

A QUALITATIVE ANALYSIS OF THE PSYCHOSOCIAL EFFECTS OF INJURY IN FEMALE ATHLETES

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ABSTRACT

Background: Athletic identity and the culture of sport affect athletes' experience of injury and recovery, and circumstances leading to injury and social support influence outcomes. *Purpose:* This study focuses on the psychosocial effects of injury on female athletes' identity both in and out of sports. *Methods:* Participants were six female athletes between the ages of 18–35, and all had sustained an injury within the past year with the exception of one athlete who had experienced a career-ending injury three years prior. Four out of six injuries were the result of acute episodes, two in-game situations and two during training. Five out of six injuries were to the lower extremity, and five out of six participants reported at least one previous sports injury in addition to the one for which they were included in the study. Two focus groups with a total of five athletes and one interview with a sixth athlete were conducted with female athletes. *Results and Discussion:* Athletic identity developed within the culture of sport shaped respondents' understanding of pain and injury, and influenced decisions to delay seeking help and play with pain. Injury caused participants to re-evaluate their identities, both as athletes and as females. During recovery, athletic identity and its attendant social support affected the lived experience of injury and how participants reacted, influencing decisions regarding return to play. Social support, especially sport-specific care, was essential to recovery. *Conclusion:* Injury compromised not only athletic identity but also feminine identity.

Keywords: female athletes, sport injury, culture of sport, athletic identity, women in sport

Article citation: Scolnik, M., Nakamura, Y., Howard, A., Murnaghan, L. & Macpherson, A. (2018) A qualitative analysis of the psychosocial effects of injury in female athletes. *Graduate Journal of Sport, Exercise & Physical Education Research*, 6: 29-43.

BACKGROUND

Injury is a regular but significant occurrence in the life of an athlete (Safai, 2003; Young & White, 1995). When injury limits physical activity for significant periods of time, there is a loss of the protective health effects of exercise (McAllister, Motamedi, Hame, Shapiro, & Dorey, 2001; Valovich McLeod, Bay, Parsons, Sauers, & Snyder, 2009). Moreover, injuries sustained by elite athletes can be associated with loss of sports scholarships and salary, reduced academic performance, loss of time from work or school, pressure from coaches and teammates to return to play, mental health problems and long-term disability (Evans, Hardy, & Fleming, 2000; Griffin et al., 2006; Hewett & Lindenfeld, 1999; Nixon, 1994). These factors encourage elite athletes to play while injured or return to play prematurely (Cockett & Holtan, 2000; Duquin, 1994; Malcom, 2006; Pike, 2005; Young & White, 1995).

Training and conditioning are an integral part of injury prevention and management in athletes, and studies have already shown that sport-specific training can reduce female athletes' risk of injury (Griffin et al., 2006; Hewett & Lindenfeld, 1999; Mandelbaum et al., 2005). However, most of the research pertaining to training and conditioning in athletes has been conducted on male Caucasian athletes between 18–25 years of age (Harber, 2010). Programmes specifically geared towards women need to be developed because 'women are not men,' just as 'children are not small adults,' and training programmes developed for male athletes are not necessarily appropriate for female athletes (Harber, 2010).

The lack of understanding of women's specific experiences of injury have become more relevant as women's participation in sport increases because with an increase in participation there has been a corresponding increase in injury rates among female athletes. For example, anterior cruciate ligament (ACL) injuries in female athletes are between 4–6 times more common than in males participating in the same sport; patellofemoral joint (PFK) and shoulder injuries are also more common (Harber, 2010; Hewett, Myer, & Ford, 2006). The higher rates of injury amongst female athletes make it important to specifically help female athletes through the rehabilitation process, and prepare them for returning to sport.

