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Examining Hardiness, Coping and Stress-Related Growth Following Sport Injury

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## Examining hardiness, coping and stress-related growth following sport injury

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HARDINESS AND STRESS-RELATED GROWTH

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### **Abstract**

This study aimed to explain how injured athletes high in hardiness experienced stress-related growth (SRG) and why athletes low in hardiness are less likely to derive such benefits. Twenty participants were theoretically sampled into high (N=10) and low (N=10) hardiness groups. Semi-structured interviews were used for data collection. Findings revealed that athletes high in hardiness experienced SRG from having an emotional outlet, which enabled them to reframe their injury and experience positive affect. In contrast, athletes low in hardiness had no emotional outlet, which led to sub-optimal outcomes. These findings have important implications for practitioners working with injured athletes.

Keywords: positive reframing, emotional support, positive emotions

**Introduction**

One concept that is gaining increased attention from researchers within the discipline of sport and exercise psychology is growth following a stressful or traumatic experience. By growth, we mean positive changes resulting from a demanding event that has propelled an individual to a higher level of functioning than that which existed prior to the event (Carver, 1998). Whilst stressful stimuli can lead to sub-optimal outcomes (e.g., burnout, under-performance), a number of researchers from other disciplines have suggested that they may also have positive consequences (Calhoun & Tedeschi, 1999; Joseph & Linley, 2008). And it is the latter point that has intrigued sport and exercise psychology researchers more recently. Indeed, Hefferon and Sabiston and their colleagues have examined how exercise can lead to growth among cancer survivors (e.g., Hefferon, Grealy, & Mutrie, 2008; Sabiston, McDonough, & Crocker, 2007), whereas Crawford and Smith and their colleagues have identified growth experiences in athletes with spinal cord injury (e.g., Crawford, Gayman, & Tracey, 2014; Smith & Sparkes, 2005). Other researchers have taken an alternative approach by exploring growth in elite and non-elite athletes across a diverse range of stressors (e.g., Galli & Reel, 2012; Howells & Fletcher, 2015; Tamminen, Holt, & Neely, 2013). The demands included poor performances, car accidents, family dysfunction, media scrutiny, and developmental stressors (e.g., speech impediment, ADHD). Collectively, these preliminary studies have shown that athletes from different competitive standards can experience positive changes following a stressful or traumatic event, and that exercise can be used as a vehicle to experience growth in individuals with certain conditions.

Another line of research of greater relevance to this study is the experience of growth following an acute sport-related injury (e.g., Udry, Gould, Bridges, & Beck, 1997; Wadey, Evans, Evans, & Mitchell, 2011). Although somewhat related to the aforementioned research, it is important to note that this line of research differs in a number of ways. Indeed, an acute

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76 sport injury is a unique stressor compared to other demands or conditions such a car accident  
77 or terminal illness. It is unique in that injuries are frequent occurrences and considered part-  
78 and-parcel of sport (Wadey & Evans, 2011). Unlike other more unforeseen stressors, every  
79 time an athlete trains or competes they put themselves at risk of getting injured. Having an  
80 acute sport-related injury also means being physically incapacitated, which is dissimilar to  
81 other sport-specific stressors (e.g., poor performance, media scrutiny). Being incapacitated  
82 can lead to a greater sense of isolation, which can pose a significant threat to athletes' identity  
83 and coping resources (e.g., Bianco, Malo, & Orlick, 1999; Evans, Wadey, Hanton, &  
84 Mitchell, 2012). In addition, the characteristics of competitive athletes are suggested to differ  
85 from their non-athletic counterparts. Competitive athletes are suggested to laud physical  
86 prowess, emphasize positivity, admire risk-taking behavior, and tolerate pain (Howe, 2004;  
87 Mankad, Gordon, & Wallman, 2009a). Taken together, much can be learned from researchers  
88 exploring growth across different stressors or conditions; however, it is important to be  
89 cognizant of the unique subtleties and nuances between them. We believe injured athletes  
90 represent a group with unique stress experiences that are ideally viewed contextually through  
91 a lens that is sensitive to the recovery process and the unique characteristics of the athletes  
92 themselves.

93         Before reviewing the research that has explored growth following an acute sport-  
94 related injury, it is important to recognize an issue surrounding the terminology used to refer  
95 to growth. That is, researchers use different terms when referring to growth and some use  
96 terms interchangeably. For example, Wadey and colleagues have used the terms perceived  
97 benefits (Wadey et al., 2011), thriving (Wadey & Hanton, 2014), and stress-related growth  
98 (Wadey, Clark, Podlog, & McCullough, 2013). Other researchers favor the term post-  
99 traumatic growth (Hefferon et al., 2008; Sabiston et al., 2007). To develop a more unified  
100 body of literature, it is important that researchers grapple with the subtle differences between

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101 these terms and employ an appropriate term for their research question. Park (2009)  
102 recommended that researchers should consider at least two factors: (a) commonality of  
103 occurrence of the stressor under examination to distinguish events or conditions that are  
104 considered traumatic from those that are stressful. It is advised that the term post-traumatic  
105 growth is reserved for those individuals who have suffered traumatic experiences, whereas  
106 the term stress-related growth would reflect more common stressful events; and (b) whether  
107 they are interested in examining perceived or actual growth. Some researchers are interested  
108 in measurable changes, whereas others are concerned with subjective experiences (cf. Tennen  
109 & Affleck, 2002). With regard to this study, the term perceived stress-related growth (SRG)  
110 is used as were interested in whether athletes believed they changed in positive ways as a  
111 result of their injury experience.

