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Perceptions and Experiences of Psychological Readiness During the Return to Sport After Injury

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Athletes are often given permission by health professionals to return to sport (RTS) after injury based primarily on physical competencies with limited emphasis on psychological readiness (PR). There is no definition of PR consistently used in the literature; therefore, it is imperative to explore perceptions and experiences of athlete PR to understand PR and its influence more accurately on rehabilitation and the RTS process. PR is broadly conceptualized as the dynamic psychological process including factors of realistic expectation, confidence, motivation, and focus (Podlog et al., 2015; Podlog et al., 2022). Athletes who are not psychologically ready to RTS, despite achieving physical healing and functional progressions, may lack motivation and confidence in their abilities (Podlog et al., 2015) and experience anxiety or feel depressed (Tracey, 2003). Some may also fear re-injury (Ardern et al., 2014), worry about future performance (Podlog & Eklund, 2006), incur further injury (McCullough et al., 2012; Webster & Hewett, 2019), or drop out of sport (Ardern et al., 2014). In consideration of these complexities and inadequate evidence of physical parameters alone to determine readiness, the purpose of the study was to explore injured athletes' perceptions and experiences of PR during rehabilitation and after return to competition (RTC). A qualitative phenomenological design employing semi-structured interviews focused on athletes' experiences of PR surrounding the RTS process. Thematic analysis (Braun & Clarke, 2019) with 15 collegiate student-athletes before and after RTC (30 interviews total) produced three themes: focus, confidence, and realistic expectations. Findings highlight the importance of facilitating a more inclusive understanding of PR from an athlete perspective and for researchers and practitioners to consider readiness comprehensively within RTS protocols.

Keywords: Injury, rehabilitation, psychological readiness, return-to-sport

Return to sport (RTS) is the overarching process of a previously injured athlete returning to full participation in sport without restriction (e.g., resumed participation in strength and conditioning activities, sport-specific practice, and competition; Ardern et al., 2016; Creighton et al., 2010; Gómez-Espejo et al., 2022; Rollo et al., 2020). Researchers have used different descriptions to explain RTS, thus demonstrating its complex and dynamic nature. Gómez-Espejo et al. (2022) broadly describe RTS as the point at which an athlete decides to return to sport and competition safely. However, they caution this may not be plausible or realistic due to various external factors (e.g., pressure from coaches and parents, loss of status or eligibility) or contextual factors (e.g., type of injury, sport, level of competition, age of the athlete) noted by Ardern et al. (2016). Mood profile clusters have been examined in the sport and exercise domains, and the typical profile reported among athletes combines high vigor with low tension, depression, anger, fatigue, and confusion scores (Morgan, 1980; Terry, 1995). Conversely, below-average scores for vigor and above-average scores for tension, depression, anger, fatigue, and confusion represent total mood disturbance (TMD), and this profile is associated with overtraining and decreased athletic performance (Terry, 1995). To assess mood in relation to training load, Terry et al. (2007) surveyed athletes from the sports of basketball, golf, hockey, and rowing. Average scores for depression, anger, and fatigue increased as the training load of the athletes increased across all sports. In an endurance setting, the taper period has been associated with a decrease in TMD among cyclists (Zehsaz et al., 2011), rowers (Raglin et al., 1990), swimmers (Raglin et al., 1996), and triathletes (Boucher et al., 2021;

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Margaritis et al., 2003). However, these research studies were conducted with athletes who were tapering for shorter events, such as a mile swim or 40K time trial. Little to no research has been conducted on athletes who are training for endurance events of much longer duration, such as an Ironman triathlon.

Rollo et al. (2020) categorize rehabilitation into two phases: acute injury and functional recovery. The acute injury phase starts when the injury occurs until the athlete slowly re-engages in physical activity (Rollo et al., 2020). Conversely, the functional recovery phase transpires from when the individual engages in rehabilitation until they return to their respective sport (Rollo et al., 2020). As such, RTS would occur throughout the functional recovery phase as progress is seen in rehabilitation, thus promoting a slow return to sport-specific movements and skills (Rollo et al., 2020).

Ardern and colleagues (2016) further delineate RTS on a continuum, ranging from return to practice to return to competition (RTC), in which RTS falls in the middle of such a continuum and follows a graded progression aligned with sport-specific goals. Ardern et al. (2016) use the term return to participation to describe the first phases of RTS, in which injured athletes return to training, whether it be restricted or modified, or return to sport at a lower level compared to pre-injury. Athletes who have returned to participation are able to engage in physical activity or sport participation but are not yet given permission medically to RTS (Ardern et al., 2016). Further, Ardern et al. (2016) describe the RTS phase as individuals returning to their respective sport, having yet to perform at their pre-injury level or desired performance level. The RTC phase further defines the RTS continuum by denoting a functional recovery phase encompassing an athlete's opportunity to meet and exceed pre-injury performance and ultimately grow within their sport (Ardern et al., 2016). Therefore, RTS decisions should incorporate an athlete-centered holistic approach, including psychological factors, throughout the rehabilitation process rather than only at the end of physical recovery (Ardern et al., 2016; Gómez-Espejo et al., 2022; Podlog et al., 2022; Rollo et al., 2020). Haugen (2022) echoes the idea that psychological factors influencing injuries, rehabilitation, and readiness should be addressed in the early stages of rehabilitation and throughout the RTS process.

Athletes are often considered, by rehabilitation staff or other sport stakeholders (e.g., coaches), ready to return to sport after injury with little to no recognition of their psychological readiness in relation to their physical readiness (Ardern et al., 2016; Creighton et al., 2010; Forsdyke et al., 2017). This is an important discrepancy in sport because athletes who lack psychological readiness, despite being given permission medically to return to sport, might experience psychological challenges or adversity when returning, whether it be in practice or competition. These challenges could present as athletes being unmotivated to compete (Ardern et al., 2016; Podlog et al., 2015), lacking confidence in their abilities (Podlog et al., 2015), dropping out of sport, experiencing fear of re-injury (Ardern et al., 2014; Ardern et al., 2016), having fear of future performances (Podlog & Eklund, 2006), feeling anxiety and depression (Tracey, 2003), or sustaining further injury (McCullough et al., 2012; Webster & Hewett, 2019).

As demonstrated by the array of psychological challenges one may experience, understanding the psychological aspects of returning to sport, and thus psychological readiness (PR), is critical for the athlete's success. Currently, no definition of PR is consistently used in sport literature (Podlog et al., 2015). Lack of a clear and consistent definition is problematic as the same phenomenon is not necessarily being addressed in each study. For example, past research on PR has adopted the notion that simply returning to sport is the only criterion for successful psychological recovery from injury (Ardern et al., 2014; Kvist et al., 2013). Rehabilitation staff, other stakeholders, and researchers have adopted this perspective based on the assumption and previous knowledge that if athletes are medically given permission to RTS after an injury and decide to return, they are psychologically ready to compete. Ardern et al. (2016) later elucidate the need for a clear definition of PR while also using the RTS continuum to elaborate on the dynamic nature of both concepts. Therefore, ensuring the concept of PR is understood clearly and utilized appropriately for all injured athletes returning to sport post-injury is paramount for physical and psychological well-being.

