

The role of coaches of wheelchair rugby in the development of athletes with a spinal cord injury

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Wheelchair rugby allows individuals living with quadriplegia to compete in an elite-level sport. It is currently one of the fastest-growing disability sports in the world and is the only full contact sport played by athletes with a disability. The purpose of this study was to explore the personal experiences of wheelchair rugby coaches in the development of their athletes who had entered their sport after acquiring a spinal cord injury. Four elite wheelchair rugby coaches were interviewed using a semi-structured guide. Data collection and analyses followed an interpretative phenomenological approach. Participants discussed the myriad of roles they carried out as wheelchair rugby coaches and the diverse range of their coaching responsibilities. They also alluded to their philosophies in both the personal and athletic development of their athletes and the unique strategies they utilised with them. The results highlight the important role of a coach in facilitating athlete development in disability sport.

Keywords: coaching; paralympics; wheelchair rugby

On the request of the British Government in 1944, Sir Ludwig Guttmann introduced sport as a rehabilitation tool for persons with a spinal cord injury (SCI) at Stoke Mandeville Hospital (Schültke 2001). This hospital later became the site of the first international multi-sport games for persons with an SCI (Anderson 2003) which led to the present Paralympic Games (International Paralympic Committee 2009). The Paralympic movement has expanded over the past few decades from 400 athletes representing 23 countries at the inaugural Paralympic Games in Rome in 1960 to approximately 4000 athletes from 146 countries at the 2008 Summer Paralympic Games in Beijing (International Paralympic Committee 2009).

Despite the growing size and heightened popularity, research within Paralympic sport has been limited to predominantly physiological and biomechanical factors (e.g. Goosey-Tolfrey *et al.* 2006). While the scope of psychological research is still limited to elite athletes who have a physical disability, a related and growing body of research has investigated the psychological implications of able-bodied athletes' return to sport following serious injury (Gould *et al.* 1997, Taylor and Taylor 1997, Bianco 2001, Podlog and Eklund 2006). A common theme from these studies was the difficulty in the transitioning process for returning athletes. Athletes who returned to sport following a serious injury experienced fear of re-injury (Kvist

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et al. 2005), showed a decline in confidence levels and performance (Williams and Roepke 1993), were concerned about their ability to perform up to pre-injury levels (Crossman 1997) and experienced feelings of alienation from teammates, coaches and even oneself (Ermler and Thomas 1990). However, coaches have provided a positive impact on the quality and experience of an athlete's efforts in injury recovery (Gould *et al.* 1997, Johnston and Carroll 1998, Bianco 2001, Podlog and Eklund 2007). For example, Canadian national team skiers in Bianco's study emphasised the importance of social support from their coaches in reassuring they would get better, helping them focus on future opportunities and encouraging them to adhere to their rehabilitation programmes. A similar response was elicited from American alpine and freestyle skiers who believed their coach's interest and assistance helped to facilitate their injury process recovery (Gould *et al.* 1997). This type of research usually includes coaches who are continuing to coach the same athletes before and after an injury, and the focus is on transition and return to sport. Little is known about the roles of coaches working with post-injury athletes who have sustained a permanent and debilitating injury, such as SCI. Fourteen men who received their SCI during football rugby were interviewed to determine whether narratives of hope were part of their stories (Smith and Sparkes 2005). With the exception of one man who responded with little hope and a great deal of despair, 11 expressed hope in medical progress for a cure and two believed they had changed in positive ways, becoming better people with more choices of who they might become. Social support from health professionals, family and friends were noted, but there was no mention of former coaches. It seems those coaches missed an opportunity to encourage their former athletes to return to sport and benefit from such involvement.

Coaching is an enormously complex undertaking with interdisciplinary research needed to understand the complexities and experiences faced daily by such individuals as coaches, athletes, parents, physiotherapists and medical staff (Bush and Silk 2010). One of the most important roles of the coach in helping athletes transition back to sport post-injury is the provision of social support (Johnston and Carroll 1998, Podlog and Eklund 2007). Coaches also hold a myriad of roles in sport, including teaching and instilling life skills such as leadership, teamwork and character building to their athletes (Vallée and Bloom 2005, Duchesne *et al.* 2011). Elite-level coaches establish an environment where the skills and values taught from their sport are promoted and encouraged both on and off the court (Vallée and Bloom 2005, Duchesne *et al.* 2011), and which are enhanced by a positive coach-athlete relationship (Jowett and Cockerill 2003). The role of the coach inside and outside the competitive context may be particularly valuable when the athlete has a disability.

Empirical research on coaches of athletes with physical disabilities is underdeveloped (e.g. Cregan *et al.* 2007, Hanrahan 2007, Goodwin *et al.* 2009, Banack *et al.* 2011). This is disconcerting since seven priority areas for research in disability sport were proposed over 25 years ago, including one on coaching (Reid and Prupas 1998). Since this priority was identified, little growth in this field has been achieved. In fact, a recent document listed 976 coaching articles published from 1970 to 2009 and found that few of these articles included coaches of elite athletes with a disability (Rangeon *et al.* 2009). Coaching athletes, regardless of their (dis)abilities, require foundational and fundamental skills (Cregan *et al.* 2007) such as providing appropriate feedback, setting realistic goals and developing skill

progressions (DePauw and Gavron 2005). Beyond these skills necessary for all coaching, there are skills and knowledge that may be specific to coaching an athlete with a disability, such as recognising necessary biomechanical adaptations, understanding the nature of the athlete's disability and promoting independence (Sherrill 1993, Quade 1999, DePauw and Gavron 2005). Moreover, Cregan and colleagues examined the career evolution and knowledge of coaches of Paralympic swimmers. Coaches had to learn about the varying types of disabilities of their athletes, the importance of communicating with their athletes' caregivers and support workers as well as learning about accessibility issues (e.g. transportation, lodging). Cregan and colleagues also found that the coaches fostered independence for athletes that improved both their athletic performance and their quality of life outside of sport. Thus, the coach of an athlete with a disability must possess foundational knowledge common to all coaches as well as unique knowledge related to the athlete with a disability.