112         A number of studies have explored SRG following an acute sport-related injury. One  
113 of the first studies was by Udry et al. (1997) who interviewed 21 injured athletes from the  
114 U.S. Ski Team. Twenty of the 21 skiers perceived they had experienced SRG across three  
115 dimensions: personal growth, psychologically-based performance enhancements, and  
116 physical/technical development benefits. With regard to the latter dimension, the skiers  
117 reported that they not only became physically stronger, but they learned more about their  
118 body, its workings, and how it responds to training. Interestingly, this finding is not reported  
119 by researchers examining growth following other stressful or traumatic events (cf. Calhoun &  
120 Tedeschi, 1999), which demonstrates how the recovery process from injury may generate  
121 unique growth experiences. Since Udry et al.'s (1997) study, a number of researchers have  
122 gone onto directly examine SRG following injury (e.g., Smith & Sparkes, 2005; Tracey,  
123 2011; Wadey et al., 2011, 2013) or reported it as a serendipitous finding (e.g., Bianco et al.,  
124 1999; Ford & Gordon, 1999; Hurley, Moran, & Guerin, 2007). Collectively, this body of  
125 research has shown that male and female athletes, from team and individual sports, across

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126 various levels of competition, and with different types of injuries believe they have  
127 experienced positive changes resulting from their injury experiences. Another interesting  
128 finding to emerge is that while many injured athletes experience SRG, some do not. Indeed,  
129 Udry et al. (1997) reported, “““One skier was unable to identify any benefits associated with  
130 being injured”” (p. 244). Consequently, they recommended that future researchers should  
131 identify who is more likely to experience SRG and explain how they are able to do so.

132 Aligned with Udry et al.’s (1997) recommendations, Salim, Wadey, and Diss (2015)  
133 recently examined the relationship between the personality trait of hardiness and SRG. The  
134 rationale for examining hardiness was that it is conceptualized to transform debilitating  
135 situations into an opportunity for personal growth and development (Kobasa, 1979). Being an  
136 exploratory study, the authors used a cross-sectional design, whereby 206 athletes who had  
137 recently return to sport following injury completed measures of hardiness, coping, and SRG.  
138 As hypothesized, findings revealed a significant positive relationship between hardiness and  
139 SRG. Two coping strategies were also found to mediate this relationship: emotional support  
140 and positive reframing. It was suggested, therefore, that athletes higher in hardiness had  
141 higher SRG scores because they reported greater use of their social support for emotional  
142 reasons (e.g., moral support, sympathy or understanding) and were able to view their injury in  
143 positive terms. Although these findings offered important insights for practitioners working  
144 with injured athletes seeking to encourage SRG, the quantitative nature of the research  
145 findings did not provide sufficient depth to inform professional practice. It was recommended  
146 by the authors that future researchers use qualitative inquiry to develop a more elaborative  
147 understanding of the relationship between hardiness and SRG. The aim of this study was to  
148 explain in depth *how* injured athletes high in hardiness are able to experience SRG, and *why*  
149 their low hardiness counterparts are unable to derive such positive changes.

150

**Method**



**151 Philosophical Assumptions**

152           This study is underpinned by critical realism and modified dualism/objectivism  
153 (Lincoln, Lynham, & Guba, 2011). These beliefs reflect a post-positivism paradigm, which  
154 recognizes that nature can never fully be understood and we can only approximate it.  
155 Adopting this paradigm had a number of implications for this study, which included the  
156 choice of method (i.e., semi-structured interview that was literature driven and standard  
157 across participants), how the data was collected (i.e., ‘one-shot’ interviews), and the  
158 trustworthiness techniques used and how they are employed (e.g., using peer debriefing to  
159 reach consensual agreement upon identified themes and to control for the researchers’ values  
160 in the research process).

**161 Participant Selection**

162           After gaining university ethical approval, a four step purposeful sampling strategy  
163 was used to recruit participants. First, participants were identified using theory-based  
164 sampling (Patton, 2002), which involved selecting participants based on their representation  
165 of an important theoretical construct (i.e., high and low in hardiness). This strategy involved  
166 reviewing the composite hardiness scores from the Dispositional Resilience Scale (DRS) of  
167 the participants from Salim et al.’s (2015) original sample. Consistent with Khoshaba and  
168 Maddi’s (1999) qualitative procedure, those athletes who were above the 75th percentile (i.e.,  
169 63 or above for this study) were identified as high in hardiness, and those who were below  
170 the 25th percentile (i.e., 47 or below for this study) were considered to be low in hardiness.  
171 This process resulted in 43 participants; 23 high and 20 low in hardiness. Second, maximum  
172 variation sampling was used, which involved selecting a sample with a range of  
173 characteristics to help document unique and diverse insights into the research question  
174 (Patton, 2002). The characteristics for this study included sex, sport type, competitive level,  
175 and injury severity. To facilitate meaningful group comparison, however, participants were