PR within the rehabilitation environment is a nebulous concept involving cognitive, affective, and behavioural components interacting with, and influenced by, a multitude of physical and psychological elements operating across time (Forsdyke et al., 2017; Forsdyke et al., 2016; Haugen, 2022; Ivarsson et al., 2017; Podlog et al., 2022; Wiese-Bjornstal et al., 1998). Current literature within the field highlights three psychological factors directly associated with PR: confidence, motivation, and realistic expectations (Podlog et al., 2015). Confidence was noted as a key factor for physical readiness, and notably PR, as it played a vital

role in athletes coping with the injury while minimizing or eliminating fear (Ardern et al., 2012; Haugen, 2022; Podlog & Eklund, 2009). Confidence itself is multidimensional, encompassing the lack of fear of re-injury and the belief that rehabilitation is successful and the injury is physically recovered (Ardern et al., 2012; Haugen, 2022; Kunnen et al., 2020; Podlog & Eklund, 2009; Podlog et al., 2022). Motivation, also described as the willingness to return to sport, was exemplified as achievement during rehabilitation, overcoming adversity, and acknowledgment of successes during the RTS process (Podlog et al., 2015; Podlog & Eklund, 2006). Lastly, realistic expectations referred to athletes' altered judgement and expectation regarding RTS due to stressors (Haugen, 2022; Podlog & Eklund, 2009; Podlog et al., 2015). Realistic expectations allow athletes to acknowledge relapses or delays, understand reasonable timelines for RTS, and have realistic goals and progressions based on physical recovery or abilities (Podlog & Eklund, 2009; Podlog et al., 2015).

It is important to note Podlog et al. (2022) clarified PR as not necessarily an absence of negative states (such as fear of re-injury) or requiring positive states (such as increased confidence exclusively); but rather, there can be, and likely often is, a co-existence of both which can fluctuate over time. Previous conceptualization based on the assumption of an absence of negative states and the presence of positive states has likely contributed to challenges in formulating a consistent definition and the lack of an inclusive view of the elements of the construct. The lack of consensus on the definition, coupled with the varying factors that may contribute to PR, such as the social, individual, and contextual, continues to "muddy" the field and leave questions unanswered (Podlog et al., 2022). As such, the recent review by Podlog and colleagues (2022) proposed an important step toward a more robust definition, including the proposal of a new nomothetic definition of PR.

As seen in the current state of research in PR, it is important to note simply returning to sport does not necessarily mean an athlete is psychologically ready to re-enter competition. An athlete might be motivated to return to sport but lack the necessary psychological skills to cope with the challenges of transitioning from rehabilitation to competition (Podlog & Eklund, 2006). Researchers continue to highlight the need for PR to be considered and assessed in parallel with physical readiness since it is not possible to decide whether an athlete is psychologically ready to return to sport solely based on physical readiness (Ardern et al., 2016; Haugen, 2022; Rollo et al., 2020). Given the complexity of PR, Podlog et al. (2022) offered several useful recommendations for future research employing more qualitative methodologies such as a phenomenological approach and including repeated interviews "to gain a more nuanced understanding of what psychological readiness is" (p. 13). Podlog et al. (2022) further emphasized assessing PR should be done in a similar manner to physical readiness, throughout rehabilitation and before returning to sport, rather than the current practice of only evaluating PR prior to interventions (such as rehabilitation, medical procedures, surgery, etc.). The RTS process, alongside the physical recovery of an injury, does not follow a linear trajectory; therefore, we cannot assume the PR of an athlete will not vary across the RTS continuum. Furthermore, Podlog et al. (2022) recommended future research explore repeated-measure approaches and repeated interviews to understand the temporal nature of PR experienced by athletes throughout rehabilitation and RTS and to understand the optimal time points during such process to assess the construct.

The purpose of the present study was to explore injured athletes' perceptions and experiences of PR throughout the RTS process. To explore athletes' experiences surrounding PR to return to sport, the study was guided by the following research question: What factors contribute to athletes feeling psychologically ready to compete? The study aimed to augment the exploration of athletes' perceptions and experiences to understand PR conceptually from the athlete's perspective. The study examined PR across two time points in an athlete's recovery: prior to return-to-competition (RTC) and after return-to-competition (RTC). The first time point addressed the return to practice phase on the RTS continuum provided by Ardern et al. (2016). The second time point focused on the RTS phase, defined by athletes returning to competition and not by the level of performance achieved, as Ardern et al. (2016) defined it. Thus, the inclusion of two time points of RTS, before RTC and after RTC, provided a novel approach to the process of returning to sport post-injury regarding PR from an athlete-centered perspective.

Method

Research Design

To gain a more in-depth understanding of PR from the participants' perspectives, a phenomenological design was chosen for this qualitative study across two data collection time points. A phenomenological approach is

advantageous to understanding participants' meaning and experiences (Braun & Clarke, 2019; Creswell, 2014; Smith & Sparkes, 2019). Moustakas (1994) describes phenomenological research as looking for the holistic essence of individuals' lived experiences. Therefore, this approach was appropriate for the study of perceptions and experiences of student-athletes transitioning from rehabilitation to competitive sport events (e.g., games). Furthermore, a phenomenological approach emphasizes detailed data collection through dialogue, highlighting subjective meanings attached to individuals' experiences (Moustakas, 1994). A complex, individualized, and widely experienced phenomenon such as PR is conducive to a phenomenological approach, given phenomenology strives to uncover rich detail across multiple participants.

Participants

The authors' institutional research ethics board approved the study. For inclusion in the study, participants must have sustained a moderate to severe "time-loss" injury, defined as being unable to take full part in training and/or competition for a minimum of eight days (Fuller et al., 2006). Concussed athletes were excluded due to uncertain and often lengthy return timelines and the cognitive demands of study participation contraindicated for concussion recovery protocols (Cleveland Clinic, 2020; Ontario Neurotrauma Foundation, 2018). Participants included 15 student-athletes who were current members of intercollegiate sport teams from a mid-sized Canadian university in southern Ontario (*n* = eight males, seven females; M_{age} = 20.7 years, *SD* = 1.8) who sustained a moderate to severe injury. Participants represented the following team sports: basketball (*n* = one), football (*n* = two), ice hockey (*n* = three), lacrosse (*n* = three), and soccer (*n* = six). Injuries consisted of fractures (*n*= two: one fibula; one metacarpal), medial tibial stress syndrome (*n* = two), sprains (*n* = four: three ankles; one medial collateral ligament), strains (*n* = four: one groin; one hamstring; one back; one hip flexor), and tears (*n* = three: one medial collateral ligament; two anterior cruciate ligament). Ten athletes sustained injuries during competition, and five sustained injuries during practice. Nine athletes were out of competition for less than 30 days, and six athletes were out of competition for over 30 days. The shortest time out of competition was 14 days, and two athletes were out of competition for almost one year. The average time between injury and RTC for the other 13 athletes was 31.7 days.

Procedures

The study explored the nature of injured student-athletes' experiences throughout the RTS process with respect to PR post-injury. Semi-structured interviews allowed for emergent flexibility within the current study, helping to limit restrictions on interpretation, guide inquiry throughout the interview process, and permit interview questions to shift as new ideas emerged (Creswell, 2014). Demographic information collected for each participant prior to interview one included age, sex, sport background, and injury history. To understand perceptions of PR and describe athletes' experiences, each student-athlete participated in a one-on-one semi-structured interview twice during the RTS process: once just prior to RTC and once after RTC (first competition since sustaining and rehabilitating from their injury)[1]. Interviews explored participants' perceptions of PR, as well as experiences returning to sport both before and after returning to competition. In most cases, athletes were in the late stages of rehabilitation during the first interview. Interview questions were open-ended to not limit the scope of potential responses. Questions centered on PR, such as "What does it mean for you to be psychologically ready to return to sport?"; "How do you describe psychological readiness?"; "Describe your current readiness to return to competition?"; and "Now that you have returned to competition, describe your psychological readiness?"

