

1 **When does perceived coach autonomy support help reduce athlete burnout?**

2 **The role of athletes' experiential avoidance**

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28 **Perceived coach autonomy support and athlete burnout: The role of athletes' experiential avoidance**

29 **Abstract**

30 Researchers have found that perceived coach autonomy support is negatively related to  
31 athlete burnout. However, whether offering such support would be helpful for all athletes or  
32 only athletes with certain characteristics is unknown. Following the notion of autonomous  
33 goal regulation suggested in self-determination theory, the authors propose that having  
34 autonomy support from coaches will be more strongly associated with a decrease in athlete  
35 burnout among athletes with lower experiential avoidance than among those with higher  
36 experiential avoidance. Experiential avoidance is a tendency to escape, avoid, or modify the  
37 frequency of uncomfortable experiences. A total of 141 collegiate student athletes completed  
38 surveys at two time points over three months. The results indicate that perceived coach  
39 autonomy support is negatively related to athlete burnout. Furthermore, the negative  
40 relationship between perceived coach autonomy support and decreased athlete burnout is  
41 stronger when experiential avoidance is low rather than high. When the three dimensions of  
42 burnout were analyzed individually (i.e., emotional and physical exhaustion, reduced sense of  
43 accomplishment and sport devaluation), only emotional and physical exhaustion and overall  
44 score were significant. The implications and applications of these results are discussed from  
45 an interactionist perspective.

46 **Keywords:** self-determination, acceptance and commitment therapy, interactionism

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### Introduction

50 Athlete burnout is a chronic psychological syndrome that includes three symptoms:  
51 emotional and physical exhaustion, reduced sense of accomplishment and sport devaluation  
52 (Raedeke & Smith, 2001). Emotional and physical exhaustion is perceived as a feeling of  
53 depletion of emotion and physical energy that is commonly associated with intense training  
54 and competition. Reduced sense of accomplishment refers to feelings of inadequacy and  
55 failure in terms of athletes' sport performance. Sport devaluation refers to a loss of interest in  
56 or resentment toward one's performance and sport (Raedeke, Lunney, & Venables, 2002).  
57 Athlete burnout has been found to be a factor that can undermine the mental health and  
58 performance of athletes (Goodger, Gorely, Lavallee, & Harwood, 2007) and cause serious  
59 harm to the individual and the team (Gustafsson, Hassmén, Kenttä, & Johansson, 2008;  
60 Lonsdale & Hodge, 2011). Because of its detrimental consequences, coaches have been  
61 advised to take care of athletes' experiences of burnout and to take effective actions to  
62 prevent or mitigate their burnout (Goodger et al., 2007; Gould & Whitley, 2009; Li, Wang,  
63 Pyun, & Kee, 2013)

64 Self-determination theory (Deci & Ryan, 1987) provides a needs-based lens to  
65 understand athlete burnout (Cresswell & Eklund, 2005; Lonsdale & Hodge, 2011). In brief,  
66 the theory suggests that the fulfillment of basic needs (i.e., needs of autonomy, relatedness  
67 and competence) will foster self-determined motivation and thus positive psychological  
68 consequences, such as higher well-being. In contrast, deprivation of those basic needs can  
69 result in amotivation or controlled motivation and thus maladaptive outcomes such as burnout.  
70 For athletes specifically, athlete burnout is chronically developed when individuals  
71 repeatedly appraise their sporting investment as threatening to those basic needs and shift  
72 their motivation from a desire to succeed and continued investment to a pattern of physical  
73 and psychological disengagement (Gould, Tuffey, Udry, & Loehr, 1996).

74           Based on this theoretical perspective, we propose that perceiving autonomy support  
75 from coaches (i.e., the degree to which athletes believe that coaches are willing to consider  
76 their perspectives and to encourage them to make their own choices) (Deci & Ryan, 1987)  
77 can facilitate the fulfillment of one's need for autonomy and foster self-determined  
78 motivation, preventing the development of athlete burnout (Adie, Duda, & Ntoumanis, 2012;  
79 Balaguer et al., 2012; Isoard-Gauthier, Guillet-Descas, & Lemyre, 2012; Isoard-Gauthier,  
80 Trouilloud, Gustafsson, & Guillet-Descas, 2016). When athletes perceive autonomy support  
81 from coaches, they can make choices according to their interests, values and beliefs, which  
82 promotes autonomous goal regulation (Sheldon & Elliot, 1999) in which athletes can align  
83 their activities with their own sense of self (Adie et al., 2012) without spending effort and  
84 energy to regulate their behavior for goals that are not in line with their aspirations (Jowett,  
85 Hill, Hall, & Curran, 2013).

86           Although the positive effect of coaches' autonomy support in preventing or mitigating  
87 athlete burnout has been widely supported, it is unclear whether offering such support would  
88 be helpful for all athletes or only athletes with certain characteristics. Studies in a work  
89 context have indicated that whether autonomy can help individuals cope with stressors is  
90 contingent upon the individuals' abilities to utilize such freedom to approach their goals  
91 (Parker & Sprigg, 1999; Schaubroeck & Merritt, 1997). Such finding indicates a need to take  
92 an interactionist approach to understand how situational and dispositional factors can jointly  
93 shape athlete burnout experiences. This approach is more informative than an approach using  
94 dispositional or situational factors only as it enables practitioners and researchers to provide  
95 resources and appropriate intervention to athletes according to athletes' characteristics  
96 (Gustafsson, Kenttä, & Hassmén, 2011).

