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Psychological Resilience Moderates the Relationship between Organizational Stressor Frequency
and Burnout in Athletes and Coaches

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29

Abstract

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We present two studies examining the extent to which the frequency of organizational stressors encountered relate to burnout and whether psychological resilience qualities moderate any such relationship. The studies were conducted with independent samples of athletes and coaches using a questionnaire design. In study one, 372 athletes completed measures of organizational stressors (OSI-SP), resilience (CD-RISC-10), and burnout (Athlete Burnout Questionnaire). In study two, 91 coaches completed measures of organizational stressors (OSI-SP), resilience (CD-RISC-10), and burnout (Coach Burnout Questionnaire). Data were analyzed in a moderated regression model using Hayes' PROCESS macro for SPSS and supported the hypotheses that organizational stressor frequency was directly related to burnout in both athletes and coaches and that psychological resilience moderated this relationship. These results highlight the influential role of organizational dynamics for athlete and coach well-being and indicate that psychological resilience is a salient individual difference variable that buffers against potential negative outcomes.

Keywords: coaching, PROCESS, resilient, sport, stress, well-being

44 Psychological Resilience Moderates the Relationship between the Frequency of Organizational
45 Stressors and Burnout in Athletes and Coaches

46 Participation in competitive sport is typically characterized by a wide range of demands
47 that could lead to a disruption in performance and impaired health and well-being (Fletcher &
48 Arnold, 2017). One category of demands that are particularly prevalent and problematic for
49 athletes are those associated with the organization within which they operate (see Arnold &
50 Fletcher, 2012; Fletcher, Hanton, & Mellalieu, 2006). With regards to the prevalence of these
51 demands, sport performers have been found to experience and recall more organizational stressors
52 than those associated with competitive performances (Hanton, Fletcher & Coughlin, 2005). In
53 terms of their problematic nature, scholars have argued that the presence of organizational
54 stressors in sport might be inevitable (e.g., Fletcher et al., 2006), largely uncontrollable (Hanton,
55 Wagstaff & Fletcher, 2012), and give rise to a variety of emotional, behavioral, and attitudinal
56 responses (Fletcher, Wagstaff, & Hanton, 2012). Such responses may have diverse consequences
57 for burnout (Tabei, Fletcher & Goodger, 2012), dissatisfaction (Noblet, Rodwell & McWilliams,
58 2003), negative emotions (Fletcher et al., 2012), and impaired preparation for and performance in
59 major competitions (Gould, Guinan, Greenleaf, Mudberry & Peterson, 1999). To this end, we
60 report the findings from two studies. The first aim of these studies was to ascertain whether the
61 frequency of organizational stressors encountered by athletes and coaches was related to burnout
62 dimensions. The second aim was of this research was to establish whether psychological
63 resilience qualities moderated the relationship between the frequency of organizational stressors
64 and burnout.

65 Much of the extant research on organizational stress in sport has been conceptually aligned
66 with transactional theory (see Lazarus, 1999), of which the main tenet is that stress resides neither
67 in the person or their environment, but transaction between the two. In line with this theoretical
68 foundation, Fletcher et al. (2006) defined organizational stress in sport as, “an ongoing transaction
69 between an individual and the environmental demands associated primarily and directly with the
70 organization within which he or she is operating” (p. 329; adapted from Woodman & Hardy,

71 2001). In keeping with Fletcher et al.'s (2006) definition of organizational stress, researchers have
72 sought to identify and examine the types of organizational stressors encountered by individuals in
73 sport (e.g., Arnold, Fletcher, & Daniels, 2016, 2017; Fletcher, Hanton, Mellalieu, & Neil, 2012;
74 Kristiansen, Murphy & Roberts, 2012; Woodman & Hardy, 2001). Arnold and Fletcher (2012)
75 conducted a research synthesis and developed a taxonomy of organizational stressors in sport
76 comprising four categories. To elaborate, leadership and personnel issues (e.g., coach's
77 personality and external expectations), cultural and team issues (e.g., communication and goal
78 setting), logistical and environmental issues (e.g., travel and accommodation), and performance
79 and personal issues (e.g., injury and finances) were identified as organizational stressors. This
80 classification provided the conceptual foundation for the development and validation of the
81 Organizational Stressor Indicator for Sport Performers (OSI-SP; Arnold et al., 2013).

82 Although research investigating organizational stress in competitive sport has advanced
83 considerably over the past decade, much work remains to be done. For instance, most of the
84 studies to date have focused on one component (e.g., stressors, appraisal, responses, coping,
85 outcomes) of the organizational stress process in sport performers. Hence, it is important that
86 researchers progress beyond investigating discrete aspects of the organizational stress process
87 (e.g., stressors, appraisals, responses, coping) in performers alone, and explore links between
88 components of the process (e.g., factors relevant to the stress-burnout relationship) across a more
89 diverse range of stakeholders within organizational spheres (Fletcher & Arnold, 2017).

90 **Burnout in Competitive Sport**

91 The importance of investigating burnout within sport organizations stems from the
92 detrimental impact it can have on health, well-being, and performance. Indeed, burnout has been
93 associated with negative affective, cognitive, motivational, and behavioural consequences such as
94 decreased performance, overtraining, reduced sense of accomplishment, depressed mood, feelings
95 of helplessness, diminished motivation and eventual withdrawal from sport (Cresswell & Eklund,
96 2006b; Goodger, Gorely, Lavalley & Harwood, 2007; Gustafsson Hassmén, Kenttä & Johansson,
97 2008; Gustafsson, Kenttä & Hassmén, 2011). Extant research has generally supported a link

98 between stressors and burnout (for reviews see e.g., Cresswell & Eklund, 2006b; Gustafsson et
99 al., 2011). Nevertheless, while we agree that stress is an important component of the burnout
100 process, not everyone who experiences stress burns out (Raedeke, 1997). Further, we concur with
101 Coakley (1992) among others (e.g., Cresswell & Eklund, 2006b, Goodger, Wolfenden &
102 Lavallee, 2007; Gould et al., 1996) that the organization of sport can create climates associated
103 with higher incidences of burnout.

