

1 Running Header: REGULATING OWN AND TEAMMATES' EMOTIONS

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5 Regulating own and teammates' emotions prior to competition

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**Abstract**20  
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We examined intra- and interpersonal emotion regulation in the hour prior to athletic competition. Specifically, we investigated the extent to which differences between experienced and desired emotions were related to emotion regulation processes. Participants ( $n = 114$ ) from team/doubles sport rated their experienced and desired emotions before a recent competition, and listed strategies used to regulate emotions reporting frequency, effectiveness, and self-efficacy for each strategy used. They followed the same procedure in relation to perceived emotions in a teammate. Results show athletes who experienced emotions close to their desired states reported significantly higher regulatory emotional self-efficacy than those further from their desired states. Further, their emotion regulation strategies were used more frequently and were more effective. Qualitative results indicated that participants attempted to regulate similar emotions in themselves and others, but used different strategies to accomplish these tasks to different degrees of frequency. The findings highlight the role of self-efficacy in emotion regulation; an individual difference variable which merits attention in future emotion regulation interventions.

Key words: Emotion, mood, affect, self-regulation, psychological skills

38 Abstract

39 Nous avons examiné la régulation des émotions intra et interpersonnelles une heure avant la  
40 compétition sportive. Plus précisément, nous avons examiné dans quelle mesure les  
41 différences entre les émotions éprouvées et les émotions souhaitées étaient liées aux  
42 processus de régulation des émotions. Les participants (n = 114) de sports d'équipe ou de  
43 doubles ont évalué leurs émotions éprouvées et souhaitées avant une compétition récente et  
44 ont répertorié les stratégies utilisées pour réguler les émotions, la fréquence, l'efficacité et  
45 l'auto-efficacité de chaque rapport. Ils ont suivi la même procédure en ce qui concerne les  
46 émotions perçues chez un coéquipier. Les résultats montrent que les athlètes qui ont ressenti  
47 des émotions proches de l'état souhaité ont signalé une auto-efficacité émotionnelle  
48 régulatrice nettement plus élevée que ceux qui s'éloignaient de l'état souhaité. En outre, leurs  
49 stratégies de régulation des émotions ont été utilisées plus fréquemment et ont été plus  
50 efficaces. Les résultats qualitatifs indiquent que les participants ont tenté de réguler des  
51 émotions similaires chez eux et chez les autres, mais ont utilisé différentes stratégies pour  
52 accomplir ces tâches à différents degrés de fréquence. Les résultats soulignent le rôle de  
53 l'efficacité personnelle dans la régulation des émotions; une variable de différence  
54 individuelle qui mérite l'attention dans les futures interventions de régulation des émotions.

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56 Keywords:

57 Émotion, humeur, affect, autorégulation, compétences psychologiques

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The relationship between affective states (e.g., emotions and mood) and sport performance is well established (Beedie, Terry, & Lane, 2000; Craft, Magyar, Becker, & Feltz, 2003; Jokela & Hanin, 1999; Lane & Terry, 2016). Researchers have found that athletes can identify optimal affective states and will attempt to regulate them accordingly (Hanin, 2010). The terms affect, mood and emotion have sometimes been used interchangeably in research, however distinctions have been drawn between them. Emotions are typically more intense than mood, shorter lasting and arise in specific response to a situation, person, event, or object (see Barrett & Russell, 1999; Lane & Terry, 2016; Parkinson, Totterdell, Briner, & Reynolds, 1996). Barrett and Russell (1999) elucidated that core affect represents ever-present feeling states which comprise just one part of what they refer to as prototypical emotion episodes; these in turn are hypothesized to arise in response to specific situation or events and have cognitive, behavioral, feeling, and physiological elements. In their work, moods were distinguished from core affect purely in the sense that they last for a more prolonged period of time.

In the present study, we focus on affective experiences arising in relation to a specific competitive sports performance, and therefore, we use the term emotion. Research is clear, that athletes experience intense emotions and sometimes this is not how they would like to feel, and therefore, they use strategies to regulate emotions. The present study is concerned with how we regulate our own emotions and how they relate to the emotional experiences of others. Emotion regulation has been defined as the “process of initiating, avoiding, inhibiting, maintaining, or modulating the occurrence, form, intensity, or duration of internal feeling states, emotion-related physiological processes, emotion-related goals, and the behavioral concomitants of emotion, generally in the service of one’s goals” (Eisenberg, Spinrad, & Smith, 2004, p. 278). Emotion regulation sits within the broader theoretical framework of

85 self-regulation, which suggests individuals attempt to reduce discrepancies between their  
86 current and desired emotional states (Carver & Scheier, 1990). That is, people monitor how  
87 they are feeling contrasted against how they want to feel, and will seek to make adjustments  
88 if they recognize a discrepancy between these two states. For example, if an athlete believes  
89 that she should ideally feel energetic before competition, but actually feels somewhat  
90 sluggish, then this discrepancy between current and desired emotions will drive efforts to feel  
91 more energetic.

92         However, while past researchers have examined emotion regulation strategies in sport  
93 (e.g., Friesen, Devonport, & Lane, 2016; Lane, Beedie, Jones, Uphill, & Devonport, 2012;  
94 Stanley, Lane, Beedie, Friesen, & Devonport, 2012), researchers have rarely examined the  
95 associated efforts involved with emotion regulation (e.g., self-efficacy, frequency of use,  
96 perceived effectiveness) as a function of the size of differences between desired and  
97 experienced emotions. Research has demonstrated that athletes have specific constellations of  
98 emotions they believe drive their best performance (see Hanin, 2007), and emotion regulation  
99 strategies should be centered on influencing the intensity or content of the emotions.