97           Against this background, the aim of this study is to identify athlete characteristics that  
98 could moderate the association between coach autonomy support and the development of  
99 athlete burnout. Following the notion of autonomous goal regulation suggested in

100 self-determination theory, we argue that compared with those who are open to obstacles when  
101 approaching their goals, those who have difficulties in facing obstacles when pursuing goals  
102 will be less likely to benefit from autonomy support from coaches to overcome their burnout  
103 experiences. To test this hypothesis, we focus here on athletes' experiential avoidance—their  
104 tendencies to escape, avoid, or modify the forms or frequency of uncomfortable experiences,  
105 such as negative thoughts (e.g., “I fail in this game”), unpleasant emotions (e.g., anxiety  
106 when facing a highly skillful competitor), and bodily sensations (e.g., tremors) (Hayes,  
107 Wilson, Gifford, Follette, & Strosahl, 1996). Higher experiential avoidance indicates a lack  
108 of capability in self-regulation as it impairs one's willingness and persistence in approaching  
109 goals when encountering obstacles or negative feedback. We propose that receiving  
110 autonomy support from coaches will have a stronger association with a decrease in athlete  
111 burnout in those with lower experiential avoidance rather than in those with higher  
112 experiential avoidance.

### 113 **Perceived coach autonomy support and athlete burnout**

114 Athlete burnout, from the perspective of self-determination theory, is determined by  
115 whether athletes engage in an autonomous or a controlled regulation when pursuing their  
116 goals (Jowett et al., 2013). Specifically, when athletes are autonomously motivated, they can  
117 choose goals based on their values and interests, which helps them to obtain a sense of  
118 meaning, enjoy doing activities to achieve the goals and spend less effort on monitoring and  
119 tailoring activities to the goals; these factors have been negatively associated with burnout. In  
120 contrast, when athletes are under controlled motivation, their goals are imposed or regulated  
121 by external motivators such as rewards or punishments. In such situations, athletes will  
122 question the meaning of their striving, find themselves detached from what they are doing  
123 and need to spend more effort to engage in activities that fulfill external requirements; these  
124 characteristics are positively associated with burnout (Curran, Appleton, Hill, & Hall, 2011).

125 Following this perspective, we argue that perceived coach autonomy support is

126 negatively related to burnout development because it encourages athletes to engage in  
127 autonomous regulation rather than a controlled regulation when pursuing their goals.  
128 Perceived coach autonomy support involves authority figures who consider athletes'  
129 perspectives, recognize their feelings, promote their choices, encourage their decision making,  
130 and offer a meaningful rationale to a request (Vallerand et al., 2003). Perceived coach  
131 autonomy support thus satisfies a basic need for autonomy that further enhances athletes'  
132 intrinsic motivation to engage in activities that incorporate important values and social norms  
133 into their self. Moreover, athletes who perceive themselves to be empowered by making  
134 choices and decisions (i.e., autonomy support) are more likely to trust in their own abilities,  
135 which helps athletes overcome obstacles, face challenges and experience less burnout. In  
136 support of this claim, perceived coach autonomy support has been reported to have a positive  
137 association with decreased athlete burnout in longitudinal studies (Adie et al., 2012; Balaguer  
138 et al., 2012; Isoard-Gauthier et al., 2012; Quested & Duda, 2011) and lower levels of burnout  
139 in cross-sectional studies (Quested & Duda, 2010; Sullivan, Lonsdale, & Taylor, 2014).

#### 140 **Moderating effect of experiential avoidance**

141 We also propose that experiential avoidance (Hayes, Wilson, Gifford, Follette, &  
142 Strosahl, 1996) will moderate the association between perceived coach autonomy support and  
143 the development of athlete burnout. As we elaborate below, we expect that perceiving coach  
144 autonomy support will have a stronger negative association with burnout development for  
145 athletes with lower, rather than higher, experiential avoidance. In other words, perceived  
146 coach autonomy support will be more beneficial to athletes having lower experiential  
147 avoidance than those having higher experiential avoidance in preventing burnout  
148 development.

149 Experimentally avoidant individuals are those who tend to employ maladaptive  
150 self-regulatory strategies, such as an avoidant coping strategy (Chawla & Ostafin, 2007) to  
151 face obstacles to approach their goals. As employing avoidant coping strategy can reduce

152 one's contact with the present moment and decrease the likelihood of taking values-based  
153 actions (Bond et al., 2011), experientially avoidant individuals are less likely to engage in  
154 autonomous regulation. Even with autonomy support from their coaches, their obsession with  
155 avoidance from negative experiences can block the opportunity to use such autonomy support  
156 to pursue goals based on their values, interests and beliefs.

