



## The social dynamics involved in recovery and return to sport following a sport-related concussion: A study of three athlete-teammate-coach triads

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### ABSTRACT

An athlete's connection to their team and team members is an important part of their sport experience. However, researchers currently know little about the nature of these social dynamics with respect to concussed athletes. Our study explored athletes' recovery and reintegration into the team environment following a sport-related concussion. We conducted semi-structured interviews with each member of three athlete-teammate-coach triads ( $N = 9$ ). We analysed the data using thematic narrative analysis and present the results as three stories that focused on each athlete's experience. For *Cassie*, we found two major plot points in her story: the transition in her role (and shift in identity) from athlete to student assistant coach/team manager and, once recovered, back to an athlete on the team. For *Jess*, we found that the main plot in her story was "pressure". Specifically, the interplay between internal (placed on herself) and external (perceived from teammates and coaches) pressures to return to sport. In the third and final story, the main plot point was the tensions that arose from *Jaden's* preferences for social support and the type of support that his teammates and coaches believed he needed during his recovery. Our results highlight the interplay between athlete's personal and social identities, feelings of pressure to return and readiness, and the challenges of providing the right amount and type of social support. This research contributes to our limited understanding of the social dynamics involved in athletes' return to sport following a concussion.

### 1. The social dynamics involved in recovery and return to sport following a sport-related concussion: a study of three athlete-teammate-coach triads

Sport-related concussions are a type of traumatic brain injury caused by a direct or indirect blow to the head, face, neck or elsewhere on the body that results in impaired cognitive functioning (Caron, 2019). An ever-expanding literature on sport-related concussions has investigated a variety of topics related to diagnosis, management, and long-term sequelae associated with the injury and recovery process (e.g., Broglio et al., 2019; Kontos et al., 2019). However, the psychosocial aspects of sport-related concussions remain an under-explored phenomenon (Kontos, 2017).

Contemporary research on psychosocial aspects of sport-related

concussions can, at least in part, be traced back to the work of neuropsychologist Dr. Jeffrey Barth and his colleagues (e.g., Barth et al., 1983; Rimel et al., 1981), who studied individuals who acquired brain injuries in motor vehicle accidents. Barth et al. found that study participants reported emotional stress and deficits associated with their attention, concentration, memory, and judgement. Almost 40 years later, researchers are in agreement that similar psychosocial impairments may also be observed in concussed athletes (Covassin et al., 2017; Wiese-Bjornstal et al., 2015). In a reviewing of the psychological implications that can result from sport-related concussions, Covassin et al. (2017) found that topics like mood disturbance, anxiety, depression, and suicide have all received empirical attention in relation to concussed athletes. Additionally, Wiese-Bjornstal et al. (2015) developed a conceptual model to hypothesize the types of psychological responses that

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occur following sport-related concussion. Building off of their earlier model of musculoskeletal injury, the authors argued that personal (severity of injury and individual physical and psychological differences) and situational (social and environmental) factors will influence the athlete's cognitive appraisal and emotional and behavioural responses to concussion.

At their most recent consensus meeting on concussion in sport, McCrory et al. noted that sport-related concussions remain "... among the most complex injuries in sports medicine to diagnose, assess and manage" (p. 839). Part of what makes concussions complex is the subjective nature of the injury. For instance, symptom intensity and duration can vary between children and adults (Davis et al., 2017), between men and women (Sandel et al., 2017), and there is evidence that factors such as history with the injury (Putukian et al., 2018) and pre-existing neurodevelopmental factors (e.g., attention deficit hyperactivity disorder; Iverson et al., 2016) can impact symptom duration and/or severity. Further, concussion diagnosis and management are reliant on athletes accurately disclosing their symptoms. This is problematic because estimates suggest that as many as 75% of athletes either diminish or do not disclose their concussion symptoms each year (e.g., Kroshus et al., 2020; Sanderson et al., 2017). Kroshus et al. (2020) surveyed 328 collegiate athletes (174 females) and found that the most commonly reported reasons for not disclosing a concussion were "I did not want to leave the practice or game", "I did not want to let my teammates down", and "I thought I would be held out of practice/play even when I thought I was ready to return". In another study, Sanderson et al. (2017) investigated concussion disclosure of 529 collegiate athletes (365 females) and found that "conforming to sport cultural norms" was reported as a reason for continuing to play with a suspected concussion. The authors interpreted responses such as "I sucked it up and continued to play" and having a "tough guy mentality" as being related to the *pain principle*, a concept that refers to athletes being stigmatized as weak or lacking in toughness if they were to remove themselves from play due to injury (Sabo, 2004). Indeed, this is consistent with the *culture of risk* in sport (Donnelly, 2004; McGannon et al., 2013), which stems from the idea that playing through pain and downplaying risks is embedded within the sport ethic of sacrificing for the game (Hughes & Coakley, 1992; Donnelly, 2004). In sum, these are but some of the factors that contribute to complexity and subjectivity of concussions and reinforce the notion that we are still learning about how psychosocial deficits impact concussed athletes (Kontos, 2017).

Recent work points to growing interest in the social dynamics involved in the recovery and return to sport (Caron et al., 2017; Dean, 2019; McGuckin et al., 2016; O'Rourke et al., 2017). Caron et al. (2017) conducted a qualitative investigation of on female university athlete's experiences with concussion symptoms that persisted for 12 months. Through the use of photo-elicitation and audiologists, the authors captured the participant's identity construction/negotiation and social isolation. The theme "identity loss and negotiation" encompassed the female athlete's struggle to (1) continue to be the person she was and (2) the person who she was becoming, a finding that has previously been discussed in the athletic identity literature (Ronkainen et al., 2016). In terms of social isolation, the female athlete provided a metaphorical description of "feeling like she was in prison" while recovering from her concussion symptoms. Specifically, she noted that her recovery was holding her captive and she could only watch as her peers and teammates continued to work towards their academic and athletic goals. In another study, McGuckin et al. (2016) interviewed five adolescent female hockey players to better understand the role of social influences when they were returning to sport following a concussion. When reflecting back on their experiences, athletes reported that their interactions with members of their social environment were largely positive during their concussion recoveries. That said, some of these adolescent athletes reported feeling pressure from siblings and parents to resume playing sport more quickly than they were comfortable with, a finding also reported among collegiate athletes (Kroshus et al., 2015).