100 Adopting this approach, Robazza, Pellizzari, and Hanin (2004) found that helping athletes to  
101 regulate emotions they associated with their optimal past performance states resulted in  
102 improved performance. Hanin and colleagues (e.g., Hanin & Stambulova, 2002) extended  
103 this work by showing idiosyncratic emotion content and intensity are different across  
104 situations (e.g., practices and competitions) and can vary across pre-, mid-, and post-  
105 performance situations. Therefore, consistent with self-regulation theory, rather than  
106 referencing past performances we opted to analyze emotion regulation activity as a function  
107 of the difference between one's experienced and desired emotions to examine whether a  
108 larger discrepancy between the two would be associated with different emotion regulation  
109 efforts.

110 A growing area in emotion research is recognition that the generation, expression, and  
111 regulation of emotions are inherently social (e.g., Van Kleef, Cheshin, Fischer, & Schneider,  
112 2016). Parkinson (1996) emphasized that the cause, effect and function of emotions are social  
113 in nature. This has clear implications for sport, which is fundamentally a social activity  
114 involving interactions between teammates, coaches, spectators, opponents, and referees  
115 (Friesen, et al., 2013). Athletes could try to influence the emotions of many different people  
116 in a sporting situation (e.g., trying to anger an opponent, console a teammate, or guilt an  
117 official), or might find their own emotions influenced by others. For example, one athlete  
118 might seek to share their emotions with another in order for both to feel better (e.g., Stanley  
119 et al., 2012). Interpersonal emotion regulation being reported in studies on ice hockey  
120 (Friesen, Devonport, Sellars, & Lane (2015), curling (Tamminen & Crocker, 2013), cricket  
121 (Totterdell, 2000), baseball (Cheshin, Heerdink, Kossakowski, & Van Kleef, 2016), soccer  
122 (Moll, Jordet, & Pepping, 2010), rugby (Campo et al., 2016), lacrosse (Friesen et al., 2016),  
123 volleyball (Palmateer & Tamminen, 2017), and running (Stanley et al., 2012). We therefore  
124 recommend that research in sport should consider both intra- and interpersonal approaches to  
125 emotion regulation (cf. Friesen et al., 2016; Stanley et al., 2012).

126 Consistent with many other skills, people differ in their emotion regulation capacities  
127 and skills usage (Meyer & Fletcher, 2007; Petrides, Furnham, & Mavroveli, 2007). People  
128 not only use different strategies, but also vary in their own confidence to apply them.  
129 Furthermore, some strategies might be more or less effective than others (Petrides et al.,  
130 2007). Regulatory emotional self-efficacy (i.e., one's belief about their capability to regulate  
131 their emotions) has been identified as influential in this relationship (Alessandri, Vecchione,  
132 & Caprara, 2015). In a longitudinal study monitoring emotional and social experiences across  
133 a major life transition (i.e., before going to college through to the end of the freshman year),  
134 regulatory emotional self-efficacy partially mediated the effects of beliefs regarding the

135 controllability of emotions on emotional outcomes (Tamir, John, Srivastava, & Gross, 2007).  
136 Totterdell and Leach (2001) found higher expectations of being able to regulate unpleasant  
137 emotions were associated with higher happiness ratings and players' batting averages in  
138 cricket. This suggests that beliefs about emotion regulation ability influence the unfolding  
139 process of emotional changes before and during competition. Enhancing understandings of  
140 regulatory emotional self-efficacy, regulation strategy usage, and emotion outcomes, offers  
141 theoretical and practical utility within and beyond the sporting context. For example, Caprara,  
142 Vecchione, Barbaranelli, and Alessandri (2013) found that regulatory emotional self-efficacy  
143 could improve emotional stability, a trait frequently associated with mental health (Kotov,  
144 Gamez, Schmidt, & Watson, 2010). The aim of the present study was to examine the extent  
145 to which differences in athletes' own experienced and desired emotions were related to the  
146 frequency and perceived effectiveness of emotion regulation strategy use in the hour before  
147 sporting competition. We also examined the relationship regulatory emotional self-efficacy  
148 on the discrepancy between desired and experienced emotions. We hypothesized that those  
149 individuals with low regulatory emotional self-efficacy would demonstrate a greater  
150 discrepancy between experienced and desired emotions than those with high regulatory  
151 emotional self-efficacy. We replicated the examination of this hypothesis using participants'  
152 perceptions pertaining to a teammate (regulatory emotional other-efficacy).

## 153 **Method**

### 154 **Participants**

155 Participants were 114 team/doubles athletes ( $M_{\text{age}} = 20.58$  years,  $SD = 2.71$ ; men  $n =$   
156 97, women  $n = 17$ ). All reported their main sport and responses included badminton,  
157 basketball, cricket, dancing, football, ice hockey, martial arts, netball, rock climbing, rugby,  
158 swimming, tennis, track and field, trampoline, triathlon, volleyball, and weight lifting. It  
159 should be noted that in sports such as triathlon or weightlifting which are in essence

160 individual sports, it is still possible to compete as part of a team. For example, in triathlon,  
161 one person swims, one cycles and a third runs, or in track and field athletes where there is also  
162 a team competition.