Data Analysis

In accordance with answering the research question, data analysis explored what contributes to athletes' perceptions and experiences of PR based on the assumption of reality as subjective and socially constructed. An interpretivist epistemological approach was used to inductively explore factors relating to PR not necessarily investigated in previous literature, including further exploration of the process of PR before and after RTC. It was also used to reflect on the researchers' interpretation of the data (Weed, 2009), as regular reflective note-taking during analysis allowed researchers to interpret how their worldview was inherently shaping the research.

[1] For the purpose of this study, return to competition (RTC) was guided by the Ardern et al. (2016) RTS continuum. As such, time point one, prior to RTC, consists of recovered athletes returning to training within their respective sport, thus return to practice phase; and time point two, after RTC, consists of RTS phase of the continuum.

A thematic analysis, involving searching for patterns within the data (Braun & Clarke, 2019), was essential to explore aspects of PR, specifically looking for significant statements and descriptions of the construct. Thematic analysis is not necessarily concerned with the frequency of emergent themes throughout entire transcripts since that is a quantifiable measure (Vaismoradi et al., 2013). Rather, the analysis focused on capturing participants' lived experiences specifically related to the research question. Further, data analysis used Corbin and Strauss's (2008) coding guidelines involving open, axial, and selective coding methods. Though these guidelines were originally intended for developing grounded theory, they are akin to thematic analysis when coding is not primarily focused on theory development (Braun & Clarke, 2006) as in the present study. Additionally, this approach is suitable for exploratory research aiming to generate new concepts (Delve & Limpaecher, 2022). Both an initial inductive followed by a deductive analysis further conceptualized the process of RTS and RTC with respect to PR. The inductive approach was guided and provoked by the choice of conducting a qualitative study and using a thematic analysis (Braun & Clarke, 2019).

Open coding involved conceptualizing the data and creating tentative labels for related chunks of data, specifically in relation to any response inherently describing PR. Axial coding involved identifying relationships among the open codes, connecting related concepts, and deductively comparing the findings with the current literature. A deductive analysis approach, during axial coding was subsequently used to (1) help organize and define themes and (2) compare the current findings with known literature on PR. As Fletcher (2017) described, current knowledge of known theories and phenomena may not accurately reflect reality and experiences and, therefore, were simply categorized as initial theories rather than concrete ideas for future findings to build upon. The concept of PR and its definition provided by Podlog et al. (2015) and Podlog et al. (2022) served as a guiding tool at this stage to build upon the initial results gained from the inductive approach. Finally, selective coding involved naming the overall themes, coding relevant data with each category, and constructing lower-order subthemes (Corbin & Strauss, 2008). Detailed descriptions of higher-order subthemes were used to complete the construction of lower-order subthemes. By building on the current body of knowledge and using initial results gained from the inductive approach, the study provided novel insights into PR and the RTS process, expanding the theoretical and empirical scope (Timmermans & Tavory, 2012).

All three authors, trained in the field of sport and exercise psychology and qualitative methods, familiarized themselves with the data through transcription (first author) and repeated reading of the interviews (all three authors). The first and third authors then individually analyzed the data using Corbin and Strauss' (2008) methodology. Each interview was analyzed, resulting in a within-case profile for each participant, followed by cross-case profiles to identify similarities and differences among the participants. This process helped ensure all data within a theme demonstrated links and warranted inclusion while additionally ensuring all themes were clearly differentiated (Patton, 2002). Throughout the analysis, the second author served as a critical friend to challenge the findings. Minor disagreements were resolved through discussion, ensuring consensus with respect to themes and terminology. This iterative process of discussion and questioning helped ensure rigor and address potential biases (Corbin & Strauss, 2008; Patton, 2002).

