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Mediating Effects of Parents' Coping Strategies on the Relationship Between Parents' Emotional Intelligence and Sideline Verbal Behaviors in Youth Soccer

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Abstract

21 The overall purpose of this study was to examine the mediating effects of parents' coping
22 strategies on the relationship between parents' emotional intelligence (EI) and sideline verbal
23 behaviors during their children's soccer games. Participants were 232 parents (120 mothers,
24 110 fathers) of youth soccer players aged 9 to 13 years old. Observations in situ were carried
25 on 30 soccer games during a soccer tournament. At the end of the game, parents were
26 approached and asked to complete the Emotional Intelligence Scale and the Brief COPE
27 scale. SEM analyses revealed that adaptive and maladaptive coping mediated the relationship
28 between regulation of emotion and parents' praise/encouragement, and negative and
29 derogatory comments during the game. In addition, game result moderated the relationships
30 between EI, coping strategies and parents' behaviors. Emotional regulation and adaptive
31 coping may promote desirable parents' sideline behaviors and reduce undesirable behaviors.

32 *Keywords:* adaptive coping, emotional regulation, encouragement, maladaptive coping,
33 praise, soccer.

34 Mediating Effects of Parents' Coping Strategies on the Relationship Between Parents'
35 Emotional Intelligence and Sideline Verbal Behaviors in Youth Soccer

36 Parents exert a powerful influence on their children's sporting experiences via the
37 emotional climate they create. This emotional climate can be conveyed in numerous settings,
38 including the family home (Holt, Tamminen, Black, Mandigo, & Fox, 2009), during car rides
39 (Tamminen, Poucher, & Povilaitis, 2017), at tournaments (Knight & Holt, 2013a) and on the
40 sidelines while parents are spectators (Holt, Tamminen, Black, Sehn, & Wall, 2008). Parents'
41 sideline verbal behaviors have received considerable attention in the youth sport literature.
42 Researchers have shown that parents engage in a wide range of sideline behaviors, and
43 whereas the majority of comments made by parents during games are positive and directed
44 toward athletes, negative behaviors do occur (Bowker et al., 2007; Holt et al., 2008; Kidman,
45 McKenzie, & McKenzie, 1999). Nonetheless, coaches and sport administrators have reported
46 concerns with negative parental sideline verbal behaviors, including parents verbally abusing
47 officials and other parents, undermining coaches, calling out their children's weaknesses, and
48 providing conditional support based on children's performances (Ross, Mallett, & Parkes,
49 2015).

50 Several factors appear to influence the nature and content of parents' verbal comments
51 on the sidelines. For example, Holt et al. (2008) suggested a model which emphasizes the role
52 of parents' empathy towards their children, the emotional intensity of the games and parents'
53 knowledge and expertise of the sport. Other researchers suggested that constructs such as
54 parents' anger (Omli & LaVoi, 2012), goals relevant to interpersonal communication (Dorsch,
55 Smith, Wilson, & McDonough, 2014), and control-orientation (Goldstein & Iso-Ahola, 2008)
56 also influence sideline behavior. For instance, Goldstein and Iso-Ahola (2008) found that
57 parents with high control-orientation exhibited more ego defensiveness and reported higher
58 levels of anger and aggressive spectator behavior than parents with low control-orientation.

59 Also, parents may encounter a range of organizational and developmental stressors in relation
60 to their children's participation in youth sport, and must be able to cope with the *emotional*
61 *demands* of competition (Harwood & Knight, 2009). Thus, given that parents (a) create the
62 emotional climate that supports (or detracts from) their children's sporting experiences, (b)
63 experience a variety of emotional, and (c) have the need to monitor others' and their own
64 emotions, it is plausible that emotional intelligence (EI), will enable parents to cope with their
65 children's competitive situations and behave in appropriate ways. Indeed, Harwood and
66 Knight (2015) recently suggested that EI ability is a component of sport parenting expertise.
67 However, relationships between parent EI, coping, and verbal sideline behaviors have yet to
68 be examined in the youth sport literature.

69 Salovey and Mayer (1990) originally defined EI as a "subset of social intelligence that
70 involves the ability to monitor one's own and others' feelings and emotions, to discriminate
71 among them and to use this information to guide one's thinking and actions" (p. 189). In
72 addition to this 'ability perspective', EI has also been conceptualized as a trait (Petrides, Pita,
73 & Kokkinaki, 2007). In an attempt to reconcile these different perspectives, Mikolajczak
74 (2009) proposed a tripartite model, in which EI is organized in three levels. The first level
75 consists of knowledge about emotions (e.g., parents' knowledge about strategies to regulate
76 emotions). The second level refers to the ability to use specific emotion regulation strategies.
77 This component reflects the ability perspective (Salovey & Mayer, 1990) and involves a set of
78 hierarchical specialized skills, such as the ability to perceive emotions, understand emotions,
79 manage them, and use them to facilitate thinking. The third level refers to the disposition
80 (trait) to behave in a certain way in emotional situations. This component belongs to the
81 domain of personality and affect, such as stress tolerance, adaptability, or social competence
82 to deal with the emotional situation (e.g., Petrides et al., 2007).

83

84 Measures of EI reflect the theoretical approach researchers follow in sport (Laborde,
85 Dosseville, & Allen, 2016). The most frequent trait measure is the 153-item Trait Emotional
86 Intelligence Questionnaire (TEIQue), which has demonstrated sound psychometric
87 characteristics within a sample of athletes of various sports (Laborde, Dosseville, Guillen, &
88 Chavez, 2014). This measure has been shown to be preferable to Schutte EI scale (Schutte et
89 al., 1998) and the Bar-On Emotional Quotient Inventory (Bar-On, 2004) as studies in sport
90 have not been able to replicate the hypothesized factor structure (Laborde et al., 2014;
91 Laborde et al., 2016). Concerning measurement of EI as an ability, the Mayer-Salovey-Caruso
92 Emotional Intelligence Test (MSCEIT) is a EI performance test that measures the
93 subcomponents of Salovey and Mayer's (1990) framework: perception, use, understanding
94 and management of emotion. Using MSCEIT, Dunn, Brackett, Ashton-James, Schneiderman,
95 and Salovey (2007) showed that spectators of a basketball game who are high in EI ability
96 made more accurate forecasts about their own affective responses to the outcome of the event.
97 Despite its clear theoretical foundation of MSCEIT, Laborde et al. (2016) summarize the
98 limitations of this instrument including its complex scoring system, overlap with other
99 personality and intelligence dimensions, and lack of validation studies in sport. In addition, its
100 141-items renders it impractical for field studies. Another measure of EI as an ability based on
101 Salovey and Mayer's (1990) framework is the 16-item Wong and Law EI Scale (WLEIS;
102 Wong & Law, 2002). Lee and Chelladurai (2016) used the WLEIS within a sample of
103 coaches and revealed good psychometric characteristics in sport. In the current study, we
104 considered the ability perspective using the WLEIS because we aim at specifying the
105 constructs pertaining to parents' recognition of emotions in the self and others, to regulate
106 their behaviors and to use this information to facilitate their actions during their child's soccer
107 games, in line with Salovey and Mayer's (1990) framework.