163 Participants trained an average of 5.65 hours per week ( $SD = 3.26$ ). Competitive  
164 performance levels were reported, including international (3%), national (9%), regional  
165 (35%), university/college (16%), club (21%), and recreational (16%). The number of years of  
166 experience in participants' respective main sport ranged from up to 6 months (1%), 7-12  
167 months (1%), 1-2 years (5%), 3-4 years (6%), 5-6 years (6%), 7-8 years (11%), 9-10 years  
168 (12%), to over 10 years (58%).

## 169 **Measures**

170 **Experienced and desired emotions.** Emotions were assessed using items taken from  
171 the UWIST Mood Adjective Checklist (UMACL; Matthews, Jones, & Chamberlain, 1990),  
172 and the Brunel Mood Scale (BRUMS; Terry, Lane, Lane, & Keohane, 1999). Single item  
173 adjectives are not useful ways to distinguish mood from emotion. As such, participants were  
174 asked to rate the levels of emotions (i.e., happy, angry, calm, downhearted, energetic, still,  
175 sluggish, enthusiastic, anxious) they experienced and desired to experience in relation to a  
176 competitive match that took place over the previous week. The reference to a specific event  
177 indicates that the term emotion is consistent with theoretical definitions (Beedie, Terry, &  
178 Lane, 2005; Parkinson et al., 1996) and previous measures (Beedie, Terry, & Lane, 2011).  
179 This allowed an analysis of nine emotions representing the respective quadrants of the  
180 circumplex model of affect (Remington, Fabrigar, & Visser, 2000). Enthusiastic and  
181 energetic represented pleasant high active emotions, anger and anxiety represented  
182 unpleasant high active emotions; happy, calm and still represented pleasant low active  
183 emotions, and downhearted and sluggish represented unpleasant low active emotions. Rather  
184 than attempt to create factor scores, results are displayed using single items as although they



185 correlate, analysis of each item independently allows the researcher to see if data behaves the  
186 same way as other items in the higher-order scale. We should expect items to perform in a  
187 similar way if the same underlying scale is assessed. However, there is a great deal of  
188 research that argues for assessing emotions such as anger and anxiety independently (Lane &  
189 Terry, 2000). Nevill, Duncan, and Lane (2015) argued that examination psychological scales  
190 analyzing each item can be especially helpful for identifying items that behave differently to  
191 other items in the expected scale. When seen collectively, analysis of each item was argued to  
192 be the best way to show the results.

193         Participants were asked: '*In the hour before the competitive performance you have*  
194 *identified how did you feel?*' They were also asked to report '*In the hour before the*  
195 *competitive performance you have identified how did you want to feel?*' Participants rated  
196 emotion using a 5-point scale ranging from 0 (*not at all*) to 4 (*extremely*) for each emotion.  
197 The perceived desired and actual emotions of a chosen teammate were likewise rated. The  
198 period of one-hour before performance was selected as this is the standard time to assess pre-  
199 competitive sport emotions (see Martens, Vealey, Burton, Bump, & Smith, 1990), though it  
200 should be noted that precompetitive emotions can extend beyond this time frame (Cerin,  
201 Szabo, Hunt, & Williams, 2000).

202         It is important to acknowledge that retrospective measures of emotion have limited  
203 accuracy, explained variously as resulting from faulty or incomplete encoding, memory  
204 decay, distorted recollections, or ambient mood (Parrott & Sabini, 1990; Thomas & Diener,  
205 1990). As such, retrospective reports should not be treated as equivalent to measures taken  
206 with greater temporal proximity to the experience of interest. For the purpose of the present  
207 study, it was stipulated that the competitive event around which recall took place should  
208 occur within the previous week, this was in an attempt to attenuate the limitations of recall.  
209 This recall timeframe was deemed suitable when examining the general proximity of

210 experienced emotions to desired emotions in a competitive sporting context.

211 **Regulatory Emotional self-efficacy.** Following Bandura's (1997) recommendations  
212 for confidence estimates to be expressed on a percentage rating scale of 1-100%, we asked  
213 participants: "On a scale of 1 to 100% where 1 = 'no confidence' and 100 = 'total  
214 confidence,' how confident were you that you could change your emotions in the ways that  
215 you wanted to in the hour before competition?" Participants also provided ratings for  
216 confidence of being able to alter the chosen teammate's emotions (regulatory emotional  
217 other-efficacy).

218 **Emotion regulation strategies.** Participants were asked to describe any strategies  
219 they used in the hour before competition to influence their own emotions. Specifically, they  
220 were asked; *'In relation to how you felt before the competitive performance you have  
221 identified, what strategies did you use to influence the way you were feeling? It does not  
222 matter whether the strategies worked or not, please simply indicate those you used.'*  
223 Participants provided open-ended responses using as many words as they required.

