical disabilities.

Keywords: physical disabilities, sport and exercise psychology, narrative analysis, identity theory
Introduction

Participating in sport has a plethora of physical health and psychosocial benefits (e.g. Slater & Meade, 2004). However an estimated 3% of Canadians with disabilities participate in sport; this rate stands in stark contrast to the estimated 30% of Canadians in the general population (ParaSport Ontario, 2009). This discrepancy is not limited to Canada; Sport England (2002) estimates that approximately 6% of individuals with disabilities access sport, compared to 18.5% of the general population in Britain. Given the international inequity in sport participation, explanations for this difference are necessary to help inform future sport promotion efforts for individuals with acquired physical disabilities.

In the general population, work by Strachan and colleagues (2005, 2008) reveals that identities related to physical activities influence the maintenance of exercise and sport behaviours over the long term and in the face of barriers to participation. Indeed athletic identity, the extent to which an individual self-identifies as an athlete (Brewer, Van Raalte, & Linder, 1993), is noted to be important for participation at a number of different levels of sport (Lamont-Mills & Christensen, 2006). Among individuals with acquired disabilities, Tasiemski and colleagues (2004) have observed lower levels of athletic identity than levels reported among those in the general population. This difference has significant implications for sport given that recent research has demonstrated positive relationships between athletic identity and sport participation for this population (Tasiemski & Brewer, 2011). To our knowledge, no studies have examined why
individuals with acquired physical disabilities express lower levels of athletic identity. In the absence of empirical research, identity theory can offer some guidance.

Multiple strands of identity theory highlight how identities are developed and influence behaviour. McCall and Simmons (1978) interactional perspective of identity theory proposes that identity meanings are supported through interaction with others – an identity is supported when others confirm or reward the individual for successfully “using” a particular identity. In terms of athletic identity and sport participation, this perspective is useful for understanding how some role identities, such as athlete, become more important based on interactions with others. However, it falls short in explaining how athletic identity is formed, changes post-injury, and influences behaviour.

From the perspective of cognitive identity theory (e.g. Stryker & Burke, 2000), identity meanings are internalized as an identity standard, or a perceptual-cognitive system. When individuals’ behaviour does not match the behaviours held within their identity standards, they will change their behaviour to avoid negative emotions, such as guilt, associated with this identity discordant behaviour. In accordance with cognitive identity theory, individuals who participated in sport before injury can often return to sport after injury, thus behaving once again in line with their athletic identity standard – or beliefs in what it means to be an athlete (e.g. Wu & Williams, 2001). However, cognitive identity theory is limited in elaborating on how the content of identities are developed and moreover in the case of an acquired disability, why and how individuals who return to sport no longer self-identify as an athlete to the same extent (Kendzieski & Morganstein,
In the latter case, behaviour alone does not necessarily mean one will self-identify as an athlete after acquiring a physical disability.

In contrast, narrative theorists posit that individuals, as story-telling beings, shape their identities through the act of story-telling itself (Smith & Sparkes, 2008) thus addressing the “how” questions unanswered by the identity theories previously described. Despite the agreement on the social nature of narrative identity (i.e. how individuals story and understand their lives), there are five general perspectives concerning what constitutes narrative identity: psychosocial, inter-subjective, storied resource, dialogic, and performative; we define narrative identity from the storied resource perspective such that narrative identity is actively constructed by individuals through storytelling (Smith & Sparkes, 2008). From this perspective, identity is seen as both public and private. While the events in a given story may be personal, the narrative template used to construct the story itself is culturally and socially situated (Smith & Sparkes, 2008). These cultural and social constraints on narrative identity limit what stories individuals can tell about themselves and others. As a result, Frank (2010) refers to the stories individuals tell of themselves as “unchosen choices”. Consider the example of an injury that leads to an acquired physical disability. Individuals construct narratives to contextualize their experiences according to the narrative templates that are available for “disability” (Frank, 1995). While each disability experience is unique in some respect, cultural contexts provide individuals with a “menu” of narrative options to apply to these experiences, thus adding an element of public to the narrative (McAdams, 2006). For example, prior to the
Paralympic games a person with a disability would not have been considered to be an elite athlete because of the social and cultural circumstances surrounding our understanding of disability.

Within these narrative templates is the aspect of a narrative plot, or the story line, given to an identity (Frank, 1995; Sparkes & Smith, 2003). As Roberts (2004) proposes, narratives identities are not constructed in a simple, linear fashion. Rather the past, present and future versions of self are intertwined to influence the narrative plot, guiding the construction of a given narrative identity. For example, desired future selves may be heavily based on past versions of the self (i.e. I want to be an athlete again) while simultaneously considering the progress of the present self towards this desired future self (i.e. I am getting stronger, I could be an athlete again). Indeed, a strong attachment to these narrative plots can limit the development of other possible selves and thus, narrative identity (e.g. Sparkes & Smith 2003).

With this in mind, narrative identity theory can help illuminate why and how individuals lose athletic identity post-injury. Indeed, research with injured athletes suggests that some who were active in sport before their injuries maintain a solidified view of the self as an athlete prior to injury, what the body should be able to do, and furthermore, what activities count as “sport” (e.g. Brittain, 2004; Sparkes & Smith, 2002). As narrative theorists propose, these individuals retain only past narratives of “able-bodied” sport while dismissing others, such as those that include Paralympic sport as an athletic pursuit (Frank, 1995). Thus narrative identity complements cognitive and interactional identity theories.
Individuals who reject a narrative that includes adapted sport, in theory, would be those who express a lost, athletic identity based on the past narrative of athlete. Those who accept a narrative that includes adapted sport, in theory, will continue to participate in sport because this fits with the meaning of athlete. Therefore, while cognitively based identity theories highlight how identities influence behaviour, narrative identity complements this understanding by highlighting what elements are present in a given identity; why a particular identity is used; and how this identity is constructed.

Previous research with narratives and the embodied experience of disability demonstrates that narrative plot and time are integral parts of a narrative identity (e.g. (Brittain, 2004; Smith & Sparkes, 2004; Sparkes & Smith, 2002). For these individuals, the loss experienced as a result of their injuries demonstrates how a fixation on a given plot, such as the restoration of a past self, influences identity (e.g. Smith & Sparkes, 2004; Sparkes & Smith, 2003, 2005). However, specific research that examines how and why narratives of sport help (re)develop athletic identity, particularly in comparison to those who express a lost athletic identity, is largely absent. Therefore, the objective of this study was to examine how the structure and content of narratives influenced the (re)development or loss of athletic identity after acquiring a permanent physical disability.
Method

Participants

Participants were eleven English-speaking individuals over the age of 18 who had a permanent, physical disability that was acquired at the age of 16 or older. Additional inclusion criteria included the completion of their inpatient rehabilitation prior to the interview as well as being free of cognitive impairments as per self-report. For the cognitive screening, participants were asked if a physician had ever told them that they have a cognitive or memory impairment. Those who responded “yes” were not included in the study. Participants were purposively sampled from an existing cohort of 201 individuals with acquired physical disabilities (Perrier, Sweet, Strachan, & Latimer-Cheung, 2012) based on whether they (1) participated in sport both before and after injury; (2) participated in sport before, but not after injury; (3) did not participate in sport before their injury but began sport after injury; or (4) did not participate in sport before injury and did not return after injury. This purposive sampling method was used to acquire a breadth of experiences and opinions that could highlight differences and similarities among individuals (Patton, 2002). However during data analysis, no a priori grouping was used. Participants were recruited until saturation, the point at which no new information arises from additional interviews (Hennink, Hutter & Bailey, 2011), was reached. For this study, saturation was reached after eleven interviews (Table 1). Prior to commencement, all procedures and materials were approved by the General Research Ethics Board at the lead author’s institution.
Table 1.
Participants by narrative type

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Age (years)</th>
<th>Years since injury</th>
<th>Injury type</th>
<th>Pre-injury sport participation</th>
<th>Current sport participation</th>
<th>Athletic identity pre-injury</th>
<th>Athletic identity post-injury</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-athlete</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alexandra</td>
<td>34</td>
<td>5</td>
<td>Amputee</td>
<td>Seasonal (Ski)</td>
<td>None, no interest</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Amy</td>
<td>48</td>
<td>29</td>
<td>C5-6 SCI</td>
<td>Recreational</td>
<td>None, no interest</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Kevin</td>
<td>47</td>
<td>4</td>
<td>T12 SCI</td>
<td>Recreational</td>
<td>None, no interest</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Heather</td>
<td>32</td>
<td>8</td>
<td>T5-7 SCI</td>
<td>International</td>
<td>None, interested</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Jocelyn</td>
<td>52</td>
<td>3</td>
<td>T6 SCI</td>
<td>Recreational</td>
<td>None, interested</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Sam</td>
<td>37</td>
<td>2</td>
<td>L1 SCI</td>
<td>National</td>
<td>Infrequent</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Melinda</td>
<td>28</td>
<td>6</td>
<td>C4-5 SCI</td>
<td>International</td>
<td>Infrequent</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Future self as athlete</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bryce</td>
<td>59</td>
<td>37</td>
<td>T5 SCI</td>
<td>None</td>
<td>International</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Christine</td>
<td>44</td>
<td>22</td>
<td>L1 SCI</td>
<td>None</td>
<td>Recreational</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Erin</td>
<td>60</td>
<td>34</td>
<td>Amputee</td>
<td>Competitive</td>
<td>Competitive</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Shane</td>
<td>52</td>
<td>30</td>
<td>T2 SCI</td>
<td>Recreational</td>
<td>Recreational</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Once informed consent was provided, participants completed approximately hour long semi-structured interviews via Skype (without video) or telephone, depending on the participant’s access to the Internet. Some non-verbal cues, such as body language, may be missing through a telephone interview; however, other cues such as tone of voice and cadence of speech remain and can be transcribed as they would in a face-to-face interview (Opdenakker, 2006). Given the difficulty to access individuals with acquired physical disabilities, telephone interviews offer access to participants who are geographically out of reach. Comparisons with face-to-face, semi-structured interviews revealed that telephone interviews could generate the same level of detail and thus, rich interview data (Cachia & Millward, 2011). Given mobility and transportation concerns for individuals with physical disabilities, these interviews were also seen as ideal for participants given that no alternate arrangements for care or other scheduling disruptions would be necessary for the interview to take place.

**Data collection**

An interview guide to assist with data collection was developed using multiple strands of identity theory as a sensitizing framework (McCall & Simmons, 1978; Somers, 1994; Stryker, 1980; Stryker & Burke, 2000). Questions regarding interactional identity theory that focused on the role identity were included (e.g. what aspects of sport make/do not make you feel like an athlete?). Questions focusing on self-other interactions were also included (e.g. Tell me about the individuals who influenced your decision to become
involved/avoid sport). These questions were also congruent with narrative identity such that they tap into the widely available narratives for athlete and disability as well as the individuals who convey these narratives. Finally, questions based on the meaning and behavioural aspects associated with identity were posed (e.g. Tell me why you consider/do not consider yourself to be an athlete?).

Given that previous research supports the general tenets of identity theories and athletic identity’s relationship to sport participation (e.g. Tasiemski et al., 2004, 2011), the objective of this research was to further explore why athletic identity may be lost or (re)developed after acquiring a physical disability. Therefore, these frameworks cannot be ignored. While questions were posed in an open manner that invited narratives of sport and athletic identity, theory puts these experiences and narratives into context. Despite the use of theory as guidance, a qualitative approach still allows for unanticipated phenomena to arise and to be explored during the interviews; the analysis can still generate new possible themes and theories. Therefore, while the interview guide was based on theory, the analysis was not completely deductive. Yet, given the use of an interview guide based in theory, the interviews were not fully inductive either. Therefore an abductive approach, the dialogue between theory and data, was used as opposed to a strictly inductive or deductive approach (e.g. Taylor, Ntoumanis & Smith, 2009).
Data analysis

As Brockmeier (2012) notes, individuals have agency in their construction of narrative identities. Therefore, the approach to data analysis was to act as a witness to the narratives of sport and athletic identity provided by participants. This approach allowed us to examine the content of participants’ narratives, thus making link to cognitive theories, but by considering the structure of the story, examine how individuals constructed these narratives of sport and identity. Therefore we conducted a dual analysis consisting of a structural analysis and a categorical-content analysis (Lieblich, Tuval-Mashiach, & Zilber, 1998). The categorical-content analysis made it possible to highlight key themes of the interviews within, and between, participants. From a narrative identity perspective, this allows us to identify the content of stories and from a cognitive identity perspective, we can create links between this content and theory. By contrast, the structural analysis specifically addresses the narrative as a whole, thus highlighting how individuals construct the storylines of their accounts with sport, disability and identity (e.g. Lieblich et al., 1998). This aspect allows one to understand the overall focus, tone, and other structural features of the narrative thus uniting those with the same structures into a “narrative type”.

While the analyses overlapped to an extent, we began with the categorical-content analysis. The lead author transcribed the interviews verbatim and read each transcript multiple times for familiarization. Initial themes were proposed for the eleven transcripts as a whole. After the preliminary analysis, a research assistant independently read and coded the
transcripts to verify the plausibility of this coding structure. After verification from the research assistant and discussion about the themes, the categorical-content analysis led to the structural analysis as patterns within the data arose. Participants were either distinguished, or united, into smaller groups called narrative types. Following this initial observation, the structural analysis allowed the authors to examine the key features of these narrative types. From this structural analysis, the authors were able to identify structures such as tone and the narrative plot, or the storyline individuals constructed with respect to their involvement in sport. Once the structural analysis was complete, we were able to revert back to the categorical-content analysis and compare and contrast the narrative types on the themes that emerged.

Throughout the analysis the lead author, a doctoral candidate in Sport and Exercise Psychology, presented the emerging findings to the second author, who acted as a “critical friend”. Presenting data to the critical friend, a researcher with over 15 years of experience in disability and narrative inquiry, increased the rigor of the analysis by requiring the author to consider alternative interpretations, including structures and themes, therefore presenting the clearest case possible for proposed interpretations (Smith & Sparkes, 2006). The second author’s questions required the lead author to present a sound argument for the interpretations made based on both theory and the data, leading to more trustworthy conclusions (Smith & Deemer, 2000). Furthermore, engaging with the second author as a critical friend allows for auditing and transparency during data analysis (Sparkes & Smith, 2009).
Results

Three narrative types were identified in the interviews: non-athlete, the athlete as a future self, and the present self as an athlete. For simplicity, we will outline the findings from the structural analysis that led to identification of these three narratives followed by the findings from the categorical-content analysis, where we will contrast the different narrative types with respect to themes that emerged.

The structure of athletic identity narratives post-injury

Mission impossible: the non-athlete narrative. Alexandra, Amy and Kevin identified that they had no possible future in sport and therefore no possibility for the future development of an athletic identity. Though all were involved in recreational sport (e.g. running, softball) pre-injury, none of these participants had returned to sport post-injury. Furthermore, they reported no intention to ever return to sport. The lack of intention to participate in sport was the defining feature of this narrative type, such that these participants described the closure of a possible future as an athlete based on the past and present versions of the self. The lack of intention to participate in sport can be seen as a type of “narrative foreclosure” of a future identity (Freeman, 2003). In this group, foreclosure was defined by a fragmentation between selves across time. The closure of a future in sport was associated with a relatively negative tone about the body’s “dys-appearance” after injury (Leder, 1990). For example, Kevin strongly identified as a runner in the past; his athletic identity was strongly attached to marathon running. Because of this
past involvement in sport, Kevin could not see a possible future as an athlete given his present body’s inability to perform physically in the sport of his choice. Because he had spent many years in the distance running circuit, Kevin had built a strong identity as a fitness buff, runner and weight lifter; his inability to maintain the same intensity of weight training after injury could not restore this identity:

I couldn’t put myself to that level [of identity] though because I know how I was able to go to the extreme and I can’t, I can’t physically do that now. You know, I mean, if I work out, you know, I bench press and work out for maybe 10 to 15 minutes at a time and then I’m fatigued, then I gotta take a rest and then I can go back and exercise again where before I would go to the gym and I would just hit the weights hard for 40 minutes and get the heck outta there, you know? I was very, very determined, strong, and would burn myself out, where now [pause] you can’t do that, you know your injury, only half your body’s working anyway.

(Kevin, SCI, age 47)

The rigidity of Kevin’s identity and dwelling on the past self as a marathoner are indicative of a solidified narrative habitus (Frank, 2010), the system of narratives Kevin uses to construct his identity and interpret his experiences.

The constant comparison between present and past selves closed the possibilities of future sport, emotions mirrored by Alexandra. While Alexandra did not consider herself to
be an athlete before her amputation, the changes to her body caused her to feel that she could never be an athlete in the future. Unlike Alexandra and Kevin, Amy’s interview was neutral as opposed to mostly negative in tone. Amy differed from Alexandra and Kevin in a few important ways. First, Amy sustained her SCI at 19 years of age and thus had been living with her injury for 30 years while both Alexandra and Kevin were injured at older ages and had their injuries for less than 5 years. Amy chose not to participate in sport because she felt that it would be too physically taxing on her body. Thus, Amy made the decision not to return to sport after acquiring her SCI. Despite some of her differences from Alexandra and Kevin, Amy still operates by comparing her past and present bodies on physical function and this comparison prevents her from pursuing a future in sport. In a sense, Amy feels that her present body has less energy than her past body, forcing decisions about where to invest her remaining energy.

**Definitely, maybe: the athlete as a future self.** Four participants (Jocelyn, Melinda, Sam and Heather) expressed a second narrative type based on differences between past and present selves that diminished athletic identity. However in contrast to the *non-athlete* type, these participants envisioned redeveloping an athletic identity in the future if their present circumstances changed. Furthermore, these participants were more positive during their interviews. While they acknowledged that their present behaviour was not in line with that of an ‘athlete’, an athletic identity could be restored once future behaviour changes. For participants in this narrative type, the definition of athlete remained rooted in the pre-injury past. Yet, in comparison to those in the *non-athlete*
narrative, meanings of sport and the related identity standards were more malleable such that these participants described the possibility of (re)developing an athletic identity by either participating in a new sport in the future or returning to the same sport, provided that it could be adapted. For example, Melinda returned to sailing post-injury, the sport she had previously participated in at the national and international level. After injury, Melinda felt that her commitment to graduate school along with lower energy prevented her from participating in sailing to the extent that was consistent with her identity standard. As a result, she no longer considers herself to be an athlete. However, Melinda stated that once she graduates and moves to a city that offers more sport for quadriplegics, she could (re)develop an athletic identity. She predominantly focuses on the changes she sees in her present body, thus focusing on emerging aspects of the self that indicate a possible future in sport, such as increasing strength and energy:

I definitely think that it’s [pause] fairly probable, that yeah, I would um, be able to make that commitment in the future, partly because every month I get more energy and things get easier and you get more used to things and stuff like that. And yeah, especially if I’ve moved, depending on the opportunities, um, I can definitely see myself making that commitment. (Melinda, SCI, 28 years old)

Participants in this narrative type also considered past versions of the self; differences between present behaviour and past identity standards were identified as the
source of lost athletic identity. However, the future self as an athlete narrative was distinct from the non-athlete narrative such that the fragmentation between past and present selves did not dominate the interview. Rather, the dominant focus was how changing present behaviour could lead to a future as an athlete.

I got into a climbing harness and you know, tied up, tied in, got my belay set up with my belay partner and just had at it and I mean, I didn’t climb pretty, I didn’t climb well, I fell a couple of times but I got to the top of a route and I had not felt that sense of elation since well before my accident. I mean I distinctly remember that feeling. And every time I climb now I still have that feeling, so I feel like that’s, that’s going in the right direction.

(Sam, SCI, 37 years old)

The flexibility and openness to new meanings for ‘athlete’ was the structural focus of these interviews.

**I act, therefore I am: the present self as an athlete.** Four participants (Shane, Erin, Christine and Bryce) described a third narrative type: the present self as an athlete. Participants in this narrative focused predominantly on their present behaviour as indicative of athletic identity, though past performance and future goals also were identified as heavily influential. With respect to goals and competition, the achievement of goals strengthened identity as participants reflected on past performances when considering their athletic goals. In general, most of the participants’ behaviours stayed in
line with their past definitions of athletes; Christine was the exception to this observation. For Christine, the meaning of athlete itself changed as she met others with disabilities in the community. Exposure to these individuals through sport and recreation challenged her dominantly held narrative about bodies with disabilities could do and moreover, what an athlete is. This shift in the meaning of “athlete” enabled Christine to explore other athletic narratives, such as one dominated by changes in her own personal performance and enjoyment, as opposed to her previously held assumption that athletes were “super human performers” like Olympians. Thus like the others in this narrative type, the dominant focus of Christine’s interview was on her present behaviour sustaining her athletic identity, consistent with cognitive identity theory (Stryker & Burke, 2000).

**Comparative-content analysis: support for identity theories**

The results of the comparative-content analysis support the interactional versions of identity theory (e.g. McCall & Simmons, 1978) and cognitive identity theory (Stryker, 1980; Stryker & Burke, 2000). Furthermore, interrelated concepts of the embodied experience of disability and sport after injury; the traits of an athlete; conflicting roles and multiple identities; along with the influence of others were discussed during the interviews.

**The embodied experience of sport and disability.** One of the most dominant topics in the interviews centered on the body and participation in sport; changes to the body and ensuing changes to function either confirmed or challenged the athletic identity standard. Moreover, the demonstration of traits perceived as belonging to an athlete
confirmed athletic identity post-injury. Each participant identified the same characteristics of an athlete: commitment to sport, competitive goals and the desire to develop skill and improve performance. Across narratives, athletic identity was lost or developed by engaging in sport and possessing these athletic traits.

Alexandra and Kevin provide an example of how physical changes to the body can diminish the potential to develop an athletic identity post-injury because of the attachment to past selves. In Kevin’s case, his athletic identity standard was dominated by past experiences in marathons. Because his current body could never compare to this standard, there was no possible sport that would make Kevin feel like an athlete. Moreover, Alexandra’s interview demonstrates that the absence of an athletic identity pre-injury does not prevent changes in the body from diminishing the possible development of an athletic identity post-injury. Though she did not identify as an athlete pre-injury, Alexandra’s amputation made her feel awkward and clumsy, physical traits that are discordant with her beliefs about what an athlete is. Because she felt “inept” post-injury, Alexandra could not see herself ever developing an identity as an athlete, even if she tried adapted sport. For those who fell into the non-athlete type, changes in athletic identity hinged upon this discordance between the present self and the past athletic identity standards. These interviews highlight the importance of the role of physical function and the body in precluding changes in athletic identity based on the past notion of athlete. For example, Kevin still exhibits anger and frustration over this loss and shows no signs of changing the meaning of athlete to include lower performance in other sports, even four years post-
injury. Therefore, the embodied experience of injury, the body and attachment to this past self may overpower any adaptive changes to identity standards when these participants do try sport. Indeed, identity meanings for athlete were rigid and did not change in this sample, regardless of current physical activity and possible future sport participation.