108 According to MacCann, Fogarty, Zeidner, and Roberts (2011), EI leads to more
109 adaptive coping, which in turn leads to better behavioral outcomes. In the earliest
110 conceptualizations of EI, Salovey et al. (1999) suggested promising links between EI and
111 coping with stressful events, and proposed the Emotional Coping Hierarchy model. This
112 model has three sequential levels: the first level relates to the basic emotional skills of
113 emotional appraisal; the second level represents a more complex component of emotional
114 knowledge, such as emotional use and understanding; finally, the third level addresses
115 emotional regulation as the key dimension of EI that facilitates the coping process. Joseph and
116 Newman (2010) empirically confirmed the relationships between these levels via meta-
117 analytic data. These authors postulated a progressive pattern among EI levels, in which
118 emotion perception causally precedes emotion use and understanding, which in turn precedes
119 emotion regulation and behavior. Emotion regulation is associated with individuals' adaption
120 to a specific encounter because it implies the management of emotions in a flexible manner
121 that is consistent with their goals (Salovey et al., 1999). In sport, researchers have only
122 recently started to explore the relationships between EI and coping strategies. For example,
123 Laborde, You, Dosseville, and Salinas (2012) reported that athletes with higher EI scores
124 engaged in more adaptive coping, such as task-oriented coping strategies (e.g., appraise
125 competition as a challenge), whereas lower EI scores were related to disengagement-oriented
126 coping (e.g., behavioral avoidance and venting of unpleasant emotions).

127 The overall purpose of this study was to examine the mediating effects of coping
128 strategies between EI and parents' sideline verbal behaviors during their children's soccer
129 games. We followed Salovey et al.'s (1999) Emotional Coping Hierarchy model (Figure 1),
130 assuming that the emotions' appraisal, use of emotion, and regulation of emotion are related
131 to parents' behaviors in a sequential mode. Thus, we predicted that regulation of emotion is
132 the primary determinant of parents' behaviors, and it will be positively related with desirable

133 parents' sideline verbal behaviors (i.e., praise/encouragement) and negatively with
134 undesirable parents' sideline verbal behaviors (i.e., performance-contingent feedback,
135 instruction, striking a balance, negative comments, and derogatory comments) during their
136 children's soccer games (Hypothesis 1). Furthermore, we hypothesized that: regulation of
137 emotion will be positively related with adaptive coping and negatively with maladaptive
138 coping strategies (Hypothesis 2); adaptive coping will positively mediate the relationships
139 between regulation of emotion and desirable parents' sideline verbal behaviors (Hypothesis
140 3), and negatively mediate the relationship with undesirable parents' verbal behaviors
141 (Hypothesis 4); maladaptive coping will positively mediate the relationships between
142 regulation of emotion and undesirable parents' sideline verbal behaviors (Hypothesis 5), and
143 positively mediate the relationship with undesirable parents' verbal behaviors (Hypothesis 6).
144 Finally, following suggestions of gender differences in the EI (Farrelly & Austin, 2007) and
145 in the use of coping strategies (Matud, 2004), and that situational conditions may influence
146 parents' sideline behaviors (Holt et al., 2008), we were also interested in how parents' gender
147 (Hypothesis 7) and game outcome (Hypothesis, 8) moderate the relationships estimated in the
148 hypothesized model.

149 [FIGURE 1]

150 **Methods**

151 **Participants**

152 During an international youth soccer tournament, 232 parents (120 mothers, 110 fathers;
153 2 participants did not identify gender) of youth soccer players (boys and girls who were
154 between 9 and 13 years of age) participated in both phases of this study. Parents' age ranged
155 from 28 to 62 years old ($M = 40.50$, $SD = 5.63$). Twenty-four-point six per cent of the parents
156 had completed lower secondary education, 33.5% upper secondary education, 38.1% had an
157 undergraduate degree and 3.8% a master degree.

158 **Design and procedure**

159 **Observations.** Ethical approval was obtained from the faculty ethics committee and the
160 board of directors for the IBERCUP – *International Youth Football Tournament*. The
161 IBERCUP is one of the largest youth football tournaments in the world, a weeklong event that
162 involves more than 200 teams and 2500 young athletes from several different countries.
163 Naturalistic observations were carried out in 30 soccer games during the week of the
164 tournament (60 soccer teams involved), which permitted the observation of various situations
165 (e.g., first-round games, semi-finals, final games). The length of the games was 40 minutes.
166 We observed games in two age groups, Under-11 and Under-13, with mixed-gender
167 participation. The number of parents of girls in this sample is small ($n = 12$).

168 **Observer training.** Prior to conducting the observations, four observers (three lecturers
169 with PhD in Sport and Exercise Psychology and a teacher of physical education with a master
170 degree in Sports Coaching) were trained following the guidelines of McKenzie and van der
171 Mars (2015). Training comprised the following phases: identification of the categories of the
172 system (i.e., definition of behavioral categories); discussion of the observation protocol (i.e.,
173 interactive discussion about behavioral scenarios); evaluation of the learning of the categories
174 (i.e., interpretation of video segments created by the first author); and practice and application
175 of the observation system in situ. The observation system was tested in three under-12 soccer
176 games. After the first game of observation training, we decided to implement a maximum
177 ratio of four parents to one observer, depending on the conditions of the crowd (e.g., parents
178 very close together, presence of flags, the sound of trumpets). Thus, the four observers were
179 divided into two teams. Each team randomly chose four parents to observe at each game,
180 coding in three games a total of 164 verbal behaviors using a paper-and-pencil observation
181 system (see Supplementary Material: Parents' observation system). For each of the observed
182 categories, we found acceptable Cohen's kappa coefficients ranged between 0.86 and 0.91, by

183 comparing two independent observations related to the same match (McKenzie & van der
184 Mars, 2015).