224 Whilst measures of intra-personal emotion regulation strategies do exist (e.g., the  
225 Emotion Regulation Questionnaire; Gross & John, 2003), such measures use a limited list of  
226 researcher-generated strategies. In order to capture and reflect a wider range of intra- and  
227 interpersonal emotion regulation strategies as used by participants, an open-ended approach  
228 was utilised whereby participants self-identified the range of strategies used. Participants  
229 were asked to indicate which of the nine emotions each strategy targeted, whether the  
230 intention was to increase, decrease or maintain that emotion, how effective the strategy was  
231 (1 = "not at all" to 7 = "very effective"), and how frequently they used the strategy (1 = "not  
232 at all" to 7 = "a great deal"). Having done this, participants followed the same procedure to  
233 describe and rate each strategy used to influence the emotions of their chosen teammate. An  
234 acknowledged limitation is that rating another person's emotions is a difficult and complex

235 task. Notwithstanding that emotions are inherently covert, there are multiple decisions on  
236 who to select. This is especially more difficult when there are multiple people and interaction  
237 among team members is limited. We recognize that this is a limitation of the present study.  
238 We emphasize that our study assesses perceptions of emotions in others, and these  
239 perceptions might not be close to how she or he perceived they were feeling.

#### 240 **Procedure**

241 Following institutional ethical approval of the study, a convenience sample of team or  
242 doubles sport participants was recruited through university sport and exercise science classes.  
243 We explained the procedures to the participants and obtained written consent. Participants  
244 then completed the measures during university class time.

#### 245 **Data Analysis**

246 The differences between experienced and ideal emotions demonstrated large effect  
247 sizes, indicating sizeable discrepancies between experienced and ideal emotions. A primary  
248 study aim was to assess the extent to which such discrepancies were associated with emotion  
249 regulation. To overcome differences in the direction of emotion regulation (i.e., strategies  
250 being used to either increase, decrease, or maintain target emotions), we squared the  
251 differences between experienced and ideal emotions for self and other separately and then  
252 calculated the sum of these differences. We standardized the sum of emotion regulation  
253 differences, and placed participants into one of three groups representing their respective  
254 proximity to their ideal emotions: Participants with a standardized score  $< -1$  SD were  
255 classified as scoring "very close" to ideal emotions; participants scoring within 1 SD  
256 (positive or negative), were classified as scoring "close" to their ideal emotions; and  
257 participants scoring  $> 1$  SD were classified as scoring "far" from their ideal emotions.

258 Pertaining to intra- and interpersonal emotion regulation strategies, all four authors  
259 independently read through the athletes' responses several times to familiarise themselves

260 with the data. Text codes were generated by highlighting words and phrases from the  
261 responses that seemed to exemplify an emotion regulation strategy (Hsieh & Shannon, 2005).  
262 The authors defined as many codes as they believed necessary to describe all aspects of the  
263 data (Elo & Kyngäs, 2007). Codes were subsequently compared and revised in a series of  
264 meetings between the authors. There was a high degree of consensus during data coding,  
265 likely the result of participant responses being comprised mostly of short single-sentence  
266 statements rather than in-depth paragraphs. Once consensus regarding the codes was  
267 achieved, participants' statements were sorted into strategies based on links and relationships  
268 that seemed apparent between them, resulting in the organisation of the data into meaningful  
269 clusters (Elo & Kyngäs, 2007). To further improve the trustworthiness of our analysis, we  
270 provide sufficient verbatim examples in the text of the Results section and in Tables 5 and 6  
271 (Hsieh & Shannon, 2005; Morse & Field, 1995).

## 272 **Results**

273 MANOVA results revealed significant differences between experienced and desired  
274 emotions for self (Wilks' Lambda  $_{9, 103} = .30, p < .001$ , Partial Eta<sup>2</sup> = 0.70; see Table 1) and  
275 teammate (Wilks' Lambda  $_{9, 94} = .36, p < .001$ , Partial Eta<sup>2</sup> = 0.64; see Table 2) with both  
276 demonstrating large multivariate effect sizes. Univariate analysis indicated that participants  
277 desired to feel significantly happier, calmer (low active pleasant emotions), more energetic  
278 and enthusiastic (high active pleasant emotions), and less downhearted, sluggish (low active  
279 unpleasant emotions) and anxious before competition. Participants reported wanting their  
280 teammates to experience the same emotion discrepancies as described for themselves, along  
281 with also desiring to experience significantly lower on stillness. In terms of the extent to  
282 which emotions performed in an expected way to their higher-order factor, anger performed  
283 differently to anxiety. However, when seen collectively, results indicate that desired emotions  
284 followed an hedonic model.

285 <INSERT TABLE 1 HERE>

286 <INSERT TABLE 2 HERE>

287 For athletes' own emotions, a comparison of emotion regulation effort variables by  
288 proximity to desired emotional state indicated a significant multivariate effect (Wilks'  
289 Lambda  $_{6, 216} = 0.89, p < .04, \text{Partial Eta}^2 = .06$ ). This low effect size indicates that  
290 participants furthest from their desired emotions demonstrated significantly lower self-  
291 efficacy to regulate their emotions than participants who were closer to their desired state (see  
292 Table 3). Thus, we accept the hypothesis that individuals with low regulatory emotional self-  
293 efficacy will demonstrate a greater discrepancy between experienced and desired emotions  
294 than those with high regulatory emotional self-efficacy.

295 Analyzing the ratings provided for teammates, a comparison of emotion regulation  
296 variables by proximity to desired emotional state revealed a non-significant effect with small  
297 effect size (Wilks' Lambda  $_{6, 176} = 0.81, p = .22, \text{Partial Eta}^2 = .05$ ). We reject the hypothesis  
298 that individuals with low regulatory emotional other-efficacy would perceive a greater  
299 discrepancy between the experienced and desired emotions of others, than those with high  
300 regulatory emotional other-efficacy.