As a contrast, participants in the *athlete as a future self* and the *present self as athlete* narrative types focused on sport behaviour as opposed to the physical traits of the body. Athletic identity was supported, or lost, based on the comparison between sport behaviour and identity standards. Those in *athlete as a future self* narrative expressed losing their athletic identity based on changes in their behaviour. The discrepancy between sport participation and identity standards indicated that participants were not meeting the key athletic traits of committing, competing and performing well in a sport:

I remember watching the winter Olympics in Vancouver and seeing these amazing feats of athleticism, you know the skiing and the biathlon and the cross-country skiing, all these amazing things that people were doing and thinking to myself ‘wow, I’ll never be able to participate even remotely like that’, let alone something at the level of Olympic athlete… I remember just breaking down one day and feeling like all hope was lost that I would ever be an active person again…for a long time, I kind of went through, into shut down mode where I didn’t even want to think about sports or think about physical activity cause I, there
was no way that I could even participate, I mean I went from climbing mountains to not being able to climb a staircase and that was just, you know, that just wrecked me. (Sam, SCI, 37 years old)

Sam’s focus was on the discrepancy between his past performance and present ability to climb. As time post-injury increased, the negative focus on the body decreased as Sam began to consider sport once again. As a further example, Jocelyn identified how changes in the body can cue changes to athletic identity immediately:

I looked down at my legs and it was so sad because I spent all these years running, you know, and had a lot of muscle and they were already so atrophied and it was just really, really sad. I remember that was huge, that was a huge deal for me ‘cause then it was like, that’s when I realized I, I mean, that was like, I’m no longer a runner. (Jocelyn, SCI, 52 years old)

The distinguishing features of the athlete as a future self was moving beyond dwelling on past bodies and engaging in sport. The focus became restoring the self as an athlete at a future point in time and therefore resolving the discrepancy between pre- and post-injury sport participation and traits. For these participants, the meaning behind being an athlete focused on aspects of the behaviour, such as frequency and commitment to sport, as opposed to aesthetics of the body and performance itself. For example, both Sam and Melinda had returned to sport they participated in pre-injury; however, because their
participation was not consistent with the commitment and competition aspects of their former athletic identities, they did not consider themselves to be athletes. They did identify that when they began to participate to the same extent as before, they could see their athletic identity return.

Participants in the present self as athlete narrative focused heavily on their present behaviour and future goals in sport. A main focal point for these interviews was on the interplay of goals, competition and performance as important factors influencing athletic identity. In turn, this focus reinforced athletic identity, producing positive emotions consistent with cognitive identity theory (Stryker & Burke, 2000). As an example, Shane described the importance of goals for guiding sport participation and maintaining motivation post-injury:

After my injury I lifted more for competitive reasons. So before it was just to stay in shape and to get exercise but now, I was weightlifting with a goal, to constantly improve…I’m at a higher level and competition is much more fierce and I find that I train harder now than I did back 20 years ago when I was doing field events. (Shane, SCI, 52 years old)

As Shane describes, having competitive goals influences motivation and sport participation. Past performance motivated sport participation through the desire to improve a future performance, particularly when compared to the perceived competition.
Reflecting on past selves was a source of information about the mastery of new skills in sport, and thus whether these participants’ possessed traits perceived as athletic. Moreover, competition was an integral part of ‘being’ an athlete for this group. Strongly linked to performance and commitment to practice, participating in competitions allowed participants to identify with the athletic role by engaging in an athletic pursuit. As an example, both Bryce and Shane had participated in national level competitions in their respective sports. The sheer level of time and effort that went into preparing for competition was influential on their athletic identities regardless of the outcome of the competition itself.

While most individuals held similar meanings of athlete before and after their injuries, they were not necessarily identical. Erin and Christine demonstrate how two individuals at two different levels of sport can both consider themselves to be athletes. For Erin, competition and commitment were the crux of being an athlete; commitment and performance goals allow one to reach those upper levels of competition that is consistent with Erin’s athletic identity standard. As a contrast, Christine acknowledged that her definition of athlete has changed over the years: her focus shifted towards specific skill development and enjoyment of sport rather than the competition or performance itself. This change in identity standard, as a result of changing identity meanings, allowed her current behaviour to fulfill her identity as an athlete:

I can’t say that I’m anywhere close to being someone who could be a competitive skier; however, every time that I’ve been out,
I’ve seen an increase in the skill. I’m able to do this a little better or been able to do that a little bit differently and I see the growth of my skill and the growth of my confidence, I think that’s what, that’s what keeps me going back and that’s what, that’s what I really think an athlete is. Someone who is striving to do, do more and to improve their skill at whatever it is that they’re working on. (Christine, SCI, 44 years old)

While competition is important for some, the importance may actually lie within skill development; for some, competition and its outcome may be indicative of this skill. These indicators of behaviour supported athletic identity post-injury.

**Co-existing disability and athletic identities.** Participants in all narratives identified a new identity as someone with a disability. Yet the extent to how this was defined differed between the narrative types. Among those in the *non-athlete* narrative, changes to the body and ensuing function changed how they felt about their multiple roles. For example, Kevin’s past identity as a runner was complimentary to his role as a husband and as a friend; given its salience (Stryker, 1980), the loss of his athletic identity and function influenced other areas of his life including his relationship with his wife and with friends, many of whom were runners. These changes led to negative experiences and changes in Kevin’s lifestyle based on others’ responses to his injury, such as friends who could no longer face him. In the *non-athlete* narrative type, individuals could not perform
the behaviours they attributed to an athlete given the changes to the body, its function, and ability to perform.

Those in the *athlete as a future self* narrative also identified issues of physical symptoms and an identity as someone with a disability as influential on how they felt about their post-injury selves. Often, this was described in terms of an ignorance of what life with a disability would actually be like:

> I didn’t have any conception of how difficult it would be to go from feeling physically like there were not limits to what I could do in terms of what I could do, no realistic limits I should say… those were things I never considered before my accident and now they’re things I have to consider if I’m going to, you know, live my day to day, so I think that’s something that a lot of folks don’t understand and there’s really no way one can fully appreciate it until it happens to them. (Sam, SCI, 37 years old)

However, in contrast to those in the *non-athlete* narrative, Sam and the other participants in the *athlete as a future self* narrative described eventually embracing the changes in their body so that this was no longer the defining feature of their lives. Thus, meanings of disability changed. As an example, Sam adopted a view of himself as a “gimp” which was perpetuated through the sport and activity group he became involved with. Rather than interpret this as a negative thing, Sam now sees himself as someone who goes out and gives it his best despite physical impairments. As a comparison to Sam, Melinda says that
while her disability does affect who she is, she does not let it completely define her. Melinda described having many other salient identities, such as graduate student and friend. Indeed, the presence of other important identities is linked to greater well-being and ability to adjust when faced with challenges (Thoits, 1983). Therefore, individuals in the athlete as a future self narrative may have better adjustment post-injury if they can more easily incorporate both athletic and disability identities.

The participants in the present self as athlete narrative did not see athletes with a disability as different from athletes in the general population. Rather, it was the commitment to sport and the necessary sacrifices to excel in sport that defined athletes regardless of disability status. As an example, Erin identified that she uses different equipment but in reality she is still competing and therefore, is still an athlete. Unlike those in the non-athlete narrative, meanings of disability and athlete were more congruent such that both identities could co-exist. Christine’s interview highlights the importance of others in developing the understanding of how someone with a disability can also be an athlete. Repeated exposure to stories of athletes with disabilities changed Christine’s identity standard for athlete. This change allowed her disability and athletic identity standard to mutually exist and be satisfied through similar behaviours, such as participation in recreational sport:

I think it’s my own experience, my own exposure to uh, various different people in the community and learning to appreciate that absolutely everybody has something to contribute…I’ve learned
to appreciate I think, um, various different people in the community by meeting them and um, and just changing maybe the way I may have thought about people with disabilities before as well. So it’s been an evolution. (Christine, SCI, 44 years old)

Interestingly, Christine, Bryce, Erin and Shane were all injured in early adulthood and have been injured for over 20 years. Thus, accepting and integrating changes to the body and changing meanings of athlete through new narratives of disability may take several years and repeated exposure to others with disabilities.

The power of shared experiences and interactions with others. Successful performance of a role requires the negotiation of roles and meanings with others (McCall & Simmons, 1978). While, this was supported to an extent through the interviews, not every social interaction was described as having an impact on athletic identity. Others in the community and family were not seen as having a strong influence on athletic identity before or after injury. As a contrast, before and after injury, friends were identified as playing a more active role in developing athletic identity by introducing participants to sport. For example, Sam’s close friend from his climbing gym played a vital role by organizing an adapted climbing workshop and connecting Sam with a local organization for adapted, extreme sports. Therefore friends were described as a catalyst to sport – though not an outright influence on identity.

For those in both the athlete as a future self and the present self as athlete narratives, it was teammates and other athletes that were influential in the development of
athletic identity both before and after injury. For those who had returned to sport, sharing experiences and stories with other athletes drew these participants to sport. In particular, Sam appreciated the benefits of connecting with people who can relate to the experience of a traumatic injury:

Having a community of folks who identify through activity and outdoor activity in particular, you know to have that community to support one another is really incredibly helpful because one of the things that I suffered from most in my depression was a sense of isolation and alienation, that the world just didn’t understand what I was going through…they knew what that feeling was like, they’ve been there, a lot of them are still going through it…But you know, we can all come together and support one another and I think it’s through that sense of identity, shared identity. (Sam, SCI, 37 years old)

Participants from the present self as athlete type also described the importance of others in creating welcoming environments in which athletic identities could be developed. For example, Erin recounted how the introduction to adapted sport can be a confusing time; each sport has its own jargon and classification system. The coach’s words of reassurance drew her in but it was the other athletes and the environment these athletes created which kept Erin involved in sport:
I was very nervous. Now I had prejudice, I guess I would call it a prejudice. I just thought to myself, oh my gosh, I’m going to go out with all of these disabled people, how depressing is this?!
Well it ended up to be an amazing experience because they were so supportive, they joked around a lot, they seemed to have their priorities in their life straight. (Erin, Amputee, 60 years old)

Once in these environments, sharing experiences with other athletes was beneficial for building identity through creating a sense of belonging to this group. Common goals within a group context motivated participants to continue participating in sport. The maintained commitment to sport and their peers assisted with building an athletic identity post-injury.

Athletes without disabilities who were not part of the immediate team context were also influential on athletic identity through the validation that they offered when they made comments to participants concerning their involvement in sport. As an example, Erin highlights certain aspects of these individuals that make them more credible sources of information: other athletes understand how physically taxing sport, and thus adapted sport, can be. Indeed, Erin felt that the encouraging comments and responses to her sport held more weight than negative comments made by other individuals outside of a sport context. Sharing experiences with, and feedback from, individuals with more of an understanding of sport and its physicality may be more important as a form identity validation because they are perceived as a credible source.
Discussion

The objective of this paper was to explore the process by which individuals lose or (re)develop athletic identity after acquiring a permanent physical disability. Three narrative types structurally based on the embodied aspects of disability, sport and the self influenced athletic identity and sport participation; these narratives further influenced future chances to develop or re-cultivate identity as an athlete. Using novel research methods within sport and disability research, our findings advance the knowledge base of athletic identity for people with acquired physical disabilities by identifying ways in which perceived selves across time, rooted in notions of the body and performance, can influence sport participation.

The similarities and differences observed between the narrative types support multiple strands of identity theory. For example, every participant identified the same characteristics of an athlete including both physical (e.g. performance, skill) and psychological (e.g. goal orientations, commitment) aspects that suggest a master narrative of “athlete”. As narrative theorists would suggest, this master narrative of athlete provides a template for individuals to use with their experiences in sport post-injury. The narrative types that focus on traits such as commitment to sport, as opposed to lost bodily function, allows participants to remain open to sport opportunities and thus, potentially, (re)develop an identity as an athlete. From the perspective of cognitive identity theory, participants identified that behaving like an athlete, such as setting goals and committing to a sport practice, was part of the key to maintaining an athletic identity (Stryker & Burke, 2000).
Finally as interactional identity theorists would propose, conversing with other athletes confirmed athletic identity and built an environment in which individuals felt supported (McCall & Simmons, 1978). Therefore, it is important to consider all narratives that circulate within an environment, as they may challenge the dominant, master narratives for sport and disability that individuals hold.

The interviews provided further context to identity theories by demonstrating the importance of narrative plots. This point is made evident by comparing narratives from individuals such as Christine and Kevin. Because of Kevin’s extensive experience with marathon running, even four years post-injury he remained attached to his past definitions of sport. Kevin’s personal narrative was heavily influenced by that of the marathoner and as such, the “runner” identity became an increasingly salient, and rigid, aspect of how Kevin constructed his identity. His runner identity was associated with multiple other identities such as husband and friend. As a result, even though Kevin returned to weight-lifting post-injury, he no longer identified as an athlete – contrary to cognitive identity theory. However when considering Kevin’s attachment to a specific athletic narrative, it is not surprising that Kevin follows a plot that limits the (re)development of the future self as an athlete. By contrast, Christine participated socially in outdoor sport before her injury and thus based on her past meaning of the athlete as an elite performer, she did not consider herself to be an athlete pre- and immediately post-injury. However, Christine identified exposure to others with disabilities and adapted sport as an important factor that changed how she thought about sport. Repeated exposure to alternative narratives of sport
and performance allowed Christine to express a new narrative of sport – one in which her recreational sport participation would be considered as athletic. While cognitive identity theory would predict this change over time, the narrative analysis provides context by answering why this change occurred.

The contrast between Christine and Kevin reveals important differences between the narrative groups. Individuals in the present self as athlete narrative (e.g. Christine) were approximately 25 years post-injury while individuals in the non-athlete narrative (e.g. Kevin) were approximately 4 years post-injury with the exception of Amy, who was 30 years post-injury. Participants in the athlete as a future self narrative (e.g. Melinda) were approximately 5 years post-injury, similar to Kevin and Alexandra from the non-athlete narrative type. As those in the present self as athlete narrative described, making these transitions to considering the self as the athlete after injury may take a number of years. Therefore it is possible that those in the non-athlete narrative need more time and exposure to different narratives to develop a new meaning of athlete.

A second observation from the interviews was differences among the ages at which individuals were injured. On average, participants in the present self as athlete narrative were injured in their late teens and early twenties. As Kevin and Melinda stated during their interviews, at this age individuals are not yet set in their ways and can make the transition to sport more easily than older individuals. When individuals are “set in their ways”, they demonstrate a solidified narrative habitus (Frank, 2010). Because the narrative habitus predisposes individuals to certain narratives, this may explain why those with a
solidified narrative habitus, such as Kevin, resist sport post-injury. Consider Kevin and Jocelyn from the *non-athlete* and *athlete as a future self* narratives. Both were injured in their mid to late-forties, approximately four years ago. Jocelyn expressed the desire to return to sport post-injury while Kevin expressed a strong resistance. If narrative habitus is solidified solely through age, both Kevin and Jocelyn should have both identified a narrative foreclosure for their athletic identity. However this was not the case. Upon further discussion, Jocelyn identified that running was not necessarily part of her other identities as a wife, mother or friend. Moreover, Jocelyn was considering moving to cycling because of knee pain. As a contrast, Kevin’s other identities including husband and friend were strongly linked to his identity as a runner; he was still training for marathons at the time of his injury. Thus for Kevin, a narrative habitus as a runner dominated his experiences in other domains of his life, such as interactions with his wife whereas Jocelyn’s narrative habitus incorporated more narrative resources for her to draw upon, such as identities as a friend and mother. Understanding the strength of individuals’ narrative habitus can be useful in identifying any resistance to sport and the stories that lead to such a resistance.

A solidified narrative habitus can prevent individuals from exploring sport post-injury. As Frank (2010) theorizes, when stories do not fit with an individual’s narrative habitus, the story and its information will pass along in the “river of not for me”. Thus for individuals like Kevin (i.e. those with a solidified, *non-athlete* narrative habitus), having to start from scratch in a new sport, with new equipment and rules, is not conducive to the
performance that dominates their understanding of the self as an athlete. Thus experience in adapted sport that does not meet these demands may further push these individuals away from working at a sport until they reach elite levels of performance once again. Moreover, it is possible that the narrative habitus as a marathoner continues to call Kevin to continuously ruminate on the past self and past performances as a runner.

The observed narratives also provide insight for sport promotion among individuals with acquired physical disabilities. First, participants in the present self as athlete narrative (e.g. Christine, Shane) identified the change to the self as an athlete as an evolving, lengthy process. Consistent with cognitive identity theory, social structures will inform identity meanings and it will take time to adjust identity standards to these meanings (Burke, 2006). Therefore sport promotion within this population cannot be a one-time activity that takes place immediately after injury. Rather, continual contact with individuals to help them understand that the world of sport can, and will, remain open is necessary. As an example, frequent visits to rehabilitation facilities will ensure that patients hear about adapted sport opportunities multiple times before they are discharged. Building connections with other disability organizations, allied health professionals and peer support services can help access those individuals once they leave inpatient rehabilitation. These connections between organizations are essential to support those in the community who will not be open to sport immediately after injury or during rehabilitation. Moreover, these connections can help support individuals who identify with the athlete as a future self narrative (e.g. Sam, Melinda) work toward sport participation. As identified in the
interviews, there were a number of barriers to sport that precluded these individuals from behaving in accordance with their identity standards. Connections between sport and disability organizations are necessary for ensuring these individuals have the support they need to begin participating in sport. This will include assisting individuals with environmental barriers (e.g. equipment, transportation) as well as providing behavioural strategies, such as planning and self-regulatory strategies to overcome personal barriers to sport (e.g. Arbour-Nicitopoulos, et al., 2009; Martin Ginis, et al., 2011). With support, these individuals could transfer into the present self as athlete narrative.

The non-athlete narrative presents a dilemma for sport promotion. Attempts to promote sport in the current manner will be met with resistance; from the non-athlete narrative’s perspective, the body post-injury precludes them from becoming athletes based on a solidified narrative habitus. However, Frank (2010) notes that habitus may be predisposing to certain stories, but it is not an individual’s destiny. Rather Frank (2010) suggests that we can narratively ambush individuals through providing stories of adapted sport that disrupt commonly held beliefs about athletes and provide new ways of thinking about sport and disability. Indeed one participant, Christine, described narrative ambush in action – repeated exposure over time to other stories of disability and sport eventually opened her narrative habitus to include adapted sport and performance at any level. For individuals resistant to sport post-injury and those who feel awkward with their chair, sport that requires minimal equipment and can be done with important others in their lives, such as kayaking, may begin to open a space for sport in their narrative habitus and may
increase the openness to more obvious adapted sports like wheelchair tennis or curling. Moreover, experience in a completely different sport from one done in the past may remove some of the expectations for performance held. Future research considering the role of narrative ambush in sport promotion is warranted.

**Contributions and conclusion**

This study employed the novel approach of narrative inquiry to advance our understanding of athletic identity for individuals with acquired physical disabilities by allowing individuals to express in their own words why and how their injuries and experiences within athletics influenced their identities. Participants’ stories of sport and athletic identity post-injury fit one of three narrative types, distinguished based on narrative plot. Within the *present self as athlete* group, identity was maintained by focusing on present behaviour and future goals – the narrative plot focuses on the present self and sport participation. Among those in the *athlete as a future self* narrative, the plot was future oriented such that future sport participation and its associated activities such as competition would restore an athletic identity. As a stark contrast, those in the *non-athlete* narrative were focused on the past. As a result, they spent more time ruminating on past versions of the self and lost possibilities for the future.

This research advances our theoretical understanding of athletic identity by incorporating complementary versions of identity theory – those based in Cognitive Psychology and Narrative Identity. While cognitive and interaction versions of identity
theory highlight the internal mechanisms that influence identity and therefore behaviour, the turn to narrative identity highlights how individuals shape identity through storying their experience and the structure of such stories. As a result, factors such as the strength of narrative habitus provided information about why individuals may behave in completely opposite manners. Thus in the case of this research project, we were to achieve a more nuanced understanding of athletic identity post-injury; that is, why behaviour does not necessarily lead to validation of an identity as an athlete for some individuals and moreover, how and why others could be drawn to develop an athletic identity after sport.

As Smith and Sparkes (2009) suggest, narrative inquiry allows us to understanding the personal and public meanings behind sport and disability and how these meanings influenced identity. Using this method, it becomes possible to examine the “messiness” behind identity, sport, and disability.

Finally, these developments can lead to improved sport promotion practice for this population by creating innovative interventions based on stories of sport. As Frank (2010) suggests, narrative ambush through media and messaging can disrupt the dominantly held narratives individuals’ hold thus increasing the narratives available to individuals. As Smith (2013) notes, creating stories can increase the possibility of change. The narrative approach to messages can attract individuals and capture attention more so than blunt, factual messages. Indeed, finding ways to create and test messages that increase exposure to these alternative narratives of sport and disability are an important step to draw inactive individuals towards sport.
References


INTEGRATION OF MANUSCRIPTS 1-3

The second manuscript demonstrated how and why individuals with acquired physical disabilities lose or (re)develop an athletic identity post-injury. Individuals that focused on the past, including the body and its previous ability to perform in sport, saw themselves as having lost the ability to redevelop an athletic identity post injury. By contrast, the participants who expressed an athletic identity or the possibility of developing an athletic identity identified athletic behaviour, such as commitment to a sport practice and setting competitive goals, as supportive of identity. Evidently, the self and body are important factors to consider with respect to sport and acquired physical disabilities.

While the first and second manuscript address why and how athletic identity and its narratives influence sport participation, specific disability narratives may also limit what identities can develop post-injury and how life is seen. However, no research has examined how broader disability narratives and context motivate individuals to engage in sport. Thus to complement the role of athletic identity in sport participation, research is needed to understand the role disability plays in motivating a return to sport and in particular, environments that support this role. As such, the objective of the third manuscript was to address how larger disability narratives motivate LTPA, such as sport and exercise.
Chapter 5

Narrative environments and the capacity of disability narratives to motivate leisure-time physical activity among individuals with spinal cord injury
Abstract

**Purpose:** Few individuals with spinal cord injury (SCI) engage in the recommended amount of leisure time physical activity (LTPA). Yet little is known about how, and why, active individuals engage in specific types of LTPA. This study explored how a unique narrative environment and disability narratives motivated individuals with SCI to engage in LTPA. **Method:** Narrative analysis of interviews with fourteen active individuals with SCI present at a specific physical activity program. **Results:** Restitution narratives (n=6) were motivated to engage in functional LTPA because of the desire to maintain the body and restore the past self. The chaos narrative (n=1) preferred solitary LTPA because exposure to others with SCI was a constant reminder of the lost, pre-injury self. Quest narratives (n=7) explored LTPA options that fit with their interests; these individuals were open to new types of LTPA, such as sport and outdoor recreation. **Conclusion:** Disability narratives motivated the pursuit of certain LTPA and the rejection of others. Given three unique differing viewpoints of LTPA and SCI, LTPA interventions can be enhanced through the lessons learned from this unique type of environment.

*Keywords:* spinal cord injury, leisure time physical activity, narrative inquiry
Introduction

Individuals with spinal cord injuries (SCI) face a higher risk for a number of negative physical health outcomes and secondary complications compared to individuals in the general population\textsuperscript{1-3}. For example, cardiovascular disease (CVD) is an estimated 3 to 5 times more prevalent among individuals with SCI (i.e. 30-50\%) than in the general population (i.e. 5-10\%)\textsuperscript{3}. Given that approximately 80\% of individuals with SCI are injured before the age of 30 and the increase in life expectancy for individuals with SCI, they will face a number of years at risk for these health problems\textsuperscript{3,4}. In addition to poor physical health outcomes, individuals with SCI also have a higher risk for negative social and psychological outcomes. Recent evidence also suggests that over half of individuals with SCI experience chronic pain severe enough to interfere with quality of life\textsuperscript{5}. Furthermore, individuals with SCI also have an increased risk of depression, lower quality of life and life satisfaction, and have more difficulty with community integration compared to individuals in the general population\textsuperscript{6-8}.