185 **Participant recruitment.** During the tournament, the observers wore the same clothing
186 as the tournament staff and volunteers. At the beginning of each game, observers randomly
187 chose four parents to observe. At the end of the game, parents were approached, informed
188 about the purpose of the study and that they had been observed, and invited to participate in
189 the remainder of the study (i.e., the completion of the questionnaires). A total of 96.6% of
190 parents observed agreed to participate in the remaining of the study and provided informed
191 consent. Those parents who did not agree, did not have their children playing in the game
192 observed, or were not parents (e.g., grandparents or other relatives) were excluded from the
193 study and their observational data were not used. Only data from the 232 parents who
194 participated in both stages of this research (i.e., they were observed and completed the
195 questionnaires) were included in the analysis.

196 Parents who agreed to participate were directed to a classroom-type setting. Prior to the
197 administration of the questionnaires, it was made clear that participation in this study was
198 voluntary and that all responses would be confidential. A research assistant answered any
199 questions during the data collection. Participants took about 10 minutes to complete the
200 questionnaires and immediately returned them to a research assistant.

201 **Measures**

202 **Emotional intelligence.** The Portuguese version (Rodrigues, Rebelo, & Coelho, 2011)
203 of the Wong and Law Emotional Intelligence Scale (WLEIS; Wong & Law, 2002) was used
204 to assess parents' perceptions of their EI abilities. Following Lee and Chelladurai (2016), we
205 used the WLEIS because (a) it is representative of the original EI construct defined by
206 Salovey and Mayer (1990), (b) it is short, (c) there is evidence of good psychometric

207 characteristics, both for its English (e.g., Libbrecht, De Beuckelaer, Lievens, & Rockstuhl,
208 2014) and Portuguese versions (Carvalho, Guerrero, Chambel, & González-Rico, 2016).

209 WLEIS is a short 16-item self-report scale that was validated in different countries,
210 showing psychometrically sound characteristics, such as construct and criterion validity,
211 reliability, and measurement invariance (e.g., Libbrecht et al. 2014). Recently, the Portuguese
212 version of WLEIS has demonstrated consistent psychometric characteristics via confirmatory
213 factor analysis, reproducing the original factor structure (Carvalho et al., 2016). WLEIS is
214 based on the revised four-dimensional EI model originally theorized by Salovey and Mayer
215 (1990). In this model, EI consists in four dimensions: self-emotions appraisal (e.g., “I really
216 understand what I feel”), other’s emotions appraisal (e.g., “I have good understanding of the
217 emotions of people around me”), use of emotion (e.g., “I would always encourage myself to
218 try my best”), and emotion regulation (e.g., “I can always calm down quickly when I am very
219 angry”). All items were responded on 7-point Likert-type scale ranging from 1 = *totally*
220 *disagree* to 7 = *totally agree*. Cronbach alpha coefficients for the current study were 0.79 (use
221 of emotion), 0.81 (self-emotions appraisal), 0.84 (regulation of emotion), and 0.86 (other’s
222 emotions appraisal).

223 **Coping strategies.** The Portuguese version (Ribeiro & Rodrigues, 2004) of the Brief
224 COPE (Carver, 1997), a 28-item self-report questionnaire, was used to assess coping. We
225 focused on situational coping, which refers to coping with a specific event at a precise
226 moment in time (Lazarus, 1991). Participants were asked to indicate what they did to cope
227 during the soccer game in which their children competed. According to Carver (1997), two
228 broad coping dimensions integrate the 14 subscales: *adaptive coping strategies* (i.e., active
229 coping, acceptance, humor, religion, planning, positive reframing, and using instrumental and
230 emotional support) and *maladaptive coping strategies* (i.e., behavioral disengagement, denial,
231 self-blame, self-distraction, substance use, and venting negative emotion). Items were

232 answered on a 4-point Likert-type scale, ranging from 1 = *I have not used this at all* to 4 = *I*
233 *have used it a lot*. In this study, both adaptive (.83) and maladaptive coping strategies (.79)
234 had adequate Cronbach alpha coefficients.

235 **Parents' sideline verbal behaviors.** We used Holt et al.'s (2008) observational system
236 to examine parents' sideline behaviors in competitive sport settings (e.g., Dorsch et al., 2014).
237 Holt et al. (2008) identified six categories of parents' verbal reactions to children's
238 performance behaviors (see Supplementary Material: Parents' observation system): (a)
239 *praise/encouragement* denotes more supportive comments (e.g., "Very well, John!" "Let's go,
240 team!"); (b) *performance-contingent feedback* refers to comments intended to improve
241 children's performance (e.g., "Now it's time to attack, boys"); (c) *instruction* refers to direct
242 commands (e.g., "Pass the ball!"); (d) *striking a balance* refers to verbal reactions that are
243 intended to provide an equilibrium between positive and negative comments (e.g., "Oh, no
244 John... That's okay, good try!"); (e) *negative comments* refers to general negative reactions
245 during the game (e.g., "Bad decision, John!"); and (f) *derogatory comments* refers to
246 depreciating and potentially harmful reactions (e.g., "Hey, ref, go home!" "That's
247 embarrassing, John!"). Similar to Holt and colleagues (2008), we also recorded the intended
248 target of each comment: athletes, coaches and referees.

249 **Data analysis**

250 The two-step approach to maximum likelihood structural modeling was implemented
251 using AMOS 23. First, the measurement model was estimated by conducting a confirmatory
252 factor analysis (CFA) to evaluate the extent to which each of the variables were adjusted to its
253 indicators. Subsequently, the structural model estimation was performed to test the research
254 hypotheses. The adequacy of the models was assessed through a variety of fit indices. We
255 followed the cut off values (CFI and TLI > .95, RMSEA < .06, and SRMR < .08) suggested
256 by Hu and Bentler (1999) as excellent model fit; however, Marsh, Hau, and Wen (2004) have

257 contended that the rigorous approach of Hu and Bentler (1999) to the cut of values could lead
258 to an incorrect rejection of an appropriate model. Thus, we considered the cut off values (CFI
259 and TLI > .90, RMSEA and SRMR < .08) proposed by Hair, Black, Babin, and Anderson
260 (2014) as adequate model fit.

