

RUNNING HEAD: COACH NARCISSISM AND ATHLETES' DOPING ATTITUDES

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**Linking Narcissism, Motivation and Doping Attitudes in Sport:
A Multilevel Investigation Involving Coaches and Athletes**

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Abstract

Research on coaching (Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2009) has shown that coaches can display controlling behaviors that have detrimental effects on athletes' basic psychological needs and quality of sport experiences. The current study extends this literature by considering coach narcissism as a potential antecedent of coaches' controlling behaviors. Further, the study tests a model linking coaches' ($n = 59$) own reports of narcissistic tendencies with athletes' ($n = 493$) perceptions of coach controlling behaviors, experiences of need frustration, and attitudes toward doping. Multilevel path analysis revealed that coach narcissism was directly and positively associated with athletes' perceptions of controlling behaviors, and was indirectly and positively associated with athletes' reports of needs frustration. Additionally, athletes' perceptions of coach behaviors were positively associated—directly and indirectly—with attitudes toward doping. The findings advance understanding of controlling coach behaviors, their potential antecedents, and their associations with athletes' attitudes toward doping.

Keywords:

Coach personality, controlling coaching, self-determination theory, need frustration, multilevel path analysis

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50 According to self-determination theory (SDT; Ryan & Deci, 2002), individuals in
51 positions of authority may display a controlling interpersonal style of communication, which is
52 likely to be motivationally detrimental to those with whom they interact. Controlling
53 interpersonal style is a result of a controlling socialization under which one feels pressured by
54 others (e.g., deadlines, punishment, or rewards) or by oneself (e.g., feelings of guilt and shame;
55 Soenes & Vansteenkiste, 2010). In sport, controlling coaches frequently act in a forceful
56 pressuring manner, coercing ways of thinking, feeling, and behaving upon their athletes
57 (Bartholomew et al., 2009). These coaches use numerous strategies to influence their athletes,
58 such as yelling, imposing opinions, making normative comparisons, issuing calculating
59 statements, and offering contingent affection (Bartholomew et al., 2009). Such a controlling
60 interpersonal style can frustrate athletes' basic psychological needs, undermine their self-
61 determined motivation, and produce maladaptive affective, cognitive, and behavioral outcomes,
62 including favorable attitudes toward doping (Bartholomew et al., 2009; Hodge, Hargreaves,
63 Gerrard, & Lonsdale, 2013).

64 Unfortunately, there is a scarcity of SDT-based empirical research on antecedents of such
65 a controlling interpersonal style in sport domain (for a review and an integrative model of such
66 antecedents, see Matosic, Ntoumanis, & Quested, 2016). We believe that it is important to
67 understand not only how coaches shape athletes' sporting experience, but also why coaches
68 might behave in a controlling manner (Occhino, Mallet, Ryanne, & Carlisle, 2014). Hence, the
69 purpose of this study was to examine —whether coaches' reports of their narcissism, empathic
70 concern, and dominance are associated with athletes' perceptions of controlling coach behaviors,
71 and whether the latter are associated with athletes' frustrated needs and positive attitudes toward

72 doping. These interrelated research questions were tested in an integrative fashion via multilevel
73 path analysis.

74 **Narcissism as an Antecedent of Controlling Behaviors**

75 Based on the Mageau and Vallerand (2003) coach–athlete relationship model, Matosic et
76 al. (2016) reviewed, across several life domains, three categories of antecedent variables thought
77 to influence behaviors of individuals in positions of authority. These categories are context (e.g.,
78 administrative pressure), perceptions of others' motivation (e.g., self-determined or controlled
79 motivation), and personal characteristics (e.g., personality factors; Pelletier, Seguin-Levesque, &
80 Legault, 2002; Stebbings, Taylor, Spray, & Ntoumanis, 2012). The last category, personal
81 characteristics (i.e., personality and stable beliefs), has received scarce attention in the sport
82 domain (Matosic et al., 2016). As such, limited empirical research has been conducted
83 investigating whether personality factors predict coach use of controlling behaviors.