Participating in leisure-time physical activity (LTPA), activities individuals do in their spare time such as sport and exercise, becomes critical post-injury. Indeed, recent systematic reviews indicate that engaging in LTPA can mitigates the risk of CVD and other health outcomes (e.g. obesity, Type 2 diabetes) post-injury\textsuperscript{3}. Moreover, participation in regular LTPA results in reduced pain and as a result, reduced depression\textsuperscript{9}. Indeed, a recent meta-analysis revealed significant, positive relationships between LTPA, life satisfaction and subjective well-being\textsuperscript{10}. Yet despite these benefits, research by
Martin Ginis and colleagues suggests that the majority of individuals with SCI are insufficiently active to achieve these important health and psychosocial benefits of LTPA. Furthermore, there are inequities between the effort spent to promote LTPA in the general population and among those with SCI. This inequity is particularly worrying given the increased risk of health problems among individuals with SCI.

Research has begun to explore theory-based determinants of LTPA among this population. Constructs such as attitudes, self-efficacy, intentions and planning have emerged as factors influencing LTPA behaviour. Researchers have applied this knowledge in the creation of theory-based LTPA interventions that effectively promote LTPA participation among people with SCI. Although these interventions can lead to behaviour change, their efficacy certainly can be improved. The models upon which these interventions are based account for a relatively small amount of variance in behaviour. For example, studies based on the theory of planned behaviour (TPB) demonstrated that behavioural intentions predict LTPA among individuals with SCI; however, only 12% of the variance in LTPA is explained through these constructs. Research with other theoretical models such as the Health Action Process Approach (HAPA) demonstrates the importance of other possible theoretical constructs for LTPA such as planning and multiple types of self-efficacy. Similarly to the TPB, research using the HAPA model explains approximately 20% of the variance in LTPA behaviours. Given that these current models explain only a small proportion of variance in LTPA behaviours, exploring the context in which LTPA takes place can enhance our
understanding of how and why individuals access LTPA post-injury. This understanding will provide direction for delivering theory-based interventions in contexts that suit the diverse LTPA needs and motivations of the SCI population. Applying novel research methods such as narrative inquiry is one approach to developing a rich understanding of LTPA motivation and complimentary contexts for fostering participation.

**Narratives as a conceptual framework**

Narrative inquiry is a tradition of qualitative research founded on the assumption that meaning is created through the act of story telling. It complements investigations of theory-based determinants of behaviour such as those described above by allowing an exploration of the larger context, such as how one’s identity of the self as “disabled” may construct different attitudes towards LTPA. As Frank proposes, stories act *for* and *on* people. Stories act *on* people by motivating specific behaviours by “hailing” an individual to act in accordance with its characters. Furthermore, stories work *for* people by allowing individuals to shape their identities through story telling. Thus research in this realm invites individuals to share stories and uses the stories individuals tell as the data itself. This novel approach to investigating LTPA participation post-injury can enhance our understanding of how the theory-based determinants and interventions for LTPA operate in a population largely absent from health promotion efforts by providing deep insight into the narrative dimensions of human lives, including the ways in which narratives are pervasive in shaping human conduct.
When applying narrative inquiry methods to gain an understanding of individuals’ behaviours, there are three dimensions of the story and story-telling experience that must be considered including: a) the narrative identity, b) the narrative plot, and c) the narrative environment.

**Narrative identity.** As Frank and other narrative theorists suggest, individuals construct identities through story telling\textsuperscript{20,22}. While theorists would agree on the socially constructed nature of identity, there are five different ways of framing identity: psychosocial, inter-subjective, storied resource, dialogic, and performative. For the purpose of this paper, narrative identity is viewed from the storied resource perspective such that identities are actively constructed through the act of story telling\textsuperscript{22}. In this perspective, individuals’ stories and thus identities are personal such that the events they speak about are private and unique; however, these identities are also public such that the template used for the story is socially situated\textsuperscript{22}. These templates can limit what stories and therefore, what identities individuals can develop post-injury\textsuperscript{21}. From this perspective, SCI is both a personal and public event such that the narrative templates guide whom a person with SCI “can be” and therefore, what this person “does”. For example, the narrative templates for disability would then act for and on people by motivating specific behaviours associated with SCI, such as proper skin care to avoid secondary complications associated with SCI. While research has demonstrated that SCI affects identity in different ways\textsuperscript{23-26}, no studies have examined how these differing identities motivate LTPA post-injury.
**Narrative plot.** The templates that shape identity contain what is referred to as a “narrative plot”, or a story line that is used to understand a given experience and motivate behaviour. Within these plots is the concept of “narrative time” which refers to the perception and construction of time across a given template. Within narrative plots, time is not simply a clear trajectory from past to present to future; rather, these time periods are intertwined to shape the narrative plot and give individuals a sense of who they are. Among individuals with disability, previous research using narrative inquiry demonstrates the importance of narrative plot, and therefore time, for narrative identity. For example, post-injury some individuals tend to focus on the past, pre-injury self while others tend to focus on the future such as the developing self as an advocate for individuals with disabilities. However to our knowledge, no research has examined how and why particular aspects of these narratives, such as narrative plot, motivate LTPA post-injury.

**Narrative environments.** As narrative theorists propose, stories do not exist in isolation; rather they circulate in what Gubrium and Holstein call “narrative environments”. While narrative environments can be physical environments such as a hospital, the notion itself also incorporates the larger socio-cultural environments. In particular, Gubrium and Holstein note that narrative environments support and value specific narratives while inhibiting or marginalizing others. Consider hospitals as a narrative environment. Within hospitals there are master narratives, the dominant socially acceptable narrative, for patients that invite certain stories and behaviours, such as
adhering to treatment regimens, while minimizing others. Given the influence that narrative environments may have on the expression of narratives themselves, any consideration of narrative identity and LTPA must also explore how narrative environments can support or inhibit specific stories about SCI and LTPA.

The current study: objectives and narrative environment

With the goal of developing knowledge that will contribute to enhancing the delivery of theory-based interventions for LTPA post-injury, the purpose of the current study is to understand how narratives motivate LTPA and the types of narrative environments that support individuals’ stories of SCI and LTPA. The study was conducted in a unique narrative environment. However, participants were encouraged to discuss other environments that supported their identities. Specifically, the research was conducted in a new type of rehabilitation facility (pseudonym: Active Rehabilitation) that opened its doors to individuals with SCI in Europe. As a narrative environment, this program offers a unique consideration of LTPA post-injury. Active Rehabilitation is a paid rehabilitation and LTPA service that focuses on functional exercises for the entire body, including the legs and core. All of the exercises occur outside of the clients’ wheelchairs on mats and benches, simultaneously engaging as many muscle groups and body parts as possible. Specific weight exercises, such as work on the adductor machine, are meant to recruit and fire the muscle groups in the legs. Aerobic activities, such as cycling on a spin bike, offer a different experience of aerobic exercise post-injury. The
program has a wide variety of clients with varying levels of SCI and resulting function. Given the unique narrative environment for LTPA among individuals with SCI, examining the stories and experiences of Active Rehabilitation’s clients, along with the environment in which they occurred, offers a deeper understanding of the reasons individuals approach LTPA post-injury.

Method

Participants

A convenience sample of clients with SCI from Active Rehabilitation was recruited; no age, gender or injury limitations were set. Participants were first approached by staff at the program, followed by a formal invitation by the lead author (initials removed for review) if they agreed to be contacted. Fourteen Active Rehabilitation clients (10 male, 4 female; 12 paraplegics, 2 quadriplegics) approximately 40 (range=21 to 65 years) agreed to participate (Table 1). They were approximately 3.5 years post-injury and been attending the program for an average of one year.

Data collection

Life history interviews were used to explore the stories that clients told about LTPA. In person interviews were scheduled at a time and location that they chose. For two individuals, it was necessary to do the interview via Skype (with video). Prior to the interview, participants were reminded of the nature of the study and given the opportunity
to ask questions regarding the research and its purpose. All participants gave informed consent prior to their interview with the lead author.

Table 1.
Participants from Active Rehabilitation (AR)

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Age</th>
<th>Years Post-injury</th>
<th>Years at AR</th>
<th>Level of Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Restitution</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carys</td>
<td>34</td>
<td>1</td>
<td>3 months</td>
<td>T5, Complete</td>
</tr>
<tr>
<td>Don</td>
<td>31</td>
<td>1</td>
<td>3 months</td>
<td>T4/5, Complete</td>
</tr>
<tr>
<td>Jane</td>
<td>50</td>
<td>7</td>
<td>1.5</td>
<td>T12 Incomplete</td>
</tr>
<tr>
<td>John</td>
<td>26</td>
<td>2</td>
<td>1.5</td>
<td>T9, Complete</td>
</tr>
<tr>
<td>Kal</td>
<td>37</td>
<td>3</td>
<td>1</td>
<td>T11/12, Complete</td>
</tr>
<tr>
<td>Rachel</td>
<td>35</td>
<td>2.5</td>
<td>1.5</td>
<td>C6/7, Motor Complete &amp; Sensory Incomplete</td>
</tr>
<tr>
<td><strong>Chaos</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emilie</td>
<td>40</td>
<td>2.5</td>
<td>6 months</td>
<td>T7, Complete</td>
</tr>
<tr>
<td><strong>Quest</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aaron</td>
<td>34</td>
<td>2.5</td>
<td>1.5</td>
<td>T12, Incomplete</td>
</tr>
<tr>
<td>Alan</td>
<td>21</td>
<td>3.5</td>
<td>2.5</td>
<td>T5, Complete</td>
</tr>
<tr>
<td>Alice</td>
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<td>7</td>
<td>3 months</td>
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<tr>
<td>Jim</td>
<td>45</td>
<td>1.5</td>
<td>9 months</td>
<td>T9, Incomplete</td>
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<tr>
<td>Robert</td>
<td>50</td>
<td>6</td>
<td>3</td>
<td>T6, Complete</td>
</tr>
<tr>
<td>Tom</td>
<td>65</td>
<td>4</td>
<td>1</td>
<td>T3, Incomplete</td>
</tr>
<tr>
<td>William</td>
<td>60</td>
<td>7</td>
<td>2.5</td>
<td>T6, Complete</td>
</tr>
</tbody>
</table>

**Interview guide.** A semi-structured interview guide was developed to ensure the interview touched upon aspects of pre- and post-injury LTPA and the context in which it occurred. The guide included broad questions such as “tell me something about your life before your spinal cord injury” and “tell me something about your life after your spinal cord injury”. These broad questions were meant to open the door for participants to
describe their lives and post-injury changes in their own words. Once the general discussion from the broad introductory questions lulled, graphic elicitation was used to guide the discussions around LTPA. Each participant was asked to draw a graph that represented what their pattern of participation in LTPA pre- and post-injury looks like. The graphs prompted participants to think about periods in time where they were particularly active or inactive and to explore these points. Each interview closed with a broad question, allowing participants to add anything they felt was relevant to their experience with LTPA or SCI. Interviews generally lasted between 45 minutes and 2 hours; a single interview with each participant produced detailed stories about their pre- and post-injury experiences of LTPA. Saturation, the point at which the information collected begins to repeat itself and no new information is gained from further interviews, was reached after fourteen participants.

Data analysis

Given that the objective was to explore how stories individuals tell of SCI and LTPA in the context of Active Rehabilitation motivate LTPA, a dual structural and categorical-content analysis of participants’ narratives was used. The structural analysis highlights how individuals construct their experience of disability; the focus is on the structure of narratives which allows us to understand the overall tone and plot of narratives, therefore enabling the grouping of narratives into “narrative types”. Essentially, this analysis reveals the how and why of stories. By contrast, the categorical-
content analysis allows us to understand what participants’ discuss when talking about LTPA and SCI and how this differs between groups 32. Therefore, the use of this type of dual analysis enables researchers to gain a more complete understanding of the structure and content of specific narrative types that motivate LTPA.

All interviews were audio-taped, transcribed verbatim and subjected to the dual narrative analysis described above 32,33. While the two analyses overlapped, the analysis began by reading transcripts in groups of three or four as this was considered to be manageable size. After data collection and the initial reading of the first group of four transcripts, the structure of individuals’ narratives became evident. It is important to note that no narrative types were initially imposed on the data. Both themes and narrative structures were allowed to emerge during the initial analysis. Once a pattern appeared with respect to a structure, the remaining transcripts were examined for the same structures and were confirmed through field notes from each participant’s interview. Each participant was then assigned to a “narrative type” based on the key features of the interviews 20. As transcripts were read they were coded according to narrative structure, the authors remained open to other possible narrative types. During the initial reading of the transcripts, interviews were also coded for content related to SCI and LTPA and initial themes were proposed for the 14 transcripts as a whole. Conversations with the second author confirmed the proposed themes and narrative structures. Once all participants were organized based on narrative types, an in depth categorical-content analysis allowed us to examine the key content of the different narratives with respect to
LTPA and SCI.

During the analysis, the first author regularly presented the findings to the second author, who acted as a “critical friend”. The critical friend required the author to consider alternative interpretations of the data, including alternative structures and themes, thus increasing the quality and rigor of the analysis because the lead author had to present a clear case for the proposed interpretations\textsuperscript{34,35}. Furthermore, the active role played by the second author allowed for transparency during the data analysis\textsuperscript{36}.

**Findings: Stories from Active Rehabilitation**

As a narrative environment, Active Rehabilitation allowed for three very different and opposing narratives to operate within the same LTPA setting: the restitution, chaos, and quest narratives. For ease of presentation, the results of the categorical-content analysis will be described as embedded within the structural analysis. First, we will describe how the restitution narrative operates with respect to LTPA, followed by the chaos narrative and finally by the quest narrative.

**Restitution narratives: LTPA as a vehicle for the restored self**

Six participants framed their stories using a restitution narrative (Table 1). Frank\textsuperscript{20} describes the plot of the restitution narrative as “yesterday I was healthy, today I’m sick, but tomorrow I’ll be healthy again” (p. 77); in the context of SCI research, “health” can be replaced with the restoration of function and walking\textsuperscript{24,25}. It is important to note that
among our participants the focus was not always explicitly on walking but rather returning to a life that mirrored the one lived before SCI and to maintain the body for an eventual cure for paralysis. Participants in this narrative viewed LTPA primarily as a way to restore function or to maintain the body for a potential cure in the future. The plot of the restitution narrative itself was an important motivator for individuals to get involved in LTPA post-injury.

I’m desperate to keep in as good shape as possible. If there's a breakthrough in science or something that, that just might help a bit later in life, it's not much good if you let your body go to pot or if your bones are not strong enough to support you or anything like that…I suppose there's a huge underlying, don't be lazy about things because, because I gotta keep my body in good shape for all reasons and for the future. (Rachel)

As Rachel describes, the appeal of physical activity is deeply rooted within the restitution narrative. The narrative allows participants to envision a more promising future – one that serves as the motivation for regular physical activity.

As the participants’ comments highlight, an important aspect of the restitution narrative is the emphasis on the restoration of a past self in the future. The restitution narrative focused participants’ attention on the future, allowing them to express a strong philosophy of the future. This philosophy of the future maintains focus on engaging in LTPA so that participants could reach the restored self they desired. Indeed, the
restitution narrative brings individuals to LTPA and provides them with a way to minimize the potential impact of the SCI on the original biographical map, or original life plan, as highlighted by John:

It’s my determination to beat it and walk again because I figure if nothing’s broken in my spine, it’s just, it’s just inflammation, it’s not like it’s been cut off and I don’t know, so it’s just trying to get the messages back through there, trying to get the nerves to regenerate. It’s just the sort of thing, repetition is gonna help that.

(John)

A second capacity of the restitution narrative is to focus attention to the functional body. As participants noted, functional improvements made over the course of their participation in LTPA further motivated habitual LTPA as they noted the desired future self was getting closer.

I have gotten much better since I’ve been here, much stronger. You know, my actual movement, ‘cause I can’t move this foot at all and this one I can move the foot but not the toes. And that’s what you use for balance. But the actual muscle strength has obviously helped with everyday things and people I haven’t seen for a long time say, “Oh God, you’re walking so much better”, so I have gotten much better since, much stronger. I’ve got a long
way to go, but I see enough improvement to, you know, keep
going. (Jane)

As Jane’s comments demonstrate, the desire for a restored self and body, as
conceptualized by Charmaz\(^{38}\) and Frank\(^{20}\), was the motivator for LTPA; monitoring the
body’s function across time with respect to this plot served to continuously motivate
participants to return to Active Rehabilitation. However, the commitment to the pre-
injury life, rooted in the past, limits participants from exploring other types of LTPA,
namely adapted sport.

I quite enjoyed running; well you don’t get adapted running, like
you don’t get adapted yachting. You get adapted snow sports but
it just looks like such a [joke] to me right now. Maybe in five
years I’ll get a bit bored and go, alright then, I’ll try it and then
you know, we can go. But I’ve just got no interest in adapted
sport. I don’t come here for the exercise, I came here for the
rehabilitation potential. (Don)

As a narrative environment, Active Rehabilitation supported participants’ use of
the restitution narrative. The uniqueness of this environment, when combined with the
restitution narrative, drew the participants in the restitution narrative to maintain
participation in LTPA.

I’ve always been determined, I will beat it and I will walk again,
despite the doctors saying otherwise. Some of the doctors say
with my attitude I could beat it, but then other ones are the complete opposite and try to knock you down all the time and that’s what this place, [Active Rehabilitation] kind of, it’s different because nothing’s impossible to them. They’re doing the sort of things that I want to do, they’re working with the stuff that doesn’t work rather than everywhere else just wants to work with your upper body and teach you wheelchair skills and stuff like that, which isn’t what I want to do…I actually enjoy coming here and speaking to other people that are in the same sort of situations as you, it’s good and when you’re here, you’re treated normally, not like you’re different to anyone else. (John)

As John comments, Active Rehabilitation and its trainers focus on restoring as much function as possible; in turn, this fits with the story these participants tell about their SCI, namely that of restoration.

The restitution narrative was further supported in narrative environments through the presence of, and interactions with, peers. Contrasting the self to peers who were seen as “worse off” strengthened the commitment to LTPA because participants believed they had the physical function necessary to restore aspects of the self in the future.

I think you can relate to that, because you've been through it and you can see, I can certainly see that, there are a lot of people out there worse off than me. And I think if anything that gives me
strength, in a sad way I suppose, because how can I feel sorry for myself or, or just wallow in my own self-pity when you know, there are other people out there getting on with it. (Kal)

Like Kal, Jane also expressed making downward comparisons, particularly during her post-injury rehabilitation:

They were very important actually and I did feel incredibly lucky. Seeing other people, that’s, it’s probably a millimetre against me being in the same position. Um and the more I realized that I could improve and others couldn’t, it made me push myself more.

(Jane)

Once at Active Rehabilitation, connecting with peers who were doing well reaffirmed the restitution narrative, as peers’ bodies confirmed the anticipated reward of engaging in LTPA. For example, as John saw others improving and regaining function through Active Rehabilitation and other LTPA, he made note of his own functional improvements and increased his desire to continue being active. Indeed for the restitution narrative, peers were useful in providing participants with an idea of what life without LTPA could look like (downward contrast) but also what could happen to the self if they chose to be physically active (upward identification). This upward identification, seeing others get better, provided an option for the possible restoration of the self.

As past authors suggest, our participants that used with a restitution narrative expressed an attachment to the future in the form of a restored self. The future orientation
of this narrative motivated continued engagement in LTPA and more specifically, in narrative environments that supported the use of a restitution narrative. These participants were continuously involved in Active Rehabilitation as opposed to other opportunities for LTPA such as team sport, which would establish ties within the “world of disability”. Because of the focus on restoration and rehabilitation, the potential for these participants to develop other identities through LTPA, such as an athlete, are limited.

**The chaos narrative: ruminations on the “lost self”**

One participant expressed a chaos narrative (Table 1). In contrast to the restitution narrative, the chaos narrative’s plot is one with no order. There is no clear beginning, middle and end; the individual experiences extreme suffering and cannot imagine life ever improving. Given the disarray and lack of a clear storyline, Frank refers to chaos narratives as ‘non-narratives’. Often, these individuals will express the loss of hope and identify life as lacking a purpose. In most cases, likely an individual who uses the chaos narrative would not access LTPA programs in the same way that those in the restitution narrative would. One participant at Active Rehabilitation, Emilie, expressed a chaos narrative when describing her life post-injury. Emilie began by dwelling on her pre-injury self as a happy and active individual, a stark contrast from her present self. Rather, Emilie described her present self as characterized as trapped in a chair, sick and constantly in pain. Moreover, she could not see a future with happiness in sight because of her present body. Emilie’s present, and therefore, future were dominated by feelings of
sadness as she envisions a never-ending cascade of pain and health problems. As Emilie described her story, she often shifted between the past and present with no order. Indeed, both the structure and content of Emilie’s story fit Frank’s chaos narrative\textsuperscript{20}.

Based on the plot of the chaos narrative, we would not expect an individual who uses this chaos narrative to access LTPA that extends beyond physiotherapy. In living by the plot of Frank’s chaos narrative, Emilie’s preliminary and dominant experience of time was as an empty present in which she felt helpless. Thus while the future motivated those in the restitution narrative group to maintain involvement in LTPA, in the chaos narrative there is no future; hope and possible future selves are lost as the future becomes an extension of the present chaos\textsuperscript{25}.

If the characteristics of the chaos narrative, such as the plot would not motivate LTPA then why did Emilie get involved in LTPA? Contrasting Emilie’s interview to narrative research with individuals who express a chaos narrative\textsuperscript{23,42} reveals how the supports in Emilie’s environment played a role in the introduction of LTPA post-injury. Emilie has a close family friend who is extremely involved in her life and assists Emilie with her daily affairs; when Emilie’s physician recommended Active Rehabilitation, she had social supports in place to facilitate her access to the program. Thus she initially accessed Active Rehabilitation because important others recommended she went. In narrative wreckage, the present chaos and angst prevents an individuals from constructing a coherent future\textsuperscript{41} and therefore the body ‘is swept along, without control’\textsuperscript{26}. In this chaos, Emilie went along with what others had insisted she do. This is not to say that
Emilie would have gone to just any activity others recommended. Emilie preferred to engage in LTPA, and activities in general, with people without SCI. Repeated exposure to others in wheelchairs served to reinforce the chaos narrative by reminding her of the life she’d lost:

Someone’s, it’s better than me and I feel sad. I’m in the wheelchair alright, but have people better than me. And, I feel sad. I don’t like it, to see, when I’m in the gym and some people bad than me and try to do something and they not going to do it, it’s hard. It’s very hard to see, very, very hard. (Emilie)

While Active Rehabilitation held events in which its participants could mingle and chat with others, training often occurred either alone or in the presence of one other individual with SCI in the room. The semi-private nature of Active Rehabilitation ensured that Emilie would have minimal exposure to others with SCI; as a result, Active Rehabilitation became a therapeutic environment for her. As she attended sessions, the positive feedback given by the trainers increased her confidence for exercises and provided her with a sense of accomplishment. By challenging Emilie’s perception of her body, and bearing responsibility to witness her stories, this environment and the people in it allowed Emilie to tell a new story – namely one in which she can be “able”. In telling a different story and experiencing the body in a different way, she became able to escape the chaos for the period of time she spent at Active Rehabilitation.
It’s different but the people here, it’s very kind and very
[friendly] and you know, when you do something for the first
time and the people say, you’re very good, and you say “I’m
very good” [smiled]. But he says, “for the first time, you very
good” and, you, him push hard, and I said, “it’s good” and he
said, “you wanna keep going?” And I said, “yes” . All the time,
yes. He push hard and I said I like it. (Emilie)

The approach taken by Active Rehabilitation, along with opportunities for as
much or as little social involvement at the gym engaged Emilie in LTPA. Moreover, this
type of LTPA offered respite from the chaos by preventing the future and present from
collapsing into a melange of pain and hopelessness. In comparison to those in the
restitution narrative, the chaos narrative was not the motivating factor in maintaining her
LTPA. Rather, it was the respite from the chaos and turmoil that was a result of LTPA
that motivated her to continue participating in Active Rehabilitation.