301 <INSERT TABLE 3 HERE>

302 We investigated the relationship between regulatory emotional self-efficacy and the  
303 frequency and effectiveness of strategy use, and the extent to which the proximity to desired  
304 emotions (the covariate) influence this relationship. The results support acceptance of the  
305 hypothesised association between regulatory emotional self-efficacy and emotions state of  
306 self, but not for others. Analyzing participants data for themselves, a multivariate analysis of  
307 covariance (MANCOVA) revealed significant effects for self-efficacy to change emotions  
308 (Wilks' Lambda  $_{2, 106} = .84, p < .001, \text{Partial Eta}^2 = .16$ ) albeit with a weak effect size. There  
309 was with no significant effect for proximity to desired emotions (Wilks' Lambda  $_{4, 212} = .99, p$

310 = .91, Partial  $\eta^2 = .00$ ), and no interaction effect (Wilks' Lambda  $_{4, 212} = .84, p = .85$ , Partial  
 311  $\eta^2 = .01$ ). Univariate analyses indicated significant differences for effectiveness ( $F = 21.08$ ,  
 312  $p < .001$ , Partial  $\eta^2 = .15$ ) and frequency ( $F = 7.68, p = .01$ , Partial  $\eta^2 = .07$ ) of strategy  
 313 use, with small effects in magnitude.

314 Concerning a teammate's emotions, a MANCOVA for regulatory emotional other-  
 315 efficacy to change the teammate's emotions, and proximity to desired emotions, indicated no  
 316 significant effects for all three tests (perceived proximity to other's desired emotions: Wilks'  
 317 Lambda  $_{4, 172} = .97, p = .63$ , Partial  $\eta^2 = 0.01$ ; confidence to change other's emotions:  
 318 Wilks' Lambda  $_{2, 86} = .94, p = .07$ , Partial  $\eta^2 = .06$ ), and no significant interaction effect  
 319 (Wilks' Lambda  $_{4, 172} = .96, p = .45$ , Partial  $\eta^2 = .02$ ). Results indicated that self-efficacy to  
 320 change one's own emotions correlated significantly with perceived effectiveness and  
 321 frequency of strategy use; the higher the individual rates their perceived self-efficacy to  
 322 regulate their emotions, the more frequently they will use a strategy, and the more it is  
 323 perceived to be effective. A similar trend was found for variables associated with  
 324 interpersonal emotion regulation with the exception that confidence to change emotions was  
 325 not significantly related to strategy effectiveness (see Table 4).

326 <INSERT TABLE 4 HERE>

327 When asked to describe intrapersonal emotion regulation strategies used in the hour  
 328 before competition, 268 data entries were provided. Eighteen of these entries were discarded  
 329 because they did not identify a specific strategy (e.g., "I was able to remain calm"). The  
 330 remaining 250 entries were classified under 14 broad strategy types, with the frequency of  
 331 citations and exemplary quotes provided in Table 5. Overall, intrapersonal strategies were  
 332 typically intended to increase energy (the focus of 21% of strategies cited), calmness (21%),  
 333 and enthusiasm (20%), or to reduce anxiety (18%). Participants reported 185 interpersonal  
 334 strategies (18 removed) classified under 15 broad strategy types. The citation frequencies and

335 exemplary quotes are provided in Table 6. Interpersonal emotion regulation strategies were  
 336 intended to increase happiness (20%), calmness (17%), enthusiasm (17%), and energy (14%),  
 337 or to reduce anxiety (14%). The focus of emotion regulation was similar for self and other;  
 338 both in terms of the emotions targeted (with the exception of additionally seeking to increase  
 339 happiness in others, and a less prominent focus on increasing others' energy), and the  
 340 strategies used to alter emotions of self and other.

341 <INSERT TABLE 5 HERE>

342 <INSERT TABLE 6 HERE>

343 Discussion

344 The present study examined athletes' ratings of their experienced and desired  
 345 emotions in the hour before competing, and their perceptions of a chosen teammate. We  
 346 analysed how discrepancies between experienced and desired emotions related to regulatory  
 347 emotional self-efficacy, perceived strategy effectiveness, and usage frequency. Athletes  
 348 reported large discrepancies between experienced and desired emotions for both themselves  
 349 and for a teammate. According to the desired affective states for self and teammate,  
 350 participants intended to increase pleasant emotions such as energetic and excited and low  
 351 active pleasant emotions such as calm and happy. Participants intended to reduce the intensity  
 352 of low activation unpleasant emotions such as depressed and sluggish (see Tables 1 and 2).  
 353 Although the desire to increase hedonically pleasant emotions is consistent with past findings  
 354 and theory (e.g., Tamir, 2015), it is also important to note that studies have documented  
 355 athletes' attempts to intensify high activation unpleasant emotions, such as anger and anxiety,  
 356 due to their perceived functional role in facilitating performance (Hanin, 2007; Lane, Beedie,  
 357 Devonport, & Stanley, 2011; Robazza et al., 2004). In the present study, we found no  
 358 significant differences for experienced and desired ratings for anger. This may be because the  
 359 analyses of aggregated scores across the sample negated individual response tendencies (i.e.,

360 some athletes may have been seeking to increase anger whilst others aimed at reducing  
361 anger). In the present study we examined each emotion independently and although anger and  
362 anxiety inter-correlated, caution is urged regarding grouping them into a general unpleasant  
363 high-active emotion concept. A great deal of research in sport has forwarded arguments for  
364 investigating discrete emotions independently with a view to examine possible interactions  
365 among them (Lane & Terry, 2000).