Although these studies provide preliminary insights about the social dynamics that appear to be involved in athletes' recovery and return to sport following a concussion, it is also important to situate these findings within previous research on the role of groups in relation to athletes' identities and well-being.

Sport teams are groups with high levels of entitativity (i.e., clear boundaries differentiate members from non-members, frequent social interaction, common goals and fate; Lickel et al., 2000). As such, athletes tend to feel a sense of connection to both their teammates and team (i.e., social identification; Rees et al., 2015). However, athletes' sense of connection and identification with their team can change in response to situational events (Benson & Bruner, 2018). Identity theorists have long been interested in the complex ways in which individuals define their self-concept based on membership in a collective (i.e., social identity) and more granular interpersonal comparisons (i.e., personal identity), as well as the consequences of such identities (Hornsey, 2008). According to the social identity approach, maintaining positive social group memberships following stressful events can be protective against declines in well-being (Praharsu et al., 2017). Indeed, how strongly an athlete identifies with their team (i.e., social identity) connects to a range of positive outcomes such as cohesion (Bruner et al., 2014) and youth athletes' sense of self-worth (Martin et al., 2017). Life events that fracture or disrupt a person's sense of connection to a valued social group (i.e., social identity loss), however, may precipitate declines in well-being (Praharsu et al., 2017). Drawing from the concept of *normative fit* in self-categorization theory (Hornsey, 2008), an injured athlete may experience a decline in social identification as a team member due to their inability to engage in normative social behaviours associated with group membership (e.g., practicing, competing in competitions). If athletes feel disconnected from their team and/or confused about their newfound role as an injured athlete, this could exacerbate the difficulties associated with sport-related concussions. Further, given the previously discussed culture of risk in sport, athletes may engage in risky behaviours such as concealing concussion symptoms (Graupensperger et al., 2018) in attempts to maintain or re-establish their place within the team.

In sum, evidence suggests that being embedded within the sport team environment can shape the ways in which athletes think, feel, and behave. However, we know very little about how the social dynamics within sport teams might facilitate or hinder recovery from a concussion. As such, the central research question guiding this study was: what social dynamics are involved in athletes' recovery and reintegration into the team environment following a sport-related concussion?

## 2. Methods

We used a qualitative approach to explore our research question. Two recent reviews provide insights to help researchers engage in quality qualitative work in sport and exercise (McGannon et al., 2019; Poucher et al., 2020). One suggestion was that researchers should clearly articulate their philosophical positioning. With respect to our ontological positioning, however, we found it challenging to agree on the terminology to frame our collective position. See the supplemental file for details regarding our differing ontological assumptions (i.e., relativism, critical realism). Our authorship team came to understand that the way in which two members of our team interpreted ontological relativism and how three members of our team interpreted critical realism fit within a consistent paradigmatic (interpretivist) and epistemological (subjective/transactional) position. That is, we viewed the knowledge generated in this study as being co-created between our research team and the participants. We do not make an attempt to try to separate ourselves from our past experiences. Rather, we outline our collective experiences in the 'interviewer and research team' section for readers to better understand our role in interpreting participants' experiences in this study. We held meetings throughout the data collection, analysis, and interpretations of the study findings to ensure that we

were adhering to a coherent set of philosophical assumptions. We highlight the challenges we encountered articulating our ontological positioning to (1) present ourselves authentically and (2) in the event that sharing this information is helpful to other research teams who experience similar challenges.

### 2.1. Participants

After receiving ethical approval from our university research ethics council, we solicited the participation of three ( $n = 3$ ) “high-status” Canadian university athletes, who suffered a concussion and returned to sport. We contacted high-status athletes at our institutions via email who we knew had suffered a concussion within the past 12 months. In this paper, we use the term high-status in reference to an individual who is a starter on their team and who occupies a highly influential role (Boroumand et al., 2018). We sought out high-status athletes working from the assumption that an injury to one of those athletes would disrupt team functioning to a greater extent than an athlete who occupied a less significant role on their teams (Surya et al., 2015). Meetings with athletes occurred in person or over the phone and, on average, were 40 min in length. Near the end of each meeting with the high-status athletes, we asked them to identify a coach and teammate who could provide insights about the athlete’s concussion experiences given their relationships with them (see Table 1). The meetings with coaches and teammates occurred in person or over the phone and lasted approximately 25 min in length. In total, three athlete-teammate-coach triads participated in this research ( $N = 9$ ). To help protect the confidentiality of participants in this study: (1) each participant was assigned a sex-matched pseudonym; (2) the sport in each triad was changed; and (3) any other potentially identifying information that was shared with us during the interviews (e.g., names of universities, locations) were also modified.