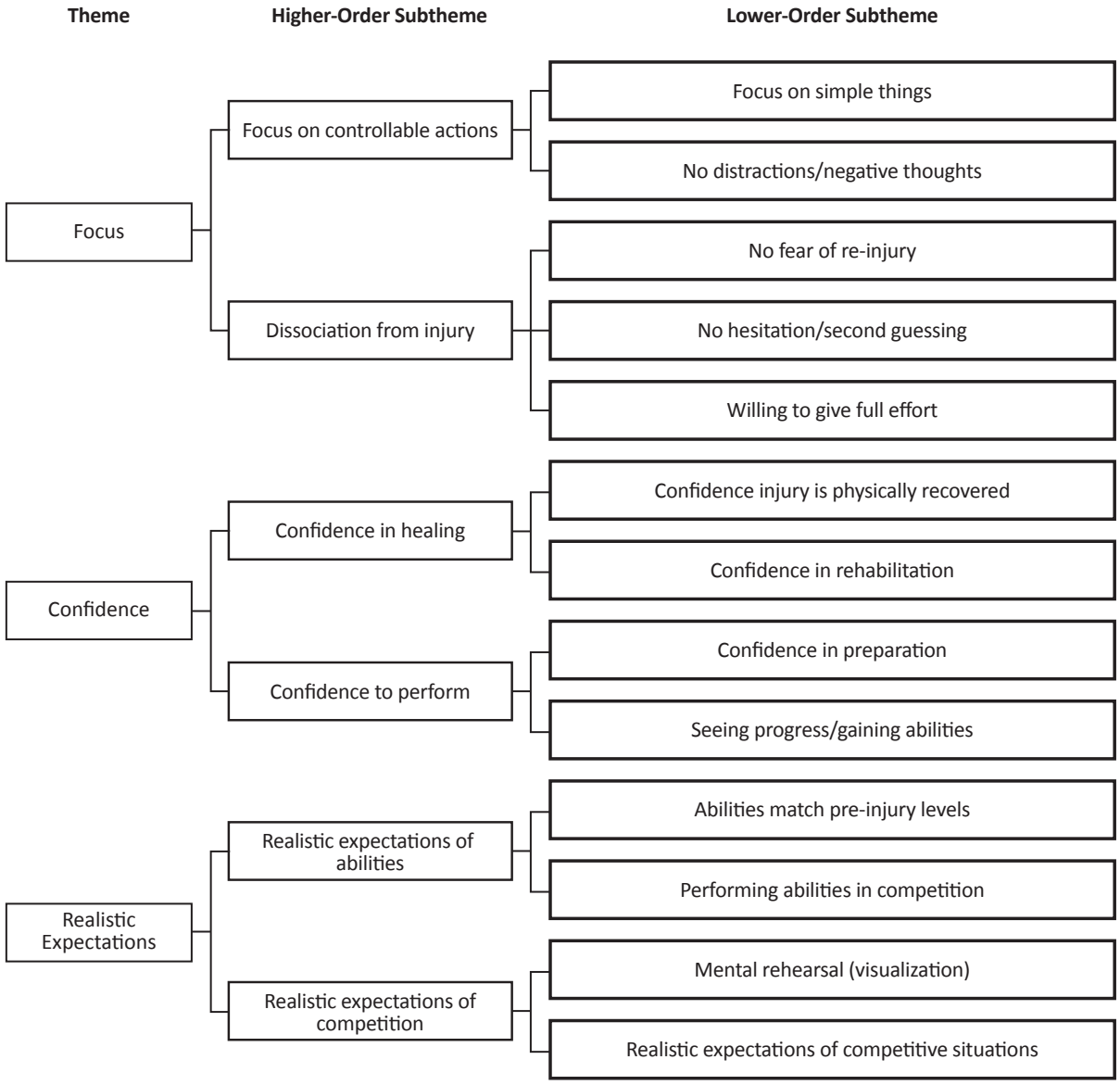
Trustworthiness

Multiple approaches to data analysis enhanced the ability of the researchers to analyze the findings accurately and strengthen the trustworthiness, authenticity, and credibility of the findings. Bracketing was used to acknowledge possible bias the first author (primary researcher) brought to the study, to assess the process of data analysis, and to reduce subjectivity. Analyst triangulation was applied to help build a more "coherent justification for themes" (Creswell, 2014, p. 251), adding to the trustworthiness of the qualitative findings. Patton (2002) defines analyst triangulation as "having two or more researchers independently analyze the same qualitative data set and then compare their findings" to provide "an important check on selective perception and blind interpretive bias" (p. 3). The process added rigor and thoroughness to the analysis and interpretation of findings.

Results

To address the aim of the study exploring injured athletes' perceptions and experiences of PR and to understand the factors contributing to PR before and after RTC, three themes were produced: focus, confidence, and realistic expectations. Within each theme, subthemes were categorized into higher and lower-order subthemes, for before RTC (see Figure 1) and after RTC (see Figure 2).

Figure 1. Main themes, higher-order subthemes, and lower-order subthemes of psychological readiness prior to return to competition (RTC)

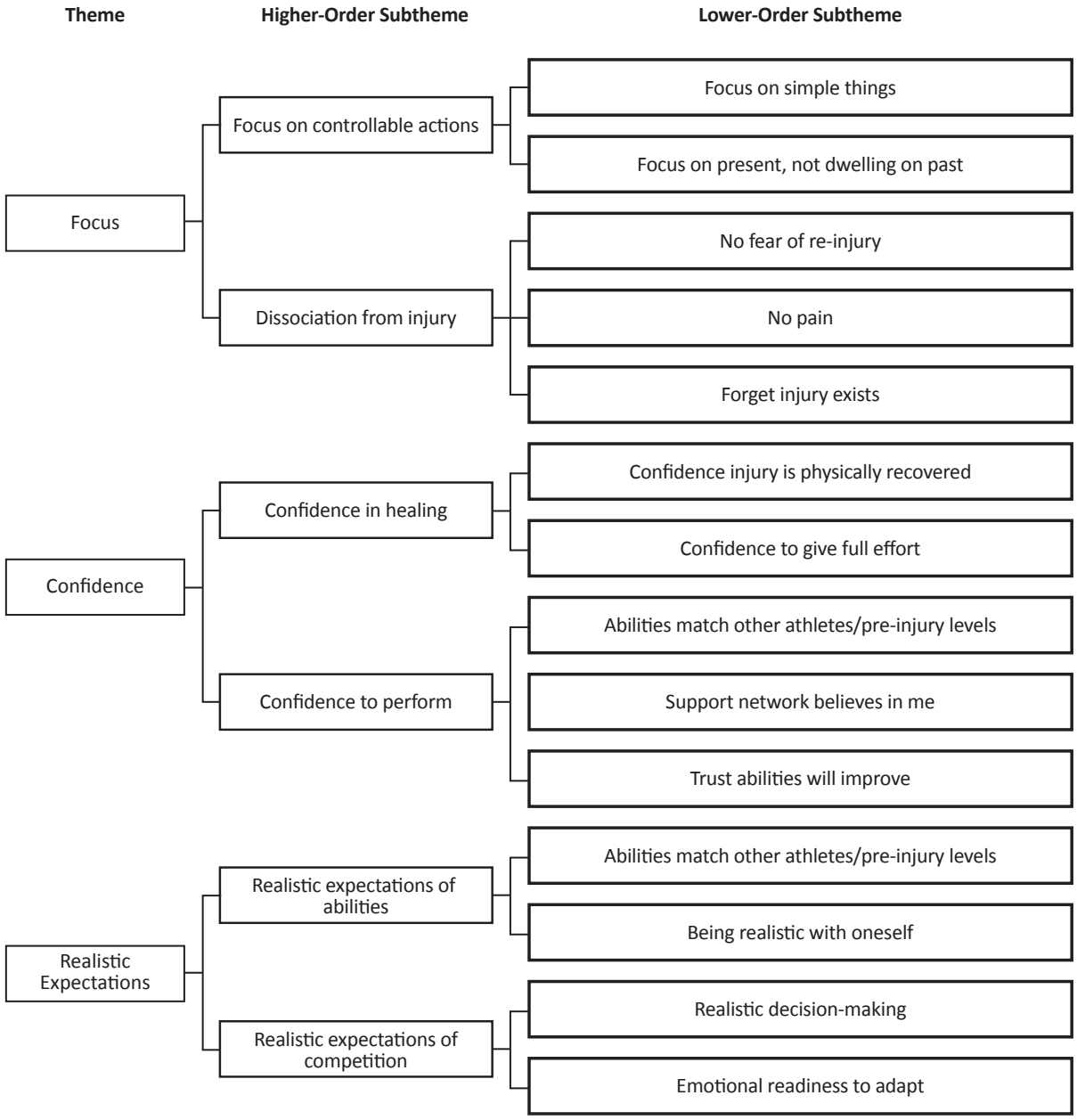


Focus

Participants described themselves as psychologically ready to return to sport when they could remain focused in the present without distraction. The primary distraction leading to feeling psychologically ready was the status of the injury. However, there were also reports of distractions, including overthinking, high expectations, concerns over real or perceived loss of fitness, and other life stresses. For instance, after RTC Julia[2] said, "Honestly, I don't really think I'm psychologically ready yet because sometimes I'll be playing and then I just get this weird thought like, 'What if I hurt my [previously injured part] again?'" Participants also recognized PR as being "mentally prepared," which progressed from reducing "distractions" and "negative thoughts" before RTC to focusing on the "present," "not dwelling" on the past, and "not focusing on pain" after RTC. Results consisted of two higher-order subthemes of focus: (a) focus on controllable actions and (b) dissociation from injury.

[2] Participants were assigned pseudonyms for anonymity.

Figure 2. Main themes, higher-order subthemes, and lower-order subthemes of psychological readiness after return to competition (RTC)



Focus on Controllable Actions

Focus on controllable actions includes two lower-order subthemes before RTC: focus on simple things, no distractions/negative thoughts; and two lower-order subthemes after RTC: focus on simple things, focus on present/not dwelling on past. Being able to remain focused on controllable actions was deemed of vital importance. Before and after RTC, participants felt they needed to focus on the simple aspects of performance instead of attempting more complex skills performed prior to injury. Before RTC, Oliver said, "I'm not expecting to come back and play like I was before I got hurt. I'm expecting to come back, keep it simple, do my job, whatever, and then just build off that each game." LD suggested how he increased his PR by stating, "I think a big part was just sticking with it, keeping it simple to start, and I think that just kinda mentally gave me a boost

to really focus and stay on the right track." A further example is Gina describing her perspective as "looking forward to the next step," where she recognized focusing on what she could do (e.g., dribble, pass effectively) propelled her to feel ready.