A consequence to the limited research on coaches of athletes with a physical disability is the lack of available coaching resources in this field. Coach education programmes in the disability sport field were almost non-existent prior to 2005 (Coaching Association of Canada 2005) and therefore self-coaching was a common practice (Liow and Hopkins 1996, Bradbury 1999, DePauw and Gavron 2005). Self-coaching occurs when athletes learn the techniques, tactics and skills that are traditionally taught by a coach (Bradbury 1999). This coaching education practice was needed due to a lack of qualified and trained coaches for elite athletes with a disability (Bradbury 1999). Many current Paralympic coaches have completed coach education programmes that were designed almost exclusively of strategies and skills focused on able-bodied athletes (Cregan *et al.* 2007). As such, Paralympic coaches are not trained in the specific circumstances that define disability sport. Wheelchair rugby, for example, is a sport that poses many unique challenges for coaches. It was developed in Canada in the 1970s for athletes with SCI and became an official Paralympic sport at the 2000 Sydney games.

Wheelchair rugby allows individuals living with quadriplegia a chance to compete in an elite-level sport. It has gained enormous popularity in recent years and is currently one of the fastest-growing disability sports in the world and is the only full contact sport played by athletes with a disability (DePauw and Gavron 2005). All wheelchair rugby players are held to a classification system whereby they must have impairment in three out of four of their limbs to be eligible to compete (DePauw and Gavron 2005). There are seven player classifications ranging from 0.5 (the lowest class who have limited function of arms and hands) to 3.5 (the highest class who have much greater function). Four players from each team are allowed on the court at a time, but a maximum sum of player classifications of 8.0 is permitted on the court at any one time (USA Quad Rugby n.d.). This classification system in wheelchair rugby maximises the range of players with quadriplegia and other disabilities to ensure equal representation among team players and to foster positions and roles that are unique to the various disabilities represented on a team (Goodwin *et al.* 2009). Thus, a person with a low point value will play a defensive roll, whereas a high point player will be utilised in more ball handling and carrying situations (Goodwin *et al.* 2009).

Despite the growing popularity of Paralympic sports such as wheelchair rugby, coaches of athletes with a disability need effective coach education programmes. Such programmes should blend practical experience with research-based knowledge.

Knowledge about players, coaches and game tactics will be critical. Goodwin *et al.* (2009) explored wheelchair rugby from the perspective of the players, and therefore exploration from the viewpoint of coaches seems warranted. The purpose of this study was to explore the personal experiences of wheelchair rugby coaches in the development of their athletes with an SCI. This focus guided the central research question: How do wheelchair rugby coaches support the development of their athletes with an SCI? The results of this study will broaden coaching research by including coaches of athletes with a physical disability and contribute to the research base of coach education programmes by providing knowledge on best coaching practices specific to the sport of wheelchair rugby.

Methods

Given that the purpose of this study was to explore coaches' experiences of working with wheelchair rugby athletes, interpretative phenomenological analysis (IPA; Smith and Osborn 2003, Smith *et al.* 2009) was the methodology that informed this research. According to Smith (2011), IPA is theoretically grounded in understanding persons' lived experiences (e.g. phenomenology), a process of engagement and interpretation (e.g. hermeneutics) and a balance of convergence and divergence of themes (e.g. idiography). It is also experiential such that the researcher's interpretation of the participant's sense-making of their own experiences is done in a pedagogical context whereby the researcher is being taught about the participants' experiences (Reicher 2000, Smith 2011).

Participants

Consistent with IPA (Smith and Osborn 2003, Smith 2011), a purposeful sample of four elite Canadian wheelchair rugby coaches volunteered for this study. These participants were identified as the top coaches in the country by the Canadian wheelchair sports association (CWSA), had a minimum of 3 years of coaching experience in the sport at the provincial and/or national levels and had relevant coach training as evidenced by a minimum of Level 2 coaching certification. The study included three coaches with a disability and one able-bodied coach. All participants were male because there are only few, if any, female wheelchair rugby coaches in Canada.

Procedure

Consent was obtained from both the university research ethics board and the CWSA. Sampling, interviewing and data analysis were guided by IPA (Smith 2004, Smith and Osborn 2008). The interviews lasted for 60–120 min, and the main questions addressed athlete development within the context of coaching athletes with an SCI. Prior to the main questions, the interview began with a general enquiry into the coaches' athletic experiences, their disability (if they had one), a description of their current athletes, and their coaching knowledge acquisition and evolution. This information was designed to establish rapport with the coaches and to provide the research team with important information that would be used to help interpret the results. However, this information was confidential and, if reported, would undermine issues of anonymity given the small number of wheelchair rugby coaches. These data were coded but were not analysed within the main findings.