The quest (narrative) for LTPA

Seven participants framed their experience in SCI using the quest narrative (Table
1). In contrast to chaos and restitution narratives, quest narratives see disability as a
challenge with something to learn or gain from the experience. Among participants, this
desire was most commonly expressed as the need to help others with SCI live better lives
post-injury. As with participants that expressed a restitution narrative, LTPA was seen as
instrumental for health post-injury and therefore, Active Rehabilitation was accessed for its functional benefits. As a contrast, those in the quest narrative were open to exploring other types of LTPA, such as such as sport and outdoor activities. Thus while health was an important motivator to attend Active Rehabilitation and engage in LTPA, the plot of the quest narrative allowed other types of LTPA, such as sport, to be accessed if they would provide the opportunity for social involvement, enjoyment, connection with injured peers, and the development of positive experiences post-SCI.

In contrast to those who expressed a restitution narrative, participants who used a quest narrative group focused primarily on the present self. In line with the plot of the quest narrative, as Seymour notes, SCI brings about the chance to remake the self in a meaningful way\(^{43}\). The importance to make a positive contribution was made evident by Robert and Alice who had created organizations that would help others with SCI access LTPA. In contrast to participants who used a restitution narrative and saw a future self that was based on the past self, participants who used a quest narrative made comments supporting the development of a new self who made a difference to others. From this respect, the quest narrative motivated LTPA through the opportunities it offered for the development of the self in the “here and now” through sport, outdoor pursuits, and volunteer activities.

A key characteristic of the quest narrative is the “communicative body”\(^{20}\), whereas bodies that tell restitution narratives are monadic in their relationships, communicative embodied individuals seek out connection with others with SCI and to
share their knowledge. Participants like Jim made comments that support how the
communicative body draws individuals to LTPA scenarios in which they could connect
and help others cope with SCI\textsuperscript{20}. For example, having experienced depression post-injury
Jim expressed the desire to volunteer with an organization that provides social LTPA
activities. He was drawn to this activity in particular because he wanted to share his
experiences and help others live better lives after injury. In turn, many of these
participants in this group described making an effort to help their peers lead physically
active lives:

I’m quite happy to do some voluntary stuff. I mean there’s
these, a spinal charity called [PA organization] who sort of tour
the hospitals to see you when you’re more recently injured and
try to, ‘cause everyone goes through the depression, big time. I
had a little bit but I’ve seen worse. They come ‘round and talk to
you, try to get you out for [program], that sort of stuff. And so,
well, I wouldn’t mind doing some volunteering for that. I don’t
mind going to the hospital and seeing some new recruits. Try
and help ‘em out bit, you know? (Jim)

While participants who expressed a quest narrative were open to sport and
outdoor recreation as forms of LTPA, the narrative environment at Active Rehabilitation
also motivated individuals who used a quest narrative to engage in regular LTPA at the
centre because of the opportunities to connect with others. Because of the role of the

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communicative body in the quest narrative, the opportunity to connect with others motivated the return to the program itself. While the chaos narrative found the presence of other bodies discouraging, participants who used a quest narratives primarily made upward identifications with individuals they felt were coping well with their SCIs and had positive attitudes towards disability and LTPA. Indeed, Jim decided to get involved with this organization because he enjoyed being active with others who were willing to take life head on. The presence of others fuelled the plot of the quest narrative, demonstrating how social involvement and LTPA can lead to positive development of the self in the future, above and beyond the health benefits.

**Discussion**

This project supplements health behaviour theory by demonstrating how different disability narratives can motivate LTPA post-injury particularly in context of a narrative environment. Building upon previous narrative research that highlights how disability narratives operate within the SCI population, this paper extends the literature by highlighting how disability narratives operate to motivate individuals to continue engaging in LTPA. While previous research with the determinants of LTPA explains relatively low variance of LTPA among individuals with SCI, the findings from this project suggest that disability narratives motivate LTPA differently and therefore theoretical constructs may not be applied equally for all individuals and for all LTPA contexts. For example, among those who use a quest narrative, enjoyment of LTPA and
the opportunity to connect with others were more important than the instrumental or health benefits. By contrast among those who used a restitution narrative, the promise of strengthening and maintaining the body for a cure maintained individuals’ motivation for LTPA. Therefore it is possible that different constructs within these theoretical models may work differently based on the specific disability narrative and desired LTPA. These findings underscore the need to tailor theory-based interventions to the factors that motivate individuals to participate in LTPA. Our study findings point to the narrative environment as one strategy to tailor an intervention.

**Letting stories breathe: an environment for every (narrative) body**

As expressed by the participants, the narrative environment has important implications for behaviour, in terms of health and LTPA. Practitioners (i.e. physicians, coaches, trainers) work with narrative knowledge as clients’ case histories are given in the form of stories and the environment provided by practitioners can therefore elicit some stories while stifling others. Given the different stories we noted at Active Rehabilitation, each with different plots and orientation to peers, these findings make apparent the need to consider what influence the narrative environment has on theory-based interventions as, evidently, the environment can invite or exclude certain stories. Consider a narrative environment that solely expresses SCI as a challenge that could be overcome and would lead to positive, personal development, such as environments presented in Paralympic sport. This type of environment would support and motivate
individuals who use a quest narrative, like Alan and Jim, to come and participate. This type of environment meets the needs of the quest narrative by including the chance to connect with peers and inspire others. However, this narrative environment would likely not support individuals like Emilie, who felt the need to express her chaos nor would this narrative environment respect her desire to avoid peers with SCI. Because this type of sporting environment would not support a chaos story, individuals who express a chaos narrative would not be motivated to return to such an environment. Moreover within this type of environment, a chaos narrative like Emilie would likely not have had the increase in confidence and the sentiments of being “able”, nor would she push herself in the same way she did under the guidance of her trainer at Active Rehabilitation. Indeed, understanding these contextual factors complements health behaviour theory by providing of deeper understanding of why and how theory-based interventions work, as well as for whom these interventions will work.

One of the most notable characteristics of the interviews at Active Rehabilitation was the presence of all three narrative types – despite narrative plots that motivated LTPA in different ways. From observing the environment at the gym, it was evident that the trainers respected the client stories: rather than refuting or correcting the story, the trainers would listen and acknowledge client stories as “testimony”. The response given to each client was chosen based on the individual rather than employing a one-size fits all approach. Multi-vocality, supporting and respecting multiple narratives, allows for participants to offer their stories as testimony. This respect for people and the individual
stories that needed to be told was evident particularly when thinking about Emilie as the chaos narrative. Throughout the interview, Emilie continuously identified her body as a source of conflict and pain; however, near the end of her interview she began to speak about her experiences with the trainers and the program. Here, Emilie identified feelings of pride knowing that she could do something and therefore, Active Rehabilitation had become the place where she felt happy. By listening without interruptions and accepting Emilie’s point of view, Active Rehabilitation was able to capture Emilie’s attention and provide her with a different way of thinking about LTPA and provided respite from her chaos.

**Considering disability narratives and narrative environment in future LTPA interventions**

Three different narrative plots, and thus perceptions of narrative time, were present at Active Rehabilitation. The openness of the narrative environment to different injury narratives allowed for the expression of different stories and therefore, allowed three different plots and narrative time to motivate LTPA post-injury. The focus of the restitution narrative was on the future, which limits the development of new selves\(^\text{25}\). The plot of the restitution narrative, embedded in the future, was the primary motivator for a very specific type of LTPA – namely the functionally active LTPA. By contrast, Brockmeier’s notion of “fragmenting time” allows for a clear distinction between the past self and the current, injured self\(^\text{48}\). This distinction allowed individuals in the quest
narrative to leave behind the past self and to focus on the present self. Separating the past self from the present allowed participants to be open to new selves, such as a Paralympian or a disability advocate, and open to new relationships with others. Often LTPA became secondary to these participants; LTPA was necessary to keep healthy and therefore be able to engage in hobbies and relationships outside of LTPA. In comparison, Emilie described a level of narrative wreckage and therefore as noted with other chaos narratives, future selves cannot be developed nor can the self be actively engaged in the present.20,25.

The neutral and open narrative at Active Rehabilitation can be recreated in future LTPA programs. The trainers engaged in friendly chatter with clients during the clients’ sessions, but also drew attention to positive changes in the clients’ function in a neutral way, such as “you’re doing so much better today” as opposed to “you’re so much closer to walking”. The neutral approach to function allows participants to make sense of this information and their body according to their own narrative plots and personal goals. By accepting different points of view and making neutral comments about individuals’ function, Active Rehabilitation motivated individuals with SCI who were guided by very different narratives to habitually engage in LTPA. Active Rehabilitation approaches LTPA in a manner that attracts individuals from all narratives because of its multivocality which prevents LTPA information to pass along into “the river of not for me” that Frank proposes.21. The neutral approach that Active Rehabilitation used allows all participants to experience LTPA in a way that resonates with their own experience of
SCI. For example, selling sport as an LTPA may not resonate with restitution and chaos narratives and yet selling LTPA as a way to restore the past self may not work for the quest narrative. This notion has essential implications for future LTPA interventions.

LTPA programs and interventions must be given careful consideration with respect to the narratives individuals hold as evidently the environment created can support some stories while suppressing others. If the goal of the program is to increase broad LTPA participation, evidently effort at creating a neutral environment, such as Active Rehabilitation, would ensure that every body can be present. Evidently, these narratives operate with respect to LTPA in different ways and therefore considering how the narrative environment affects what stories are present is an important next step for program planning and LTPA interventions. Furthermore, thinking about the role important others, such as peers, play in these narrative interventions opens up exciting new avenues for research to encourage individuals with SCI to become more active.

It is important to note that throughout this paper, we have labeled Active Rehabilitation as an LTPA environment. However, it is important to note that not all participants may see Active Rehabilitation as an LTPA environment. Rather some may see the facility as a place for work, rather than a place for leisure. Further research into the implications of viewing facilities as a place to work, rather than a place for leisure, is necessary to fully understand how and why individuals with SCI continue to engage in strength and aerobic training.
Conclusion

Active Rehabilitation offers a unique narrative environment in which three narratives motivated participation in LTPA. These narratives worked on individuals by drawing them towards specific LTPA environments, or as it seems for sport, turning individuals away. Indeed, the interviews illustrated how an open, narrative environment can attract individuals from all three narrative types despite these differences among plots and preferences for social interaction. By respecting the story and creating an environment that focused on the task, clients were able to express their authentic emotions and see their progress in LTPA in light of their own individual narrative. Therefore future LTPA interventions should also consider what disability narrative they promote as a way of strengthening intervention efforts.
References


The second and third manuscript of this thesis highlight the importance of both athletic identity and disability narratives with respect to sport participation after acquiring a physical disability. In both studies, those who became involved in sport post-injury identified peers and the environment created by peer athletes and coaches as influential in their decision to at least try sport post-injury. Yet as participants in the third study identified, individuals who constructed their experience of SCI using either a restitution or chaos narrative often did not want to engage in activities with peers who had physical disabilities nor did they wish to invest in activities that would establish ties to the “disabled world”. Thus the plot of the disability narrative can discourage individuals with SCI from accessing sport. However, no research has examined what peer athletes tell individuals with SCI about sport and moreover, whether peer athletes are sensitive to the narratives that resist sport.

Given the importance of disability narrative on the openness to try sport post injury, and the importance of sport behaviour on athletic identity, research is needed to identify how and what peer athletes share with others about sport. Therefore, the objective of my final dissertation study explored responses from peer mentors to these disability narratives.
Chapter 6

Moving stories: peer athlete mentors’ responses to mentee narratives of sport and spinal cord injury
Abstract

Objective: To explore how peer athlete mentors respond to vignettes that express individuals’ hesitance or resistance to engage in adapted sport. Methods: Thirteen peer athlete mentors from sport and disability organizations participated in hour-long interviews in which four vignettes were discussed. A narrative analysis of the peer mentors’ responses to these vignettes was completed. Results: Peer mentors generally tailored their responses to the hesitant and resistant sport vignettes such that they responded according to mentee narratives rather than forcing their own view of sport and spinal cord injury. Heavily resistant vignettes elicited two main responses: one that challenged the perception of disability and one that allowed mentees to express their own narrative. These heavily resistant narratives were seen as more difficult to respond to. Conclusion: When presented with narratives counter to their own, peer mentors can overcome their negative reactions and provide information about sport that generally fit the mentees’ personal narratives.

Practice Implications: Given the difficulty peer mentors expressed with responding to the heavily resistant narratives, training for peer mentors should include these counter narratives along with practice in how to respond to these tougher cases.

Keywords: peer mentorship, sport participation, spinal cord injury, narrative analysis
Introduction

Spinal cord injury (SCI) is a life-altering event that changes the way individuals experience the self and the world around them. In addition to a number of negative physical health outcomes, such as increased risk of chronic disease when compared to individuals in the general population, individuals with SCI also have a higher risk of negative psychosocial outcomes including increased rates of depression, decreased community integration, and lower life satisfaction.

Engaging in leisure time physical activity (LTPA) post-injury leads to a number of positive physical health and psychosocial outcomes. Individuals with SCI who engage in LTPA can lower their risks of cardiovascular disease and pain while increasing their subjective well-being and life satisfaction. Despite the benefits of engaging in LTPA, 50% of individuals with SCI accrue no LTPA. Individuals with SCI state that access to information is one of the many barriers to LTPA; when asked who they would prefer to receive LTPA information from, peers are listed as one of the preferred sources.

An independent and growing body of literature suggests that peer mentors play a vital role in assisting newly injured individuals adjust to life post-injury. As individuals who have successfully overcome life challenges, peer mentors can support their mentees as the mentees confront these same challenges. In particular, peer mentors provide their mentees with social support by providing information about life with SCI, emotional support and companionship. Emerging research suggests that peer mentors assist their
mentees by teaching necessary life skills (e.g. wheelchair skills), connecting individuals with community programs and resources, and facilitating social participation. Research conducted with mentees revealed that they valued the information, resources and general support provided by their peer mentors. Given the positive outcomes of engaging in both LTPA and peer mentorship, it is important to better understand the process of peer mentorship in the context of LTPA within this population.

No research to date has examined how peer mentors respond to mentee narratives; yet, this knowledge is crucial for peer mentorship programs. Narratives, the discourse that connects related abstract ideas, signs and events, motivate individuals to act in ways that are consistent to the narrative. Therefore, hearing stories from peer mentors may motivate mentees to engage in specific behaviours, such as LTPA. However, narratives that contain information contrary to what individuals hold to be true will go ignored, or as Frank (1995) calls, the “river of not for me”. If peer mentors respond to all mentees in the same manner, regardless of the mentees’ narratives, it is possible that this information may not be attended to. Despite the widespread use of peer mentorship in disability organizations (i.e. SCI Ontario, ParaSport Ontario), very little empirical research has actually examined the peer mentorship process.

Narratives influence how individuals understand their lived experiences post-injury. Peer mentees’ needs are evident in the stories they recount to their mentors; these stories are framed in narratives. In particular, Frank describes three dominant narratives that people use to understand their experiences with disability. The restitution
narrative has the general structure: “yesterday I was healthy, today I’m sick, but
tomorrow I’ll be healthy again” 20. In the context of SCI, walking or the restoring
function replaces “healthy” resulting in a narrative with the following structure:
“yesterday I could walk, today I can’t, but tomorrow I will walk again” 23,24. Individuals
who express a chaos narrative cannot see life ever improving, experience extreme
suffering, and describe a loss of hope 20,25,26. In contrast to chaos and restitution
narratives, the quest narrative views disability as a challenge to be overcome. Those who
face this challenge head on will gain something from the experience 20. These individuals
see SCI as a chance to remake the self and enhance the lives of other individuals post-
injury 20,23-25.

While no research has examined the narrative interaction between peer mentors
with SCI and their mentees, a few studies have examined other audiences’ responses to
different disability narratives. Soundy and colleagues 27 examined physiotherapy
students’ perceptions of SCI narratives. Students held positive perceptions of the
individual who expressed a quest narrative 20. By contrast, those who expressed a
restitution narrative were seen as being completely unrealistic in their expectations 27.
Furthermore, research by Smith and Sparkes 28 demonstrates that the chaos narrative can
elicit very different responses from a variety of audiences, including scholars and
practitioners. While some respondents expressed support and understanding for the
individual whose vignette they read, other respondents’ responses can marginalize the
individual’s experience. Given that different audiences can have very different reactions
to these SCI narratives, it is important to understand how peers mentors respond to a variety of mentee narratives.

This study explores the responses of peer athlete mentors (i.e. “peers”), to different mentee narratives. Sport was selected as an LTPA because individuals with SCI who engage in sport participate in longer bouts of LTPA and at higher intensities; therefore, these individuals are more likely to achieve the benefits of living an active lifestyle\textsuperscript{29}. Despite its benefits, only 4% of individuals with SCI engage in sport\textsuperscript{29}. Interestingly the dominant stories of sport participation, perpetuated through media, are quest narratives\textsuperscript{30-32}. While there are peer programs in place at adapted sport organizations, no research explores how peers’ stories fit with different disability narratives or whether the stories peers share fit this dominant narrative. Therefore the objective of this paper is to explore how peer athletes respond to vignettes that express the stories of individuals who are hesitant or resistant to engage in sport.

**Method**

**Participants**

Thirteen peers were recruited with the assistance of partners at two national adapted sport organizations (Table 1). Participants were required to be at least 18 years old, English-speaking, and actively involved as a peer support volunteer/worker in a sport or disability organization. Recruitment continued until saturation, the point at which information gained from interviews continuously repeated itself\textsuperscript{33}. The lead author’s
institutional Research Ethics Board approved all recruitment, study materials and procedures before study commencement.

Table 1.
Peer athlete demographics

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Age</th>
<th>Cause</th>
<th>Injury level</th>
<th>Years post Injury</th>
<th>Years to sport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Justin</td>
<td>44</td>
<td>MVA</td>
<td>T5/Amputee</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Jenna</td>
<td>41</td>
<td>Ski accident</td>
<td>Paraplegic (unsure)</td>
<td>29</td>
<td>1</td>
</tr>
<tr>
<td>Trevor</td>
<td>32</td>
<td>Fall</td>
<td>T12, L1</td>
<td>19</td>
<td>0.5</td>
</tr>
<tr>
<td>Matt</td>
<td>38</td>
<td>MVA</td>
<td>C5-C6</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>Dave</td>
<td>47</td>
<td>MVA</td>
<td>C6</td>
<td>29</td>
<td>2</td>
</tr>
<tr>
<td>Tony</td>
<td>26</td>
<td>Biking</td>
<td>C5-C6</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Steve</td>
<td>34</td>
<td>MVA</td>
<td>C5-C6</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Geoff</td>
<td>26</td>
<td>MVA</td>
<td>T5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Paul</td>
<td>53</td>
<td>Fall</td>
<td>T11-T12</td>
<td>33</td>
<td>0.5</td>
</tr>
<tr>
<td>Larry</td>
<td>41</td>
<td>MVA</td>
<td>T4</td>
<td>20</td>
<td>0.5</td>
</tr>
<tr>
<td>Jake</td>
<td>45</td>
<td>MVA</td>
<td>T6</td>
<td>22</td>
<td>1.5</td>
</tr>
<tr>
<td>Mark</td>
<td>36</td>
<td>Diving</td>
<td>C6-C7</td>
<td>10</td>
<td>0.5</td>
</tr>
<tr>
<td>Sarah</td>
<td>35</td>
<td>Virus</td>
<td>Paraplegic (unsure)</td>
<td>23</td>
<td>9</td>
</tr>
</tbody>
</table>

Data collection

The day before the interview participants were emailed four vignettes to review. On the day of the interview participants were contacted via telephone or Skype, depending on the participants’ preferences. After providing consent, participants engaged in hour long, semi-structured interviews. Interviews began by eliciting the peers’ versions of their own experience with SCI and their journey to begin sport post-injury followed by a discussion
of the four vignettes. The first part of the interview was necessary to understand how the peers framed their own stories of sport and SCI; these data are presented elsewhere. In the second part of the interview, participants were briefly reminded of the content of each vignette, asked to provide both general feedback (e.g. what was your initial reaction to this person?) and sport specific feedback (e.g. how would you discuss sport with this individual? What stories would you share about your sport experience?). All interviews closed with open questions to allow any additional information to emerge.

**Sport hesitant/resistant vignettes.** Four vignettes about individuals that expressed hesitation or resistance to sport post-injury were developed based on four participants from the lead author’s previous narrative research\(^{35,36}\). To protect the previous participants’ identities, pseudonyms were changed and no detailed geographic or occupational data were included.

The first vignette was a quest narrative\(^ {20}\) based on a woman named ‘Kate’. In this vignette, Kate describes an interest in adapted sport but lists a number of current barriers that make it impossible for her to participate in sport at the time of her interview. In comparison to the other vignettes, she was the most open to both sport and peers with disabilities. The second vignette, ‘Adam’, expressed Frank’s restitution narrative\(^ {20}\), such that his main focus and goal for the future was to walk. However, he was open to peers with disability and expressed less resistance towards sport than the strong restitution or chaos vignettes. Like Kate, Adam’s vignette focused on the barriers and hesitancy towards trying sport for the first time. The third vignette was about ‘Brian’ who expressed a strong
desire to walk again in the future. Like ‘Adam’, ‘Brian’ expressed a restitution narrative. However in comparison to Adam, Brian expressed a strong resistance to both peers with disabilities as well as adapted sport. The fourth vignette was about ‘Emilie’ who expressed Frank’s chaos narrative. She expressed constant pain and suffering and had no desire to engage in sport post-injury. Exposure to other people with SCI who struggle in sport made ‘Emilie’ feel bad about her current situation. As a result, she was extremely resistant to adapted sport and peers with SCI.

**Data analysis**

Both a structural analysis and a categorical-content analysis were used. The structural analysis highlights how peers respond to each vignette. Here, structural features of responses are noted, including the tone of the response and type of narrative used, such as a quest or restitution. In the second analysis, a categorical-content approach allowed us to identify what content and resources were recommended as a response to a specific vignette, but also between vignettes. From this analysis, it is possible to see what activities, sports and resources peers would provide to the individual.

The lead author transcribed all interviews verbatim. The emerging findings were presented at multiple time points to the third author. As a “critical friend”, the third author increased the rigor of the analysis by challenging the first author to justify her interpretations of the data and to consider alternative interpretations. The lead author had to present her colleague with a sound argument based in theory and data, leading to
more trustworthy conclusions \(^{38}\). Of note, interview content from peers’ description of they own sport participation journey was transcribed. However, these data were analyzed separately and are reported elsewhere.

**Results**

While all thirteen peers expressed a quest narrative, they tailored their responses to meet the needs of the mentee vignettes. Below, we highlight how peers’ responded to each vignette, embedding the results of the categorical-content analysis within the structural analysis.

