

STRESS, PERFORMANCE, AND SOCIAL SUPPORT

1

1

2

3

4

5

6 Organizational Stressors, Social Support, and Implications for Subjective Performance

7 in High-Level Sport

8

9 Rachel Arnold and Thomas Edwards

10 University of Bath

11 Tim Rees

12 Bournemouth University

13

14

15

16

Author Note

17

18 Rachel Arnold and Thomas Edwards, Department for Health, University of Bath. Tim
19 Rees, Faculty of Management, Bournemouth University.

20 Declarations of interest: None. This research did not receive any specific grant from
21 funding agencies in the public, commercial, or not-for-profit sectors.

22 Correspondence concerning this article should be addressed to Rachel Arnold,
23 Department for Health, University of Bath, Bath, BA2 7AY, United Kingdom. Telephone:
24 4412-2538-5107. Fax: 4412-2538-3833. E-mail: R.S.Arnold@bath.ac.uk

25

26 Abstract

27 *Objectives:* Although much is now known about the role of social support in the competitive
28 stress process, scholars have yet to examine this moderator in relation to organizational stress.
29 The purpose of this study was to examine the relationship between perceived organizational
30 stressors and subjective performance in sport, with particular focus on the potential moderating
31 role of social support.

32 *Design and Methods:* Talented athletes ($N = 122$; 60 male; $M_{age} = 20.50$) completed
33 questionnaires of perceived organizational stressors, social support, and subjective athletic
34 performance.

35 *Results:* In addition to evidence of main effects, analyses revealed four significant interactions
36 which demonstrated that social support did act as a significant moderator of the relationship
37 between organizational stressors and subjective performance. Contrary to the extant literature,
38 however, the findings illustrated reverse buffering. Associations suggest that some dimensions
39 of social support exacerbated rather than mitigated athletes' stress reactions (i.e. impaired
40 performance) when encountering greater frequencies of organizational stressors.

41 *Conclusion:* These findings not only advance theoretical understanding of the organizational
42 stress process, but also present a number of significant implications for athletes, coaches, and
43 applied practitioners aiming to enhance performance in pressurized and demanding situations.
44 Specifically, recommendations are forwarded for practitioners to address coaching stressors
45 and provide effective social support that is matched to the stressors that he or she encounters.

46 *Keywords:* athletic, demand, interaction, moderation, strain, stressor

47 Organizational Stressors, Social Support, and Implications for Subjective Performance
48 in High-Level Sport

49 In elite sport, athletes are often required to perform while encountering various
50 competitive pressures. Increasingly, however, research is demonstrating that organizational
51 stressors can not only be a prevalent and problematic type of demand for various sport
52 performers (see e.g., Arnold, Fletcher, & Daniels, 2016; Arnold, Wagstaff, Steadman, & Pratt,
53 2017), but can also be encountered more than competitive demands (Fletcher & Arnold, 2017;
54 Hanton, Fletcher, & Coughlan, 2005). Organizational stressors have been defined as “the
55 environmental demands associated primarily and directly with the organization within which
56 an individual is operating” (Fletcher, Hanton, & Mellalieu, 2006, p. 329). In terms of their
57 prevalence, Arnold and Fletcher (2012) synthesized 34 studies that had identified the
58 organizational stressors encountered by sport performers to find 640 distinct demands. These
59 were organized to form four categories of organizational stressors: leadership and personnel
60 issues (e.g., the coach’s behaviors and interactions, expectations, media), cultural and team
61 issues (e.g., the team atmosphere, roles, goals), logistical and environmental issues (e.g.,
62 facilities, selection, travel), and performance and personal issues (e.g., injuries, finances, career
63 transitions). If organizational stressors remain unaddressed, research has suggested that they
64 can be associated with negative affect and poor well-being (Arnold, Fletcher, & Daniels, 2017;
65 Fletcher, Hanton, & Wagstaff, 2012), overtraining (Meehan, Bull, Wood, & James, 2004),
66 burnout (Larner, Wagstaff, Thelwell, & Corbett, 2017; Tabei, Fletcher, & Goodger, 2012;
67 Wagstaff, Hings, Larner, & Fletcher, 2018), and impaired preparation for and performance at
68 sporting competitions (Didymus & Fletcher, 2017b; Gould, Guinan, Greenleaf, Medbery, &
69 Peterson, 1999).

70 One model that can be used to explain the relationship between organizational
71 stressors and key outcomes in sport is the meta-model of stress, emotions, and performance
72 (Fletcher & Arnold, 2017; Fletcher & Fletcher, 2005; Fletcher et al., 2006; Fletcher & Scott,

73 2010). This model was adopted to underpin the present study because of three main reasons
74 (Fletcher et al., 2006): a) it offers a supraordinate and integrative perspective of stress and its
75 relationship with performance, b) it is consistent with existing theoretical work in the area, and
76 c) it has been designed to accommodate organizational stressors. The model suggests that
77 environmental stressors are mediated by certain processes (e.g., perception, appraisal, coping),
78 and, as a consequence, can result in various outcomes (e.g., suboptimal well-being and/or
79 performance). Additionally, the model posits that various personal and situational
80 characteristics can moderate the transactional stress process (Fletcher et al., 2006). Example
81 personal characteristics might include hardiness, self-confidence, and neuroticism; whilst
82 example situational characteristics might include the degree of available autonomy or control
83 (Fletcher et al., 2006).

84 Although there are an abundance of moderators that could be examined, one situational
85 characteristic that has received attention in relation to the competitive stress process is social
86 support. This is an important variable to measure in sport psychology research, given its
87 identified benefits for group cohesion (Westre & Weiss, 1991; see also, Al-Yaaribi &
88 Kavussanu, 2016), self-confidence (Freeman & Rees, 2010; see also, Beaumont, Maynard, &
89 Butt, 2015), performance (Freeman & Rees, 2009; Rees, Ingledew, & Hardy, 1999; Tamminen,
90 Sabiston, & Crocker, 2018), well-being (DeFreese & Smith, 2014), burnout and self-
91 determined motivation (DeFreese & Smith, 2013), and coping with performance slumps and
92 injury (Madden, Kirkby, & McDonald, 1989; Udry, 1996; see also, Mosewich, Crocker, &
93 Kowalski, 2014),, and competitive and personal stressors (Crocker, 1992; Rees & Hardy, 2000;
94 see also Cosh & Tully, 2015). It is important to explore the role of social support in the
95 organizational, as well as the competitive, stress process given the differential impacts that
96 organizational stressors can have on athletes' experiences in sport. Specifically, Tamminen and
97 colleagues (2018) found that more frequent coaching stressors weakened the association
98 between esteem support and secondary appraisal, whereas more frequent team and culture

99 stressors strengthened the association. Furthermore, extensive research in the workplace has
100 demonstrated the benefits of social support as a resource to help employees cope with
101 occupational demands (Bakker & Demerouti, 2017). The construct of social support
102 encompasses structural (i.e. support network), functional (i.e. support exchanges), and
103 perceptual (i.e. support appraisal) aspects (Bianco & Eklund, 2001). Despite this, research in
104 sport has typically focused on the functional element, which can be separated into perceived
105 availability of support and support actually received (Freeman & Rees, 2010). The present
106 study focuses on perceived support, because evidence suggests this aspect of support is more
107 consistently related to key outcome variables, such as performance and self-confidence, than
108 support actually received (Freeman & Rees, 2010; Rees & Hardy, 2004). There is consensus in
109 the literature that perceived support may be separated into four main dimensions (Cutrona &
110 Russell, 1990; Rees & Hardy, 2000). These are: emotional support (viz. others being present to
111 provide comfort and security), esteem support (viz. others bolstering an individual's
112 competence or self-esteem), informational support (viz. others providing advice or guidance),
113 and tangible support (viz. others providing concrete instrumental advice) (Freeman & Rees,
114 2009).

115 Transactional stress theory suggests that social support can exert an impact on
116 outcomes in two main ways (Cohen, 1988; Rees & Hardy, 2004). Firstly, in what is known as a
117 *main effects model*, social support can have a direct impact on various outcomes. Research
118 investigating the main effects model has produced fairly consistent findings in the sports
119 context. Indeed, studies have demonstrated a link between social support and Olympic
120 performance (Gould et al., 1999), performance factors in tennis (Rees & Hardy, 2004; Rees et
121 al., 1996), and performance outcomes in golf (Rees & Freeman, 2009; Rees, Hardy, &
122 Freeman, 2007).

123 Alternatively, social support can moderate the effect of stressors on outcomes, which is
124 referred to as the *stress buffering hypothesis*. There have been a number of mechanisms

125 forwarded in the literature in an attempt to explain the protective, buffering influence of social
126 support on the detrimental effects of stressful events. To elaborate, social support has been
127 suggested to lead to a benign appraisal of the event, redefine the potential threat of a situation,
128 enhance an individual's perceived situational control and ability to cope, directly provide
129 resources, promote self-efficacy and better coping behaviours, and alter the affective,
130 physiological, or behavioural response to stress (Cohen & Gottlieb, 2000; Freeman & Rees,
131 2009; 2010; Rees & Freeman, 2009; Rees & Hardy, 2004). In the sports context, research has
132 demonstrated that social support can moderate the effects of competitive stressors on task
133 performance in sport (Rees & Freeman, 2009; Rees & Hardy, 2004). Other dependent variables
134 have also been examined under the rubric of the stress buffering hypothesis, with Freeman and
135 Rees (2010) demonstrating social support as a significant moderator of the relationship
136 between performance-related stressors and self-confidence. Furthermore, Mitchell, Evans,
137 Rees, and Hardy (2013) have found significant stress buffering effects of social support on the
138 relationship between injury stressors (e.g., incapacitation, loss of confidence) and
139 psychological responses to injury (e.g., restlessness, isolation, feeling cheated). Although much
140 is now known about the role of social support in the competitive stress process, scholars have
141 yet to examine this moderator in relation to organizational stress. Indeed, whilst researchers
142 have attempted to measure some organizational demands (e.g., expectations), this has been
143 limited since the body of work has primarily been centred on competitive demands (e.g.,
144 fitness, form, technique). Freeman and Rees (2010) acknowledge this when stating:

145 The present study examined the relationship between perceived support . . . within
146 the context of specific performance-related stressors. Further research is required
147 to identify if the perceived support available . . . buffers the detrimental effect of
148 other types of stressors. (p. 65).

149 Given the aforementioned prevalence and problematic nature of organizational stressors
150 in sport (cf. Arnold & Fletcher, 2012; Fletcher & Arnold, 2017) and the identified beneficial

151 role that social support can play in this context (cf. Rees & Hardy, 2000), it is critical that the
152 relationship between these two constructs is examined in future investigations. In seeking to
153 further advance social support research, scholars should also look to consider the main effect
154 and stress buffering models in relation to an individual's actual perceptions of their
155 performances rather than using indicator variables (e.g., flow, feeling flat). Based on the
156 aforementioned critical review of the research in this area to date, the purpose of this study was
157 to examine the relationship between perceived organizational stressors and subjective
158 performance in high-level sport, with particular focus on the potential moderating role of social
159 support.

