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Inflexibility, Reactions to Retirement, and Mental Health in Elite Competitors: A Mediation Analysis

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Research suggests retirement from competition to be a significant life transition, categorized by both positive and negative experiences. Ample studies have shown that psychological inflexibility (i.e., a person's difficulty in coping with and accepting distress) is a negative experience that can lead to adverse mental health outcomes within competitive contexts. However, no studies to date have examined the link between psychological inflexibility, reactions to retirement, and mental health outcomes in retired competitors. The present study examines how inflexibility and reactions to retirement are associated with depression and anxiety symptoms in a sample of former competitors within Drum Corps International, an elite marching and performance organization with mandatory retirement at age 21. Results from 223 retired competitors (age range 20-29, M_{age} = 24.27) were analyzed. Consistent with hypotheses, psychological inflexibility predicted depression and anxiety symptoms, and reactions to retirement partially mediated the relation between inflexibility and symptoms of depression. Specifically, positive reappraisal and loss of control reactions to retirement partially mediated psychological inflexibility's association with depressive symptoms (with loss of control as the stronger mediator). Clinical implications for competitors approaching retirement are discussed, with emphasis on the utility of acceptance and commitment-based interventions.

Keywords: psychological inflexibility, depression, anxiety, reactions to loss

Psychological inflexibility, the central tenet of the acceptance and commitment therapy (ACT) model (Hayes et al., 1999; 2006), refers to difficulty connecting with the present moment and adaptively engaging in certain behaviors in service of chosen values. Inflexibility is construed as a process rather than an event and typically occurs when people attempt to avoid or control unwanted internal experiences. Inflexible behavior is oriented toward "getting through" or surviving psychological distress (e.g., mental illness symptoms), whereas flexibility is marked by using previously identified values to guide behavior toward building a life that is more rewarding, satisfying, and workable in the long run, even when distress is present.

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Values are defined as "things we care about, things that are important to us, and things we organize and plan our lives around" (DeYoung & Tiberius, 2023, p. 6), and focusing on how to pursue values amidst a difficult change can be good for mental health. The ability to pursue values in new ways during a challenging situation is a core aspect of psychological flexibility. For example, if a competitor experiences an injury that ends their career earlier than expected, an inflexible response would involve suppressing grief and avoiding acknowledgment of the imminent transition. In contrast, a flexible response would involve the acknowledgment of grief and consideration of ways that personal values can inform their responses to the injury (e.g., if leadership is a value, the competitor can look for ways to continue being a leader in their new role). An abundance of self-report, correlational research has established a link between flexibility and positive behavioral outcomes like job performance, job satisfaction, and decreased symptoms of depression and anxiety (for a meta-analysis, see Hayes et al., 2006), and

*Zimmermann and Bounds both contributed equally to this work.

behavioral and clinical studies have further supported these associations (Dalrymple & Herbert, 2007; Feldner et al., 2006).

Inflexibility is relevant for competition and retirement from competition in several ways. Inflexibility is particularly salient in competitive settings that involve intense goal pursuit, loss, and high stress because the ways in which people engage in high-intensity experiences (i.e., with varying degrees of flexibility) can have a magnified effect on outcomes (Carraça et al., 2018; Pourabdol et al., 2020). One such setting includes elite competitive contexts, wherein lower inflexibility is associated with better individual and team performance (Aukee, 2014; Carraça et al., 2018; 2019a; 2019b), and higher levels of inflexibility can lead to negative perceptions of performance (Clemente-Suarez et al., 2020). Interventions that lower inflexibility in elite soccer players have improved performance in competitive scenarios, more sophisticated strategies for coping with competition-related stress, and reductions in competition-related anxiety (Carraça et al., 2018). After experimentally examining the effectiveness of a mindfulness-based soccer program (MBSoccerP) on elite soccer athletes, Carraça et al. (2018) found ACT interventions (e.g., identification of salient values, practice of acceptance in the face of distress) to longitudinally predict greater increases in flexibility and self-compassion and decreases in their self-reported levels of anxiety during competition compared to controls. These results highlight flexibility as an important strength for coping with the demands of competition. In addition, inflexibility is relevant for retirement from competition because retirement involves a change of role and context (e.g., Willard & Lavallee, 2016), and people can respond to that change with acceptance and self-awareness (i.e., flexibly) or with avoidance or grasping for control (i.e., inflexibly).

Reactions to Loss in Retirement from Competition

Inflexibility matters both during competition and after when performers retire. Retirement from competition can bring about distinct reactions to loss. Loss is defined as "an experience where there is a change in circumstance, perception, or experience where it would be impossible to return to the way things were before" (Harris, 2020, p. 2). Loss is common in competition settings, and the ways competitors engage with loss might explain how inflexibility affects mental health outcomes, such as depression or anxiety symptoms. Performers engage with loss when they lose a competition but also during injury or transition to a different role or team. Perhaps the most profound loss competitors will experience is when they can no longer compete and transition into retirement. For example, one study on the retirement transitions of professional ballet dancers found that the dancers with a strong, exclusively athletic identity experienced the most loss and confusion during their retirement transition (Willard & Lavallee, 2016).

The psychological burden of retirement from elite competition can include symptoms of anxiety and depression, loss of competitive identity, the potential for substance misuse, disordered eating behaviors, and lack of long-term goal clarity (Chang et al., 2019; Esopenko et al., 2020; Martin et al., 2014; Miller & Buttell, 2018). Retirement is also associated with psychological struggle regardless of whether people plan for it or not (Bianco et al., 1999; Brewer et al., 2010; Park et al., 2012; Stephan et al., 2003). Because a highly inflexible person is at risk for some of these same outcomes (Arslan & Allen, 2022; Hayes et al., 1996; Kato, 2016; Levin et al., 2014), it is necessary to clarify the relation between inflexibility, competitive retirement, and depression and anxiety symptoms. Said another way, competitors' experiences following retirement likely depend on the nature of the transition and the degree to which they (in)flexibly relate to it. Scarce empirical research has examined the relation between psychological inflexibility and competitive retirement, thus highlighting a gap in the clinical and applied performance literature.

The ways that people react to losses, such as retirement from competition, matter for mental health. An abundance of psychological research has examined responses to loss and challenge in the form of coping, in which people try to respond to difficulty in an adaptive way that diminishes demands (Livneh & Martz, 2007). However, not all reactions to loss are adaptive, like coping; people can also respond defensively or fragmentedly (Chronister & Chan, 2007). Research has found that people react to loss (e.g., losing an important match, retirement from competition) in correlated but distinct ways, some of which are adaptive coping strategies (e.g., positive reappraisal), and some of which are not (e.g., avoiding the loss outright or perceiving the loss as a loss of control; Cooley et al., 2010). People who avoid the loss will try to go on as if nothing has happened and/or try to forget the loss completely. Avoidant reactions are typically associated with higher depression and anxiety symptoms (Arnaudova et al., 2017; Barlow et al., 2011). People who perceive the loss as a loss of control also tend to report more symptoms of both depression and anxiety, such as difficulty concentrating, rumination about the loss's negative future effects, and engaging in isolating behaviors (Cooley et al., 2010).

In contrast, people who positively reappraise their loss by reframing it as an opportunity to experience personal growth and/or engage in different manners of self-expression are more likely to report feeling stronger after the loss. Positive reappraisal is associated with greater happiness and positive affect, as well as lower anxiety (Cooley et al., 2010). Indeed, some research has suggested that retirement from competition can involve finding gains or strengths (Menke & Germany, 2019), suggesting not all retirement experiences are necessarily negative (Harrison & Ruddock-Hudson, 2017; Stankovich et al., 2001). For example, competitors may find value in committing themselves to new goals and investing in their competitive community in a new way (e.g., coaching), or competitors with ambivalent feelings about their performance domain may feel relieved to move on.

Given that flexibility can be conceptualized as a higher-order ability to respond effectively in a variety of distressing situations in pursuit of longer-term goals, its effectiveness as a process is likely related to engaging in adaptive reactions to loss in the presence of distress from that loss (Dawson & Golijani-Moghaddam, 2020). More avoidant reactions to loss have been shown to mediate the link between inflexibility and symptoms of depression and anxiety among psychiatric patients (Rueda & Valls, 2020). Conversely, flexible people who engage in a positive reappraisal style report higher levels of acceptance and lower levels of depression and/or anxiety in the general population (Dawson & Golijani-Moghaddam, 2020). This relation has yet to be extended to competitors, thus revealing another gap in the performance and applied performance literature.

Drum Corp International

The dearth of findings involving inflexibility, reactions to loss, and mental health outcomes warrant further investigation, especially in high-performance populations. One population in which these concepts can be examined is Drum Corps International (DCI), an elite competitive marching organization. Also known as "Marching Music's Major League," DCI is the most prestigious level of marching arts. DCI is comprised of 23 world class units and 22 open class units. Each unit (also known as a 'corps') is made up of 154 members and 3 sections (i.e., brass, percussion, and color guard), with 6,930 competitors in the organization each year. In 2017, the average age of world class corps was 19.31 years, with a range of 14-22 (About Drum Corps International (DCI), Marching Music's Major League™, n.d.).

Participants in DCI train extensively, spending 6-12 hours per day engaging in physical training, choreographed movements, and disciplined goal-setting for competition when in season. A unique element of DCI includes a standard age limit of 21 years old, commonly known as an "age-out." The fact that DCI enforces such a rigid retirement age makes it a prime context for examining reactions to retirement because retirement age (i.e., 21) and reason for retiring (i.e., forced) are more uniform across retirees than in other competitive contexts. Because the context and motivation of retirement are similar for DCI competitors, researchers can learn much about the individual difference factors that affect how competitors respond differently to the same event. Moreover, this mandatory age-out may affect reactions to loss in specific ways. DCI competitors may exhibit a higher perceived loss of control, or they may be able to engage in greater positive reappraisal and gratitude for their DCI experience as a whole. Research suggests that forced involuntary (versus voluntary) retirement negatively impacts competitor well-being (Coakley, 1983; Coleman & Roberts, 2021; McKnight et al., 2009; Park, Lavallee, & Tod, 2012). Given its emphasis on training, competition, and excellence, as well as the mandatory age-out at 21 years, DCI is an optimal context for examining inflexibility, reactions to retirement, and depression and anxiety symptoms in a high-performance, competitive environment.

The Present Study

We aimed to explore the relations between psychological (in)flexibility, reactions to loss, and depression and anxiety symptoms in a competitive context. The present study addresses important, unexplored questions about high-performance competitors' transitions to retirement and how differences in psychological (in)flexibility and reactions to loss influence depression and anxiety symptoms. The present study focuses on symptoms of depression and anxiety, which have been shown to be worse and more common after retirement from competitive contexts (Montero et al., 2022). Given that research has shown anxiety and depression to be two of the most frequently occurring comorbid disorders alongside the presence of psychological inflexibility (Aukee, 2014; Carraça et al., 2018; Kalin, 2020; Kessler et al., 2015), we hypothesized that (H1) retired competitors higher in inflexibility would report higher levels of depression and anxiety. Additionally, because psychological inflexibility has been shown to predict more avoidant reactions to loss (Rueda & Valls, 2020), we hypothesized that (H2) the

predicted relation between psychological inflexibility and mental illness symptoms would be mediated by reaction to loss styles. In other words, we predicted that retired competitors higher in psychological inflexibility would negatively appraise their loss (i.e., higher avoidance and loss of control, lower positive reappraisal), which would then be associated with higher levels of depression and anxiety following retirement from competition.

Psychological inflexibility is considered as the independent variable in these models because it is a habitual way in which people engage the external world in relation to their internal experiences that is employed across diverse situations and contexts. In contrast, reactions to loss are situationally dependent in that they are only relevant in response to a loss and are more likely to vary based on the contextual features of a loss (e.g., retirement vs. relationship loss, forced vs. voluntary retirement). Whereas psychological inflexibility is relevant to both loss and non-loss scenarios, reactions to loss are constrained in their relevance to loss events. Thus, we examine how inflexibility, a domain general construct, affects depression and anxiety symptoms through specific reactions to the losses experienced during retirement. We chose to examine reactions to loss as simultaneous mediators because people can respond to a loss in a variety of coinciding ways (e.g., feeling out of control and wanting to avoid the loss). By testing whether reactions to loss play an explanatory role in the association between inflexibility and depression and anxiety symptoms simultaneously, we can compare effect sizes of those concurrent mediators.[1] Although we view this specification of independent, dependent, and mediating variables as the most theoretically defensible, alternative models in which inflexibility mediates the associations between reactions to loss and depression and anxiety symptoms can be found in the Supplemental Material.