261 **Mediation analysis.** With mediation analysis we explored the direct and indirect effects
262 of the variables in this study on the outcome variable. Specifically, EI variables were
263 conceptualized to have an indirect association with parents' sideline verbal behaviors and
264 coping strategies were conceptualized as mediators. The significance of the direct and indirect
265 effects was assessed using the bootstrap resampling procedure (1000 bootstrap samples), via
266 bias corrected 95% confidence intervals (CI). An indirect effect is considered significant (at \leq
267 0.05) if its 95% CI does not include zero (Williams & MacKinnon, 2008). Effect size values
268 of 0.1, 0.3, and 0.5 were considered small, medium and large, respectively (Cohen, 1988).

269 **Moderation analysis.** We were also interested to know possible changes on the
270 relationships between the variables in the study as a function of the moderating influence of
271 gender and game outcome. Thus, two multi-group analyses were conducted to discern the
272 extent to which the parents' gender and game outcome moderate the path coefficients
273 estimated in hypothesized model. Differences between models were accessed with chi-square
274 (χ^2) tests of significance and CFI difference (Δ CFI) values (Cheung & Rensvold, 2002).
275 Between groups differences was further assessed by sequentially examining the unconstrained
276 and the constrained structural paths. The significance of the structural paths was assessed
277 using critical ratio for differences produced by AMOS (significance \geq 1.96).

278 **Results**

279 A priori power analysis to compute required sample size was conducted using GPower
280 3.1. (Faul, Erdfelder, Buchner, & Lang, 2009) considering the following input parameters:
281 effect size $f^2 = 0.1$; alpha = 0.05; statistical power = 0.95; and 6 predictors. The required

282 sample was 215. A preliminary inspection to the data revealed that missing values comprised
283 0.2% of cells in the original data, without any missing data patterns. Consequently, missing
284 data were imputed using AMOS's regression procedure. Mardia's coefficient (58.12)
285 exceeded the expected values for the multivariate normality. Hence, a Bollen-Stine bootstrap
286 (B-S) was used for subsequent analysis (Nevitt & Hancock, 2001). In addition, variance
287 inflation factors (VIF) were assessed to verify collinearity within all study variables, with
288 values ranging from 1.23 (self-emotions appraisal) to 1.76 (adaptive coping), showing
289 acceptable conditions to conduct regression analysis ($VIF < 10$; Hair et al., 2014).

290 **Measurement model**

291 Table 1 shows means, standard deviations, and bivariate correlations among all
292 variables. Parents revealed high self-emotions appraisal ($M = 3.96$, $SD = 0.69$) and low levels
293 of maladaptive coping ($M = 2.22$, $SD = 0.50$). Regarding sideline verbal behaviors, parents
294 expressed a mean of 32.80 ($SD = 12.60$) comments per game (984 parents' verbal behaviors
295 were recorded). Most of the verbalized behaviors were praise/encouragement ($M = 16.60$, SD
296 $= 6.30$), followed by performance-related behaviors (i.e., performance-contingent feedback
297 and instruction), negative and derogatory comments. Negative and derogatory comments were
298 rare (4%), and mainly targeted to the referee. Parents' comments were directed to athletes
299 (92%), referees (6%) and coaches (2%).

300 The correlation matrix showed a variety of associations between variables (Table 1). In
301 general, all EI variables correlated between each other, while regulation of emotion was
302 related with both adaptive ($r = .17$, $p < 0.01$) and maladaptive ($r = .33$, $p < 0.01$) coping
303 strategies. In turn, adaptive coping strategies correlated positively with praise/encouragement
304 ($r = .38$, $p < 0.01$) and negatively with negative ($r = -.16$, $p < 0.05$) and derogatory ($r = -.11$, p
305 < 0.05) comments. Maladaptive coping correlated negatively with praise/encouragement ($r =$

306 -.12, $p < 0.05$) and positively with striking a balance ($r = .23$, $p < 0.01$), and negative ($r = .18$,
307 $p < 0.01$) and derogatory ($r = .21$, $p < 0.01$) comments.

308 The test of the measurement model included parents' own and other's emotions
309 appraisal, use of emotion, regulation of emotion, and adaptive and maladaptive coping as
310 latent variables. Results suggest an excellent fit to the data [$\chi^2/df = 475.32$ (390), $p < .001$,
311 TLI = 0.95, CFI = 0.95, SRMR = 0.02, RMSEA = 0.04 (CI = 0.04, 0.05)].

312 [TABLE 1]

313 **Structural model**

314 The assessment to the hypothesized mediational model displayed an inadequate fit to
315 the data [$\chi^2/df = 906.53$ (577), $p < .001$, TLI = 0.88, CFI = 0.89, SRMR = 0.05, RMSEA =
316 0.06 (CI = 0.06, 0.07)]. Some of the criteria demonstrated excellent fit (SRMR $< .08$ and
317 RMSEA $< .06$). However, the incremental indices showed inadequate fit (CFI and TLI $> .90$).
318 In this situation, the generation of an alternative model should be considered, provided it has
319 theoretical support, it is parsimonious, and it fits the data (Kline, 2011). Further analysis
320 indicated no associations from regulation of emotion, adaptive and maladaptive coping to
321 performance-contingent feedback ($\beta = 0.03$, $p > 0.05$; $\beta = -0.02$, $p > 0.05$, and $\beta = 0.04$, $p >$
322 0.05 , respectively) or from regulation of emotion, adaptive and maladaptive coping to
323 instruction ($\beta = -0.04$, $p > 0.05$; $\beta = 0.01$, $p > 0.05$, and $\beta = 0.06$, $p > 0.05$, respectively). Thus,
324 these variables were excluded from the revised path model, and no additional modifications
325 were applied. Consequently, the revised model showed an adequate fit to the data [$\chi^2/df =$
326 603.46 (514), $p < .001$, TLI = 0.90, CFI = 0.91, SRMR = 0.04, RMSEA = 0.06 (CI = 0.05,
327 0.06)].