160 In line with the main effects model and stress buffering hypothesis forwarded in extant
161 literature, the hypotheses for this study were as follows:

- 162 1. The frequency of perceived organizational stressors will directly predict subjective
163 performance in athletes (H1); specifically perceived greater frequencies of
164 organizational demands will negatively predict subjective performance.
- 165 2. Perceived social support (viz. emotional, esteem, informational, tangible) will directly
166 predict subjective performance irrespective of levels of stressors (H2); specifically
167 perceived higher levels of support will positively predict subjective performance.
- 168 3. Perceived emotional, esteem, informational, and tangible support will also have stress-
169 buffering effects on subjective performance; specifically, the detrimental relationship
170 between perceived organizational stressors and subjective performance will be reduced
171 for those with high perceived support versus those with low perceived support (H3).

172 Plotted onto an interaction graph, this third hypothesis would be represented as an
173 increase in the perceived frequency of the organizational stressors being associated with a
174 maintenance or smaller decrease in subjective performance for those with high social support
175 as opposed to those with low social support. Since there exists no extant research on these
176 specific relationships, particular organizational stressor-social support combinations are not

177 hypothesized in this study.

178 **Methods**

179 **Participants and Procedure**

180 To be eligible for inclusion in this study, participants had to be studying at a British
181 higher educational institution and be identified as a talented athlete. Specifically, to be
182 recognised as talented, student-athletes were required to satisfy one of the following criteria
183 within the past two years; a top 10 British ranking, a member of the Great Britain (GBR)
184 squad, have a semi or professional sports contract, supported by the Talented Athlete
185 Scholarship Scheme (TASS), on a World Class Programme (WCP), or receive National
186 Governing Body (NGB) funding. Additionally, participants had to be British and over 18 years
187 of age. Following institutional ethical approval, the study's information and questionnaire link
188 were emailed to the TASS organization and every British university student-athlete
189 coordinator, who were asked to distribute this to relevant individuals in their
190 organization/institution (based on the above inclusion criteria). Additionally, NGBs were
191 contacted and asked to promote the study to their members who also met the above inclusion
192 criteria. Finally, participants meeting the criteria were also contacted via the research teams'
193 personal sporting networks. On the questionnaire link, participants were further informed about
194 the study and their ethical rights (i.e. that their data would remain confidential, their identities
195 anonymous, and that they had the right to withdraw at any stage without consequence), before
196 they were asked to confirm their consent to participate. The participants were asked to
197 complete the questionnaire once (i.e. a cross-sectional design) and the questionnaire took
198 approximately 20 minutes to complete. The final sample comprised 122 participants (60 male,
199 62 female) who met the aforementioned age, nationality, and sporting level inclusion criteria,
200 had a mean age of 20.50 ($SD = 2.60$), and participated in a total of 34 sports at a national ($n =$
201 28) or international level ($n = 94$). The sports represented in the sample were: archery ($n = 2$),
202 athletics ($n = 13$), badminton ($n = 2$), basketball ($n = 4$), boxing ($n = 2$), canoeing ($n = 4$),

203 cricket (n = 3), curling (n = 1), cycling (n = 2), dancing (n = 1), equestrian (n = 1), fencing (n =
204 15), football (n = 1), goalball (n = 1), golf (n = 1), gymnastics (n = 1), hockey (n = 14), judo (n =
205 = 3), karate (n = 1), lacrosse (n = 1), modern pentathlon (n = 10), netball (n = 4), rowing (n =
206 6), rugby (n = 11), shooting (n = 4), skiing (n = 2), softball (n = 2), squash (n = 1), swimming
207 (n = 4), table tennis (n = 1), tennis (n = 1), triathlon (n = 1), volleyball (n = 1), and
208 weightlifting (n = 1).

209 **Measures**

210 **Organizational Stressor Indicator for Sport Performers (OSI-SP; Arnold,**
211 **Fletcher, & Daniels, 2013).** The 23 item OSI-SP was used to measure the frequency of
212 organizational stressors that participants had encountered as part of their participation in
213 competitive sport over the past month. For all items on the OSI-SP, the stem “In the past
214 month, I have experienced pressure associated with. . .” was provided, to which the participants
215 responded on the frequency rating scale (“how often did this pressure place a demand on
216 you?”) with options ranging from zero to five (0 = never, 5 = always). The five subscales on
217 the indicator are Goals and Development (six items; example: “the development of my sporting
218 career”), Logistics and Operations (nine items; example: “travelling to or from training or
219 competitions”), Team and Culture (four items; example: “the atmosphere surrounding my
220 team”), Coaching (two items; example: “my coach’s personality”), and Selection (two items;
221 example: “how my team is selected”). There is evidence to support the factorial, concurrent,
222 discriminant, and cross-cultural validity and internal consistency of the OSI-SP (Arnold et al.,
223 2013; Arnold, Ponnusamy, Zhang, & Gucciardi, 2017) and, in the present study, acceptable
224 internal consistency was found for all subscales (α range = .74 to .95). Whilst it is recognized
225 that the intensity and duration subscales of the OSI-SP (cf. Arnold et al., 2013) provide
226 additional information beyond a sole focus on frequency, we chose to solely focus on the
227 frequency dimension for two key reasons. First, so as to keep the burden of measurement as
228 manageable as possible for our participants and thus ensure greater likelihood of full

229 completion. Second, as noted by Arnold et al. (2013), the high correlations between the three
230 dimension subscales of the OSI-SP mean that “the frequency scale alone would likely be
231 adequate for researchers or practitioners requiring a shorter version of the indicator” (p. 192).

232 **Perceived Available Support in Sport Questionnaire (PASS-Q; Freeman, Coffee,**
233 **& Rees, 2011).** Participants’ perceptions of available support were measured using the 16 item
234 PASS-Q. For each of the items, a 5-point Likert-type scale that ranged from 0 (*not at all*) to 4
235 (*extremely*) was used to assess the extent to which performers felt they had each type of
236 support available to them. The questionnaire consists of four subscales which measure the four
237 main dimensions of social support: emotional (example item: “provide you with comfort and
238 security”), esteem (example item: “reinforce the positives”), informational (example item:
239 “give you constructive criticism”), and tangible (example item: “help with tasks to leave you
240 free to concentrate”). Evidence has been provided for the reliability and factorial, construct,
241 and concurrent validity of the PASS-Q (Freeman et al., 2011) and the subscales were also
242 internally consistent in the present study (α range = .74 to .87).

243 **Performance.** Measuring athletic performance is extremely difficult in sports other
244 than those in which performance can be determined through a time or distance (e.g. athletics),
245 and when evaluating individual performances within teams. Moreover, comparing athletes’
246 performances across sports is complex. In light of these points and the varied sports from
247 which participants were drawn in the present study, we drew upon the tradition in sport
248 psychology (see, e.g., Arnold, Fletcher et al., 2017; Brown, Arnold, Standage, & Fletcher,
249 2017; Levy, Nicholls, & Polman, 2011; Nicholls, Polman, & Levy, 2012; Pensgaard & Duda,
250 2003; Reeves, Nicholls, & McKenna, 2011) to employ a subjective, single-item measure of
251 performance. Specifically, in this study, participants were asked to rate their performance over
252 the past month in comparison to their personal best using a scale of 0 (*very poor*) to 10
253 (*excellent*). This was deemed this the most appropriate way of providing a reflective and
254 explanatory subjective measure of athletes’ performances and enabling comparisons across

255 sports and sporting levels. Notwithstanding limitations of self-report, subjective measurements
256 (cf. Arnold & Fletcher, 2012a), some scholars have suggested that self-assessed performance in
257 athletes who are very familiar with their own abilities and have a good knowledge of their
258 sporting discipline can be more appropriate and sensitive than objective measures (Pellizzari,
259 Bertollo, & Robazza, 2011; Raglin, 1992; Raglin & Morgan, 1988; Thelwell & Maynard,
260 2003). In our sample, high-level sport performers were likely to assess their performance
261 quality frequently (cf. Saw, Main, & Gustin, 2015); therefore, similar to Pellizzari and
262 colleagues (2011), it was deemed that self-referenced performance was expected to be
263 accurate. Participants were asked to reflect on both organizational stressors and performance
264 over the past month, because this has been previously suggested as an appropriate time period
265 for encountering and recollecting organizational stressors (cf. Arnold et al. 2013). In line with
266 this study's purpose to examine the relationship between perceived stressors and subjective
267 performance, we deemed it appropriate to match the time-frames of reflection for the two
268 variables.

269 **Data Analysis**

270 Moderated hierarchical regression analysis (Baron & Kenny, 1986; Cohen & Wills,
271 1985; Jaccard, Turrisi, & Wan, 1990) were used to examine the relationships between
272 perceived organizational stressors, social support, and subjective performance. The PROCESS
273 command in SPSS can be used to estimate a moderation model with *M* moderating the effect of
274 *X* on *Y* by requesting model = 1 (cf. Hayes, 2017). Applied to this study, *M* refers to social
275 support, *X* to organizational stressors, and *Y* to subjective performance. Twenty moderated
276 hierarchical regression analyses were run (i.e. for each subscale of organizational stressors (*n* =
277 5) a separate regression was conducted with each social support dimension (*n*=4)). The
278 independent variables were entered in three steps: the stressor subscale first, then the social
279 support dimension, then the interaction (i.e. stressor*support) term. As suggested by Hayes
280 (2017), the significance of increments in explained variance in *Y* over and above the variance

281 accounted for by those variables already entered into the equation was assessed at each step.
282 The f^2 statistic was also calculated to illustrate the effect size of the moderation (Aiken & West,
283 1991), with Cohen's (1988) guidelines adopted to illustrate a small (0.02), medium (0.15), or
284 large (0.35) effect. Following guidelines in the literature (cf. Aiken & West, 1991; Cohen,
285 Cohen, West & Aiken, 2003; Hayes, 2005, 2017; Spiller, Fitzsimons, Lynch, & McClelland,
286 2013), significant interactions were plotted to display the relationship between perceived
287 organizational stressors and subjective performance at low (1SD below the mean), moderate
288 (mean), and high (1 SD above the mean) levels of perceived support. To provide more insight
289 into how the relationship between the predictor variable (e.g., perceived stressors) and the
290 outcome variable (e.g., subjective performance) changes at various values of the moderator
291 variable (social support) (rather than just low, mean and high), the Johnson and Neyman
292 (1936) approach was also adopted in this study (cf. Hayes, 2017).