Female athletes are deemed more likely to sustain injury during sport than their male counterparts (Robinson, 2002), even though higher injuries amongst female athletes has only been identified for a few specific injuries (Harber, 2010; Hewett, Myer, & Ford, 2006). To suggest that gender is the reason for injury, limits both females' choice of sports and the physical and mental benefits females accrue from engaging in physical activity (Charlesworth & Young, 2004; Coakley & White, 1992; Collinson & Hockey, 2007; Colvin & Lynn, 2010; Harber, 2010; Krane, Choi, Baird, Aimar, & Kauer, 2004; Manley, 1996; Nixon, 2004; Pike & Maguire, 2003; Pike, 2005; Robinson, 2002; Sparkes, 1998; Sparkes et al., 1996; Theberge, 1997, 2008; Young & White, 1995; Young, 1997). Rather, the gender difference points to the need to understand the experience of injury among female athletes and how they cope with being injured.

Research illustrates how the experience of injury among athletes is shaped by the 'culture of sport,' which includes collective ideologies, rituals, beliefs, even a shared lingo, and perhaps most importantly, a shared understanding among sport participants (Houlihan & Malcolm, 2015). Initiation into the culture of sport and being accepted into

the attendant social network, depend upon athletes' ability to conform to the conventions of the culture. For example, one convention within the culture of sport is the view of the body as an object, such that athletes come to see their bodies as machines that produce a successful performance (Collinson & Hockey, 2007; Duquin, 1994; Krane et al., 2004; Pike & Maguire, 2003; Sparkes & Smith, 2003; Sparkes, 1998; Sparkes et al., 1996). In understanding their bodies as objects in the service of excellence, athletes may subsequently ignore pain, play through injury and defer medical consultation (Duquin, 1994). Another related convention within the culture of sport is the glorification of the injured athlete as someone who sacrificed body and self for success (Charlesworth & Young, 2004; Duquin, 1994; Pike & Maguire, 2003). Thus, the culture of sport has also been called a 'culture of risk' (Cockett & Holtan, 2000; Collinson & Hockey, 2007; Pike & Maguire, 2003; Pike, 2005; Safai, 2003).

Initiation and acceptance within the culture of sport is also dependent on athletes' social ability, or specifically, the ability to develop an athletic identity (Donnelly & Young, 1999). An identity can be understood as the way in which one feels included in a specific social environment, and one's sense of belonging within that group (Yukhymenko-Lescroart, 2014). More specifically, the athletic identity is defined as the extent to which one may identify as an athlete within a broader identity (Brewer, Van Raalte, & Linder, 1993). This identity becomes central to elite athletes' self-image and to their sense of belonging within a team (Donnelly & Young, 1999; Rees, Smith, & Sparkes, 2003; Sparkes, 1998). The athletic identity may be more complicated for female athletes who ascribe to a feminine identity because these two identities may be viewed as having conflicting values (Krane et al., 2004). Although femininity has many different forms, the more dominant version of femininity in contemporary Western society focuses largely on the appearance of women as slim and toned, and their manner as being soft, clean and complaisant (Krane et al., 2004). The athletic identity is associated with strength, muscles, aggression and assertiveness, qualities often considered to be masculine (Krane et al., 2004; Pike & Maguire, 2003; Young & White, 1995; Young, 1997). Female athletes who want to be valued both as athletes and females in contemporary Western society often find that these identities are at odds with one another (Krane et al., 2004).

James Marcia explained that the development of a specific identity is important for coping with stress (Marcia, 1966), and for athletes, injury is a major source of stress (Sparkes et al., 1996). Research has found that the athletic identity affects athletes' reaction to injury and recovery, and that injury affects athletes both psychologically and socially (Budgeon, 2003; Duquin, 1994; Malcom, 2006; Pike & Maguire, 2003; Pike, 2005). For example, injury disrupts athletes' sense of identity, and in turn they may distance themselves from their injury and reject their altered body (Charlesworth & Young, 2006; Sparkes & Smith, 2003; Young, 2004). There are also social implications to injury, and differences in the ways that athletes interact with other athletes when they are injured (Collinson & Hockey, 2007; Sparkes & Smith, 2003; Sparkes, 1998).