The main interview questions were directed at understanding the coaches' experiences in working with athletes with SCI. In light of critiques for the semi-structured nature of interviews within IPA methodologies (Brocki and Wearden 2006, Allen-Collinson 2009), we used an open-ended interview guide that consisted mainly of prompts to help trigger specific experiences of each coach in developing their knowledge and experiences working with SCI athletes. In line with IPA (Smith and Osborn 2003, Smith 2011), specific questions were also asked to build rapport and to better understand the coaching perspectives. Specific questions were directed at: coaching philosophies (e.g. what are your coaching beliefs and how/where did you develop these?), coaching roles (e.g. primary duties on and off the court, and tasks in training sessions and competitions), athlete stress management (e.g. what types of stressors do your athletes face and how do you help them cope with these?) and athlete support (describe how you support your athletes?). The predominantly open-ended nature of the interview guide prevented any theoretical or personal preconceptions from the researchers from influencing the participants' constructions of their experiences (Allen-Collinson 2009). The interview guide can be obtained from the corresponding author upon request. Interviews were audio-recorded and transcribed verbatim and the data were stored and organised using the data storage software QSR NVivo 8. Follow-up interviews lasting approximately 30 min also occurred and added richness to the data, clarified misunderstandings and allowed participants to discuss any relevant ideas that did not arise in the first interview (Smith and Osborn 2003).

Smith and Osborn's (2003) recommendations for IPA were followed to analyse the data. IPA is an inductive double hermeneutic method in that it involves both the participants' understandings and the researchers' interpretations that are grounded in the data (Larkin *et al.* 2006). Furthermore, IPA is idiographic in that it is concerned with the experiences of a small number of people within a specifically defined experience (Smith and Osborn 2008, Smith 2011). Given these conditions, in addition to the phenomenological perspective that coaches understand their experiences in relation to their context (i.e. varying coaching backgrounds, team sport, athletes with an SCI), IPA involves conducting detailed analyses of one case before analysing subsequent cases (Smith *et al.* 1995, Smith 2004). The primary investigator began by reading the first transcript several times. Notes were made in the margins of the transcript in a line-by-line analysis that resulted in coding the participants' experiences based on the research questions. Coded text was organised into categories based on common meanings and interpretations (as well as delayed literature searches and theory review), and categories were merged into themes.

Once the analysis had been completed for one transcript, a second transcript was coded. A table of themes was used as a guide for relevant data and was expanded to incorporate new codes as they emerged with subsequent transcripts (Smith and Osborn 2008). During this process, the emerging themes were continually compared back to the original transcripts to ensure all data were coded. Once all transcripts had been coded, they were re-read and the coded data were reviewed to ensure relevant text was represented in the themes. The second author also read all transcripts while reviewing the coded text, themes and labels to ensure that the interpretations were grounded in participants' accounts.

Throughout the research process, Yardley's (2008) four principles for demonstrating validity in qualitative research (i.e. sensitivity to context, commitment and rigour, transparency and coherence, impact and importance) were followed. We

established 'sensitivity to context' throughout the research process through close engagement with the purposefully selected research participants who shared lived experiences of working with athletes with an SCI. The specific interview questions highlighted above were developed to inform a well-derived interview in an appreciation of the interaction between the data collection and the interview context. The care in collecting and analysing the data while maintaining awareness that the interpretations were grounded in the coaches' experiences demonstrated sensitivity to context (Yardley 2008). To establish 'commitment and rigour', the researchers practised prolonged engagement with the topics, the lead author developed competence and skill in interview methods, and all researchers were immersed in the relevant theoretical and empirical data. In this way, there was prolonged, iterative and empathic exploration of the main themes in this study to transcend superficial understandings and interpretations (Yardley 2000). We established 'transparency and coherence' by clearly articulating and presenting the findings while being mindful of the grounding within the participants' lived experiences. We also detailed all steps of data collection and analysis, presented the themes, definitions and sample quotations while maintaining the context. The final principle for assessing the quality of our research was the 'impact and importance' of the study, a criterion that ultimately rests on the usefulness of the findings for advancing theory, practical application and future research (Yardley 2000). We have analysed and presented the data grounded within the lived experiences of coaches who worked with athletes with an SCI with the goal of providing information and context to this understudied topic.

Consistent with the guidelines for assessing our qualitative study (Yardley 2000, 2008), and as an important step in the phenomenological tradition (Allen-Collinson 2009), we constantly reflected on the impact of ourselves as researchers on the research itself (i.e. reflexivity) and attempted to suspend our assumptions (i.e. bracketing). Bracketing was practised throughout the data collection and interpretation. While impossible to bracket completely, this is a process of suspending one's assumptions to be open to discovery in such a way that the participants' experiences can be highlighted (Allen-Collinson 2009). The act of bracketing involves the researchers' identification of their own preconceptions and theories of knowledge and interest to support the philosophical stance of phenomenology perspectives. Throughout the planning, initiating, and analysing and interpreting phases of this study, the primary author maintained a reflexive journal about her preconceptions about disability sport and coaching. It was important for her to be mindful of her interest in learning how coaches fostered growth and potential in their athletes who suffered SCI. In her role as a member of the 2010 World Wheelchair Rugby Championships Committee and part of the development of Wheelchair Rugby Schools Program curriculum (i.e. a legacy initiative coinciding with that championship), the lead author was immersed in the culture and context of the disability sport. She also attended and observed the National Wheelchair Rugby Championships and Paraspport Winter Games. The second author has been a youth sport coach for a number of years and has conducted a research programme focused on coaching science. The third author has conducted a research programme focused on psychological growth following trauma and the mental health outcomes of physical activity participation, and the fourth author is an expert in disability and adapted physical education. All authors have played competitive sport. However, it is important to acknowledge that none of the authors were wheelchair rugby athletes or coaches, therefore, positioning the lead author (and interviewer) and the remaining authors as

outsiders to the experiences that were discussed by the participants in the study. In line with phenomenological research, this lack of experiential knowledge enabled a context whereby the participants were able to 'teach' the interviewer about their experiences (Reicher 2000, Allen-Collinson 2009, Smith 2011).