### 2.2. Data generation

Participants were interviewed individually. We created two interview scripts to guide the conversations with participants; one for athletes and one for teammates and coaches. The main difference was that the conversations with athletes focused on their own concussion experiences, whereas we asked teammates and coaches to comment on their perceptions of the athlete’s concussion experiences and provide contextual information about the team environment. We interviewed

**Table 1**  
Demographic information of each participant, including their relationship with the athlete.

	Cassie’s Story (Rugby)	Jess’s Story (Soccer)	Jaden’s Story (Basketball)
Athlete	<i>Cassie</i> <ul style="list-style-type: none"> <li>• League All-Star</li> <li>• Suffered concussion beginning of 2nd year</li> </ul>	<i>Jess</i> <ul style="list-style-type: none"> <li>• League All-Star</li> <li>• Suffered concussion in 4th year</li> </ul>	<i>Jaden</i> <ul style="list-style-type: none"> <li>• League Rookie of the Year</li> <li>• Suffered concussion at beginning of 4th year</li> </ul>
Teammate	<i>Ashley</i> <ul style="list-style-type: none"> <li>• Joined the team at the same time as Cassie</li> <li>• Was also her roommate</li> </ul>	<i>Amanda</i> <ul style="list-style-type: none"> <li>• Joined the team at the same time as Jess</li> <li>• One of the team’s captains during Jess’s concussion</li> </ul>	<i>Alex</i> <ul style="list-style-type: none"> <li>• Played 4 seasons with Jaden</li> <li>• One of the team’s captains during Jaden’s concussion</li> </ul>
Coach	<i>Mike</i> <ul style="list-style-type: none"> <li>• More than 15 years on the university team coaching staff, including 5 years as head coach</li> </ul>	<i>Robert</i> <ul style="list-style-type: none"> <li>• Former high-performance soccer athlete</li> <li>• More than 5 years in current head coach role</li> </ul>	<i>Patrick</i> <ul style="list-style-type: none"> <li>• Student-coach during Jaden’s tenure</li> <li>• Now the assistant coach of the team</li> </ul>

teammates and coaches because we felt they would be in a better position to provide contextual details about that time period because the athletes were likely focused on their own recovery.

There were four main sections for both interview scripts (see supplemental online material). Using the “Athlete” interview script as an example, the sections included: (a) *pre-concussion context questions* (e.g., “Can you please describe what your role was prior to your concussion?”), (b) *initial response to injury event* (e.g., “What type of expectations did you have about returning to the active roster?”), (c) *post injury re-integration process* (e.g., “What were some of the interactions that really ‘stick-out’ to you about re-joining the group?”), and (d) *concluding remarks* (e.g., “Would you like to add anything further to our interview?”). We created the interview scripts to guide conversations, but we were also flexible to allow participants to focus on aspects of their experience that they believed were important. In instances where conversations began to stray too far from the purpose of our research, we attempted to gently direct interviewees back towards the interview question.

#### 2.2.1. Interviewer and research team

The interviews were conducted by LM, who was a former Canadian university athlete for four years. We agreed that LM was the appropriate member of our team to lead the interviews because she had an insider perspective, which helped with participant recruitment and to establish rapport/facilitate dialogue during the interviews. Once the data were collected, all of the authors were involved in the analysis, so we thought it was appropriate to briefly describe our (relevant) collective experiences for the reader. JC and RS primarily consider themselves to be sport-related concussion researchers, and they each experienced injury, including concussions, as university student-athletes. Throughout the research process, JC and RS wish to highlight that they were influenced by their personal injury experiences as well as by research and theory from the fields of sport-related concussion and psychology of athletic injuries. AB and MB consider themselves to be group dynamics researchers who have experience in university sport as athletes and working with elite teams. As a result, the interpretations made by AB and MB were shaped by research and theory on roles and social identity in groups and organizations, in addition to their experiences in sport. Finally, JC and MB also work with athletes and teams as sport psychology professionals. We highlighted our personal and professional experiences in this section to provide readers with a better understanding of our role in the co-construction of knowledge in this study.

#### 2.3. Data analysis

We followed recommendations for conducting a thematic narrative analysis (Smith, 2016; Smith & Sparkes, 2009). The goal of thematic narrative analysis is to identify themes (and relationships between themes), with the goal of creating one or more stories (Smith, 2016). We analysed each triad separately to identify one story based on each athlete’s experience because, just like concussion injuries, human beings are complex, and narratives allow researchers to explore the complexities of people as social and individual beings (Smith & Sparkes, 2009). Once the audio recordings of the interviews were transcribed and stored using NVivo 12 (QSR International Pty Ltd), JC and RS began the analytic process that Smith (2016) refers to as *narrative indwelling*, which involved familiarizing ourselves with each triad. Using Cassie’s story as an example, we read and analysed Cassie’s (athlete) interview transcript, followed by Ashley’s (teammate) and Mike’s (coach) transcripts. During this process, we would write down our initial impressions of the interview transcripts, including any information that stood out to us. An example of that type of information would be when members of the same triad had different interpretations or opinions about the same event.

The next step of our analysis was to *identify narrative themes and thematic stories*. For each triad, JC and RS began by identifying initial

narrative themes and/or stories from the athlete's transcript before proceeding to the teammate and coach transcripts. When engaging in this step of the analysis, we found that two of the athlete's stories contained multiple narrative themes that were situated within a larger story of their experiences reintegrating into the sport environment following a concussion. For the other athlete's story, we felt that there was one key theme throughout their concussion experience.

RS then created a timeline for each athlete's story that amalgamated themes and/or stories from each member of the triad. We used a combination of handwritten notes and an audio-visual presentation software, allowing us to visualize the narrative themes and stories generated within each triad. After determining the themes and/or stories that we felt best represented each athlete's story, RS began verbalizing each athlete's story using an auto-dictation function. After editing each story for clarity, JC and RS worked together to develop an initial draft of the stories. Subsequently, the entire research team worked together on developing each athlete's story. Key quotes were later inserted into each athlete's story.

A final point about the thematic narrative analysis carried out in this study is that we chose to share these stories through the lens of story 'analyst' rather than as the story 'teller'. Smith (2016) noted the importance for researchers to explicitly state their positioning when sharing narrative stories so the reader can properly situate themselves within the story. We decided that it was most in line with the purpose of this research to focus on the athletes' experiences as told by the members of each triad. Although we, the research team, insert our voice in certain aspects of the stories (e.g., by sharing our interpretations, perspectives, etc.), we believe that these stories were most authentically interpreted and shared by our team through the lens of the story 'analyst'.