Conforming to the cultures of sport and risk, and performing this adherence through one's athletic identity are particularly significant for female athletes whose gender is constructed as being in contradiction to sport (Ewing, 2016; Kane, Lavoie, & Fink, 2015; Messner, 2011). This is especially true for those who are injured. Female athletes generally have less financial support and less access to care than male athletes (Pike, 2005; Robinson, 2002). As athletes' support system shrinks, they may feel pressure to

play with injury, with a negative effect on recovery and increasing the risk of secondary injury (Bianco & Eklund, 2001; Collinson & Hockey, 2007; Evans et al., 2000; Freeman, Coffee, & Rees, 2011; Hardy, Richman, & Rosenfeld, 1991; Magyar & Duda, 2000; Malcom, 2006; Nixon II, 1994, 1996; Theberge, 2008). Some female athletes may develop coping mechanisms and hide pain from coaches and teammates because being injured contradicts the characteristic strength and aggression expected of athletes (Charlesworth & Young, 2006; Cockett & Holtan, 2000). When forced to stop competing, they may experience a compromised sense of self (Pike & Maguire, 2003; Pike, 2005; Sparkes, 1998; Sparkes et al., 1996) and exhibit symptoms of anxiety, depression and low self-esteem (Collinson & Hockey, 2007; Thing, 2004).

Numerous studies elaborate on the differences between injury in male and female athletes, the effects of the culture of sport on injury and recovery, and in addition the influence of athletic identity on injury in female athletes. There is a paucity of studies, however, on the effects of athletic injury on the feminine identity. Do athletes change the way they view themselves as females when they are injured, and if so, how? The purpose of this study was to explore the psychosocial effects of injury on female athletes' identity both as athletes and as females.

METHODS

Design

Two focus groups were conducted; the first with two and the second with three female athletes, to explore the effect of injury. In addition, one interview was conducted with an athlete who could not attend either focus group. Each of the focus groups as well as the interview was approximately one hour in length.

Qualitative research employing focus groups and in-depth interviews are used extensively in health research (Côté-Arsenault & Morrison-Beedy, 2005; Linhorst, 2002; Pope & Mays, 1995; Wilkinson, 1998b). The social interaction between participants and the facilitator provides a safe and open-minded environment, creating an atmosphere conducive to rich data collection. Participants of focus groups receive support from people in similar situations, and often report high levels of satisfaction (Côté-Arsenault & Morrison-Beedy, 2005). Part of the reason that we chose focus groups was because we hoped to replicate those feelings of support for injured female athletes. We observed and wrote down our impressions of the support and advice shared between athletes and there were statements of encouragement in the transcripts between the participants. However, we did not perform a formal evaluation such as a survey to specifically assess whether the athletes felt supported, or not, by the focus group. It is possible to guide discussion to cover important topics while facilitating the sharing of ideas between participants (Côté-Arsenault & Morrison-Beedy, 2005; Wilkinson, 1998a, 1998b) and the co-construction of knowledge.

In discussing the psychosocial effects of injury and barriers to recovery, the focus groups provided a window into the group dynamic and social interaction between injured athletes in a context where other athletes reaffirmed their athletic identity (Wilkinson, 1998a, 1998b). An in-depth interview provided the opportunity to investigate the subject in greater detail (Pope & Mays, 1995).

Qualitative research explores personal experiences drawn from an individual's

perspectives and understandings rather than in an experimental setting (O'Brien, Harris, Beckman, Reed, & Cook, 2014). It provides an in-depth understanding of a person's responses to a situation in order to facilitate the development of relevant and sensitive interventions (Sandelowski & Barroso, 2003). The 'social identity theory' was used for the analysis because it captured the psychological effect of injury on all aspects of athletes' lives.

The social identity theory was first described in the late 1970s as a way to characterize human interactions within a group. These interactions were placed along a spectrum beginning with purely interpersonal, an example of which is a person who takes no note of social categories, and ending with purely intergroup, an interaction where someone believes themselves to be a complete representation of all the values of the group to which they belong. In a purely intergroup interaction a person may view themselves 'us' while others outside the group were termed 'them' (Hornsey, 2008).

Social identity theory has more recently been used to analyse the ways in which people define themselves within cultural groups and how that self-perception shapes identity (Hogg, 2016; Islam, 2014). It also specifically emphasizes issues such as the effects of a group or culture on identity construction, and how people are affected by that identity (Hogg, 2016; Islam, 2014). Using the social identity theory, the development of athletic identity and its interaction with injury, as well as the effect of injury on well-being and self were explored. As such it provides a strong framework for analysing the effects of injury on the athletic identity to understand the multifaceted challenges facing athletes during injury and recovery.