Results

Through an inductive data analysis process, a total of 21 sub-themes and two higher-order themes emerged. A third primary theme was also identified as portraying the participants' athletic career, disability (if they had one), evolution as a coach, knowledge acquisition and interpersonal characteristics as well as those of the athletes' that they coach. Due to issues of confidentiality and anonymity, this third theme is not presented. The two themes titled *Coaching the Sport* (described with 14 sub-themes of: athlete ability, athlete autonomy, athlete buy-in, creating

Table 1. Table of themes and sub-themes expressed by each participant.

Coach	Coaching the sport	Coaching the individual
C1	Athlete ability levels Athlete buy-in Creating high performance environment Fostering athlete commitment Importance of support staff/volunteers Myriad of roles Skill development Teaching fundamentals Veteran athlete leadership role	Creating expectations Listening to the athlete Fostering athlete independence Philosophy of athlete development Philosophy of personal development Realisation of new possibilities Tough love
C2	Athlete ability levels Athlete autonomy Creating high performance environment Game philosophy Goal-setting Myriad of roles Skill development Veteran athlete leadership role	Fostering athlete independence Listening to the athletes Philosophy of athlete development Philosophy of personal development Tough love
C3	Athlete ability levels Athlete autonomy Creating high performance environment Evolution of wheelchair rugby Goal-setting Myriad of roles Skill development Veteran athlete leadership role	Creating expectations Fostering athlete independence Philosophy of athlete development Philosophy of personal development Realisation of new possibilities Tough love
C4	Athlete ability levels Athlete autonomy Goal-setting Knowledge transfer from players Importance of support staff/volunteers Myriad of roles Skill development Teaching fundamentals	Fostering athlete independence Listening to the athlete Philosophy of athlete development Philosophy of personal development Realisation of new possibilities

high performance environment, game philosophy, goal-setting, fostering athlete commitment, importance of support staff, myriad of roles, skill development, teaching fundamentals, veteran athlete leadership role, evolution of wheelchair rugby and knowledge transfer from players) and *Coaching the Individual* (described with 7 sub-themes of: creating expectations, listening to the athlete, fostering athlete independence, philosophy of athlete development, philosophy of personal development, realisation of new possibilities and tough love) are presented both within the text and in Table 1. Participant quotes are used to illustrate the coaches' experiences and are labelled as C1 (Coach 1) through C4 (Coach 4) for identification and continuity in the information provided.

Coaching the sport

The participants described the evolution and sporting environment of wheelchair rugby. They discussed the diverse range of their coaching responsibilities that they felt challenged them and that contributed to their passion for their roles in coaching their players as athletes. The coaches also discussed the important contribution of veteran athletes within the sport, and their appreciation for these senior players being part of the team.

According to the coaches, wheelchair rugby has developed significantly since its inception in the late seventies. It became apparent in their discussions that there is currently a higher degree of professionalism in wheelchair rugby, which has impacted the expectations of coaches and the roles they now play within the sport. Two of the coaches discussed the international expansion of wheelchair rugby and felt that it had challenged their athletes, particularly their veteran athletes who were used to an environment that was much less structured and professional. You could sense from their responses that they were driven by the transformation of their sport:

When I started playing there were no World Championships or Paralympic Games, the only international competition took place at Stoke Mandeville in England. There were no try-outs for the National team – you just got selected to be on it. You travelled to party and it was an excuse to get drunk in a different city. (C3)

It is changing the mindset of the training environment. We have clearly had to get this across because there are some guys who have been on the national team for five or six years, even longer. (C1)

You have to start changing the culture. The new athletes understand the expectations of them and they are normal for them now. It is the veteran athletes that you have a problem with because they've been around for 10 years and they knew what it was like before. (C3)

All of the coaches discussed the importance of creating an environment where players were treated as elite athletes. The passion in their voices while discussing this topic indicated they felt this was an important topic:

I do believe in coaching an athlete as an athlete. You have a lot of people who are involved in disability sports who are still looking at the disability. Then you have the athletes that are like 'oh I am a quad, I can't do that or I'm an amputee and I don't have this.' They're looking at what they don't have and regardless of what or who

you coach it's the same message; you're trying to get their best potential out of what they can accomplish. (C1)

My role here currently is to try and get the guys to realize what it means to be an athlete. It is changing the old dynamics and the previous model of Paralympic sport. Now my players are carded athletes, although some of them still want to be amateur athletes. If you're getting paid to play a sport, you're a professional athlete. (C1)

Wheelchair rugby is no longer solely a recreational sport. Because of this transformation, the coaches described how they have set and instilled higher expectations for all of their athletes, regardless of ability level. The coaches do not let their athletes use the limitations of their disability as an excuse. During these discussions, it became apparent that the coaches were driven by the shifts in the sport and enjoyed the new challenges of coaching to, and ahead of, these advances in competition. It seemed like the evolution of wheelchair rugby gave them a chance to personally develop and evolve their coaching styles.