Method

Participants and Procedures

Participants were alumni of DCI. An initial sample of 460 was attained, with ages ranging from 20 to 80 years old. Because our study focused on reactions to retirement that occurred at approximately 21 years of age, we restricted our final analytic sample to participants still in emerging adulthood (i.e., the same developmental stage as when they competed). Research supports emerging adulthood age ranges from 18 to 29 years old (Arnett, 2007; Arnett et al., 2014; Reifman et al., 2007). With an age range of 20 to 29, our final sample size was 223 (M_{age} = 24.47). See Table 1 for participant demographic information.

All participants retired at or before the age of 21 due to DCI's age-out rule. Participants indicated in which section of DCI they competed, with 54% in brass, 13% in percussion, 29% in color guard, and 5% as conductors. Participants also indicated the duration of their DCI involvement ($M_{involve}$ = 2.69 years) and whether they retired voluntarily (29%) or via age-out (71%). Participants also indicated whether they were still connected to the marching arts in some way today (66%

Table 1. Demographic Information

Demographic	*n*	%
Gender Identity		
Man	96	43.0
Woman	123	55.2
Other	4	1.7
Sexual Orientation		
Heterosexual	167	74.9
Homosexual	17	7.6
Bisexual	29	13.0
Other	10	4.4
Ethnicity		
African American/Black	2	.9
Asian American	9	4.0
Hispanic/Latino	13	5.8
White	191	85.7
Other	8	3.5
Education		
High school degree	2	.9
Vocational training	2	.9
Some college	49	21.9
Associate's degree	12	5.4
Bachelor's degree	101	45.3
Some graduate school	27	12.1
Master's degree	26	11.7
Doctorate degree	4	1.8
Religious Affiliation		
Christian	80	35.9
Buddhist	1	.4
Atheist	42	18.8
Unaffiliated	69	30.9
Other	30	13.4
Missing	1	.4
	M (Med)	***SD***
Age	24.47 (24)	2.33

[1] In addition, mediation models allow for simultaneous mediators but not more than one independent variable, and we wanted to test predictors all in one model.

still involved). Involvement does not refer to continued competition but rather any level of involvement, such as alumni groups, administrative roles, instruction (i.e., band director or teacher), judging of competitions, collegiate or community marching, spectator/fan, or volunteer (these examples come from an open-ended text box for participants who indicated that they were still connected to the marching arts).

Ethical approval was given and deemed exempt from our institutional review board. Data for this study were taken from a larger study aimed at examining which factors impact transition from DCI to everyday life. Participants were recruited online through snowball sampling on various social media platforms (i.e., Facebook and Instagram). Participants were told that they could share the survey link on their respective corps alumni group pages. The survey was distributed in the spring of 2019 for approximately 4–6 weeks. All participants provided consent before completing a Qualtrics self-report battery of questionnaires followed by basic demographic multiple choice questions (i.e., age, total number of years competed in DCI, voluntary versus involuntary retirement, continued involvement with the marching arts post-retirement, gender identity, sexual orientation, ethnicity, education level, and religious affiliation).

Measures

The Action and Acceptance Questionnaire-II (AAQ-II, Bond et al., 2011) is a ten-item measure of psychological inflexibility and experiential avoidance. Participants were asked to rate the extent to which items applied to them in the time following their age-out. Items are rated on a 7-point Likert scale ranging from 1 (never true) to 7 (always true), with items including such statements as "I'm afraid of my feelings" or "Emotions cause problems in my life." Items are summed, with higher scores indicating greater inflexibility and cutoff scores higher than 24 suggesting greater levels of psychological inflexibility and clinically significant distress. Internal consistency was good ($\alpha = .92$). The AAQ-II is also commonly used to examine inflexibility in both college-aged and athletic populations, and shows strong psychometric properties across cultures (Chang et al., 2017; Dehghani et al., 2018; Krafft et al., 2019; Wong et al., 2022).

The Reactions to Loss Scale (RTL, Cooley et al., 2014) is a 70-item self-report measure used to assess reactions to both death-related and non-death-related losses. Its three subscales refer to three discrete reactions to loss: Loss of Control (e.g., "I could not stop thinking about the loss"), Avoidant (e.g., "I tried to go on as if nothing happened"), and Positive Reappraisal (e.g., "I began to feel stronger after dealing with the loss."). Participants were asked to rate the extent to which items applied to them following the loss of their DCI eligibility. Items are rated on a 6-point Likert scale ranging from 1 (never true) to 6 (always true). Internal consistency across subscales was good (all $\alpha > .88$). The RTL was also validated by Cooley et al. (2014) in a sample of college-aged students, thus making it an appropriate measure for examining reactions to DCI retirement (i.e., at a maximum of 22 years of age).

Two subscales from the Depression and Anxiety Stress Scale-21 (DASS-21; Antony et al., 1998) were used to assess depression and anxiety. The third subscale, assessing stress, was not included in analyses, as the present study aimed to explore the association of inflexibility and reactions to retirement on depression and anxiety only. Both subscales consist of seven items. Participants were asked to rate the extent to which items applied to them in the time following their final season. Each subscale ranges from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time), with items describing emotional difficulties included in depression (e.g., "I felt down-hearted and blue") and anxiety (e.g., "I felt I was close to panic"). Items from each scale are summed to create composites for depression and anxiety. Cutoff scores are ≥ 21 for the depression subscale and ≥ 15 for the anxiety subscale, which indicates "high" or "severe" levels after composite scores have been multiplied by two. Internal consistency across subscales was good (all $\alpha > .81$). Additionally, the DASS-21 has been deemed one of the most respected norm-referenced scales of its kind and has been shown to be a stronger predictor of depression and anxiety diagnoses when compared to similar self-report measures of the same constructs (Dunstan et al., 2017).

Analytic Approach

For our first hypothesis testing whether greater psychological inflexibility predicts mental illness symptoms, multiple regressions were conducted in SPSS. Depression and anxiety were regressed onto psychological inflexibility while controlling for demographic variables in separate linear regressions. For our second hypothesis testing whether reactions to loss mediate the relation between psychological (in)flexibility and symptoms of depression or anxiety, mediation with nonparametric bootstrapping within

a regression-based framework using an ordinary least squares estimator was utilized with Hayes' (2018) PROCESS macro package in SPSS, downloaded at https://processmacro.org/download.html. Two mediation analyses were run to predict outcomes of anxiety and depression, respectively. The three reactions to loss were tested as simultaneous mediators of the relation between psychological inflexibility and symptoms of depression or anxiety. Demographic covariates were controlled for in the mediation models. PROCESS "Model 4" was used for mediation, and syntax specific to PROCESS was used to provide standardized effect sizes and compare effects of simultaneous mediators. Significant mediation effects were found when the 95% confidence intervals (CI) of the indirect effects excluded zero. Post-hoc power analyses using G*Power 3.1 indicated that we were sufficiently powered to detect a moderate effect (i.e., f^2 = .15) with a two-tailed alpha value of .05 with seven predictors and a sample of N = 223.

Results

Before testing hypotheses, we sought to understand the sample characteristics in terms of the severity of responses to clinical measures. All emerging adult participant data were included in analyses; the observations in relation to clinical cut-offs is to provide contextualization of the sample's general levels of symptoms. The analytic sample composite of psychological inflexibility (M = 31.15) fell above the cut-off for significant inflexibility (> 24), and frequencies indicated that 62.8% of participants fell above that cut-off, suggesting that this sample had high levels of distressing inflexibility. The sample composite for depression (13.47) did not fall above the cut-off for severe depression symptoms (≤ 21), but frequencies indicated that 15.2% of participants fell above that cut-off. Similarly, the sample composite for anxiety (11.23) did not fall above the cut-off for severe anxiety symptoms (≤ 15), but frequencies indicated that 20.6% of participants fell above that cut-off.

Descriptive statistics and bivariate correlations for study variables are displayed in Table 2. Depression symptoms demonstrated strong, positive correlations with psychological inflexibility (r = .65, p < .001), avoidant reactions (r = .60, p < .001), loss of control reactions (r = .69, p < .001), and a negative association with positive reappraisal (r = -.27, p < .001). Anxiety symptoms demonstrated strong, positive correlations with psychological inflexibility (r = .56, p < .001), avoidant reactions (r = .51, p < .001), and loss of control reactions (r = .52, p < .001). Anxiety was not related to positive reappraisal (r = -.10, p > .05).

Furthermore, study variables were compared between participants who are still involved with DCI compared with participants who are no longer involved in any capacity. Independent samples t-tests revealed a significant difference for positive reappraisal. Participants still involved with DCI had greater levels of positive reappraisal (M = 72.34) compared to participants no longer involved (M = 67.05), t(221) = 2.27, p < .05, Cohen's d = .32. In contrast, no differences were found between those still involved with DCI and those not involved on avoidant or loss of control reactions or psychological inflexibility (ps > .05). Participants still involved with DCI had lower levels of depression symptoms (M = 12.76) compared to participants no longer involved (M = 14.85), t(221) = -2.65, p < .01, Cohen's d = -.38. In contrast, no differences were found between those still involved with DCI and those not involved on anxiety symptoms.

Table 2. Descriptive Statistics and Correlations

Variable	1	2	3	4	5	6
1. Psychological Inflexibility	-	-	-	-	-	-
2. Depression	.65*	-	-	-	-	-
3. Anxiety	.56*	.59*	-	-	-	-
4. Avoidant Coping	.65*	.60*	.51*	-	-	-
5. Loss of Control Coping	.70*	.69*	.52*	.83*	-	-
6. Positive Reappraisal Coping	-.30*	-.27*	-.10	-.06	-.08	-
M(SD)	31.15(13.71)	13.47(5.64)	11.23(4.23)	49.76(18.85)	64.37(24.45)	70.56(16.57)
α	**.92**	**.91**	**.81**	**.91**	**.94**	**.88**

Note. *p < .001.

Hypothesis 1: Psychological Inflexibility and Depression and Anxiety Symptoms

Before psychological inflexibility was tested as a predictor of depression and anxiety symptoms, demographic covariates were tested as predictors. In separate models, depression and anxiety were regressed onto age, gender identity, sexual orientation, ethnicity, education, religious affiliation, and continued involvement with the marching arts post-retirement. See Tables 3 and 4 for full results for these models. Gender identity, education, and post-retirement involvement significantly predicted depression symptoms. Age and gender identity significantly predicted anxiety symptoms. Significant demographic variables were included in H1 analyses.

Multiple regressions were used to examine psychological inflexibility's predictive relationship with depression and anxiety symptoms while controlling for age, gender identity, education, and continued involvement in the marching arts. As predicted, when depression was regressed onto psychological inflexibility and demographic covariates, the model was significant, $F(5, 217) = 36.67$, $p < .001$, $R^2 = .458$, and psychological inflexibility significantly predicted depression, $t(217) = 11.82$, $p < .001$, $\beta = .61$. Gender identity also significantly predicted depression symptoms with women more likely to experience symptoms, $t(217) = 2.41$, $p < .05$, $\beta = .12$. Other demographic variables were not associated with depression symptoms, $|t| < 1.9$.