**Responses to Kate**

Kate’s vignette was based on a mild quest narrative, such that she had viewed SCI as a challenge to be overcome. As such, she continued to move forward with her graduate studies and other plans for her life. Kate’s actions to move forward resonated with the peers, who responded positively to her vignette. Peers shared their stories that were framed in a quest narrative, therefore matching Kate’s narrative type. They recognized that Kate saw her disability as something she could move past; therefore, they moved to open her to the current possibilities for sport by providing resources and social support. With respect to both resources and support, peers shared stories of scenarios in which they successfully overcame barriers to commit to a sport practice.
Peers encouraged Kate to continue searching for a sport that fit with her current lifestyle given that wheelchair rugby, the sport she was interested in, was not available. Furthermore, peers also suggested that she try other sports aside from wheelchair rugby, the sport she indicated an interest in:

You've got to look beyond the obvious. Like she's looking at wheelchair rugby, which is a very physical, but there's lots of sports that she can participate in that are integrated. She doesn't have to be in a larger community with, you know, with the disabled population. She's in a small town. I've always lived in small towns and like I say, I lived in [city], there wasn't a single wheelchair sports club but I participated in lots of sports, you know? But it was with able-bodied people and that's the way to do it, is to get involved in that. And, you know, I find that in the able-bodied community a sport club like that, they're just tremendously accommodating. They'll do anything they can to assist somebody like her. (Paul)

In responding to Kate, peers used their experience to demonstrate that sport can be done, even if it may not look like what she originally would have expected.

In addition to exploring other sport options, peers felt that Kate could also connect with provincial and national sport organizations for assistance with developing her own rugby team:
I think she should reach out…when we first started it wasn't really, like there was nothing there. We started the club from scratch because there wasn't anything in [city]. And we just kind of put posters up and we got more and more interest from people. So I think it, in her situation, she might be in a small town but she could, I guess the hard part is getting the chairs but if you can get the chairs then friends and family can come out and play, or even there might be other people who are in the same situation who are also thinking of, nothing is happening… I think I would just tell her that if there's nothing there that she should just, you know, kind of look into it on her own and maybe start her own thing.

Then maybe people will just join her team. (Geoff)

Peers felt that they could provide Kate with the information and connections she would need to “make sport happen”. They felt the information and encouragement would help put Kate into action.

**Responses to Adam**

In contrast to Kate, the peers felt that Adam had the resources, such as access to sport, but really needed to be reassured with respect to his ability to play sport.

Regardless of their personal feelings about Adam’s desire to walk again, peers responded by providing Adam with ways in which sport could benefit this desire to walk.
Essentially, they chose to promote sport in a way that fits with Adam’s restitution narrative.

While peers felt that Adam was slightly unrealistic in his desire to walk again, his vignette resonated in other ways. In particular, peers could relate to Adam’s performance concerns for adapted sport. They validated his feelings by reassuring him that everyone needs to start somewhere:

Well nobody’s good when they first start out. It’s like anything that you try for the first time. It’s a process, learning and developing the skills… You use your muscles differently from a seated position and, and it’s gonna take a little bit of time, you know? Everybody has to go through those steps. (Larry)

To reassure Adam, peers shared stories of their first experiences in wheelchair sport:

It was very hard at first… I played high school basketball when I was in school and so it was, and I always played a shooting guard. So I was a really good shooter [laughs]. And then the first time I picked up the ball, it was just completely different because I couldn't balance myself in the chair and it took me I think 4 hours to get my first basket! [laughs]. But I scored and then you know, I just started figuring out, talking to people about the chairs and the set up and you know, how to make it
more, you know, proper for myself and for my level of injury.

(Geoff)

Because Adam expressed some openness to sport, peers felt it was necessary to share information about the programs and opportunities in which he could learn sport at his own pace, like trial nights. The peers felt people like Adam need companionship to first approach sport given that it can be a completely unfamiliar environment.

Adam’s story of restitution and desire to walk again resonated with Mark, who recommended trying sports that he did not play before his SCI. Mark felt that a completely new sport would help remove some of Adam’s expectations:

He's me! You almost gotta be on top of this guy get him to try, ‘cause trying is huge. And that was the one I was saying about the expectations, he doesn't think the very good at basketball. Well maybe he’s played basketball before and he, you know, and all of the sudden you’re in a chair and you can’t get it in the basket. Well that’s when I would say try something different, like tennis, if you've never played it before. Try it. You’ve got no expectations, you go in thinking you’re going to be crappy. You’re starting at the bottom. Exactly what I would say, I mean that’s what I did. I remember living this kind of life. (Mark)

In addition, the peers also felt that it was important to reassure people like Adam that it is normal to feel self-conscious about his body and participating in sport for the first time.
Even if they did not agree with his point of view, the peers were respectful of Adam’s desire to walk again. They felt that there were two key things to share with individuals like Adam. First, sport can be a source of fun and something to pass the time while they wait for a cure:

So this is the thing that I would tell a guy like Adam is, that's fine that you want to walk again but in the meantime if you want to have some fun. I mean come on out. You know, great if you end up walking again but still if that's two years down the line or five years down the line, or six months down the line, you are still in the meantime able to go out and have a good work out and be physically tired and challenge yourself a little bit and those things. So just trying to keep those two things separate and not make it seem like it's the same thing, I think helps people kind of get their heads around it a little bit. (Jenna)

Secondly, peers saw sport as a way to keep the body strong while Adam waits for a cure:

[Walking is] something that you want to pursue and I totally understand that, but I would suggest that even if you are trying to walk, you still need a lot of upper body strength to do the parallel bars with the leg braces or to do the stretching exercises…I would say that would kind of be my response, you know, any of these walking type activities or walking related physiotherapy, you still
need to be strong upstairs and the way to do that is to do wheelchair sports. (Dave)

Therefore, peers promoted both the informational and affective aspects of sport involvement with Adam, however they do frame this based on Adam’s desire to walk again. Peers noted that Adam would need social support to bring him to a completely new environment.

**Responses to Brian**

Brian openly expressed his distaste for adapted sport as well as for peers with SCI. As such, it is unsurprising that nearly every peer athlete referred to Brian as a “tough one”. In general, peers felt that Brian required a different approach than Adam or Kate, who were interested in sport and just needed the resources and social support. With Brian, they felt the key challenge was to first sell him on sport and then to work on challenging how he viewed people with SCI by presenting cases that were in direct opposition to these beliefs. However, most peers respected Brian’s desire to avoid peers with SCI by recommending individual sports like swimming or cycling. As such, their approach to sport promotion with people like Brian is to challenge his perceptions, but also give him the resources for sport and corresponding space to make his own decision.

Peers felt that Brian had not yet accepted his disability and still identified with who he was before his SCI. This did evoke some elements of a quest response.
For example, Steve felt that Brian would first need to separate his self and the wheelchair in order to cope:

    I mean I had the exact same perception. I mean I didn’t want to be around other people with disabilities. I figured that when I was in public I drew attention to myself, I didn’t need to be with two or three more people in wheelchairs…I was self-conscious of the fact that I was in a wheelchair and I mean, until I realized that I wasn’t “in a wheelchair”, I was using a wheelchair as a piece of equipment, I mean [pause], until I realized that I didn’t ever entertain the thought of having any kind of social aspect with other people with wheelchairs, whether it’s sport or even just having a friend that uses a wheelchair too…that just comes with time…So I mean that is a tough one. I wouldn’t know how to approach that and try to get this person involved with sports because obviously they’re just not comfortable with themselves yet. (Steve)

Peers felt that Brian’s vignette highlights a paradox of people who express a strong restitution narrative: engaging in sport and meeting peers with SCI assists people with developing comfort with disability and learning skills that make life post-injury easier, a concept supported within the peer mentorship literature. However, Brian’s resistance
to peers with SCI and adapted sport prevents him from engaging in activities that lead to positive development post-injury.

To address this paradox, the peers did respond in a quest manner, stating that they would use their own stories or stories about others with SCI to challenge and change Brian’s perception of disability and adapted sport:

There are a lot of cool people that are in chairs that are just as unfortunate as he is. It's not all like the type of people that you see in rehab or the people that you're sharing rooms with at that time…I have quite the network of people, I'm sure I could introduce him to somebody that he would think is awesome or cool and that would help to change the perception… I bring in the photos that I have of me mono-skiing, some of these photos are racing and some of them are doing some, you know, big air jumps, like 70 foot tables in the snowboard park and right away they’re just like “Oh my God, like this is awesome!” ‘cause they really don't have an idea of what their potential is in adapted sport. I think when they're exposed to that then it's really changes their own perception of it. (Larry)

Peers also mentioned that they would use media like Murderball and YouTube videos of Canadian Paralympians like Patrick Anderson and Josh Dueck as counter narratives to disrupt Brian’s perceptions:
I think he’s still very new at it. I think it's always tough to get someone who’s [pause], you know, when it just happens and trying to get back to everything…with him not wanting to do the adapted sport such as the skiing, I would probably just show him the video of the guy who did the jump in Whistler. He did the flip, the first flip in a sit ski. It kind of speaks for itself you know, the guy looks pretty cool [laughs]. (Geoff)

While the peers acknowledged that Brian needs to be “heard out” for a little while, Jake suggested an alternative approach to sell Brian on sport. He suggested that rather than changing Brian’s perception of sport itself, it could be more influential to try and sell Brian on the effect of sport on identity:

He said that his injury has had quite an impact upon his identity as an entrepreneur. Sport does create a very, very strong identity for people, you know, an athlete in the eyes of our society is a person who’s capable, a person who’s accomplished, a person who is a strong person and that identity is available through being involved in sport. I’m not sure how I’d relay that message to him but I think selling the identity of sport and the, maybe again it depends on who you’re talking to just the pitch that you use, but [pause] being physically active is something that is admired by society, I
think. So if somebody can build that identity into their person I think it’s uh, I think that’s very powerful. (Jake)

Responses to Abby

Abby’s vignette was the most negative as she spent time describing her life of pain and desire to avoid others with SCI. All peers felt that Abby was the most difficult to respond to and in particular, peers felt this type of conversation would leave them feeling unhappy. As a result, they expressed frustration because they felt that she just needed to accept not being able to walk. Despite similarities in the emotional response to Abby’s story, the content and approach of the responses from the peers varied. One group of peers felt Abby needed to see a similar other who has “made it” after SCI. These peers felt that they could inspire Abby by demonstrating the possibilities that exist for people with SCI. In particular, they felt that she needed to know that sport and LTPA post-injury would be her key to a better life. These responses call Abby to see SCI as a challenge, a response consistent with the quest narrative, which does not fit Abby’s desire or chaos narrative.

For example, Trevor said that he would share stories about his trips to the Paralympics while others, like Sarah, would describe other positive outcomes that are a result of getting involved in sport. Other peers would tell her that anything could be adapted, as long as she stayed positive and was ready to challenge herself:
It's like a challenge now, right? You have to figure out how to get there and what to do and I just think physical activity is a tool to help get you to towards a happier life. I would maybe kind of try talk to her about that and really try to encourage her and just tell how normal it is for her to be feeling this way at this point in her injury and to say that like, it gets better. That's what I try to tell everybody that I meet when they’re freshly injured. Because it really sucks… You just have to stay positive and keep, and start finding things that you can do and you'll be amazed at how much better you feel in a couple of years. (Tony)

Similar to the responses given for Brian, peers also felt that it would be necessary to challenge Abby’s perception of people with SCI by bringing her to a game to observe athletes with an SCI. They wanted to challenge Abby’s perception that SCI is the worst thing to ever happen to her. As a result, some peers felt she needed more social activities with others with SCI, like meals, before she could consider sport.

A second group of peers respected Abby’s desire to avoid other individuals with SCI. While they disagreed with how Abby felt about SCI and sport, they also felt that she needed time to heal. As such, they presented information about sport and LTPA that respects Abby’s desire to avoid others with SCI. For example, Geoff suggested that if he were to meet with her, it would be over Skype. In such a meeting he’d recommend sport that she could do alone or with her friends, such as sailing:
I’d try to get her to try out an individual sport…she could do like sailing by herself and she would be on the water…I get what she's talking about because when I was in rehab and I saw people that were worse than me, it made me really sad. I just felt bad for them especially like the younger guys. With her, I probably wouldn't see her in person. I would probably try to see, like I would try to call her and speak to her over the phone or on Skype so that she wouldn't feel sad by seeing somebody else. The other thing that I would probably say, recommend for her in terms of sports is, sports where she's with people who are able-bodied. (Geoff)

**Discussion**

The objective of this paper was to explore how peers respond to vignettes that express an individual’s hesitance or resistance toward sport. In general, peers tailored their responses to the hesitant and resistant sport vignettes such that they would not necessarily respond using a quest narrative. However, when the vignettes were particularly negative, some peers did feel the need to at least challenge those perceptions of disability and sport. Kate and Adam’s vignettes were the most positive; they also expressed the most openness to sport post-SCI. As such, they evoked more positive responses from the peer and were found to be easier to relate to. These vignettes elicited quest stories, such that peer used their experiences in sport as the foundation for these stories. In the presence of
Adam’s desire to walk again, they accepted that point of view and proceeded to highlight how sport could further that goal by helping him pass time and to keep his body lean and healthy. As such, peers also tied in pieces of a restitution narrative by positioning sport near a cure. By promoting the instrumental benefits of sport, such as the physical strength outcomes, Frank would suggest that this information is therefore consistent with Adam’s restitution narrative and less likely to pass into the “river of not for me”\textsuperscript{20}. Therefore, it is possible that the information peers share about sport with individuals like Adam, including the resources, are heard.

By contrast, Brian and Abby’s heavily sport-resistant vignettes were often met with a negative reaction from peers. While they would not respond in a negative way, peers did not always frame their responses within a restitution or chaos narrative. The negative reactions and desire to challenge the perception of disability in these two cases reveals the action of peers’ narrative habitus – all of the narratives that construct a peer’s understanding of the world \textsuperscript{21}. The narrative habitus disposes certain stories to feeling ‘right’ and in the case of these peers, their years of positive experiences in sport post-injury strengthens and solidifies adapted sport as part of a “good life” \textsuperscript{21}. When individuals like Brian and Abby have negative reactions to SCI, the peers’ narrative habitus may impede their ability to fully understand why and how Brian and Abby construct their understanding of SCI and adapted sport. As a result, Brian and Abby’s stories often did not resonate and the majority of peers expressed difficulty and frustration in responding to such a vignette. Yet by challenging Brian and Abby’s perceptions of disability, peer were
engaging in narrative ambush, such that they provided multiple different ways of considering disability to challenge Abby and Brian’s dominantly held narrative. As such, further investigation of the narrative habitus and this form of narrative ambush is necessary to see if this is an effective way to open up space for peer mentees.

Our research reveals the relative ease with which peers respond to quest stories as well as basic restitution stories. In these instances, training peers about how to promote sport among individuals with SCI will be relatively straightforward. As peers recommended and demonstrated, individuals like Kate and Adam need an awareness of the resources and possibilities for sport. Therefore, ensuring that peers have information about the different sport organizations and the resources they offer, such as equipment loan programs and beginners evenings, is necessary. Furthermore, ensuring that peers understand and present the physical benefits of sport ensures that these peers can provide information about sport that fits with individuals like Adam’s restitution narrative. Based on Frank’s theoretical work, this information will be noted as peers tailor it to their mentees’ narratives.

The peers expressed difficulties and frustration responding to chaos and restitution stories that did not fit with their own ways of viewing the world and life post-SCI. These findings align with Soundy and colleagues research. Peers felt compelled to challenge the perceptions of disability and sport that they felt were inaccurate. Theoretically, this can have one of two outcomes: mentees completely disregard the information and it passes into “the river of not for me” or the narrative ambush is successful and mentees’ open up their
mind to sport post-injury. Given that approximately 96% of people with SCI do not participate in sport post-injury, the likelihood of peers meeting someone with a chaos or sport resistant vignette is relatively high. Future research that examines the implications of these responses is necessary.

There were a few limitations in this study. First, all peer athletes expressed a quest narrative. Therefore if other peers understand sport and SCI using a restitution narrative, the responses they may have to these hesitant and resistant vignettes is unknown. Secondly, we elicited responses using vignettes as opposed to using real mentees. Future research should find a way to include observation of peer mentor-mentee interactions.

Conclusion

When working in a peer mentor capacity, athletes can tailor their responses to a variety of individuals. Furthermore when presented with counter narratives, peers can overcome some of their negative responses to provide mentees with information about sport that generally will fit with the individual’s own narrative. However, individuals that expressed strong resistance to sport and life with SCI were difficult to respond to. Thus, these responses were more varied amongst peers. An examination of the outcomes of these responses is necessary to better understand what stories are effective and how to train peers to respond to a variety of differing narratives.
References


Chapter 7

General Discussion

The objective of this dissertation was to develop a nuanced understanding of the role that theoretical and contextual factors play in sport participation among individuals with acquired physical disabilities, and in particular spinal cord injury (SCI). Below, I will summarize the results, highlight the strengths and limitations of this dissertation, discuss the practical implications, and conclude with future research directions.

7.1 Summary of Results

The first dissertation study supports the use of the theoretical constructs from the Heath Action Process Approach (HAPA) model as well as athletic identity to predict sport participation among individuals with acquired physical disabilities. These results are in line with the leisure time physical activity (LTPA) literature that support the separate effect of affective and instrumental outcomes on LTPA intentions (Rhodes & Courneya, 2003). In accordance with work by Martin Ginis and colleagues (2011), we also found that multiple types of self-efficacy are necessary for the initiation and maintenance of sport, a specific form of LTPA. We extended these models, and supported research by Tasiemski and colleagues (2011), by demonstrating that athletic identity is an equally important predictor for sport participation within this population. This information is vital given that many models of sport participation consider how to
develop and retain talent, but not necessarily what factors motivate individuals to try sport for the first time.

The second study builds upon the findings of the first study by exploring how athletic identity is lost or (re)developed after acquiring a permanent physical disability. A narrative analysis of eleven participants’ interviews revealed three narrative types: the non-athlete, the future self as an athlete, and the present self as an athlete. Ruminating on the discrepancy between the past and present selves led to diminished athletic identity. The object of comparison, the past body or past behaviour, differentiated between those who believed they could (re)develop an athletic identity and those who could not. Among those who considered themselves to be athletes, performance goals and psychological traits were identified as the most influential factors for athletic identity. Peers were reported as supports of athletic identity, such that they created the environment that attract individuals to sport. This study extends the body of research by Smith and Sparkes (2003), by exploring how individuals (re)develop an athletic identity post-injury as opposed to focusing on the lost identity.

The third study built upon the first two dissertation studies by exploring the impact that disability narratives have on the LTPA individuals participate in. The plot of an individual’s disability narrative motivated individuals to pursue very different types of LTPA. Only those who framed their experience of disability using a quest narrative were open to sport. By contrast, those who desired to walk in the future were motivated to use LTPA to increase function. Furthermore, individuals who used different disability
narratives had differing levels of openness to peers with SCI. This study extends Martin Ginis and colleagues’ (2010) research on the types of LTPA that individuals with SCI do by highlighting why individuals are drawn to specific types of LTPA, such as sport.

Study 4 built upon Studies 2 and 3 by examining how peer athletes interact with their mentees who express hesitance and resistance to sport. Despite their own beliefs about sport and SCI, peers generally crafted responses to others based on the other individual’s disability narrative. However, extremely resistant and negative mentee vignettes were difficult to respond to. While the peer athletes suggested other ways to get involved in sport, such as by trying integrated sports or engaging in sport for physical strength, the efficacy of tailoring these responses to mentee vignettes is unknown. Therefore, in the future it is important to examine the impact tailored responses have on mentees’ openness to sport post-injury.

As a whole, this dissertation further unpacks sport participation post-injury by exploring the complexities with the experience of acquired physical disabilities, athletic identity, and peer athletes’ responses to differing disability narratives. As such, the results from all studies can be incorporated into existing sport programs and sport promotion messages.

7.2 Strengths

Using a mixed methods approach to explore athletic identity among individuals with acquired physical disabilities enables a deeper understanding of the constructs and
contexts that lead to sport participation post-injury. The quantitative study established a statistical relationship between the HAPA constructs, athletic identity, and sport participation among this population. Given the complex nature of athletic identity and disability, two follow-up studies that use narrative inquiry provide vital context for the observed relationships between athletic identity, HAPA constructs and sport participation. Furthermore, eliciting peer responses to these observed narratives contributes an additional layer of complexity by capturing the dialogical nature of narratives and identities (Frank, 2010). This approach enabled us to understand multiple layers.

A second strength of this dissertation is its foundation in theory. Behavioural theories allow complex relationships to be mapped, providing a guide of possible constructs to target through interventions (Green, 2000). Models of sport participation largely focus on talent development and assume that individuals have already accessed the sport system (e.g. (Bruner, Erickson, Wilson, & Côté, 2010). By incorporating a behavioural theory, such as HAPA, it is possible to extend these sport development models by incorporating factors that are necessary to motivate individuals with acquired physical disabilities to access sport programs. This information is essential for sport organizations, such as the Canadian Paralympic Committee, who need this knowledge to increase the efficacy of their sport messages and programs.

Behavioural theories have been critiqued for explaining little variance in their outcomes. By using narrative inquiry in the second and third studies, we were able to
extend beyond the theoretical relationships postulated. Adding a narrative approach allows us to illuminate the complex relationships between athletic identity, sport participation, and disability and the context in which they exist. In doing so, we capture the “messiness” of human lives. For example, understanding the dominant narrative that frames individuals live can highlight situations when the proposed theoretical constructs may not necessarily predict behaviour as expected.

Frank (1995) and other narrative theorists posit that identities are dialogical in nature; they are performed and thus call for responses from others (Smith & Sparkes, 2008). By creating mentee vignettes from Studies 2 and 3 and collecting peer athletes’ responses to these vignettes, Study 4 highlights the dialogical nature of narratives and therefore, understand the process of peer sport promotion.

7.3 Limitations

Although this dissertation has several strengths, it is not without its limitations. In its conceptualization, the first dissertation study examines athletic identity and sport participation. However, we explored the predictive value of HAPA constructs on sport participation two weeks later. While we can say these constructs are important for sport participation in the short term, the role these constructs play in the maintenance of sport participation remains unknown.

In his longitudinal research, Burke (2006) noted that changing identity can take multiple years. The cross sectional nature of the qualitative studies cannot directly
address how stories change over time and what circumstances produce these changes. While participants in the three qualitative studies reflected on identity changes over time, participants described identity changes using their present narrative. Therefore, it is not possible to truly see the impact that a past narrative may have had.

Due to our approach, while we can see the dominant narratives individuals involved in sport use, we cannot understand how these dominant narratives for adapted sport are first constructed. For example, the opportunity for an individual with a disability to be considered as an athlete would not have been possible before the establishment of the Stoke Mandeville games (Thomas & Smith, 2009). Because the focus was not an in depth analysis of the historical context that produces and maintains master narratives, we cannot say how the notion of an “athletic identity” was first produced nor can we ascertain how such a narrative gained ground over the past 50 years.

Finally, this thesis focuses on sport as an LTPA. While sport has many unique benefits for individuals with acquired physical disabilities, it may not be suitable for every body. As such, other factors and narratives related to broader LTPA were not explored outside of the third study. Therefore other research that honours individuals’ desire to engage in other types of LTPA is necessary.