#### 2.4. Quality standards

We followed Burke's (2016) "relativist approach" to demonstrate the quality of our study. We believe this was a methodologically congruent approach given that a relativist approach is aligned with the "... assumptions held by constructionists, interpretivists and critical researchers" (Burke, 2016, p. 334). As such, we would like readers to use the following criteria to judge the quality of our study: *width* and *transparency*. We demonstrated *width*, which Burke described as the comprehensiveness of evidence, by gathering data from multiple perspectives to better understand each athlete's story, and by providing a number of quotations in the athletes' stories. In terms of demonstrating *transparency*, we have articulated the backgrounds of our research team as well as the decisions made throughout the process of generating data and interpreting the findings. We hope that readers will agree that transparency was a strength of this study and, as such, that they can have confidence in the level of care and introspection with which we approached this study.

### 3. Results

Within each story, we begin by sharing background information about the athlete, how their concussion occurred, and their relationship with other members of the triad (see Table 1 for information about each participant in this study). For direct quotes in each story, we credit the person who shared the quote by noting their pseudonym. Immediately preceding each quote, we identify the question (or prompt) posed by the interviewer in an attempt to demonstrate the co-construction of knowledge that occurred during the interviews.

#### 3.1. Cassie's story

Cassie was among the best players on her university rugby team as a 1st year athlete. Her coaches and teammates identified her as a leader because of her stellar on-field performances as well as an ability to

connect with teammates. Cassie had a strong relationship with the teammates she lived with, and they were important individuals in Cassie's life. Unfortunately, Cassie experienced a string of serious concussions, including one instance requiring hospitalization. Cassie missed two full seasons as a result of her concussions, which was challenging for her because she was forced to transition from being a star athlete to watching from the sidelines. As she noted during the interview, "I didn't know who I was anymore. It was kind of [like] a loss of identity." The shifting identity also adversely impacted her relationship with the teammates she lived with. Although Cassie returned to play in her fourth year of university, many things changed since she last played rugby, including the type of player and person she was. We found two major plot points in Cassie's story that centered around her transition in roles. The first is Cassie's experience transitioning from athlete to the dual role of student assistant coach and team manager [assist with the day-to-day management of team]. The second is related to Cassie's transition back to being athlete after missing two seasons.

##### 3.1.1. "She was part of the team ... but in a different way"

Knowing that Cassie had a very strong bond with her teammates before her concussion, Mike (coach) wanted for her to stay involved with the team. He offered her the dual role of team manager and student assistant coach while she was unable to play. When asked to comment on Cassie's position as a student-assistant coach, Ashley (teammate) discussed how Cassie's teammates perceived her new role on the team.

*Ashley:* Honestly, I'm gonna say I didn't see her as a teammate anymore because she wasn't out on the field and stuff with us. But I would never say she wasn't part of the team. I don't know if that makes sense ... she was part of the team but in a different way.

While interpreting Ashley's comments, we sensed that Cassie's teammates wanted to make her feel like she was part of the team but perhaps did not understand the best way to show their support, which, understandably, would have been a difficult situation for Cassie's coaches and teammates. In any case, Cassie's new role impacted her relationship with her teammates.

As Cassie's role and identity were shifting as a result of the concussion, so, too, were her emotions. Cassie felt that she often had to distance herself from her teammates (who were also her roommates) because of her lack of emotional control, which she attributed to her concussion. We sensed that Cassie's teammates did not know how to support her through these changes. As Cassie noted, "I'm going to make [my roommates] sound super evil—but they weren't very supportive for the most part. [...] sometimes they would do things purposely because they knew I would freak out." Although Cassie jokingly refers to her roommates not being overly supportive while she was symptomatic of concussion, being unable to count on her roommates for support must have made her recovery all the more difficult.

Cassie described that she was able to find other sources of support. For example, Cassie described having positive interactions with a sport psychology professional and athletic therapist, who both worked at the university. Cassie noted that she felt both individuals understood her injury and the emotional symptoms she was experiencing. Cassie described that [name of sport psychology professional] was a particularly important source of emotional support for her during her recovery from concussion, while also helping her to develop mental skills that allowed her to regain some control over her emotions. Cassie was not certain that she would have been able to make it out of the "dark hole" she was stuck in during her recovery, if not for that individual.

*LM:* Do any experiences kind of stand out in your mind during that journey back?

*Cassie:* Yeah, actually. A major contributor—not just in my return back to sport but also my quality of life in general—is [name of sport psychology professional]. She played a major role in getting me back

on the field but also in me being alive today. Because I was just in such a downwards loop and I was in a very great depression. I don't know if I would have crawled out of there alone. So she was that spark to get me back up and running again. I'm grateful for her. She was a really big part in my life.

### 3.1.2. “[We called her] a rookie again because she hadn't played for so long”

When Cassie eventually decided to return to play in her final year of her undergraduate studies, she once again had to shift her role and identity. This time, however, the shift was from being the team manager/student-assistant coach back to being an athlete. Although Cassie felt ready to get back on the field, her coaches and teammates were less certain. They were concerned for Cassie—both in terms getting hit in the head again and because of her new status on the team. Although she was not a rookie, Cassie likely experienced a challenging time reintegrating into the sport environment because she had to (once again) balance the many demands of being a university student-athlete (academically, athletically, and socially), transition from her previous role on the team, and re-establish herself as an athlete on the team.

When Cassie returned to the team, she was not getting much playing time, and there were times when she did not travel with the team. It must have been a drastic change for her—going from an important player on the team early in her university career to mainly being a reserve player. This could have been why Cassie's teammates jokingly referred to her as a rookie. Based on the three interviews, Cassie's new role as a reserve player seemed to create tension between her and her roommates, who were now veterans and starting players on the team. Ashley explained how Cassie's new role on the team impacted their relationship:

*Ashley:* I was worried for her that [recruits] were gonna come in [to training camp in better shape] and that, you know, she was just gonna be disappointed. But she was put in some of the games. It was a questionable thing sometimes. It's like, 'Are we bringing her on the road? Are we dressing her this weekend?' That was tough, and it was kind of awkward as roommates again. Because there was four of us [rugby players] in the house. So, imagine, say, three of us dressed and she didn't.