104 **Athlete burnout.** While there has been some conceptual debate among scholars (cf.
105 Cresswell & Eklund, 2006a; Goodger, Gorely, Lavallee & Harwood, 2007), it is generally
106 accepted that athlete burnout is an experiential condition characterized by symptoms of physical
107 and emotional exhaustion, reduced sense of accomplishment, and devaluation of the sporting
108 context (Raedeke, 1997; Raedeke & Smith, 2009). According to Raedeke and colleagues
109 (Raedeke, 1997; Raedeke, Lunney & Venables, 2002), physical and emotional exhaustion (PEE)
110 emanates from the psychosocial and physical demands associated with intense training and
111 competition. Reduced sense of accomplishment (RA) refers to feelings of inefficacy and the
112 tendency to evaluate oneself negatively in terms of performance and ability. Sport devaluation
113 (DV) is a negative, detached attitude toward sport reflected in part by a lack of concern for
114 performance quality. Research has examined the stressor-burnout relationship in athletes. For
115 example, Gould, Udry, Tuffey and Loehr (1997) reported factors such as increased pressure from
116 others and the need for a social life as contributing to athlete burnout. Further qualitative research
117 by Gustafsson et al. (2008) found situational and organizational factors (e.g., work/school
118 demands, logistical concerns, a lack of social support) to be associated with burnout in elite
119 athletes. Such findings imply the numerous environmental demands that athletes face might lead
120 to debilitating personal and professional effects.

121 **Coach burnout.** Conceptualizations of coach burnout have similarity with athlete burnout
122 but with researchers devoting greater attention to the coaching *context* (Kelley, 1994).
123 Consequently, much of the extant coach burnout literature has investigated the relationship
124 between personal (e.g., gender, age) and situational (e.g., work overload, social support) factors

125 with the three general burnout dimensions allied with athlete burnout (viz. PEE, RA, and DV;
126 Georgios & Nikolaos, 2012; Kelley, Eklund & Ritter-Taylor, 1999). To elaborate, a lack of
127 perceived autonomy and control (Vealey, Udry, Zimmerman & Soliday, 1992), and role
128 ambiguity and role conflicts (Capel, Sisley & Desertrain, 1987), have been linked to coach
129 burnout. Recently, Lundkvist, Gustafsson, Hjalm and Hassmén (2012) provided a qualitative
130 perspective of burnout in elite soccer coaches. Lundkvist et al.'s findings illustrate coach burnout
131 as stemming from a combination of issues relating to the performance environment profile (e.g.,
132 outside pressure to perform, problems handling the performance environment), and the life
133 situation profile (e.g., workload, family, health issues), many of which have relation to
134 organizational stressors.

135 **H1.** The frequency with which organizational stressors are encountered is positively related to
136 burnout in a) athletes and b) coaches.

137 **Psychological Resilience in Competitive Sport**

138 As alluded to above, while it would appear that stressors are an important component of
139 the burnout process, not all individuals who experience stress will burnout or withdraw from sport
140 (Raedeke, 1997). Therefore, to better understand why individuals report different outcomes to
141 similar organizational stressors, research might examine the role of potential moderating and
142 mediating variables, including various cognitive, emotional, and attitudinal, and individual
143 differences phenomena. Psychological resilience is one important individual difference in sport
144 organizations as those operating within them must use a variety of protective factors to withstand
145 stressors (Fletcher & Sarkar, 2012). Early resilience research in competitive sport focused on
146 athletes' responses to adversity (Galli & Vealey, 2008; Martin-Kruum, Sarrazin, Peterson &
147 Famose, 2003; Mummery, Schofield, & Perry, 2004) and the delivery of training programs to
148 develop resilience (Schinke & Jerome, 2002; Schinke, Peterson, & Couture, 2004). In a more
149 recent and systematic program of research, Fletcher and Sarkar defined psychological resilience
150 as, "the role of mental processes and behavior in promoting personal assets and protecting an
151 individual from the potential negative effect of stressors" (2012, p. 675; 2013, p. 16). This

152 definition emphasizes the potentially negative effects of stressors and the need to maintain mental
153 and behavioral functioning in the face of adversity (Sarkar & Fletcher, 2014).

154 In an interview study with 12 Olympic champions, Fletcher and Sarkar (2012) found that
155 participants encountered a wide variety of stressors and possessed five main psychological
156 protective factors (relating to a positive personality, motivation, confidence, focus, and perceived
157 social support) that underpin the resilience-stress-performance relationship. Further to this, Sarkar
158 and Fletcher (2014) reviewed the different types of stressors (viz. competitive, organizational and
159 personal) encountered by sport performers and found the aforementioned psychological protective
160 factors appear to protect athletes from the potentially negative effect of these stressors. Such
161 findings suggest psychological resilience buffers against potentially negative responses to
162 organizational stressors in athletes.

163 **H2.** The frequency with which the organizational stressors encountered by a) athletes and b)
164 coaches interacts with psychological resilience to predict burnout, whereby, as psychological
165 resilience qualities increase, there would be a significantly weaker relationship between the
166 frequency of organizational stressors and burnout.

167 **Purpose of the Studies**

168 From the preceding review, it would appear that psychological resilience is a potentially
169 salient asset for those who operate in demanding sport environments (i.e., athletes and coaches).
170 Hence, it seems pertinent to examine resilience in the organizational stressor-burnout relationship
171 given the recent calls for researchers to examine the role of potential moderating and mediating
172 variables in the organizational stress process in sport (cf. Fletcher & Arnold, 2017). In light of
173 these observations, the aim of this research was to ascertain whether organizational stressor
174 frequency was related to burnout and whether psychological resilience qualities moderated any
175 such relationship in athletes and coaches.

176 **Study 1**

177 **Method**

178 **Participants**

179 For the purpose of this study, 372 athletes were recruited from a large range of sports ($n =$
180 43). Participants from individual (e.g., golf, archery and equestrian), team (e.g., basketball,
181 football, rugby) and combined individual and team (e.g., cycling, tennis and rowing) sports were
182 recruited. Males comprised the majority of the sample (57.8%) and the participants ranged in age
183 from 17 to 42 years ($M = 21$, $SD = 5.91$). On average, athletes had 8.77 hours per week ($SD =$
184 5.70) of active involvement in training and competition and had competed for their current
185 organization for 5.1 years ($SD = 4.43$). At the time of the study, participants performed at club (n
186 = 138), county ($n = 103$), regional ($n = 49$), national ($n = 52$) and international ($n = 30$) level.
187 Following institutional ethical approval, participants were recruited via opportunity sampling and
188 online distribution using web-based Typeform software. The sampling criteria specified that
189 participants had to be aged over 16 years and be current athletes in a sport organization.