Each participant noted an important component of coaching wheelchair rugby was understanding the various ability levels of each athlete with an SCI and the different classification levels in the sport. They loved this feature of the sport and felt it added a new dimension to their coaching role. Some of the participants further described the classification system in the sport and how it enabled athletes of varying ability levels to compete on an equal playing field. C4 said, 'With the point system, you really have to use your team. You only have four players on the court so it is your job to know where to put them and that is the hardest thing'. With these classifications and subsequent roles on the court of each athlete, coaches were further challenged with helping their athletes understand their abilities and limitations as well as those of their teammates. One of the coaches described how some of his athletes stressed easily when a new teammate arrived because they were unsure about how to pass the ball to him and worried about their teammates' ability to catch it. All of the coaches discussed their understanding of the classification process and setting expectations for their athletes regardless of their ability level. C2 said, 'I understand that a 0.5 player is not going to be the offensive superstar that a high point player will be ... they are just as important to the team'. Furthermore, with a variety of ability levels, three participants discussed how their coaching was continually adapting:

The reality within wheelchair sports is we don't have that big mass of athletes like in able-bodied sports. You get out of a rehab center and get into a club and there are big chances you are going to practice with a national team member ... as soon as you get out of your province and you go to the National Championships for example, the play goes up very rapidly. You are going to face some adversity on the court ... we have to set-up an environment where they won't be stressed by that. That is one of the toughest parts. (C2)

Based on these perspectives, the coaches not only embraced the technical struggles of coaching these athletes, but also acknowledged the challenges. It was apparent from these discussions that the coaches enjoyed this element of piecing together with their team for each game like a puzzle, but were also at times frustrated by the infrastructure that sometimes limited the use of their players.

The participants also further illustrated their roles and described the multitude of responsibilities required of them as coaches in wheelchair rugby. For example, it encompassed several aspects such as the recruitment and development of new athletes, running local leagues and regional programmes, and planning for travels including but not limited to hotel reservations. The coaches all accepted these added responsibilities and also appreciated some of the new administrative positions that have been created in their sport that have alleviated some of the extra tasks and stress assigned to them. The coaches also described their experiences helping their athletes with basic life skills, such as personal care issues. They talked about educating athletes on bowel/bladder care (i.e. emptying a leg bag, assistance with going to the washroom) and described their teachings of proper transferring techniques to their athletes. The participants understood and accepted these responsibilities as part of their role as a coach in this sport. Their facial expressions and body language during these discussions spoke to the importance attached to this aspect of coaching athletes with a disability. These additional responsibilities set the coaches apart from the coaches of able-bodied athletes.

The participants also highlighted the important role veteran athletes played in aspects ranging from the recruitment of new athletes, sharing knowledge about the sport and their disability, and assisting with coaching in the sport. 'The mentoring aspect is huge. When you have someone who is involved and has experienced it, then it is a lot easier to convince someone to play wheelchair rugby'. (C1)

There is a kid going through rehab and he is a quad. Some of my athletes on their own accord have approached this guy and said 'hey have you thought about rugby' and introduced themselves to him. They have gone to this kid in rehab who just broke his neck and they are already getting him involved. Not everyone has the common sense to take that kind of initiative. (C3)

It was obvious that the coaches were extremely proud of their veteran athletes. Not only were veteran athletes important for their sport, but support staff, family members and volunteers were described by the coaches as playing significant roles in the development of their athletes:

You can draw from the strength of the Integrated Support Team (IST). We can use these various professionals to make our athletes stronger, faster, and fitter. Everyone works together and it is a neat dynamic we now have. Before I had to do every single role the IST fills. (C1)

We are really lucky right now because we have a lot of volunteers. We also stress the importance of getting the family to come out and see and play the game. If they have brothers and sisters, we try and get them into chairs so they can try it out. We get them to take an extra chair at home so mom and dad can get in and play. The more involvement the better. (C4)

Based on the perspectives of the coaches, veteran athletes, the IST and family members were all seen as important individuals in helping develop the sport. In particular, the veteran athletes not only helped with recruiting new athletes into wheelchair rugby, but they also helped their coaches in many other ways off the court. For example, those coaches who did not share the same disability with their players were able to turn to their veteran athletes to help new players learn basic life skills, especially when travelling on the road. The one able-bodied coach from

our sample went into great detail when discussing this topic. This may indicate that he is still having a tough time relating to the physical limitations that his athletes go through on a daily basis.

In summary, the participants thrived on the sporting environment of wheelchair rugby and were challenged by the growth of their diverse range of roles and responsibilities as coaches in the sport. The participants emphasised the importance of creating an elite training environment and reinforcing an adoption of a high performance mindset to their athletes. The coaches were cognisant of the various ability levels and classifications of their athletes and the continual coaching adaptations required when new individuals entered the sport. All the participants were aware of the importance of fostering skill development with their athletes. Finally, wheelchair rugby was supported by veteran athletes who played a vital role in the continued development of the sport.

Coaching the individual

This section describes the participants' philosophies on developing their athletes on the court and as individuals off the court. The participants created and set high expectations and provided continual support to their athletes. The coaches reinforced the importance of commitment and dedication to their athletes and discussed their training expectations. The participants also challenged their new athletes to become independent and encouraged all of their athletes to realise new possibilities outside of sport following their SCI.

The coaches facilitated a sporting environment that catered to all their athletes and supported them regardless of their abilities, personal goals and objectives for playing the sport. In particular, two of the coaches described the roles clearly:

A lot of it is what level you want to commit to. A lot of people do it for something on a Friday night; it is good exercise and fun. I push that; I don't want to say no to anybody. I never want to see anybody leave the sport unless they want to and there is a reason. (C4)

I have a small enough athlete pool that I try and provide an experience that everyone is looking for. If someone is just showing up to get some exercise then I am able to provide him or her with that experience. If someone is showing up and looking to be on the national team for Canada then I am able to provide him or her with that experience as well. (C3)

Coaches felt it was important to be creative with their practices to accommodate the varying degrees of skill level and different levels of commitment to the sport. The importance of planning practices, structuring drills and designing yearly training plans was obvious in their discourse. It was obvious that they thrived on the unique challenges of the sport.