84 As an exception to this status quo, Matosic et al. (2015) asked whether narcissism
85 qualifies as a potential antecedent of coaches' controlling interpersonal style. Narcissism is a
86 self-centered, self-aggrandizing, dominant, and manipulative interpersonal orientation (Emmons,
87 1987; Sedikides, Rudich, Gregg, Kumashiro, & Rusbult, 2004). Narcissistic individuals strive to
88 assume leadership positions that allow them to be recognized as leaders. They seek attention and
89 admiration, and focus on gaining personal benefit even when undermining others (Campbell,
90 Hoffman, Campbell, & Marchisio, 2011). Narcissistic individuals look relentlessly for validation
91 and pursue situations where they can exert authority and superiority over others (Morf &
92 Rhodewalt, 2001). Narcissism has been linked with negative leadership qualities and lack of
93 leadership effectiveness (Schoel, Stahlberg, & Sedikides, 2015). Narcissistic leaders utilize
94 manipulations and conceit that culminate in abusive supervision behaviors (e.g., anger outbursts,

95 taking credit for subordinate success; Keashly, Trott, & MacLean, 1994; Keller Hansbrough &
96 Jones, 2014). As coaching provides an opportunity for leadership and power, it may attract
97 narcissistic individuals. Matosic et al. (2015) showed that narcissistic coaches report greater use
98 of controlling behaviors toward athletes in situations in which coaches experience self-threat.

99 **Empathic Concern and Dominance as Mediators of the Relation between Narcissism and**
100 **Controlling Behaviors**

101 A potential explanation for the possible negative relation between narcissism and
102 controlling behaviors is reduction in empathic concern among narcissistic individuals (Hepper,
103 Hart, Meek, Cisek, & Sedikides, 2014; Rosenthal & Pittinsky, 2006). Empathic concern is a
104 component of empathy that describes a person's ability to experience others' emotions, and feel
105 sympathy and compassion (Davis, 1983). Importantly, a negative association between narcissism
106 and empathic concern has been identified in the literature (Trumpeter, Watson, O'Leary, &
107 Weathington, 2008). Coaches with increased narcissism and lower levels of empathic concern
108 may be less able to anticipate the negative feelings experienced by their athletes when these
109 coaches act in a controlling manner. Consistent with this possibility, Matosic et al. (2015)
110 demonstrated that reduced empathic concern mediated a positive predictive effect of narcissism
111 on controlling behaviors among sport coaches. However, this study was based solely on coaches'
112 reports of their controlling behaviors. As such, it is not known whether empathic concern
113 mediates any effects of narcissism on athletes' perceptions of their coach's controlling behaviors;
114 the current study explores this issue. There is an evidence to suggest that coach and athlete
115 reports may be weakly related. Indeed, research has found a weak association between coach
116 interpersonal style and athletes' perceptions of their coach's interpersonal style (Smoll, Smith, &
117 Cumming, 2007).

118 Narcissistic individuals are also high in need for dominance. Dominance is the self-
119 aggrandizing component of power that regulates subordinates' resources and establishes
120 superiority over them (Emmons, 1984; Keltner, Gruenfeld, & Anderson, 2003). Narcissistic
121 leaders may dominate their subordinates through displays of harassment (Horton & Sedikides,
122 2009). As such, narcissistic coaches may seek to establish superiority over their athletes via the
123 enactment of pressuring and intimidating (i.e., controlling) behaviors (Bartholomew et al., 2009).
124 Support for this contention can be found in the non-sport literature, which suggests that
125 dominance mediates the effect of narcissism on indicators of controlling behaviors (e.g.,
126 aggression, hostility; Ojanen, Findley, & Fuller, 2012; Raskin, Novacek, & Terry, 1991).
127 However, although Matosic et al. (2015) found coach narcissism to be a strong positive predictor
128 of dominance, dominance was not associated with controlling behaviors. Given that this latter
129 finding contradicted Matosic et al.'s hypothesis and, importantly, is inconsistent with the non-
130 sport literature, we aimed in the current research to re-examine the relations among coach
131 narcissism, dominance, and controlling behaviors. In contrast to Matosic et al., though, we
132 assessed controlling coach behaviors via athlete report rather than coach report.