Table 3. Demographics Predicting Depression Symptoms

Predictor	β
Age	β = .04
Gender Identity	β = .16*
Sexual Orientation	β = .11
Ethnicity	β = ..08
Education	β = -.18*
Religious Affiliation	β= .09
Post-Retirement Involvement	β = .13*
Model Results	$F(7, 214) = 4.92$, $p < .001$, $R^2 = .14$

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

Table 4. Demographics Predicting Anxiety Symptoms

Predictor	β
Age	β = .15*
Gender Identity	β = .13*
Sexual Orientation	β = .13
Ethnicity	β = .07
Education	β = -.10
Religious Affiliation	β= -.01
Post-Retirement Involvement	β = .01
Model Results	$F(7, 214) = 3.63$, $p = .001$, $R^2 = .11$

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

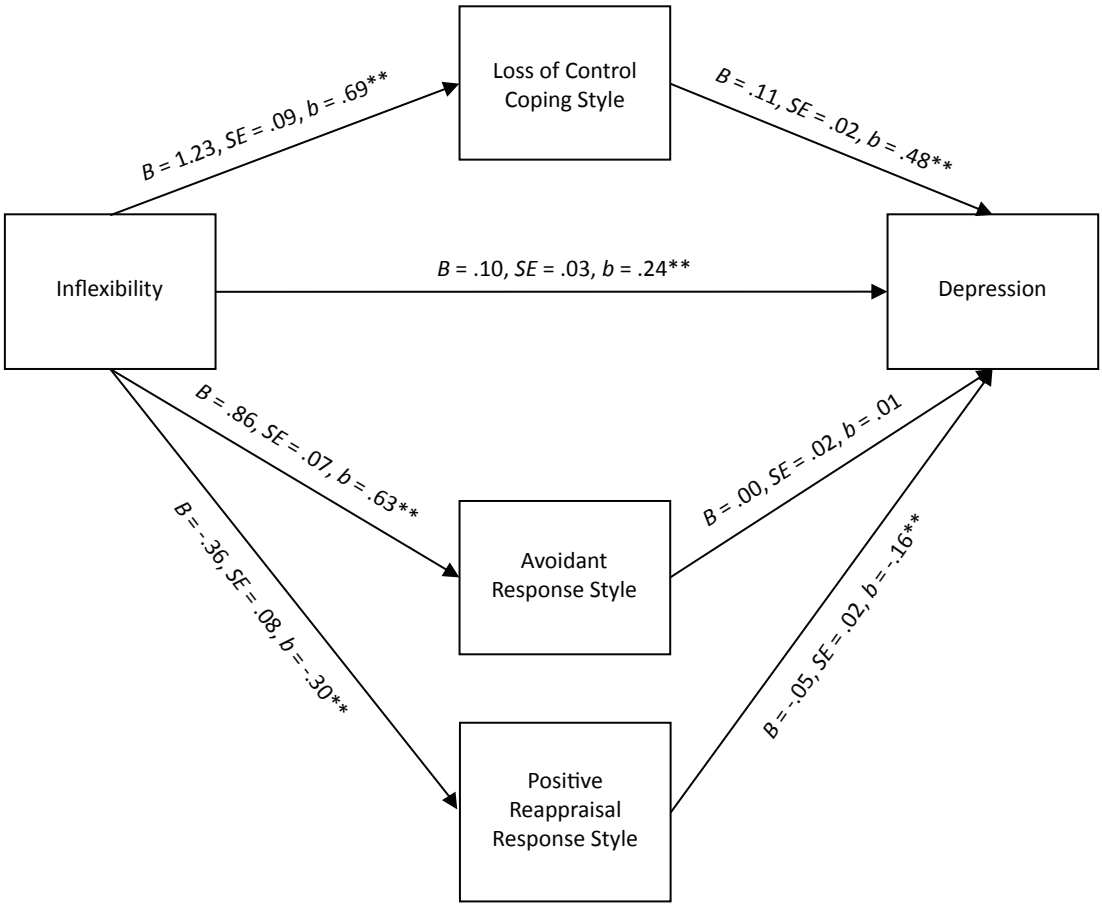
Also as predicted, when anxiety was regressed onto psychological inflexibility and demographic covariates, the model was significant, $F(5, 217) = 23.78$, $p < .001$, $R^2 = .354$, and psychological inflexibility significantly predicted anxiety, $t(217) = 9.52$, $p < .001$, $\beta = .53$. Older age predicted fewer anxiety symptoms, $t(217) = -2.76$, $p < .01$, $\beta = -.16$. Other demographic variables were not significantly associated with anxiety symptoms, $|ts| \leq 1.8$.

Hypothesis 2: Reactions to Loss as Mediators

Two mediation analyses were run to predict outcomes of symptoms of depression and anxiety, respectively. The three reactions to loss were tested as simultaneous mediators of the relation between psychological inflexibility and symptoms of depression or anxiety. Age and gender were included as covariates because they were significant predictors for H1, and involvement in the marching arts post-retirement was also included as a covariate because differences were found for positive reappraisal and depression symptoms between those involved and those not involved.

Path coefficients from the first mediation analysis predicting depression can be found in Figure 1, and mediator indirect effects statistics with 95% confidence intervals can be found in Table 3. Results from 10,000 bootstrapped samples indicated a partial mediation: a significant direct effect of psychological inflexibility on depressive symptoms, $B = .10$, $SE = .03$, CI [.04, .15], and a significant total indirect effect of all mediators, $B = .16$, $SE = .03$, CI [.11, .21]. Specifically, there was a significant indirect effect of the positive reappraisal response style as a partial mediator between inflexibility and symptoms of depression after controlling for the two other mediators and age in the model. Psychological inflexibility negatively predicted positive reappraisal, and positive reappraisal negatively predicted depressive symptoms. Moreover, loss of control reactions partially mediated inflexibility and symptoms of depression after controlling for the two other mediators and age in the model. Psychological inflexibility positively predicted loss of control reactions, and loss of control reactions positively predicted depressive symptoms. Planned contrasts indicated that loss of control reactions had

Figure 1. Simultaneous Mediation Model: Inflexibility and Depression through Reactions to Loss



Note: Mediation model predicting depression symptoms (N = 223) where statistics associated with the arrow from Inflexibility to Depression represent direct effects. *p < .05, **p < .01.

Table 5. Mediation Statistics for Depression

	Unstandardized Indirect Effect		Completely Standardized Indirect Effect		Unstandardized Direct Effect		Completely Standardized Direct Effect
Predictor Variable	***B*(*SE*)**	**95% CI**	***B*(*SE*)**	**95% CI**	***B*(*SE*)**	**95% CI**	**β**
Psychological Inflexibility					.26(.02)	[.21, .30]	.62***
Age					-.16(.12)	[-.40, .08]	-.06
Gender Identity					1.13(.52)	[.10, 2.17]	.11*
Involvement					1.28(.60)	[1.00, 2.47]	.11*
Avoidant Reactions	.00(.02)	[-.04, .05]	.01(.06)	[-.11, .12]			
Loss of Control Reactions	.13(.03)	[.08, .20]	.32(.07)	[.02, .48]			
Positive Reappraisal	.02(.01)	[.01, .04]	.05(.02)	[.02, .09]			

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

a stronger partial mediation compared with positive reappraisal, β = -.28, *SE* = .08, CI [-.44, -.14]. There was not a significant indirect effect for avoidant reactions.

Path coefficients from the second mediation analysis predicting anxiety can be found in Figure 2, and mediator indirect effects statistics with 95% confidence intervals can be found in Table 4. Results from 10,000 bootstrapped samples did not indicate a partial mediation. Although there was a significant direct effect of psychological inflexibility on anxiety symptoms, *B* = .11, *SE* = .03, CI [.06, .16], and a significant total indirect effect of all mediators, *B* = .05, *SE* = .02, CI [.01, .10], none of the reaction styles partially mediated the effects of inflexibility on anxiety symptoms (i.e., all confidence intervals included 0).

Discussion

The aim of this study was to examine the relations between psychological inflexibility, reactions to retirement loss, and depression and anxiety symptoms in a sample of retired elite competitors. Inflexibility predicted greater symptoms of both depression and anxiety, providing support for H1. In partial support of H2, loss of control and positive reappraisal response styles partially mediated the relation between inflexibility and depression symptoms. There were no significant mediators between inflexibility and anxiety symptoms.

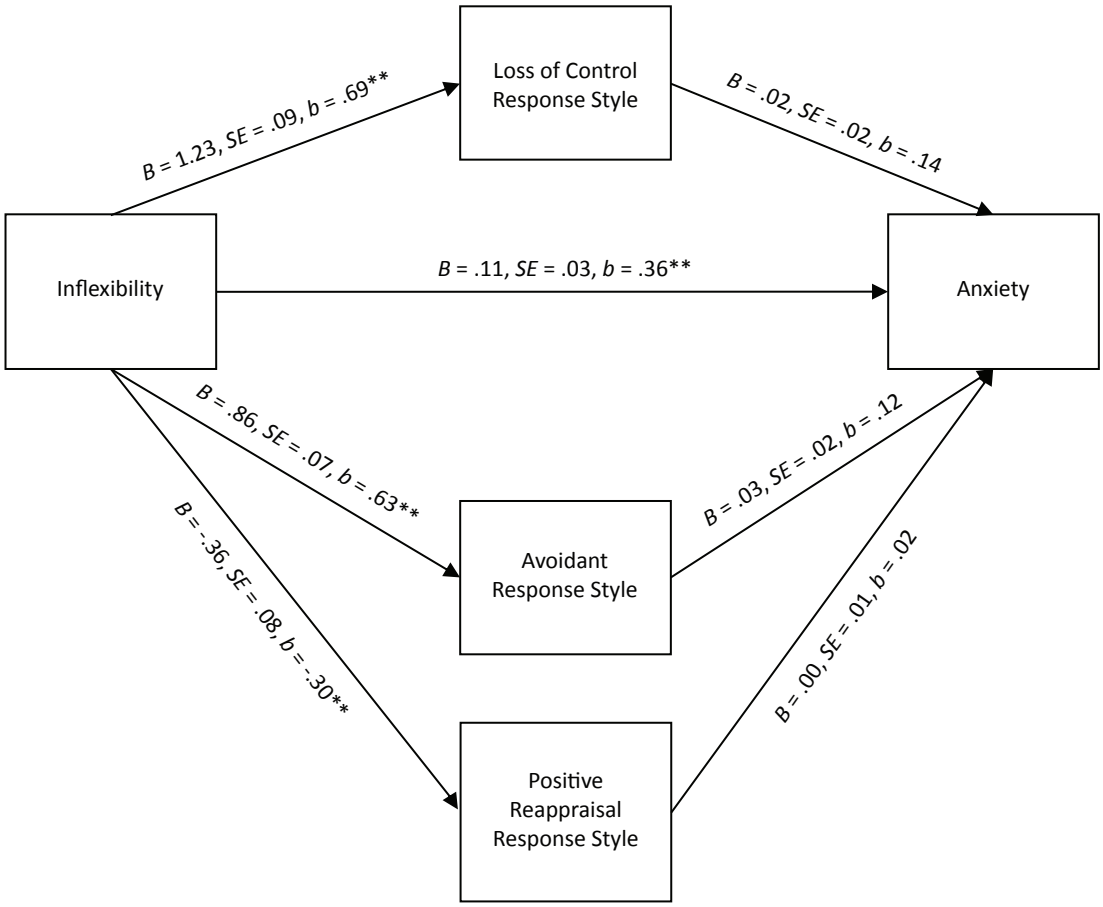
Our findings are in line with other studies that have shown inflexibility to be associated with higher levels of depressive and anxiety symptoms (Hayes, 1996; Levin et al., 2014). Our findings also corroborate studies that have shown ruminative reactions to loss to predict higher depression and anxiety symptoms (Benjamin et al., 2020; Mennin et al., 2018; Michl et al., 2013; Nedelec et al., 2018). Our findings also verify those of Cooley et al. (2010), which established positive reappraisal of a loss to significantly predict decreased symptoms of depression. Although past studies have demonstrated avoidant responses mediate the relation between inflexibility and symptoms of anxiety (Dawson & Golijani-Moghaddam, 2020; Rueda & Valls, 2020), we did not find that reactions to loss mediated the relation between inflexibility and anxiety.

However, our findings move beyond replication and extend the literature in several key ways. First, to our knowledge, the current study is the first to demonstrate these findings within a high-performance context. Most previous research on psychological inflexibility was conducted in clinical or undergraduate samples (Krafft et al., 2018). Given the demands of a high-performance context and the types of individuals who compete in such contexts, showing the direct effects of inflexibility on depression and anxiety, as well as the indirect effects through reactions to loss, is an important step forward for basic and applied literature. Second, the findings suggest different pathways by which inflexibility affects depression and anxiety symptoms through reactions to loss. The indirect effects through loss of control reactions and positive reappraisal were significant for depression, and loss of control reactions was a significantly stronger mediator of the two. In contrast, reactions to loss, although significantly related to anxiety symptoms, did not mediate the relation between inflexibility and anxiety symptoms. The discrepancy in anxiety and depression symptomatology suggests that certain reactions to loss may be more problematic for inflexible people prone to depression versus anxiety symptoms, and they may point toward the need for more targeted interventions at the time of retirement.