The coaches also discussed the need to understand and listen to their athletes. They also encouraged and fostered autonomy among their players, 'I like to believe in allowing the athletes to be the decision makers ... it is really athlete driven as far as I can see'. (C3)

I ran different line-ups with different people and got the athletes to think differently. Ideally, they're the ones who really have to coach the team. Once you get the general

understanding of what you're trying to do, they're the ones who are going to carry it out and make the changes. Then you're the one who gets everyone to do it. (C1)

Two coaches discussed the importance of being tough on their athletes in order to develop and encourage them to excel:

When I first started playing, the coach took one look at me and said 'do this, or don't show up.' It worked for me; I wanted to play so badly that I did what he said. I think I use that approach with a lot of the new guys. Right away I am in their face challenging them to not necessarily improve in sports but improve in their daily lives. If they are showing up and they are not trying to get in and out of their chair by themselves, right away I say 'hey you can do this on your own.' If they try, well then right away I say, 'hey this guy can be an athlete.' (C3)

The coaches knew they had to utilise this type of approach with their athletes. From both personal and coaching experiences, they understood the importance of encouraging independence among their players and the benefits that would ensue from it.

C4, who coaches at the club and provincial level, spoke about his philosophy on athlete development:

Winning isn't the whole thing. A lot of the players in quad rugby have issues to work out. I want them to have fun. I do want them to try hard, but I am more for the individual development than the team outcome. (C4)

This coach believed that the benefits from participating in wheelchair rugby, particularly the development of life skills, outweighed the competitive outcomes. This point was also echoed by C1, who said: 'I always bug the guys and ask them why they are still driving a van with a lift when they are a C6 or C7 and can transfer to a car'.

Despite the type of approach the participants used with their athletes, all of them wanted to maximise the potential of their athletes. This occurred by creating and setting expectations for their players:

To me the greatest thing you have as a coach is changing the expectations. Whether you are working in able-bodied sport or not, you are setting an expectation and you are creating the environment for them to perform. To me that is a big part of the coaching, it is giving your athletes the resources in terms of how to drive, how to work out, etc. (C1)

These expectations from their coaches provided the athletes with certain standards. Coaches believed strongly that they would not let their athletes use their disability as an excuse within the sport and wanted to instil a strong work ethic within their players. Furthermore, the coaches were empathic that they had strong training expectations and how they fostered the understanding of commitment with their athletes. All of the coaches reinforced the importance of what it meant to be an athlete and how their players needed to train in order to become one: 'A lot of time we only have so much gym time, so I will tell them to go and do their pushing yourself outside of practice'. (C4)

All of these guys would show up for training but they wouldn't do anything outside of practice. It was getting them to work outside of practice so that when we got to

practice, we were ready. We only had 2 two hour practices from 6–8 pm and guys would show up at 6 pm. They would get taped up and by the time they got going it was 7 pm and we had to wrap up by 8 pm. We had to get the guys to show up at 5 pm so we could be ready for practice at 6 pm. (C1)

The coaches described their frustration with the lack of commitment shown by some athletes, but understood it was part of the coaching and athlete development process in wheelchair rugby.

The importance of commitment was also emphasised to new athletes in wheelchair rugby. All of the participants encouraged their new players to become more independent when entering the sport. The coaches encouraged their athletes to perform chair-to-chair transfers, to transport themselves to and from practice and to transfer in and out of the hotel bathtubs all independently. They provided their athletes an environment which allowed them to learn these skills and to gain the confidence needed to perform these tasks independently. The pride which all of the coaches exuded while discussing this topic indicated the importance that they attached to the personal growth and development of each of their athletes.

For example, how to get in a car was new for him. But you bring the other guys right next to the van and whoop they're in! The new guy will just stop there and look at the van and think, 'how am I getting in if coach is not lifting me up?' I know he is able to transfer so I am not going to help him. It may take half an hour but I'll wait; just get in that car. One of the veteran players will come in and tell him 'put your legs there, push this way.' He will learn from someone who has been doing that for 20 years. (C2)

One of the guys on the initial team was a 0.5 classification (low pointer), a fulltime powerchair user, smoker, and drinker. After playing wheelchair rugby for 2 years he became a 0.5 player who independently transferred into a Ford Thunderbird and was able to take the chair and throw it into the seat by himself. As a 0.5 player that was pretty big progress. It was because he played wheelchair rugby that was the catalyst for him to do that. (C1)

It was clear from the discussions that wheelchair rugby was highly influential to an athlete's life and to the coaches' lives as well.

Three coaches reinforced the importance of fostering athlete independence when their teams travelled to tournaments.

My philosophy and one I share with several other coaches is that sport is the perfect complement to rehab for someone with a SCI. You aren't done with rehab until you have travelled on a sport team. In real life when you're travelling, these things are not all made for you. So you learn a lot by travelling. You especially learn a lot by travelling with players/athletes/quads who have been doing that for years. You get to the hotel and the major concern for the guys is going to the bathroom and taking a shower or a bath. (C2)

The coaches stressed how travelling was an important component for athlete development. Coaches believed learning how to travel was a vital skill for their players' continued individual growth and development.

The coaches not only challenged their athletes to become independent individuals, but also pushed them to succeed in all aspects of their lives. Each participant encouraged their athletes to become well-rounded individuals and to pursue new

possibilities outside of sport after acquiring an SCI, 'I try and push them to careers also. I tell them to go to school or do something with your life. Don't just be one-dimensional, try other things and get more stuff going' (C4).