7.4 Practical Implications

**Sport Promotion Messaging.** This dissertation has many implications for sport promotion messages for individuals with acquired physical disabilities. As the results of
the first study suggests, multiple types of outcome expectancies and task self-efficacy are vital components for intentions to participate in sport. Therefore to draw people to sport, promotional messages should consider these factors. The challenge, as suggested by the results of the second and third dissertation study, is how to target these constructs effectively. Individuals who are strongly attached to their pre-disability body and self will likely disregard the current media messages about adapted sport given that they are largely based on a quest narrative (de Léséleuc, Pappous, & Marcellini, 2010; Pappous, Marcellini, & de Léséleuc, 2011; Schell, 1999). Framing messages according to Frank’s disability narratives (1995), such as specific messages for quest, restitution and chaos narratives, may be key in getting the messages with theoretical information to be heard and is an important area for future research.

In addition to the theoretical constructs outlined in the first study, peer athletes highlighted additional content for messages. Individuals who are ambivalent or resistant to sport may only think of the obvious sports like wheelchair rugby or basketball. Yet there are a number of sports that can be done without special equipment or the need to associate with peers with disabilities. Incorporating these alternative sports, like kayaking and curling, into promotional messages could increase individuals’ affective outcome expectancies for sport and therefore increase willingness to consider contacting sport programs post-injury.

**Sport and LTPA Practice.** The third dissertation study revealed the importance of the “narrative environment” on individuals’ motivations for LTPA. Open narrative
environments, such as Active Rehabilitation, are those that do not force or promote a particular narrative. These spaces allow people to experience disability and sport in a way that resonates with their own narrative. As such, future sport and LTPA programs should consider other possible narratives that frame their participants’ experiences and in particular, practitioners should be cautious about statements that privilege one way of experiencing sport and disability over another. In doing so, these programs may reach a broader audience and encourage more individuals to consider sport.

7.5 Future Directions

In addition to examining the effectiveness of tailored, theory-based narrative messages, future research needs to explore the construction identity over time. While participants from the second and fourth studies suggest that developing an athletic identity is an evolution, there is currently no longitudinal research that examines how individuals’ disability and athletic narratives ‘evolve’ over time. The path taken to get to the present self, the changes in identity and experiences cannot be observed or understood using the current methodology. Therefore, future research that includes multiple life history interviews over the course of five or ten years after acquiring a physical disability can better highlight these changes over time. From this perspective, how the stories change and the situations that produced these changes can be directly recounted. Furthermore, the detail and raw emotions will be easier for individuals to share; these
narratives will be told from the particular social and political location in which they occurred.

7.6 Conclusion

As a whole, this dissertation highlights the important factors that are necessary for sport participation post-injury. Developing positive outcome expectancies and self-efficacy are crucial for intentions to engage in sport. However, a consideration of individuals’ identity, past athletic narratives and disability narrative is necessary to fully understand why some individuals are drawn to sport post-injury while others are not. Peer athletes’ responses provide direction for possible sport messaging interventions.

7.7 References


CHAPTER 8

Falling down the rabbit hole: from epidemiologist to narrative researcher

The purpose of this final chapter is to share the details of my journey from epidemiologist to narrative researcher. It is meant to offer insight as to how my studies are connected, or disconnected, from one another and why that is the case. This preface is meant to guide readers and to offer transparency with respect to the decisions I made. After reading this chapter, I hope the readers will be able to see the process of my learning and to appreciate how I, originally an epidemiologist interested in physical activity, became a narrative researcher interested in peer dynamics.

In the first semester of my doctoral studies, I attended a Bridging the Gap session where I was first exposed to adapted sport. Throughout my life, I have always been involved in recreational sport. I enjoyed the social aspects of intramural sport and getting out of the house for a few hours. At this adapted sport session, similar emotions were evoked and so the experience resonated with me. I was also able to see what sport could do for people with mobility impairments. Over that course of the semester, I had also started volunteering at Revved Up, a physical activity program for people with mobility impairments in the Kingston area. As I read more about access to sport among individuals with acquired physical disabilities, I realized there is a huge inequity in sport participation rates. Having experienced the positives of sport myself, I decided that I wanted to focus on promoting sport for people with an acquired disability. Also during this time, I read a paper by Tasiemski and colleagues (2004) that suggested that
individuals with spinal cord injury (SCI) score lower on quantitative measures of athletic identity than individuals in the general population, even when compared at the same competitive level, gender, and age. That paper sparked my initial interest in athletic identity, as I learned about the relationship between identity and behaviour.

Given my previous training in Epidemiology, I approached my work from a very positivist place: design, measure, write – lather, rinse, repeat. Having no prior exposure to other epistemologies and ontologies, these were the only tools that were available to me. As a result, my first dissertation study was designed from this standpoint. While this work makes a valuable contribution to adapted sport promotion, I think it is important to note that this type of inquiry can only provide one view. Intuitively I knew that if I wanted to understand changes in identity, I would need to have in depth conversations with both athletes and non-athletes with SCI. However I was still approaching my research from a positivistic standpoint. Whatever answers these individuals had given would have been treated as the only answer or version of identity. As Sparkes (2002) suggests, I was still operating in the realm of a “scientific tale” in which I removed myself from the text. I had no place in this work; the knowledge was uncovered, rather than produced through the relationships I held with my participants.

During the time I was interviewing participants for my second dissertation study, I was taking a course in sociocultural methods and had exposure to different epistemologies. That fall, after my data collection, I spent the semester in Loughborough working with Dr. Brett Smith on my third dissertation study. By working with Brett, I
had exposure to different ways of conceptualizing disability; this change influenced how I analyzed the data from my second study as well as the methods I would use for my third and fourth studies. During this trip, I had realized that I was embedded in a culture that promoted a quest perspective (Frank, 1995). Every exposure that I had to adapted sport was with individuals who saw their disability as a challenge and sport as an opportunity for self-improvement. Indeed, after reading the work of Art Frank I had a new perspective on disability; it made sense that not everyone will see sport and disability as positively as I do. In turn, I learned to look for the stories that people share with me and to think about how these studies are shaped by the broader sociocultural contexts in which people find themselves (Frank, 2010).

I better understood that concept once I had interviewed people who did not see their disabilities as positively as I had. During my interviews at Loughborough, I realized that I approached my work with an understanding of disability from a quest narrative. Indeed, this quest approach suggests that disability is a challenge that can be met and overcome (Frank, 1995). Past media analyses (e.g. Pappous, Marcellini, & de Leseleuc, 2011a, 2011b) suggest this is the dominant view that is constructed through Paralympic coverage. Stories of disability are shared as great tragedies that can be overcome; they are meant to inspire others to achieve greatness in spite of barriers or obstacles. Having been immersed in this culture, it is no wonder I felt uncomfortable with someone who expressed a story that was in such stark contrast to what I understood disability, and sport, to be.
In Loughborough, I met a woman named Emilie. She was not a native English speaker and asked to have a close personal friend attend the interview with her to help translate. However, Emilie’s friend seemed to have a different agenda for the day. She would say “her doctors tell her that just because she has an SCI doesn’t mean her life has stopped. It’s different, but she can live a good life”. Upon hearing this, Emilie would become silent, or quietly repeat “life hasn’t stopped”. When her friend would leave, she would open up about the pain she was experiencing. She had the opportunity to express how she really felt. This agenda from her friend would inhibit Emilie from sharing stories. In doing so, the lines of communication are cut off and I believe we can do more harm than good. Because of this experience, among others, I changed how I approach my research; now my focus is on creating space for individuals to consider sport and LTPA that suits their needs, while respecting individuals’ stories.

Through my own experience with an invisibility (read: invisible illness), I better understood Emilie’s frustration. I was never completely sick, but never totally healthy; I generally ate gluten free, so my symptoms were never enough to warrant a visit to the doctor. When I spent a week in Rome in 2012, I could barely function. I was so anemic that I had fist sized bruises on my legs from bumping into a coffee table. Walking around my apartment left me breathless. I had constant searing pains in my stomach. One afternoon, as I was wishing for the pain to end, I began to realize how Emilie must have felt: sick but unable to express how she felt. No one had made the effort to understand her pain. Now that I face people who impose their understanding of Celiac on me, and it can
be extremely frustrating and isolating to feel unheard. I take those experiences forward into the research I do.

As a result, my final dissertation study focuses on peer athletes. While I still believe that sport and LTPA are necessary for a better quality of life post-injury, I feel that we must be careful about how we present these opportunities to individuals with SCI and this is why my interest has shifted to peer athletes, as they are the front line. They are the ones who will hear people’s stories and be asked to respond. In turn, these are the individuals whose actions can open space for sport and LTPA post-injury through their supportive responses. Because of these experiences, my research will focus on better understanding the process of peer mentorship and the power of these narratives to promote sport and LTPA post-injury.

References


Appendix A

Ethics Approval
December 14, 2010

Ms. Marie-Josée Perrier  
Ph.D. Candidate  
School of Kinesiology and Health Studies  
Queen’s University  

Dear Ms. Perrier:

GREB Ref #: GPHE-099-10  
Title: “Getting the ball rolling: the influence of prototypes and identity on sport participation in persons with acquired, physical disabilities”

The General Research Ethics Board (GREB), by means of a delegated board review, has cleared your proposal entitled “Getting the ball rolling: the influence of prototypes and identity on sport participation in persons with acquired, physical disabilities” for ethical compliance with the Tri-Council Guidelines (TCPS) and Queen’s ethics policies. In accordance with the Tri-Council Guidelines (article D.1.6) and Senate Terms of Reference (article G), your project has been cleared for one year. At the end of each year, the GREB will ask if your project has been completed and if not, what changes have occurred or will occur in the next year.

You are reminded of your obligation to advise the GREB, with a copy to your unit REB, if applicable, of any adverse event(s) that occur during this one year period (details available on webpage http://www.queensu.ca/ors/researchethics/GeneralREB/forms.html – Adverse Event Report Form). An adverse event includes, but is not limited to, a complaint, a change or an unexpected event that alters the level of risk for the researcher or participants or situation that requires a substantial change in approach to a participant(s). You are also advised that all adverse events must be reported to the GREB within 48 hours.

You are also reminded that all changes that might affect human participants must be cleared by the GREB. For example you must report changes in study procedures or implementations of new aspects into the study procedures on the Ethics Change Form that can be found at http://www.queensu.ca/ors/researchethics/GeneralREB/forms.html - Research Ethics Change Form. These changes must be sent to the Ethics Coordinator, Gail Irving, at the Office of Research Services or irvingg@queensu.ca prior to implementation. Mrs. Irving will forward your request for protocol changes to the appropriate GREB reviewers and/or the GREB Chair.

On behalf of the General Research Ethics Board, I wish you continued success in your research.

Yours sincerely,

Joan Stevenson, PhD  
Professor and Chair  
General Research Ethics Board

c.c.: Dr. Amy Latimer, Faculty Supervisor and Co-applicant  
Dr. Spencer Moore, Chair, Unit REB  
Josie Birchall, Dept. Admin.

JS/gi
Appendix B

Baseline Questionnaire
Study of athletic identity and sport participation in individuals with an acquired, physical disability

Interviewer Initials: ________           Today’s date: ______________
(mm/dd/yy)

Interviewers, please begin by assigning the participant an ID code. ID codes should be assigned in ascending numeric order beginning with 1.
Participant ID: _______________    Initials: _____    Interview #: ____

Please begin by reading the following letter of information and obtaining verbal consent. Sign the consent log and email the participant a copy of the consent form.

The participant has the right to refuse an answer to questions. When this is the case, please mark the question with a “-9”. If they cannot remember the answer or are unsure, please indicate this with a “-8”.

When you are finished, remember to thank the participant for their time. We are offering a Shopper’s Drug Mart gift card as compensation for their help. Please send the gift card as soon as you are finished the interview or leave on MJ’s desk to send in the morning if the office is closed. When you are finished, please lock the questionnaires in KHS 502B.
Demographic Information

We will begin by asking a few questions to get a better understanding of what type of injury/diagnosis you had.

For SCI
Level of SCI: _________________ Cause: _________________

Do you know your ASIA classification?
O Yes
O No

If not, which of the following best describes you?
O No feeling or movement below the level of the injury (A)
O Feeling all the way down to your rectum/bum but no use of muscles (B)
O Limited movement or muscle contractions below level of the injury but these serve no useful function (C)
O Functional, but not necessarily full use of at least half of the muscle groups below the level of the injury (D)
O Feeling and movement is normal below level of injury (E)

Is the injury complete or incomplete?
O Complete
O Incomplete

For Tumours
Type of tumour: ______________ Location of tumour: ______________
Areas of body affected: ______________ Resulting impairment: ______________

For Illnesses (i.e. meningitis/polio)
Illness: ______________
Area of body affected: ______________ Resulting impairment: ______________

For Amputees (check all that apply)
Cause of amputation: __________________________
Upper limb
   Above the elbow  O
   Below the elbow  O
   Left            O
   Right           O
   Bilateral       O

Lower limb
   Above the knee  O
   Below the knee  O
   Left           O
   Right          O
   Bilateral      O

For Stroke
Please indicate the level of paralysis/weakness present in the following:
   Hand: None  O
   Mild       O
   Moderate   O
   Severe     O

   Arm: None  O
   Mild       O
   Moderate   O
   Severe     O

   Upper leg:
   None  O
   Mild  O
   Moderate  O
   Severe O

   Lower leg:
   None  O
   Mild  O
   Moderate  O
   Severe O

Type of stroke: Ischemic (caused by a clot)  O
                 Haemorrhagic (caused by a brain bleed)  O
Side of lesion: Left O  
Right O  
Bilateral O

What is your primary mode of mobility outside your home?
- Manual Wheelchair O
- Power Wheelchair O
- Walker O
- Braces O
- Cane O
- Walk Independently O
- Walk with use of prosthesis O

Which of the following describes your ethnicity?
- White O  
- Native Canadian O  
- Black O  
- Asian O  
Other: __________ O

What is the highest level of education you have completed?
- High school O  
- College O  
- University O  
- Post Graduate O  
Other: __________ O

What is your marital status?
- Single O  
- Common Law O  
- Married O  
- Divorced O  
- Widowed O

For the next 20 minutes or so, we will be discussing a number of topics related to sport. We consider sport to be any type of structured, physical activity with a contest between two or more individuals to determine a winner. This can be in the form of a game, race, or other competitive event. This activity is governed by an organization which determines the rules of play and determines the winners of organized events.

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<th>Sport</th>
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<td>Basketball</td>
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<td>Sledge hockey</td>
<td>Stretching</td>
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<td>Track and field</td>
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<td>Volleyball</td>
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<td>Swimming with a team</td>
<td>Playing Frisbee with children</td>
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<td>Strength training for a sport</td>
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Think back to the most recent sport you participated in sport before your injury. If you did not participate in sport before your injury/illness, indicate so by responding “none”. If you played in multiple sports at the time you were injured, please answer based on the sport in which you played the most (i.e. more years, more practices).

Thinking back to this pre-disability sport experience, what level of sport did you participate in?
O None
O Recreational/intramural
O Regional (City)
O Provincial
O National/International

How many days per week did you participate in sport? ______

How many minutes per session of sport did you do? ______

Thinking about your current level of participation in sport, which of the following describes you?
O I am currently not participating in sport, nor am I considering it
O I am currently not participating in sport, but I am considering joining in the next six months
O I am currently not participating in sport, but I have contacted an organization to get the ball rolling
O I have been participating in sport for less than six months
O I have been participating in sport for more than six months

We are interested in understanding what your view of the typical athlete, or a person who engages in sport, is. The next set of questions will focus on what you feel defines this type of person. Please list three characteristics you think an athlete possesses. These traits can be physical or personality traits:

1. _______________________
2. _______________________
3. _______________________
On a scale from 1 to 100, where 0 represents very negative and 100 represents very positive, where would you rate your thoughts, beliefs and feelings about the typical athlete?

0 10 20 30 40 50 60 70 80 90 100
O O O O O O O O O O
Very negative Neutral Very positive

On a scale of 1 to 7, where 1 is “not at all similar” and 7 is “definitely similar”, how similar are you to the typical athlete?

1 2 3 4 5 6 7
O O O O O O O
Not at all similar Definitely similar

On a scale of 1 to 7, where 1 is “not at all like me” and 7 is “definitely like me”, do the characteristics that describe the typical athlete?

1 2 3 4 5 6 7
O O O O O O O
Not at all like me Definitely like me

Next, I will ask you a series of questions about your identity within sport. I am going to read a series of statements and for each statement, you can respond with any value between 1 and 7. 1 represents strongly disagree while a 7 represents strongly agree.

**I consider myself an athlete**

1 2 3 4 5 6 7
O O O O O O O
Strongly disagree Strongly agree

**I have many goals related to sport**

1 2 3 4 5 6 7
O O O O O O O
Strongly disagree Strongly agree
Most of my friends are athletes
1  2  3  4  5  6  7  
O  O  O  O  O  O  O  
Strongly disagree

Sport is the most important part of my life
1  2  3  4  5  6  7  
O  O  O  O  O  O  O  
Strongly disagree

I spend more time thinking about sport than anything else
1  2  3  4  5  6  7  
O  O  O  O  O  O  O  
Strongly disagree

I need to participate in sport to feel good about myself
1  2  3  4  5  6  7  
O  O  O  O  O  O  O  
Strongly disagree

Other people see me mainly as an athlete
1  2  3  4  5  6  7  
O  O  O  O  O  O  O  
Strongly disagree

I feel bad about myself when I do poorly in sport
1  2  3  4  5  6  7  
O  O  O  O  O  O  O  
Strongly disagree

Sport is the only important thing in my life
1  2  3  4  5  6  7  
O  O  O  O  O  O  O  
Strongly disagree
I would be very depressed if I were injured and could not compete in sport

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Strongly disagree

Strongly agree

Most people compare themselves from time to time with others. For example, they may compare the way they feel, their opinions, their abilities, and/or their situation with those of other people. There is nothing particularly “good” or “bad” about this type of comparison, and some people do it more than others. We would like to find out how often you compare yourself with other people. To do that we would like you to indicate how much you agree with each statement below, by using 1 to indicate strongly disagree and 5 to indicate strongly agree.

I always pay a lot of attention to how I do things compared with how others do things.

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If I want to find out how well I have done something, I compare what I have done with how others have done.

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I often compare how I am doing socially (e.g., social skills, popularity) with other people.

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I am not the type of person who compares often with others.

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Strongly disagree

Strongly agree
I often compare myself with others with respect to what I have accomplished in life.

1 2 3 4 5
O O O O O
Strongly disagree Strongly agree

I often like to talk with others about mutual opinions and experiences.

1 2 3 4 5
O O O O O
Strongly disagree Strongly agree

I often try to find out what others think who face similar problems as I face.

1 2 3 4 5
O O O O O
Strongly disagree Strongly agree

I always like to know what others in a similar situation would do.

1 2 3 4 5
O O O O O
Strongly disagree Strongly agree

If I want to learn more about something, I try to find out what others think about it.

1 2 3 4 5
O O O O O
Strongly disagree Strongly agree

I never consider my situation in life relative to that of other people.

1 2 3 4 5
O O O O O
Strongly disagree Strongly agree

I often compare how my loved ones (boy or girlfriend, family members, etc.) are doing with how others are doing.

1 2 3 4 5
O O O O O
Strongly disagree Strongly agree
I am now going to ask you about your thoughts and beliefs about participating in sport. I am going to read a series of statements and I’d like you to rate each statement on a scale ranging from 1 to 7. You can respond with any value between 1 and 7 where 1 represents not at all and 7 represents definitely. Over the next two weeks, participating in sport would…

### Increase my mobility

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Not at all  

**Definitely**

### Increase my energy

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Not at all  

**Definitely**

### Improve my physical fitness

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Not at all  

**Definitely**

### Improve my mood

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Not at all  

**Definitely**

### Increase my self-esteem

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Not at all  

**Definitely**

### Increase the size of my social network

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Not at all  

**Definitely**

### Improve my quality of life

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Not at all  

**Definitely**
Would be fun
1 2 3 4 5 6 7
O O O O O O O
Not at all Definitely

Would be enjoyable
1 2 3 4 5 6 7
O O O O O O O
Not at all Definitely

Would be pleasant
1 2 3 4 5 6 7
O O O O O O O
Not at all Definitely

Would be relaxing
1 2 3 4 5 6 7
O O O O O O O
Not at all Definitely

We would like to ask you a few more questions about how likely certain events are to happen compared to other individuals of your age and gender. Please answer the questions according to the following scale, where 1 represents “no chance” and 7 represents “certain to happen”.

I will develop type 2 diabetes
1 2 3 4 5 6 7
O O O O O O O
No Very Unlikely Moderate Likely Very Certain
Chance Unlikely Likely To Happen

I will develop obesity
1 2 3 4 5 6 7
O O O O O O O
No Very Unlikely Moderate Likely Very Certain
Chance Unlikely Likely To Happen
I will develop osteoporosis

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No Very Unlikely Moderate Likely Very Certain
Chance Unlikely Likely To Happen

I will develop cardiovascular disease

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No Very Unlikely Moderate Likely Very Certain
Chance Unlikely Likely To Happen

We would like to ask you a few more questions about how likely certain events are to happen, if you were to engage in sport over the next two weeks. Please answer the questions according to the following scale, where 1 represents “no chance” and 7 represents “certain to happen”.

I will feel physically exhausted

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No Very Unlikely Moderate Likely Very Certain
Chance Unlikely Likely To Happen

I will improve my general health

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No Very Unlikely Moderate Likely Very Certain
Chance Unlikely Likely To Happen

My mood will improve

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No Very Unlikely Moderate Likely Very Certain
Chance Unlikely Likely To Happen

I will feel physically sore (e.g., joint or muscle pain)

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No Very Unlikely Moderate Likely Very Certain
Chance Unlikely Likely To Happen
### I will overheat

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### I will feel less depressed

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### I will interfere with my physiotherapy

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### I will feel better about myself

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### I will put myself at risk for injuries

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### I will experience pressure sores

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### I will experience hypotension making me feel dizzy or lightheaded

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I will lose weight

1 2 3 4 5 6 7
O O O O O O O
No Very Unlikely Moderate Likely Very Certain
Chance Unlikely Likely To Happen

I will cause my family and friends to worry about me

1 2 3 4 5 6 7
O O O O O O O
No Very Unlikely Moderate Likely Very Certain
Chance Unlikely Likely To Happen

I am now going to ask you about your confidence in your abilities within the realm of sport. I am going to read a series of statements and I’d like you to rate each statement on a scale ranging from 1 to 10 where 1 represents not at all confident and 10 represents completely confident. Assuming you had the opportunity and resources, over the next two weeks how confident are you that you have the physical ability to:

Participate in any type of recreational sport over the next two weeks

1 2 3 4 5 6 7 8 9 10
O O O O O O O O O O
Not at all Completely

Participate in recreational basketball over the next two weeks

1 2 3 4 5 6 7 8 9 10
O O O O O O O O O O
Not at all Completely

Participate in recreational sledge hockey over the next two weeks

1 2 3 4 5 6 7 8 9 10
O O O O O O O O O O
Not at all Completely

Participate in recreational tennis over the next two weeks

1 2 3 4 5 6 7 8 9 10
O O O O O O O O O O
Not at all Completely
Participate in recreational curling over the next two weeks
1  2  3  4  5  6  7  8  9  10
O  O  O  O  O  O  O  O  O  O
Not at all  Completely

Participate in swimming over the next two weeks
1  2  3  4  5  6  7  8  9  10
O  O  O  O  O  O  O  O  O  O
Not at all  Completely

Assuming that you had the opportunity and resources to participate in a sport, how confident are you that you would be able to attend:

One, 60 minute practice per week over the next two weeks
1  2  3  4  5  6  7  8  9  10
O  O  O  O  O  O  O  O  O  O
Not at all  Completely

Two, 60 minute practices per week over the next two weeks
1  2  3  4  5  6  7  8  9  10
O  O  O  O  O  O  O  O  O  O
Not at all  Completely

Three or more 60 minute practices per week over the next two weeks
1  2  3  4  5  6  7  8  9  10
O  O  O  O  O  O  O  O  O  O
Not at all  Completely

I am now going to ask you about your beliefs about your abilities to overcome the common barriers to sport. I am going to read a series of statements and I’d like you to rate each statement on a scale ranging from 1 to 10 where 1 represents not at all confident and 10 represents completely confident. Assuming that you had the opportunity and the resources, how confident are you that you could participate in sport over the next two weeks, even when:

You are experiencing pain or stiffness
1  2  3  4  5  6  7  8  9  10
O  O  O  O  O  O  O  O  O  O
Not at all  Completely
The weather is poor
1 2 3 4 5 6 7 8 9 10
O O O O O O O O O
Not at all Completely

You cannot find/afford the right equipment
1 2 3 4 5 6 7 8 9 10
O O O O O O O O O O
Not at all Completely

The facilities nearby are closed
1 2 3 4 5 6 7 8 9 10
O O O O O O O O O O
Not at all Completely

The sport you chose is no longer available in your neighbourhood
1 2 3 4 5 6 7 8 9 10
O O O O O O O O O
Not at all Completely

Your time is limited
1 2 3 4 5 6 7 8 9 10
O O O O O O O O O O
Not at all Completely

The cost of your chosen sport increases
1 2 3 4 5 6 7 8 9 10
O O O O O O O O O O
Not at all Completely

I am now going to ask you about your beliefs about your abilities to return to sport after a 2 week absence. I would like you to rate this statement on a scale ranging from 1 to 10 where 1 represents not at all confident and 10 represents completely confident. Assuming you had the opportunity to participate in a sport but found yourself unable to attend practices over the next two weeks, how confident are you in your ability to go back to practice after your absence?
1 2 3 4 5 6 7 8 9 10
O O O O O O O O O
Not at all Completely
Action plans refer to the specific details about how, when, and where you will be involved in sport. I am going to read a series of statements and for each statement, you can respond with any value between 1 and 7. 1 represents strongly disagree while a 7 represents strongly agree.