293 Results

294 Preliminary Analysis

295 There was a negative relationship found between the perceived frequency of
296 organizational stressors and subjective performance; however, this was not significant (see
297 Table 1 in Supplementary Files). Turning to the stressor subscales, a significant negative
298 relationship was found between the coaching frequency subscale and subjective performance (r
299 = $-.19$, $p < .05$); however, none of the other stressor subscales demonstrated a significant
300 relationship. For perceived social support, all dimensions demonstrated a positive relationship
301 with subjective performance; however, only emotional ($r = .18$), esteem ($r = .21$), and tangible
302 ($r = .19$) dimensions were found to be significant (all $ps < .05$).

303 Main Analysis

304 Tables 2-6 display the results of the moderation analyses. To illustrate the nature of
305 significant interactions, the relationships between the perceived frequency of organizational
306 stressors, social support dimensions, and subjective performance are displayed graphically in

307 Figures 1-4 (see Supplementary File).

308 **Goals and Development.** The results indicated that athletes' perceptions of esteem
309 support moderated the relationship between the goals and development stressors encountered
310 and subjective performance, ($F(1, 118) = 4.68, p < .05, \Delta R^2 = .03, f^2 = .030$). For every one
311 unit increase in goals and development stressors frequency, there was a 0.59 decrease in
312 subjective performance ($p < .05$). Interaction slopes for goals and development stressor
313 frequency predicting subjective performance demonstrated that when esteem support was low
314 (-.926), there was a non-significant positive relationship between these demands and subjective
315 performance, $b = 0.56, 95\% \text{ CI} [-0.03, 1.15], t = 1.87, p = .06$ (see Figure 1). At the mean value
316 of esteem support (.000), there was a non-significant positive relationship between these
317 demands and subjective performance, $b = 0.01, 95\% \text{ CI} [-0.66, 0.69], t = 0.04, p = .97$. When
318 esteem support was high (.926), there was a non-significant negative relationship between
319 these demands and subjective performance, $b = -0.53, 95\% \text{ CI} [-1.56, 0.50], t = -1.02, p = .31$.
320 The Johnson Neyman technique illustrated that the relationship between goals and
321 development stressors and subjective performance was significant only at values of esteem
322 support less than -.997. The relationship between goals and development stressors and
323 subjective performance was not significantly moderated by the perceptions of emotional,
324 informational, or tangible support.

325 **Logistics and Operations.** The relationship between logistics and operations stressors
326 and subjective performance was not significantly moderated by the perceptions of
327 informational, emotional, esteem, or tangible support.

328 **Team and Culture.** The results indicated that athletes' perceptions of esteem support
329 moderated the relationship between the team and culture stressors encountered and subjective
330 performance, ($F(1, 118) = 3.97, p < .05, \Delta R^2 = .04, f^2 = .043$). For every one unit increase in
331 team and culture stressors frequency, there was a 0.53 decrease in subjective performance ($p <$
332 $.05$). Interaction slopes for team and culture stressor frequency predicting subjective

333 performance demonstrated that when esteem support was low (-.926), there was a non-
334 significant positive relationship between these demands and subjective performance, $b = 0.68$,
335 95% CI [-0.06, 1.43], $t = 1.82$, $p = .07$ (see Figure 2). At the mean value of esteem support
336 (.000), there was a non-significant positive relationship between these demands and subjective
337 performance, $b = 0.19$, 95% CI [-0.25, 0.64], $t = 0.86$, $p = .39$. When esteem support was high
338 (.926), there was a non-significant negative relationship between these demands and subjective
339 performance, $b = -0.30$, 95% CI [-0.86, 0.27], $t = -1.05$, $p = < .30$. The Johnson Neyman
340 technique illustrated that the relationship between team and culture stressors and subjective
341 performance was only significant at values of esteem support less than -1.96.

342 The results also demonstrated that athletes' perceptions of tangible support moderated
343 the relationship between the team and culture stressors encountered and subjective
344 performance, ($F(1,118) = 5.71$, $p = <.05$, $\Delta R^2 = .05$, $f^2 = .050$). For every one unit increase in
345 team and culture stressors frequency, there was a 0.59 decrease in subjective performance ($p <$
346 $.05$). Interaction slopes for team and culture stressor frequency predicting subjective
347 performance demonstrated that when tangible support was low (-.910), there was a non-
348 significant positive relationship between these demands and subjective performance, $b = 0.70$,
349 95% CI [-0.01, 1.40], $t = 1.95$, $p = .05$ (see Figure 3). At the mean value of tangible support
350 (.000), there was a non-significant positive relationship between these demands and subjective
351 performance, $b = 0.16$, 95% CI [-0.27, 0.59], $t = 0.73$, $p = .46$. When tangible support was high
352 (.910), there was a non-significant negative relationship between these demands and subjective
353 performance, $b = -0.37$, 95% CI [-0.89, 0.15], $t = -1.42$, $p = .16$. The Johnson Neyman
354 technique illustrated that the relationship between team and culture stressors and subjective
355 performance was significant at values of tangible support less than -.96, and at values of
356 tangible support greater than 1.55. The relationship between team and culture stressors and
357 subjective performance was not significantly moderated by the perceptions of emotional or
358 informational support.

385 in athletes, a negative (albeit non-significant) relationship was found. Although at a subscale
386 level, a significant negative relationship was found between the coaching frequency subscale
387 and subjective performance, none of the other stressor subscales demonstrated a significant
388 relationship. It was secondly hypothesized that perceived social support would directly predict
389 subjective performance irrespective of levels of stressors. In line with this, all four dimensions
390 demonstrated a positive relationship with subjective performance, with emotional, esteem, and
391 tangible dimensions found to be significant. Turning to the moderation hypothesis, the results
392 illustrated that some dimensions of social support did act as a significant moderator of the
393 relationship between organizational stressors and subjective performance, although, this was in
394 the opposite direction to the one normally observed in the literature and hypothesized in this
395 study. Although effect sizes for these moderator effects were small (.03 to .05), when judged
396 against Cohen's (1988) suggestions, they are far larger than the median effect size of .002 for
397 tests of moderation noted by Aguinis, Beaty, Boik, and Pierce (2005) across thirty years of
398 research, and could even be considered large according to Kenny's (2018) suggested revised
399 criteria of 0.005, 0.01, and 0.025 for small, medium, and large effects, respectively.

400 The significant negative relationship found between the coaching frequency subscale
401 and subjective performance may be explained by the fundamental role a coach, and specifically
402 an athlete's relationship with his or her coach, can play in developing talent and producing
403 world-class athletic performances (Durand-Bush & Salmela, 2002; Rees et al., 2016); therefore
404 when stressors arise relating to the coach-athlete relationship, performance can suffer.
405 Alternatively, considering this relationship from a bidirectional perspective, it could be the case
406 that as perceived performances improve, the performers do not perceive coaching stressors as
407 frequently. Indeed it is often witnessed in elite sport that, during times of poor athletic
408 performance, a coach can be made a scapegoat; however, they are not perceived to be a
409 problem when performances are good (cf. Flores, Forrest, & Tena, 2012; Jowett, 2003). In
410 relation to the negative (albeit non-significant) relationships found between organizational

411 stressors in general and subjective performance, this highlights the need for future research to
412 examine further components of the transactional stress process (e.g., appraisal, coping etc) to
413 explore this in more depth.

414 Turning to the significant positive relationships found between subjective performance
415 and emotional, esteem, and tangible support, these findings add to the existing literature that
416 social support can have beneficial effects for athletic performance (Rees & Hardy, 2004; Rees
417 et al., 2007; Gould, Greenleaf, Chung, & Guinan, 2002; Tamminen et al., 2018). Whilst studies
418 have proposed how perceived support contributes to performance, for example via influencing
419 situational control and cognitive appraisals (Freeman & Rees, 2009), future research is needed
420 to examine the transferability of this explanation to the organizational stress process.

421 Specifically, work should be conducted which looks to examine if factors such as control and
422 appraisal mediate the relationship between organizational stressors and performance. With
423 regards to the non-significant relationship between informational support and subjective
424 performance, Freeman and Rees (2009) suggest that certain support dimensions (e.g., esteem)
425 may be more important and effective than others in achievement contexts. Taking the findings
426 of hypotheses one and two together, this study provides some support for the independent
427 distress deterrent model (Wheaton, 1985) which suggests that the role of the resource (i.e.
428 support) does not depend on the level of stress as the two constructs have independent effects
429 on distress. In relation to current findings it is clear that some stressors and social support
430 exerted separate and opposite effects on outcomes (e.g., subjective performance).

431 Returning to the moderator findings, for the significant interactions evident in the
432 study, rather than the negative relationship between organizational stressors and subjective
433 performance being reduced for those with high perceived support versus those with low
434 perceived support, the opposite was the case for some social support dimensions. Specifically,
435 all of the interaction slopes results illustrated that at lower levels of social support there was a
436 positive relationship between perceived organizational stressors and subjective performance,

437 whereas a negative relationship was displayed at higher levels of social support. Indeed, the
438 Johnson-Neyman analysis demonstrated that the stressor-performance relationships were
439 primarily apparent for those with particularly low levels of esteem support, and for those with
440 either particularly low or particularly high levels of tangible support. These results are
441 somewhat surprising, as intuitively it makes sense that social support should be helpful to
442 individuals experiencing stress. This effect has, however, been identified before in research
443 where social support has been found to exacerbate rather than mitigate employees' stress
444 reactions and has been termed *reverse* buffering (Kaufmann & Beehr, 1986; Tucker,
445 Jimmieson, & Bordia, 2016).

446 There are various examples of reverse buffering in the job stress literature and, given
447 the identified similarities between high-level sport and business contexts (e.g., organizational
448 issues, stress, leadership, high-performing teams; Jones, 2002), it is worth reflecting on these
449 examples in the present study. For example, Kaufmann and Beehr (1989) found with a sample
450 of police officers that high levels of instrumental support exacerbated the impact of job
451 stressors (e.g., workload, skill underutilization) on strain (e.g., dissatisfaction, boredom,
452 depression). As a second example, Kickul and Posig (2001) found that a supervisor's
453 emotional support strengthened the positive relationship between stressors (e.g, role conflict,
454 time pressures) and emotional exhaustion. Since there is no widely accepted reason for why
455 reverse buffering occurs (Fenlason & Beehr, 1994), various explanations have been extracted
456 from the literature to try and explain the findings of the present study. The first explanation
457 relates to the social support being ineffective or deficient; thus, when high levels of social
458 support are provided to athletes, it does not assist them in effectively managing the stressors
459 that they are experiencing and can even make the situation worse (Patterson, 2003). This not
460 only illustrates the importance of matching specific types of social support with the demands of
461 the stressor being encountered (Rees & Hardy, 2004), but also illustrates the need to better
462 understand what is deemed sufficient and effective social support in the sporting context (cf.