157 Athletes who have high experiential avoidance also tend to misinterpret social cues and  
158 have anxious attachment and hostility toward others (Gerhart, Baker, Hoerger, and Ronan  
159 (2014), another reason for why experiential avoidance can weaken the benefits of perceiving  
160 coach autonomy support. Gerhart et al. (2014) proposed that experientially avoidant  
161 individuals tend to possess an anxious attachment style, which makes them more likely to be  
162 suspicious of other people, misinterpret vague social cues, and denote defensive behavior.  
163 For example, anxiously attached adolescents perceive expectations from other people in a  
164 negatively biased manner and tend to have negative attributions concerning friendships  
165 (Zimmermann, 2004). Furthermore, Collins and Feeney (2004) reported that anxiously  
166 attached adults perceive ambiguous social support from romantic partners as less helpful and  
167 less well-intended. In this regard, athletes who are high in experiential avoidance are more  
168 likely to suspect the intentions of the autonomous support from coaches and will not  
169 appreciate and embrace such support.

170 Furthermore, experientially avoidant people usually demonstrate increased inward  
171 expressions of aggression (Gerhart et al., 2014). Experientially avoidant people tend to  
172 interpret other people's intentions as hostile and respond in offensive and dominating ways to  
173 manage uncomfortable physiological arousal. Several studies have implied that experiential  
174 avoidance may create a cognitive bias, which causes individuals to interpret events in a  
175 hostile manner (Gardner & Moore, 2008; Lobbestael, Cima, & Arntz, 2013; Schöenberg &  
176 Jusyte, 2014). Athletes who are high in experiential avoidance may therefore have selective  
177 biases toward social cues even when they perceive support from their coach. Thus, we

178 suggest that athletes high in experiential avoidance are less likely to benefit from autonomy  
179 support from coaches and thus less likely to overcome burnout experiences.

## 180 **Aims and hypotheses**

181 The main purpose of this study is to investigate the relationship between perceived  
182 coach autonomy support and the development of athlete burnout while considering the  
183 moderating role of experiential avoidance. We expect that the relationship between perceived  
184 coach autonomy support and the development of athlete burnout will be negative and that  
185 such negative association will be stronger when experiential avoidance is low rather than  
186 high.

## 187 **Method**

### 188 **Participants and procedures**

189 Initially, 180 collegiate athletes participated in this study. A total of 141 athletes (78  
190 male) ultimately provided complete data. The participants included basketball, volleyball,  
191 tennis, track and field, soccer, and taekwondo athletes with a mean age of 21.14 years ( $SD =$   
192 1.68). The athletes were recruited from the Department of Athletic Performance and Physical  
193 Education at National Taiwan Normal University. The athletes reported that they spent 17.73  
194 hours ( $SD = 7.17$ ) per week training and participated in their sports for 9.73 years ( $SD = 2.50$ ).  
195 The majority of the participants (45.2%) reported the international level as their highest level  
196 of competition while 24.4% competed at a regional level and 30.4% competed at their  
197 schools.

198 All study procedures were approved by the National Taiwan Normal University's  
199 review board. The athletes were instructed to read the information sheet, and they signed an  
200 informed consent form before they began the survey. Self-report questionnaires were  
201 administered to the participants in a quiet and private setting without the presence of a coach.  
202 Confidentiality and anonymity were ensured. Moreover, the measures of the present study are  
203 all self-reported, which can lead to common method bias (Lindell & Whitney, 2001) and may

204 result in overestimation of the coefficients. Podsakoff, MacKenzie, Lee, and Podsakoff (2003)  
205 suggested that temporal, psychological, or methodological separation of measurement is one  
206 of the techniques for controlling common method biases. When it is not possible to obtain  
207 data from distinct sources, another potential remedy is to separate the predictor and criterion  
208 variables. Therefore, we collected our variables at different times. We measured experiential  
209 avoidance at Time 1. Perceived coach autonomy support was measured at Time 2. Athlete  
210 burnout was measured at both Time 1 and Time 2 within 3 months. The full questionnaire  
211 took approximately 10 min to complete. The athletes volunteered to participate in this study  
212 and were given a NT\$50 gift voucher at each session.

### 213 **Measurement**

#### 214 **Experiential avoidance**

215 The Acceptance and Action Questionnaire-II (AAQ-II) developed by Bond et al. (2011)  
216 was used to measure experiential avoidance. Subsequently, Chang, Chi, Lin, and Ye (2017)  
217 established the reliability, factor invariance and nomological validity across the athlete and  
218 student samples of the Chinese AAQ-II. The confirmatory factor analysis demonstrated a  
219 satisfactory fit ( $\chi^2(9) = 17.98$ , CFI = 0.98, NNFI = 0.96, RMSEA = 0.077, SRMR = 0.046).  
220 Good internal consistency (.81) was supported. In addressing validity, the Chinese AAQ-II  
221 was positively correlated with negative affect and depression while negatively correlated with  
222 positive affect and life satisfaction. Additionally, previous studies using the Chinese AAQ-II  
223 also demonstrated its acceptable validity and reliability with Chinese participants (Chang, et  
224 al., 2017; Chen, & Wu, 2016). The items on the AAQ-II included statements such as “I worry  
225 about not being able to control my worries and feelings”. The participants scored each item in  
226 a range from 1 (*almost never*) to 7 (*almost always*); higher scores reflect greater experiential  
227 avoidance.