328 The standardized direct effects for the revised model are presented in Figure 2. As
329 expected, the EI variables were related in a sequential mode. Further, regulation of emotion
330 showed positive significant relationships on praise/encouragement ($\beta = 0.35$, $p < 0.01$), and

331 adaptive coping ($\beta = 0.19, p < 0.05$), whereas negative associations were found with
332 maladaptive coping ($\beta = -0.32, p < 0.01$), and negative ($\beta = -0.18, p < 0.05$) and derogatory
333 comments ($\beta = -0.16, p < 0.05$). Adaptive coping was positively associated with
334 praise/encouragement ($\beta = 0.31, p < 0.01$), and negatively associated with negative comments
335 ($\beta = -0.15, p < 0.05$). Moreover, maladaptive coping was related with striking a balance ($\beta =$
336 $0.22, p < 0.01$), negative comments ($\beta = 0.21, p < 0.01$) and derogatory comments ($\beta = 0.28, p$
337 < 0.01). Non-significant relationships were identified between regulation of emotion to
338 striking a balance ($\beta = 0.01, p > 0.05$), adaptive coping to striking a balance ($\beta = 0.06, p >$
339 0.05) and derogatory comments ($\beta = -0.02, p > 0.05$), and maladaptive coping to
340 praise/encouragement ($\beta = -0.01, p > 0.05$).

341 [FIGURE 2]

342 Findings of the mediation analysis between EI, coping strategies and parents' sideline
343 verbal behaviors are displayed in Table 2. Regulation of emotion showed significant indirect
344 effects on praise/encouragement and negative comments via adaptive coping ($\beta = .18$; CI =
345 $.10, .29$; $\beta = -.09$; CI = $-.21, -.02$; respectively). Moreover, regulation of emotion had
346 significant indirect effects on negative comments ($\beta = -.12$; CI = $-.25, -.02$) and derogatory
347 comments ($\beta = -.08$; CI = $-.19, -.01$) via maladaptive coping strategies.

348 [TABLE 2]

349 **Moderating effects of gender and game result**

350 We performed two multi-group confirmatory factor analyses to detect whether the path
351 coefficients differed significantly between mothers and fathers, and between wins and losses.
352 With regard to gender, the fit of both unconstrained [$\chi^2/df = 1101.33 (1154), p < .001, TLI =$
353 $0.90, CFI = 0.91, SRMR = 0.04, RMSEA = 0.05 (CI = 0.04, 0.05)$] and constrained structural
354 paths [$\chi^2/df = 1123.89 (1195), p < .001, TLI = 0.90, CFI = 0.91, SRMR = 0.05, RMSEA =$
355 $0.06 (CI = 0.05, 0.06)$] models was acceptable. The χ^2 statistic indicated that these models

356 were invariant [$\Delta\chi^2(41) = 22.56, p > 0.05$], while the critical ratios for differences between
357 structural paths revealed that two hypothesized relationships differed significantly between
358 groups. The paths from use of emotion to regulation of emotion ($Z = 2.22, p < 0.05$), and from
359 regulation of emotion to praise/encouragement ($Z = 2.09, p < 0.05$), evidenced significant
360 differences. Both paths coefficients for mothers ($\beta = 0.72, p < 0.01$; $\beta = 0.42, p < 0.01$,
361 respectively) were greater than the coefficients for fathers ($\beta = 0.28, p < 0.01$; $\beta = 0.19, p <$
362 0.05 , respectively). These findings suggest that mothers with high use of emotion scores were
363 more likely to better regulate their emotions than fathers. In turn, mothers with high
364 regulation of emotion were more likely to praise and encourage during their child's games
365 than fathers.

366 The same procedure was performed to examine differences on paths coefficients for
367 parents who watched games when their children won compared to when their children lost.
368 The unconstrained [$\chi^2/df = 1553.16 (1154), p < .001, TLI = 0.88, CFI = 0.89, SRMR = 0.06,$
369 $RMSEA = 0.07 (CI = 0.06, 0.07)$] and constrained structural paths [$\chi^2/df = 766.22 (1195), p <$
370 $.001, TLI = 0.91, CFI = 0.92, SRMR = 0.04, RMSEA = 0.05 (CI = 0.04, 0.05)$] models
371 revealed satisfactory fit. The χ^2 statistic indicated that these models were significantly
372 different [$\Delta\chi^2(41) = 786.94, p < 0.001$]. The critical ratio for differences indicated that
373 maladaptive coping revealed a significantly different relationship on negative ($Z = 3.13, p <$
374 0.05) and derogatory ($Z = 3.55, p < 0.05$) comments. The magnitude of the paths from
375 maladaptive coping to negative and derogatory comments was greater for losses ($\beta = 0.32, p <$
376 0.01 ; $\beta = 0.37, p < 0.01$, respectively) than for wins ($\beta = 0.03, p > 0.05$; $\beta = 0.02, p > 0.05$,
377 respectively). Moreover, regulation of emotion revealed a significantly different path on
378 negative comments ($Z = -2.12, p < 0.05$). This path coefficient was greater for losses ($\beta = -$
379 $0.25, p < 0.01$) than the coefficient for wins ($\beta = -0.06, p > 0.05$). Additionally, the
380 relationship between adaptive coping and negative comments ($Z = -2.46, p < 0.05$) was

381 significantly different between wins and losses. Also, this path was greater for losses ($\beta = -$
382 $0.28, p < 0.01$) than for wins ($\beta = -0.02, p > 0.05$). Thus, the results demonstrated the model's
383 change in both groups, suggesting that the result of the game moderated the structural paths of
384 the revised model.

385 **Discussion**

386 The overall purpose of this study was to examine the mediating effects of parents'
387 coping strategies on the relationship between parents' EI and sideline verbal behaviors during
388 their children's soccer games. In general, the hypothesized relationships were supported.
389 Specifically, parents' regulation of emotion was positively related with praise/encouragement,
390 and negatively with negative and derogatory comments (Hypothesis 1). As high levels of
391 parents' emotion regulation are associated with sideline behaviors traditionally viewed as
392 favorable for youth athletes (i.e., related with increase praise/encouragement; Teques, Serpa,
393 Rosado, Silva, & Calmeiro, 2018), high emotion regulation individuals are likely to exhibit
394 fewer negative behaviors (i.e., criticism, insults and offensive behaviors). These results
395 suggest that improvement of parents' emotion regulation may promote parents' desirable
396 behaviors during their children's participation in competitive sport.