366 Future research should account for hedonic (for pleasure) and instrumental  
367 (purposeful relative to performance) motives (Tamir, 2009), as potentially competing goals  
368 for emotion regulation. Different motives for emotion regulation may negate individual  
369 response tendencies as described above. When examining the intrapersonal and interpersonal  
370 emotion regulation strategies identified respectively in Tables 5 and 6, qualitative data  
371 evidence instrumental emotion regulation for the self and others. For example, *"I listen to*  
372 *upbeat but nice music to keep my anger low and save for the game."* (intrapersonal emotion  
373 regulation), or *"Make them angry to make them run. Took the mick out of them."*  
374 (interpersonal emotion regulation).

375 Whilst there was possible evidence of hedonic motives for regulating the emotions of  
376 others (e.g., *"Social interacting so feels less out of the group"*), such interpersonal emotion  
377 regulation may also act as instrumental regulation (Lane et al., 2011). The findings add to the  
378 growing literature on individual differences that influence emotion regulation (e.g., Gross &  
379 John, 2003; Tamir et al., 2007). In the current study, participants reported large discrepancies  
380 between their experienced and desired levels of a range of emotions before competing.  
381 Drawing on self-regulation theory (Carver & Scheier, 1990), individuals will attempt to alter  
382 their emotions if they experience a sufficient gap between their current and desired emotional  
383 states. Crucially however, our data suggested that it might not be the size of the discrepancy  
384 between their experienced and desired emotions that determines emotion regulation strategy



385 use; one's confidence in regulating emotions seems to be a key driver in frequency of  
386 strategy use and their perceived effectiveness. Irrespective of how far athletes were from their  
387 desired emotions, those who felt confident in managing their emotions also reported emotion  
388 regulation strategies to be used more frequently and to be more effective. Conversely it seems  
389 that those who lack confidence in regulating their emotions use strategies less frequently, and  
390 also rate those strategies as less effective. While it might be intuitive that low self-efficacy  
391 relates to infrequent strategy usage, research has also purported the opposite. Devonport and  
392 Lane (2014) demonstrated in a longitudinal intervention that high emotional-efficacy  
393 associated with infrequent strategy usage whereby effective emotion regulation negates any  
394 need for further use. Further research is warranted in order to unpack these relationships.

395         Although regulatory emotional self-efficacy seems to be an important factor in  
396 regulating one's own emotions, a different pattern of responses emerged for regulating  
397 others' emotions. When attempting interpersonal emotion regulation before competition,  
398 participants' highest self-efficacy ratings occurred when the difference between observed and  
399 desired emotions in a teammate was the largest. The further participants perceived their  
400 teammate to be from their desired emotions, the more confident participants were in being  
401 able to alter that person's emotions. Clearly, individuals have greater access to their own  
402 emotional states than those of others, and when making estimates of others' experienced and  
403 desired emotions they have to make use of particular kinds of available information, such as  
404 overt emotional expressions or behaviors (Furley & Schweizer, 2014), emotional empathy  
405 (Sevdalis & Raab, 2014), or verbal inquiries as to how the teammate is feeling before  
406 attempting to regulate their emotions. Recent research has advocated for the use of video-  
407 assisted emotion recall whereby participants debrief performance videos to discuss current-  
408 desired emotion discrepancies as well as emotion regulation strategies (e.g., Martinent,  
409 Ledos, Ferrand, Campo, & Nicolas, 2015). We advocate for the continued examination of

410 video-assisted recall methods to study emotions and emotion regulation in sport as it might  
411 provide a viable way for athletes to learn how to identify subtle emotional changes in their  
412 teammates (e.g., Campo et al., 2016).

413         The challenge to perceive subtle changes in the emotions of others may help explain  
414 why the responses provided to describe the form and focus of strategies used to regulate  
415 others' emotions closely paralleled the form and focus of strategies participants used on  
416 themselves. It seems that participants presume strategies that are effective in changing their  
417 own emotions will be effective in changing others' emotions. Athletes conceivably believe  
418 that potential emotion antecedents, such as the perceived quality of opposition will have a  
419 similar effect on others' emotions as it does on themselves. Thus, strategies used to regulate  
420 one's own emotions are considered viable options for altering a teammate's emotions. An  
421 alternative explanation may be that individuals have observed, or believe that certain  
422 strategies (e.g., humor, playing loud music), when carried out in the presence of others, have  
423 an emotional impact on the other person via processes such as emotion contagion (Parkinson,  
424 1996; Totterdell, 2000). As such, in using strategies such as humor, an athlete might be  
425 striving to concurrently regulate their own and others emotions. We recommend additional  
426 research is conducted to investigate and clarify these possibilities and the relationship  
427 between intra- and interpersonal emotion regulation in sport.