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176 matched across these characteristics for the two hardiness groups, resulting in each group  
177 consisting of males and females, team and individual sports, different standards of  
178 competition, and injuries that varied in their severity. Third, any participants who recovered  
179 from their injuries and returned to competitive sport in excess of one year were excluded (N =  
180 15). This criterion was adopted to minimize the effect of inaccurate recall. Fourth, the  
181 remaining participants (N = 28) were then asked to complete the DRS again to ensure their  
182 scores aligned with those found in Salim et al.'s study. Athletes high in hardiness once again  
183 scored above the 75 percentile, whereas those low in hardiness remained below the 25th  
184 percentile. The athletes were subsequently informed of the purpose of the study and invited to  
185 participate. Eight athletes declined due to various other commitments. The remaining 20  
186 athletes all agreed to take part and provided written consent.

**187 Participants**

188 From the 20 athletes who served as participants, six were female and 14 were male,  
189 with a mean age of 23.7 years ( $SD = 6.4$ ). They represented a number of individual and team  
190 sports (i.e., martial arts, football, running, tennis, golf, swimming, running, rugby, and  
191 basketball) and ranged from recreational to national levels of competition. All participants  
192 had fully recovered from their injuries and returned to full training and/or competition.  
193 Participant information is provided in Table 1.

**194 Semi-Structured Interview Guide**

195 Based on Salim et al.'s (2015) findings, a semi-structured interview guide was  
196 developed to gain an understanding of the participants' injury experiences. Although semi-  
197 structured interview guides are reported to be over relied on in sport psychology research, the  
198 rationale for using this method of data collection was because we had specific research aims  
199 and it has been shown to be useful in previous research when exploring events that follow a  
200 stage-by-stage temporal sequence (Culver, Gilbert, & Sparkes, 2012). Once developed, the

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201 guide was piloted on two previously injured male athletes, who participated in football or  
202 rugby. Based on their feedback and the first author's personal reflections with the co-authors,  
203 a few changes were made to make the questions more user-friendly. Certain questions were  
204 also excluded as they were found to be unproductive for the aims of this study.

205         The final version of the interview guide contained three sections. In section one, the  
206 interviewer explained the objective of the study, after which the interviewee was encouraged  
207 to discuss their sporting background. Section two focused on the aims of the study, which for  
208 those high in hardiness it was to explain how they experienced SRG through the use of  
209 emotional support and positive reframing, whereas for those low in hardiness it was to  
210 explain why they were less likely to use the strategies that derive such benefits. This section  
211 also provided sufficient flexibility to enable the participants to contextualize their responses  
212 to these questions and allow for other ideas to be introduced that not only refine but also  
213 extend Salim et al.'s (2015) findings. The final section concluded the interview and invited  
214 the participant to add to anything previously discussed. Neutral non-directional probes were  
215 used throughout the entire interview process to help with detail, elaboration and clarification  
216 (e.g., Can you give me an example? What do you mean by this?).

217         Sixteen interviews were conducted face-to-face, in either a room that was provided by  
218 the University, or a place of best convenience to both the participant and the researcher (e.g.,  
219 a local coffee shop). Four interviews were conducted over the telephone in a room provided  
220 by the University due to convenience and time constraints of the participants. Each interview  
221 lasted between 45 minutes and 130 minutes ( $M = 60.2$ ;  $SD = 20.2$ ) and was recorded in its  
222 entirety. All interviews were transcribed verbatim.

**223 Data Analysis**

224         Transcripts were analyzed and displayed using composite sequence analysis (CSA;  
225 Miles & Huberman, 1994). This form of qualitative analysis was developed to extract plots,

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226 stories and scenarios that a number of cases share as meaningful time-ordered sequences.  
227 Considering the aims to this study were to explain how or why injured athletes high or low in  
228 hardiness are able or unable to foster growth (i.e., processes over time), the rationale for  
229 using CSA was because it accounts for time. Indeed, recovery from injury is viewed as a  
230 dynamic process, whereby responses are encouraged to be assessed in a temporal context  
231 (Wiese-Bjornstal, Smith, Shaffer, & Morrey, 1998). Data analysis involved five stages. First,  
232 all the transcripts were read and re-read by the first author to familiarize herself with the  
233 content. Second, chains of variables (i.e., causal streams) in the form of raw quotations were  
234 identified from the transcripts. Third, within-case causal networks were developed to provide  
235 an illustration of the relationships between the variables (Miles & Huberman, 1994). Fourth,  
236 cross-case causal networks were developed using comparative analysis for those high or low  
237 in hardiness. Finally, cross-case causal networks formed two time-ordered composite  
238 sequence maps to illustrate the overall findings of the study. The composite sequence maps  
239 are available from the first author.