397 Consistent with previous studies in sport (Laborde et al., 2012), EI (regulation of
398 emotion) was positively associated with adaptive coping, and negatively associated with
399 maladaptive coping strategies (Hypothesis 2). Specifically, parents' emotion regulation was
400 more strongly associated with reduced use of maladaptive coping strategies ($\beta = -0.32, R^2 =$
401 $.36$), instead of increased use of adaptive coping ($\beta = 0.19, R^2 = .22$). This result reinforces the
402 argument that EI is likely to support rather than promote adaptive coping (Davis, 2013), and
403 renews the discussion about the levels of conscientiousness on emotional regulation. High-
404 level conscientiousness implies awareness of emotional reactions that includes extended self-
405 reflection, whereas low-level conscientiousness involves a brief awareness that emerges in a

406 superficial fashion and is unlikely to be recalled (Mayer & Salovey, 1995). In this sense,
407 parents may be aware that it is undesirable to express anger after the referee calls a penalty
408 against their children's team, but they may not be fully aware of an adaptive strategy to cope
409 with the situation. Future studies could examine the associations between parents' regulation
410 of emotion and adaptive/maladaptive coping in more detail by analyzing moderating effects
411 of intentional forms of emotional regulation, such as emotional attention (e.g., Gohm, 2003)
412 or emotional self-efficacy (e.g., Kirk, Schutte, & Hine, 2008).

413 Also, the present results expand current knowledge by demonstrating small to moderate
414 mediating effects of coping strategies on the link between EI and individuals' behaviors (e.g.,
415 MacCann et al., 2011). As noted above, those who better regulate emotions engage more
416 frequently in adaptive coping (e.g., active coping, humor) and are less likely to use
417 maladaptive approaches such as denial or venting (e.g., Laborde et al., 2012). In turn,
418 adaptive coping was positively related with praise/encouragement and negatively with
419 negative comments (Hypothesis 3 and 4), whereas maladaptive coping was associated with
420 negative and derogatory comments (Hypothesis 5 and 6). In other words, the mediating
421 effects of coping strategies suggests that parents with high emotional regulation can manage
422 emotions effectively and are thus more likely to select appropriate coping strategies to
423 maintain optimal emotional balance and adopt appropriate behaviors.

424 The non-significant associations between regulation of emotion and both coping
425 strategies with performance-feedback and instruction may imply that different behaviors are
426 associated with varying degrees of emotional valence, including neutral emotional states
427 (Barrett, 2006). Holt et al. (2008) placed parents' praise/encouragement, performance-
428 contingent feedback, instruction, striking a balance, negative and derogatory comments on a
429 continuum moving from more supportive to more controlling comments. Hence,
430 performance-contingent feedback and instruction can be considered as neutral emotional

431 valence behaviors that do not elicit emotional regulation or coping strategies. However, this
432 interpretation is speculative, and future research should address how the hedonic tone of
433 parents' emotional experiences (i.e., positive and negative emotions) and appraisal patterns
434 are related with coping (see Lazarus, 1991).

435 In addition, the results regarding moderating effects of parents' gender show that the
436 revised path model was invariant across mothers and fathers (Hypothesis 7). However, an
437 analysis of the structural paths revealed that two paths coefficients for mothers (i.e., use of
438 emotion → regulation of emotion, and regulation of emotion → praise/encouragement) were
439 greater than the coefficients for fathers. Although the research on gender has contradictory
440 results (e.g., Joseph & Newman, 2010), the findings of the current study corroborate the idea
441 that females may be better at regulating emotions than males (e.g., Farrelly & Austin, 2007)
442 resulting in the demonstration of more supportive behaviors. Nevertheless, more important
443 than recognizing differences between genders, it is critical to analyze the possible interactions
444 between gender and other variables (Fernández-Berrocal, Cabello, Castillo, & Extremera,
445 2012). In this study, we analyzed gender moderating effects simultaneously with several
446 variables, including EI subscales, coping strategies and behaviors. However, we did not
447 systematically explore how different situations during the game may affect EI-coping
448 processes. Given that EI-coping process is situational, it will be worthy for future studies to
449 explore mothers' and fathers' EI, coping strategies and sideline verbal behaviors during
450 different game situations (e.g., changes to game score, child in/out of game).

451 Another finding concerning moderating effects of game outcome on parents' behaviors
452 is that the revised path model differs significantly between parents whose child's team is
453 winning versus losing (Hypothesis 8). In general, results suggest that parents with high
454 maladaptive coping use are more likely to provide more negative and derogatory comments
455 when they watched a game that resulted in their children's defeat. On the contrary, parents

456 with high regulation of emotion and adaptive coping are less likely to exhibit negative
457 comments in a defeat. This finding supports the view that EI-coping processes may vary
458 depending on the situation (Salovey et al., 1999), and to the best of our knowledge the present
459 study is the first to address the effects of the situational conditions on the relationships
460 between EI, coping strategies and behavior. These situational conditions may influence stress
461 appraisals and subsequent emotional states (Lazarus, 2000). Therefore, it would be important
462 to consider the actual emotions parents experience, because positive and negative emotions
463 require different forms of processing information as well as different emotional regulation
464 demands. It is likely that regulation of negative emotions is more taxing on cognitive
465 resources than that of positive emotions. Negative emotions signal threat and are more
466 distinguishable from a physiological and autonomic point of view compared to positive
467 emotions (even among negative emotions). In addition, the appraisal processes that give rise
468 to negative emotions are also more differentiated than those of positive emotions
469 (Fredrickson, 2001). Therefore, negative emotions are more intense and may be more difficult
470 for individuals to regulate. It might be that while winning, there is less need to self-regulate,
471 but while losing, individuals have the need to interact with and change the environment
472 triggered by an intense emotional experience.

473 Limitations and future research should be considered for the present study. Primarily,
474 this study has a cross sectional design which precludes any causal interpretation of regression
475 effects. Season long research that addresses processual effects over time would add to our
476 understanding of how EI, coping, and parents' sideline verbal behaviors reciprocally impact
477 each other. The classification of situational coping in adaptive and maladaptive coping
478 strategies measured by the Brief COPE may not adequately reflect the coping conceptual
479 structure. Future research should include short-form measures of coping that can capture other
480 dimensions in which parents may cope with watching their child play. Likewise, researchers

481 should consider that coping is a dynamic process and parents use multiple strategies
482 simultaneously, both adaptive and maladaptive, to cope with stressors (e.g., during the course
483 of a game, and in relation to sideline verbal behaviors) (Burgess et al., 2016). Also, evidence
484 suggests that personality traits have the potential to influence how individuals manage
485 emotions and cope with stressful events. For example, the Big Five Personality traits have
486 been shown to predict specific, rather than broad, coping strategies (Connor-Smith &
487 Flachsbart, 2007). Likewise, students who hold pure personal standards perfectionism had
488 higher levels of emotional intelligence, while those with pure evaluative concerns
489 perfectionism scored lower on emotional intelligence (Gong, Fletcher & Paulson, 2017). As
490 studies in sport are still scarce, researchers should consider personality traits to understand the
491 links between parents' emotional intelligence, coping strategies and sideline behaviors.
492 Moreover, persons change their emotional intelligence competencies with experience
493 (Fernández-Berrocal, Gutiérrez-Cobo, Rodríguez-Corrales, & Cabello, 2017); hence, future
494 research should explore how parents' emotional intelligence competencies change as a
495 function of repeated exposure to their children's competitive situations. As well, future studies
496 should address the specific environmental constraints of the game (e.g., parents' interpersonal
497 relationships, coaches' tactical decisions, game score variations, referee decisions) to examine
498 their impact on the EI-coping processes. Finally, this study coded only the parents' verbal
499 behaviors. It would be interesting for future studies to extend the analysis to nonverbal
500 parents' behaviors.