I often see the potential in them off the court as well. I am always encouraging them to pursue things other than sports. I would like to get some athletes to start coaching. With other players I help them with careers or going back to school. (C1)

I believe that you need to do more than one thing. However, there are not a lot of options when it comes to team sports with our types of disability. I encourage them to participate in wheelchair hockey, wheelchair tennis, or wheelchair curling for example. The more social interaction and the other skills they can pick-up, the better. (C3)

The coaches' role entailed more than just coaching the sport, but also motivating their athletes to excel outside of it. They inferred how leadership skills gained in their sport would help their athletes become valuable leaders and role models both within the wheelchair rugby community and beyond.

In summary, all of the coaches were invested in fostering athlete development both on and off the court. They set high expectations and continually challenged their athletes to maximise their potential. They also reinforced the importance of commitment and dedication from their athletes and felt strongly that this was an important element of their sport. The coaches loved to challenge their athletes and encouraged and supported them to try new endeavours after their SCI. They also gained new motivation with every novice athlete who joined the team, and encouraged these players to become more independent in sport and in lifestyle.

Discussion

This study highlighted the experiences of wheelchair rugby coaches in the development of their athletes who had entered their sport after acquiring an SCI. Qualitative methods using IPA were used to better understand the experiences of coaches working with elite athletes with a disability within a natural, yet understudied, elite sport context. The participants discussed the coaching practices they employed working with athletes who have an SCI and highlighted the strategies they utilised for athlete development with this population.

The participants' described how they treated their players as 'athletes' and changed the culture of how their players were perceived. Other research in disability sport has previously highlighted the importance of disregarding the disability and coaching the individual as an athlete (Hanrahan 1998, 2007, DePauw and Gavron 2005, Cregan *et al.* 2007, Goodwin *et al.* 2009, Shearer and Bressan, 2010). In particular, reviews by Hanrahan found it was important for sport psychology practitioners to provide the same services to athletes with a disability as to able-bodied athletes. In the current study, coaches discussed the sporting culture of wheelchair rugby, how their players were now viewed as athletes rather than 'quads', and that new expectations accompanied being an athlete. The coaches also reinforced the importance of adopting an elite athlete mindset to both their new and experienced players in wheelchair rugby. The need of the coaches to foster an elite athlete atmosphere may indicate that wheelchair rugby remains in a state of transition from committed recreational athletes to international elite athletes.

Coaches in the current study were very supportive of the influential role veteran athletes played in the development of wheelchair rugby. In particular, they discussed their experiences with veteran athletes who were critical for athlete recruitment, sharing knowledge about the sport and their disability, and assisting with coaching and mentoring. Peer mentoring through social support has been shown to be an invaluable component in the adjustment to an SCI for a newly injured individual (Boschen *et al.* 2003, Sherman *et al.* 2004). In particular, Boschen and colleagues found that peer mentoring helped improve activities of daily living and enhanced the life satisfaction for individuals with an SCI who received mentorship. While there is a paucity of empirical research investigating peer mentoring in sport with athletes who have an SCI, the current findings on the role of veteran athletes in wheelchair rugby support the peer mentoring research in the general SCI population. Future research questions should be focused on exploring the evolution and practice of peer mentoring in elite sport for athletes with a physical disability, specifically within the sport of wheelchair rugby which has embraced the prominent role by athlete leaders both inside and outside of sport.

In a similar manner, the importance of utilising support staff and family members to assist with athlete and team development emerged in the current study. In particular, the national team coaches described the importance of the IST (physiotherapists, massage therapists, nutritionists, physiologists, sport psychologists, strength and conditioning specialists) in athlete development. The importance of coaches forming a strong working relationship with support staff has previously been documented (Cregan *et al.* 2007, Hanrahan 2007, Werthner and Coleman 2008). For example, Werthner and Coleman noted how the IST helped with the holistic development of their athletes by providing individualised training programmes, nutrition plans and treatment for injury recovery to athletes. The coaches in the current study were dealing with athletes who were entering wheelchair rugby following a serious SCI that left them paralysed that undoubtedly changed the quality of their life. Issues related to personal independence, travel, accessibility and commitment were raised. Thus, it is reasonable to postulate that the information and support offered by the coaches and IST would be far more reaching than in other elite sport settings, including when an athlete returned to sport following a serious injury (e.g. Gould *et al.* 1997, Taylor and Taylor 1997, Johnston and Carroll 1998, Bianco 2001). Exploring this perspective could be the focus of future research.

Coaches in the current study encouraged their athletes to pursue new possibilities outside of sport after acquiring their SCI. For example, they encouraged their athletes to further their education, become more independent, pursue a career, participate in additional wheelchair sport and recreation opportunities, and become involved in coaching. The role of the coach in the holistic development of athletes has previously been identified both in elite able-bodied sport (Vallée and Bloom 2005, Duchesne *et al.* 2011) and in elite disability sport (Cregan *et al.* 2007). However, the current study extends this literature by providing insight into elite coaches working specifically with athletes who have an acquired disability. As such, these participants encouraged their athletes to realise they could pursue endeavours they participated in before their injury, such as continuing their education, in addition to realising new possibilities after their SCI. The coaches in the current study understood the impact this had on their athletes and continued to foster this, so that their players became positive role models to athletes entering the sport. They also wanted

to see their players giving back to the sport and envisioned them serving in coaching and administrative leadership positions in wheelchair rugby. This is consistent with most notions of holistic coaching (cf. Cassidy 2010, Mallett and Rynne 2010), and this discussion further supports the call for more research to clarify the definition and use of holistic sports coaching in various contexts. Elite athletes in wheelchair rugby should be regarded as athletes first, but the reality is that they have an SCI impairment that impacts their lives. Coaches should discuss these realities and the implications with each of their athletes. Holistic coaching has been argued to be contextually and culturally specific without a common international definition (Cassidy 2010). Perhaps one of the outcomes of research in disability sport will be clarification of the concept of holistic coaching which will inform coaching practices and coach education for all coaches, disability sport or not.