**240 Trustworthiness**

241 Aligned with the philosophical orientation of this study, two techniques were selected  
242 and employed to bolster the rigor of the findings: member checking and peer-debriefing.  
243 These techniques were used over three phases. The initial phase followed data transcription,  
244 where the first author sent the respective transcripts to the participants by email to verify the  
245 data and to provide any additional commentary. All the participants responded and verified  
246 that the transcripts reflected their experiences; no additional commentary was provided at this  
247 stage. The second phase occurred during data analysis and involved the first author using the  
248 co-authors as 'critical friends' (Faulkner & Sparkes, 1999). Specifically, this debriefing  
249 involved the co-authors questioning the first author to ensure her personal experiences,  
250 attitudes, values, and/or beliefs were not biasing her interpretations of the findings, and that

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251 she had a thorough understanding of the participants' experiences. This process involved the  
252 first author continually going back and forth between the transcripts and the co-authors. The  
253 resultant interpretations were continually discussed and reflected upon until consensus was  
254 achieved amongst all the authors. Once all researchers were in agreement, the final phase  
255 involved each of the participants reviewing their results face-to-face with the first author to  
256 verify that the interpretations were an accurate representation of their experiences and once  
257 again provided an opportunity for additional dialogue. All participants confirmed the  
258 researchers' interpretations and provided additional contextual findings surrounding the data.

**Results**

260 Four broad and sequential themes emerged from the interviews to explain how  
261 athletes high in hardiness promoted SRG, and why those low in hardiness are unable to  
262 derive such benefits. The themes are emotional trauma, emotional outlet, subsequent  
263 responses, and resultant outcomes. To more meaningfully compare across the two groups, the  
264 following descriptive account integrates high and low hardiness responses.

**Emotional Trauma**

266 Athletes low and high in hardiness recalled that when they incurred their injury  
267 through sport, they experienced a number of intrusive thoughts and negative emotions, which  
268 were found to emanate from real and perceived losses. Although the athletes recalled the  
269 typical process was that perceived loss resulted in intrusive thoughts and subsequent negative  
270 emotions; all participants highlighted that these three factors all mutually affected one  
271 another in a dynamic and reciprocal fashion (e.g., negative emotions led them to dwell on  
272 their perceived loss, which in turn led them to ruminate about their injury). In terms of real  
273 and perceived losses, the athletes mentioned losses in fitness, money, opportunities (sporting  
274 and non-sporting), independence, career, and athletic identity. One athlete high in hardiness  
275 | expressed, ““Running makes me feel like I have a purpose, it is who I am. Without it I'm

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276 | lost<sup>233</sup> (Participant 11), whereas another athlete expressed, ““I knew I would be off for a long  
277 | period of time. I was in so much pain. I knew that I would lose my fitness. I was so  
278 | frustrated; my pre-season training was a complete waste of time<sup>233</sup> (Participant 16). These  
279 | perceived losses led all the athletes to experience a number of negative emotions in the days  
280 | and weeks following their injury, which were reported to engulf them. Specifically, the  
281 | emotions reported were misery, anger, frustration, and disappointment. One athlete low in  
282 | hardiness recalled:

283 |         Sitting and doing nothing all day was so upsetting. It meant all I could do was think  
284 |         about it [injury], which made me more and more angry ... I was angry at myself for  
285 |         getting injured and worried about how bad it was. I had just made my break through  
286 |         with a club and I thought that was it, my career was over (Participant 17).

287 |         The combined effect of the losses and unpleasant emotions led the participants to go  
288 |         down a negative spiral of intrusive rumination. The intrusive rumination about the event that  
289 |         led to the injury, concerns about how they would cope with the aftermath of their injury, and  
290 |         blaming oneself and/or others for the injury. Indeed, the participants explained that they  
291 |         would experience flashbacks or images of the incident that caused their injury, repeatedly ask  
292 |         themselves an ongoing set of questions (e.g., Why me? Why now?), and direct negative  
293 |         judgments towards themselves and/or others for being injured. One athlete high in hardiness  
294 |         commented:

295 |         I just kept thinking about how it happened over and over again and I just couldn't  
296 |         understand it. I was so worried about how bad the injury was. I couldn't stop thinking,  
297 |         ‘This is it, I will never swim again; everything I have ever worked for has come to an  
298 |         end. Life is so unfair, I don't deserve this. What am I meant to do now?’ (Participant  
299 |         15)

300 | **Emotional Outlet**

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301           Although both groups of athletes experienced emotional trauma following their  
302 injury, they differed in how they responded to this trauma. Athletes high in hardiness recalled  
303 disclosing their thoughts and feelings to members of their support network, whereas those  
304 low in hardiness reported having no emotional outlet. When asked why they did or did not  
305 disclose, the participants' reasoning reflected three themes: emotional climate, personal  
306 beliefs, and support exchanges. For those participants high in hardiness, their emotional  
307 climate outside of sport (e.g., family unit, circle of friends) encouraged disclosure. One  
308 athlete expressed:

309           I talk to my friends about pretty much anything, so injury wasn't much different. I  
310 live with other runners, so talking about how we are thinking or feeling is pretty  
311 normal. When I was feeling down about my injury, they were the first people I spoke  
312 to ... I am also really close to my Mum, I always have been. She's a really good  
313 listener. She never makes me feel embarrassed or silly for the things I say. Talking to  
314 her about feeling unhappy about my injury was a great comfort (Participant 19).