#### 228 **Perceived coach autonomy support**

229 The Sport Climate Questionnaire (SCQ) that was developed by Deci (2001) has been

230 commonly used to measure perceived coach autonomy support (Brickell, Chatzisarantis, &  
231 Pretty, 2006; Hagger, Chatzisarantis, Hein, & Karsai, 2007; Jõesaar, Hein, & Hagger, 2012).  
232 We used the short form with 6 items (e.g., “I feel that my coach provides me choices and  
233 options.”), which was used to increase the response rate. The short form is valid and reliable  
234 (Hagger et al., 2007; Jõesaar et al., 2012). Chang et al. (2017) translated the short version of  
235 the SCQ into Chinese; the same one-factor structure was maintained, and perceived coach  
236 autonomy support was found to be positively correlated with positive affect and negatively  
237 correlated with negative affect. Previous studies using the Chinese SCQ have demonstrated  
238 its acceptable validity and reliability with Chinese participations (Chang, 2016; Lin, 2010).  
239 The participants indicated their responses on a 7-point Likert scale that ranged from 1 (*almost*  
240 *never*) to 7 (*almost always*).

#### 241 **Athlete burnout**

242 Athlete burnout was assessed by the Athlete Burnout Questionnaire (ABQ) (Raedeke &  
243 Smith, 2001). Lu et al. (2006) translated the ABQ into Chinese to assess athlete burnout.  
244 The exploratory factor analysis confirmed the three-factor structure. The confirmatory factor  
245 analysis demonstrated a satisfactory fit ( $\chi^2(41) = 86.96$ , CFI = 0.98, RMSEA = 0.069, NFI =  
246 0.97, NNFI = 0.98, GFI = 0.94, AGFI = 0.90, RMR = 0.045). Good internal consistency (.90)  
247 and test-retest reliability (.85) were supported. In addressing validity, the Chinese ABQ was  
248 positively correlated with amotivation while negatively correlated with athletic identity and  
249 intrinsic motivation in the study by Lu et al. Evidence for the reliability and validity of the  
250 Chinese ABQ test scores has been reported by Chen and Kee (2008). The Chinese ABQ  
251 contains subscales that measure emotional/physical exhaustion (four items), sport devaluation  
252 (four items), and a reduced sense of accomplishment (three items). Previous studies that have  
253 used the Chinese ABQ have demonstrated its acceptable validity and reliability with  
254 Taiwanese athlete populations (Chen, & Kee, 2008; Chen, Kee, & Tsai, 2009). We include all  
255 three dimensions in our analysis to cover all syndromes of burnout. The items in this

256 instrument are presented on a scale from 1 (*almost never*) to 6 (*almost always*).

## 257 **Results**

### 258 **Descriptive statistics and correlations**

259 We had 180 athletes initially but only 141 athletes in the final sample because 39  
260 participants did not provide their ratings on athlete burnout at Time 2. We examined whether  
261 those 39 participants had different burnout scores at Time 1 from those who provided burnout  
262 scores over time. We performed an independent t-test and found that the two groups of  
263 participants did not have different burnout scores at Time 1 ( $t = -.014, p = .988$ ). There are no  
264 univariate or multivariate outliers, and the distribution of data was acceptable when we  
265 checked skewness and kurtosis in Table 1.

266 Table 1 presents the descriptive statistics and correlations between the variables.  
267 Perceived coach autonomy support at Time 2 was unrelated to sport devaluation ( $r = .10; p$   
268  $= .23$ ) and negatively correlated with emotional and physical exhaustion ( $r = -.29; p < .01$ ),  
269 reduced sense of accomplishment ( $r = -.29; p < .01$ ) and total scores of athlete burnout ( $r =$   
270  $-.27; p < .01$ ) at Time 1. Moreover, perceived coach autonomy support at Time 2 was also  
271 negatively correlated with sport devaluation ( $r = -.55; p < .01$ ), emotional and physical  
272 exhaustion ( $r = -.40; p < .01$ ), reduced sense of accomplishment ( $r = -.33; p < .01$ ) and total  
273 scores of athlete burnout ( $r = -.50; p < .01$ ) at Time 2. We also used a paired-samples *t*-test to  
274 determine whether the athlete burnout dimensions changed from Time 1 to Time 2. The  
275 results showed that sport devaluation, reduced sense of accomplishment and athlete burnout  
276 did not differ significantly between Time 1 and Time 2 ( $t = 0.72, p = .47; t = -1.33, p = .19; t$   
277  $= 1.16, p = .25$ , respectively); however, significant differences were observed for emotional  
278 and physical exhaustion ( $t = 2.88, p < .01$ ).

### 279 **Moderated regression analyses**

280 We used the interaction term of perceived coach autonomy support and experiential  
281 avoidance to examine the interaction between perceived coach autonomy support and

282 experiential avoidance because our research variables are all continuous. This is an  
283 appropriate approach to test for an interaction effect of continuous variables (DeCoster, Iselin,  
284 & Gallucci, 2009). To prevent a multicollinearity problem that results from a high correlation  
285 between the first-order terms and the interaction terms (Jaccard & Turrisi, 2003), perceived  
286 coach autonomy support and experiential avoidance were standardized  $((X-M)/SD)$  prior to  
287 the construction of the interaction terms (perceived coach autonomy support x experiential  
288 avoidance). Following the suggestion of Cohen, Cohen, West, and Aiken (2003), we  
289 conducted a series of regression analyses to examine the proposed interaction effect. Table 2  
290 presents the results of these analyses.