The fact that DCI enforces such a rigid retirement age makes it a prime context for examining reactions to retirement because retirement age (i.e., 21) and reason for retiring (i.e., forced) are less variable than other competitive contexts, which allows individual difference variables (rather than situational variation) to be examined. The mandatory age-out may affect reactions to loss in specific ways because it is outside the person's control. Our data suggest that people with greater psychological inflexibility are more likely to experience such a forced retirement as a loss of control and less likely to positively reappraise it as they process the loss, which are each associated with greater depression symptomatology. Our preliminary analyses indicate that people who remain somehow involved in the marching arts (e.g., band director, judge) have less depression and a greater positive appraisal of the loss. This continued involvement in a new capacity may appraise an involuntary retirement as less of a retirement and more of a change in role.

Results based on the basic mediation model underscore the significance of competitors' appraisal of retirement as they prepare to leave their performance setting. Involuntary retirement from competition has been shown to be psychologically injurious across ages, genders, sports, and cultures (Alfermann et al., 2004; Brown et al., 2017; Chang et al., 2019; Filbay et al., 2017), with involuntarily retired athletes reporting higher levels of depression, anxiety, social disorientation, loss of identity, and feelings of frustration compared to the general population (Gouttebarge et al., 2019; Miller & Buttell, 2018). Psychological stress related to the process of athletic retirement (e.g., retirement planning,

Figure 2. Simultaneous Mediation Model: Inflexibility and Anxiety through Reactions to Loss



Note: Mediation model predicting anxiety symptoms (N = 223) where statistics associated with the arrow from Inflexibility to Anxiety represent direct effects. *p < .05, **p < .01.

Table 6. Mediation Statistics for Anxiety

	Unstandardized Indirect Effect		Completely Standardized Indirect Effect		Unstandardized Direct Effect		Completely Standardized Direct Effect
Predictor Variable	***B*(*SE*)**	**95% CI**	***B*(*SE*)**	**95% CI**	***B*(*SE*)**	**95% CI**	**β**
Psychological Inflexibility					.17(.02)	[.13, .20]	.54***
Age					-.29(.10)	[-.49, -.09]	-.16**
Gender Identity					.82(.43)	[-.03, 1.66]	.11
Involvement					-.09(.49)	[-1.06, .87]	-.01
Avoidant Reactions	.02(.02)	[-.02, .07]	.08(.07)	[-.06, .22]			
Loss of Control Reactions	.03(.03)	[-.02, .08]	.10(.08)	[-.07, .26]			
Positive Reappraisal	-.00(.01)	[-.01, .01]	-.01(.02)	[-.04, .03]			

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

psychological adjustment, reworking of identity) contributes to higher levels of mental illness symptoms post-retirement (Esopenko et al., 2020; Gouttebarge et al., 2019). Our data suggest that competitors might engage with the retirement experience in such a way that depression symptoms can be minimized or avoided, specifically by seeking to decrease their psychological inflexibility, which will allow them to engage in positive reappraisal and decrease the sense of a loss of control as they react to the loss. Likewise, generally decreasing inflexibility will also be beneficial for lowered anxiety symptoms but through mechanisms other than reactions to loss.

Applied performance practitioners and clinicians who are treating retiring competitors should primarily focus efforts on decreasing inflexibility amidst retirement, as higher levels of inflexibility directly predicted negative reactions to retirement as well as increased anxiety and depression symptoms. Practitioners can do so by employing interventions from the ACT framework that help competitors cognitively defuse worrisome thoughts; such activities include repeated mindfulness practice, increased present-moment awareness, and acceptance in the face of distress. These interventions will likely reduce the ruminative and avoidant behaviors seen in those who are highly inflexible (Hayes, 1999; Wolkin, 2015), thereby decreasing the intensity of the loss of control reaction style and increasing positive reappraisal, which is associated with depressive symptoms. This is in line with other research that has shown decreased inflexibility to be associated with decreased mental illness symptoms over time (Østergaard et al., 2020). Non-clinician applied performance practitioners can also engage in mindfulness practices, enhance present moment awareness, and encourage the acceptance of distress among current competitors to prepare them for adaptive goal disengagement upon retirement; such practices may include engaging in a group setting and having additional benefits beyond preparation for retirement. Likewise, practitioners can help competitors who are nearing forced retirement make a plan for disengaging from their competition goals and, ideally, identify new goals that still align with their values (Brandstätter et al., 2013; Wrosch et al., 2003).

In addition to decreasing inflexibility, it would benefit retiring competitors to assign meaning to their experience in competition to increase positive reappraisal reactions and decrease any associated depressive symptoms. Lallay (2007) showed that elite competitors who can anticipate a disruption in their athletic identity following retirement and proactively utilize positive coping mechanisms tend to experience less identity confusion following retirement. Within the ACT model, one way to decrease inflexibility and positively engage with an experience is to identify values that are salient to the competitor and to identify actions they can take that are congruent with those values. For example, if a DCI participant is approaching retirement and identifies competition and camaraderie as important values in their life, clinicians or applied performance practitioners could help competitors to identify activities in which they can engage in post-retirement that are congruent with those values (e.g., continued recreational competition, becoming a coach or volunteer within DCI). Our findings corroborate this suggestion in that retired DCI competitors still involved in the organization utilized greater levels of positive reappraisal compared to retired competitors no longer involved in DCI. Past research in performing arts settings has also found that perceived continuation of social support from fellow competitors positively influenced retirement transition processes (Willard & Lavallee, 2016). Such involvement can facilitate smoother transitions from competition and will likely buffer retired competitors from adverse mental health outcomes post-career. Thus, applied performance practitioners can also encourage competitors to engage in their social relationships from their competitive context during and after the retirement transition.

Limitations and Future Directions

Our data are cross-sectional and retrospective self-reports, so we cannot make firm interpretative claims. To make substantial predictions, longitudinal data would be ideal. Furthermore, the retrospective nature of this study and age range 20–29 years create a limitation of memory recall (i.e., a 29-year-old reflecting on their experience post-retirement from 8 years earlier). Additionally, the current study places some constraints on generalizability. It is difficult to determine whether these effects would extend to other competitive contexts. This constraint is especially true for DCI, given that it shares similarities with both athletics and the arts and shares similarities with both individual and team sports. Future studies need to examine these processes in both retiring athlete and non-athlete competitors, and within individual and team-based competitive contexts.

Conclusion

Greater inflexibility is associated with greater depression and anxiety symptoms, and the association between inflexibility and depression is partially explained by two reactions to retirement: loss of control and positive reappraisal. The degree to which a competitor is unwilling to approach internal distress associated

with retirement directly influences depression and anxiety symptoms, and greater loss of control reactions and positive reappraisal partially explain the effect of inflexibility on depression symptoms. Applied performance practitioners can prepare competitors for retirement by employing mindfulness practice and present moment awareness; working with retiring competitors would benefit from targeting inflexibility as an individual engages with athletic retirement.

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References

About Drum Corps International (DCI), Marching Music's Major League™. (n.d.). https://dci.org/static/about-drum-corps-international

Alfermann, D., Stambulova, N., & Zemaityte, A. (2004). Reactions to sport career termination: A cross-national comparison of German, Lithuanian, and Russian athletes. *Psychology of Sport and Exercise, 5*(1), 61–75. https://doi.org/10.1016/S1469-0292(02)00050-X

Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment, 10*(2), 176–181. https://doi.org/10.1037/1040-3590.10.2.176

Arnaudova, I., Kindt, M., Fanselow, M., & Beckers, T. (2017). Pathways towards the proliferation of avoidance in anxiety and implications for treatment. *Behaviour Research and Therapy, 96*, 3–13. https://doi.org/10.1016/j.brat.2017.04.004

Arnett, J. J. (2007). Emerging adulthood: What is it, and what is it good for? *Child Development Perspectives, 1*(2), 68–73. https://doi.org/10.1111/j.1750-8606.2007.00016.x

Arnett, J. J., Žukauskienė, R., & Sugimura, K. (2014). The new life stage of emerging adulthood at ages 18–29 years: Implications for mental health. *The Lancet Psychiatry, 1*(7), 569–576. https://doi.org/10.1016/S2215-0366(14)00080-7

Arslan, G., & Allen, K-A. (2022). Exploring the association between coronavirus stress, meaning in life, psychological flexibility, and subjective well-being. *Psychology, Health & Medicine, 27*(4), 803–814. https://doi.org/10.1080/13548506.2021.1876892

Aukee, H. (2014). Acceptance-, mindfulness- and value-based psychological coaching for elite female floorball players (Master's thesis, University of Jyväskylä, Jyväskylä, Finland).

Barlow, D. H., Farchione, T. J., Fairholme, C. P., Ellard, K. K., Boisseau, C. L., Allen, L. B., & Ehrenreich-May, J. (2011). *Unified Protocol for transdiagnostic treatment of emotional disorders: Therapist guide*. Oxford University Press.

Benjamin, C. L., Curtis, R. M., Huggins, R. A., Sekiguchi, Y., Jain, R. K., McFadden, B. A., & Casa, D. J. (2020). Sleep dysfunction and mood in collegiate soccer athletes. *Sports Health: A Multidisciplinary Approach, 12*(3), 234–240. https://doi.org/10.1177/1941738120916735

Bianco, T., Malo, S., & Orlick, T. (1999). Sport injury and illness: Elite skiers describe their experiences. *Research Quarterly for Exercise and Sport, 70*(2), 157–169. https://doi.org/10.1080/02701367.1999.10608033

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., & Waltz, T., Zettle, R. D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire – II: A revised measure of psychological flexibility and acceptance. *Behavior Therapy, 42*(4), 676–688. https://doi.org/10.1016/j.beth.2011.03.007

Brandstätter, V., Herrmann, M., & Schüler, J. (2013). The struggle of giving up personal goals: Affective, physiological, and cognitive consequences of an action crisis. *Personality and Social Psychology Bulletin, 39*(12), 1668–1682. https://doi.org/10.1177/0146167213500151

Brewer, B. W., Cornelius, A. E., Stephan, Y., & Van Raalte, J. L. (2010). Self-protective changes in athletic identity following anterior cruciate ligament reconstruction. *Psychology of Sport and Exercise, 11*(1), 1–5. https://doi.org/10.1016/j.psychsport.2009.09.005

Carraça, B., Serpa, S., Rosado, A., & Palmi, J. (2018). The Mindfulness-Based Soccer Program (MBSoccerP): Effects on elite athletes. *Cuadernos de Psicología del Deporte, 18*(3), 62–85. https://revistas.um.es/cpd/article/view/323541

Carraça, B., Serpa, S., Rosado, A., & Guerrero, J. P. (2019). A pilot study of a mindfulness-based program (MBSoccerP): The potential role of mindfulness, self-compassion, and psychological flexibility on flow and elite performance in soccer athletes. *Ibero-American Journal of Exercise and Sports Psychology, 14*, 34–40.

Carraça, B., Serpa, S., Rosado, A., Guerrero, J. P., & Magalhaes, C. (2019). Mindful compassion training on elite soccer: Effects, roles and associations on flow, psychological distress and thought suppression. *Ibero-American Journal of Exercise and Sports Psychology, 14*, 141–149.