In addition to focusing on the simple aspects of performance, athletes reported a need to be fully present. From Isaak's perspective, no one could remain completely focused. Even though he was physically ready, his performance was hindered when his attention was away from sport. After RTC, he said, "If you're a hundred percent, completely one hundred percent psychologically ready, I feel like all your attention and focus, and all your thoughts should be about what you're doing." This idea echoed by Gina described her perspective as, "Not thinking about the injury and not second guessing myself, and not worrying about the bad things, just focusing on where I am."

Participants also expressed individual differences in feeling PR regarding focus needs. For example, before returning to competition, Betty, a soccer player, expressed physical readiness as an essential prerequisite to her PR, "I think first and foremost for me it's just I've always been someone who, when I'm physically ready, I'm mentally ready. So, I need that aspect for everything psychologically." After RTC, Betty made it clear other athletes might not require physical readiness to the same degree to feel PR as she commented, "I don't know if people put in the factor of physically ready into their . . . psychological readiness. I don't know if they correlate the two. I guess it just depends on the individual." Participants made comments aligning with Betty's perspective. Kayley described the importance of concentrating on what she was "capable of" to target what she had control over. Additionally, Harsheen described how she focuses on the present and shifts away from thinking about her shins just before the start of a game:

> When we're doing our warm-ups is when I really feel them because we're not mentally in the game yet. It's just kind of like getting warmed up or watching the rest of the other game that's going on, and that's when I notice it, when we're doing like high knees and stuff. Like coming down with the impact, like they're sore, they're hurting . . . And I do start to get worried; I start to feel not at one hundred percent like ready to go into the game, but then as soon as our sticks are checked, and we're lined up, it always left my head, and I'm fine.

In contrast to Betty's perspective, however, still supporting the individualized nature of PR, Elijah, a football player, did not feel the need to be completely physically ready before being psychologically ready. Prior to RTC, he claimed he was "one hundred percent" psychologically ready but only "sixty-five or seventy percent" physically ready. For Elijah, feelings of PR came from knowing what to focus on and where to be positionally during the game. In contrast, diminished feelings of physical readiness came from being "a step behind" others and not being able to physically move into certain positions.

Dissociation from Injury

Dissociation from Injury includes three lower-order subthemes before RTC: no fear of re-injury, no hesitation/second-guessing, and willing to give full effort; and three lower-order subthemes after RTC: no fear of re-injury, no pain, and forget injury exists. Whether athletes physically felt pain or not, the injury was a source of fear and hesitation, making it difficult to concentrate on the current task. For this reason, several athletes consciously reverted attention away from the injury. Nate made a point of focusing on listening to instructions from the coach more intently and "doing the little things . . . touching up the fine skills" during drills with heightened focus to avoid thinking about his injury. Fiona purposefully focused her thoughts away from her injury by attending to how good running made her feel, "I'm not thinking about my injury when I'm running definitely . . . I feel good." Dissociating thoughts away from their injury was reported during practice, prior to, and during game situations. The night before a game, Oliver said:

> I've just been honestly trying to keep my mind off it as much as possible. If last night I went to bed thinking about it, I think [I] would've been worked up, and . . . second guessing myself. Am I ready? Am I ready? So, by not thinking about it I'm telling myself that I'm prepared and it's just like any other game and just come back in.

In a game context, Harsheen used imagery to focus away from injury:

> I think because the game is so important, I tune it out . . . even if it is hurting, I don't notice it because I'm so focused on what the picture is here that I feel like my shins are like a little picture. Like the little box in the corner that I don't really need to worry about. It's like I gotta focus on this.

For some participants, focusing away from the injury was only possible once the injury was completely healed physically. Before they fully recovered, however, participants expressed being hesitant and fearful of re-injury, which inhibited PR. If hesitation or fear

was present, some participants used a strategy to intentionally dissociate from the injury, described as "faking it" or being willing to "give a full effort" despite the physical limitations and potential consequences. Carson summarized the definitive importance of keeping the injury out of mind by stating, "I think just erasing the idea that you had an injury and stuff, that you're limited with that. I think that's psychological readiness." Consciously not thinking about the injury was expressed as useful to move forward and leave the injury behind, as noted by Derek, who said, "To kinda not think about it, I feel would be a little bit better for me, as an individual, just so I can put everything in the rear-view and just go forward with it." Dissociating thoughts away from the injury described by the participants highlights the active ways in which they focused their "mindset" to be "mentally prepared" to progress forward in their RTS process.

Confidence

Participants expressed confidence in physical recovery and rehabilitation to be a relevant part of PR both prior to RTC and when entering competition. Prior to RTC, confidence in the physical recovery and the rehabilitation process itself was central. Participants then established the need for confidence in their abilities to match pre-injury levels and an overall trust that they would improve once they returned to competing. Once a certain degree of confidence was established in the physical status of the injury, participants felt the need to 'take the leap' into competition to assess their readiness comprehensively. This leap was necessary to instill a feeling or "awareness" whereby they felt psychologically ready to compete again. All participants commented about the intangible concept of sensing something difficult to explain but being acutely aware of it at various points of the RTS phases. For example, when asked about his concerns going into competition, LD said, "You wanna be able to say that you're fully ready for anything, but you don't know until you do it." He continued to explain he does not know his state of readiness until he "makes a mistake" or "gets outperformed" on a play. Once that happened, he could adjust to make sure it did not happen again. Jess also stated she would not know she was ready until she performed in competition:

> I think in . . . the tests and the doctors and the surgery, physically I am good to go, but my mind just doesn't really believe it yet, and so that's why I really hope I can play in a real game because I think that will really help with how I feel. Like I'll just finally know that I am ready.

Results from the present study suggest confidence consisted of two higher-order subthemes: (a) confidence in healing and (b) confidence to perform.

Confidence in Healing

Confidence in Healing includes two lower-order subthemes before RTC: confidence injury is physically recovered and confidence in rehabilitation, and two lower-order subthemes after RTC: confidence injury is fully recovered and confidence to give full effort. For participants to have confidence in their injury recovery to handle the demands of competition, they felt the need to have confidence that the injury was physically ready and would not interfere with their ability to compete. However, participants differed in the degree to which they felt confident with the physical status of the injury before entering competition. Ten out of 15 participants reported feeling more confident handling the ensuing demands after playing at least one game. In comparison, four participants had no change in confidence, and one participant felt less confident. After playing in a game, Carson said, "I think it's just one's ability to go forward without doubt in themselves. I mean, in relation to an injury, certainty that the injury is okay and that it's working . . . that you've recovered." His comment reflects the trust and confidence gained in the healing process upon RTC.

> Both internal and external factors marked confidence in the healing process. Internal factors were behaviours such as using imagery to "see the bones coming back together" in the case of a fracture, and external factors included positive comments from others. For example, Isaak described how he felt and how showing his coach he was capable enhanced his confidence in the healing process:
>
> Until I make the first good pass, or the first good challenge, the first good decision in the game, then you'll realize like, 'Oh I am actually ready' . . . I was just waiting for the first signal that I'll be okay . . . And right when the game started I didn't get on the ball right away so until I touched the ball and did something with it, then I'm like, 'Okay, I'm fine. I'm ready for this, it's okay.' My body was ready for it, everything was ready for it, but in my head I couldn't be a hundred percent until I knew I could do it, and I had to do something first to show that oh I can do it.