The coaches in the current study allowed their athletes to make their own decisions and encouraged them to increase their independence. Research on both able-bodied and disability sport coaches has shown that coaches used autonomy-supportive strategies with their athletes (i.e. Mageau and Vallerand 2003, DePauw and Gavron 2005, Cregan *et al.* 2007, Banack *et al.* 2011). Autonomy-supportive strategies are those which provide athletes with choice, opportunities for initiative taking and constructive feedback. For example, Banack and colleagues found that Paralympic athletes who felt their coaches used autonomy-supportive strategies experienced self-determined motivation. In the current study, autonomy-supportive strategies were specific to the context of wheelchair rugby, such as coaches encouraging their athletes to increase their independence by learning to manually use a wheelchair, to self-transfer and to work on bowel/bladder management skills that enabled their athletes to improve their functioning both in wheelchair rugby and in their daily living. This often took place when wheelchair rugby teams travelled and when inexperienced players were exposed to non-accessible settings. Coaches described how they provided informational and practical support to their athletes and how they encouraged their experienced athletes to provide instruction and assistance in learning necessary skills on the road, such as how to go to the bathroom or how to take a shower in a hotel. This finding of sport being integral to the promotion of independence for individuals with acquired SCI is consistent with previous findings (Schültke 2001, Goodwin *et al.* 2009, Shearer and Bressan 2010). This finding is of particular importance since there is a paucity of research investigating the role a coach plays in the overall development of athletes with an SCI – both on and off the court. Future research should explore the context of sport and the specific mechanisms that enable the fostering of independence for daily living as well as the promotion of human potential and athletic performance excellence.

The findings from the current study using an IPA could be framed within existing conceptual models to help explain the interplay of the contextual aspects of disability sport and how coaches develop and work with their athletes. While there are many models in coaching science that could help make sense of the current findings (e.g. Multidimensional Leadership Model (Chelladurai 1978), Coaching Model (Côté *et al.* 1995), a model that resonates with the underpinnings of the coaches' experiences in the wheelchair rugby context is Horn's (2002) working model of coaching effectiveness. Horn's model is founded on the basic assumptions that contextual factors (e.g. the sport environment of wheelchair rugby and related constraining and enabling factors of coaching in disability sport) and athletes' personal characteristics (e.g. level of injury, skill, experience, etc.) influence a coach's behav-

our indirectly through a coach's expectancies, beliefs and goals. As drawn from the current findings, the coaches discussed their expectations and goals related to the athletes' performances both on and off the playing surface. As part of Horn's model, a coach's behaviour directly affects athletes' perceptions and evaluations of a coach's behaviour, which in turn affects athletes' motivation and performance. The next step in advancing this model and the related literature is to conduct phenomenological research with wheelchair rugby athletes to examine their personal growth and development in their sport and in their life. Horn's model of coaching effectiveness provides one framework to make sense of the intricate relationships involved in coaching and playing within disability sport.

Although the study enhanced the understanding of how elite wheelchair rugby coaches supported the development of their athletes with an SCI, some limitations need to be addressed. First, the interviews focused solely on coaches' perceptions; therefore, adding the views of the athlete would appear to have merit. Second, results might be specific to male coaches. While our sample could only include males because there are currently no female coaches in Canada, it may be interesting for future research to expand on these results with a sample of female coaches from the greater wheelchair rugby community. Given the known general gender differences in managing challenges (Tamres *et al.* 2002), this may be an informative line of further enquiry. Third, one must exhibit caution when transferring the current findings to coaching athletes with a congenital disability or other acquired disabilities. Fourth, we analysed the data consistent with the guidelines for IPA (Smith and Osborn 2003, Smith 2011). There is some debate on the applicability and usefulness of using thematic analysis within IPA methodology (Chamberlain 2011). However, the themes presented in the current paper are meant to be illustrative of the analytical interpretation and we have used extended interpretative narrative to provide meaning and context within a double hermeneutic lens.

In sum, the current results are of interest to the wheelchair rugby community, as well as to the broader coaching community. The national coaching certification program in Canada in wheelchair rugby is still in its early stages of development. These results, showing the importance of practical and experiential learning, in addition to formal coach training, can be utilised by the CWSA and the CAC to help inform the development of formal coach training in wheelchair rugby. Both of these components have been identified as valued components to coach education by the CAC through a competency-based approach to coach education (Coaching Association of Canada 2005). The results of this study can also be used to demonstrate successful coaching methods surrounding the reintegration of individuals into sport after their acquired SCI. These successful methods included coaching an athlete as opposed to coaching a person with a disability, setting personal and sport-related goals, encouraging independence and developing well-rounded athletes and community leaders. The current results can provide information to coaches on the importance of their role in influencing athletes to become independent individuals, in using the IST to enhance athlete development and in fostering mentoring strategies such as using veteran athletes in supporting new players in wheelchair rugby. Lastly, results from the current study can be used to show the influence of coaches in fostering the holistic growth of wheelchair rugby athletes both in sport and in life. This suggests that wheelchair rugby coaches in Canada play a prominent role in enhancing the quality of life for individuals with an SCI by creating and setting high expectations for athletes to continually challenge them to become independent

individuals in both sport and life. They have positively impacted the lives of several athletes throughout the country and increasingly do so as the sport continues to grow and develop in Canada and around the world.

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