428         Our findings offer implications for applied interventions targeting intra- and  
429 interpersonal emotion regulation in sport. Self-reported beliefs in emotional intelligence have  
430 been found to be related to the frequency of psychological skill use (Lane, Thelwell,  
431 Lowther, & Devonport, 2009). Since emotional intelligence and regulatory emotional self-  
432 efficacy are closely related concepts (Petrides et al., 2007), our results add to such research  
433 by suggesting that if regulatory emotional self-efficacy is important in determining whether,  
434 or how, individuals will attempt to alter their emotions, regulatory emotional self-efficacy

435 needs to be incorporated in future interventions. As found by Robazza et al. (2004), athletes  
436 can be provided with strategies to target the emotions they associate with their best  
437 performance, with concomitant benefits for emotional and performance outcomes. We  
438 propose that as well as teaching athletes emotion regulation strategies, potential gains might  
439 be enhanced by including techniques to build regulatory emotional self-efficacy that alter  
440 beliefs as to whether emotions are controllable (see also Tamir et al., 2007). Further, based on  
441 our finding that athletes seem more confident at regulating others' emotions when the other is  
442 perceived as a long way from their desired state, it also seems that skills that enhance  
443 empathic accuracy would be an important addition in future applied interventions.  
444 Specifically, interventions that help athletes develop the ability to recognize, understand and  
445 help manage others' emotions would be an important contribution to performance training.

446         Despite yielding some useful insights on emotion regulation in sport, this study has  
447 several limitations that can be addressed in subsequent work to extend the current findings. A  
448 first limitation is that a range of sports was included. Sport psychologists have reflected on  
449 the nuances of different sports and how these influence the concomitant mental and  
450 emotional states experienced by participant athletes (Dosil, 2006). It is also possible that  
451 different sport subcultures have distinct rules governing which emotions are appropriate to  
452 express/display and regulate, or when this should occur (e.g., Friesen et al., 2015). Future  
453 studies might examine target sports in detail to examine which emotions are experienced  
454 and/or desired the most, and how they in turn might influence emotion regulation strategy  
455 use. A second limitation was that the present study only considered the emotional outcomes  
456 of regulatory efforts; it did not consider the impact of emotion regulation on sports  
457 performance. One of the reasons athletes regulate emotions is because they expect there to be  
458 subsequent improvements to their respective performances (Lane et al., 2012). Therefore, we  
459 recommend that performance variables are included in future research on emotion regulation

460 in sport. Thirdly, by using a convenience sample from a university course, our participant  
461 sample had many more men than women, which could have affected our results given  
462 documented gender effects in emotion regulation (e.g., Webb, Miles, & Sheeran, 2012). A  
463 fourth limitation pertains to the regulatory emotional self-efficacy scale. This was completed  
464 once in respect of self-efficacy for general emotion regulation. It is plausible that an athletes'  
465 confidence to change different discreet emotions might vary. For example, they could be very  
466 confident in their ability to change energetic as desired in the hour before competition,  
467 whereas they may not be confident in their ability to regulate anger as desired in the hour  
468 before competition. To account for this possibility, we recommend that in future research  
469 participants complete a regulatory emotional self-efficacy scale for each emotion assessed.

470         Extending the investigation to time frames beyond the hour before competing could  
471 further elucidate the relationships between emotion regulation strategy use and regulatory  
472 emotional self-efficacy. Longitudinal research would be especially timely to determine the  
473 situational variability of participants' experienced and desired emotions in different sport  
474 situations (e.g., training versus competition), or the role of regulatory emotional self-efficacy  
475 and strategy use in times of injury or team selection. Alternatively, experiences in sport  
476 versus other performance domains could be contrasted to determine the extent to which  
477 regulatory emotional self-efficacy might vary across situations (e.g., work, academia,  
478 performing arts contexts) wherein different goals or outcomes are being pursued or different  
479 profiles of emotions might be desired (Lane, Davis, & Stanley, 2014). Longitudinal research  
480 would also permit the inclusion and analysis of outcome variables such as long-term sport  
481 participation, enjoyment, burnout, or performance.

482         In conclusion, we found overlap in the emotions targeted for self and others, and in  
483 the kinds of strategies used for regulating emotions. Self-efficacy to regulate emotions  
484 appears to be an individual difference variable which may be influential, particularly for

485 managing one's own emotions. Further research is needed to understand the role of  
486 regulatory emotional self-efficacy in the management of emotions, including the management  
487 of others' emotions, and to test interventions seeking to enhance regulatory emotional self-  
488 efficacy.

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673 Table 1

674 *Participants' experienced and ideal emotions*

	Experienced		Ideal		<i>F</i>	Partial Eta <sup>2</sup>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Angry	0.43	0.85	0.56	0.93	2.21	0.02
Anxious	1.83	1.25	0.99	1.04	56.48*	0.34
Calm	2.12	1.11	2.99	1.08	48.50*	0.30
Downhearted	0.36	0.81	0.19	0.63	8.16**	0.07
Energetic	2.82	0.96	3.56	0.73	63.00*	0.36
Enthusiastic	2.77	0.99	3.60	0.74	75.34*	0.40
Happy	2.38	0.98	3.13	0.85	62.14*	0.36
Sluggish	0.63	0.89	0.08	0.30	48.23*	0.30
Still	0.96	0.88	1.03	1.25	0.18	0.00