Chang, C., Putukian, M., Aerni, G., Diamond, A., Hong, G., Ingram, Y., Reardon, C. L., & Wolanin, A. (2019). Mental health issues and psychological factors in athletes: detection, management, effect on performance and prevention: American Medical Society for Sports Medicine Position Statement–Executive Summary. *British Journal of Sports Medicine, 54*(4), 216–220. http://doi.org/10.1136/bjsports-2019-101583

Chang, W. H., Chi, L., Lin, S., & Ye, Y. (2017). Psychometric properties of the acceptance and action questionnaire – II for Taiwanese college students and elite athletes. *Current Psychology, 36*(1), 147–156. https://doi.org/10.1007/s12144-015-9395-x

Chronister, J. & Chan, G. (2007). Hierarchical coping: A conceptual framework for understanding coping within the context of chronic illness and disability. In E. Martz & H. Livneh (Eds.), *Coping with chronic illness and disability: Theoretical, empirical, and clinical aspects* (pp. 49–71). Springer. https://doi.org/10.1007/978-0-387-48670-3_3

Clemente-Suárez, V. J., Fuentes-Garcia, J. P., de la Vega Marcos, R., & Martinez Patiño, M.J. (2020). Modulators of the personal and professional threat perception of Olympic athletes in the actual COVID-19 crisis. *Frontiers in Psychology, 11*, 1985. https://doi.org/10.3389/fpsyg.2020.01985

Coakley, J. J. (1983). Leaving competitive sport: Retirement or rebirth? *Quest, 35*(1), 1–11. https://doi.org/10.1080/00336297.1983.10483777

Coleman, N., & Roberts, W. O. (2021). Mental health aspects of voluntary and involuntary sport retirement. *Current Sports Medicine Reports, 20*(12), 651–654. https://doi.org/10.1249/JSR.0000000000000920

Cooley, E., Toray, T., & Roscoe, L. (2010). Reactions to loss scale: Assessing grief in college students. *Omega, 61*(1), 25–51. https://doi.org/10.2190/OM.61.1.b

Cooley, E., Toray, T., & Roscoe, L. (2014). Assessing effective coping with bereavement in college students: The reactions to loss scale. *Omega, 68*(3), 241–257. https://doi.org/10.2190/OM.68.3.d

Dalrymple, K. L. & Herbert, J. D. (2007). Acceptance and commitment therapy for generalized social anxiety disorder: A pilot study. *Behavior Modification, 31*(5), 543–568. https://doi.org/10.1177/0145445507302037

Dawson, D. L., & Golijani-Moghaddam, N. (2020). COVID-19: Psychological inflexibility, coping, mental health, and wellbeing in the UK during the pandemic. *Journal of Contextual Behavioral Science, 17*, 126–134. https://doi.org/10.1016/j.jcbs.2020.07.010

Dehghani, M., Saf, A. D., Vosoughi, A., Tebbenouri, G., & Zarnagh, H. G. (2018). Effectiveness of the mindfulness-acceptance-commitment-based approach on athletic performance and sports competition anxiety: A randomized clinical trial. *Electronic Physician, 10*(5), 6749–6755. https://doi.org/10.19082/6749

DeYoung, C. G., & Tiberius, V. (2023). Value fulfillment from a cybernetic perspective: A new psychological theory of well-being. *Personality and Social Psychology Review, 27*(1), 3–27. https://doi.org/10.1177/10888683221083777

Dunstan, D., Scott, N., & Todd, A. K. (2017). Screening for anxiety and depression: Reassessing the utility of the Zung scales. *BMC Psychiatry, 17*, 329. https://doi.org/10.1186/s12888-017-1489-6

Esopenko, C., Coury, J. R., Pieroth, E. M., Noble, J. M., Trofa, D. P., & Bottiglieri, T. S. (2020). The psychological burden of retirement from sport. *Current Sports Medicine Reports, 19*(10), 430–437. https://doi.org/10.1249/JSR.0000000000000761

Feldner, M. T., Hekmat, H., Zvolensky, M. J., Vowles, K. E., Sechrist, Z., & Leen-Feldner, E. W. (2006). The role of experiential avoidance in acute pain tolerance: A laboratory test. *Journal of Behavior Therapy and Experimental Psychiatry, 37*(2), 146–158. https://doi.org/10.1016/j.jbtep.2005.03.002

Filbay, S., Bishop, F. L., Peirce, N., Jones, M., & Arden, N. K. (2017). Common attributes in retired professional cricketers that may enhance or hinder quality of life after retirement: A qualitative study. *BMJ Open, 7*(7). https://doi.org/10.1136/bmjopen-2017-016541

Gouttebarge, V., Castaldelli-Maia, J. M., Gorczynski, P., Hainline, B., Hitchcock, M. E., Kerkhoffs, G. M., Rice, S. M., & Reardon, C. L. (2019). Occurrence of mental health symptoms and disorders in current and former elite athletes: A systematic review and meta-analysis. *British Journal of Sports Medicine, 53*(11), 700–706. https://doi.org/10.1136/bjsports-2019-100671

Harris, D. L. (Ed.). (2020). *Non-death loss and grief: Context and clinical implications*. Routledge.

Harrison, C., & Ruddock-Hudson, M. (2017). Perceptions of pain, injury, and transition-retirement: The experiences of professional dancers. *Journal of Dance Medicine & Science, 21*(2), 43–52. https://doi.org/10.12678/1089-313X.21.2.43

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. The Guilford Press.

Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. *Behavior Therapy, 35*(4), 639–665. https://doi.org/10.1016/S0005-7894(04)80013-3

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behavior Research and Therapy, 44*(1), 1–25. https://doi.org/10.1016/j.brat.2005.06.006

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change*. The Guilford Press.

Hayes, S. C., Wilson, K. W., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64*(6), 1152–1168. https://doi.org/10.1037/0022-006X.64.6.1152

Kalin, N. H. (2020). The critical relationship between anxiety and depression. *The American Journal of Psychiatry, 177*(5), 365–367. https://doi.org/10.1176/appi.ajp.2020.20030305

Kato, T. (2016). Impact of psychological inflexibility on depressive symptoms and sleep difficulty in a Japanese sample. *SpringerPlus, 5*(712). https://doi.org/10.1186/s40064-016-2393-0

Kessler, R. C., Sampson, N. A., Berglund, P., Gruber, M. J., Al-Hamzawi, A., Andrade, L., Bunting, B., Demyttenaere, K., Florescu, S., de Girolamo, G., Gureje, O., He, Y., Hu, C., Huang, Y., Karam, E., Kovess-Masfety, V., Lee, S., Levinson, D., Medina Mroa, M. E., … Wilcox, M. A. (2015). Anxious and non-anxious major depressive disorder in the World Health Organization World Mental Health Surveys. E*pidemiology and Psychiatric Sciences, 24*(3), 210–226. https://doi.org/10.1017/S2045796015000189

Krafft, J., Hicks, E. T., Mack, S. A., & Levin, M. E. (2019). Psychological inflexibility predicts suicidality over time in college students. *Suicide and Life Threatening Behavior, 49*(5), 1488–1496. https://doi.org/10.1111/sltb.12533

Krafft, J., Ferrell, J., Levin, M. E., & Twohig, M. P. (2018). Psychological inflexibility and stigma: A meta-analytic review. *Journal of Contextual Behavioral Science, 7*, 15–28. https://doi.org/10.1016/j.jcbs.2017.11.002

Lally, P. (2007). Identity and athletic retirement: A prospective study. *Psychology of Sport and Exercise, 8*(1), 85–99. https://doi.org/10.1016/j.psychsport.2006.03.003

Levin, M. E., MacLane, C., Daflos, S., Seeley, J. R., Hayes, S. C., Biglan, A., & Pistorello, J. (2014). Examining psychological inflexibility as a transdiagnostic process across psychological disorders. *Journal of Contextual Behavioral Science, 3*(3), 155–163. https://doi.org/10.1016/j.jcbs.2014.06.003

Livneh, H. & Martz, E. (2007). An introduction to coping theory and research. In E. Martz & H. Livneh (Eds.), *Coping with chronic illness and disability: Theoretical, empirical, and clinical aspects* (pp. 3–27). Springer. https://doi.org/10.1007/978-0-387-48670-3_1

Martin, L. A., Fogarty, G. J., & Albion, M. J. (2014). Changes in athletic identity and life satisfaction of elite athletes as a function of retirement status. *Journal of Applied Sport Psychology, 26*(1), 96–110. https://doi.org/10.1080/10413200.2013.798371

McKnight, K., Bernes, K., Gunn, T., Chorney, D., Orr, D., & Bardick, A. (2009). Life after sport: Athletic career transition and transferable skills. *Journal of Excellence, 13*, 63–77. https://hdl.handle.net/10133/1175

Menke, D. J., & Germany, M.-L. (2019). Reconstructing athletic identity: College athletes and sport retirement. *Journal of Loss and Trauma, 24*(1), 17–30. https://doi.org/10.1080/15325024.2018.1522475

Mennin, D. S., Fresco, D. M., O'Toole, M. S., & Heimberg, R. G. (2018). A randomized controlled trial of emotion regulation therapy for generalized anxiety disorder with and without co-occurring depression. *Journal of Consulting and Clinical Psychology, 86*(3), 268–281. https://doi.org/10.1037/ccp0000289

Michl, L. C., McLaughlin, K. A., Shepherd, K., & Nolen-Hoeksema, S. (2013). Rumination as a mechanism linking stressful life events to symptoms of depression and anxiety: Longitudinal evidence in early adolescent and adults. *Journal of Abnormal Psychology, 122*(2), 339–352. https://psycnet.apa.org/record/2013-17531-002

Miller, L., & Buttell, F. P. (2018). Are NCAA Division I athletes prepared for end-of-athletic career transition? A literature review. *Journal of Evidence-Informed Social Work, 15*(1), 52–70. https://doi.org/10.1080/23761407.2017.1411305

Montero, A., Stevens, D., Adams, R., & Drummond, M. (2022). Sleep and mental health issues in current and former athletes: A mini review. *Frontiers in Psychology, 13*. https://doi.org/10.3389/fpsyg.2022.868614

Nedelec, M., Aloulou, A., Duforez, F., Meyer, T., & Dupont, G. (2018). The variability of sleep among elite athletes. *Sports Medicine – Open, 4*, 34. https://doi.org/10.1186/s40798-018-0151-2

Østergaard, T., Lundgren, T., Zettle, R. D., Landrø, N. I., & Haaland, V. Ø. (2020). Psychological flexibility in depression relapse prevention: Processes of change and positive mental health in group-based ACT for residual symptoms. *Frontiers in Psychology, 11*. https://doi.org/10.3389/fpsyg.2020.00528

Park, S., Lavallee, D., & Tod, D. (2012). Athletes' career transition out of sport: A systematic review. *International Review of Sport and Exercise Psychology, 6*(1), 22–53. https://doi.org/10.1080/1750984X.2012.687053

Pourabdol, S., Roshan, R., Yaghubi, H., Sobhi-gharamaleki, N., & Fesharaki, M. G. (2020). The role of psychological inflexibility and emotion dysregulation in predicting intensity of anger in competitive athletes. *Journal of Counseling Research, 19*(75), 192–213. http://dx.doi.org/10.29252/jcr.19.75.192

Reifman, A., Arnett, J. J., & Colwell, M. J. (2007). Emerging adulthood: Theory, assessment and application. *Journal of Youth Development, 2*(1), 37–48. https://doi.org/10.5195/jyd.2007.359

Rueda, B. & Valls, E. (2020). Is the effect of psychological inflexibility on symptoms and quality of life mediated by coping strategies in patients with mental disorders? *International Journal of Cognitive Therapy, 13*, 112–126. https://doi.org/10.1007/s41811-020-00069-4

Stankovich, C. E., Meeker, D. J., & Henderson, J. L. (2001). The positive transitions model for sport retirement. *Journal of College Counseling, 4*(1), 81–84. https://doi.org/10.1002/j.2161-1882.2001.tb00186.x

Stephan, Y., Bilard, J., Ninot, G., & Delignieres, D. (2003). Bodily transition out of elite sport: A one-year study of physical self and global self-esteem among transitional athletes. *International Journal of Sport and Exercise Psychology, 1*(2), 192–207. https://doi.org/10.1080/1612197X.2003.9671712

Willard, V. C., & Lavallee, D. (2016). Retirement experiences of elite ballet dancers: Impact of self-identity and social support. *Sport, Exercise, and Performance Psychology, 5*(3), 266–279. https://doi.org/10.1037/spy0000057

Wolkin, J. R. (2015). Cultivating multiple aspects of attention through mindfulness meditation accounts for psychological well-being through decreased rumination. *Psychology Research and Behavior Management, 8*, 171–180. https://doi.org/10.2147/PRBM.S31458

Wong, R. S. K., How, P. N., & Cheong, J. P. G. (2022). The effectiveness of a mindfulness training program on selected psychological indices and sports performance of sub-elite squash athletes. *Frontiers in Psychology, 13*, 906729. https://doi.org/10.3389/fpsyg.2022.906729

Wrosch, C., Scheier, M. F., Carver, C. S., & Schulz, R. (2003). The importance of goal disengagement in adaptive self-regulation: When giving up is beneficial. *Self and Identity, 2*(1), 1–20. https://doi.org/10.1080/15298860309021

Supplemental Material

Table S1. Mediation Statistics for Positive Reappraisal → Inflexibility → Depression Symptoms