291 The analyses were conducted separately for the four dependent variables, which  
292 assessed sport devaluation, emotional and physical exhaustion, reduced sense of  
293 accomplishment and total scores of athlete burnout. For all analyses, we controlled for the  
294 Time 1 measure of each burnout dimension or the overall score when predicting the Time 2  
295 measurement of each burnout dimension or the overall score.

296 First, both perceived coach autonomy support and experiential avoidance significantly  
297 predicted sport devaluation at Time 2. However, their interaction effect was not significant ( $b$   
298 = .12;  $p = .093$ ). Second, perceived coach autonomy support significantly predicted  
299 emotional and physical exhaustion at Time 2, while experiential avoidance did not. More  
300 importantly, perceived coach autonomy support and experiential avoidance had a significant  
301 interaction effect ( $b = .21$ ;  $p < .01$ ). Third, both perceived coach autonomy support and  
302 experiential avoidance significantly predicted the reduced sense of accomplishment at Time 2.  
303 However, their interaction effect was not significant ( $b = -.02$ ;  $p = .695$ ). Finally, perceived  
304 coach autonomy support and experiential avoidance significantly predicted the total scores of  
305 athlete burnout at Time 2. In addition, their interaction effect was significant ( $b = .11$ ;  $p$   
306 < .05).

307 Based on the suggestion by Aiken and West (1996), we portray an interaction plot in

308 Figure 1 using one standard deviation above and below the mean perceived coach autonomy  
309 support and experiential avoidance, which are used to indicate higher and lower perceived  
310 coach autonomy support and experiential avoidance. In addition, we performed a simple  
311 slope analysis to further analyze the interaction effect (Dawson & Richter, 2006). Figure 1  
312 illustrates that the relationship between perceived coach autonomy support and emotional and  
313 physical exhaustion at Time 2 was stronger at a lower level of experiential avoidance (1  
314 standard deviation below the mean;  $b = -.56, p < .01$ ) while controlling for emotional and  
315 physical exhaustion at Time 1. Perceived coach autonomy support was not significantly  
316 associated with emotional and physical exhaustion at Time 2 when experiential avoidance  
317 was high (1 standard deviation above the mean;  $b = -.11, p = .35$ ) while controlling for  
318 emotional and physical exhaustion at Time 1. Figure 2 illustrates that the relationship  
319 between perceived coach autonomy support and athlete burnout at Time 2 was stronger when  
320 experiential avoidance is low (1 standard deviation below the mean;  $b = -.66, p < .01$ ) rather  
321 than high (1 standard deviation above the mean;  $b = -.37, p < .01$ ) while controlling for  
322 athlete burnout at Time 1.

### 323 Discussion

324 The main purpose of this study is to examine the relationship between perceived coach  
325 autonomy support and the development of athlete burnout by considering the moderating  
326 effect of experiential avoidance. Drawing on self-determination theory, we hypothesized that  
327 perceived coach autonomy support would have a negative association with the development  
328 of athlete burnout and that such negative association would be stronger among athletes who  
329 have lower, rather than higher, experiential avoidance. Empirically, we found that perceived  
330 coach autonomy support was negatively related to the development of athlete burnout, and  
331 we also observed that such negative relationship was stronger among those low in  
332 experiential avoidance than those high in experiential avoidance. Our finding suggests that  
333 athletes who are low in experiential avoidance benefit more from perceived coach autonomy

334 support than athletes who are high in experiential avoidance in preventing burnout  
335 development.

336 Although our hypotheses were supported, we observed that experiential avoidance only  
337 moderated the association between perceived coach autonomy and emotional and physical  
338 exhaustion but not the other two dimensions of burnout. This result could be understood in  
339 two aspects. First, burnout dimensions might have a developmental order (Lee & Ashforth,  
340 1993) as athletes may experience emotional and physical exhaustion first, whereas sport  
341 devaluation and the subsequent reduced sense of accomplishment take time for athletes to  
342 realize and reflect on their attitudes toward self-evaluation in sports. Following this  
343 perspective, emotional and physical exhaustion could fluctuate more readily than the sense of  
344 accomplishment and sport devaluation. As such, within a short period like our study, it is  
345 possible that only the change in emotional and physical exhaustion can be captured.

346 Second, Gustafsson, Lundkvist, Podlog, and Lundqvist (2016) indicated that reduced  
347 sense of accomplishment has consistently been shown to have lower correlations with the  
348 other two dimensions. We also observed the same phenomena in our data ( $r = .35$  between  
349 reduced sense of accomplishment and sport devaluation;  $r = .56$  between reduced sense of  
350 accomplishment and emotional and physical exhaustion). As such, whether reduced sense of  
351 accomplishment should be considered to be a symptom of burnout has been questioned, and  
352 several scholars have proposed to focus on emotional and physical exhaustion only when  
353 studying burnout (Gustafsson, Lundkvist, et al., 2016). Based on this debate, whether we  
354 should examine the three dimensions together and expect the same findings for all of them is  
355 arguable.