For Isaak, having his coach's confidence to perform helped him to feel ready, " . . . it's nice to know that my coach started me right when I came back from injury . . . that's how much he believes in me, he wants to start me. It's a nice feeling". Encouragement from key members of the support network (e.g., coaches, rehabilitation

staff) was mentioned by several participants who acknowledged how much their support systems instilled confidence in the healing process and contributed to feeling prepared to RTC and enter the performance environment.

Confidence to Perform

Confidence to Perform includes two lower-order subthemes before RTC: confidence in preparation and seeing progress/gaining abilities, and three lower-order subthemes after RTC: abilities match other athletes/pre-injury levels, support network believes in me, and trust abilities will improve. Similar to the need to be confident in the physical injury, many participants expressed that confidence to perform sport-specific abilities was essential in feeling PR to compete. Prior to RTC, confidence to perform came from adherence and compliance to the recovery requirements throughout rehabilitation, preparation leading up to competition, and seeing abilities progress. Carson illustrated how confidence in his injury and confidence in his abilities may interact. For him, an optimal level of confidence in both domains was not necessary. As such, it might be possible to have a suboptimal level of confidence in the physical injury if there is sufficient confidence in abilities. According to Carson, "If you can compete and win reps even with a little bit of pain, I think that the confidence builds, in that, 'Wow, my abilities can exceed my injury, like they can defy the odds a little bit." Confidence and trust were echoed by Austin, who tied "trust in self" to being confident around the notion of self-awareness. He recognized his injury was "more capable," which he directly associated with being more confident in performing sport-specific abilities. He described himself as "an Avenger [Superhero character]," which made him believe in his ability to perform and trust his skills would improve in subsequent games. Participants commented that confidence in their abilities to perform, even if not at the optimal level, was deemed sufficient for considering themselves psychologically ready to RTC so long as they tempered their level of confidence with being realistic.

Realistic Expectations

The third theme of PR was realistic expectations. Knowing what to expect allowed participants to RTC without major physical and psychological setbacks. Participants described being psychologically ready when they could anticipate what would happen when returning to their respective sport. Prior to RTC, participants centered thoughts about expectations on being able to perform and mentally rehearse what it would be like to perform. Once they had returned to competition, they related strongly to the notion of being realistic about themselves, their decision-making, and their overall readiness to adapt to the changing situations. The two higher-order subthemes within the realistic expectations theme were (a) realistic expectations of abilities and (b) realistic expectations of competition.

Realistic Expectations of Abilities

Realistic Expectations of Abilities includes two lower-order subthemes before RTC: abilities match pre-injury levels and performing abilities in competition, and two lower-order subthemes after RTC: abilities match other athletes/pre-injury levels and being realistic with oneself. Prior to and post-RTC, participants compared fitness and abilities to pre-injury levels to gauge performance. LD echoed a common sentiment among participants as he noted feeling physically able to keep up with others gave him confidence and refined his expectations, "I would say I'm pretty stable psychologically . . . I have that kinda confidence back, knowing that I'm able to keep up physically helps a lot", yet he also knew he was not "100%" and was realistic in his assessment of his abilities. Seeing progress during practice leading up to RTC provided an opportunity to assess overall readiness and expectations, as noted by Harsheen:

> I even noticed a difference in that one day in playing defense my expectations went way up. I was like, 'I actually can do this, this is not gonna be difficult, I'm doing better than I was before playing defense.' And then when we went into the games, I was like, 'Oh my God, this is great. I'm playing better.' I guess my expectations are even like a little bit higher now because I've already noticed a difference in practice this week.

Participants also appraised their fitness and abilities by comparing themselves to others. Jess reported comparing herself to others as "difficult" and "depressing" when watching teammates train or compete and expressed being in a quandary as she found herself constantly going back and forth between being realistic about her progress and longing to be out on the soccer field. She recognized, "I'm fit enough to keep up with the team, to keep up with my opponents. Also, like technically, my touch is good enough, my passing is on point and good enough", but knew she was not fully ready because she realized certain sport specific skills and abilities still needed work.

In contrast, some athletes felt they needed to perform in competition before they could know what to expect of their abilities. Megan understood the need to temper

her expectations and described her RTC based on how much time she had missed due to injury. She said, "For someone who hasn't been in a game for two months, I thought I played fine." Megan described how valuable it was to be realistic about abilities while acknowledging not being completely "ready." For her, it was more about carefully entering competition by "getting back into the swing of things" than returning prematurely or feeling pressured to make a significant impact. Although practice was a good opportunity to increase fitness and improve skills, competition was a better indication of abilities and, consequentially, their sense of readiness. Derek was caught between being acutely aware of the need to "manage expectations" and frustrated at not getting opportunities to demonstrate his ability to perform, as coaches hesitated to give him playing time in games. This was further exacerbated because he was placed in a different position on the field upon RTC, which he interpreted as a challenge he managed quite well, "I feel at this point in time I'm ready to do everything that I was normally able to do at a very high level. In terms of doing that for an elongated period of time, that's a different story" and he re-adjusted his expectations during competition.

Realistic Expectations of Competition

Realistic Expectations of Competition includes two lower-order subthemes before RTC, mental rehearsal (visualization) and realistic expectations of competitive situations, and two lower-order subthemes after RTC: realistic decision-making and emotional readiness to adapt. Perceptions of PR came from understanding the feeling of competition. This understanding came more easily after RTC; prior to RTC, participants attempted to comprehend this feeling by sensing or anticipating what to expect in competitive situations, mentally rehearsing competitive scenarios, and recognizing the dynamic nature of RTS. Megan tied her realistic expectations to needing to be patient when "you go into your first game, you might not even have confidence still, but that's where the patience comes in." Oliver, who had missed three months of training and games, kept reminding himself to be realistic of his overall readiness, "I need to kinda keep telling myself I'm not gonna come back right away and be as good as I was . . . I need to kinda just keep telling myself, 'This is what you should expect.'" Knowing what to expect of competitive situations and managing expectations with realism put participants in a "state of comfort," and this state of knowing what was going to happen instilled a sense of readiness. In contrast, not knowing or not being able to anticipate could impact PR. From Isaak's point of view, not knowing what to expect or what was going to happen impacted him psychologically, "I wanna think that I'm ready. I think I am ready. I think that I'm fit to play, I think that I can, but it's all based on possibilities 'cause I don't know what's gonna happen in the future."

Some participants described PR as a dynamic process due to it changing from day to day without a clear end, which made it essential to keep a realistic frame of mind. For example, Carson described PR as something he had to work towards rather than something he could quickly acquire, causing him to proceed with caution even if his athletic trainer deemed him ready to RTC:

> Being out of football for three weeks, for [Carson] to get revved up and go out on the field today, it's not a one-day process. It's not a one-hour process . . . Like if one day they say I'm no good and then the next they're like, 'Okay, you're good, let's tape you up and get you out there,' I wouldn't be ready to go.