463 DeFreese & Smith, 2014; Rosenfeld & Richman, 1997).

464 The second explanation for reverse buffering suggests that it occurs when the sources
465 of support are not independent from the sources of the stressors (Glaser, Tatum, Nebekker,
466 Sorensen, & Aiello, 1999; Mayo, Sanchez, Pastor, & Rodriguez, 2012). For example, if a
467 teammate or coach who is causing strain approaches an athlete to offer his or her support, this
468 approach may be experienced as stressful no matter what type of support is being offered.
469 Extant literature also suggests that it is important to consider source congruence (Tucker et al.,
470 2016); for example, for a workload stressor, emotional support may be incongruent with the
471 type of stressor and in contradiction with the manager's actions of assigning a high workload in
472 the first place. Instead, with such a stressor it is proposed that instrumental support (i.e.
473 tangible assistance to help employees solve their obligations) would be more appropriate;
474 however, it too has also demonstrated reverse buffering effects (Kaufmann & Beehr, 1986,
475 1989). Future research is, therefore, required to examine if source incongruence and mixed
476 messages do exacerbate rather than alleviate the effects of organizational stressors on
477 subjective performance.

478 The third explanation for reverse buffering concerns the supportive communications
479 that occur and the provider of social supports' ability to regulate his or her own emotions.
480 Indeed, research suggests that supportive communications can on the one hand convince
481 individuals that stressors are not as bad as they seem, but alternatively they can also emphasize
482 and exaggerate stressors and give the impression that they are bad and even worse than
483 originally thought (Beehr, 1976; Glaser et al., 1999; LaRocco, House, & French, 1980; Tucker
484 et al., 2016). The latter function can exacerbate the levels of strain and reinforce aversive
485 effects of the stressor encountered. To determine which of these functions the supportive
486 communication fulfils, Tucker et al. (2016) suggest that the support providers' abilities to
487 regulate their own emotions determines if the support they provide has a positive (buffering) or
488 negative (reverse-buffering) effect on the relationship between stressors and outcomes. Given

489 the emotional contagion that has been demonstrated in the sports context (Moll, Jordet, &
490 Pepping, 2010), it is, therefore, imperative that stakeholders in sport not only provide optimal
491 support for athletes, but that they also exhibit optimal emotional regulation in this process
492 (Wagstaff, Hanton, & Fletcher, 2013).

493 A fourth explanation is that reverse buffering may be evident because of the study
494 design adopted. Specifically, as Glaser et al. (1999) explain, by adopting a cross-sectional
495 design which collects data on the variables concurrently, a causal direction cannot be imputed.
496 It could be the case that athletes that are experiencing greater stressors seek more social
497 support than those perceiving less demands. If such social support is effectively sought they
498 would have higher levels of social support which, if effective, may reduce strain over time.
499 Since the current study design is unable to verify this fourth explanation, future research should
500 look to utilize designs that allow stronger causal inferences. This may be, for example, an
501 experimental or quasiexperimental design which collects data over several time-points.

502 A further explanation for reverse buffering may be the situation itself. As Buunk and
503 Hoorens (1992) suggest, if a stressful situation implies strong emotions or experiences that are
504 either embarrassing or evoke social disapproval, affiliating with and receiving support from
505 others may aggravate these responses. Turning from the situation to the relationship between
506 the support provider and receiver, less strain is present if the relationship is perceived equitable
507 (Buunk & Hoorens, 1992). In relation to reverse buffering, this explanation would propose that
508 support provided to athletes may backfire or trigger negative affect, cognitions, and behaviors
509 if people are not able or willing to reciprocate the supportive behavior, or if they receive more
510 favorable outcomes than the person providing the support. A final explanation for reverse
511 buffering may be that high levels of social support undermine an athlete's self-esteem and
512 perceptions of their own competence and autonomy (Tucker et al., 2016). This can make them
513 feel reliant on others to cope with stressors and inhibit the satisfaction of their basic
514 psychological needs, a process that can predict thriving (Brown, Arnold, Fletcher, & Standage,

515 2017; Standage, 2012; Spreitzer & Porath, 2014). To explain this process, Brown, Arnold,
516 Fletcher et al. (2017) have defined thriving as the joint experience of development and
517 success, and suggested that to achieve both of these an individual needs to experience holistic
518 functioning which has typically been determined through indices of well-being and
519 performance. Thriving can be facilitated by various personal and contextual enablers and the
520 satisfaction of basic psychological needs has been suggested to act as a process variable
521 through which these enablers may predict thriving (Brown, Arnold, Fletcher et al., 2017). In
522 support of this, recent work by Brown, Arnold, Standage, et al. (2017) has found that the
523 satisfaction of needs significantly predicted athletes' membership to a thriving profile, whilst
524 their frustration significantly predicted membership to a non-thriving profile.

525 **Strengths and Limitations**

526 This study provides the first examination of social support as a moderator for the
527 relationship between organizational stressors and subjective performance in high-level sport.
528 Indeed, previous research in the sports context examining social support as a moderator has
529 focused on the competitive stress process and has sampled performers competing at lower
530 levels of sport. A real strength of this study was that all participants were competing at either a
531 national or international level in their sport; thus, offering advancements in knowledge and
532 understanding beyond existing literature for academics, and for athletes, coaches, and
533 practitioners operating within the sport context. Specifically, although not the original aim of
534 the study, the findings offer novel insight into the role of reverse buffering and provide various
535 explanations for why the associations suggest that some dimensions of social support may
536 exacerbate rather than mitigate the negative consequences of organizational demands.

537 Notwithstanding these strengths, it is important to acknowledge the limitations of this
538 study and subsequent directions for future research. First, it is important to recognize that the
539 direct negative relationship between organizational stressors and subjective performance was
540 non-significant (bar the coaching subscale); thus, the reverse buffering findings should be

541 interpreted with this in mind. Moreover, although single item measures may be appropriate for
542 providing useful information in some circumstances as well as offering various benefits to the
543 data collection process (cf. Fisher, Matthews, & Gibbons, 2016; Gardner, Cummings, Dunham,
544 & Pierce, 1998), it is suggested that scholars attempt to develop and validate in the future a
545 more comprehensive (i.e. more than one item) measure of subjective athletic performance
546 following standard scale development guidelines (cf. DeVellis, 2017). Moreover, it would be
547 advised to combine these subjective measures with more objective, external criteria (e.g., time,
548 strength, endurance etc) so that future research can re-examine relationships from this study.
549 Furthermore, although the time-frame of one month was deemed an appropriate reflective
550 period for this study, it has been argued that retrospective recall of encounters over time tend to
551 be inaccurate (Thomas & Diener, 1990). As a result, it is suggested that scholars consider the
552 use of methods such as daily diaries to capture daily fluctuations in stressors and performance
553 and, in so doing, minimize recall bias. Despite these acknowledgements, it is worth noting that
554 regardless of organizational stressors not directly predicting subjective performance, the
555 findings do highlight that at varying levels of demands differential levels of social support are
556 important for subjective performance.

557 A further limitation of this study is its cross-sectional nature which does not allow for
558 causation conclusions to be drawn. As well as only collecting data from one point in time,
559 taking measures of the variables from one source (e.g., the athlete) using one method (e.g.,
560 questionnaires) may have induced common method variance in this study. Future research
561 should, therefore, look to collect data on the role of social support in the stress process across
562 time utilizing both subjective and objective measures (Arnold & Fletcher, 2012a). Such
563 longitudinal designs would better capture the transactional nature of stress and the reciprocal
564 relationships between components of the stress process (Fletcher et al., 2006; see also,
565 Bartholomew, Arnold, Hampson, & Fletcher, 2017). Another theoretically informed future
566 research direction would involve the consideration of social support as an end result in the

567 stress process, rather than a moderating variable (Kickul & Posig, 2001). For instance, it may
568 be the case that athletes are seeking social support because of the stressors they experience and
569 the negative impacts these can have. A further line of enquiry, in accordance with the demand-
570 control-support model (Bakker, Demerouti, & Verbeke, 2004; Karasek, 1979), would be to
571 examine the amount of discretion and autonomy provided to athletes and how this interacts
572 with organizational demands and social support to impact performance and other outcomes
573 (e.g., well-being, physical health) in sport. Finally, it would also be pertinent for future
574 research to (space permitting) include the intensity and duration dimension subscales of the
575 OSI-SP (cf. Arnold et al., 2013), and examine the moderating role of social support on the
576 relationship between other dimensions of organizational stressors and these outcomes in sport.

577 **Practical Implications**

578 There are various implications for applied practice that can be forwarded from this
579 study and its findings. Taking first the main effects, the findings point to the importance of
580 minimizing the frequency of coaching stressors. Identified coaching stressors in the literature
581 include a coach's personality, attitude, behaviors, and interactions with athletes (Arnold &
582 Fletcher, 2012). Addressing these stressors could take the form of a proactive, primary-level
583 stress management intervention which involves a coach education program (see, for a review;
584 Langan, Blake, & Lonsdale, 2013) that aims to raise coaches' awareness of the stressors they
585 can create for their athletes. In terms of the moderation findings, it is important to note that the
586 implication of these are not necessarily that social support always makes things worse in high-
587 level sport when organizational stressors are encountered. Indeed, the findings suggest that
588 having social support may still facilitate better subjective performances (e.g., at low levels of
589 organizational stressors) and, thus, should be promoted in the sports context. Instead the main
590 implication of these findings is that a frequently proposed explanation, that social support can
591 buffer the effects of stress, may not always be wholly appropriate. Indeed, notwithstanding the
592 limitations of this study, the findings make initial suggestions that higher levels of some types

593 of social support may reduce rather than enhance subjective performance as the frequency of
594 organizational stressors increases.

595 As well as implementing various ways to address the organizational stressors
596 encountered (Arnold & Fletcher, 2012b; Didymus & Fletcher, 2017a; Randall, Nielsen, &
597 Houdmont, 2018; Rumbold, Fletcher, & Daniels, 2012, 2018), interventions focused around
598 the social support that is provided are also advised. First, it is suggested that the support being
599 provided is effective and efficient for the athlete and is carefully matched to them (Marigold,
600 Cavallo, Holmes, & Wood, 2014). Second, the support needs to be appropriate for the stressors
601 that an athlete is encountering. For instance, if an athlete is experiencing a high frequency of
602 team and culture stressors then the findings of this study initially suggest that providing low,
603 rather than high, levels of tangible support may have positive implications for subjective
604 performance. Third, it is important to ensure that the person providing the support is not also
605 creating the stressor that the athlete requires support for. If this is the case, and the stressor
606 itself can't be addressed, then the support offered should be congruent to the associated stressor
607 (Tucker et al., 2016). Fourth, when providing social support, whether on a 1:1 or group basis,
608 efforts should be made to structure these interactions in a way that minimizes negative
609 communication and encourages athletes to express any demands or concerns constructively
610 (Jenkins & Elliot, 2004). Finally, the provider of the support should ensure that they can
611 effectively regulate their own emotions (Tucker et al., 2016; Wagstaff et al., 2013).