315           In contrast, the athletes low in hardiness recalled that in their emotional climate, both  
316 inside (i.e., training, socializing with teammates) and outside of sport (i.e., home, socializing  
317 with friends), they felt they needed to keep up the visage of being strong. This visage was  
318 shown from demonstrating 'mental toughness' and giving others the impression of coping  
319 well. The last thing the athletes reported was not wanting to demonstrate any sign of  
320 weakness. One athlete recalled:

321           When you are playing sport you never want to show that you are weak. You learn that  
322 part of being a good sportsman is having mental toughness. If I start talking about my  
323 emotions and showing signs of weakness then people will probably tackle me even  
324 harder. Talking is just not something I do. You aren't going to sit around with your  
325 friends in the changing room and just start talking about how you are feeling. You just

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326 have to get on with things. In all of the time I have been at the club, nobody has ever  
327 come up to talk to me about their emotions (Participant 5).

328 Based on previous personal experiences or from observing others expressing emotions  
329 in and outside of sport, the participants mentioned that their emotional climate reinforced  
330 their personal beliefs about disclosure. Athletes high in hardiness believed that disclosure was  
331 beneficial, they expressed: ““It’s good to talk””, ““Better out than in””, and ““It’s cathartic to  
332 talk””. One athlete commented:

333 I just feel that getting it [thoughts and feelings] out is a weight off your shoulders and  
334 is something less to worry about. When you are feeling down about being injured and  
335 you can’t stop thinking about it, having someone to talk to just makes it less stressful.  
336 It’s when you don’t talk about things; that’s when things build up inside and you get  
337 angrier or upset (Participant 4).

338 The athletes low in hardiness reported contrasting beliefs. They believed that by  
339 talking to others about their emotions, they would be negatively evaluated and it would have  
340 consequences (e.g., team selection upon return to sport). Furthermore, some participants  
341 recalled that they believed that disclosing to others meant they would be a burden and that  
342 people have their own problems to deal with. One athlete expressed, ““I just didn’t want to  
343 burden others with my negative emotions ... Everyone has their own things going on in life,  
344 which are more important than me. I’m sure they wouldn’t want to sit and listen to me about  
345 a silly injury”” (Participant 8). Another belief the participants highlighted was, ““Talking to  
346 people about feelings wouldn’t have helped me to recover any quicker”” (Participant 2).

347 Athletes low in hardiness were not concerned with their psychological recovery, and saw no  
348 relationship between their psychological and physical recovery.

349 The participants’ emotional climate and personal beliefs were found to ultimately  
350 effect their support exchanges. Athletes high in hardiness reported that the support provided



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351 by their support members' matched their needs. The types of social support provided were  
352 listening support, emotional support, and emotional challenge. Specifically, it was recalled  
353 that the support members would firstly provide listening support by encouraging the  
354 participants to express how they were thinking and feeling. During these support exchanges,  
355 the participants expressed that emotions would start to surface and their support providers  
356 would comfort them by demonstrating that they care for them, either verbally or through their  
357 actions (e.g., holding hands, arm around the shoulder). Finally, the support providers would  
358 challenge their emotions indirectly by disclosing about their own personal stressors, or  
359 directly by normalizing the injury or comparing it to more stressful injuries. The following  
360 example provides an insight into emotional challenge support:

361           Sometimes the pain would be really bad and I would question whether I would ever  
362           get better. I would think it's not improving; I may as well give up. My parents would  
363           then say things like, “It won't get better overnight” ... They would also explain to  
364           me that there are a lot of people less fortunate than me, and I can't feel too sorry for  
365           myself when there are other people who will never be able to walk again. I soon  
366           realized that worse things could happen in life than this injury (Participant 14).

367           In contrast, the support network of the athletes low in hardiness never asked them  
368           about how they felt and were more concerned with their physical injury because they could  
369           see it and observe its impact (e.g., flinching, limping, and grimaces of pain). As a result, their  
370           social network would offer information support, despite not having the necessary expertise.  
371           Throughout the remainder of the participants' recovery, the support members remained  
372           unaware of their psychological needs:

373           There were quite a few people around, friends and parents but they didn't really help.  
374           They just didn't understand ... Nobody said anything supportive. They just made  
375           things worse because they had no idea or understanding of how much it [sport] means

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376 to me. How could they understand, they don't even play sport. They wouldn't know  
377 how it feels to miss a game (Participant 20).

**378 Subsequent Responses**

379 Having or not having an emotional outlet that met the needs of the participants was  
380 found to have an important influence on how they responded to and coped with the recovery  
381 process. For those athletes high in hardiness who had a supportive environment that aligned  
382 with their personal beliefs and psychological needs, they reported that their support  
383 exchanges led to: (a) positive reframing, (b) heightened positive affect, and (d) investing  
384 increased time and effort in resources. First, the participants reported their support exchanges  
385 reframed their perception of their injury by viewing it in a less stressful way and as a  
386 challenge to overcome. One athlete high in hardiness recalled, ““When I was down, my dad  
387 would remind me situations which were worse. Like when I broke my leg, which made me  
388 see that although my injury seemed bad right now, it wasn't as bad as that”” (Participant 16).  
389 Their support network also challenged them to think how they could make the most out of the  
390 situation by asking questions like: So what are you going to do now? How can you learn from  
391 this? What are you going to do with your free time?