133 **Athlete Perceptions of Controlling Behaviors, Need Frustration, and Doping Attitudes**

134 Experiencing controlling behaviors in sport can have undermining and pathogenic effects
135 on athletes' three basic psychological needs of autonomy, competence, and relatedness
136 (Ntoumanis, 2012). Autonomy is the need to feel volitional about participating in one's sport,
137 competence is the need to feel skilled when engaging in that sport, and relatedness is the need to
138 feel connected and accepted by the sport milieu (e.g., teammates or coach). Satisfaction of these
139 basic psychological needs is crucial, because it contributes to individuals feeling autonomous,
140 efficacious, and connected with others (Ryan & Deci, 2000). As such, need satisfaction is linked

141 to individuals' optimal functioning and well-being, such as positive affect (Bartholomew,
142 Ntoumanis, Ryan, Bosch, &Thøgersen-Ntoumani, 2011a). On the contrary, perceptions of the
143 basic psychological needs as being actively damaged is referred to as need frustration
144 (Bartholomew, Ntoumanis, Ryan, &Thøgersen-Ntoumani, 2011b). When their basic
145 psychological needs are frustrated, individuals feel oppressed, inadequate, and rejected by others
146 (Ryan & Deci, 2000). As such, need frustration is linked to individuals' suboptimal functioning
147 and ill-being, such as self-injurious behaviors (e.g., eating disorders; Bartholomew et al., 2011a;
148 Vansteenkiste, Claes, Soenens, & Verstuyf, 2013). Specifically, athletes who experience
149 frustration of their basic psychological needs are more likely to engage in eating disorders
150 (Bartholomew et al., 2011a).

151 Factors that influence need frustration, such as controlling behaviors, are important to
152 understand in order to clarify further the link between need frustration and detrimental outcomes.
153 Recent research has reported a positive relation between athletes' perceptions of controlling
154 coach interpersonal style and need frustration (Balaguer et al., 2012). In particular, the more
155 coaches adopted controlling strategies, the more athletes perceived their needs to be undermined.
156 Putting pressure and intimidating athletes to gain personal benefit could make them feel
157 oppressed and inadequate. Hence, and in view of the aforementioned expected relations between
158 narcissism and controlling behaviors, we hypothesize that coaches higher in narcissism enact
159 more frequently controlling behaviors toward their athletes, and, as such, frustrate the latter's
160 needs. Such a hypothesis has not been previously tested in the literature.

161 One self-injurious behavior in sport that may be influenced by need frustration is the
162 intentional use of performance-enhancement drugs (PEDs; ergogenic substances ingested for
163 performance enhancement; WADA, 2015), often referred to as doping. Many PEDs have side

164 effects with potentially serious health consequences (Petróczi, 2013a; WADA, 2015); in this way
165 doping represents a form of self-injurious behavior. Further, doping is banned in most sports and
166 therefore constitutes a form of cheating. Attitudes toward doping are a key psychological
167 predictor of doping use and intentions to dope in athletes, and, as such, are considered an
168 alternate for doping behavior when obtaining data on the latter is not feasible (Lazuras,
169 Barkoukis, Rodafinos, & Tzorbatzoudis, 2010; Ntoumanis, Ng, Barkoukis, & Backhouse, 2014;
170 Petróczi & Aidman, 2009).

171 Favorable attitudes toward doping depict the use of performance enhancement drugs as
172 beneficial, useful, or ethical (Petróczi & Aidman, 2009). These attitudes are influenced by one's
173 social environment. As such, athletes who experience frustration of their needs in controlling
174 environments may develop more positive attitudes toward doping, because they feel oppressed or
175 rejected and consider "doping" a mean to satisfy their needs. Those athletes may be tempted to
176 do anything to perform well and satisfy their coaches' expectations, and may thus be likely to
177 form positive attitudes toward doping.

178 Hodge et al. (2013) reported that athletes' perceptions of controlling coach interpersonal
179 style predicted athletes' positive attitudes toward doping. Hodge et al. also examined the role of
180 non self-determined motivation in relation to athletes' perceptions of controlling behaviors and
181 attitudes toward doping, but obtained null effects. Evidence suggests that basic psychological
182 needs explain variance in sport-related outcomes over and above variance explained by
183 motivational regulations (Felton & Jowett, 2015). Hence, in an attempt to extend the Hodge et al.
184 findings, we tested whether controlling coach behaviors predict positive athlete attitudes toward
185 doping via the frustration of athletes' psychological needs. Links between need frustration and
186 doping-related variables have not been previously tested in the SDT literature.