612 To conclude, this study has been the first to examine the relationship between
613 organizational stressors and subjective performance in high-level sport, with particular focus
614 on the potential moderating role of social support. Contrary to empirical research on the role of
615 social support when encountering competitive stressors, the findings illustrate reverse
616 buffering; that is when experiencing greater frequencies of organizational stressors,
617 associations suggest that some dimensions of social support exacerbate rather than mitigate
618 athletes' stress reactions (i.e. impaired subjective performance). As well as the advancements

619 these findings can make to theoretical understanding of organizational stress in sport (Fletcher
620 et al., 2006), they also present a number of significant implications for athletes, coaches, and
621 applied practitioners aiming to enhance performance in pressurized and demanding situations.

622

References

- 623 Aguinis, H., Beaty, J. C., Boik, R. J., & Pierce, C. A. (2005). Effect size and power in
624 assessing moderating effects of categorical variables using multiple regression: A 30-
625 year review. *Journal of Applied Psychology, 90*, 94-107. doi: 10.1037/0021-
626 9010.90.1.94
- 627 Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*.
628 Newbury Park, CA: Sage.
- 629 Al-Yaaribi, A., & Kavussanu, M. (2016). Teammate prosocial and antisocial behaviors predict
630 task cohesion and burnout: The mediating role of affect. *Journal of Sport and Exercise*
631 *Psychology, 39*, 199-208. doi: 10.1123/jsep.2016-0336
- 632 Arnold, R., & Fletcher, D. (2012a). Psychometric issues in organizational stressor research: A
633 review and implications for sport psychology. *Measurement in Physical Education and*
634 *Exercise Science, 16*, 81-100. doi: 10.1080/1091367X.2012.639608
- 635 Arnold, R., & Fletcher, D. (2012b). A research synthesis and taxonomic classification of the
636 organizational stressors encountered by sport performers. *Journal of Sport and Exercise*
637 *Psychology, 34*, 397-429.
- 638 Arnold, R., Fletcher, D., & Daniels, K. (2013). Development and validation of the
639 Organizational Stressor Indicator for Sport Performers (OSI-SP). *Journal of Sport and*
640 *Exercise Psychology, 35*, 180-196.
- 641 Arnold, R., Fletcher, D., & Daniels, K. (2016). Demographic differences in sport performers'
642 experiences of organizational stressors. *Scandinavian Journal of Medicine and Science*
643 *in Sports, 26*, 348-358. doi: 10.1111/sms.12439
- 644 Arnold, R., Fletcher, D., & Daniels, K. (2017). Organizational stressors, coping, and outcomes
645 in competitive sport. *Journal of Sports Sciences, 35*, 694-703. doi:
646 10.1080/02640414.2016.1184299
- 647 Arnold, R., Ponnusamy, V., Zhang, C-Q., & Gucciardi, D. F. (2017). Cross-cultural validity

- 648 and measurement invariance of the Organizational Stressor Indicator for Sport
649 Performers (OSI-SP) across three countries. *Scandinavian Journal of Medicine and*
650 *Science in Sports*, 27, 895-903. doi: 10.1111/sms.12688
- 651 Arnold, R., Wagstaff, C. R. D., Steadman, L., & Pratt, Y. (2017). The organizational stressors
652 encountered by athletes with a disability. *Journal of Sports Sciences*, 35, 1187-1196.
653 doi: 10.1080/02640414.2016.1214285
- 654 Bakker, A. B., & Demerouti, E. (2017). Job demands-resources theory: Taking stock and
655 looking forward. *Journal of Occupational Health Psychology*, 22, 273-285. doi:
656 10.1037/ocp0000056
- 657 Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model
658 to predict burnout and performance. *Human Resources Management*, 43, 83-104. doi:
659 10.1002/hrm
- 660 Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social
661 psychological research: Conceptual, strategic, and statistical considerations. *Journal of*
662 *Personality and Social Psychology*, 51, 1173-1182.
- 663 Bartholomew, K. J., Arnold, R., Hampson, R. J., & Fletcher, D. (2017). Organizational
664 stressors and basic psychological needs: The mediating role of athletes' appraisal
665 mechanisms. *Scandinavian Journal of Medicine and Science in Sports*, 27, 2127-2139.
666 doi: 10.1111/sms.12851
- 667 Beaumont, C., Maynard, I. W., & Butt, J. (2015). Effective ways to develop and maintain
668 robust sport confidence: Strategies advocated by sport psychology consultants. *Journal*
669 *of Applied Sport Psychology*, 27, 301-318. doi: 10.1080/10413200.2014.996302
- 670 Beehr, T. A. (1976). Perceived situational moderators of the relationship between subjective
671 role ambiguity and role strain. *Journal of Applied Psychology*, 61, 35-40.
- 672 Bianco, T., & Eklund, R. C. (2001). Conceptual consideration for social support research in
673 sport and exercise settings: The case of sport injury. *Journal of Sport & Exercise*

- 674 *Psychology*, 23, 85-107. doi: 10.1123/jsep.23.2.85
- 675 Brown, D., Arnold, R., Fletcher, D., & Standage, M. (2017). Human thriving: A conceptual
676 debate and literature review. *European Psychologist*, 22, 167-179. doi: 10.1027/1016-
677 9040/a000294
- 678 Brown, D., Arnold, R., Standage, M., & Fletcher, D. (2017). Thriving on pressure: A factor
679 mixture analysis of sport performers' responses to competitive encounters. *Journal of*
680 *Sport and Exercise Psychology*, 39, 423-437. doi: 10.1123/jsep.2016-0293
- 681 Buunk, B. P., & Hoorens, V. (1992). Social support and stress: The role of social comparison
682 and social exchange processes. *British Journal of Clinical Psychology*, 31, 445-457.
683 doi: 10.1111/j.2044-8260.1992.tb01018.x
- 684 Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ:
685 Erlbaum.
- 686 Cohen, S. (1988). Psychosocial models of the role of social support in the etiology of physical
687 disease. *Health Psychology*, 7, 269-297.
- 688 Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression and*
689 *correlation for the behavioural sciences* (3rd ed.). Mahwah, NJ: Lawrence & Erlbaum
690 Associates.
- 691 Cohen, S., Gottlieb, B. H., & Underwood, L. G. (2000). Social relationships and health. In S.
692 Cohen, L. G. Underwood, & B. H. Gottlieb (Eds.), *Social support measurement and*
693 *intervention: A guide for health and social scientists* (pp. 3-25). New York: Oxford
694 University Press.
- 695 Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis.
696 *Psychological Bulletin*, 98, 310-357. doi: 10.1037/0033-2909.98.2.310
- 697 Cosh, S., & Tully, P. J. (2015). Stressors, coping, and support mechanisms for student athletes
698 combining elite sport and tertiary education: Implications for practice. *The Sport*
699 *Psychologist*, 29, 120-133. doi: 10.1123/tsp.2014-0102

- 700 Crocker, P. R. E. (1992). Managing stress by competitive athletes: Ways of coping.
701 *International Journal of Sport Psychology*, 23, 161-175.
- 702 Cutrona, C. E., & Russell, D. W. (1990). Type of social support and specific stress: Toward a
703 theory of optimal matching. In B. R. Sarason, I. G. Sarason, & G. R. Pierce (Eds.),
704 *Social support: An interactional view* (pp. 319–336). New York, NY: Wiley.
- 705 DeFreese, J. D., & Smith, A. L. (2013). Teammate social support, burnout, and self-determined
706 motivation in collegiate athletes. *Psychology of Sport and Exercise*, 14, 258-265. doi:
707 10.1016/j.psychsport.2012.10.009.
- 708 DeFreese, J. D., & Smith, A. L. (2014). Athlete social support, negative social interactions and
709 psychological health across a competitive sport season. *Journal of Sport and Exercise*
710 *Psychology*, 38, 619-630. doi: 10.1123/jsep.2014-0040
- 711 DeVellis, R. F. (2017). *Scale development: Theory and applications*. Newbury Park, CA: Sage.
- 712 Didymus, F. F., & Fletcher, D. (2017a). Effects of a cognitive-behavioral intervention on field
713 hockey players' appraisals of organizational stressors. *Psychology of Sport and*
714 *Exercise*, 30, 173-185. doi: 10.1016/j.psychsport.2017.03.005
- 715 Didymus, F. F., & Fletcher, D. (2017b). Organizational stress in high-level field hockey:
716 Examining transactional pathways between stressors, appraisals, coping and
717 performance satisfaction. *International Journal of Sports Science & Coaching*, 12(2),
718 252-263. doi:10.1177/1747954117694737
- 719 Durand-Bush, N., & Salmela, J. H. (2002). The development and maintenance of expert
720 athletic performance: Perceptions of world and Olympic champions. *Journal of Applied*
721 *Sport Psychology*, 14, 154-171. doi: 10.1080/10413200290103473
- 722 Fenlason, K. J., & Beehr, T. A. (1994). Social support and occupational stress: Effects of
723 talking to others. *Journal of Organizational Behavior*, 15, 157-175. doi:
724 10.1002/job.4030150205
- 725 Fisher, G. G., Matthews, R. A., & Gibbons, A. M. (2016). Developing and investigating the

- 726 use of single-item measures in organizational research. *Journal of Occupational Health*
727 *Psychology*, 21, 3-23. doi: 10.1037/a0039139
- 728 Fletcher, D., & Arnold, R. (2017). Stress in sport: The role of the organizational environment.
729 In C. R. D. Wagstaff (Ed.), *An organizational psychology of sport: Key issues and*
730 *practical applications* (pp. 83-100). Abingdon, UK: Routledge.
- 731 Fletcher, D., & Fletcher, J. (2005). A meta-model of stress, emotions and performance:
732 Conceptual foundations, theoretical framework, and research directions. *Journal of*
733 *Sports Sciences*, 23, 157-158.
- 734 Fletcher, D., Hanton, S., & Mellalieu, S. D. (2006). An organizational stress review:
735 Conceptual and theoretical issues in competitive sport. In S. Hanton & S. D. Mellalieu
736 (Eds.), *Literature reviews in sport psychology* (pp. 321–373). Hauppauge, NY: Nova.
- 737 Fletcher, D., Hanton, S., & Wagstaff, C. R. D. (2012). Performers' responses to stressors
738 encountered in sport organisations. *Journal of Sports Sciences*, 30, 349-358. doi:
739 10.1080/02640414.2011.633545
- 740 Fletcher, D., & Scott, M. (2010). Psychological stress in sports coaches: A review of concepts,
741 research and practice. *Journal of Sports Sciences*, 28, 127-137. doi:
742 10.1080/02640410903406208
- 743 Flores, R., Forrest, D., & Tena, J. D. (2012). Decision taking under pressure: Evidence on
744 football manager dismissals in Argentina and their consequences. *European Journal of*
745 *Operational Research*, 222, 653-662. doi: 10.1016/j.ejor.2012.03.033
- 746 Freeman, P., Coffee, P., & Rees, T. (2011). The PASS-Q: The Perceived Available Support in
747 Sport Questionnaire. *Journal of Sport and Exercise Psychology*, 33, 54-74.
- 748 Freeman, P., & Rees, T. (2009). How does perceived support lead to better performance? An
749 examination of potential mechanisms. *Journal of Applied Sport Psychology*, 21, 429-
750 441. doi: 10.1080/10413200903222913
- 751 Freeman, P., & Rees, T. (2010). Perceived social support from team-mates: Direct and stress