392 From their support network enabling them to view their injury as a challenge to  
393 overcome, the participants recalled feeling more positive. Two athletes expressed, ““I started  
394 to feel more optimistic, seeing what I could learn from this injury”” (Participant 15) and ““I  
395 became more positive on what I could get out of this experience”” (Participant 12). Indeed,  
396 the athletes reported feeling gratitude towards their friends and family, more optimistic in  
397 making the most of their situation, and a great deal of interest in their injury and the recovery  
398 process. Another athlete commented, ““I was down and upset, but I became more upbeat  
399 after chatting with my friend. I remember saying to my friend that I am going to do what I  
400 can to make myself better; I need to be positive and get back”” (Participant 20). These

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401 positive feelings then led them to identify and invest time and effort in their physical and  
402 social resources. With regard to the physical resources, the participants reported investing  
403 time and effort into the sports club's gymnasium to work on their non-injured muscle groups,  
404 as well as the learning resources available to them (e.g., library, internet at home) to better  
405 understand their injury, the recovery process, and effective training methods. One athlete  
406 | recalled, ““I become really interested in my injury. I couldn't do any sport with my injury, so  
407 | I thought I would learn about it instead. I spent lots of time researching my injury and asking  
408 | the physiotherapist questions”” (Participant 11). In terms of their social resources, the  
409 | participants reported that they decided to invest their free time into their family, close circle  
410 | of friends, and reflecting on themselves. One athlete recalled, ““I did not have a very good  
411 | relationship with my brother before my injury because we have just never really got on. But  
412 | when I got injured I decided to spend more time together”” (Participant 14).

413 In contrast, the athletes low in hardiness expressed different resultant responses from  
414 their social support network not meeting their psychological needs. Three resultant responses  
415 reported were: (a) suppressing negative emotions, (b) expressing positive emotions, and (c)  
416 emotional outbursts. With regard to emotional suppression, those low in hardiness recalled  
417 that they would 'bottle up' the negative emotions they were really feeling as a way to cope  
418 with the social norms in their sporting and nonsporting environments. However, although  
419 suppressing their negative emotions helped them to avoid being judged and/or a burden on  
420 others, the participants did not think it was an effective strategy. One athlete commented:

421 I didn't talk to anybody. I bottled things up and it makes things worse. I never  
422 offloaded to anyone about how I felt. Not telling anyone actually made me feel worse  
423 because all my anger and frustration just built up and I became more and more  
424 miserable. The more I kept my emotions in, the angrier I got, and the more I got  
425 annoyed with everyone around me (Participant 6).

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426           Due to the participants' ineffective attempts to manage their negative thoughts and  
427 feelings, many highlighted that they continued to have repeated episodes of intrusive  
428 rumination and experienced negative emotions throughout their recovery. These responses  
429 led to them being unable to reframe their injury. One athlete reported, "I felt worst [during  
430 rehabilitation] than I did when I got injured. I was filled with anger, disappointment; I  
431 couldn't see myself recovering or see any light at the end of the tunnel. It seemed to just go  
432 from bad to worse" (Participant 4). These episodes occurred at sporadic times, but typically  
433 when they were by themselves (e.g., first thing in the morning, last thing at night). When the  
434 athletes were with others in a sporting context however, they coped by expressing positive  
435 emotions (e.g., cheerful, happy, upbeat, interested) as they found it easier just to tell people  
436 what they wanted to hear. The following athlete mentioned his typical response to questions  
437 about his injury:

438           I would say, "Yeah, I'm fine thanks, really happy with the way rehab is going. I'll be  
439 back soon." I kept telling everyone how excited I was about coming back. I'd also be  
440 really cheerful for everyone else. But, yeah, deep down, especially when I was on my  
441 own, I was pretty miserable (Participant 7).

442           As a consequence of suppressing negative emotions and expressing positive emotions,  
443 participants recalled that every now and then, they would have an emotional outburst. These  
444 outbursts were described as their emotions 'boiling over', and things just getting too much for  
445 them, resulting in them verbally shouting towards members of their social network. To their  
446 frustration, the outbursts would often be directed towards those who they valued most (i.e.,  
447 close friends, immediate family). One athlete mentioned:

448           I would shout or get cross at people around me. I remember my mum trying to help  
449 me upstairs to the toilet one day, and I ended up shouting, "Just leave me alone! I

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450 | can do it myself. Go away, I don't want you here."<sup>22</sup> I didn't mean it like that, but I  
451 | said it so aggressively, just because I was so frustrated (Participant 9).

**452 Resultant Outcomes**

453 | The participants' subsequent responses were reported to lead to resultant outcomes.  
454 | The outcomes recalled however, differed between the high and low hardiness groups. The  
455 | athletes high in hardiness mentioned three resultant outcomes: (a) physical growth, (b)  
456 | psychological growth, and (c) behavioral growth. Although some of the areas of growth  
457 | recalled within these themes were not related across the themes, many of them were related.  
458 | For example, one aspect of physical growth was improved strength and conditioning, which  
459 | according to the participants led to psychological growth (i.e., confidence in one's physical  
460 | prowess) and behavioral growth (i.e., positive actions for improvement). Another example is  
461 | that of psychological growth, where having a greater empathy for others was mentioned by  
462 | the participants to lead to them help other injured athletes in need (i.e., behavioral growth).