LM: Right.

*Ashley:* Right? So that made for some tension, but nothing you can't get over. It's just how girls are. It's not like you're upset at anybody—it's just tough. You don't know what to say. You try to say the same things [but] then you feel like a broken record. But you're gonna try to make your friend feel better. I think that was tough for her to kind of accept sometimes but she pushed through though.

Given how common it is for teammates to live together as roommates in university sport, it is easy to imagine how Cassie's situation, and the associated emotions, could linger from the team environment to the house (and vice versa). This situation would have likely been omnipresent in the lives of all of the roommates, and would have undoubtedly impacted their relationships as teammates, roommates, peers, and friends—not to mention residual impacts on team functioning.

## 3.2. Jess's story

Jess was the starting goaltender of her university soccer team. Early in the season, the team's second-string goaltender sustained an injury, which meant that Jess's back-up for the season would be the team's third-string goaltender. Through our conversations with Jess, Amanda (teammate), and Robert (coach), it was clear that the third-string goaltender was much less experienced, making Jess's concussion detrimental for the team's chances for success. Jess described two separate incidents that occurred in games—one week apart—that resulted in her

concussion diagnosis. Jess recalled having a minor headache after the first hit but that she felt fine otherwise. However, after the second collision, Jess said that she started vomiting and became unconscious.

Aside from being concerned for Jess's health, we felt that Jess's teammates and coaches were equally concerned about how Jess's absence might impact the team's performance. Through our analysis of the conversations, we felt that “pressure” was the main plot point of Jess's story. The way we interpreted Jess's story was that she experienced pressures both internally (based on her personal goals and expectations) and externally (by teammates and coaches) to perform at a high level for her team to have success. These same patterns of internal and external pressures were also present and seemed to characterize her recovery from concussion.

### 3.2.1. *Because you are stuck between what you're feeling and [...] 'we need you back'*

Jess's teammates and coaches described feeling uneasy about their goaltending situation before the season. Amanda mentioned that the team had discussed what might happen if Jess became injured “... if Jess were to ever get hurt—we talked about this at the beginning of the season—it would be devastating.”

LM: So, obviously [Jess] was significantly injured. Can you describe the general feeling within the dressing room after that?

*Amanda:* Everyone was thinking of the future. And thinking about how [Jess] was at the moment. She went out in an ambulance, so the general consensus was pretty worried. Also, about the future of the team, with Jess being hurt, that is a huge blow.

Given the severity of Jess's concussion, we were surprised to learn that Jess returned to playing soccer soon afterwards. One of the main reasons appeared to be that Jess placed a great deal of pressure on herself to get back into the lineup as quickly as possible. When asked Jess about her own expectations about returning to the lineup, she said:

*Jess:* Yeah, I mean obviously it was tough coming back from an injury like that. You have to be careful. You don't want to come back too early. But at the same time, I was pretty eager to get back 'cause, you know, we were doing pretty well, and we were on a roll. You know, I think I put a lot of pressure on myself, you know, being the starting goaltender. I really wanted to make a difference with the team, so I don't think I rushed back in ... But, you know, it was a pretty fast recovery for a severe injury. But my expectations were to get back as soon as possible.

Although Jess did not state it explicitly, her comments implied that the pressure to return to the team stemmed from not wanting to let her teammates and coaches down. Jess was aware that her absence would force the third-string goaltender into the lineup. However, the pressure that Jess felt was not only internal. Through our conversations with Amanda and Robert, it became clear to us that Jess was under subtle external pressures from team members to return to the lineup as quickly as possible. Take, for example, the following response from Robert, after being asked to share his perspective on reintegrating athletes into the team environment following a concussion.

*Robert:* Umm my advice would be to ... umm ... would be to actually downplay [the concussion] a little bit. Because I think the more you talk about it, and the more you make special adjustments for players, my personal feeling is the more they feel the injury ... You know, if you can eliminate, you know, the talk about it and everything like that—I think it allows [players] to just go about their day-to-day routine a little bit more easily. And it allows them to heal quicker.

We got the sense from his comments that Robert was hesitant to share his perceptions of reintegrating athletes into the team environment following a concussion (e.g., “... umm ... you know ...”). Perhaps it

stemmed from being aware that his comments were not in line with socially normative coach perceptions of concussions? As we reflected on his comments, we wondered about the impact of coaches who hold those types of beliefs with team members with whom they interact daily (athletes, other coaches, training staff). We also wondered how an athlete, like Jess, whose absence would likely adversely impact the team's success, might feel about interacting that same coach while recovering from a concussion.

Despite wanting to get back on the field and help the team win, Jess spoke about feeling fearful of reinjury upon her return to sport. When asked to think back to the process of re-joining the team, and if there was anything that really stood out to her about that process, Jess noted:

*Jess:* Umm, I think the first game back was a little nerve-racking. Just in the sense of ... You kind of think of everything. Like, kind of the fear [of wondering whether] you are actually okay. If it was just going to happen again. Or, 'cause, you know, Second Impact Syndrome<sup>1</sup> is pretty serious. I had a lot of conversations with my doctor about, you know, 'If you get hit again, it could be very serious. This could be a career-ending, or even a life-threatening, situation.' ... So, I think that was weighing on me pretty heavily.

Based on our analysis of Jess's story, it was clear to us that she experienced a combination of internal and external pressures, and that the external pressures she experienced did not necessarily stem from "outright" comments from teammates or coaches.