	Unstandardized Indirect Effect		Completely Standardized Indirect Effect		Unstandardized Direct Effect		Completely Standardized Direct Effect
Predictor Variable	***B*(*SE*)**	**95% CI**	***B*(*SE*)**	**95% CI**	***B*(*SE*)**	**95% CI**	**β**
Positive Reappraisal					-.09(.02)	[-.13, -.05]	-.26***
Age					-.30(.15)	[-.60, -.00]	-.13*
Gender Identity					2.00(.15)	[.67, 3.25]	.19**
Involvement					1.43(.76)	[-.06, 2.93]	.12
Psychological Inflexibility	-.06(.02)	[-.09, -.03]	-.18(.04)	[-.27, -.09]			

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

Table S2. Mediation Statistics for Avoidant Reactions→ Inflexibility → Depression Symptoms

	Unstandardized Indirect Effect		Completely Standardized Indirect Effect		Unstandardized Direct Effect		Completely Standardized Direct Effect
Predictor Variable	***B*(*SE*)**	**95% CI**	***B*(*SE*)**	**95% CI**	***B*(*SE*)**	**95% CI**	**β**
Avoidant Reactions					.17(.02)	[.14, .20]	.57***
Age					-.05(.13)	[-.31, .20]	-.02
Gender Identity					1.22(.55)	[.13, 2.31]	.12*
Involvement					1.10(.64)	[-.16, 2.36]	.09
Psychological Inflexibility	.08(.02)	[.06, .12]	.28(.05)	[.19, .38]			

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

Table S3. Mediation Statistics for Loss of Control Reactions → Inflexibility → Depression Symptoms

	Unstandardized Indirect Effect		Completely Standardized Indirect Effect		Unstandardized Direct Effect		Completely Standardized Direct Effect
Predictor Variable	***B*(*SE*)**	**95% CI**	***B*(*SE*)**	**95% CI**	***B*(*SE*)**	**95% CI**	**β**
Loss of Control Reactions					.15(.01)	[.13, .17]	.66***
Age					-.17(.12)	[-.40, .06]	-.07
Gender Identity					1.10(.50)	[.11, 2.08]	.11*
Involvement					1.11(.57)	[-.02, 2.25]	.09
Psychological Inflexibility	.05(.01)	[.03, .07]	.22(.05)	[.12, .32]			

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

Table S4. Mediation Statistics for Positive Reappraisal → Inflexibility → Anxiety Symptoms

	Unstandardized Indirect Effect		Completely Standardized Indirect Effect		Unstandardized Direct Effect		Completely Standardized Direct Effect
Predictor Variable	***B*(*SE*)**	**95% CI**	***B*(*SE*)**	**95% CI**	***B*(*SE*)**	**95% CI**	**β**
Positive Reappraisal					-.03(.02)	[-.06, .01]	-.11
Age					-.38(.12)	[-.61, -.15]	-.21*
Gender Identity					1.30(.51)	[.30, 2.30]	.17*
Involvement					.17(.59)	[-.99, 1.33]	.02
Psychological Inflexibility	-.04(.01)	[-.07, -.02]	-.17(.04)	[-.26, -.08]			

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

Table S5. Mediation Statistics for Avoidant Reactions → Inflexibility → Anxiety Symptoms

	Unstandardized Indirect Effect		Completely Standardized Indirect Effect		Unstandardized Direct Effect		Completely Standardized Direct Effect
Predictor Variable	***B*(*SE*)**	**95% CI**	***B*(*SE*)**	**95% CI**	***B*(*SE*)**	**95% CI**	**β**
Avoidant Reactions					.11(.01)	[.08, .13]	.48***
Age					-.23(.11)	[-.44, -.02]	-.13*
Gender Identity					.89(.44)	[.00, 1.77]	.11*
Involvement					-.19(.52)	[-1.21, .82]	-.02
Psychological Inflexibility	.06(.01)	[.04, .08]	.26(.05)	[.16, .36]			

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

Table S6. Mediation Statistics for Loss of Control Reactions → Inflexibility → Anxiety Symptoms

	Unstandardized Indirect Effect		Completely Standardized Indirect Effect		Unstandardized Direct Effect		Completely Standardized Direct Effect
Predictor Variable	***B*(*SE*)**	**95% CI**	***B*(*SE*)**	**95% CI**	***B*(*SE*)**	**95% CI**	**β**
Loss of Control Reactions					.09(.01)	[.06, .11]	.49***
Age					-.31(.10)	[-.51, -.11]	-.17**
Gender Identity					.86(.44)	[-.01, 1.73]	.11
Involvement					.13(.51)	[-1.13, .87]	-.01
Psychological Inflexibility	.04(.01)	[.03, .06]	.26(.05)	[.16, .36]			

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

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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).

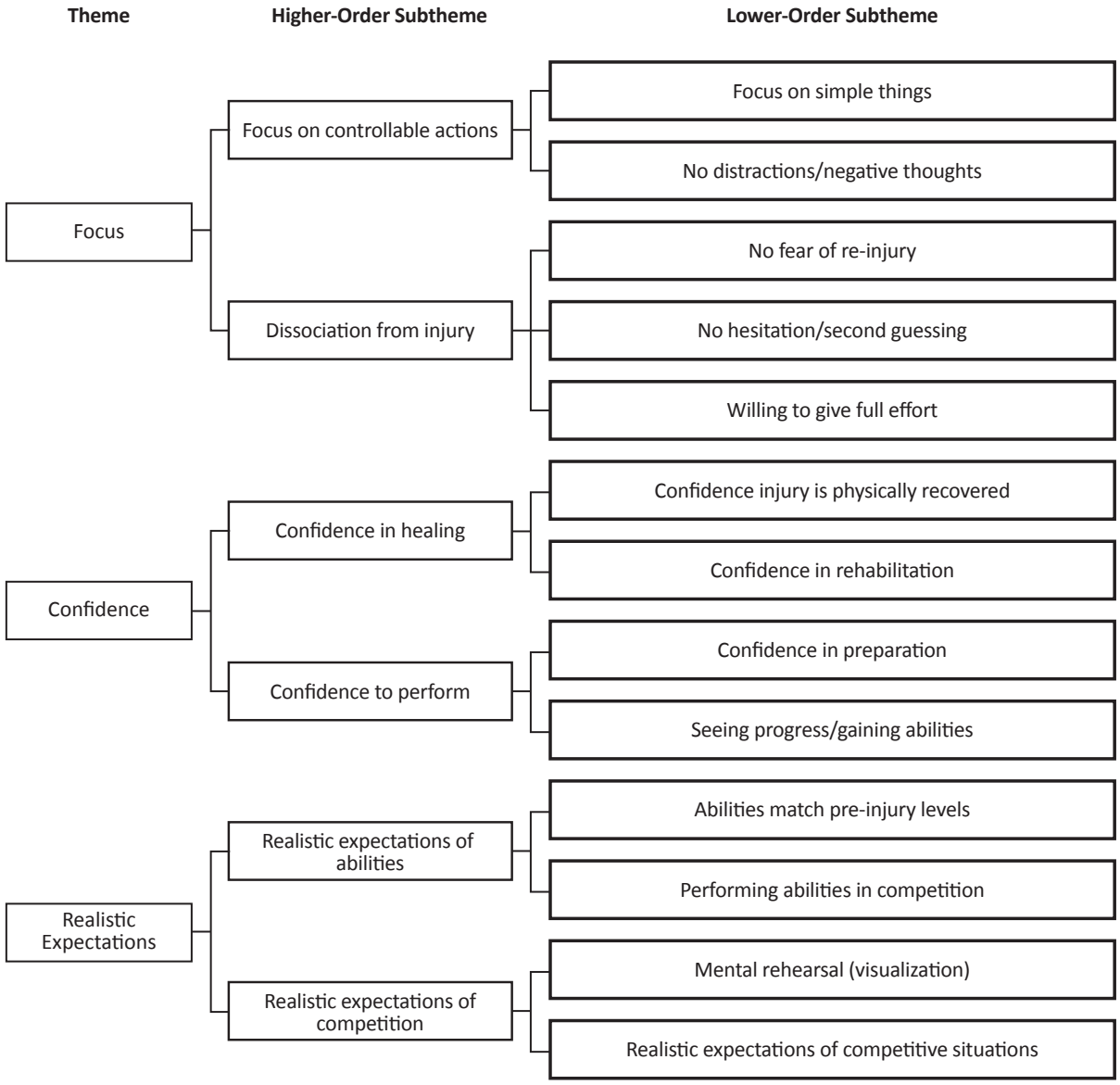
Trustworthiness

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)

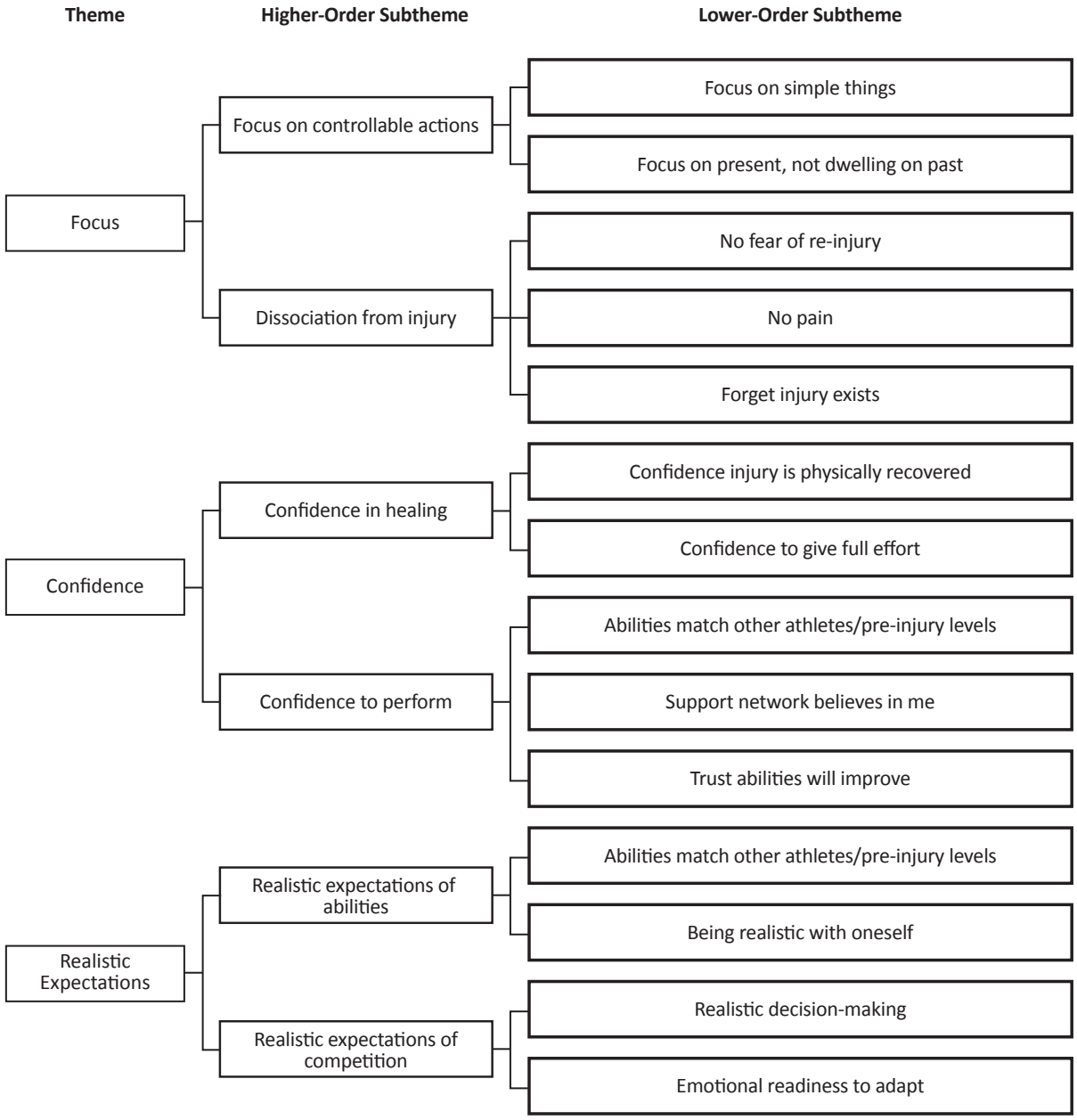


Focus

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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References