- 752 buffering effects on self-confidence. *European Journal of Sport Science*, *10*, 59-67. doi:
753 10.1080/17461390903049998
- 754 Gardner, D. G., Cummings, L. L., Dunham, R. B., & Pierce, J. L. (1998). Single-item versus
755 multiple item measurement scales: An empirical comparison. *Educational and*
756 *Psychological Measurement*, *58*, 898-915. doi: 10.1177/0013164498058006003
- 757 Glaser, D. N., Tatum, B. C., Nebekker, D. M., Sorenson, R. C., & Aiello, J. R. (1999).
758 Workload and social support: Effects of performance and stress. *Human Performance*,
759 *12*, 155-176.
- 760 Gould, D., Greenleaf, C., Chung, Y., & Guinan, D. (2002). A survey of U.S. Atlanta and
761 Nagano Olympians: Variables perceived to influence performance. *Research Quarterly*
762 *for Exercise and Sport*, *73*, 175-186. doi: 10.1080/02701367.2002.10609006
- 763 Gould, D., Guinan, D., Greenleaf, C., Medbery, R., & Peterson, K. (1999). Factors affecting
764 Olympic performance: Perceptions of athletes and coaches from more and less
765 successful teams. *The Sport Psychologist*, *13*, 371-394. doi: 10.1123/tsp.13.4.371
- 766 Hanton, S., Fletcher, D., & Coughlan, G. (2005). Stress in elite sport performers: A
767 comparative study of competitive and organizational stressors. *Journal of Sports*
768 *Sciences*, *23*, 1129-1141. doi: 10.1080/02640410500131480
- 769 Hayes, A. F. (2005). *Statistical methods for communication science*. New York, NY:
770 Routledge.
- 771 Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis*.
772 New York, NY: Guilford Press.
- 773 Jaccard, J., Turrisi, R., & Wan, C. K. (1990). *Interaction effects in multiple regression*.
774 Newbury Park, CA: Sage.
- 775 Jenkins, R., & Elliot, P. (2004). Stressors, burnout and social support: Nurses in acute mental
776 health settings. *Journal of Advanced Nursing*, *48*, 622-631. doi: 10.1111/j.1365-
777 2648.2004.03240.x

- 778 Johnson, P. O., & Neyman, J. (1936). Tests of certain linear hypotheses and their application to
779 some educational problems. *Statistical Research Memoirs, 1*, 57-93.
- 780 Jones, G. (2002). Performance excellence: A personal perspective on the link between sport
781 and business. *Journal of Applied Sport Psychology, 14*, 268-281. doi:
782 10.1080/10413200290103554
- 783 Jowett, S. (2003). When the “honeymoon” is over: A case study of a coach-athlete dyad in
784 crisis. *The Sport Psychologist, 17*, 444-460. doi: 10.1123/tsp.17.4.444
- 785 Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for
786 job redesign. *Administrative Science Quarterly, 24*, 285-308. doi: 10.2307/2392498
- 787 Kaufmann, G. M., & Beehr, T. A. (1986). Interactions between job stressors and social
788 support: Some counterintuitive results. *Journal of Applied Psychology, 71*, 522-526.
789 doi: 10.1037/0021-9010.71.3.522
- 790 Kaufmann, G. M., & Beehr, T. A. (1989). Occupational stressors, individual strains, and social
791 supports among police officers. *Human Relations, 42*, 185-197. doi:
792 10.1177/001872678904200205
- 793 Kenny, D. (2018). Moderator variables. Retrieved from:
794 <http://davidakenny.net/cm/moderation.htm>
- 795 Kickul, J., & Posig, M. (2001). Supervisory emotional support and burnout: An explanation of
796 reverse buffering effects. *Journal of Managerial Issues, 13*, 328-344.
- 797 Langan, E., Blake, C., & Lonsdale, C. (2013). Systematic review of the effectiveness of
798 interpersonal coach education interventions on athlete outcomes. *Psychology of Sport
799 and Exercise, 14*, 37-49. doi: 10.1016/j.psychsport.2012.06.007
- 800 Larner, R. J., Wagstaff, C. R. D., Thelwell, R. C., & Corbett, J. (2017). A multistudy
801 examination of organizational stressors, emotional labor, burnout, and turnover in sport
802 organizations. *Scandinavian Journal of Medicine & Science in Sports, 27*(12), 2103-
803 2115. doi:10.1111/sms.12833

- 804 LaRocco, J. M., House, J. S., & French, J. R. P. (1980). Social support, occupational stress, and
805 health. *Journal of Health and Social Behavior*, *21*, 202-218.
- 806 Levy, A. R., Nicholls, A. R., & Polman, R. C. J. (2011). Pre-competitive confidence, coping,
807 and subjective performance in sport. *Scandinavian Journal of Medicine and Science in*
808 *Sports*, *21*, 721-729. doi: 10.1111/j.1600-0838.2009.01075.x
- 809 Madden, C. C., Kirkby, R. J., & McDonald, D. (1989). Coping styles of competitive middle
810 distance runners. *International Journal of Sport Psychology*, *20*, 287-296.
- 811 Marigold, D. C., Cavallo, J. V., Holmes, J. G., & Wood, J. V. (2014). You can't always give
812 what you want: The challenge of providing social support to low self-esteem
813 individuals. *Journal of Personality and Social Psychology*, *107*, 56-80. doi:
814 10.1037/a0036554
- 815 Mayo, M., Sanchez, J. I., Pastor, J. C., & Rodriguez, A. (2012). Supervisor and coworker
816 support: A source congruence approach to buffering role conflict and physical stressors.
817 *International Journal of Human Resource Management*, *23*, 3872-3889. doi:
818 10.1080/09585192.2012.676930
- 819 Meehan, H. L., Bull, S. J., Wood, D. M., & James, D. V. B. (2004). The overtraining
820 syndrome: A multicontextual assessment. *The Sport Psychologist*, *18*, 154-171. doi:
821 10.1123/tsp.18.2.154
- 822 Mitchell, I., Evans, L., Rees, T., & Hardy, L. (2013). Stressors, social support, and tests of the
823 buffering hypothesis: Effects on psychological responses of injured athletes. *British*
824 *Journal of Health Psychology*, *19*, 486-508. doi: 10.1111/bjhp.12046
- 825 Moll, T., Jordet, G., & Pepping, G-J. (2010). Emotional contagion in soccer penalty shootouts:
826 Celebration of individual success is associated with ultimate team success. *Journal of*
827 *Sports Sciences*, *28*, 983-992. doi: 10.1080/02640414.2010.484068
- 828 Mosewich, A. D., Crocker, P. R. E., & Kowalski, K. C. (2014). Managing injury and other
829 setbacks in sport: Experiences of (and resources for) high-performance women athletes.

- 830 *Qualitative Research in Sport, Exercise and Health*, 6, 182-204. doi:
831 10.1080/2159676X.2013.766810
- 832 Nicholls, A. R., Polman, R. C. J., & Levy, A. R. (2012). A path analysis of stress appraisals,
833 emotions, coping, and performance satisfaction among athletes. *Psychology of Sport*
834 *and Exercise*, 13, 263-270. doi: 10.1016/j.psychsport.2011.12.003
- 835 Noblet, A., Rodwell, J., & McWilliams, J. (2003). Predictors of the strain experienced by
836 professional Australian footballers. *Journal of Applied Sport Psychology*, 15, 184-193.
837 doi: 10.1080/10413200305394
- 838 Patterson, G. T. (2003). Examining the effects of coping and social support on work and life
839 stress among police officers. *Journal of Criminal Justice*, 31, 215-226. doi:
840 10.1016/S0047-2352(03)00003-5
- 841 Pellizzari, M., Bertollo, M., & Robazza, C. (2011). Pre- and post-performance emotions in
842 gymnastics competitions. *International Journal of Sport Psychology*, 42, 278-302.
- 843 Pensgaard, A-M., & Duda, J. L. (2003). Sydney 2000: The interplay between emotions, coping
844 and the performance of Olympic-level athletes. *The Sport Psychologist*, 17, 253-267.
845 doi: 10.1123/tsp.17.3.253
- 846 Randall, R., Nielsen, K., & Houdmont, J. (2018). Process evaluation for stressor reduction
847 interventions in sport. *Journal of Applied Sport Psychology*. Advance online
848 publication. doi: 10.1080/10413200.2018.1480544
- 849 Raglin, J. S. (1992). Anxiety and sport performance. *Exercise and Sport Sciences Reviews*, 20,
850 243- 274.
- 851 Raglin, J. S., & Morgan, W. P. (1988). Predicted and actual pre-competition anxiety in college
852 swimmers. *Journal of Swimming Research*, 4, 5-7.
- 853 Rees, T., & Freeman, P. (2009). Social support moderates the relationship between stressors
854 and task performance through self-efficacy. *Journal of Social and Clinical Psychology*,
855 28, 245-264. doi: 10.1521/jscp.2009.28.2.244

- 856 Rees, T., & Hardy, L. (2000). An investigation of the social support experiences of high-level
857 sports performers. *The Sport Psychologist, 14*, 327-347. doi: 10.1123/tsp.14.4.327
- 858 Rees, T., & Hardy, L. (2004). Matching social support with stressors: Effects on factors
859 underlying performance in tennis. *Psychology of Sport and Exercise, 5*, 319-337. doi:
860 10.1016/S1469-0292(03)00018-9
- 861 Rees, T., Hardy, L., & Freeman, P. (2007). Stressors, social support, and effects upon
862 performance in golf. *Journal of Sports Sciences, 25*, 33-42. doi:
863 10.1080/02640410600702974
- 864 Rees, T., Hardy, L., Güllich, A., Abernethy, B., Côté, J., Woodman, T., Montgomery, H.,
865 Laing, S., & Warr, C. (2016). The Great British medalist's project: A review of current
866 knowledge on the development of the world's best sporting talent. *Sports Medicine, 46*,
867 1041-1058. doi: 10.1007/s40279-016-0476-2
- 868 Rees, T., Ingledeu, D. K., & Hardy, L. (1996). Dimensions of performance and differential
869 effects of hassles, support and perceived control. *Journal of Sports Sciences, 14*, 43-44.
- 870 Reeves, C.W., Nicholls, A. R., & McKenna, J. (2011). The effects of a coping intervention on
871 coping self-efficacy, coping effectiveness, and subjective performance amongst
872 adolescent soccer players. *International Journal of Sport and Exercise Psychology, 9*,
873 126-142. doi: 10.1080/1612197X.2011.567104
- 874 Rosenfeld, L. B., & Richman, J. M. (1997). Developing effective social support: Team
875 building and the social support process. *Journal of Applied Sport Psychology, 9*, 133-
876 153.
- 877 Rumbold, J., Fletcher, D., & Daniels, K. (2012). A systematic review of stress management
878 interventions with sport performers. *Sport, Exercise, and Performance Psychology, 1*,
879 173-193. doi: 10.1037/a0026628
- 880 Rumbold, J. L., Fletcher, D., & Daniels, K. (2018). Using a mixed method audit to inform
881 organizational stress management interventions in sport. *Psychology of Sport and*