### 3.3. Jaden's story

Jaden was a go-to player on his university basketball team. He was also well-respected by his teammates and coaches because, as Patrick (coach) noted, "Jaden was the fun, lovable, goofy, make-everyone-in-the-room-laugh kind of character. And he did a great job of helping to integrate some of our younger athletes [into the team]." However, after being named to the All-Star team in his first university season, Jaden sustained a number of injuries during his second and third seasons, which limited his ability to influence the team's on-court success. Although Jaden remained an influential member of the team, his strong personality seemed to be a bit of a double-edged sword. As Alex (teammate) noted, "[...] Jaden sometimes is a little bit opinionated. He just believes in his own way; his way or the highway."

Alex and Patrick praised Jaden's commitment of training prior to his fourth and final year. Unfortunately, during an exhibition game early in the season, Jaden was involved in a collision and, in total, he would end up missing more than one month of practices and games due to concussion symptoms. Through our analysis of the three conversations that comprised this triad, there appeared to be tension between Jaden and his teammates/coaches during the recovery from concussion. Everyone agreed that it was best if Jaden took the necessary time to recover and then return to play before playoffs. However, Jaden did not feel that he received the type of support he wanted from his teammates and coaches. Conversely, and, from our perspective, interestingly, Alex and Patrick believed they were giving Jaden the support that he needed at that time—not necessarily the support he wanted. This disconnect, and tensions that arose during Jaden's recovery, form the basis of this story.

<sup>1</sup> Second Impact Syndrome is the rare but devastating consequence of suffering a second concussion before the symptoms of the first concussion have subsided (see McLendon et al., 2016). There is a well-known case of Second Impact Syndrome in Canada, which involved 17 year-old Canadian rugby athlete Rowan Stringer (Tator et al., 2019). Based on Jess's comments, we inferred that Jess and her medical doctor were discussing the Rowan Stringer incident as a way to educate Jess about the potential implications of returning to sport too soon after a concussion.

#### 3.3.1. Unfortunate case of broken telephone?

*LM:* So, if you compared your experience to other teammates who also had a concussion, in which ways do you think your experiences were similar or different?

*Jaden:* Umm, I think my experiences were a bit different in the fact that mine was just a bit longer. For them it was short—a week and a bit and they were back. But for me it was twice or three times or four times [as long]. So, people were just wondering "Oh are you ready to come back?" Like, "does your head hurt really bad?" The hardest questions. People didn't know when I was coming back and [they would] get kind of impatient for me to come back because they wanted me out there. So, it was kind of like people were frustrated with me. Like, that's not fair.

Jaden was clearly frustrated with his lengthy concussion recovery, which was different than what he had witnessed with his teammates. Perhaps most troublingly for Jaden was that he felt that his teammates did not understand what he was going through. When speaking with Patrick, however, we learned that some of the frustrations that Jaden alluded to could have been caused by some of the information that he was sharing with teammates. Specifically, Patrick discussed some instances where he felt that Jaden would embellish parts of his recovery.

*Patrick:* [...] Jaden is the type of person who likes to talk about himself. And Jaden is the type of person who if there is something minor that might be happening, he is great at elaborating so it may not seem minor to everyone else. So, there were perhaps a few instances where he would be chatting with other players and say, "Well yeah, I am coming back from a concussion and sometimes my head still hurts, and this is what's going on." So, when I had heard about that I had ask him, "Is your head actually still hurting or what? Because I need to know to make sure we are doing our best to look out for you." and then he replied, "No, no I was just kind of chatting a little bit. And, you know, maybe I just didn't frame it the right way."

Through our analysis of this triad, we felt as though some of the tension that existed between Jaden and his teammates and coaches resulted from an unfortunate game of broken telephone. We could not discern whether Jaden's feelings of frustration towards his teammates were warranted or not. That is, were his teammates constantly asking him for updates on his health out of genuine interest regarding his health? Or, as Patrick alluded to in the quote above, was it because Jaden had been circulating inconsistent messaging about his concussion recovery?

#### 3.3.2. "... a really big foundation of our team is accountability"

In speaking with Alex and Patrick, it was clear that holding players accountable for their actions was core to their team's values. We sensed that Jaden's teammates and the coaching staff wanted to make sure they were both supporting Jaden throughout his return to sport, but also holding him accountable if/when he engaged in behaviours contrary to his recovery. This was a point that Alex and Patrick both made during our conversations with them:

*LM:* What were your expectations for Jaden when he was returning to the group?

*Alex:* From a social or athletic perspective?

*LM:* Let's do both. Social first.

*Alex:* So, we made sure he was fully clear of his concussion before he partook in any formal and informal team activities. Like, if we knew you [speaking about the interviewer] were concussed, we wouldn't come play video games with you. And, so, the guys would be very cautious of that until Jaden was medically cleared.

In a similar manner, Patrick spoke about the importance that he and other members of the coaching staff placed on keeping Jaden accountable during his recovery.

LM: So, in general, what were the expectations of the coaching staff for Jaden when returning to play?

Patrick: We were very much encouraging of him to achieve the goals that he wanted to achieve from the onset of the season, and we didn't want this concussion to derail him from those. To the point of saying, "Hey, we know that you are an avid video game player. But video games aren't necessarily going to help you immediately after your concussion. We know that you like to enjoy your social life, and that you like to enjoy the nightlife. Perhaps it's not the best thing to do paired with video games, paired with the fact you just had a concussion, if you are trying to get back to your goals." So, I think our mindset was always "Remember your expectations of being a part of this team."

We interpreted Alex's and Patrick's comments as being genuinely supportive of Jaden's recovery. But, based on the behaviours they were seeing out of Jaden, Alex and Patrick believed that the best way to support Jaden was to hold him accountable when he engaged in behaviours that thought were incongruent with his recovery. Jaden perceived his teammates' and coaches' attempts to support him in a different manner. This point was elucidated when we asked Jaden to discuss how he would help a future teammate who was concussed:

LM: So, if a teammate of yours has a concussion in the future what will you do?