Many participants believed it was not possible to be completely psychologically ready. More specifically, there were too many factors at play for it to be possible; therefore, having a realistic mindset was important. According to Betty, "everyone has insecurities and issues to deal with" that detract from complete PR. After RTC, Betty addressed the continuous process of trying to reach PR:

> I don't think you can be one hundred percent confident, or I don't think you can be one hundred percent mentally ready. I think it's just a continuous process, and you just have to keep working at it and working at it and working at it.

This comment echoes the sentiment of many of the participants in the study. There was a recognition of a continuum of readiness with the caveat of complete readiness as not necessarily attainable nor necessary for returning to sport.

Although reaching a state of complete readiness might not be realistic or possible given various circumstances, participants described PR as being built up over time and characterized in part by remaining realistic about decision-making, such as when to push and when to back off. For example, Isaak said, "I actually don't think you can be a hundred percent psychologically ready. I just think you're able to deal with situations better through experience." Therefore, one way to build PR might be for athletes to enter competitive situations. This was a common response among most participants. They acknowledged competitive situations as the ultimate test to determine the degree of physical and psychological readiness, even when they knew complete readiness was unrealistic. Given this state for participants, they

recognized they had to be emotionally prepared to adapt to changing situations and pain levels and manage expectations.

Discussion

The purpose of the study was to explore injured athletes' perceptions and experiences of PR throughout the RTS process, transitioning from rehabilitation to RTC. This was the first study the authors are aware of to investigate PR at two time points – once before RTC (during rehabilitation) and once after RTC, thus providing a prospective exploration of the RTS process. Heeding the recommendations of Ardern et al. (2016) to consider RTS decisions as a continuum throughout the rehabilitation process and not in isolation only at the end of recovery, the present study viewed RTS from an athlete-centered holistic perspective also suggested by Ardern et al. (2016), Gómez-Espejo et al. (2022) and Rollo et al. (2020). The current study focused on perceptions of PR during the RTS phase and before initial RTC post-injury, not on attainment of a pre-injury performance level. Though the Ardern et al. (2016) description of RTC is based on achieving pre-injury levels of performance upon return, athlete's perceptions from this study found pre-injury performance levels to be an unrealistic measure.

Based on the perceptions and experiences of participants in the present study, the results produced three themes: focus, confidence, and realistic expectations. Participants had similar overarching needs before and after RTC to feel psychologically ready. However, differences across lower-order subthemes underscored shifts in perspective as participants progressed through rehabilitation to return to practice, then RTC. As they perceived themselves to be more competent and directed their focus to more relevant tasks, they derived confidence from new sources, and expectations increased. From pre- to post-RTC, participants consistently articulated the need to focus on simple tasks, have confidence in the physical status of the injury, and compare abilities to pre-injury levels to form realistic expectations about their performances upon RTC.

Focus

The theme of focus provides a novel contribution to the PR literature. For participants in the present study, PR in the RTS process after injury meant focus was not entirely devoted to the injury itself. Participants highlighted the importance of dissociating from the injury, which should be further explored in future studies. Participants had trouble freeing their minds of the injury. However, those who were able to do so reported feeling better and perceived themselves to be more psychologically ready as they progressed from RTS to RTC. Glazer (2009) noted confidence to not concentrate on the injury is likely one piece of the PR puzzle. However, the findings of the present study suggest focus plays a critical role in PR and should be its own contributing factor rather than an aspect of confidence.

A possible explanation for the impact of focus on PR comes from research on self-control by Baumeister et al. (1998). They discovered acts of choice and self-control reduce resources available for subsequent volition, a state termed ego depletion (see Muraven et al., 2019 for a review). Hypothetically, this means the more attention participants in the present study devoted to one resource (e.g., injury), the less attention was left to be devoted to other resources (e.g., performance). This idea, supported by an investigation by Englert et al. (2015), demonstrated the association between ego depletion and distractibility in basketball players. Researchers discovered free throw shooters with intact self-control strength, as opposed to depleted self-control strength, were more proficient in ignoring distracting stimuli and, consequently, outperformed ego-depleted shooters. In essence, the more attention devoted to one thing temporarily reduces the attention available for another. This might explain why participants felt, to be psychologically ready, a distinct need to stop thinking about the injury.

Some of the earlier research (Glazer, 2009; Podlog et al., 2015; Podlog & Eklund, 2006) reflected more of an exclusive set of states for PR, such that achieving PR is meant to be a presence of positive states (e.g., increased confidence) and an absence of negative states (e.g., fear). The review by Podlog et al. (2022) highlights that many states can co-exist simultaneously and interact across time. Participants in the present study experienced both positive and negative states simultaneously (i.e., feeling excited to compete but also uncertain). Interestingly, the new factor of focus continues to reinforce the co-existence of both positive and negative states since a participant's state of PR depended, in part, on where they placed their focus. Participants reported these states could change from day to day, and they experienced a continuum of readiness. For example, some fear of re-injury could be present but did not serve as a roadblock to feeling focused on tasks and confident to enter competition.

Confidence

An important concept shared by participants in this study was confidence as a staple element of PR. Although the mechanism as to why confidence was needed for PR remains unclear, it is possible confidence acted as a buffer from debilitative emotions such as anxiety and fear (Forsdyke et al., 2016). Confidence as multidimensional is supported by Kunnen et al. (2020) and Podlog et al. (2022), noting the role of trust and belief in rehabilitation professionals to aid in the efficacy of healing. Results from the present study indicate potential support for this hypothesis. For some participants, confidence in abilities mitigated the need for confidence in the injury. In other words, confidence in one domain (e.g., abilities) potentially reduced debilitative emotion (e.g., anxiety) toward another domain (e.g., injury). Considering this, the potential interaction between confidence and emotional attributes should be considered when assessing PR. As noted by other researchers (Burland et al., 2019; Truong et al., 2020), PR is a diverse concept, and exploring and acknowledging the psychological factors influencing it throughout rehabilitation is essential to optimize injury management and positive outcomes. Validating and monitoring the emotions of injured athletes is always vital (Forsdyke et al., 2017) and an essential component of caregiving. Enhancing rehabilitation by attending to those in need to cope effectively with emotions associated with injury recovery and increasing confidence is at the heart of a holistic and facilitative environment.

Researchers have commented on the optimal timing of assessments of both physical readiness and PR to maximize confidence when returning to practice and competition (McCall et al., 2017; Podlog et al., 2022). The crux of the timing is whether to delay RTC until the athlete feels more confident or expose them to competition to determine if they can cope with performance demands (McCall et al., 2017). Participants in the present study overwhelmingly felt the need to 'take the leap' into competition to ultimately assess their PR. Podlog et al. (2022) perceived physical readiness may indeed be a precursor for PR. As such, participants in the present study linked confidence to their physical recovery, ability to give full effort, and to perform.

Additionally, though a criticism of assessing PR after RTC is likened to "asking athletes if they are ready to resume activity they are already doing" (Podlog et al., 2022, p. 12), we assert the complexities and dynamic nature of PR are profound and worthy of exploration at the time of RTC. By asking relevant questions and focusing on their perceptions and experiences at this time point, participants in the present study recognized the following: performance at pre-injury levels was not necessarily immediate; the reliance on their support system helped them cope; and competing gave them a strong sense of trust that their abilities will improve in subsequent competitions. Therefore, these nuances and individual perceptions could help rehabilitation staff, coaches, parents, athletes, etc. in the decision-making process of not only the initial RTS or RTC but also knowing whether an athlete's readiness is sufficient and not limiting physical capacity.