190 **Procedure**

191 The data collection process involved distribution of a questionnaire pack that included the
192 Organizational Stressor Indicator for Sports Performers (OSI-SP; Arnold, Fletcher & Daniels,
193 2013), Connor-Davidson Resilience Scale-10 (CD-RISC-10; Campbell-Sills & Stein, 2007), and
194 Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001). These questionnaires were
195 selected due to their sound psychometric properties, accessibility and conceptual relevance to the
196 variables under investigation. Participants were offered either a hard copy ($n = 342$) or online ($n =$
197 30) version of the questionnaire pack, which they selected according to preference. Online
198 questionnaires were completed using the Typeform web interface.

199 **Measures**

200 **Organizational Stressor Indicator for Sports Performers (OSI-SP).** The OSI-SP
201 (Arnold et al., 2013) is a 23-item measure comprising 5 subscales, goals and development,
202 logistics and operations, team and culture, coaching, and selection. The 5-factor structure was
203 supported by confirmatory factor analysis (Arnold et al., 2013). Although Arnold et al. (2013)
204 suggested using all three rating scales (i.e., frequency, intensity, and duration) for a
205 comprehensive picture of performer-organization transactions, they argued that the frequency

206 scale alone would be adequate for researchers requiring a shorter version of the indicator. Hence,
207 in order to limit the number of items in the questionnaire pack, and in line with the view that
208 burnout is linked to chronic exposure to stressors (e.g., Dale & Weinberg, 1990), the frequency
209 scale alone was employed here. The OSI-SP items were scored on a Likert rating scale in relation
210 to the frequency of each organizational stressor, with options ranging from 0 to 5 for each stem.
211 For each item, the frequency (e.g., “how often did this pressure place demand on you?”, 0 =
212 never, 5 = always), of organizational stressors encountered were measured. Acceptable omega
213 coefficients for each OSI-SP subscale were observed for the present sample: goals and
214 development ($\Omega = .75$), logistics and operations ($\Omega = .83$), team and culture ($\Omega = .62$), coaching
215 ($\Omega = .78$), and selection ($\Omega = .82$).

216 **Connor-Davidson Resilience Scale-10 (CD-RISC-10).** In the absence of a sports-
217 specific measure of psychological resilience, the CD-RISC-10 (Campbell-Sills & Stein, 2007)
218 provided a measure of resilience for the purpose of this investigation. The CD-RISC-10 is a ten-
219 item measure (score range 0-40) that assesses personal resources or qualities deemed appropriate
220 for positive adaptation to adversity (viz. personal competence, high standards, tenacity, trust in
221 one’s instincts, tolerance of negative affect, strengthening effects of stress, positive acceptance of
222 change, secure relationships, control, and spiritual influences). The questionnaire consists of ten
223 statements related to adapting to adverse situations (e.g. “I am able to adapt when changes
224 occur”). Each item was measured on a 5-point Likert scale ranging from 0 (not at all true) to 4
225 (true nearly all the time), with higher scores indicating recurrent use of each strategy. Gucciardi,
226 Jackson, Coulter, and Mallett (2011) reported good factorial validity analyses supporting the 10-
227 item unidimensional model compared to the original 25-item CD-RISC (Connor & Davidson,
228 2003), and internal reliability estimates with adult and adolescent cricketers. Satisfactory internal
229 consistency ($\Omega = .85$) were observed in the present study.

230 **Athlete Burnout Questionnaire (ABQ).** The ABQ (Raedeke & Smith, 2001) is a 15-item
231 measure and was developed specifically to measure burnout in athletes. The ABQ comprises of

232 three 5-item subscales designed to assess: (a) reduced sense of accomplishment (e.g., “I am not
233 achieving much in sport”), (b) sport devaluation (e.g., “I feel less concerned about being
234 successful in sport than I used to”), and (c) emotional/physical exhaustion (e.g., I feel overly tired
235 from my sport participation”). Two items are positively-framed and reverse scored. Participants
236 were required to answer each item on a 5-point Likert Scale ranging from 1 (almost never) to 5
237 (almost always). Higher total scores on the ABQ indicated a greater degree of burnout.
238 Confirmatory factor analysis by Raedeke and Smith (2001) suggested acceptable construct
239 validity and Cronbach’s alphas (between .85 and .91). Further, satisfactory test-retest reliability
240 from a sample of cross-country runners was reported (between .86 and .92). In the present study,
241 adequate omega reliability coefficients were reported for sport devaluation ($\Omega = .77$) and
242 emotional and physical exhaustion ($\Omega = .86$), but the omega for reduced sense of accomplishment
243 ($\Omega = .64$) was slightly below the recommended threshold for adequacy.

244 **Data Analysis**

245 In order to investigate whether the effect of organizational stressors on burnout varied in
246 magnitude and nature as a function of resilience, simple moderation analysis was utilized (Hayes,
247 2009). This allowed the identification of statistical interactions between the predictor
248 (organizational stressors) and moderator (resilience) variables, and the strength and direction of
249 their collective effect on the outcome variable (burnout) (Judd, Kenny, & McClelland, 2001).
250 Further, moderation encapsulates the enhancement, reduction or changing influence of the
251 predictor as a result of the moderating variable (Fairchild & MacKinnon, 2009). In addition to the
252 simple moderation analyses, we also conducted additional regression analyses controlling for
253 resilience with the organizational stressor subscales in predicting burnout. Before commencing
254 the analysis, the moderation model was checked for statistical assumptions. This included OLS
255 regression assumptions (i.e., linear in parameters, random sample, random sample, more than 20:1
256 observations: n ratio, no perfect collinearity, zero conditional mean, homoscedasticity; Cohen,
257 Cohen, Aiken & West, 2003). Data were analyzed using SPSS Version 22 (IBM Corporation,

258 U.S.A) using Hayes's (2013) PROCESS macro. This regression-based path analytic framework
259 allows the configuration and estimation of interactions in moderation models. Nine participants
260 returned incomplete questionnaires and, therefore, had their responses excluded from the data
261 analysis.