**I have a specific plan for when I will be active in sport over the next two weeks**

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Strongly Disagree

I have a plan with a specific location to be active in sport over the next two weeks

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Strongly Disagree

I have a plan for the types of sport activities that I will be involved in over the next two weeks

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Strongly Disagree

I have a plan for how often I will engage in sport over the next two weeks

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Strongly Disagree

Coping plans refer to the specific details about how, when, and where you will be involved in sport in the face of barriers, that is, how you will overcome these barriers. I am going to read a series of statements and for each statement, you can respond with any value between 1 and 7. 1 represents not at all while a 7 represents definitely.

**I have a developed a list of barriers to my sport participation over the next two weeks**

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Strongly Disagree
I have developed plans for dealing with barriers to my sport participation over the next two weeks

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Strongly Disagree          Strongly Agree

I am now going to ask you about your intentions to participate in a sport. I’d like you to respond on a scale from 1 to 7. A one represents strongly disagree and a seven represents a strongly agree. **Over the next two weeks:**

I intend to participate in a sport over the next two weeks

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Strongly Disagree          Strongly Agree

I will try to participate in a sport over the next two weeks

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Strongly Disagree          Strongly Agree

I plan to participate in a sport over the next two weeks

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Strongly Disagree          Strongly Agree

I will attend all of the scheduled practices for a sport of my choice over the next two weeks

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Strongly Disagree          Strongly Agree
The Feel the Rush database is an online database of sporting opportunities for people with disabilities across Canada. You can access the database online by using the website: http://www.paralympic.ca/en/sports/find-a-club.html.

I will search Feel the Rush to obtain information about joining a sport team

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Strongly Disagree  Strongly Agree

I intend to contact teams from the Feel the Rush database to discuss sport opportunities

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Strongly Disagree  Strongly Agree
Appendix C

Leisure Time Physical Activity Questionnaire for People with Spinal Cord Injury (LTPAQ; 2 Week Follow-Up)
Study of athletic identity and sport participation in individuals with an acquired, physical disability

Follow-Up Questionnaire

Interviewer Initials: __________  Today’s date: ______________
(mm/dd/yy)

Participant ID: ______________

Please begin by reading the letter of information and obtaining verbal consent. Sign the consent log and email the participant a copy of the consent form.

The participant has the right to refuse an answer to questions. When this is the case, please mark the question with a “-9”. If they cannot remember the answer or are unsure, please indicate this with a “-8”.

When you are finished, remember to thank the participant for their time and send their second gift card.
**Participation in Sport and other LTPA**

The focus of this interview will be different than the last time we spoke. The series of questions I will be asking will focus on your participation in sport and leisure time physical activity. This set of questions will be asking you about your participation in sport. The following definitions may be helpful.

<table>
<thead>
<tr>
<th>NOTHING AT ALL</th>
<th>MILD</th>
<th>MODERATE</th>
<th>HEAVY</th>
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<tr>
<td>Includes activities that even when you are doing them, you do not feel like you are working at all.</td>
<td>Includes physical activities that require you to do very light work. You should feel like you are working a little bit but overall you shouldn't find yourself working too hard.</td>
<td>Includes physical activities that require some physical effort. You should feel like you are working somewhat hard but you should feel like you can keep going for a long time.</td>
<td>Includes physical activities that require a lot of physical effort. You should feel like you are working really hard (almost at your maximum) and can only do the activity for a short time before getting tired. These activities can be exhausting.</td>
</tr>
</tbody>
</table>
Keep in mind that **mild intensity sport** requires very light physical effort. You feel like you are working a little bit, but you can keep doing them for a long time without getting tired.

During the last 7 days, on **how many days** did you do mild intensity sport? _______

On those days, **how many minutes** did you usually spend doing mild intensity sport? _______

Recall that **moderate intensity sport** requires some physical effort. Moderate intensity activities make you feel like you are working somewhat hard, but you can keep doing them for a while without getting tired.

During the last 7 days, on **how many days** did you do moderate intensity sport? _____

On those days, **how many minutes** did you usually spend doing moderate intensity sport? _____

As you know, **heavy intensity sport** requires a lot of physical effort. Heavy intensity activities make you feel like you are working really hard, almost at your maximum. You cannot do these activities for very long without getting tired. These activities may be exhausting.

During the last 7 days, on **how many days** did you do heavy intensity sport? _______

On those days, **how many minutes** did you usually spend doing heavy intensity sport? _____
Appendix D

Publication
I act, therefore I am: Athletic identity and the health action process approach predict sport participation among individuals with acquired physical disabilities

Marie-Josée Perrier\textsuperscript{a,*}, Shane N. Sweet\textsuperscript{b}, Shaelyn M. Strachan\textsuperscript{b}, Amy E. Latimer-Cheung\textsuperscript{d}

\textsuperscript{a}School of Kinesiology and Health Studies, Queen’s University, Kingston, Canada
\textsuperscript{b}Faculty of Kinesiology and Recreation Management, University of Manitoba, Winnipeg, Canada

\textbf{Abstract}

Objective: The study had two objectives 1) to test the fit of the Health Action Process Approach (HAPA) model for sport participation among individuals with acquired physical disabilities and 2) to estimate the extent to which athletic identity predicts intentions to engage in sport within the context of HAPA.

Method: Prospective cohort of 82 women and 19 men with acquired permanent disabilities (M\textsubscript{age} = 44.0; M\textsubscript{years post-injury} = 16.2; % in sport = 61.7%). All HAPA indicators and athletic identity were assessed at baseline and sport participation was assessed using the Leisure Time Physical Activity Questionnaire for People with Spinal Cord Injury two weeks later. Structural equation modelling was used to test the HAPA model.

Results: The HAPA constructs explained 15% of the variance in sport participation and 18% of the variance when athletic identity was added to the model. Instrumental (β = .21), affective (β = .35), and negative outcome expectancies (β = -.20) were significant predictors of intentions to participate in sport, as was athletic identity (β = -.25). Intentions to participate in sport significantly predicted planned participation (β = -.54) yet there was no direct relationship between planning and sport participation (β = -.008; p > .05). When the relationship between planning and maintenance self-efficacy was reversed, planning had a significant indirect effect on sport participation through maintenance self-efficacy (β = -.33).

Conclusion: The HAPA model is a good predictive model for sport participation among those with acquired physical disabilities; furthermore, athletic identity accounts for additional variance in sport participation. These constructs can be valuable components of sport promotion programs for this population.

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Introduction

Approximately 16–19% of individuals worldwide experience a physical disability (World Health Organization, 2011). Given the medical advances of the 21st century, individuals with physical disabilities are living longer than ever before but now are faced with preventing and managing chronic disease such as diabetes and cardiovascular disease (National Spinal Cord Injury Association, 2001). These complications are worth noting as individuals with disabilities are considerably less likely to report being in good or excellent health and often require more services and medications than persons without disabilities (McColl, 2005). Furthermore, these individuals often suffer from increased secondary complications (e.g. Hetz, Latimer, Arbour-Nicitopoulos, Martin Ginis, & the SHAPE-SCI Research Group, 2011). Individuals with acquired physical disabilities also face a number of psychosocial concerns including depression, lower quality of life and isolation (e.g. McKinley & Meade, 2010; Tonack & Hitzig, 2008). Many of these negative outcomes of disability can be mitigated by participating in moderate to vigorous leisure time physical activity (LTPA) (e.g. Giacobbi, Stancil, Hardin, & Bryant, 2008; Martin Ginis, Jetha, Mack, & Hetz, 2010; Motl & Gosney, 2008). Unfortunately, nearly 50% of individuals with acquired physical disabilities are inactive (e.g. Brown, Yoo, Ham, & Macera, 2005; Martin Ginis et al., 2010a).

Sport is a promising source of moderate and vigorous LTPA for people with acquired physical disabilities. For example, recent work by Martin Ginis et al. (2010b) demonstrated that individuals with a spinal cord injury (SCI) who participate in sport are active for longer durations as well as active at higher intensities than their peers who participate in other forms of LTPA. Therefore, individuals who are active in sport may be closer to achieving the important physical and mental health benefits associated with a physically...
understanding how athletic identity develops and in athletic identity than what is seen in the general population. A
identity for individuals with SCI based on level of sport competi-
Tasiemski, Kennedy, Gardner, and Blaikley (2004)
acting in line with their identity. Accordingly, individuals who
suggests that individuals with a strong identity as an athlete are
solutions into action. Having solutions and plans to address barriers
between identity and behaviour.
To date, identity has not been incorporated in the HAPA model. However, research testing theories with constructs similar to HAPA (e.g., Theory of Planned Behaviour; Ajzen, 1985) supports the inclusion of identity as an additional independent predictor of behavioural intentions beyond standard measures of outcome expectancies and self-efficacy (Terry, Hogg, & White, 1999). Building upon this research and the notion that identity standards set the expectation for behaviour, in the current study athletic identity was incorporated into the motivational phase of HAPA such that athletic identity should predict intentions to engage in sport. Demonstrating that athletic identity is a predictor of intentions to engage in sport will provide direction for developing sport promotion interventions that not only target HAPA constructs but that also foster athletic identity.
Accordingly, the objectives of the current study were twofold. The primary objective of this study was to validate the HAPA model as a predictive model for sport participation among individuals with acquired physical disabilities. Furthermore, given the potential role of athletic identity in sport promotion for individuals with acquired physical disabilities, the second objective was to estimate the extent to which athletic identity predicts intentions to engage in sport in the context of the broader HAPA model. Two hypotheses were put forth: 1) the HAPA model would fit sport participation with adequate fit statistics and 2) the addition of a path between athletic identity and intentions to participate in sport would increase the variance accounted for by the model. The second hypothesis was based on the notion that individuals who see themselves as athletes would likely set intentions to be involved in sport so that they can maintain behaviour consistent with their identity standard. Thus, intentions will mediate the influence of identity such that people who see themselves as athletes will form intentions to perform behaviours, in this case sport, to be consistent with the roles held in the identity.

Methods
Participant recruitment
Individuals, regardless of current participation in sport, who acquired a physical disability through an acute onset event such an as accident or through an illness were invited to participate. Participants were required to be English-speaking; have a permanent physical disability acquired at the age of 16 or older; be finished with inpatient rehabilitation; be 18–65 years of age; and self-report to have no cognitive or memory impairments. A convenience sample was recruited through two means. With the assistance of disability and adapted sport specific organizations, recruitment emails were sent to coaches and athletes. Furthermore, announcements were posted in rehabilitation centres and adapted gyms. Secondly, individuals were recruited through a database of individuals with SCI who agreed to be contacted for research purposes. All procedures and materials were approved by the General Research Ethics Board prior to commencement.
Data collection and measures

Participants who met the screening requirements completed two questionnaires approximately two weeks apart. Questionnaires were primarily filled out via telephone interview with the principal investigator or a trained research assistant; however, participants were given the opportunity to fill out the questionnaire online if that better suited their needs. The first questionnaire contained scales to assess the HAPA constructs for the next two weeks (e.g., planning over the course of two weeks) and athletic identity. This prospective design in which the HAPA constructs and athletic identity were measured two weeks prior to behaviour allowed for prediction of sport behaviour over time.

Athletic identity

Athletic identity was measured using the 10-item Athletic Identity Measurement Scale (AIMS), where each item, such as “Others see me as an athlete”, is measured on a 7-point scale (1 = strongly disagree; 7 = strongly agree) (Brewer et al., 1993). The scale has demonstrated good test–retest reliability (r = .89) as well as discriminant and construct validity (Brewer et al., 1993). The AIMS has been validated for use with athletes with both acquired and congenital disabilities (Gzowski & Zabriskie, 2006; Martin, Edlund, & Adams-Mushett, 1997). In our sample, the Cronbach’s alpha was .91 which suggests the scale has good internal consistency (Nunnally, 1978). A confirmatory factor analysis with our data revealed only one factor for athletic identity; only one eigenvalue was greater than 1 (5.62). Therefore the AIMS score was kept as a single factor.

Outcome expectancies

Both the affective component, the emotional beliefs about a behaviour (e.g., sport would be enjoyable), and the instrumental component, the beliefs about the utility of performing sport (e.g., sport would improve my general health) were measured (e.g., French et al., 2005). Affective outcome expectancies were measured using four items, each assessed on a 7-point scale (1 = not at all; 7 = definitely) (α = .94). Instrumental outcome expectancies were measured by five items, also on a seven point scale using (1 = no change; 7 = certain to happen) (α = .75). There is also evidence to suggest that individuals consider the possible negative outcomes of engaging in strenuous LTPA and sport such as worsening pain or putting themselves at risk for injuries (Brewer, 2006; Martin, Edlund, & Adams-Mushett, 1997). In our sample, the Cronbach’s alpha was .91 which suggests the scale has good internal consistency (Nunnally, 1978). A confirmatory factor analysis with our data revealed only one factor for athletic identity; only one eigenvalue was greater than 1 (5.62). Therefore the AIMS score was kept as a single factor.

Risk perceptions

Previous research with individuals with physical disabilities indicates that the main reason they engage in LTPA, such as sport, is to achieve physical health benefits (Couture et al., 2010; Schelza et al., 2005; Tasiemski et al., 2004). Therefore risk perception items referred to the perceived severity and susceptibility to chronic diseases caused by sedentary behaviour, such as the risk of developing cardiovascular disease. Health risk perceptions were measured using four of the conditions that individuals are at increased risk for after acquiring a disability. These four items were measured on a 7-point scale (1 = no chance; 7 = certain to happen) (α = .75).

Task self-efficacy

Task self-efficacy was measured using six items that assessed confidence in the ability to play certain sports, at the recreational level. Items were assessed on a 10-point scale (1 = not at all confident; 10 = completely confident) (α = .88) (Foulon, Martin Ginis, Benedict, & Latimer, 2010).

Intentions

Intentions to participate in sport were measured using four items of varying commitment to sport, such as “I will try to participate in sport”. Each item was assessed using a 7-point scale (1 = no chance; 7 = certain to happen) (α = .97).

Maintenance self-efficacy

Scheduling self-efficacy was collected as part of the maintenance self-efficacy construct. Three items were used to assess individuals’ confidence in their ability to schedule one, two, and three or more practices and/or games throughout the week. Items were assessed on a 10-point scale (1 = not at all confident; 10 = completely confident) (α = .92). Barrier self-efficacy was also collected as part of the maintenance self-efficacy construct. Seven items were used to measure participants’ confidence to overcome the common barriers to sport, such as the cost of sport and access to facilities. Items were measured on the same 10-point scale (α = .89).

Planning

Action plans were measured using a four item scale that queries the details of the action plan including when, where, what activities, and how often the individual plans to engage in a sport. Responses were rated on a 7-point scale was used (1 = no chance; 7 = certain to happen) (α = .97). The presence of coping plans was measured with two items that asked about the consideration of potential barriers and the development of plans to get around these barriers. A 7-point scale was used (1 = no chance; 7 = certain to happen). The two items were strongly and significantly correlated (r = .68, p < .01).

Recovery self-efficacy

Recovery self-efficacy was measured by posing the following question: “Assuming you were participating in sport, how confident are you in your ability to return after a two-week absence”. Responses to this item was measured on a 10-point scale (1 = not at all confident; 10 = completely confident).

Participation in sport was assessed two weeks after the HAPA constructs and athletic identity were assessed. Participation in sport was assessed using a modified version of the seven day short-form Leisure Time Physical Activity Questionnaire for People with Spinal Cord Injury (LTPAQ-SCI) by replacing the phrase “physical activity” with the word “sport” (Martin Ginis, Latimer, Hicks, & Craven, 2005). Participants were asked to recall both the number of minutes and days in the last week that they participated in mild, moderate and heavy intensity sport; the total amount of time spent engaging in sport was determined by calculating the sum of the mild, moderate and heavy intensity minutes of sport per week. The LTPAQ-SCI has demonstrated test-retest reliability (ICC = .83) as well as criterion validity within the SCI population (Latimer, Martin Ginis, Craven, & Hicks, 2006; Martin Ginis et al., 2005).

Data management

Since missing data were less than 5% (<1.5%), problems associated with missing data were not a concern and thus a single imputation by a mean replace was used for variables with missing data (Tabachnick & Fiedell, 2007). The risk perception item regarding physiotherapy was missing 46 responses because it was not relevant for many participants and was thus deleted. Correlation matrices were examined for possible collinear items and tolerance.
was used to examine possible collinear items. To correct for the large ratio between variances, mean scale scores were calculated by dividing the total score by the number of items within the scale to standardize the scales (Kline, 2005).

Data analysis

The analyses were conducted in two phases. In the first phase we conducted preliminary analyses to establish the optimal model for Phase 2, which tested the study hypotheses. Some of the general constructs within the HAPA model can be further divided into specific constructs that may uniquely predict PA participation. For example, outcome expectancies may be best modelled specifically as affective, instrumental, and negative components rather than as a general outcome expectancy construct (Rhodes & Courneya, 2003). Planning (action planning; coping planning) and maintenance self-efficacy (barrier self-efficacy; scheduling self-efficacy) may also be modelled best as specific constructs as well. Given the possibility of constructs fitting best as specific latent constructs rather than general ones, measurement models for outcome expectancies; planning; and maintenance self-efficacy were examined. To specify the latent constructs, a scale was created by fixing each latent construct’s first indicator to 1 (Kline, 2005). The latent constructs were left free to correlate. In step 1, a model with the general latent construct and its dependent variable (e.g., intentions, planning) were compared to a model with the specific, subdivided constructs. Model fit was determined by assessing the change in Chi-square from the model, as well as by changes in the Comparative Fit Index (CFI) that were greater than .01 (Rhodes & Courneya, 2003). To ensure consistency across concepts, if the change in CFI was not greater than .01, the component was kept as a general construct to maintain parsimony.

Once the discriminant construct validity of latent constructs was determined, structural equation modelling was used as a second step to assess whether the relationships between sport participation and the latent constructs would be best modelled in the HAPA as general constructs or as specific constructs. The full HAPA model was built with the four general constructs and compared to four specificity models. To test the specificity models, each construct was left as a general construct with the exception of one, which was modelled as the specific construct. Model fit was assessed using the CFI, the Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Square Residual (SRMR); CFI values higher than .94, RMSEA values less than .07 and SRMR values less than .10 indicate models with good fit (Hu & Bentler, 1999).

Upon completion of both the discriminant validity and specificity analyses, a final predictive model was set and used to assess the utility of the HAPA constructs in predicting sport participation. A second model was created with the addition of athletic identity to determine its contribution to sport participation. All descriptive statistics were calculated using PASW 18 (SPSS Inc.). The paths between latent constructs were estimated using maximum likelihood estimations in Mplus version 5 (Muthen & Muthen, 2006).

Results

Participants

A total of 216 individuals with acquired physical impairments met eligibility criteria and set a date to complete the first questionnaire (Table 1). The mean age of participants was 44.0 yrs (SD = 12.8) with approximately 16.2 yrs (SD = 11.5) since their injury/impairment diagnosis. Seventy-five percent of the recruited participants had an SCI, 15% had an amputation and 8% had other mobility impairments resulting from a medical event such as stroke or polio. Fifty-nine percent of respondents were male. Consistent with our efforts to adequately predict sport participation, athletes were overrepresented (61.7%) to ensure variance in the outcome. Of the recruited participants, 201 completed the first questionnaire (Table 2) and 187 completed the two-week follow-up. Comparisons using t-tests and Chi-square tests did not reveal any differences

### Table 1

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<tr>
<th>Demographics</th>
<th>Mean (standard deviation)</th>
<th>Number (%)</th>
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<tbody>
<tr>
<td>Age</td>
<td>44.0 (12.8)</td>
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<tr>
<td>Years post-injury</td>
<td>16.2 (11.5)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>119 (59.2)</td>
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<tr>
<td>Female</td>
<td>82 (40.8)</td>
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### Table 2

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<tr>
<th>Construct (range)</th>
<th>Mean (standard deviation)</th>
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<tr>
<td>Athletic identity (7–70)</td>
<td>36.8 (147)</td>
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<tr>
<td>Instrumental expectancies (4–28)</td>
<td>22.1 (47)</td>
</tr>
<tr>
<td>Affective expectancies (4–28)</td>
<td>23.4 (5.5)</td>
</tr>
<tr>
<td>Negative expectancies (7–40)</td>
<td>24.6 (8.1)</td>
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<tr>
<td>Health risk perceptions (4–28)</td>
<td>13.1 (5.4)</td>
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<tr>
<td>Task self-efficacy (6–60)</td>
<td>33.7 (16.7)</td>
</tr>
<tr>
<td>Intentions (4–28)</td>
<td>20.1 (9.6)</td>
</tr>
<tr>
<td>Scheduling self-efficacy (3–30)</td>
<td>22.1 (9.6)</td>
</tr>
<tr>
<td>Barrier self-efficacy (7–70)</td>
<td>39.5 (16.8)</td>
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<tr>
<td>Action planning (4–28)</td>
<td>19.6 (8.9)</td>
</tr>
<tr>
<td>Coping planning (2–14)</td>
<td>7.3 (4.2)</td>
</tr>
<tr>
<td>Recovery self-efficacy (1–10)</td>
<td>8.1 (2.6)</td>
</tr>
<tr>
<td>Sport Participation (minutes/week)</td>
<td>289.0 (557.7)</td>
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</table>
between those who were lost to follow-up after the first questionnaire and those who were not. Additional testing also did not reveal any differences between the injury types or method of survey administration.