Realistic Expectations

Podlog et al. (2015) identified realistic expectations as a dimension of PR. Specifically, athletes expressed the importance of patience, acceptance of post-injury limitations, and effective and flexible goal setting. In the Podlog et al. (2015) study, athletes appeared to need to downplay high expectations and the strong desire to re-enter competition. In the study by Johnson et al. (2016), athletes reported setting reasonable goals aided their overall rehabilitation and contributed to successful coping. In contrast, athletes in the present study expressed a definitive need to know what to expect from abilities and in competition, and in doing so, needed to be realistic in their goals and expectations. It may be the case that knowing what to expect allows an athlete to more readily express patience or acceptance, or vice versa, but further research is required to explore the relationship between these concepts.

One possible explanation for realistic expectations playing such a key role in PR is over-estimation of readiness can lead to under-compliance with rehabilitation, which, in addition to high negative affective responses, results in less successful RTC outcomes (Ivarsson et al., 2017). A possible scenario could occur whereby the over-estimation of abilities leads to more risky behaviour, which leads to negative affect (i.e., when abilities do not match expectations), ultimately contributing to feelings of uncertainty and poor performance. Problems occur when athletes have unrealistic expectations and feel the compelling need to test their abilities in unique competitive situations. Athletes in the present study were well aware of the importance of being realistic with themselves, in their decision-making, and in their emotional readiness to adapt to competitive and post-competitive situations. Realistic expectations might allow athletes to avoid setbacks, both physically and psychologically. This may also influence the risk of new or further injury identified by other researchers (e.g., McCullough et al., 2012; Webster & Hewett, 2019) as a potential issue.

Limitations and Future Directions

Limitations include the relatively limited number of participants and the team type. All 15 participants were team sport athletes (e.g., football, hockey, soccer), with no representation from individual sport athletes (e.g., wrestling, golf, swimming). Furthermore, discernible differences in what constitutes PR might exist between different types of sports. For example, one participant perceived an aspect of PR to be knowing one's role on the team, which might not be relevant for individual sport athletes. Although individual sport athletes often contribute to team scores and engage in training together, the emphasis remains on individual performance since an athlete can win or lose independently of team performance. More research regarding the generalizability of these findings across individual sports is befitting.

It is noteworthy to recognize PR research to date is predominantly from a Westernized lens and may not be relevant within other contexts and cultures (Podlog et al., 2022). Participants in the present study were from a Westernized culture. Further development of a definition and components of PR must be considered with this in mind, thus, inclusively incorporating cognitive, affective, behavioural, and individual elements. Additionally, consideration of biopsychosocial models such as Brewer (2007) is needed as many relevant socio-environmental factors (e.g., ethnicity, social support), biological and physical factors (e.g., range of motion, neuromuscular function), and rehabilitation outcomes (e.g., functional performance, treatment outcome) likely impact PR.

Future researchers should investigate the role of emotion in PR. Emotion-related themes did not emerge as central to participant perceptions of PR, but the themes of confidence and realistic expectations might influence emotional regulation or vice versa. Podlog et al. (2022) include both confidence and emotion as part of cognitive appraisal and affective response, respectively, within their definition of PR. The role of confidence in sport injury rehabilitation and how it may relate to emotional response could provide insight into best practices regarding psychological rehabilitation. Attending to the emotional responses and needs of the athletes has clinical implications as athlete-centered holistic rehabilitation facilitates optimal decision-making for clinicians (Ardern et al., 2016) and addresses the emerging evidence for collaboratively assessing both physical and psychological factors (Faleide et al., 2021) to determine overall readiness. Emotion may also play a role in realistic expectations, particularly when desire and ability do not coincide. This idea presents the possibility to examine further commonalities between PR and psychological response to injury.

Since athletes returning to competition are amid a continual psychological response to injury, similarities inevitably exist between PR and the Integrated Model of Response to Sport Injury (Wiese-Bjornstal et al., 1998). As this research has shown, personal (e.g., injury experience) and situational (e.g., sport season) factors, presented by Wiese-Bjornstal et al. (1998), also influence PR. Factors presented by Wiese-Bjornstal and colleagues (1998) not examined in the present study could expand understanding of PR. For example, individual differences like personality and athletic identity, demographic variables such as gender, age, and ethnicity, environmental factors including varying season lengths, and social factors such as coach/teammate pressures are all worthy of investigation.

The present study provides novel perspectives on PR by accounting for athletes' perspectives at two time points in the transition from rehabilitation to competition. Though the time points were used to expand the current knowledge on PR across multiple transitions from rehabilitation to RTC, as recommended by researchers (Podlog et al., 2022), the RTS continuum, currently established by Ardern et al. (2016), needs further research. The researchers used the RTS continuum to help define the chosen time points; however, the language used by Ardern et al. (2016) in each phase of the continuum does not lend itself to the experiences of the athletes within the present study. The participants expressing full PR to return to sport may not be realistic or even possible; as such, the RTS continuum may not be so either. Future studies should explore PR at various time points along the continuum to further understand RTS and PR during RTS.

A further strength of the research is the diverse population in terms of sport and injury. Fifteen participants represented five different sports and eleven separate injury types. Although research on PR is still in its infancy, the current conceptualization of the construct should be considered due to its complexity. Researchers and practitioners should also comprehensively consider both physical readiness and PR within RTS protocols, accounting for the role and influence of focus, confidence, and realistic expectations during all phases of RTS.

Conclusion

Due to the dynamic and complex nature of PR highlighted in the present study and supported by previous research, to fully understand how psychological factors influence RTS, emotions, experiences, and

perceptions need to be acknowledged. Certain physical standards should be assessed in conjunction with psychological standards to adjust rehabilitation protocols. Other researchers have highlighted the importance of incorporating PR assessment as part of an overarching need for further evaluation and attention to psychological responses within the RTS phases (Ardern et al., 2016; Burland et al., 2019; Faleide et al., 2021; Gómez-Espejo et al., 2022; Kunnen et al., 2020; Podlog et al., 2022; Rollo et al., 2020; Truong et al., 2020). Clinicians are on the front line with the physical and psychological recovery and readiness of the athletes they work with on a daily basis. Incorporating physical readiness and PR assessment collaboratively is paramount to best facilitate comprehensive recovery and prepare athletes for the opportunity to be successful as they progress through the RTS process and return to the competitive environment. Optimal clinical outcomes require a multi-disciplinary team approach to all aspects of rehabilitation, so the more the 'team' and all stakeholders incorporate evidence-based practice and appropriate decision-making, the higher the likelihood of an effective RTS.

For these athletes, PR is dynamic and characterized by athletes harnessing the ability to focus and the confidence to meet realistic expectations in the competitive environment before and after RTC. The findings represent a progression of the nature of PR through the RTS continuum and relate to an athlete-centered approach. It is not the authors' intention to forward a definition requiring consensus, a point noted by Podlog et al. (2022), as it is not a requirement or outcome of PR research. This is because PR and RTS are individualized processes that are dynamic in nature and do not follow a linear pattern. Therefore, a rigid definition of PR could be as detrimental as the lack of definition by eliminating or rejecting certain perspectives and experiences of athletes returning to sport post-injury. The present study contributes to the evolving understanding of PR, highlighting the complexity and importance of perceptions and experiences of athletes during rehabilitation and after returning to competition.

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