Ardern, C. L., Glasgow, P., Schneiders, A., Witvrouw, E., Clarsen, B., Cools, A., Gojanovic, B., Griffin, S., Khan, K. M., Moksnes, H., Mutch, S. A., Phillips, N., Reurink, G., Sadler, R., Silbernagel, K. G., Thorborg, K., Wangensteen, A., Wilk, K. E., & Bizzini, M. (2016). 2016 Consensus statement on return to sport from the First World Congress in Sports Physical Therapy, Bern. *British Journal of Sports Medicine, 50*(14), 853–864. http://dx.doi.org/10.1136/bjsports-2016-096278

Ardern, C. L., Osterberg, A., Tagesson, S., Gauffin, H., Webster, K. E., & Kvist, J. (2014). The impact of psychological readiness to return to sport and recreational activities after anterior cruciate ligament reconstruction. *British Journal of Sports Medicine, 48*(22), 1613–1619. https://doi.org/10.1136/bjsports-2014-093842

Ardern, C. L., Taylor, N. F., Feller, J. A., & Webster, K. E. (2012). A systematic review of the psychological factors associated with returning to sport following injury. *British Journal of Sports Medicine, 47*(17), 1120–1126. http://dx.doi.org/10.1136/bjsports-2012-091203

Baumeister, R. F., Bratslavsky, E., Muraven, M., & Tice, D. M. (1998). Ego depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology, 74*(5), 1252–1265. https://doi.org/10.1037%2F0022-3514.74.5.1252

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. http://dx.doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health, 11*(4), 589–597. https://doi.org/10.1080/2159676X.2019.1628806

Brewer, B. W. (2007). Psychology of sport injury rehabilitation. In G. Tenenbaum, & R. Eklund (Eds.), *Handbook of sport psychology* (3rd ed., pp. 404–424). John Wiley & Sons. https://doi.org/10.1002/9781118270011.ch18

Burland, J. P., Toonstra, J. L., & Howard, J. S. (2019). Psychological barriers after anterior cruciate ligament reconstruction: A clinical review of factors influencing postoperative success. *Sports Health: A Multidisciplinary Approach, 11*(6), 528–534. https://doi.org/10.1177/1941738119869333

Cleveland Clinic. (2020). Concussion. https://my.clevelandclinic.org/health/diseases/15038-concussion

Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Sage Publications. https://doi.org/10.4135/9781452230153

Creighton, D. W., Shrier, I., Shultz, R., Meeuwisse, W. H., & Matheson, G. O. (2010). Return-to-play in sport: A decision-based model. *Clinical Journal of Sports Medicine, 20*(5), 379–385. https://doi.org/10.1097/JSM.0b013e3181f3c0fe

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage Publications.

Delve, H. L., & Limpaecher, A. (2022, February 8). How to do open, axial, and selective coding in grounded theory. *Delve*. https://delvetool.com/blog/openaxialselective

Englert, C., Bertrams, A., Furley, P., & Oudejans, R. R. D. (2015). Is ego depletion associated with increased distractibility? Results from a basketball free throw task. *Psychology of Sport and Exercise, 18*, 26–31. https://doi.org/10.1016/j.psychsport.2014.12.001

Faleide, A. G. H., Magnussen, L. H., Strand, T., Bogen, B. E., Moe-Nilssen, R., Mo, I. F., Vervaat, W., & Inderhaug, E. (2021). The role of psychological readiness in return to sport assessment after anterior cruciate ligament reconstruction. *The American Journal of Sports Medicine, 49*(5), 1236–1243. https://doi.org/10.1177/0363546521991924

Fletcher, A. J. (2017). Applying critical realism in qualitative research: Methodology meets method. *International Journal of Social Research Methodology, 20*(2), 181–194. https://doi.org/10.1080/13645579.2016.1144401

Forsdyke, D., Gledhill, A., & Ardern, C. (2017). Psychological readiness to return to sport: Three key elements to help the practitioner decide whether the athlete is REALLY ready? *British Journal of Sports Medicine, 51*(7), 555–556. https://doi.org/10.1136/bjsports-2016-096770

Forsdyke, D., Smith, A., Jones, M., & Gledhill, A. (2016). Psychosocial factors associated with outcomes of sports injury rehabilitation in competitive athletes: A mixed studies systematic review. *British Journal of Sports Medicine, 50*(9), 537–544. https://doi.org/10.1136/bjsports-2015-094850

Fuller, C. W., Ekstrand, J., Junge, A., Anderson, T. E., Bahr, R., Dvorak, J., Hägglund, M., McCrory, P., & Meeuwisse, W. H. (2006). Consensus statement on injury definitions and data collection procedures in studies of football (soccer) injuries. *Scandinavian Journal of Medicine & Science in Sports, 16*(2), 83–92. https://doi.org/10.1111/j.1600-0838.2006.00528.x

Glazer, D. D. (2009). Development and preliminary validation of the injury-psychological readiness to return to sport (I-PRRS) scale. *Journal of Athletic Training, 44*(2), 185–189. https://doi.org/10.4085/1062-6050-44.2.185

Gómez-Espejo, V., Olmedilla, A., Abenza-Cano, L., Garcia-Mas, A., & Ortega, E. (2022). Psychological readiness to return to sport practice and risk of recurrence: Case studies. *Frontiers in Psychology, 13*(905816). https://doi.org/10.3389/fpsyg.2022.905816

Haugen, E. (2022). Athlete mental health & psychological impact of sport injury. *Operative Techniques in Sport Medicine, 30*(1). https://doi.org/10.1016/j.otsm.2022.150898

Ivarsson, A., Tranaeus, U., Johnson, U., & Stenling, A. (2017). Negative psychological responses of injury and rehabilitation adherence effects on return to play in competitive athletes: A systematic review and meta-analysis. *Open Access Journal of Sports Medicine, 8*, 27–32. https://doi.org/10.2147/OAJSM.S112688

Johnson, U., Ivarsson, A., Karlsson, J., Hägglund, M., Walden, M., & Borjesson, M. (2016). Rehabilitation after first-time anterior cruciate ligament injury and reconstruction in female football players: A study of resilience factors. *BMC Sports Science, Medicine and Rehabilitation, 8*(20), 1–8. https://doi.org/10.1186/s13102-016-0046-9

Kunnen, M., Dionigi, R. A., Litchfield, C., & Moreland, A. (2020). 'My desire to play was stronger than my fear of re-injury': Athlete perspectives of psychological readiness to return to soccer following anterior cruciate ligament reconstruction surgery. *Annals of Leisure Research, 23*(3), 447–461. https://doi.org/10.1080/11745398.2019.1647789

Kvist, J., Österberg, A., Gauffin, H., Tagesson, S., Webster, K., & Ardern, C. (2013). Translation and measurement properties of the Swedish version of ACL-Return to Sports after Injury questionnaire. *Scandinavian Journal of Medicine & Science in Sports, 23*(5), 568–575. https://doi.org/10.1111/j.1600-0838.2011.01438.x

McCall, A., Ardern, C., Delecroix, B., Abaidia, A., Dunlop, G., & Dupont, G. (2017). Adding a quick and simple psychological measure of player readiness into the return to play mix: A single player case study from professional football (soccer). *Sport Performance & Science Reports, 8*, 1–3.

McCullough, K. A., Phelps, K. D., Spindler, K. P., Mattava, M. J., Dunn, W. R., Parker, R. D., & Reinke, E. K. (2012). Return to high school- and college-level football after anterior cruciate ligament reconstruction: A multicenter orthopaedic outcomes network (MOON) cohort study. *The American Journal of Sports Medicine, 40*(11), 2523–2529. https://doi.org/10.1177/0363546512456836

Moustakas, C. E. (1994). *Phenomenological research methods*. Sage Publications. https://doi.org/10.4135/9781412995658

Ontario Neurotrauma Foundation. (2018). Guideline for Concussion/Mild Traumatic Brain Injury & Prolonged Symptoms. https://braininjuryguidelines.org/concussion/fileadmin/pdf/Concussion_guideline_3rd_edition_final.pdf

Muraven, M., Buczny, J., & Law, K. F. (2019). Ego depletion: Theory and evidence. In R. M. Ryan (Ed.), *The Oxford Handbook of Human Motivation* (2nd ed., pp. 111–134). The Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190666453.013.7

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Sage Publications.

Podlog, L., Banham, S. M., Wadey, R., & Hannon, J. C. (2015). Psychological readiness to return to competitive sport following injury: A qualitative study. *The Sport Psychologist, 29*(1), 1–14. https://doi.org/10.1123/tsp.2014-0063

Podlog, L., & Eklund, R. C. (2006). A longitudinal investigation of competitive athletes' return to sport following serious injury. *Journal of Applied Sport Psychology, 18*(1), 44–68. https://doi.org/10.1080/10413200500471319

Podlog, L., & Eklund, R. C. (2009). High-level athletes' perceptions of success in returning to sport following injury. *Psychology of Sport and Exercise, 10*(5) 535–544. https://doi.org/10.1016/j.psychsport.2009.02.003

Podlog, L., Wadey, R., Caron, J., Fraser, J. J., Ivarsson, A., Heil, J., Podlog, S., & Casucci, T. (2022). Psychological readiness to return to sport following injury: A state-of-the-art review. *International Review of Sport and Exercise Psychology, 16*, 1–20. https://doi.org/10.1080/1750984X.2022.2081929

Rollo, I., Cater, J. M., Close, G. L., Yangüas, J., Gomez-Diaz, A., Medina Leal, D., Duda, J. L., Holohan, D., Erith, S. J., & Podlog, L. (2020). Role of sports psychology and sports nutrition in return to play from musculoskeletal injuries in professional soccer: An interdisciplinary approach. *European Journal of Sport Science, 21*(7), 1054–1063. https://doi.org/10.1080/17461391.2020.1792558

Smith, B., & Sparkes, A. C. (Eds.). (2019). *Routledge handbook of qualitative research in sport and exercise*. Routledge. https://doi.org/10.4324/9781315762012

Timmermans, S., & Tavory, I. (2012). Theory construction in qualitative research: From grounded theory to abductive analysis. *Sociological Theory, 30*(3), 167–186. http://doi.org/10.1177/0735275112457914

Tracey, J. (2003). The emotional response to the injury and rehabilitation process. *Journal of Applied Sport Psychology, 15*(4), 279–293. https://doi.org/10.1080/714044197

Truong, L. K., Mosewich, A. D., Holt, C. J., Le, C. Y., Miciak, M., & Whittaker, J. L. (2020). Psychological, social, and contextual factors across recovery stages following a sport-related knee injury: A scoping review. *British Journal of Sports Medicine, 54*(19), 1149–1156. http://dx.doi.org/10.1136/bjsports-2019-101206

Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing and Health Sciences, 15*(3), 398–405. https://doi.org/10.1111/nhs.12048

Webster, K. E., & Hewett, T. E. (2019). What is the evidence for and validity of return-to-sport testing after anterior cruciate ligament reconstruction surgery? A systematic review and meta-analysis. *Sports Medicine, 49*(6), 917–929. https://doi.org/10.1007/s40279-019-01093-x

Weed, M. (2009). Research quality considerations for grounded theory research in sport & exercise psychology. *Psychology of Sport and Exercise, 10*(5), 502–510. https://doi.org/10.1016/j.psychsport.2009.02.007

Wiese-Bjornstal, D. M., Smith, A. M., Shaffer, S. M., & Morrey, M. A. (1998). An integrated model of response to sport injury: Psychological and sociological dynamics. *Journal of Applied Sport Psychology, 10*(1), 46–69. https://doi.org/10.1080/10413209808406377

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Beyond the Ivory Tower: Toward a More Inclusive Approach to University Scholarship

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Academia, as we know it, has been shaped by a history of exclusion based on class, race, and gender. By extension, that history has moulded our conceptualisations of what constitutes knowledge and scholarship. This article challenges academics to consider how, as keepers of knowledge, we can simultaneously be agents of scholarly change in novel ways that are expansive and inclusive.

Keywords: Academia, inclusive scholarship, gatekeepers of knowledge

Academia is an exclusive club. In this article, I attempt to critically examine the impact of academia's exclusionary roots and consider whether we, as academics, can take a more inclusive stance on what constitutes legitimate knowledge. Can we, for example, critique our veneration of the peer-reviewed academic journal article and, at the same time, expand our concept of "the literature" in our scholarly work? How might we learn to explore findings from, make connections between, and draw conclusions from different types of knowledge? And how might we be more inclusive in our methods of broadcasting our scholarship outside of the Ivory Towers we find ourselves in?