356 Regarding the interaction effect, we acknowledge that the effect size of the observed  
357 interaction effect is small (Cohen, 1988); however, Chaplin (1991) indicated that interactive  
358 effects are difficult to detect in field-based work, and they seldom contribute to more than 3%  
359 of the explained variance. We also argue that the observed interaction effect is practically

360 important as it provides information for coaches to know to whom they should provide more  
361 autonomy support when helping athletes overcome burnout.

362 Our study contributes to the athlete burnout literature because it uses an interactionist  
363 perspective to understand how to mitigate athlete burnout (Griffo & Colvin, 2009; Gustafsson  
364 et al., 2011). The current results indirectly correspond to the work of Gustafsson, Hill,  
365 Stenling, and Wagnsson (2016), which emphasized the need to jointly consider the social  
366 environment and personality factors in understanding athlete burnout. Gustafsson and his  
367 colleague found that a high level of perfectionism was a risk factor for athlete burnout,  
368 especially when athletes perceived a parent-initiated motivational climate. Specifically,  
369 highly perfectionistic athletes in a task-involving climate and highly perfectionistic athletes in  
370 a mixed climate reported higher athlete burnout. Collectively, our results indicate that it is  
371 inappropriate to emphasize only the role of dispositional or situational factors in athlete  
372 burnout, as researchers may not obtain a complete picture.

373 Our investigation also contributes to the research on experiential avoidance in athletes in  
374 two ways. First, previous studies primarily examined the role of experiential avoidance in a  
375 stress coping process (Bardeen, Fergus, & Orcutt, 2013; Kashdan & Kane, 2011; Pickett,  
376 Bardeen, & Orcutt, 2011) as to how experiential avoidance can shape one's stress perception  
377 due to individuals' anxiety sensitivity. Our study extends the scope by considering the role of  
378 experiential avoidance in an interpersonal context, such as by considering how individuals  
379 with different levels of experiential avoidance respond differently to coaches' support. This  
380 extension should help us understand the impact of experiential avoidance on athlete  
381 well-being from various viewpoints. Second, our study illustrates a need to investigate the  
382 relationship between coaches' autonomy support and experiential avoidance. In this study,  
383 we found that experientially avoidant athletes do not benefit from coaches' autonomy support  
384 in overcoming burnout. Nevertheless, Chen and Wu (2016) found that coaches' autonomy  
385 support can help athletes reduce the degree of experiential avoidance over time, especially for

386 those who are high in gratitude. Although these are seemingly contradictory findings, they  
387 altogether may suggest a complex and dynamic process in the relationship between coaches'  
388 autonomy support and experiential avoidance such that the trait gratitude may evoke a  
389 function of coaches' autonomy support in shaping one's experiential avoidance over time,  
390 which in turn may help athletes to cope with burnout. This speculation should be further  
391 examined in a longitudinal study.

### 392 **Practical implications**

393       Experiential avoidance plays a key role in correctly interpreting interpersonal feedback  
394 and effectively diminishing athlete burnout. Acceptance and commitment therapy (ACT)  
395 (Hayes, Strosahl, & Wilson, 1999) may be the most commonly used interventional approach  
396 to decrease experiential avoidance. Adapted ACT interventions have been found to reduce  
397 athletes' experiential avoidance (Mahoney & Hanrahan, 2011; Schwanhausser, 2009).  
398 Athletes may benefit from therapeutic encounters that enable them to accept negative  
399 perceptions of interpersonal relationships. This body of research emphasizes the necessity of  
400 considering individual differences in interpersonal contexts and the ways in which athletes  
401 interpret the feedback of important figures in their lives (e.g., a coach, teammate or parent).

### 402 **Limitations**

403       Although the present study provides practical insights, several limitations should be  
404 noted. First, we go beyond the cross-sectional design and examined the development of  
405 athlete burnout by measuring burnout at two time points. However, we did not include a  
406 temporal component for autonomy support; thus, we unable to examine whether athlete  
407 burnout could influence coaches to provide more or less autonomy support over time. Future  
408 research can extend our research by examining the cross-lagged association between coach  
409 autonomy support and athlete burnout to discover their dynamics over time. Having multiple  
410 observations for those variables should also be considered as it can help investigate linear,  
411 nonlinear or discontinuous change in the dynamics (Ployhart & Ward, 2011).

412           Second, our data come from the same source, which may induce common method  
413 variance (Siemsen, Roth, & Oliveira, 2009). Although we have tried to reduce common  
414 method variances among research variables by collecting data for different variables at  
415 different times, ideally it is better to ask different targets to rate different variables. For  
416 example, our research design can be improved by asking coaches to report the levels of  
417 autonomy support they have provided to athletes. This approach not only helps avoid  
418 common method bias but also help us explore the interaction between coaches and athletes  
419 from both sides.

420           Third, the results of this study are correlational in nature, and causal effects were not  
421 determined. Subsequent research can use experimental methods, such as manipulating  
422 coaching behavior, to reflect an environment that supports autonomy (Mageau & Vallerand,  
423 2003). Finally, we are aware of the issue of generalizability of our findings as our study is  
424 based on a sample of collegiate athletes. Although our theorizing based on self-determination  
425 theory provides a general principle that can be applied to different populations, we did not  
426 exclude the possibility that our observed effects can vary across populations due to factors  
427 such as athletes' career stage (Wylleman, Alfermann, & Lavallee, 2004) or cultural  
428 differences in coaching (Chelladurai, Imamura, Yamaguchi, Oinuma, & Miyauchi, 1988). We  
429 thus encourage future studies to replicate our research findings and extend our research.