262 **Results**

263 Descriptive statistics and correlations can be seen in Table 1. For the main study variables,
264 there was a significant positive relationship between the frequency of organizational stressors and
265 burnout ($r = .27, p < .01$), providing support for Hypothesis 1a. In addition, a significant negative
266 relationship was found between resilience and burnout ($r = -.46, p < .01$). A significant
267 relationship was not found between the frequency of organizational stressors and resilience.

268 [Table 1 around here]

269 The simple moderation results are presented in Table 2. Consistent with Hypothesis 2a,
270 resilience moderated the relationship between organizational stressors and burnout in athletes (F
271 $(3, 373) = 44.86, p < .001, R^2 = .29$). For every one unit increase in resilience there was a -.22
272 decrease in burnout ($b = -.22, t(373) = 85.46, p < .001$) and for every one unit increase in stressor
273 frequency, there was a .93 increase in burnout ($b = .93, t(373) = 4.98, p < .001$). The interaction
274 between resilience and stressor frequency was ($b = -.05, t(373) = -2.22, p < .05$). Interaction
275 slopes for stressor frequency predicting burnout showed that at low levels of resilience burnout
276 scores increased by 1.25 ($b = 1.25, t(373) = 5.04, p < .001$) compared to athletes who reported
277 high levels of resilience, for whom burnout scores increased by .60 ($b = .60, t(373) = 2.68, p$
278 $< .001$). The moderation effects are presented graphically in Figure 1.

279 [Table 2 around here]

280 [Figure 1 around here]

281 We conducted further analyses to examine the contribution of each organizational stressor
282 subscale (see Table 3). After controlling for covariance among the subscales, moderation analyses
283 showed the team and culture, coaching, and goals and development subscales to be significant
284 predictors of burnout, but the logistics and operations and selection subscales did not.

285 [Table 3 around here]

286 **Discussion**

287 This study provides a novel empirical examination of the organizational stressor-
288 resilience-burnout relationship in a sport context. The findings indicate that the frequency of
289 organizational stressors was positively correlated with athlete burnout. Hence, Hypothesis 1a was
290 supported. Further, following simple moderation analysis (see Table 2), the frequency of
291 organizational stressors experienced by athletes interacted with psychological resilience to predict
292 burnout. That is, the results suggest the relationship between organizational stressor frequency
293 and burnout is significantly reduced in athletes with higher levels of resilience compared to those
294 with lower levels of resilience. Therefore, Hypothesis 2a was supported.

295 The data are comparable to those of Tabei et al. (2012), who reported a relationship
296 between organizational stressors and burnout using the ABQ and follow-up interviews with
297 soccer players. Hence, the empirical findings from the present study support and extend
298 theoretical links between stress and burnout in athletes (cf. Gustafsson et al., 2011; Raedeke &
299 Smith, 2004). Further, athletes in the present study with high resilience reported a lower incidence
300 of burnout when encountering comparable frequency of organizational stressors to those with low
301 resilience. One possible explanation for this protective effect is the elicitation of constructive
302 challenge appraisals, whereby athletes perceive stressors as opportunities for personal and skill
303 development. Nevertheless, it is beyond the scope of this study to ascertain whether resilience
304 promotes facilitative athlete responses in adverse circumstances and it is for future research to
305 examine such relationships.

306 In terms of the organizational stressor subscales, it is noteworthy that only three of the five
307 OSI-SP subscales individually predicted burnout when tested with resilience as a moderator.
308 These data highlight team and culture, coaching, and to a lesser extent, goals and development as
309 strong predictors of burnout, when controlling for other stressors and resilience. Moreover, such
310 findings have commonality with extant findings (see Arnold et al., 2016). Specifically, sport
311 performers competing at national or international level encountered a significantly higher

312 frequency of both goals and development and logistics and operations organizational stressors
313 than those competing at regional and university, and higher frequency of selection, goals and
314 development, and logistics and operations organizational stressors than those competing at county
315 and club level. The present sample was reflective of varying numbers of county (27%), regional
316 (13%), national (14%), and international (8%) performers, and as such, the future researchers
317 might undertake further examination of the influence of demographics on the stressor-burnout
318 relationship.

319 **Study 2**

320 **Method**

321 **Participants**

322 For the purpose of this study, 69 male and 22 female coaches ($n = 91$) were recruited from
323 a broad range of individual and team sports ($n = 26$), with a sizeable proportion of coaches
324 specializing in association football (24.2%). The participants ranged in age from 21 to 60 years
325 ($M = 31.1$, $SD = 12.3$). On average, the participants coached in their current sport organization for
326 12.31 hours per week ($SD = 12.82$) and had been in their current position for 8.65 years ($SD =$
327 7.05). The participants coached at club ($n = 26$), county ($n = 15$), regional ($n = 13$), national ($n =$
328 21) and international ($n = 16$) levels at the time of the study. After receiving ethical approval,
329 participants were recruited via workplaces, university institutions, and sport organizations. The
330 sampling criteria specified that participants had to be currently coaching in a sport organization.

331 **Procedure**

332 A questionnaire pack including the OSI-SP, CD-RISC-10, and the Coach Burnout
333 Questionnaire (CBQ) was distributed to coaches in this study. These questionnaires were selected
334 due to sound psychometric properties, accessibility and conceptual relevance to the variables
335 studied. The data collection protocol as described in Study 1 was repeated in Study 2, using the
336 online survey website Typeform ($n = 18$) and hard copy ($n = 73$) distribution techniques.

337 **Organizational Stressor Indicator for Sports Performers (OSI-SP).** See Study 1.

338 Acceptable omega coefficients were observed in this study for frequency of organizational

339 stressors in each subscale of the OSI-SP: goals and development ($\Omega = .77$), logistics and
340 operations ($\Omega = .82$), team and culture ($\Omega = .80$), coaching ($\Omega = .78$), selection ($\Omega = .87$).

341 **Connor-Davidson Resilience Scale-10 (CD-RISC-10).** See Study 1. Acceptable omega
342 coefficients for the sample of coaches were observed for the present sample ($\Omega = .86$).