Participants

The five focus group participants and the interview participant were between 18 to 28 years of age and sport affiliations included basketball, ice hockey, rugby, tennis and tri-athletics. Four out of six injuries were the result of acute episodes, two in-game situations and two during training. Five out of six injuries were to the lower extremity, and five out of six participants reported at least one previous sports injury in addition to the one for which they were included in the study. Operative intervention was required for two of the six injuries, and rehabilitation was necessary for all; furthermore, three athletes discussed surgeries for previous sports injuries. Five of the athletes had experienced an injury within the last year from which they hoped to recover, and one had experienced a career-ending injury three years prior. Five of the six participants were current post-secondary students, and the sixth had competed at the highest level possible in her sport, necessitating long and disruptive commitments, such as long-distance travelling and permanent relocation. She had sustained a career-ending injury, and though no longer directly involved in her sport, her data proved to be highly relevant, adding important insights to the findings.

An athlete was defined as having competed at a varsity university level or higher, and all, with the exception of one athlete who had sustained a career-ending injury, hoped to continue once they recovered. There is only one division for varsity sports in Canada, and American athletes who participated in this study competed in Division I of the National Collegiate Athletic Association (NCAA).

Inclusion criteria was female athletes between the ages of 18 and 35. Female athletes in the 18–35-year-old age group were recruited in one of the following ways: via coaches of intercollegiate teams who e-mailed or told injured players about the research project,

through a sport injury clinic based at an intercollegiate institution, by word of mouth or via recruitment posters.

Initially, we wanted to recruit only athletes with an injury severe enough that it required them to miss at least half a season. It also had to be an injury that occurred during sports. Realizing that it was more important to discover how athletes defined injury, we simply put the word injury on the posters without specifying type or severity. Interestingly, all the athletes who self-identified as injured and asked to participate had been forced to miss at least half a season with sports injury, and many of them had missed much more time. They also all required rehabilitation and two athletes required operative intervention.

Procedure and measures

Ethics approval was obtained from York University and the University of Toronto in 2012, and the focus groups and interviews were conducted in 2013. The University of Toronto required additional ethics approval from the University of Toronto Research Ethics Board in order to include their students in research. Before beginning the focus group or interview, confidentiality was explained and participants' informed consent was obtained. No research information was shared with athletes' medical practitioners or coaches. Pseudonyms were used to maintain confidentiality.

After completing the research for the literature review, we highlighted identity construction and the socialization of athletes into the culture of sport as extremely important to athletes' attitudes towards injury and recovery. There are social implications to injury and differences in the ways that athletes interact with other athletes when they are injured (Collinson & Hockey, 2007; Sparkes & Smith, 2003; Sparkes, 1998). We were fascinated by how athletic identity affected injury, the reaction to injury and recovery, and most of all how injury affected female athletes in all aspects of their lives (Budgeon, 2003; Duquin, 1994; Malcom, 2006; Pike & Maguire, 2003; Pike, 2005). This led us to develop questions to further elucidate issues such as how female athletes felt towards injury, how they felt while injured and how it affected their lives. Issues such as time away from sport, well-being, sense of self, academic achievement, social relationships, employment and secondary injury prevention were explored, using the social identity theory.

A list of questions for the focus groups and interviews were divided into three categories. The first category, demographics, encompassed questions such as, "What sport did you play?" In the second category, social support and subculture, there were questions similar to, "Describe a time when you have felt pressure to play through injury?" An example of a question from the third category, sense of self and athletic identity, was "How did your most recent injury requiring rehab, or your worst injury, affect your self perception?"

Analysis

Encounters were audio-recorded and transcribed within three days of each focus group or interview to assist in recall. Limited field notes, recording important discussion points, were taken during focus groups and the interview. Typed verbatim transcripts were uploaded to NVivo™, which was used to facilitate data analysis. The interview and the second focus group each generated approximately 13 pages of transcripts and the first interview was transcribed into 21 pages. From this data, 15 codes were highlighted which were further merged into subheadings.