187 When investigating the effects of coach behavior on athletes, it is important to examine
188 effects at both the group (between) and individual (within) levels. Research involving data from
189 coaches and athletes within teams is inherently multilevel because athletes are nested within
190 teams/coaches (Arthur & Tomsett, 2015). As such, relations occur at more than one level, the
191 individual (within-level) and the group level (between-level). Variables can also be measured at
192 different levels, such as athletes' perceptions of coach behaviors (within-level) and coaches' self-
193 reports (between-level). Furthermore, observations (i.e., athletes) are not independent, which is
194 an assumption that underlies analysis of variance and ordinary least squares regression. These
195 issues highlight the need to account for the non-independence among observations using
196 multilevel analysis (Hox, 2010). Individuals in a group or context tend to be more similar on
197 many variables (e.g., attitudes, behavior) compared to individuals in different groups or contexts
198 (Heck & Thomas, 2015). As such, it is important to account for associations at both levels when
199 analyzing nested data (Byrne, 2012).

200 **Aims and Hypotheses**

201 Our primary aim was to test a hypothesized multilevel model (Figure 1) proposing (1)
202 positive relations between coach narcissism and dominance, and between athlete-reported
203 controlling coach behaviors, need frustration, and attitudes towards doping at the between-level,
204 as well as (2) negative relations between coach narcissism and empathic concern, and between
205 coach empathic concern and athlete-reported controlling coach behaviors at the between-level,
206 and (3) positive relations between athlete-reported controlling coach behaviors, need frustration,
207 and attitudes towards doping at the within-level. In addition to these direct effects, we
208 hypothesized positive indirect effects from (1) coach narcissism to athlete-reported controlling
209 coach behaviors via coach empathic concern and dominance at the between-level, (2) coach

210 narcissism to athlete need frustration via athlete-reported controlling coach behaviors at the
211 between-level, as well as (3) athlete-reported controlling coach behaviors to attitudes toward
212 doping via need frustration at the between- and within-level, respectively.

213 **Method**

214 **Participants**

215 Participants were 493 athletes (328 male, 165 female; age ranging between 16-53 years,
216 $M_{\text{age}} = 21.22$, $SD_{\text{age}} = 3.65$,) and 59 accredited coaches (48 males, 11 females; age ranging
217 between 20-68 years, $M_{\text{age}} = 35.90$, $SD_{\text{age}} = 12.71$) from different levels of competition (e.g.,
218 regional, national, international) across the UK; each athlete was linked to only one coach. A
219 variety of sports (e.g., rugby, soccer, swimming) were represented. On average, coaches had
220 12.71 ($SD = 9.24$) years of coaching experience, and athletes had practiced their sport for an
221 average of 7.10 ($SD = 5.11$) years.

222 **Measures**

223 **Narcissism.** We assessed coach narcissism with the 40-item Narcissistic Personality
224 Inventory (NPI; Raskin & Terry, 1988), which uses a forced-choice approach whereby
225 participants are required to choose, for each item, between a narcissistic (e.g., "I like having
226 authority over people") or a non-narcissistic (e.g., "I don't mind following orders") statement.
227 NPI scores range from 0 to 40, with higher scores reflecting increased narcissism. We scored
228 each narcissistic statement as 1, and each non-narcissistic statement as 0. We calculated the total
229 score by adding up the narcissistic responses. The NPI has high construct validity and internal
230 consistency (Raskin & Terry, 1988).

231 **Dominance.** We assessed coach dominance with the 11-item International Personality
232 Item Pool (IPIP: Goldberg et al., 2006), which is based on the California Personality Inventory

233 (CPI; Wink & Gough, 1990). Response options ranged from 1 (*very inaccurate*) to 5 (*very*
234 *accurate*). A sample item is: “Lay down the law to others.” The stem for dominance was:
235 “Describe yourself as you generally are now, not as you wish to be in the future, in relation to
236 other people you know of the same sex and roughly the same age”. The IPIP has high construct
237 validity and internal consistency (Goldberg et al., 2006).