343 **Coach Burnout Questionnaire (CBQ).** The CBQ (see Malinauskas, Malinauskiene &
344 Dumciene, 2010; is a 15-item measure based on the original ABQ (Raedeke & Smith, 2001),
345 specifically designed to assess burnout in coaches. The measure is based on the original ABQ, the
346 CBQ comprises of three 5-item subscales designed to assess: (a) reduced sense of
347 accomplishment, (b) sport devaluation, and (c) emotional/physical exhaustion, in line with the
348 multidimensional conceptualization of burnout (Raedeke, 1997). Of the 15 items, two are posed
349 positively and are reverse scored, with the remaining 13 being posed negatively. The original
350 ABQ question stems are altered for the CBQ to reflect coaching rather than athletic participation
351 in sport. For example, “I’m accomplishing many worthwhile things in [sport]” is changed to “I’m
352 accomplishing many worthwhile things coaching [sport].” Subjects are required to answer each
353 item on a 5-point Likert scale ranging from 1 (almost never) to 5 (almost always). Higher scores
354 on the CBQ indicate a greater degree of burnout. Based on the examination of convergent and
355 discriminant validity of extant coach burnout measures, Lundkvist et al. (2014) supported the use
356 of the CBQ because of its coverage of important aspects of coach burnout that other measures do
357 not cover (e.g., Maslach Burnout Inventory; Maslach & Jackson, 1981, Oldenburg Burnout
358 Inventory; Halbesleben & Demerouti, 2005). In an examination of fit, clarity, and the meaning of
359 revised items the CBQ has been found to have appropriate content validity and item modification.
360 For the present sample, adequate omega coefficients were observed for sport devaluation ($\Omega =$
361 $.78$) and emotional and physical exhaustion ($\Omega = .88$), but the omega for reduced sense of
362 accomplishment ($\Omega = .68$) was slightly below the recommended threshold for adequacy.

363 **Data Analysis**

364 As in Study 1, simple moderation analysis was used to ascertain whether the effect of
365 organizational stressors on burnout varied in magnitude and nature as a function of resilience
366 (Hayes, 2009). The full procedure undertaken was as presented in Study 1, except in this study,
367 given the older ages of the participants, and evidence that resilience may be related to age, we
368 controlled for age within the analyses. Additionally, due to the smaller sample size, we did not
369 conduct additional regression analyses controlling for resilience with the organizational stressor
370 subscales in predicting burnout.

371 Results

372 Descriptive statistics and correlations can be seen in Table 4. For the main study variables,
373 there was a significant positive relationship between the frequency of organizational stressors and
374 burnout ($r = .38, p < .01$), providing support for Hypothesis 1b. In addition, a significant negative
375 relationship between resilience and burnout ($r = -.56, p < .01$).

376 [Table 4 around here]

377 The simple moderation results are presented in Table 5. Consistent with Hypothesis 2b, resilience
378 moderated the relationship between organizational stressors and burnout in coaches ($F(3,85) =$
379 $28.78, p < .001, R^2 = .49$). Indeed, for every one unit increase in resilience, there was a -.29
380 decrease in burnout ($b = -.29, t(85) = -6.78, p < .001$) and for every one unit increase in
381 organizational stressor frequency, there was a 1.12 unit increase in burnout scores ($b = 1.12, t(85)$
382 $= 3.52, p < .001$). The interaction between resilience and stressor frequency was $b = -.15, t(85) = -$
383 $3.27, p < .001$. Interaction slopes for stressors predicting burnout showed that at low levels of
384 resilience burnout scores increased by 2.06 units ($b = 2.06, t(85) = 4.27, p < .001$), and for coaches
385 reporting high levels of resilience there was a non-significant increase in burnout ($b = .19, t(85) =$
386 $.51, p = .61$). When age was added as a covariate, these findings were not significantly different.
387 The moderation findings are presented graphically in Figure 2.

388 [Table 5 around here]

389 [Figure 2 around here]

390 Discussion

391 This study provides a novel empirical examination of stress-resilience-burnout relationship
392 in sports coaches. In a similar manner to Study 1, comparable conclusions can be drawn from the
393 present study. That is, the findings provide evidence of the positive relationship between the
394 frequency of organizational stressors and burnout, and the moderating effect of psychological
395 resilience in coaches whereby, as psychological resilience increased, there was a significantly
396 weaker relationship between organizational stressors and burnout. Hence, hypotheses H1b and
397 H2b were supported.

398 Although the present study only offers a cross-sectional perspective, these findings
399 indicate that the development of coaches' psychological resilience characteristics might
400 ameliorate reports of reduced accomplishment, physical and emotional exhaustion, and
401 devaluation of coaching experienced in response to organizational stressors. In line with research
402 on coach stress (e.g., Fletcher & Scott, 2010; Rhind, Scott, & Fletcher, 2013; Thelwell, Weston,
403 Greenlees & Hutchings, 2008), it is not unreasonable to assume that more resilient coaches might
404 also be more likely to experience positive outcomes as a result of positive responses to adversity
405 (e.g., thriving, growth, adaptive coping resources) that might enhance their well-being. The
406 findings of Study 2 echo the work of Lundkvist et al. (2012), whose findings pointed to the
407 tendency for the accumulation of organizational stressors to lead to coach burnout. Indeed, the
408 present findings also support Lundkvist et al.'s concluding remarks that better support should be
409 provided to coaches to manage the "off-field" challenges associated with their role (cf. Fletcher &
410 Scott, 2010).

411 **General Discussion**

412 The aim of the studies reported here was to examine the extent to which organizational
413 stressor frequency was related to burnout and whether psychological resilience moderated any
414 such relationship. The main finding to emerge from these studies is that the experience of athlete
415 and coach burnout is moderated by the psychosocial dynamics within sport organizations (i.e.,
416 organizational stressors) and that psychological resilience reduces the strength of this relationship.