#### 430 **Conclusion**

431           Athletes are a special population who experience frequent pressures from training and  
432 competition. Thus, preventing athlete burnout is an important goal for researchers and  
433 practitioners. The present study demonstrates that perceived coach autonomy support is  
434 negatively related to athlete burnout over time. In addition, by adopting an interactionist  
435 approach, we found that experiential avoidance can moderate this relationship such that the  
436 negative relationship between perceived coach autonomy support and athlete burnout is  
437 stronger when experiential avoidance is lower. These findings provide important information

438 for sport researchers and practitioners to prevent or mitigate athlete burnout.

439

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Table 1  
Descriptive statistics of variables

	<i>M</i>	<i>SD</i>	Skewness	Kurtosis	Internal reliability	1	2	3	4	5	6	7	8	9	10	
1. T1EA	3.82	1.21	.12	-.41	.83	1.00										
2. T2PCAS	4.39	1.38	-.24	-.34	.93	.09	1.00									
3. T1RD	2.76	.88	.23	-.36	.70	.10	-.29**	1.00								
4. T1E	3.43	1.23	-.52	-.06	.88	.30**	-.29**	.54**	1.00							
5. T1D	3.94	1.15	-.05	-.74	.87	.38**	.10	.27**	.72**	1.00						
6. T1AB	3.37	.85	-.29	-.26	.90	.33**	-.27**	.69**	.93**	.84**	1.00					
7. T2RD	2.85	.80	.27	.47	.58	.17*	-.55**	.57**	.46**	.28**	.51**	1.00				
8. T2E	3.37	1.13	-.23	-.57	.89	.27**	-.40**	.35**	.67**	.48**	.62**	.56**	1.00			
9. T2D	3.71	1.13	-.09	-.60	.84	.23**	-.33**	.19*	.55**	.64**	.58**	.35**	.68**	1.00		
10. T2AB	3.31	.86	-.11	-.40	.89	.27**	-.50**	.42**	.68**	.58**	.69**	.71**	.92**	.85**	1.00	

Note. *N* = 140. T = time; EA = experiential avoidance, PCAS = perceived coach autonomy support, RD = reduced sense of accomplishment, E = emotional and physical exhaustion, D = sport devaluation, AB = athlete burnout.

\**p* < .05. \*\**p* < .01.

Table 2

Results of hierarchical regression in predicting athlete burnout dimensions at Time 2.

	T2 RD			T2 E			T2 D			T2 Athlete Burnout		
	Model1	Model2	Model3	Model1	Model2	Model3	Model1	Model2	Model3	Model1	Model2	Model3
Constant	2.85	2.85	2.85	3.71	3.71	3.70	3.37	3.37	3.36	3.31	3.27	3.26
T1 DV	.45**	.34**	.34**	.73**	.69**	.67**	.75**	.63**	.62**	.59**	.49**	.47**
T2PCAS		-.36**	-.36**		-.30**	-.29**		-.29**	-.28**		-.30**	-.30**
T1EA		-.13*	.13*		.03	.03		.15*	.14*		.10*	.10*
Interaction			-.02			.21**			.12			.11*
$R^2$	.33	.50	.50	.42	.48	.52	.44	.51	.52	.48	.59	.61
$F$	65.30**	47.33**	35.32**	97.84**	28.57**	22.81**	109.48**	46.25**	35.88**	124.79**	65.22**	51.59**
$\Delta F$		26.35**	.16		9.00**	8.72**		8.60**	2.86		19.08**	4.97*
$df$	139	139	139	139	139	139	139	139	139	139	139	139

Note. Unstandardized coefficients are reported. T = time; DV = dependent variables, EA = experiential avoidance, PCAS = perceived coach autonomy

support, RD = reduced sense of accomplishment, E = emotional and physical exhaustion, D = sport devaluation, AB = athlete burnout.

\* $p < .05$ . \*\* $p < .01$ .