501 In conclusion, the findings of this study offer several valuable contributions to the
502 literature. First, from a conceptual perspective, the findings addressed a long-standing
503 question about the hierarchical associations of EI components (i.e., emotion appraisals, use of
504 emotion and emotion regulation), recognizing emotion regulation as the immediate
505 determinant of individuals' adaptation (e.g., Joseph & Newman, 2010; Salovey et al., 1999).

506 Second, at an elementary descriptive level, the majority of sideline verbal behaviors were
507 praise/encouragement, followed by performance-contingent feedback, instruction, and
508 negative and derogatory comments. Hence, while negative parental sideline behaviors may be
509 particularly concerning for coaches and administrators (e.g., Ross et al., 2015), the current
510 study suggests that these behaviors are less frequent. Indeed, this interpretation is in line with
511 evidence obtained from observational studies conducted in several countries, including
512 Canada (Bowker et al., 2007; Holt et al., 2008), New Zealand (Kidman et al., 1999), the
513 United States (Dorsch et al., 2014). Third, this study adds to the youth sport parenting
514 literature by revealing some individual factors (i.e., regulation of emotion, adaptive and
515 maladaptive coping strategies) that are associated with verbal sideline behaviors. Finally, the
516 findings lend some support for Harwood and Knight's (2015) assertion that EI and adaptive
517 coping are features of sport parenting expertise by revealing that regulation of emotion is
518 related positively with desirable parents' sideline behaviors (i.e., praise/encouragement) and
519 negatively with undesirable parents' sideline behaviors (i.e., negative comments, and
520 derogatory comments). Overall, this study sheds light on the emotional experience of parents
521 attending their children's games and suggests that EI and adaptive coping strategies may be
522 useful approaches to include in sport parent educational initiatives in the future (cf. Knight &
523 Holt, 2013b; Ross et al., 2015).

524

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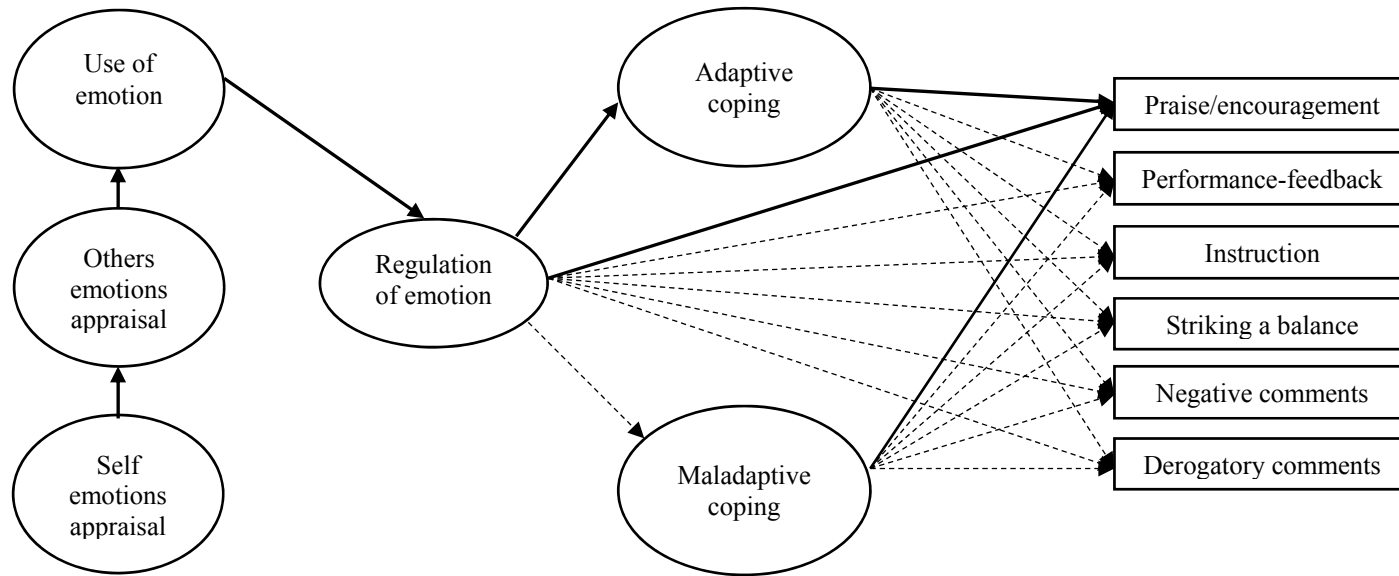


Figure 1. The hypothesized path model for the relationships between parents' emotional intelligence, coping strategies and sideline behaviors during their child's soccer games. Note. Positive paths in continuous lines; Negative paths in dashed lines.