The Nvivo program had functions that allowed codes to be merged, unmerged, renamed and edited reflecting these changes. Combining the data in this organized manner helped us to see the themes emerging from the data so that we could appreciate some of the problems faced by injured female athletes. To keep track of the flow of our thoughts, we combined codes as subheadings so that the original code headings were still saved. The PDF files from Nvivo were then saved, numbered and lettered to show which subheadings belonged in which theme.

Reflexivity is an important component of conducting qualitative research as it justifies how the data analysis is conducted (Carter & Little, 2007; Doucet & Mauthner, 2006; Finlay, 2002). A discussion of reflexivity elucidates the researcher's thought process throughout the research and serves to position the researcher within the study. It acknowledges that the researcher's connection to the research influences the analysis, and allows the reader to make a judgement of the data with an understanding of that relationship. A clear explanation of the decisions made also holds the researcher accountable for the knowledge produced (Doucet & Mauthner, 2006).

A single author performed the entire data analysis and her interest in studying injured female athletes was due to personal experience both as a child and later as an adult. It was impossible to fully separate her experience of injury from the research, because her understanding and definition of injury was shaped by her own experiences. This does not invalidate the analysis based on bias but rather explains that the analysis is a product of the participants, the researcher, and the relationships and understanding formed through the research (Finlay, 2002). The participants' narratives reflected only her version of the data, and any other person who analysed the data or attended the focus group would have had a different opinion of what was significant in the dialogue and which themes emerged from the data. As such the analysis was an interpretation based on her understanding throughout the project (Carter & Little, 2007).

Discourse analysis was used which is a type of analysis that elucidates meaning from both the language used as well as the ideas expressed by the participants (Blommaert & Bulcaen, 2000). Inductive and deductive coding methods were both used in the analysis. A central question directed the coding of the research, which is an inductive coding method (Thomas, 2006). The central question was, "What is the social context of injury in female athletes and how does that affect female athletes?" A deductive approach was used in the organization of the data, and this method outlines the use of codes to reach a deeper interpretation of the data (Fereday & Muir-Cochrane, 2006).

RESULTS

This analysis is divided into three sections: formation of athletic identity, the effect of athletic identity on athletes' perceptions regarding pain and injury, and how injury affects athletes and their athletic identity.

Pre-injury: the culture of sport and athletic identity

The obligatory time spent together with sporting colleagues while training and competing, increased athletes' dependence on friendships *within* the athletic community, especially since friends uninvolved in sport were not necessarily understanding of the

commitments expected of athletes. Leigh commented, “Most of my non-sport friends think that I’m just crazy... They just can’t relate and they don’t understand. And they do get offended when you put your workouts ahead of them,” and Kara explained, “There were a lot of sacrifices. And you miss things.” All agreed that inclusion in the culture of sport involved rigorous, all-encompassing training, making it difficult to sustain relationships outside of sport. Higher levels of competition demanded increasing sacrifice of social interactions, ultimately making it more comfortable to be close to others involved in sport. Indeed, Emma chided the other focus group participants: “Girls, you’re doing it wrong. I’ve never *not* dated an athlete.”

Even as young players involved in less competitive sport, study participants had been expected to play through pain. Bea described being pressured to play with injury in high school: “My coach wanted me to play cuz, like, it was a championship game, so the way she like wrapped it I had like no rotation in my wrist and she didn’t want me going to the hospital.” Likewise, Mia explained that she felt pressured to play while injured for an entire high school season. Both women stressed that sports had nevertheless helped them navigate new situations and make friends. Relationships built through sports provided strong support for female athletes; several participants counted current or former teammates as lifelong friends. As Reanne said, “Like the girls I met through (university name) they will be my bridesmaids. That’s how close they are to me.”

Becoming injured: ignoring and accepting injury

Athletes so fully invested in sports and their athletic identity were devastated when they got injured. Reanne recalled, “I had a huge identity crisis because I was like what are people going to think of me if I don’t play _____ anymore?” Mia similarly commented, “I felt just really down because it’s like, I felt like I didn’t, I’m not really that valuable.” Likewise, after a setback in her recovery, Kara said, “This is it, feels like my life is over and I’m depressed.”