463 | With regard to physical growth, the participants recalled that from investing time and  
464 | effort in their physical environment during their recovery the athletes were able to see  
465 | improvements in their flexibility, conditioning, strength, and core stability; all of which,  
466 | according to the participants, lead to decreased risk of future injury. One athlete mentioned:

467 | I definitely became physically stronger because of my injury and I have had less  
468 | niggles since returning back. I used to get a sore back all of the time, but I worked on  
469 | my weaker muscles while I was off ... The physiotherapist gave me some excellent  
470 | exercises to do whilst I couldn't use my knee. And the time I spent in the gym was so  
471 | effective because I wouldn't have worked on those muscles if I didn't get injured ... I  
472 | also increased my flexibility, which is something I had never worked on. I had so  
473 | much free time that I took that time to stretch more because my physiotherapist  
474 | suggested it could prevent me getting injured again (Participant 17).

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475 Athletes also recalled experiencing psychological growth, which was reported to  
476 entail developing positive relations with others, having a new appreciation and outlook on  
477 life, having a new appreciation and outlook on sport, gaining a new awareness of one's limits  
478 and capabilities, gaining a sense of mastery, and having a greater knowledge of health-related  
479 behaviors. This growth was a result of investing time and effort into their social network  
480 (e.g., family, friends, coach, and physiotherapist) and taking the time to reflect. For example,  
481 one athlete mentioned:

482 Before my injury I had an awful relationship with my mum, we couldn't be in the  
483 room with one another without arguing! My mum helped me so much throughout my  
484 injury, even with things like putting my socks on and helping me to the bathroom. I  
485 realized how good she was to me during my worst time, and I appreciate her far more  
486 now, which has brought us so much closer. We now spend a lot of time together,  
487 respect each other more and I do my best to help her out around the house (Participant  
488 18).

489 Finally, all athletes recalled experiencing behavioral growth, which is reflective of  
490 positive actions. The actions include warming up and cooling down properly, eating  
491 healthier, having a better work-life balance, asking for help when needed, no longer messing  
492 about in training, spending more time with family and friends, helping people who need it  
493 (e.g., injured athletes), listening more carefully to others, and performing better in sport. This  
494 growth developed by investing time into their physical and social resources. For example,  
495 one athlete commented:

496 Before my injury I used to think, 'I am slim, if I don't exercise much it doesn't matter,  
497 nothing can stop me'. I thought because I was slim I was fit; I ate what I wanted, I  
498 trained when I wanted and I messed around [in training] so much ... I would warm up  
499 for about 2 minutes and wouldn't bother to cool down. But from dislocating my hip, it

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500 was the most painful experience ever ... It scared me so much. I also put on so much  
501 weight and couldn't train ... I realized what I was eating was unhealthy. Now, I have  
502 changed my diet, I know when is the time to be serious in training, and I make sure I  
503 warm up and cool down every session because I never want to injure myself like that  
504 again (Participant 12).

505 In contrast to those high in hardiness, the low hardiness counterparts experienced no  
506 growth-related outcomes. Three contrasting resultant outcomes were reported: (a) returning  
507 back to sport too early, (b) re-injury, and (c) poor sporting performance. Indeed, over half the  
508 athletes low in hardiness reported that they returned back to training and/or competition too  
509 early because they wanted to feel good again or were getting bored. One athlete mentioned,  
510 ““I started feeling a little bit better so I just went back, I knew I wasn't 100% but I got bored  
511 being at home”” (Participant 10). This resultant outcome however, led to them getting re-  
512 injured:

513 I didn't cope with my injury very well at all. Being injured is the worst thing ever. At  
514 the start I was so angry, rehabilitation was slow and I was in pain for so long; I got so  
515 bored of being injured and missed playing so much, I went back a few weeks earlier  
516 than the physiotherapist said but I thought I would be fine. But, I got re-injured and  
517 now need an operation on my knee (Participant 6).

518 For those who did not get injured, they recalled performing badly in their first session  
519 back. They mentioned being 'more in their head' rather than focusing on their game plan or  
520 tactics, and would pull away from tackles or demanding actions to protect their injury body  
521 part. For example, one athlete expressed:

522 I got bored and just wanted to return. I lost my place in the first team, because I  
523 returned when I wasn't fit or ready and played so badly. My coach took me off after

524 only 10 minutes in the game. I was so excited about coming back but after my  
525 performance, I didn't feel good (Participant 3).

### 526 **Discussion**

527 The purpose of this study was to explain how injured athletes high in hardiness are  
528 able to experience SRG and explore why those low hardiness were unable to foster such  
529 perceived benefits. Findings revealed that athletes high in hardiness were able to experience  
530 SRG because their support network provided them with an outlet for their emotions, which  
531 enabled them to reframe their injury from a stressful event into a challenge to overcome.  
532 From having a challenge appraisal, the athletes were able to experience positive affect (e.g.,  
533 gratitude, optimism, interest), which led them to invest their time and effort into their  
534 physical and social resources. Interestingly, these findings not only refine and extend Salim et  
535 al.'s (2015) findings, but also significantly contribute to bodies of literature focusing on  
536 hardiness and SRG. In term of Salim et al.'s study, the current findings extend theirs in four  
537 important ways: (a) they describe the use of emotional support and positive reframing and  
538 how they relate to one another, (b) they give greater insights into the participants' SRG  
539 experiences (i.e., physical, psychological, and behavioral), (c) they explain how certain  
540 coping strategies led to SRG (i.e., positive affect), and (d) they provide a context to the  
541 previous findings (e.g., emotional trauma, emotional climate, and personal beliefs).