417 The findings across both samples indicate that all organizational stressor dimensions are
418 positively related to all dimensions of burnout. That is, participants in the present studies
419 reporting encountering a higher frequency of organizational stressors felt more exhausted,
420 devalued their role in their sport organization, and felt they were accomplishing less in sport as an
421 athlete or coach, when compared to those who reported fewer organizational stressors. These
422 findings have similarity to past research revealing a relationship between unspecified perceived
423 stress and burnout (e.g., Gould et al., 1996; Kelley et al., 1999; Raedeke & Smith, 2004). Further,
424 several stressor-burnout dimension relationships in the present studies are noteworthy. There was
425 a medium positive correlation in both samples between organizational stressor frequency and
426 physical and emotional exhaustion ($r = .34$ and $.54$ respectively, $p < 0.01$), and a medium
427 relationship being between goals and development demands and physical and the emotional
428 exhaustion dimension of burnout. These findings parallel those of Chan (2003) who found role
429 stressors to have main effects on emotional exhaustion in a sample of prospective teachers.
430 Further, the coach data indicated that the organizational stressors most strongly correlated to
431 burnout were those aligned with goals and development and logistics and operations. In athletes,
432 the stressors most strongly associated with total burnout scores were those aligned with team and
433 culture demands. That organizational stressor dimensions were not related to resilience in the
434 athlete sample is also noteworthy, but perhaps not surprising given the tenets of the meta-model
435 of stress, emotions, and performance (Fletcher et al., 2006; Fletcher & Scott, 2010). That is, the
436 meta-model posits that stress resides neither in the person nor in the environment, but in the
437 relationship between the two. Hence, it is possible that resilience is one of a number of
438 characteristics that *moderate* the stress process, while the components of perception, appraisal and
439 coping *mediate* the relationship between stressors and responses (cf. Fletcher et al., 2006; Fletcher
440 & Scott, 2010; Hanton et al., 2012; Raedeke & Smith, 2004). Indeed, in light of the present data,
441 it might be beneficial to examine whether those who are more resilient perceive similar
442 frequencies of stressors, but attend to, appraise, respond to, and cope with these differently to
443 those who are less resilient.

444 The present examination of resilience as a moderating variable in the stress process is a
445 step toward addressing calls by organizational stress researchers in sport to move beyond the
446 examination of components of the stress process in isolation (e.g., Arnold & Fletcher, 2012;
447 Fletcher et al., 2006, 2012), by investigating the effects of a moderating variable such as
448 resilience. In doing so, the findings presented here indicate that interventions supporting
449 resilience, designed to protect and sustain well-being and performance in the face of adversity,
450 might benefit athletes and coaches in sport organizations (Fletcher & Sarkar, 2016). The findings
451 parallel those in other professional domains in highlighting the importance of resilience for
452 professional well-being such as social work (e.g., Kinman & Grant, 2011), teaching (e.g., Howard
453 & Johnson, 2004), medicine (e.g., Zwack & Schweitzer, 2013), human service managers (Zunz,
454 1998), and nursing (e.g., Edward & Hercelinskyj, 2007), physicians (e.g., Taku, 2014), civil
455 servants (e.g., Hao, Hong, Xu, Zhou & Xie, 2015), and students (e.g., Dyrbye et al., 2010). The
456 findings also align with a body of research that indicates training to better negotiate workplace
457 stressors leads to a healthier and more engaged workforce (e.g., Arnetz, Nevedal, Lumley,
458 Backman & Lublin, 2009; McCraty & Atkinson, 2012; Sood, Prasad, Schroeder, & Varkey,
459 2011). Researchers seeking to examine the relationship between organizational stressors
460 individual outcomes (e.g., attitudes, mental health and subjective well-being, psychosocial,
461 physical/biological, and performance) in sport might adopt ideographic longitudinal designs. It
462 will also be important to clarify which psychological resilience qualities best protect against
463 which types of organizational stressors to prevent particular burnout dimensions (Sarkar &
464 Fletcher, 2014b). Further, given the present findings, research examining the effectiveness of
465 resilience-building at the individual, team and organization levels is relevant (see Wagstaff,
466 Sarkar, Davidson, & Fletcher, 2017), and would also align with the calls by Wagstaff and
467 colleagues for a positive organizational psychology of sport (POPS; Wagstaff et al., 2012a;
468 2012b).

469 In addition to the contribution to stress and resilience knowledge, the present studies also
470 advance burnout theory. The findings presented in this article provide a step toward better

471 conceptual understanding burnout in athletes and coaches and extends the research on the factors
472 that mediate or moderate stress-burnout relationship. For example, Gustafsson et al.'s (2011)
473 integrated model of athlete burnout outlines perfectionism, trait anxiety, low social support, lack
474 of coping skills, goal orientation, and motivational climate as vulnerability factors. The present
475 findings indicate that psychological resilience should be added to this list of factors. Despite these
476 advances, much remains to be examined in terms of other antecedent (e.g., perceptions of control)
477 and consequence (e.g., turnover) components related to burnout. For example, Kinman and Grant
478 (2011) found a significant negative relationship between resilience and psychological distress in
479 social workers. The authors highlighted that emotional and social competencies (i.e., emotional
480 intelligence, reflective ability, empathy and social competence) were important protective factors
481 and, therefore, present possible areas for researchers in sport to investigate. Elsewhere, in a
482 narrative review, Strümpfer (2003) argued that there are other psychological variables allied with,
483 or possibly subsumed by, resilience that might buffer against burnout; engagement,
484 meaningfulness, subjective well-being, positive emotions, and proactive coping. Future research
485 on resilience-burnout might seek to incorporate these variables.

486 While there is a considerable body of research examining athlete burnout, little of this
487 research has resulted in the development of methods for successfully reducing the incidence of
488 burnout in sport. There also remains a need for evidence-based research evaluating the design and
489 effectiveness of stress management and resilience training interventions in sport. Given the
490 present findings, we hope that sport psychology scholars are encouraged to conduct applied
491 research to further examine the role of psychological resilience in the prediction of burnout in
492 athletes, coaches, and others who operate in sport organizations. In doing so, these findings might
493 serve to elevate the salience of psychological resilience in sport and galvanize its emerging place
494 as a topic of interest into one of prominence within models of stress and burnout.

495 In addition to the theoretical advancement outlined above, it seems incumbent upon sport
496 organizations to drive appropriate change to minimize demands for those individuals to whom
497 they have a duty of care. While the development of intra-individual protective resources might be

498 quicker and easier, inter-personal and organizational level improvements connected to the
499 individual in the workplace might have a more pervasive and long-lasting impact on burnout. That
500 is, equipping individuals in sport organizations with techniques to reduce job stress is likely to be
501 helpful (see Didymus & Fletcher, 2017), but such methods can be more effective if the
502 organization also seeks to make operating in sport less stressful to begin with (cf. Fletcher et al.,
503 2006; Rumbold, Fletcher, & Daniels, 2012; Fletcher & Sarkar, 2016). An organizational response
504 to stress and burnout requires the recognition of the phenomena as a legitimate *workplace*
505 problem and a sustained and systematic commitment to developing organization-wide
506 preventative protocols and initiatives Moreover, genuine efforts to prevent and alleviate burnout
507 among athletes, coaches and other professionals within sport organizations (e.g., support staff)
508 might also have purposeful or serendipitous positive effects, including increased performance,
509 improved quality of work life, higher levels of satisfaction and commitment, and lower turnover
510 (see, for a review, Wagstaff et al., 2017).