In addition, the participants indicated that their feminine identity was challenged as well as their athletic identity:

I didn’t feel sexy at all... I didn’t feel feminine like I usually feel. I didn’t feel like, like when I’m in really good shape I feel good about my body and it makes me feel happy and then I just felt like, like my appetite went down; I didn’t gain any weight or anything. But I just felt like, in addition to having the limp you know your muscles start to atrophy and you just feel all, in comparison to your normal buff self you feel flimsy. And like, yeah. So aside from like not feeling like myself as a person, physically I didn’t feel like myself. And I felt really self-conscious.

When asked about the effect injury had on her self-perception, Leigh first discussed the way it made her feel as a female, then how it changed her perception of her body and finally how she felt mentally and physically when she was injured. It was impossible to separate out her feelings about injury as an athlete and as a female; it affected every facet of her identity. Her identity as an athlete was challenged by the fact that she could not compete while injured, and as mentioned in the above quote, she also felt less feminine due to her injury.

Athletes denied having their femininity questioned because of their athleticism, but felt that injury was in conflict with being feminine. While many effects of injury are common to males and females, having their femininity challenged is an issue unique only to some

female athletes. After injury, they became conscious of their bodies for the first time: “I kept looking at myself and going, I look a little fat... It was a lot of body image stuff that I’d never worried about before.” Bea commented, “I was like, I need to cover this. I’m so embarrassed. And all my friends were like, no no no. And I was like, I actually want to lose this weight. It was just weird.”

With both their athletic and feminine identities being compromised, female athletes wanted to return to sport as quickly as possible, feeling pressure to play while injured, even at the risk of worsening their condition. While the pressure to play is common to male and female athletes, the participants felt that their femininity was called into question, an extra burden of injury that is not faced by male athletes. Kara continued to play despite pain and numbness in her limbs and Emma played while injured in order to remain on the team, though she did not regret her decision.

Since pain itself was not seen as a problem, but rather as “just kind of an athlete thing,” when injury did prevent participation, athletes felt the need to stress that the shortcoming was in their body. They disengaged from being injured by referring to their bodies as a separate entity: Reanne asked, “Can my body handle a season (of sport)?” Likewise, Kara joked, “I think my left knee felt neglected,” and Emma stated, “My ankle was okay enough to play.”

Social interactions shaped athletes’ decisions regarding playing with injury, and the lived experience of injury. As Leigh explained, “it’s really like self-pressure but it’s created by the team environment.” Teammates’ concern felt like pity rather than empathy to participants, who were accustomed to being strong and able. Emma stated, for example, “They like pity you more sometimes. Which kinda made me like irritated.” Athletes felt uncomfortable when attention was called to the injury: “The constant awareness that they would bring to it... Like that bothered me a bit but I can’t do anything about that.” Injury led to feelings of social isolation at a time when athletes most needed support. Leigh recalled “Nobody else has time to hang out with you... Like your social time is practice time... I was definitely lonely.” Athletes also mentioned the importance of receiving sport-specific and affordable care. Reanne for example, stated that, “If it wasn’t for the clinic, I would not have been able to afford my rehab... I would not have played again if it were not for that clinic.” This particular clinic offers free daily sports injury rehabilitation for intercollegiate athletes. Normally, this type of care provided through private physical therapy clinics is not covered by the Ontario Health Insurance Plan (OHIP) and is expensive.

Recovery: re-evaluation of injury and its causes

Injury was insignificant to athletes unless it made them miss competition or training. The realization that they might not play was far worse than the injury, as illustrated by Reanne’s comment: “I didn’t shed a single tear until (athletic therapist’s name) came over to me and said, might be your (injury type)... and then the waterworks started, and then cuz then I was like ‘I’ll never play again!’” The realization that they could not continue training and playing forced athletes to reconsider their identity and entertain the possibility of a life without sports. Bea said, “I was having a crisis with trying to figure out how I’m supposed to like, like go on with life and like the year not playing because it has always been a part of who I was, and the activities and the friends I had through it and everything.” Injury also changed athletes’ view of their body, “Like, you have to get past that mentality

that you're invincible. Cuz I still think I'm invincible even after getting hurt like, I forget."