- 882 *Exercise*, 35, 27-38. doi: 10/1016/j.psychsport.2017.10.010
- 883 Saw, A. E., Main, L. C., & Gatin, P. B. (2015). Monitoring athletes through self-report:
884 Factors influencing implementation. *Journal of Sport Science and Medicine*, 14, 137-
885 146.
- 886 Spiller, S. A., Fitzsimons, G. J., Lynch, J. G., & McClelland, G. H. (2013). Spotlights,
887 floodlights, and the magic number zero: Simple effects tests in moderated regression.
888 *Journal of Marketing Research*, 50, 277-288. doi: 10.1509/jmr.12.0420
- 889 Spreitzer, G., & Porath, C. (2014). Self-determination as a nutriment for thriving: Building an
890 integrative model of human growth at work. In M. Gagné (Ed.), *The Oxford handbook*
891 *of work engagement, motivation, and self-determination theory* (pp. 245–258). New
892 York, NY: Oxford University Press.
- 893 Standage, M. (2012). Self-determination and performance in sport. In S. Murphy (Ed.), *The*
894 *Oxford handbook of sport and performance psychology* (pp. 233-249). New York, NY:
895 Oxford University Press.
- 896 Tabei, Y., Fletcher, D., & Goodger, K. (2012). The relationship between organizational
897 stressors and athlete burnout in soccer players. *Journal of Clinical Sport Psychology*, 6,
898 146-165. doi: 10.1123/jcsp.6.2.146
- 899 Tamminen, K. A., Sabiston, C. M., & Crocker, P. R. E. (2018). Perceived esteem support
900 predicts competition appraisals and performance satisfaction among varsity athletes: A
901 test of organizational stressors as moderators. *Journal of Applied Sport Psychology*.
902 Advance online publication. doi: 10.1080/10413200.2018.1468363
- 903 Thelwell, R. C., & Maynard, I. W. (2003). The effects of a mental skills package on repeatable
904 good performance in cricketers. *Psychology of Sport and Exercise*, 4, 377-396. doi:
905 10.1016/S1469-0292(02)00036-5
- 906 Thomas, D. L., & Diener, E. (1990). Memory accuracy in the recall of emotions. *Journal of*
907 *Personality and Social Psychology*, 59, 291-297. [doi:10.1037/0022-3514.59.2.291](https://doi.org/10.1037/0022-3514.59.2.291)

- 908 Tucker, M. K., Jimmieson, N. L., & Bordia, P. (2016). Supervisor support as a double-edged
909 sword: Supervisor emotion management accounts for the buffering and reverse-
910 buffering effects of supervisor support. *International Journal of Stress Management*,
911 25, 14-34. doi: 10.1037/str0000046
- 912 Udry, E. (1996). Social support: Exploring its role in the context of athletic injuries. *Journal of*
913 *Sport Rehabilitation*, 5, 151-163.
- 914 Wagstaff, C. R. D., Hanton, S., & Fletcher, D. (2013). Developing emotion abilities and
915 regulation strategies in a sport organization: An action research intervention.
916 *Psychology of Sport and Exercise*, 14, 476-487. doi: 10.1016/j.psychsport.2013.01.006
- 917 Wagstaff, C. R. D., Hings, R. F., Lerner, R. J., & Fletcher, D. (2018). Psychological resilience
918 moderates the relationship between organizational stressor frequency and burnout in
919 athletes and coaches. *The Sport Psychologist*. Advance online publication. doi:
920 10.1123/tsp.2016-0068
- 921 Westre, K., & Weiss, M. (1991). The relationship between perceived coaching behaviors and
922 group cohesion in high school football teams. *The Sport Psychologist*, 5, 41-54.
- 923 Wheaton, B. (1985). Models for the stress-buffering functions of coping resources. *Journal of*
924 *Health and Social Behavior*, 26, 352-364. doi: 10.2307/2136658

925 Table 1

926 *Correlations and Descriptive Statistics of The Study Variables*

Variables	1	2	3	4	5	6	7	8	9	10	11
1. OSa F											
2. GD F	.75**										
3. LO F	.84**	.52**									
4. TC F	.72**	.48**	.38**								
5. C F	.60**	.31**	.36**	.46**							
6. S F	.60**	.37**	.34**	.52**	.32**						
7. EmSS	-.16	-.16	-.06	-.01	-.23*	-.01					
8. EsSS	-.20*	-.19*	-.08	-.06	-.26	-.01	.80**				
9. ISS	-.18*	-.12	-.15	-.03	-.26	.09	.61**	.65**			
10. TSS	-.11	-.08	-.04	.02	-.25	.06	.66**	.75**	.60**		
11. Perc Perf	-.06	-.01	-.12	.05	-.19*	-.03	.18*	.21*	.19*	.15	
<i>M</i>	1.39	1.97	1.20	1.21	1.16	1.26	3.28	3.12	3.43	2.94	7.05
<i>SD</i>	.65	.69	.81	.98	1.32	1.15	1.06	.93	.87	.91	2.31

927 *Note.* OSa = Organizational stressor average; F = Frequency dimension; GD = Goals and development stressors; LO = Logistics and operations
928 stressors; TC = Team and culture stressors; C = Coaching stressors; S = Selection stressors; EmSS = Emotional social support; EsSS =
929 Esteem social support; ISS = Informational social support; TSS = Tangible social support; Perc Perf = Perceived Performance. * p < .05; **
930 p < .01

Table 2

Moderation Results for The Goals and Development Stressors

Variable	<i>b</i> [LLCI, ULCI]	SE	<i>t</i>	<i>P</i>
GD F	-.03 [-.72, .66]	.35	-.09	.93
EmSS	.44 [.07, .80]	.19	2.35	.02
GD F x EmSS	-.40 [-.95, .16]	.28	-1.43	.16
GD F	.01 [-.66, .69]	.34	.04	.97
EsSS	.55 [.19, .91]	.18	3.04	.00
GD F x EsSS	-.59 [-1.13, -.05]	.27	-2.16	.03
GD F	.04 [-.59, .68]	.32	.13	.90
ISS	.50 [.03, .97]	.24	2.12	.04
GD F x ISS	-.36 [-1.21, .49]	.43	-.84	.41
GD F	-.02 [-.65, .61]	.32	-.07	.94
TSS	.41 [-.02, .84]	.22	1.89	.06
GD F x TSS	-.51 [-1.09, .06]	.29	-1.76	.08

Note. F = Frequency dimension; GD = Goals and development stressors; EmSS = Emotional social support; EsSS = Esteem social support; ISS = Informational social support; TSS = Tangible social support.

Table 3

Moderation Results for The Logistics and Operations Stressors

Variable	<i>b</i> [LLCI, ULCI]	SE	<i>t</i>	<i>P</i>
LO F	-.33 [-.87, .21]	.27	-1.23	.22
EmSS	.40 [.03, .77]	.19	2.16	.03
LO F x EmSS	-.33 [-.79, .13]	.23	-1.41	.16
LO F	-.31 [-.85, .23]	.27	-1.13	.26
EsSS	.52 [.14, .91]	.19	2.70	.01
LO F x EsSS	-.27 [-.75, .21]	.24	-1.11	.27
LO F	-.37 [-.93, .20]	.29	-1.28	.20
ISS	.45 [-.02, .93]	.24	1.90	.06
LO F x ISS	-.50 [-1.01, .01]	.26	-1.93	.06
LO F	-.39 [-.91, .14]	.27	-1.46	.15
TSS	.40 [-.02, .83]	.22	1.87	.06
LO F x TSS	-.50 [-1.03, .04]	.27	-1.85	.07

Note. F = Frequency dimension; LO = Logistics and operations stressors; EmSS = Emotional social support; EsSS = Esteem social support; ISS = Informational social support; TSS = Tangible social support.

Table 4

Moderation Results for The Team and Culture Stressors

Variable	<i>b</i> [LLCI, ULCI]	SE	<i>t</i>	<i>P</i>
TC F	.15 [-.31, .61]	.23	.65	.52
EmSS	.42 [.05, .79]	.19	2.22	.03
TC F x EmSS	-.28 [-.74, .19]	.24	-1.19	.24
TC F	.19 [-.25, .64]	.23	.86	.39
EsSS	.47 [.08, .85]	.20	2.39	.02
TC F x EsSS	-.53 [-1.06, -.00]	.27	-1.99	.05
TC F	.10 [-.33, .53]	.22	.45	.65
ISS	.39 [-.07, .85]	.23	1.67	.10
TC F x ISS	-.63 [-1.32, .06]	.35	-1.82	.07
TC F	.16 [-.27, .59]	.22	.73	.46
TSS	.36 [-.03, .75]	.20	1.84	.07
TC F x TSS	-.59 [-1.07, -.10]	.25	-2.39	.02

Note. F = Frequency dimension; TC = Team and culture stressors; EmSS = Emotional social support; EsSS = Esteem social support; ISS = Informational social support; TSS = Tangible social support.

Table 5

Moderation Results for The Coaching Stressors

Variable	<i>b</i> [LLCI, ULCI]	SE	<i>t</i>	<i>P</i>
C F	-.26 [-.61, .09]	.18	-1.47	.14
EmSS	.32 [-.07, .70]	.20	1.62	.11
C F x EmSS	.02 [-.25, .28]	.13	.12	.90
C F	-.27 [-.60, .07]	.17	-1.57	.12
EsSS	.43 [.05, .82]	.20	2.21	.03
C F x EsSS	-.04 [-.32, .24]	.14	-.29	.78
C F	-.33 [-.72, .06]	.20	-1.68	.10
ISS	.37 [-.15, .89]	.26	1.39	.17
C F x ISS	-.21 [-.55, .13]	.17	-1.21	.23
C F	-.33 [-.68, .01]	.17	-1.91	.06
TSS	.28 [-.17, .73]	.23	1.24	.22
C F x TSS	-.13 [-.40, .15]	.14	-.91	.36

Note. F = Frequency dimension; C = Coaching stressors; EmSS = Emotional social support; EsSS = Esteem social support; ISS = Informational social support; TSS = Tangible social support.