238 **Empathic concern.** We assessed coach empathy with the 7-item empathic concern
239 subscale of the Interpersonal Reactivity Scale (IRI; Davis, 1983). Response options ranged from
240 0 (*does not describe me well*) to 4 (*describes me well*). A sample item is: “I am often quite
241 touched by things that I see happen.” The scale has good construct validity and internal
242 consistency (Davis, 1983).

243 **Controlling coach behaviors.** We assessed athletes' perceptions of their coach's
244 controlling behaviors using the 15-item Controlling Coach Behaviors Scale (CCBS;
245 Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2010). Response options ranged from 1
246 (*strongly disagree*) to 7 (*strongly agree*). A sample item is: “My coach tries to control what I do
247 during my free time.” The scale has good construct validity and internal consistency
248 (Bartholomew et al., 2011a).

249 **Need frustration.** We assessed need frustration using the 12-item Psychological Need
250 Thwarting Scale (PNTS; Bartholomew et al., 2011b) scale. The PNTS includes three subscales
251 corresponding to athletes' autonomy, competence, and relatedness needs. Response options
252 ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item is: “I feel I am rejected
253 by those around me.” The scale has high construct validity and internal consistency
254 (Bartholomew et al., 2011a).

255 **Attitudes toward doping.** Finally, we assessed athletes' attitudes toward doping with the
256 5-item modified version of the Performance Enhancement Attitude Scale (PEAS; Petróczi &
257 Aidman, 2009) used by Gucciardi, Jalleh, and Donovan (2011). A sample item is: "The risks
258 related to doping are exaggerated." Response options ranged from 1 (*strongly disagree*) to 6
259 (*strongly agree*). This scale has satisfactory construct validity and acceptable internal
260 consistency ($\alpha = .67$; Gucciardi et al., 2011).

261 **Procedure**

262 We recruited coaches and athletes via sport club websites and existing contacts. After
263 gaining approval from the ethics board of the first author's institution, we explained the purpose
264 and procedure of the study to coaches and athletes, and obtained written consent to participate
265 from both parties. We reminded them that their participation was voluntary, and all information
266 provided would be completely confidential. The first author and three trained research assistants
267 collected the data.

268 **Data Analyses**

269 First, we calculated intraclass correlation coefficients (ICC) for relevant variables to
270 determine whether there was enough between-level variance to support their decomposition into
271 within- and between-levels (Preacher, Zyphur, & Zhang, 2010). Then, we used multilevel path
272 analysis via Mplus 7.3 software (Muthén & Muthén, 1998-2015). In MSEM, regression paths
273 among the variables are included at the within- (athlete) and between- (coach and athlete
274 aggregate scores) levels, allowing examination of indirect effects for both within- and between-
275 level components, with each controlling for the other. We estimated simultaneously the direct
276 and indirect effects at the within- and between-levels. The analysis provided standard errors and
277 chi-square tests of model fit that accounted for the non-independence of observations due to the

278 clustering of athletes within coaches (Muthén & Muthén, 1998-2015). We used the robust
279 maximum likelihood (MLR) estimation (Muthén & Muthén, 1998-2015) and assessed model fit
280 using χ^2 goodness-of-fit index, root mean-square error of approximation (RMSEA), comparative
281 fit index (CFI), Tucker-Lewis index (TLI), and square root mean residual (SRMR) at both the
282 within- and between-levels (Preacher et al., 2010). By default, Mplus software performs an
283 implicit latent group-mean centering of the latent within-level variable (Muthén & Muthén,
284 1998-2015). Therefore, no centering was needed prior to conducting the MSEM analyses.