675 \**p* < .001, \*\**p* < .01

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678 Table 2

679 *Participants' perceptions of teammate's experienced and ideal emotions*

	Experienced		Ideal		<i>F</i>	Partial Eta <sup>2</sup>
	M	SD	M	SD		
Angry	1.00	1.10	0.83	1.05	2.06	0.02
Anxious	1.89	1.40	1.23	1.17	23.47*	0.19
Calm	1.90	1.21	2.67	1.17	24.56*	0.19
Downhearted	0.75	1.05	0.19	0.61	32.09*	0.24
Energetic	2.49	1.14	3.55	0.71	77.54*	0.43
Enthusiastic	2.59	1.11	3.57	0.69	63.09*	0.38
Happy	2.30	1.04	3.23	0.82	83.23*	0.45
Sluggish	0.97	1.07	0.14	0.45	60.50*	0.37
Still	1.24	1.00	0.97	1.30	4.72**	0.04

680 \**p* < .001, \*\**p* < .05

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683 Table 3

684 *Experienced and ideal emotions discrepancies and emotion regulation variables*

	Very close		Close		Far		<i>F</i>	Partial Eta <sup>2</sup>
	M	SD	M	SD	M	SD		
<b>Self</b>								
Regulatory emotional self-efficacy	68.49	18.25	65.44	17.72	53.39	19.32	6.54*	0.11
Perceived effectiveness	5.35	1.21	5.07	0.91	4.88	1.29	1.56	0.03
Strategy frequency	5.54	1.45	5.35	1.21	5.24	1.56	0.41	0.01
<b>Teammate</b>								
Regulatory emotional other-efficacy	59.36	22.46	51.32	23.22	66.43	21.28	3.16**	0.07
Perceived effectiveness	5.03	1.16	5.00	1.27	5.26	1.22	0.43	0.01
Strategy frequency	5.06	1.24	4.82	1.10	5.51	1.44	2.20	0.05

\**p* <.001; \*\**p* < .05

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689 Table 4

690 *Correlational relationships between emotion regulation variables for self and teammate*

	Regulatory emotional self-efficacy	Strategy effectiveness	Frequency of strategy use
Self			
Regulatory emotional self-efficacy	1.00	0.41*	0.26*
Perceived effectiveness		1.00	0.44*
Strategy frequency			1.00
Teammate			
Regulatory emotional other-efficacy	1.00	0.18	0.30*
Perceived effectiveness		1.00	0.44*
Strategy frequency			1.00

691 \* $p < .05$

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695 Table 5

696 *Intrapersonal emotion regulation strategy types (n =250)*

Strategy	Frequency	Quotes
Music	48	<i>"I listen to upbeat but nice music to keep my anger low and save for the game."</i>
Visualization/rehearsal	42	<i>"Visualizing positive moves I can make in the game, i.e., take on a defender."</i>
Physical movements	35	<i>"Warm up. Increase heart rate to enhance energetic feeling. Ran to sports hall."</i>
Interactions with others	34	<i>"Interact with my teammates."</i>
Self-talk	26	<i>"Used self-talk, psyching myself up to increase anger levels. Telling myself I need to get angry."</i>
Focus or distractions	12	<i>"Focusing on the game and not worrying how the result ends."</i>
Solitude	9	<i>"Alone time to concentrate on task in hand."</i>
Reappraisals	9	<i>"Treating the match as if it is a cup final so I am fully switched on."</i>
Consumption of food or drink	8	<i>"Eating good tasty meal before the game to get rid of hunger and increase happiness."</i>
Recollecting past events	8	<i>"Think of previous good performance."</i>
Breathing	7	<i>"Breathing techniques. Used deep breaths in and out to try and calm self down."</i>
Goal-setting	6	<i>"I set goals for myself to be able to work harder and maintain happiness throughout the game."</i>
Positive thinking	5	<i>"Use quotes from experienced people to bring to mind good emotions."</i>
Self-care	1	<i>"Have a morning wash freshens me up to feel more awake and ready. Feel clean."</i>

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701 Table 6

702 *Interpersonal emotion regulation strategy types (n =167)*

Strategy	Frequency	Quotes
Encouragement & motivation	44	<i>"If my teammate was feeling anxious I would use encouraging words to boost confidence and calm them down."</i>
Humor/banter	22	<i>"Joking around before kick-off took his mind off what was expected and any pressure."</i>
Tactics & goal setting	20	<i>"To help decrease my team member's nerves before the competition we kept going over the routine to keep the dance in her head and to make sure she knew what she was doing at what time."</i>
Reassurance	19	<i>"Reassure him that he's a good player and important to the team."</i>
Music	17	<i>"To make my team mate feel better I let him listen to the music I was listening to and tried to improve his mood."</i>
Physical movements	12	<i>"Get them to warm up with me to keep energized and warmed up."</i>
Reappraisal	10	<i>"Explain there is no need to be nervous or angry."</i>
Physical contact and expressions	6	<i>"Giving as many handshakes or high fives as possible to warm up team spirit and happiness."</i>
Distraction	5	<i>"Before the competition I tried to distract my team mate from her negative feelings. I did this by talking about various other things apart from the competition."</i>
Provocation	3	<i>"Make them angry to make them run. Took the mick out of them."</i>
Inclusivity	3	<i>"Social interacting so feels less out of the group."</i>
Explicit co-regulation	2	<i>"The second approach I implemented was that of an energetic manner. This was beneficial as my teammate saw that I was performing to maximum intensity so that he in turn raised his game to a higher level."</i>
Recollecting past events	2	<i>"Talk about past success and highlight what they did well in previous games."</i>
Consumption of food or drink	1	<i>"I gave him some Red Bull."</i>
Solitude	1	<i>A way that well helped to decrease my team mate's anxiety levels, we stayed away from other teams that were competing."</i>

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