**Preliminary analyses**

**Measurement model**

The proposed measurement model demonstrated acceptable fit [CFI = .93; RMSEA = .061; SRMR = .070]. However, four items had low factor loadings (<.40) indicating poor fit. Three items were related to the risks of health and sport (osteoporosis; developing pressure sores; and losing weight). The last item was related to coping planning (developed a list of barriers to sport). Poor fit of these items is likely the result of the heterogeneity of disability types within the sample. For example, osteoporosis and pressure sores were likely not considered as risky by participants with amputations in comparison to those with SCI. Moreover among people with amputations, losing weight may not have been perceived as a benefit of sport because they need to keep their weight consistent in order to be able to use the same prosthetic. There also was some confusion about the first coping planning item among participants; many participants reported that they did not have a list of barriers to sport despite reporting the presence of coping plans. The measurement model was re-specified by dropping these items; the adjusted measurement model's fit indices reached levels that indicate acceptable fit [CFI = .960; RMSEA = .049; SRMR = .062]. Therefore, the discriminate validity and hypothesized structural model testing were completed using the adjusted measurement model.

**Discriminant validity for model constructs**

The discriminant validity analysis suggested that the HAPA model could be conceptualized with outcome expectancies and risk perceptions as specific constructs while maintenance self-efficacy and planning were best conceptualized as a general latent constructs (Table 3). Structural equation models were then fit for the different conceptualizations of each HAPA construct as either a general construct or as specific constructs. Both analyses suggested that outcome expectancies could be incorporated into the HAPA model as specific constructs. These analyses also suggested that planning and maintenance self-efficacy fit best as general constructs. The specificity models with outcome expectancies met the RMSEA requirement but not for the CFI or SRMR (Hu & Bentler, 1999; Kline, 2005). Therefore, a structural model was built with risk perceptions, intentions, planning, task self-efficacy and maintenance self-efficacy as general latent constructs as the discriminant validity analysis suggests while outcome expectancies was included as three specific latent constructs. When this model was built, the fit indices indicated good fit [CFI = .96; RMSEA = .049; SRMR = .063] which was better than the general model and any of the structural models with only one specific construct. Thus, this was the model used for testing.

**Hypothesis testing**

The structural model demonstrated good fit [CFI = .96; RMSEA = .049; SRMR = .063] supporting the hypothesis that the HAPA model fits sport behaviour for persons with acquired, physical disabilities.

**Predictor of intentions**

In most instances, the observed relationships followed the hypothesized HAPA relationships with intentions (Fig. 1). Greater task self-efficacy and more positive instrumental and affective outcome expectancies were associated with increased intentions for sport. Negative outcome expectancies negatively predicted intentions to participate in sport (β = −.24; p = .001). Health risks did not predict intentions to participate in sport (β = −.909; p = .17). This model explained 47% of the variance in intentions. Similar relationships were found when the HAPA was modified by adding athletic identity to the model. Athletic identity had a comparable effect on intentions such that increases in athletic identity were associated with increased intentions to engage in sport (Fig. 1, italicized betas) and did not change model fit. Athletic identity explained an additional 35% of variance in intentions to participate in sport (i.e. Objective 2).

**Predictors of planning**

With regards to planning, the model accounted for 74% of the variance in planning. In accordance with the HAPA model, intentions to participate in sport and higher maintenance self-efficacy were positively associated with sport. Contrary to HAPA, higher task self-efficacy was associated with decreases in planning (β = −.22; p = .015). However, task self-efficacy had a positive indirect effect on planning through intentions (β = −.13, p = .002). In relation to Objective 2, the addition of athletic identity to the model did not change model fit.

**Predictors of behaviour**

The only statistically significant predictor of sport participation in this model was maintenance self-efficacy (β = .48; p = .003). Individuals with higher scores on the self-efficacy latent construct reported more minutes of sport involvement after two weeks. The relationship between the planning latent construct and sport participation was small and non-significant (β = .052; p = .05). Contrary to HAPA, the path between recovery self-efficacy and sport was negative, albeit non-significant (β = −.19; p = .11). The HAPA indicators explained 15% of the variance in sport participation. With regards to Objective 2, the addition of athletic identity to this model increases the total R² for sport participation to 18%.

**Exploratory analyses**

Given the weak predictive relationship between planning and behaviour, we explored alternate pathways between planning and sport. Because sport is already a planned activity, self-efficacy to schedule and overcome barriers to sport in light of planning may be more predictive of sport than planning itself. Therefore, the HAPA model was modified so that planning predicts maintenance self-efficacy (Fig. 2; CFI = .94; RMSEA = .058; SRMR = .081; R² = .19%). The most notable change was a significant indirect effect from planning to sport through maintenance self-efficacy such that greater planning was associated with an increase in maintenance self-efficacy (β = .33, p = .002) which in turn contributed to an increase in sport participation.

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**Table 3**

Discriminant validity analysis for HAPA constructs.

<table>
<thead>
<tr>
<th>Model</th>
<th>χ²</th>
<th>df</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome expectancies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General construct</td>
<td>633.0***</td>
<td>134</td>
<td>.842</td>
</tr>
<tr>
<td>Instrumental, affective &amp; negative expectancies</td>
<td>197.4***</td>
<td>129</td>
<td>.978</td>
</tr>
<tr>
<td><strong>Planning</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General construct</td>
<td>172</td>
<td>9</td>
<td>.992</td>
</tr>
<tr>
<td>Action &amp; coping planning</td>
<td>168</td>
<td>8</td>
<td>.992</td>
</tr>
<tr>
<td><strong>Maintenance self-efficacy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General construct</td>
<td>250</td>
<td>18</td>
<td>.995</td>
</tr>
<tr>
<td>Barrier &amp; scheduling self-efficacy</td>
<td>250</td>
<td>17</td>
<td>.993</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01, ***p < .001.
Discussion

This study was the first to predict sport participation among individuals with acquired, physical disabilities using a prospective, theory-based design. Furthermore, this study was the first to assess the utility of the addition of athletic identity in the context of a behaviour theory in a sample of persons with acquired, physical disabilities. This study confirmed many of the theorized predictions of the HAPA model lending support to the model and its utility for predicting for sport behaviour; however, our results also suggest that the relationship between planning and maintenance self-efficacy, at least in the context of pre-planned behaviours such as sport, may not be best represented as initially hypothesized; rather, it may be that greater planning increases maintenance self-efficacy. Moreover, our results suggest that contextual factors surrounding HAPA constructs, such as identity, are important for understanding behaviour and cannot be ignored. Below we consider the implications of our findings for promoting sport participation among adults with an acquired disability.

We determined that three types of outcome expectancies (instrumental, affective, sport risk) had important contributions to intentions to participate in sport. Thus to promote sport in this...
people who have moved into the volitional phase, interventions should include components that aim to engage in sport. Therefore, when promoting sport among beginners interventions should include components that aim to build task self-efficacy such as having peers model techniques or providing opportunity for beginners to try different sports thus creating potential for mastery experiences (Bandura, 1982). For people who have moved into the volitional phase, interventions should target maintenance self-efficacy as our study findings indicate that maintenance self-efficacy is a key determinant of sport behaviour. In accordance with our finding that increased planning was associated with greater confidence to schedule sport and overcome common barriers to sport, encouraging the formation of plans (action and coping) may be one strategy to including in interventions fostering maintenance self-efficacy. Future work is necessary to understand how planning works to increase self-efficacy and sport participation over time and in the face of barriers.

While a number of the HAPA tenets were supported in the current study, there were some divergences from predicted relationships. Health risk perceptions did not predict intentions to participate in sport. A similar finding has been demonstrated in the context of LTPA (Scholz, Keller, & Perren, 2009). No direct or indirect relationships as specified by HAPA between planning and sport participation were found in this study. Yet in other LTPA research, the relationship between planning and LTPA has been demonstrated in both disability and general populations (Martin Ginis et al., 2011; Scholz, Soubbotta, & Schwarzer, 2006; Williams & French, 2011). Given the pre-planned nature of sport, the relationship between planning and behaviour may not work in the same manner as it does for other physical activities. Because sport is already planned, it may not necessarily be the presence of plans but rather the self-efficacy to schedule activities around sport and to overcome those barriers to sport such as the deadline at work. As revealed in our exploratory analysis, once the relationship between planning and maintenance self-efficacy was reversed, there was an indirect effect of planning on sport and a stronger relationship between planning and maintenance self-efficacy. Indeed, other research with HAPA constructs have found a similar effect (e.g. Barg, Latimer, Pomery, & Salovey, in press; An alternate construct to consider in the prediction of behaviour is that of action control. Scholz et al. (2009) found that “action control” such as self-monitoring, rather than planning, predicted LTPA participation. This style of action control was not measured in the present study; however, this may be an important construct to consider because in most instances, sport is pre-planned and thus the monitoring of these plans may be more important for behaviour. These aspects of the volitional phase merit further investigation.

As per identity theory, viewing oneself as an athlete was associated with increased intentions to be involved in sport and explained additional variance in sport participation, these findings are in line with previous research (Strachan & Brawley, 2008; Strachan et al., 2005). It is not surprising that athletic identity explains a small amount of variance in sport participation given its placement in the model. Indeed, there are many mediators, such as planning and self-efficacy that lie between identity and behaviour. However, increasing individuals’ level of athletic identity may be a valuable component of sport promotion programs because of the influence on intentions, an important predictor of behaviour. Though the exact components of an athletic identity intervention have not yet been tested, identity theory would suggest that these interventions should change how individuals think of athletes with acquired disabilities. This could occur through exposure to a variety of athletes with acquired, physical disabilities stories of sport participation along with increasing commitment and perceived ability in sport (Kendzierski & Morganstein, 2009). However, these types of interventions require that individuals engage in sport. Therefore these identity interventions would need to be in conjunction with interventions to promote sport using HAPA constructs.

Indeed, relatively little is known about athletic identity among those with acquired physical disabilities. Given its relationship to sport promotion, future research that aims to specifically examine the possible multi-dimensionality of this concept is necessary. While our factor analysis revealed that only one factor best represented identity, it is important to note this was among a mixed population of athletes and non-athletes. Previous research, such as that from Ferreira and Fox (2008) as well as Shapiro and Martin (2010a) revealed the multi-dimensional nature of athletic identity in their respective populations; therefore, future research further examining the best conceptualization of athletic identity among individuals with acquired physical disabilities is warranted. Moreover, recent research by Shapiro and Martin (2010b) suggests that athletic identity and friendships built within sport contribute to quality of life and positive affect; thus, future research specific to the experience of athletes with acquired physical disabilities and the positive impact of sport on post-injury development is also of interest.

Limitations

There were a few limitations in this study. First, since solely sport was measured we do not know the other physical activities that individuals participated in when they could not make it to practice or were off-season. Therefore, it is possible that we may have underestimated the importance of athletic identity on sport participation. Furthermore, coping plans were not investigated in depth and thus the relationship between coping planning, maintenance self-efficacy and sport participation remains unclear. Because there was a mix of athletes and non-athletes, some of the questions (e.g. recovery self-efficacy) were difficult for non-athletes to answer. Furthermore, this study only examined sport after two weeks; future research should examine the context of the HAPA and athletic identity for long-term sport participation. Finally, the data are self-reported data within an observational study; thus future research should incorporate interventions to determine the cause-effect relationship between constructs and sport.

Conclusion

This study was the largest, prospective study which used a theory to frame sport participation among individuals with acquired, physical disabilities. Indeed as hypothesized, the HAPA model’s constructs offer insight into predictors of sport participation for this population. However, given that the HAPA model did not fit exactly as Schwarzer (1992) postulates, further research is necessary to understand the relationship between maintenance self-efficacy, planning and behaviour in the context of pre-planned behaviours such as sport. Fostering athletic identity through increasing thoughts of the self as an athlete, along with increasing positive outcome expectancies and reducing beliefs that sport is a risky behaviour will increase individuals’ intentions to participate in sport. Furthermore, building multiple types of self-efficacy through comprehensive action and coping planning can help actors maintain their involvement in sport. Given the preliminary nature of this research, future work should focus on testing population, informational interventions should focus on the benefits of sport rather than the health risks of being sedentary. Attention to decreasing perceived negative outcomes, such as overuse injuries, and providing information about how to avoid them must also be considered.
interventions that incorporate these constructs to determine the effectiveness in real world contexts.

Appendix A. Supplementary material


References


Williams, S. L., & French, D. P. (2011). What are the most effective intervention techniques for changing physical activity self-efficacy and physical activity behaviour – are they the same? Health Education Research, 26, 308–322.

Appendix E

Ethics Approval (Amendment from Study 1)
Dear Marie-Josée,

Thank you for submitting your request for ethics changes to your project. I am pleased with the layout of your changes so they are easier to follow. I have no problems with your changes and I am asking Gail Irving to add this change to your file. Good luck with your study.

Joan Stevenson
GREB Chair
Appendix F

Interview Schedule
**Proposed interview guide**

Can you describe to me what an athlete is?

   Probe: What are factors influenced that influence this definition?

Before your injury, what were some of the reasons you considered yourself to be an athlete?

   o  Was there a particular aspect of sport that made you feel like an athlete?
   o  Can you give me an example of moment where you felt like one?
   o  How did your friends/family react to your participation in sport?
   o  Were there aspects of competition or games that made you feel like an athlete in particular (i.e. traveling with gear)

Can you describe to me the impact that people in your social group (peers, family, teammates) had on your identity as an athlete (before your injury)?

Can you tell me a little bit about your experience recovering from your injury? How did you experience changes in your physical body?

Can you tell me how any changes in your body influenced your perception of yourself as an athlete?

What factors that discouraged you from participating in sport? What factors make you want to get into sport again?

At what point did you decide that you wanted become involved in sport again?

   o  Can you tell me a little bit about the moment when you made the commitment to return?
   o  Who did you contact to learn more about sport?
o What type of information did these people give you?

o Were there any images/phrases that were particularly influential in your decision?

o Did they use the term ‘athlete’? What did you think about that?

If you think of yourself as an athlete now, can you describe to me some of the reasons why?

o What were some of the reasons that you did not consider yourself to be an athlete after your injury?

o Can you tell me why this perception of yourself has changed since your injury?

Can you tell me a little bit about how important, and why, being an athlete was to you before your injury?

o Can you tell me why this has or hasn’t changed?

How does who you were before your injury influence how you perceive yourself now?

What is it about that sport, rationale for getting into a particular sport?
Appendix G

Ethics Approval
17 December 2012

Dear Dr Smith,

Research Project: Understanding the impact of physical activity on the psychological health and identity construction of spinal cord injured adults: A qualitative study. (EAC Reference Number: R11-P115)

Principal Investigator:
Dr B Smith, School of Sport, Exercise and Health Sciences

Other Investigators:
M Perrier, School of Kinesiology and Health Studies, Queen's University, Ontario, Canada.

I can confirm that the Loughborough University's Ethical Advisory Committee has considered the ethical implications of this research proposal and has confirmed that the research is acceptable. The Committee has issued clearance to proceed.

Yours sincerely,

Zoe Stockdale
Secretary, Ethical Advisory Committee
Appendix H

Interview Schedule
Opening
1.0 Can you tell me something about your life?
2.0 Can you tell me more about the lifestyle that you led before your injury?

Physical activity profile (pre injury)
2.0 How physically active were you before your spinal cord injury?
   2.1 If active: What did physical activity mean to you then?
   2.2 What impact do you think being active had on you?
       Probe: quality of life, well-being, identity
   2.3 If inactive: Why did you not participate in physical activity?
   2.4 What impact do you think being inactive had on you?
       Probe: quality of life, well-being, identity

Physical activity profile (post injury)
3.0 How physically active are you now?
   3.1 What does being active mean to you?
   3.2 Why did you decide to be physically active?
   3.3 What are some barriers to your physical activity?
   3.4 How does being active impact your health?
   3.5 How does being active impact your wellbeing / happiness
   3.6 How does being active impact on your identity … who you are?
   3.7 How have you remained active?
   3.8 If you met someone before they became injured, what advice would you give them in relation to being physically active?

Closing
4.0 Is there anything else that you would like to tell me about your experiences?
Appendix I

Ethics Approval
May 25, 2012

Ms. Marie-Josée Perrier
Ph.D. Candidate
School of Kinesiology and Health Studies
Queen's University

Dear Ms. Perrier,

RE: Your study entitled, "GPHE-099-10: Getting the ball rolling: the influence of prototypes and identity on sport participation in persons with acquired, physical disabilities"; Ethics ROMEO # 6005585

Thank you for submitting your ethics request (amendment event and annual renewal form) to re-open this file and to examine another research population (high level competitive athletes) using the previous research paradigm. We accept your new approach under this ethics application and the revised questionnaires, Letter of Information, and Consent Form.

Please find attached the annual renewal approval letter for this study.

Good luck with your research.

Regards,

Joan Stevenson

May 25, 2012

Ms. Marie-Josée Perrier
Ph.D. Candidate
School of Kinesiology and Health Studies
Queen's University
28 Division St.
Kingston, ON K7L0G3

GREB Request # 6005585
Title: "GPHE-099-10: Getting the ball rolling: the influence of prototypes and identity on sport participation in persons with acquired, physical disabilities"

Dear Ms. Perrier,

The General Research Ethics Board (GREB) has reviewed and approved your request for renewal of ethics clearance for the above-named study. This renewal is valid for one year from December 14, 2011. Prior to the next renewal date you will be sent a reminder memo and the link to ROMEO to renew for another year.

You are reminded of your obligation to advise the GREB of any adverse event(s) that occur during this one year period. An adverse event includes, but is not limited to, a complaint, a change or unexpected event that alters the level of risk for the research or participant or situation that requires a substantial change in approach to the participant(s). You are also advised that all adverse events must be reported to the GREB within 48 hours. Report to GREB through either ROMEO Event Report or Adverse Event Report Form at http://www.queensu.ca/research/ethics/GreBOverviews.html.

You are also reminded that all changes that might affect human participants must be cleared by the GREB. For example you must report changes in study procedures or implementations of new aspects into the study procedure. Your request for protocol changes will be forwarded to the appropriate GREB reviewers under the GREB Chair. Please report changes to GREB through either ROMEO Event Report or the Ethics Change Form at http://www.queensu.ca/research/ethics/GreBOverviews.html.

On behalf of the General Research Ethics Board, I wish you continued success in your research.
Appendix J

Vignettes
Kate

Kate is a 28 year-old law student who sustained a cervical SCI (C4-5) six years ago. Before her injury, Kate was involved in varsity athletics for her university. She also enjoyed the team-based aspect of sailing. Furthermore, the sense of being a part of a bigger group was important to her sense of being an athlete. After her injury, no longer participating in sport and the physical changes in her body make her feel that she is no longer an athlete. Kate is relatively limited in what she can do (physically and geographically) and she doesn’t necessarily have the energy and time to commit to sport yet, particularly because she dedicates her time to law school. She is thinking about joining a sport in the future when she moves to a larger city:

“[I’ve looked into] wheelchair rugby, which you can be fairly recreational. But there’s just nothing in this area. It’s understandable, I mean there isn’t enough people right? There’s not the demand, so if I was in the [bigger city] there’d be several teams and you’d be able to, you know, meet up and do pick up. I don’t have the mobility for wheelchair basketball. Um, I don’t have the mobility for curling. Uh, there’s wheelchair fencing, don’t have the mobility for that. Um, I’ve looked into skiing but one of the side effects of the injury is that I’m pretty much freezing cold all the time. So I haven’t done that yet just because I’d get so cold that it presents some health risks and things like that and it remains to be seen how much I’d actually be able to do.”
Adam

Adam is a 26 year old who was diagnosed with sarcoidosis which caused scarring on his spinal cord (T9) and resulted in paralysis, two years ago. Before his diagnosis, Adam worked as an engineer and loved to play soccer. He was never interested in going to the gym; Adam would rather play a sport because he enjoyed it and could still feel the fitness benefits. He enjoyed being a part of a team. While he feels that the injury led to a drastic change in his life, Adam is determined to beat his illness and walk again. Currently he attends an exercise program that focuses on restoring as much physical function in the legs and body as possible. Walking in the future is his primary goal. Adam feels self-conscious and this prevents him from doing certain activities, such as swimming.

“I have looked into basketball a bit, but I just haven’t gotten around to actually doing anything about it. I have looked at it a bit, but I need to go down there and see, watch and do it. I thought about it then but I never really followed that up. I followed it up again recently but it’s just a matter of going down there and seeing what it’s all about…the part that’s probably putting me off is worrying that I won’t be any good at it, I don’t deal very well with not being good at things.”
Brian

Brian is a 31 year-old man who sustained an SCI (T2-T7) snowboarding 11 months ago. He finds life is difficult and his daily tasks are a struggle and would define his life as borderline enjoyable. He is frustrated by the length of time that tasks now take and feels that he has less time to live his life because of this injury. Brian’s struggled because of the impact that his injury has had on his identity as an entrepreneur and a person who is always moving quickly from one activity to the next. He feels clumsy when he’s doing exercises and this sensation makes him want to avoid physical activity. Brian does note that he feels better when he’s been active and treats it as safety because it will keep him from “getting fat”. At the same time, he feels that his time is so short already that he doesn’t want to spend time on activities that he’s not interested in. Therefore Brian does not include others with SCI in his social life; he has no interest in “fully embracing the disabled world”.

“So I see [physical activity] more just as maintenance, to keeping myself so I can, my body will still work in a few years time and so I don’t deteriorate into horrible unhealthiness whereas if there ever was any potential for getting better it’s too late for me because I’ve let myself go too far. I think that’s key... you don’t get adapted running, like you don’t get adapted yachting, you get adapted snow sports but it just looks like such a joke to me right now. I’ve just got no interest in adapted sport.”
Abby

Abby is a 40 year-old woman who sustained an SCI (T7) two years ago. She reflects on her past life as happy, active, and full of potential. She loved to play soccer, dance and swim in the ocean. When Abby describes her life post-injury, she feels it is full of sadness, pain and never ending health problems. At times, she cannot see life getting any better and wishes she wouldn’t wake up. Seeing both those who are doing better than her as well as those who are worse off makes her feel worse about her own life. Seeing others in wheelchairs is very hard for her to see:

“Honestly [pause], I don’t feel happy. Because when I’m in the hospital, I have sports with the people like me, but I don’t know, it’s, it’s not my fault, it’s something inside. I look, I’m like this, but I’m like, but I know for other people like me, I feel sad. So I don’t like it, to go to the sports with the people in the wheelchair.”
Appendix K

Interview Schedule
Part 1
1) Can you tell me your story about spinal cord injury, as you would share it with a peer?
   a. Probe: Frank’s injury narratives
   b. Probe: Why did you get involved in sport after injury?
   c. Probe: Who was involved, what was that first experience like?
2) How about sport, how would you describe your experience in sport since your injury?
3) Can you tell me about your experience acting as a peer and promoting sport?
   • Probe: What topics do you discuss?
   • Probe: What are the typical questions you answer?

Part 2
1) What initial response did you have to [narrative character name]?
   • Probes: How do you feel about this person?
   • Probe: What thoughts come to mind after you read their story?
2) How would talk to (narrative) about sport?
   • Probe: Can you tell why you would answer or describe sport the way you did?
3) How do you think (narrative) would respond to your comments about sport?
4) How do you feel about these stories as a whole?
   • Probe: how frequently do you encounter these types of comments about sport?
5) Do you have any other comments to add about your participation in the sport or the stories you’ve read?