**Figure Captions**

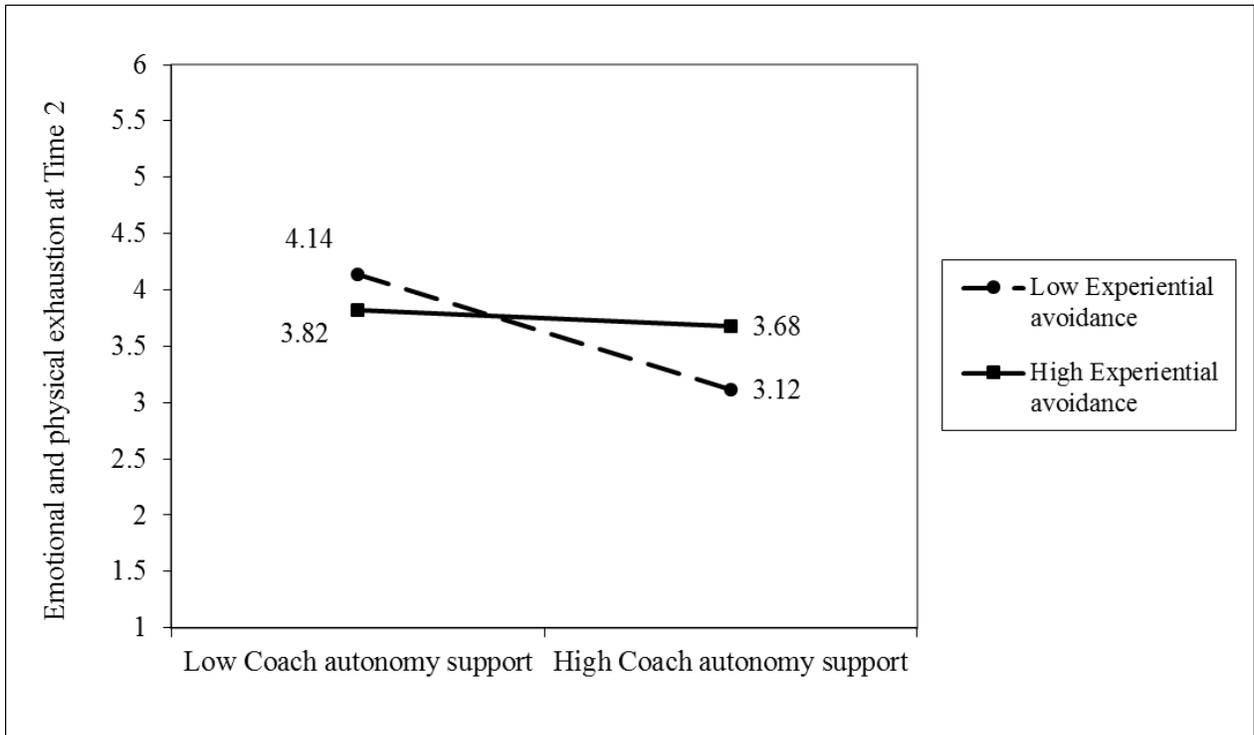
1

2 *Figure 1. Simple regression lines predicting emotional and physical exhaustion at Time 2 while*  
3 *controlling for emotional and physical exhaustion at Time 1.*

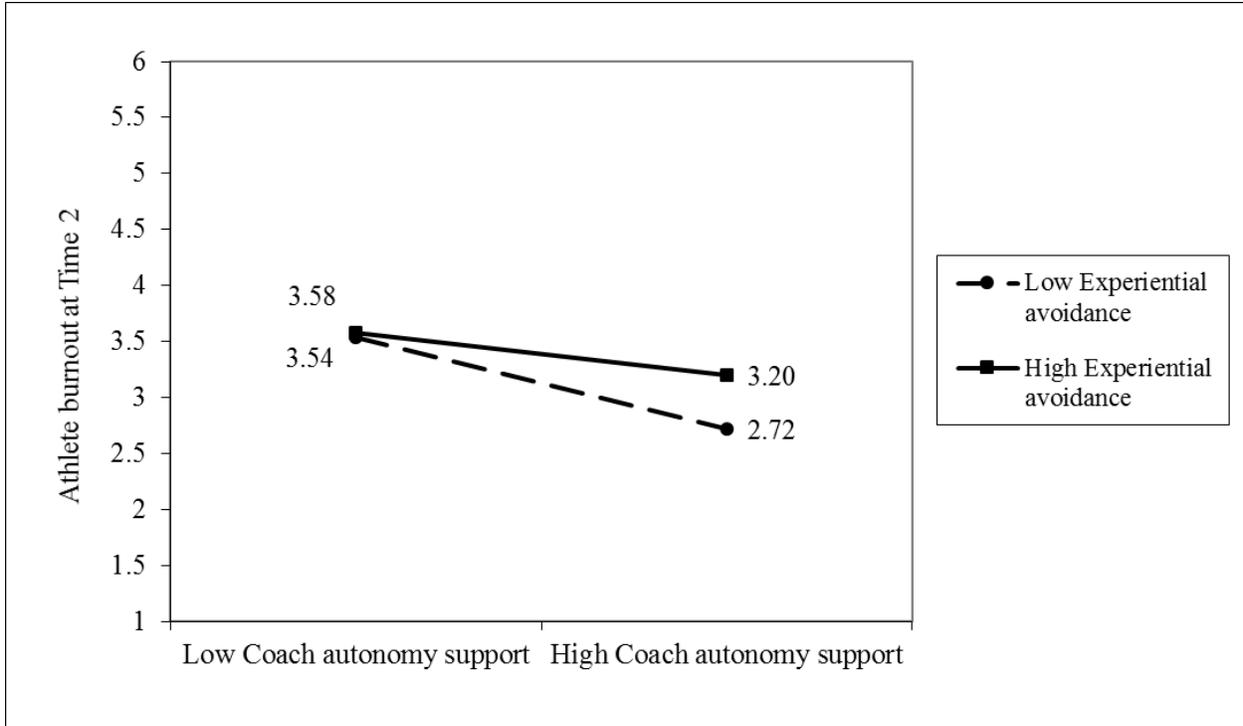
4

5 *Figure 2. Simple regression lines predicting athlete burnout at Time 2 while controlling for*  
6 *athlete burnout at Time 1*

7



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