Participants continually re-evaluated the injury and themselves, and regret or self-blame were often apparent. For example, Kara admitted, "The overuse injuries with my shoulders, those were just not listening to my body... I wish sometimes looking back, I wish it would have been a lot different." Reanne stated more simply, "It was my own fault." Kara further explained that the same motivation that allowed her to reach the highest level of sport also influenced her decision to play with pain. Although she blamed herself, she also realized that, "At the same time that's not really who I am." Her re-evaluation suggested that perhaps she understood that the perseverance needed in order to attain her goals was also what drove her to play through pain, and in this case, worsen her injury.

DISCUSSION

This study found that the lived experience of injury challenged not only the athletic identity of female athletes, but also their feminine identity. Sports made them feel fit and strong while injury made them feel self-conscious about their bodies. They were distressed due to withdrawal from sports, and injury also affected the way they viewed their own body and femininity, a finding specific to some female athletes.

The decision to play while injured was influenced by athletes' self-perceptions as well as by how they thought others viewed them. The need for support from the athletic community was a major concern for injured athletes, especially psychological support to help mitigate some of the anxieties surrounding returning to play. Focus groups provide an atmosphere where participants feel supported in sharing their experiences (Côté-Arsenault & Morrison-Beedy, 2005). We observed athletes encouraging each other with body language and words as well as sharing advice and information, and we interpreted that as support generated by the focus group.

Pre-injury: the culture of sport and athletic identity

Participants' athletic identity begins to develop long before elite play, becoming increasingly central to their overall identity as they spend more time devoted to athletic pursuits (Coakley & White, 1992; Donnelly & Young, 1999); sport becomes the prism through which they view life, and self-worth depends on athletic prowess (Cockett & Holtan, 2000; Sparkes et al., 1996). The culture of sport, even before elite level play, mandates acceptance of pain and injury and the need to sacrifice for sport (Cockett & Holtan, 2000; Duquin, 1994; Malcom, 2006; Pike, 2005; Young & White, 1995). Athletes gravitated towards friends who shared the same values, reducing interactions outside of sports and narrowing their identity. Through this investment, athletes develop a strong athletic identity, and reap the social benefits of participation (Charlesworth & Young, 2004; Donnelly & Young, 1999; Nixon, 2004). Willingness to forgo other areas of life leads to a narrower self-identity (Charlesworth & Young, 2004; Cockett & Holtan, 2000; Duquin, 1994; Pike & Maguire, 2003; Safai, 2003; Sparkes & Smith, 2003; Sparkes, 1998; Sparkes et al., 1996), and increasing devotion to sport makes it difficult to retain interests and relationships outside of the culture of sport (Sparkes, 1998). It was necessary to illustrate the strength of the athletic identity to fully understand what injury did to the participants' identities.

Becoming injured: ignoring and accepting injury

Injury was psychologically and socially difficult for the athletes in our study. Being injured made them feel depressed, anxious and unhappy. In other studies, athletes have described feeling inconsequential, out of place, meaningless, depressed and despondent about the future (Duquin, 1994; Evans et al., 2000; Pike & Maguire, 2003; Pike, 2005; Sparkes & Smith, 2003; Sparkes, 1998; Sparkes et al., 1996). In addition, adoption of athletic identity meant that injury not only prevented participants from engaging in the sport that they loved, but also challenged their identity. They had even endured pain and attempted to play through it, ultimately normalizing injury in an attempt to retain their identity. This is similar to other studies which also found that athletes played through pain to avoid the identity crisis that ensues when they are no longer able to compete (Cockett & Holtan, 2000; Collinson & Hockey, 2007; Pike & Maguire, 2003; Pike, 2005; Young, 2004).