Jaden: A teammate, I would honestly hang out with them as much as possible. Go over and just talk with them. It would be nice to have social interactions 'cause it's almost like a sideline—well you *are* on the sidelines. But it's almost, like, your whole life is on hold, right? Because you can't go out and see your friends. You can't go out and do things you like to do. But people keep living their lives. It's not like they forget about you. But they are busy. You are almost isolated, so it would be nice for people to take that into account. And I am not saying "be my friend" but [they should] take those facts into consideration.

We interpreted this part of the conversation with Jaden as him projecting his own feelings about his concussion experiences through the example of a future teammate. By suggesting that the best thing a teammate could do for a concussed athlete is to support them, we felt that this was his way of expressing the lack of support he felt from his team. Indeed, it's possible that some of the decisions that Jaden made during his recovery, like playing video games or staying out late socializing, could have stemmed from feelings of isolation or loneliness. The interesting and, from our perspective, unfortunate, part of engaging in those behaviours was that they seemed to be interpreted by his team as not taking his concussion recovery seriously.

#### 4. Discussion

The purpose of this study was to better understand the social dynamics involved in athletes' recovery and reintegration into the team environment following a sport-related concussion. We studied three athlete-teammate-coach triads and presented stories that detailed each athlete's concussion experience. Our findings build upon recent reviews and conceptualizations of athletes' responses to concussion (e.g., Covassin et al., 2017; Wiese-Bjornstal et al., 2015). Notably, our results provide insights into specific social processes that appear to be intertwined with feelings of pressure and readiness to return to sport. Within each story, we presented one to two plot points that we felt characterized each athlete's recovery and reintegration into the team environment. Our discussion focuses on literature related to those plot points, as

well as avenues for future research and potential applied implications.

The main plot point in Cassie's story was her transition in role from athlete to student assistant coach/team manager, and eventually back to being an athlete. These changes in her roles, along with the protracted concussion symptomatology, led to a very challenging time in her life. As roles provide athletes with a sense of who they are (i.e., personal identity; Burke, 1980), how they should behave and their purpose within the team, an abrupt and unexpected role change can be disorienting for an athlete—creating uncertainty regarding one's place within the team as well as how they should act moving forward (Benson et al., 2014; Surya et al., 2015). In the present study, the transition into different roles did appear to be disorienting for Cassie, whereby she described worsening relationships with her teammates (some of whom were also her roommates).

Additionally, we believe that Cassie accepted different roles on the rugby team to remain a member of the group and protect her social identity (Rees et al., 2015). Both theory and evidence borne from a social identity approach indicates that maintaining positive social group memberships following stressful life events is closely connected to well-being (Praharsro et al., 2017). As declines in social identity are connected to declines in well-being (Haslam et al., 2018), it is crucial that support is provided by team members to help maintain and reaffirm athletes' sense of belonging to the group.

Along with the transition in roles that Cassie experienced, she also described a shift in her athletic identity ("I didn't know who I was anymore"). Researchers have found that athletes undergoing abrupt or involuntary career transitions have experienced a disruption or loss of athletic identity (see Park et al., 2013 for a review), including those who have suffered injuries such as concussions (e.g., Caron et al., 2013; Caron et al., 2017; Dean, 2019). Caron et al. (2013) found that former National Hockey League athletes who experienced multiple concussions described a loss of identity due to their forced career transitions ("My identity was stripped from me when I retired, and I had to reinvent myself"; p. 175). Although Cassie was not forced to retire from rugby, she was unable to participate for two seasons because of concussions and, not surprisingly, disrupted her athletic identity. Similar to the athletes in the Caron et al. (2013) study, Cassie appears to have "reinvented" her identity by taking on various roles as an assistant coach/team manager to remain affiliated with the team. The findings align with theory articulating the complex, interwoven interplay of an individual's personal and social identities (Hogg et al., 1995). These results also underscore a need to better understand the relations between personal and social identity in sport (Bruner et al., 2014) and specifically in this study, the disruption or loss of personal and social identity in the case of lengthy concussion recovery. Although taking on other roles on the rugby team appeared to be helpful for Cassie, it is unclear whether that approach would work for all athletes. As a result, there appears to be a need to develop appropriately individualized support strategies to help athletes negotiate the identity disruption (or loss) that can accompany protracted concussion recovery (Caron et al., 2013; Dean, 2019).

The main plot point in Jess's story was pressure to return to sport following her concussion, a point that has previously received attention in the concussion literature from Kroshus and her colleagues (Kroshus et al., 2015, 2018). For instance, Kroshus et al. (2015) found that out of the 324 collegiate athletes they surveyed, 26.5% reported having experiencing pressure from a teammate, coach, parent, or fan to continue playing after sustaining a head impact during the previous athletic season. The authors also found that athletes stratified to the "High Pressure" group (i.e., those who felt a high degree of pressure from the external sources to continue playing with a concussion) were less likely than athletes in the "Low" and "Moderate" pressure groups to report a possible concussion (Kroshus et al., 2015). In the present study, we got the sense that Jess experienced external pressures from teammates and coaches, which led to what she described as "... a pretty fast recovery for a severe injury". An additional source of pressure came from Jess herself, whereby she described feeling an obligation to return

to play as quickly as possible, likely attributable to the important role that she occupied. Although the internal *self-pressures* that athletes place on themselves return to sport to sport quickly have been discussed in relation to musculoskeletal injuries (Podlog et al., 2011), we are not aware of explicit discussions of self-pressures in the concussion literature. Drawing on Donnelly's (2004) seminal work on sport and risk culture, there are biological, psychological, and sociological reasons that must be considered when attempting to understand why athletes engage in risky behaviors. For Jess, her decision to return to play soon after a serious concussion could be explained—at least in part—by psychosocial reasons such as wanting to be admired by teammates for demonstrating toughness or in terms of wanting to obtain emotional rewards like the preservation of the team's shared identity and comradeship. Taken together, our findings suggest there is a need to develop psychosocial interventions to help athletes identify (e.g., focusing on emotional intelligence, self-awareness) and overcome (e.g., working on action planning, self-regulation) pressure-inducing situations, and report possible concussion symptoms to allied health professionals. Such interventions would benefit from the expertise of sport psychology professionals or behaviour change specialists.