511 The main limitation of the present research is the use of a cross-sectional, self-report
512 design. Such designs preclude analysis of the influence of moderating variables (i.e., resilience)
513 on the stressor-burnout relationship over time. Hence, notwithstanding the replication of the main
514 findings using independent samples presented here, the authors would encourage researchers to
515 examine the longitudinal, predictive role of resilience in the stressor-burnout relationship. A
516 second limitation relates to the respective measures used in the present research. The authors
517 adopted an evidence-based selection process to identify the most suitable measures available, yet
518 each measure has strengths and limitations. To elaborate, in the absence of a sport-specific
519 measure of resilience (see Sarkar & Fletcher, 2013), we selected the CD-RISC-10 as the most
520 appropriate available measure given Gucciardi et al.'s (2011) favorable evaluation of its
521 psychometric properties. The current research provides further support for the use of the CD-
522 RISC10 in sport. Nevertheless, we reiterate recent calls for the development of a measure of
523 psychological resilience for specific use in sport contexts (see Gucciardi et al., 2011; Sarkar &
524 Fletcher, 2013, 2014) and for the purpose of greater conceptual-measurement harmony.

525 Researchers should also continue to seek and utilize the most psychometrically robust inventories
526 to measure coach burnout given the low omega coefficients (.64 and .68 respectively) observed
527 for the reduced sense of accomplishment subscales in the present studies. We would also advise
528 caution when interpreting the team and culture subscale data from Study 1 for similar reasons
529 (i.e., $\alpha = .62$), and encourage researchers to undertake further validation of the psychometric
530 properties of this measure to ensure researchers' confidence in its use. Moreover, although a
531 recent review of the available coach burnout measures championed the use of the CBQ over
532 alternatives (e.g., MBI, OBI), the original validation of this measure was conducted in Lithuanian
533 and not English. Hence, further evidence of its validation might enhance confidence in its utility.
534 A possible third limitation relates to the potentially confounding effects of the athlete sample
535 demographics. That is, a sample of largely young ($M = 21^{\text{years}}$), male (57%), competitive athletes
536 (37%) was included. Despite the moderate imbalance toward non-elite young males, we do not
537 believe that the data were biased or unrepresentative of competition level, given the sampling of
538 county (27%), regional (13%), national (14%), and international (8%) participants. Nevertheless,
539 the reader should note the imbalanced gender and age sampling when drawing conclusions from
540 these data.

541 In summary, our results corroborate and extend theory and research linking stressors and
542 burnout in athletes and coaches, and illustrate the role of resilience in this relationship. Indeed,
543 these findings offer a novel empirical examination of resilience as a moderator of the
544 organizational stress-burnout relationship, and significantly contribute to extant mechanistic
545 knowledge. Hence, these results highlight the role that resilience plays in burnout and add to the
546 broader literature on each of the main variables in the general psychology domain. Future research
547 is needed that assesses the influence of resilience on other well-being and performance outcomes
548 in the stress process, and the efficacy of resilience-building interventions at intra-individual, inter-
549 individual and environmental levels, to prevent burnout.

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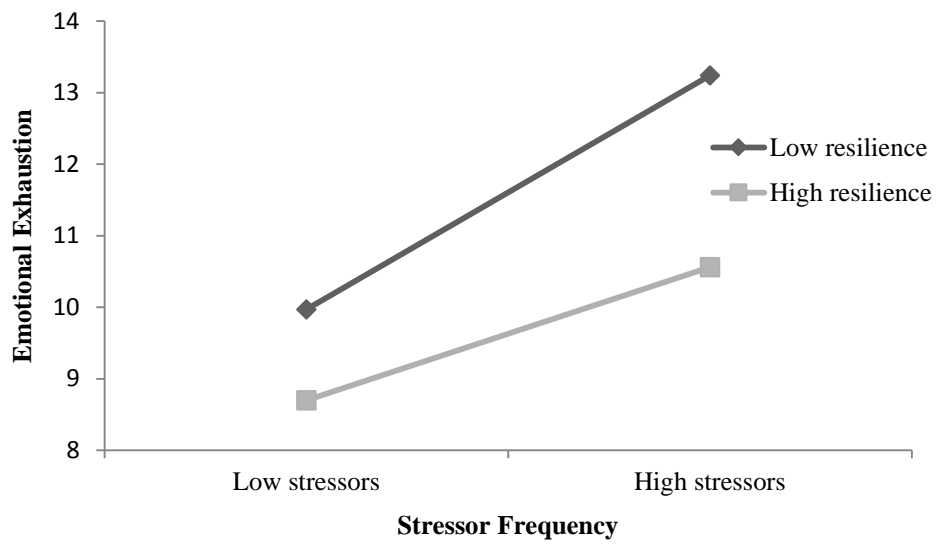
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764 *Figure 1.* Plot of the interaction between the frequency of organisational stressors and resilience

765 in predicting burnout in athletes.

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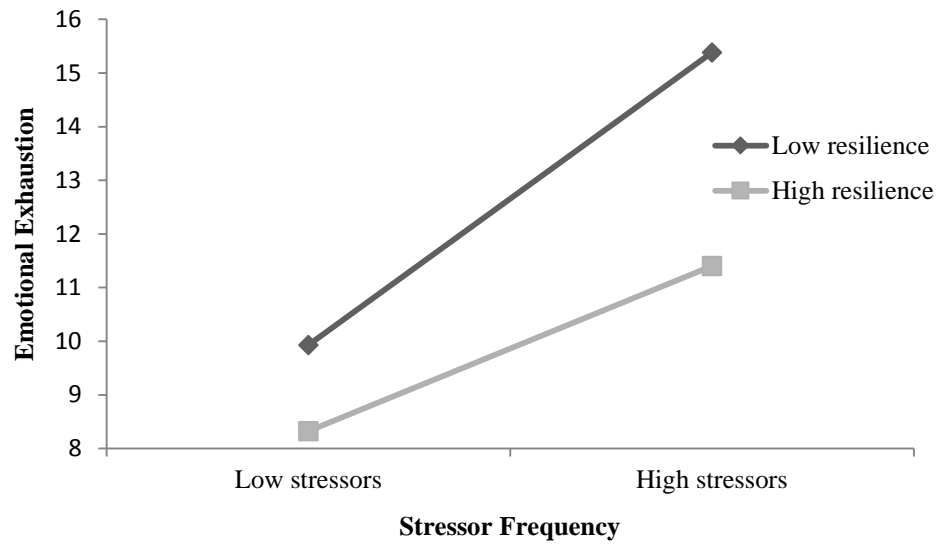