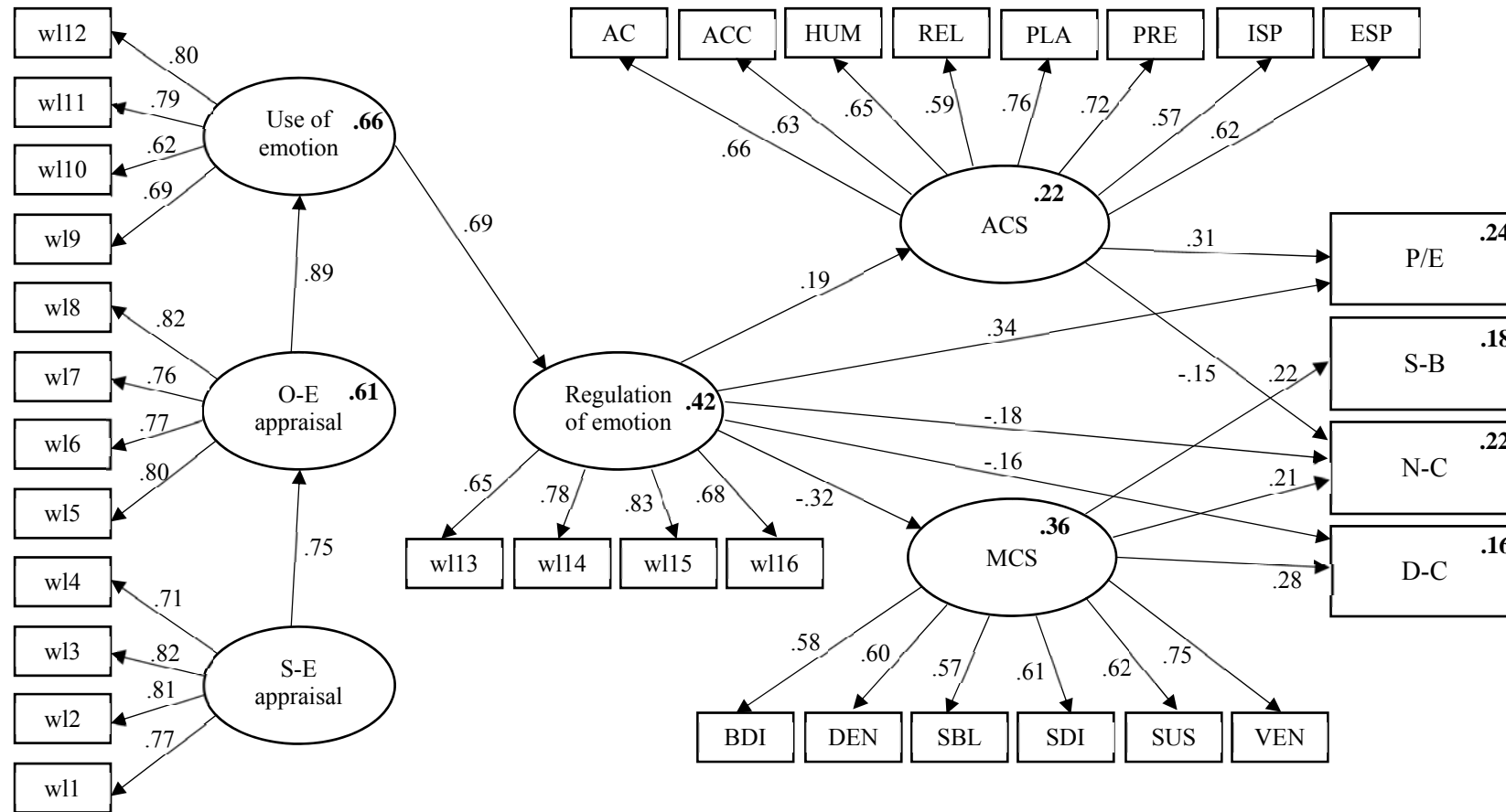


Figure 2. The revised path model. Note. All the standardized path coefficients are significant at the .05 level. In bold are the coefficients of determination (R^2). Non-significant paths were excluded for visual simplicity. ACS = adaptive coping, AC = active coping, ACC = acceptance, HUM = humor, REL = religion, PLA = planning, PRE = positive reframing, ISP = instrumental support, ESP = emotional support; MCS = maladaptive coping, BDI = behavioral disengagement, DEN = denial, SBL = self-blame, SDI = self-distraction, SUS = substance use, VEN = venting; P/E = praise/encouragement, S-B = striking a balance, N-C = negative comments, D-C = derogatory comments.

Table 1

Descriptive statistics and bivariate correlations for all variables.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Self-emotions app	-											
2. Others-emotions app	.64**	-										
3. Use of emotion	.63**	.72**	-									
4. Regulation	.38**	.52**	.71**	-								
5. Adaptive coping	.04	.21*	.28**	.17**	-							
6. Maladaptive coping	-.35**	-.04	-.24**	-.33**	-.42**	-						
7. Praise/encouragement	.18**	.16**	.26**	.28**	.38**	-.12*	-					
8. Perform-feedback	-.19**	-.23**	-.19**	-.13*	-.10	.07	.36**	-				
9. Instruction	-.17**	-.22**	-.16**	-.12*	-.08	.08	.31**	.77**	-			
10. Striking balance	-.22**	-.28**	-.13*	-.32**	-.06	.23**	.21**	.72**	.75**	-		
11. Negative comms	-.08	-.14*	-.13*	-.18*	-.16*	.18**	.25**	.55**	.53**	.57**	-	
12. Derogatory comms	-.04	-.06	-.11*	-.17*	-.11*	.21**	.12	.39**	.39**	.23**	.47**	-
<i>Mean</i>	3.96	3.81	3.88	3.65	2.66	2.22	16.60	12.23	13.55	5.67	2.56	1.65
<i>Standard deviation</i>	0.69	0.71	0.65	0.67	0.52	0.50	6.30	5.16	7.89	1.89	1.12	1.03
<i>Range</i>	2.25-5.00	1.50-5.00	2.50-5.00	1.00-5.00	1.25-3.81	1.00-3.58	2-32	0-23	0-36	0-12	0-5	0-4

Note. * $p < .05$, ** $p < .01$.

Table 2

Standardized indirect effects and confidence intervals

Mediating paths	Estimate	95% CI	
		Lower	Upper
Emotion regulation → Adaptive coping → Praise/encouragement	.18	.10	.29
Emotion regulation → Adaptive coping → Negative comms	-.09	-.21	-.02
Emotion regulation → Maladaptive coping → Negative comms	-.12	-.25	-.02
Emotion regulation → Maladaptive coping → Derogatory comms	-.08	-.19	-.01

Note. 95% confidence intervals (CI) do not include zero for indirect effect significance.

Target of comments																		
	Athletes						Coaches						Referees					
	P/E	FB	INS	SB	NC	DC	P/E	FB	INS	SB	NC	DC	P/E	FB	INS	SB	NC	DC
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3																		
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47																		
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49																		
50																		
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%																		

Game:

Date:

Note. P/E = praise/encouragement, FB = Performance Feedback; INS = Instruction; SB = striking a balance, NC = negative comments, DC = derogatory comments.