285 We calculated indirect effects using the RMediation package via the distribution-of-the-
286 product method (Tofighi & McKinnon, 2011). We used this method, because it can account for
287 correlations between *a* (predictor-mediator) and *b* (mediator-outcome) paths (Tofighi &
288 McKinnon, 2011); not doing so can produce inaccurate indirect effects, because of the
289 covariance between the two paths (Kenny, Bolger, & Korchmaros, 2003). We calculated the
290 indirect effects as the product of the *a* and *b* paths. We determined the statistical significance of
291 the indirect effects via 95% confidence intervals (CIs). A 95% CI not containing zero indicates a
292 statistically significant indirect effect (Preacher & Hayes, 2008). We calculated effect sizes for
293 indirect effects via kappa squared (κ^2 ; Preacher & Kelley, 2011). κ^2 is the ratio of the obtained
294 indirect effect to the maximum possible indirect effect (Preacher & Kelley, 2011). κ^2 is
295 standardized and bounded using an interpretable metric (0 to 1), is independent of sample size
296 and, with bootstrap methodology, allows for confidence interval construction. According to
297 Preacher and Kelley (2011), κ^2 ratios are interpreted based on Cohen's (1998) guidelines with
298 effect sizes ranging from small (.01), through medium (.09), to large (.25).

299

Results

300 We present descriptive statistics and inter-correlations for all study variables in Table 1.
301 Correlation coefficients were in the expected direction and ranged in effect size from small to
302 medium. The ICC for athletes' perceptions of controlling behaviors, need frustration, and
303 attitudes toward doping variables ranged from .05 to .30. The fit indices for our *a priori*
304 hypothesized model indicated very good model fit: $\chi^2(5) = 8.10$, $p = 0.15$, CFI = .98, TLI = .94,
305 RMSEA = .04, SRMR (within) = .00, SRMR (between) = .09. We measured coach narcissism,
306 empathic concern, and dominance at the between-level only (i.e., coach data); we decomposed
307 athletes' perceptions of controlling coach behaviors, need frustration, and attitudes toward
308 doping into latent within- (level 1) and between-level (level 2) components¹. We report all direct
309 and indirect effects, p values, κ^2 , and 95% CIs in Figure 1 and Table 2.

310 With respect to the first aim of the study, the findings at the between-level showed that
311 coach narcissism was positively associated with athletes' perceptions of controlling coach
312 behaviors and dominance, and athletes' perceptions of controlling coach behaviors were
313 positively associated with need frustration. However, the effects of dominance on athletes'
314 perceptions of controlling coach behaviors, the effects of need frustration on attitudes toward
315 doping, as well as athletes' perceptions of controlling coach behaviors on athlete attitudes toward
316 doping, were not statistically significant. With respect to the second aim of our study, the
317 findings at the between-level showed that the effects of coach narcissism on empathic concern,
318 as well as empathic concern on athletes' perceptions of controlling coach behaviors were not
319 statistically significant. With respect to the third aim of our study, the findings at the within-level
320 showed that athletes' perceptions of controlling behaviors were positively associated with need
321 frustration, and need frustration was positively related to attitudes toward doping. Additionally,

322 athletes' perceptions of controlling coach behaviors were positively related to athletes' attitudes
323 toward doping.

324 We obtained a statistically significant indirect effect at the between-level; this was the
325 effect of coach narcissism on athlete need frustration through athletes' perceptions of controlling
326 coach behaviors ($a*b = .85, [.02, .1.79]$); the effect size was large ($\kappa^2 = .50$; Table 2). Further, the
327 indirect effect of athletes' perceptions of controlling coach behaviors on athlete attitudes toward
328 doping through athlete need frustration was statistically significant ($a*b = .08, [.03, .13]$) and had
329 a small effect size ($\kappa^2 = .07$; see Table 2).

330 Discussion

331 We addressed the role of narcissism as an antecedent of coach controlling behaviors. To
332 that effect, we proposed a multilevel model linking coach controlling behaviors with athletes'
333 frustrated needs and positive attitudes toward doping use (an indicator of compromised athlete
334 functioning). In the tested model, we used coach and athlete data to examine the direct and
335 indirect associations between coach reported narcissism, dominance, and emphatic concern, and
336 athletes' perceptions of controlling coach behaviors at the group level. We also examined
337 associations between athletes' perceptions of controlling coach behaviors, need frustration, and
338 attitudes towards doping in sport at the group and individual levels, respectively.