Our study also highlights that injury not only affected participants' athletic identities but also challenged their feminine identities; they perceived being visibly injured as a non-feminine characteristic, and being unable to exercise diminished their ideal bodies. Although previous literature has discussed how injury affects athletic identity (Cockett & Holtan, 2000; Collinson & Hockey, 2007; Donnelly, 2004; Pike & Maguire, 2003; Pike, 2005; Thing, 2004; Young, 2004) and the conflict between athletic identity and the societal ideal for femininity (Charlesworth & Young, 2006; Krane et al., 2004; Pike & Maguire, 2003), it did not stress the way in which injury challenges feminine identity. Ultimately, the athletes in this study appeared bound to societal values concerning women's bodies; gaining fat and limping did not conform to the desired and expected flawlessness, causing athletes to feel self-conscious, less feminine and unattractive when injured.

As athletes, they prized having the perfect body for their sport, a body that achieved performance excellence even if it did not conform to feminine ideals. The culture of sport prizes physical strength, endurance and sacrifice of body, and highlights the importance of being able-bodied, powerful, aggressive and capable of persevering physically and mentally (Collinson & Hockey, 2007; Duquin, 1994; Krane et al., 2004; Pike & Maguire, 2003; Sparkes & Smith, 2003; Sparkes, 1998; Sparkes et al., 1996; Theberge, 1997, 2006; Young, McTeer, & White, 1994; Young & White, 1995). Injury disrupts this mental model, highlighting the incongruity between an athlete's perception of self and the limitations imposed by injury (Cockett & Holtan, 2000; Collinson & Hockey, 2007; Pike & Maguire, 2003; Pike, 2005; Young, 2004). Indeed, as in previous research, when participants were injured, their body image was compromised. As explained in the results section, the athletes felt as though their bodies were powerful until their injury. They also questioned the perfection of their body once they were injured. Furthermore, they felt that being injured was unfeminine, an idea that could be explored further in the research.

Recovery: re-evaluation of injury and its causes

Once participants understood the severity of their injury, they re-evaluated their identity and self-perception of body, expressing regret for decisions to play through pain. This is similar to previous research which has shown that, as the reality of being injured sinks in, initial disbelief and distress gives way to guilt and self-blame (Pike & Maguire, 2003; Pike, 2005; Sparkes & Smith, 2003; Sparkes, 1998; Sparkes et al., 1996). Athletes

may eventually come to realize that these feelings are unhealthy and that adherence to their athletic identity could even cause or exacerbate injury (Pike & Maguire, 2003; Theberge, 2008; Young & White, 1995). Their intention to return to full athletic participation changes as they appreciate the implications of injury on future sports involvement. There is a reassessment of identity as they realize the severity of their injury and its effects on their abilities (Collinson & Hockey, 2007; Pike & Maguire, 2003; Pike, 2005; Sparkes & Smith, 2003; Sparkes, 1998; Sparkes et al., 1996).

Strengths and limitations

The comprehensive literature review afforded us the necessary background to employ an effective approach, namely social identity theory, for data collection and analysis. The use of focus groups allowed us to build a first-hand understanding of the social interaction between athletes while they were injured, supplemented by additional depth from the interview data. Focus groups as an intervention that provided support was not formally evaluated. A follow-up survey for the female athletes who participated in the study would have helped to address that limitation. The lived experience of females playing sport at a less competitive level, or facing barriers that prevent them from playing at the intercollegiate level, may be different. Future research that may explore athletes at many different levels of play would offer a more comprehensive view of the effects of injury on female athletes.

CONCLUSION

Injury compromised not only the athletic identity but also the feminine identity of female athletes. The participants explained how injury made them take note of their female body in a different way than before they were injured. They became self-conscious of their bodies, both because they could not perform in their sport and because injury challenged their perceptions of the ideal female body. Injury, rather than sport, challenged their femininity.

The culture of sport amplified the psychological and social impact of injury on athletes. Decisions regarding playing with pain and injury were affected by the participants' perception of how they were regarded by teammates and other people in their sports community. Access to support, especially medical care provided specifically for athletes, greatly affected athletes' experience of injury and decisions to return to play.

FIRST AUTHOR BIOGRAPHY

I am currently a medical student, and the research completed during my masters, including this manuscript, contributed to my acceptance and to my continued interest in research. This manuscript was adapted from my MSc thesis and the research for this manuscript was collected in 2013–2014.

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