Table 6

Moderation Results for The Selection Stressors

Variable	<i>b</i> [LLCI, ULCI]	SE	<i>t</i>	<i>P</i>
S F	-.08 [-.47, .32]	.20	-.40	.69
EmSS	.40 [.02, .77]	.19	2.11	.04
S F x EmSS	-.14 [-.46, .17]	.16	-.89	.37
S F	-.04 [-.44, .35]	.20	-.23	.82
EsSS	.49 [.09, .90]	.20	2.42	.02
S F x EsSS	-.17 [-.58, .24]	.21	-.80	.43
S F	-.07 [-.45, .32]	.20	-.35	.73
ISS	.36 [-.11, .82]	.24	1.53	.13
S F x ISS	-.51 [-1.02, -.01]	.26	-2.01	.05
S F	-.07 [-.47, .33]	.20	-.36	.72
TSS	.38 [-.05, .81]	.22	1.75	.08
S F x TSS	-.38 [-.82, .06]	.22	-1.72	.09

Note. F = Frequency dimension; S = Selection stressors; EmSS = Emotional social support; EsSS = Esteem social support; ISS = Informational social support; TSS = Tangible social support.

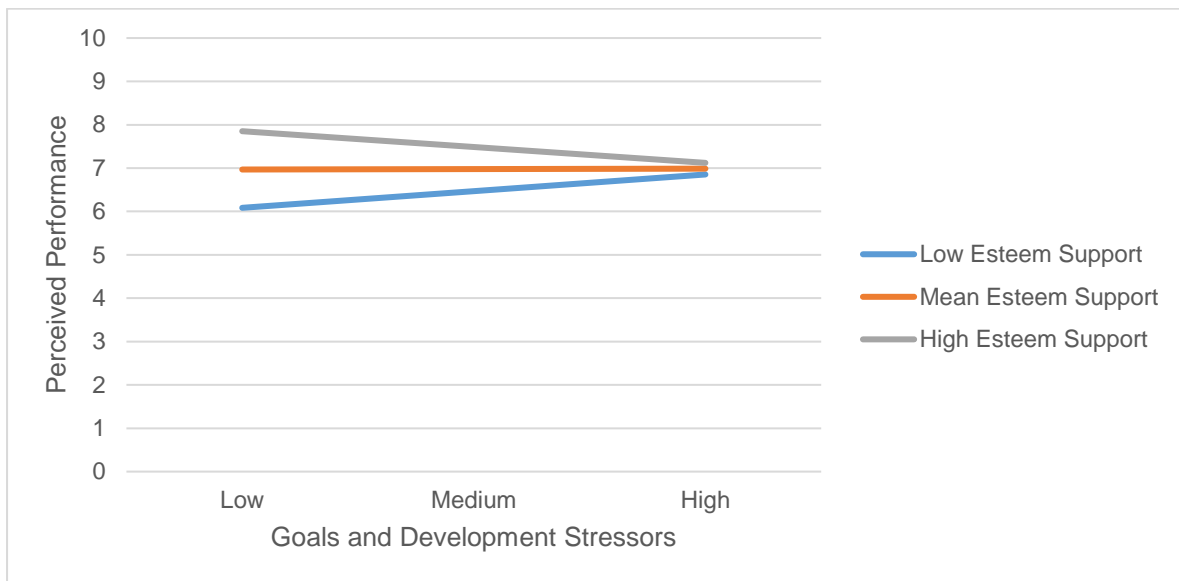
Supplementary File: Figures

Figure 1. A plot of the interaction between goals and development stressors and perceived performance at low (1SD below the mean), moderate (mean), and high (1SD above the mean) levels of perceived esteem support. Perceived performance is measured on a 0 (very poor) to 10 (excellent) scale.

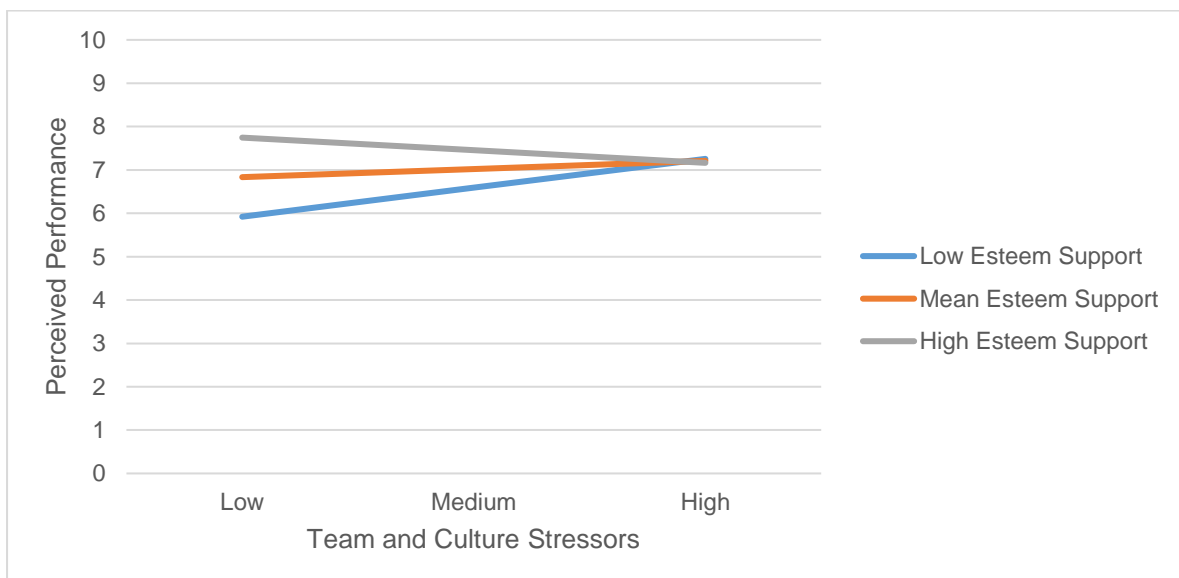


Figure 2. A plot of the interaction between team and culture stressors and perceived performance at low (1SD below the mean), moderate (mean), and high (1SD above the mean) levels of perceived esteem support. Perceived performance is measured on a 0 (very poor) to 10 (excellent) scale.

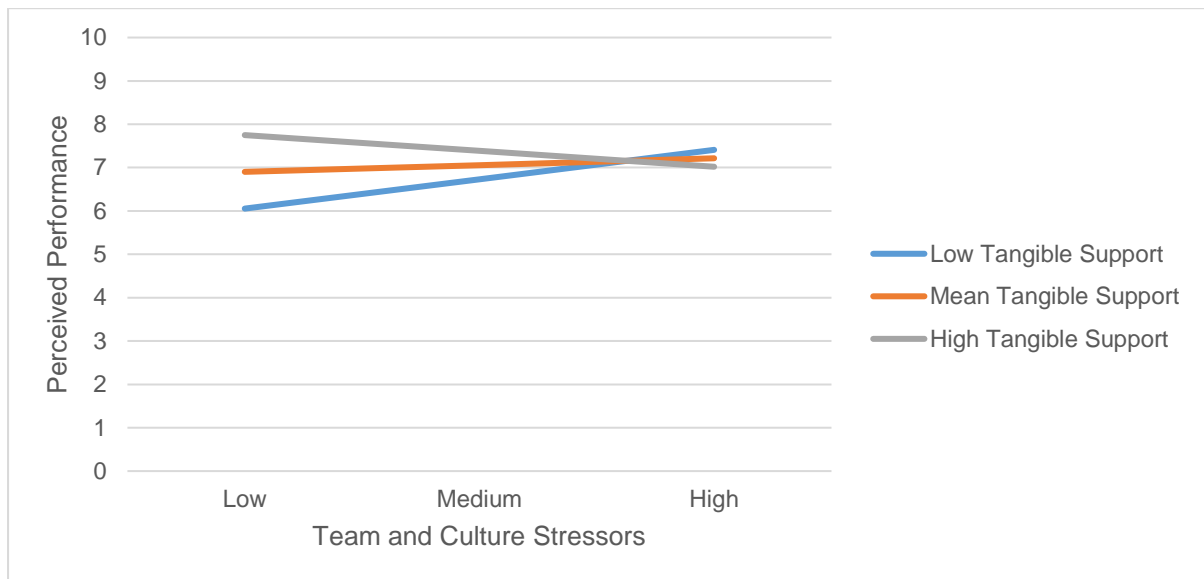


Figure 3. A plot of the interaction between team and culture stressors and perceived performance at low (1SD below the mean), moderate (mean), and high (1SD above the mean) levels of perceived tangible support. Perceived performance is measured on a 0 (very poor) to 10 (excellent) scale.

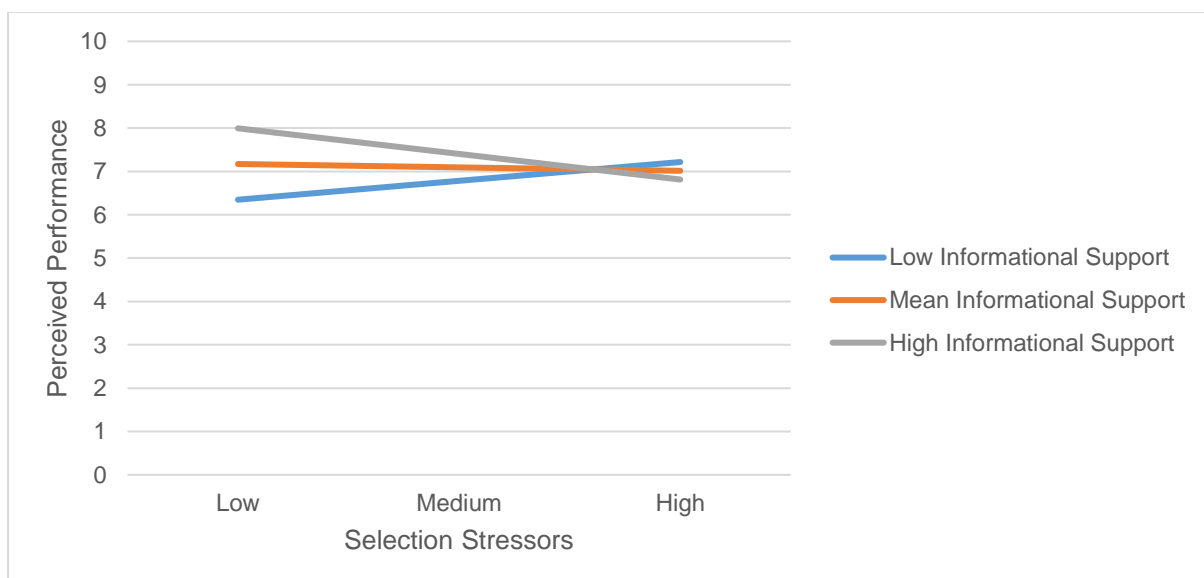


Figure 4. A plot of the interaction between selection stressors and perceived performance at low (1SD below the mean), moderate (mean), and high (1SD above the mean) levels of perceived informational support. Perceived performance is measured on a 0 (very poor) to 10 (excellent) scale.