Figure 2. Plot of the interaction between the frequency of organisational stressors and resilience in predicting burnout in coaches

Table 1. Correlations and descriptive statistics for athletes.

| | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. |
|------------------------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| 1.OSISP Frequency | - | | | | | | | | | | |
| 2.OSISP Frequency G&D | .73** | - | | | | | | | | | |
| 3.OSISP Frequency L&O | .73** | .61** | - | | | | | | | | |
| 4.OSISP Frequency T&Cu | .79** | .44** | .50** | - | | | | | | | |
| 5.OSISP Frequency Co | .73* | .45** | .48** | .47** | - | | | | | | |
| 6.OSISP Frequency S | .74** | .37** | .40** | .56** | .34** | - | | | | | |
| 7.CD-RISC | -.02 | -.05 | .02 | -.05 | -.04 | .02 | - | | | | |
| 8.ABQ | .27** | .23** | .13** | .28** | .23** | .15** | -.46** | - | | | |
| 9.ABQ PEE | .34** | .35** | .25** | .27** | .26** | .18** | -.30** | .69** | - | | |
| 10.ABQ SD | .20** | .11* | .10** | .21** | .20** | .12** | -.39** | .83** | .45** | - | |
| 11.ABQ RA | .16** | .13* | -.02 | .20** | .14* | .08 | -.39* | .77* | .32** | .53** | - |
| Mean | 1.54 | 1.73 | 1.12 | 1.75 | 1.35 | 1.74 | 25.09 | 11.32 | 10.62 | 10.41 | 13.04 |
| SD | .79 | .95 | .80 | 1.00 | 1.19 | 1.31 | 6.06 | 3.03 | 3.64 | 3.95 | 3.50 |

Note: ABQ and OSISP Frequency are Mean scores. G & D: goals and development; L & O: logistics and operations; T & Cu: team and culture; Co: coaching; S: selection; PEE: physical and emotional exhaustion; SD: sport devaluation; RA: reduced accomplishment; ** $p < .01$; * $p < .05$ (2-tailed).

Table 2. Simple moderation analysis for athletes.

| Variable | b | se | <i>t</i> | <i>p</i> |
|--------------------|-------|-----|----------|----------|
| Constant | 11.30 | .13 | 85.46 | .000 |
| Resilience | -.22 | .02 | -9.56 | .000 |
| Stressor Frequency | .93 | .19 | 4.98 | .000 |
| Interaction | -.05 | .02 | -2.22 | .027 |

Note. Interaction: frequency of stressors x resilience. ^aBootstrap sample size = 1,000. ^b95% confidence intervals.

Table 3. The prediction of burnout from organizational stressor subscale and resilience scores.

| Predictor | β | SE | t | LLCI | ULCI |
|--------------------------|---------|-----|-------|------|------|
| Resilience | -.23*** | .02 | -9.87 | -.25 | -.17 |
| Team and Culture | .58** | .18 | 3.24 | .23 | .92 |
| Coaching | .24* | .12 | 2.03 | .00 | .47 |
| Goals and Development | .03* | .18 | 1.65 | .05 | .66 |
| Logistics and Operations | -.03 | .24 | -.17 | -.50 | .42 |
| Selection | .01 | .13 | .12 | .23 | .26 |

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Table 4. Correlations and descriptive statistics for coaches.

| | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. |
|------------------------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|-------|
| 1.OSISP Frequency | - | | | | | | | | | | |
| 2.OSISP Frequency G&D | .71** | - | | | | | | | | | |
| 3.OSISP Frequency L&O | .65** | .50** | - | | | | | | | | |
| 4.OSISP Frequency T&Cu | .75** | .49** | .49** | - | | | | | | | |
| 5.OSISP Frequency Co | .71** | .46** | .34** | .32** | - | | | | | | |
| 6.OSISP Frequency S | .82** | .43** | .39** | .58** | .43** | - | | | | | |
| 7.CD-RISC | -.23* | -.19 | -.28** | -.22* | -.17 | -.04 | - | | | | |
| 8.ABQ | .38** | .39** | .36** | .22* | .24* | .23* | -.56** | - | | | |
| 9.ABQ PEE | .54** | .47** | .49** | .37** | .35** | .36** | -.41** | .82** | - | | |
| 10.ABQ SD | .30** | .26* | .28** | .19 | .19 | .24* | -.42** | .81** | .61** | - | |
| 11.ABQ RA | .16 | .21* | .06** | .06 | .19 | .03 | -.53** | .73** | .44** | .51** | - |
| Mean | 1.50 | 1.75 | 1.41 | 1.69 | 1.26 | 1.38 | 27.84 | 11.21 | 11.41 | 10.70 | 11.82 |
| SD | .80 | .95 | .85 | .97 | 1.15 | 1.31 | 6.03 | 3.29 | 4.38 | 4.21 | 3.50 |

Note: ABQ and OSISP Frequency are Mean scores. G & D: goals and development; L & O: logistics and operations; T & Cu: team and culture; Co: coaching; S: selection; PEE: physical and emotional exhaustion; SD: sport devaluation; RA: reduced accomplishment; ** $p < .01$; * $p < .05$ (2-tailed)

Table 5. Simple moderation analysis for coaches.

| Variable | b | se | <i>t</i> | <i>p</i> |
|--------------------|-------|-----|----------|----------|
| Constant | 11.26 | .26 | 43.32 | .000 |
| Resilience | -.29 | .04 | -6.78 | .000 |
| Stressor frequency | 1.12 | .32 | 3.52 | .001 |
| Interaction | -.15 | .05 | -3.27 | .002 |

Note. Interaction: frequency of stressors x resilience. ^aBootstrap sample size = 1,000. ^b95% confidence intervals