Look, Dig, & Dig Deeper

If you take a look at Wikipedia, the modern-day fountain of all dubiously sourced knowledge, the first "real university" is generally considered to be the University of Bologna, Italy, founded in 1088. It is credited as being the first university, largely because it was the first to use the Latin word "Universitas"—meaning 'the whole', or in Roman law, meaning a number of persons associated into one body, a society, company, community. Now, if you think about it for more than half a second, this seems like something of a circular (and, thus, very silly) argument, but we can let that go for now.

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If you dig a little deeper, you will find the oldest university in the world is thought to be University of Al Quaraouiyine, founded by a Muslim woman, Fatima al-Fihri in Morocco in 859 CE (Common Era). Originally founded as a mosque, it became a leading spiritual and educational centre, awarding degrees in religious studies, grammar, and rhetoric, growing to include subjects like mathematics, medicine, and astronomy.

Dig a little deeper still and you will find that places of higher learning go back much, much further. You might find your way to Nalanda, a Buddhist monastic university in 5th Century India, offering fine arts, medicine, and politics. You might find your way to the Great Library of Alexandria, Egypt, founded sometime between 323–246 BCE (Before the Common Era), and perhaps to the Ancient Egyptian Per-ankh, dating back as far as around 2000 BCE. In fact, you will probably discover many, many other ancient centres of learning across India, China, Africa, and the Middle East (Alemu, 2018).

"That's borderline interesting," you might be thinking, "but what has that got to do with anything?" Well, this is an example of how, despite acknowledging the existence of these historically global centres of learning, our ideas about what higher education is and who it is for, are coloured by a very particular, very Western, very White, and very elitist set of lenses.

Academia's Ugly Historical Roots

Academia is, by its very nature, an exclusive club. It always has been. If, for argument's sake, we do take our European medieval "universities" as the starting point,

women were effectively barred from earning degrees because priests, lawyers, or doctors were not allowed to have ovaries in those days. The first colleges established in the British American colonies, including Harvard and Yale in 1636 and 1701 respectively, were, rather unsurprisingly, major beneficiaries of the slave trade and were only available, again rather unsurprisingly, to privileged, White, male-identifying students, who often brought their enslaved Black people along with them—presumably to carry their heavy, heavy books, fetch them their Bud Lights, and adequately season their food.

The university, as we know and love it, was built on exclusion by class, race, and gender, among other things. In fact, the language of higher education was still Latin right up until the later part of the 19th Century! What all this exclusion has left us with is a very specific and very archaic way of doing things in academia, which stems from an age that no longer (in theory) exists.

Figure 1. Proof from the inside: Even we academics recognize the irony

The Ivory Tower

We are tied to an anachronistic form of writing and broadcasting our work which (a) let's face it, is often deathly boring, and (b) only serves other academics. Even our use of grammar is heavily scrutinized and must conform to standards. When drafting this piece, I originally used several contractions, deliberately for emphasis, yet they have all been removed by the editorial team to conform to the style of this journal and academic writing[1]. Contractions (don't, can't, shouldn't, etc.) are unacceptable in academic writing because they are colloquial and, thus, too informal. But formal and informal are just made-up concepts. Academia is often referred to as an Ivory Tower, or as the Oxford English Dictionary defines it: a state of privileged seclusion or separation from the facts and practicalities of the real world. Within this Ivory Tower, we continue to write in particular ways and express ourselves via narrowly prescribed and largely inflexible methods, deliberately indecipherable and inaccessible to those not on the inside.

Consider the peer-reviewed original research paper, the bane of many an undergraduate's existence. Often written and structured in APA 7th Edition format and style, the research paper is the standard way of broadcasting our scientific findings. But can we all just admit they are mostly pretty dull? Do I honestly have to read about Braun and Clarke's six stages of thematic analysis in every qualitative research paper for the rest of my life? While we are on the subject, I am honestly not really that bothered about your ontological perspective either, I just want to know what you found out when you asked those people about that thing. And I am pretty sure athletes, coaches, parents, and anyone else interested in the psychology of sport, exercise, and performance, couldn't give a rat's ass about whether your journal titles are in italics in your reference list. Seriously, who's got the time to care about that?

I digress. I am obviously not suggesting that we do away with academic writing and publishing altogether. The detailed descriptions of methodology and methods, the presentation of statistical analyses, and the peer review system all serve as forms of rigor and protection against the publication of methodologically "iffy" research and potentially spurious findings that can cause real harm. Although . . . now that I think about it, the extensive back-catalogue of published, peer-reviewed psychology research describing the supposed inferiority of non-White "races," the very foundation of Scientific Racism that continues to drive the discrimination

[1] Mostly. I snuck a few past the censors!

faced by minoritized groups to this day (*takes breath, inserts reference at the request of the journal editors*) (Shannon, 2021), is perhaps evidence that peer-review within the Ivory Tower is not all it is cracked up to be! And let us not even get started on the whole Autism/vaccines thing![2]

As Keepers of Knowledge

What I *do* think, is that we should perhaps be more cognisant of where our elitist, exclusionary style of scientific communication comes from, and that even though it might be uncomfortable, we should take a good look at what we consider to be legitimate forms of knowledge and why we consider them to be so. To disappear down a rabbit hole for a moment, Steven Roberts and colleagues (2020) examined the editorship and authorship of six top-tier psychology journals from 1974 to 2018 (i.e., *Cognition, Cognitive Psychology, Child Development, Developmental Psychology, The Journal of Personality and Social Psychology and Personality and Social Psychological Bulletin*). Their analysis showed that during that time, only 5% of editors were people of colour. A quick look at the editorship of major journals in sport and exercise psychology (e.g., *The Sport Psychologist, Journal of Applied Sport Psychology, Psychology of Sport and Exercise, Journal of Sport and Exercise Psychology, Qualitative Research in Sport, Exercise, and Health*; sorry if I have left yours out) also reveals a distinct lack of colour.

But that is not the interesting bit. The interesting bit is that Roberts et al.'s (2020) data also suggested an editor-in-chief's race predicted the publication of research that highlighted race. When editors were white, 4% of all publications highlighted race. When editors were people of colour, the publication rate of articles concerned with race almost tripled. Again, I am using race as the primary example here, but this aptly demonstrates that if the peer-reviewed journal article is the gold standard, then the gatekeepers in academia—reviewers, editors, and the journals—really do influence what is considered and accepted as "knowledge" and what is not. And if those gatekeepers operate within a system of exclusion, and let us be absolutely honest here, academia is a system of White, male superiority, then just like those ancient centres of learning in Africa and Asia, certain types and forms of knowledge are delegitimized. So, while I obviously generalise here, we are left with a situation in which a largely homogenous group of people in terms of class, race, and gender become the arbiters of what is and is not considered legitimate knowledge, and in which that knowledge is communicated in ways that are designed to exclude anyone else.

Bravery From Within the Ivory Tower

When people ask me what I think needs to happen in academia, they usually raise at least one of their eyebrows when I say, "Burn it all to the ground and start again!" But I am deadly serious. Well, not literally, there are some really beautiful buildings on university campuses that I would hate to see damaged—mostly built with money from slavery, now that I think about it. So yeah, perhaps I am serious after all[3]. In lieu of arson, what I am suggesting is perhaps we can be a bit more expansive in what we consider legitimate scholarly work. That can happen in two ways.

First, if I interview a two-time world champion athlete and write it up as a blog post, or publish an article in a magazine, or produce a podcast—are the insights from that interview not meaningful, not useful, not legitimate, just because I didn't carry out a thematic analysis and note down my epistemological position? We can and should still look to academic research as being vital in driving progress in the field, but to elevate the peer-reviewed article to God-like status *without real consideration of why*, and to denigrate other forms of knowledge as less acceptable, useful, or trustworthy, is to do a disservice to all other work that might inform our thinking and our practice. We must be deliberate about this though. We must make a concerted effort to include and acknowledge other forms of knowledge in our own writing, which takes a certain amount of bravery when students are regularly shamed for not having enough peer-reviewed journal articles in their reference lists.

Second, within traditional "academic" writing and publishing, can we, as reviewers, editors, gatekeepers, be more expansive and inclusive in the types of writing that we consider? Can we be less particular about the way that people express themselves, instead focusing

[2] In 1998, British physician Andrew Wakefield and colleagues published a study in The Lancet, suggesting a link between the MMR vaccine and Autism in children. Despite the poor design (only 12 children in the study) and speculative nature of the findings, the paper passed peer review. Even though it was widely discredited and eventually retracted, its publication is responsible for the persistent myth that vaccines cause Autism, even though every shred of available evidence suggests they absolutely do not. Peer review ain't all that!

[3] To clarify, I am not serious in a literal sense. Arson is bad. Do not set fire to things.

on the quality and usefulness of the output? Can we challenge ourselves to look beyond our own exclusionary academic roots? As writers and thinkers, can we be brave enough to express our ideas in other ways? Poetry. Art. Storytelling. Imagine opening the *Journal for Advancing Sport Psychology in Research* to find pencil drawings capturing the frustration of elite coaching, or a series of Haikus on the pain and triumph of being an early career practitioner. Is there a sample-size calculation? No. Is there inspiration, provocation, the spark of an idea? Absolutely, and there is so much benefit in that, even in the stuffy, whitewashed walls of academia.

Figure 2. Academic Frustration Haiku by Dr. Pete

"That's all very well and good," I hear you mumble, "but the academic journal isn't the place for that sort of thing." Why not? Because you say so? Because this is how it has always been in the Ivory Tower, so this is how it should always be? Because we must preserve the sanctity of yet another White, male, supremacist institution? Yeah, I said it.

Look, people like and seek out things that are like themselves. It is an affinity bias, or homophily. In other words, people who are in charge of stuff basically really like their own shit. Therefore, conventional, conservative reviewers (which is most people in academia) will prefer conventional, conservative ideas (Brezis et al., 2020). More innovative reviewers (of which there are fewer) are more likely to be interested in and accepting of novel ideas. So, because the more innovative, inclusive, expansive reviewers are far fewer in number, we get this sort of regression to the mean, whereby daring to try something different is punished, and sticking to tried and tested formulaic work is rewarded. And, thus, nothing changes. Nothing changes.

But I quite like change. Change is good.

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References[4]

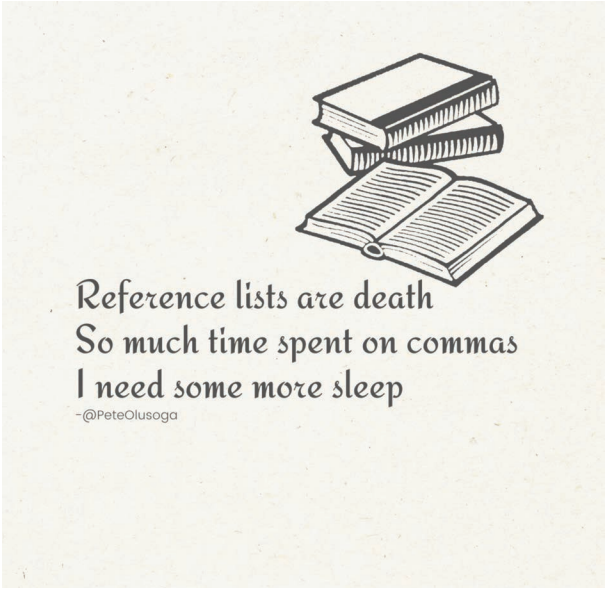
Alemu, S. K. (2018). The meaning, idea, and history of university/higher education in Africa: A Brief literature review. *FIRE: Forum for International Research in Education, 4*(3), 210–227. https://doi.org/10.32865/fire20184312

Brezis, E. S., & Birukou, A. (2020). Arbitrariness in the peer review process. *Scientometrics, 123*(1), 393–411. https://doi.org/10.1007/s11192-020-03348-1

Roberts, S. O., Bareket-Shavit, C., Dollins, F. A., Goldie, P. D., & Mortenson, E. (2020). Racial inequality in psychological research: Trends of the past and recommendations for the future. *Perspectives on Psychological Science, 15*(6), 1295–1309. https://doi.org/10.1177/1745691620927709

Shannon, L. (Director) (2021). *Subnormal: A British scandal* [Film]. British Broadcasting Corporation.

Figure 3. One more Haiku, dedicated to all PhD students, just because I can ☺. Dr. Pete



[4] In APA Style 7th Edition, as is Tradition, with every comma, period, and use of *italics* carefully considered and placed so as not to offend the Gods of Pedantry.