542 The findings also extend hardiness research. Maddi (2005) reported that over 1,000  
543 studies on hardiness have been published, and this body of research has shown hardiness to  
544 lead to desirable health- and performance-related outcomes through four mechanisms: (a)  
545 appraisal, (b) social support, (c) transformational coping, and (d) positive health practices.  
546 The findings from this study suggest however, that another mechanism by which hardiness  
547 may operate is through positive affect. The study of positive affect has not received much  
548 research attention in the sport psychology literature (cf. McCarthy, 2011). However, it is



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549 gaining increased attention in other fields of research. One theory that has helped to explain  
550 this phenomenon is Frederickson's (1998) broaden-and-build theory of positive emotions.  
551 The theory suggests that positive emotions not only 'broaden' an individual's momentary  
552 thought-action repertoire, but also 'build' an individual's resources. For example, the positive  
553 emotion of interest is suggested to create the urge to explore, to learn, to immerse oneself in  
554 novelty (i.e., thought-action repertoire) and thereby expand one's knowledge base (i.e.,  
555 durable resource). Interestingly, this resonates with the current findings that show 'interest'  
556 led athletes high in hardiness to learn more about their injuries and the recovery process,  
557 which promoted psychological growth. What is also noteworthy is that theories and  
558 associated research examining SRG have yet to identify positive emotions as a mechanism  
559 leading to growth (for a theoretical review, see Joseph & Linley, 2006). Clearly, researchers  
560 interested in hardiness, SRG, and/or sport injury should consider the role of positive  
561 emotions.

562         This study also examined the experiences of athletes low in hardiness, which is a  
563 group of individuals who have not received a great deal of research attention in sport or other  
564 fields of research. Their social environments did not encourage disclosure of negative  
565 emotions, the support offered to them from their social network outside of sport did not  
566 inquire about their psychological needs, and they did not personally believe that emotional  
567 disclosure would be advantageous. However, not having an emotional outlet was reported to  
568 result in the athletes suppressing their thoughts and feelings, leading to increasing bouts of  
569 intrusive rumination and the inability to reframe. In addition, they would cope with social  
570 exchanges in their sporting environment by expressing inauthentic positive emotions. The  
571 resultant outcomes from these responses were returning to sport too soon, re-injury and poor  
572 performance. Interestingly, these findings extend previous research in sport psychology  
573 examining growth, in that they identify the barriers to positive changes following a stressful

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574 event. Many of the sentiments resonate with Mankad et al.'s (2009a) research however, who  
575 found injured athletes to report feeling as though they needed to inhibit their emotions in a  
576 sporting culture to maintain an image associated with being 'tough'. Their study, like ours,  
577 however, only employed one method of data collection (i.e., semi-structured interviews) and  
578 this method is limited in that it fails to capture the dynamics of sporting cultures. Future  
579 researchers, therefore, should consider embracing alternative methodologies (e.g.,  
580 ethnography) and methods (e.g., observations) to fully understand the social pressures injured  
581 athletes encounter. Furthermore, researchers should not only aim to examine 'what' injured  
582 athletes say, but also 'how' they say it (Smith & Sparkes, 2009).

583         Considering the importance of meeting injured athletes' psychological needs, the  
584 current findings represent a challenge for practitioners. On the one hand, the athletes low in  
585 hardiness do not want to disclose their emotions because of the adverse consequences it may  
586 have (e.g., sign of weakness, future team selection), yet on the other hand by keeping their  
587 emotions to themselves it is likely to have a negative effect on their physical and  
588 psychological recovery. It could be recommended therefore, that sporting clubs aim to  
589 challenge and change their culture to encourage emotional disclosure, that support providers  
590 (sporting and non-sporting) are taught the communication strategies to foster effective  
591 exchanges that challenge athletes' beliefs and promote disclosure, and/or we as a profession  
592 also explore other methods of enabling athletes to disclose their emotions (e.g., written  
593 disclosure, art therapy, music therapy). For example, a significant body of research has  
594 examined the efficacy of written disclosure (for a review, see Frattaroli, 2006); however,  
595 very limited research has examined this type of disclosure with injured athletes, and in  
596 particular athletes who are prone to emotional suppression (Mankad & Gordon 2010;  
597 Mankad, Gordon & Wallman 2009b). Indeed, written disclosure could be used at injury onset  
598 and rehabilitation to encourage injured athletes to reframe their situation as a challenge to

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599 overcome and/or also during their return-to-sport as a reflective tool to learn for the future.

600 Future researchers are encouraged to explore the efficacy and effectiveness of various

601 interventions to encourage disclosure and whether these in turn can led to the experience of

602 SRG.

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728

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