When Jess was returning to sport, she described feeling uncertain about how "ready" she was, which is interesting to note given that she had progressed through the graduated return to sport steps and received medical clearance, which is the recommended approach for concussion management. The current return to sport steps focuses almost entirely on ensuring athletes' physical readiness, which ignores psychological aspects of returning to sport (Caron et al., 2018). Exploratory research on athletes with other types of musculoskeletal injuries have found that a lack of psychological readiness has been associated increased competition anxiety, decreased confidence in sport-specific skills, and fear of re-injury (Podlog et al., 2015). Psychological readiness has not yet been explored among concussed athletes (Caron et al., 2018), however there is growing evidence hinting at the variables that could be involved in psychological readiness to return to sport following a concussion such as resilience (Durish et al., 2018) and fear of re-injury (Anderson et al., 2019). The present findings contribute to a limited body of literature on psychological readiness by providing an empirical example of a concussed athlete who questioned her readiness to resume sport participation despite having received medical clearance.

Social support was a contentious issue in Jaden's story. On the one hand, Jaden did not feel as though his teammates and coaches were supportive of him during his concussion recovery, whereas his teammates and coaches felt that they were supporting him by holding him accountable for his actions. Given the variability of concussion symptomatology, and the possibility of a non-linear recovery process, we can see how it would be difficult for teammates and coaches to deliver the right dose of social support for concussed athletes. Different forms of social support—such as emotional support, esteem support, tangible support, and informational support—carry distinct consequences for the recipient (Freeman et al., 2014). Whereas Jaden's teammates primarily discussed the ways in which they provided tangible support (i.e., practical and instrumental assistance) and informational support (i.e., providing advice and guidance) to ensure a smooth transition back into the lineup, Jaden perceived a lack of emotional support (i.e., sense of comfort and security) and esteem support (i.e., other affirming one's sense of competence) from his teammates.

There has been some research highlighting the importance of the provision of social support for concussed athletes (Covassin et al., 2017), however it remains unclear *how* this support should be provided. When interpreting Jaden's story from our perspective as former athletes and sport psychology professionals, we were struck by the practical implications surrounding the notions of accountability for concussed athletes. That is, what are the best ways to support athletes—particularly those who you suspect are not behaving in a way that is most beneficial for recovery? The approach taken by Jaden's teammates and coaches was to highlight their expectations to prioritize recovery rather than offer

emotional and esteem-based social support. Drawing from data from the three triads, there appears to be a delicate balance for the coach and teammates when emphasizing the recovery and expected behaviour, yet also being sympathetic to the athlete's sense of isolation due to non-participation in many social elements including team practices and games. Based on the findings of this research, it appears prudent for teammates and coaches to attempt to provide concussed athletes with a combination of tangible, informational, emotional, and esteem support. In some instances, this may involve coaches finding a role for injuries players to stay connected with the team similar to Cassie.

## 5. Limitations and conclusions

We identified a few limitations to our research that we believe are important to consider when interpreting these findings. First, participants' social reintegration experiences occurred within the context of Canadian university sports, which has distinct academic, athletic, and financial considerations when compared to, for example, university sport programs in the United States and, of course, when compared to elite and professional contexts worldwide. Second, this research involved three athlete-teammate-coach triads and we were only able to conduct one interview with each participant. Additionally, interviews with teammates and coaches were relatively short ( $M = 25$  min). Although we believe that garnering insights from coaches and teammates was a strength of this study, other social actors might be involved in the social reintegration of concussed athletes that were not captured in this research. Future studies may consider exploring other social actors' perceptions in greater detail. Third, we modified the sport type within each triad to help protect the confidentiality of the participants. Knowing that each sport has its own unique culture, we do not believe that the findings of this research should be used to make recommendations or conclusions about concussions or safety practices for the sports highlighted in the stories.

Despite those aspects, we believe this research allowed us to gather a preliminary understanding of the social dynamics involved in concussion recovery and reintegration into sport. Our analysis suggests that the concepts of personal and social identities, feelings of pressure and readiness to return, and the challenges of proving the right amount and type of social support are important considerations moving forward with this research. Studying athletes' concussion experiences through stories, and from the perspective of multiple knowledge holders, was an informative way to learn about this phenomenon. We hope that research will adopt other qualitative research approaches, like the Social Identity Mapping tool, to identify other aspects that should be considered during concussed athletes' recovery and reintegration. Additionally, it would be interesting for researchers to prospectively gather data on athletes' social reintegration experiences following a concussion. Of course, researchers would have to be certain that such procedures would not adversely impact athletes' concussion recovery, but those data would provide additional insights into this phenomenon. Finally, this work may be of interest to sport psychology professionals, who have not typically been included as part of the concussion management/recovery team. One athlete in this study, Cassie, described having important interactions with a sport psychology professional during her recovery. Another, Jaden, and his teammates/coaches, would have likely benefitted from training in effective communication, which could have also been delivered by a sport psychology professional. In sum, we hope that this work will be able to provoke discussion and thought about the role of psychosocial aspects involved in athletes' recovery and reintegration to sport following a sport-related concussion. We believe that this area holds much promise for the field of sport and exercise psychology to become more involved in sport-related concussion research and practice.



## Author statement

JC works in the School of Kinesiology and Physical Activity Sciences at Université de Montréal. AB works in the Department of Psychology at Western University. RS works in the Department of Kinesiology and Physical Education at McGill University. LM works in the School of Human Kinetics at the University of Ottawa. MB works in the Department of Physical and Health Education at Nipissing University.

JC, AB, and MB were involved in all aspects of this research. RS and LM were primarily involved in the data generation and data analysis but also contributed to the writing of the manuscript.

## Declaration of competing interest

We have no conflicts to disclose.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.psychsport.2020.101824>.

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