339 Coach Narcissism, Coach Controlling Behaviors, and Athletes' Need Frustration at the 340 Group Level

341 Coach narcissism was positively associated with athletes' perceptions of controlling
342 coach behaviors at the group level. As such, the higher the narcissism coaches reported, the more
343 frequently athletes perceived them to engage in controlling behaviors (e.g., punishing their
344 athletes, imposing deadlines, and using task-engagement rewards). This is consistent with recent

345 findings that coach narcissism positively predicts coaches' self-reported controlling behaviors
346 (Matosic et al., 2015). Here, we replicated this finding using athletes' perceptions of coach
347 controlling behaviors. Thus, coaches who report narcissistic elements such as authority, self-
348 sufficiency, entitlement, or exhibitionism are rated by themselves and others as more controlling.

349 Although narcissism – as expected – was positively related to dominance, we found no
350 effect of dominance on athletes' perceptions of controlling behaviors at the group level. This
351 pattern parallels that of Matosic et al. (2015). Taken together, these two studies suggest that,
352 although coach dominance is positively predicted by narcissism, any effect of narcissism on
353 coaches' controlling behaviors may be direct rather than operating through dominance. Future
354 research in sport will do well to examine other possible mediators, such as beliefs about the
355 normalcy and effectiveness of controlling behaviors (Reeve et al., 2014).

356 Empathic concern did not mediate the relation between coach narcissism and athletes'
357 perceptions of controlling coach behaviors at the group level. Specifically, coach narcissism did
358 not relate to empathic concern, and empathic concern did not relate to athletes' perceptions of
359 controlling behaviors. This is contrary to the work of Matosic et al. (2015), in which such effects
360 were significant. Interestingly, research outside of sport has reported mixed findings when
361 examining the relation between narcissism and empathic concern (Hepper et al., 2014;
362 Trumpeter et al., 2008). Of particular note, Hepper et al. (2014) found that narcissism did not
363 directly relate to empathic concern, but cognitive components of empathy (i.e., perspective
364 taking) did. Future empirical efforts could focus on cognitive components of empathy alongside
365 its emotional components to tease out the possible mediating role of empathic concern in the
366 coach narcissism-controlling behaviors relation.

367 Coach narcissism was indirectly linked to athletes' frustrated needs via athletes'
368 perceptions of controlling coach behaviors at the group level. This indirect effect was large and
369 extends previously reported direct effects between narcissism and controlling coach behaviors
370 (Matosic et al., 2015), and between athletes' perceptions of controlling coach behaviors and need
371 frustration (Bartholomew et al., 2011a). Hence, it seems that, when narcissistic coaches exhibit
372 external controlling characteristics such as imposing deadlines, punishing athletes, and using
373 engagement-contingent rewards, athletes are more likely to feel oppressed, inadequate, or
374 rejected.

375 **Predicting Attitudes toward Doping at the Group and Individual Levels**

376 Athletes' perceptions of controlling coach behaviors did not have an effect on athletes'
377 attitudes toward doping at the group level, either directly or via need frustration. Although
378 athletes' perceptions of controlling coach behaviors positively predicted need frustration, the
379 latter was not associated with athletes' attitudes toward doping. However, this relation was in the
380 anticipated direction and had a moderate effect size. Thus, the lack of statistical significance may
381 have been due to the limited amount of variance in doping attitudes to be explained at the group
382 level (i.e., ICC = .05). The minimal variance in doping attitudes may in turn be due to the private
383 and secretive nature of doping. In other words, attitudes toward doping are infrequently shared
384 with others, which may prevent the formation of group level doping attitudes (Petróczi, 2013a).

385 At the individual level, however, athletes' perceptions of controlling coach behaviors
386 were positively related to athletes' attitudes toward doping. This is consistent with the findings
387 of Hodge et al. (2013), namely that athletes' perceptions of controlling coach climates positively
388 predict athletes' doping attitudes. Athletes who experience pressure to perform at their best from
389 their coach may be likely to have more positive attitudes towards doping. This is possibly

390 because athletes view ethically questionable means of performance enhancement more favorably
391 given that those may help them satisfy their coach's demands for high performance (Hodge et
392 al., 2013; Smith et al., 2010).

393 We extended the work of Hodge et al. (2013) by showing that need frustration was a
394 mediator of the relation between athletes' perceptions of controlling behaviors and athletes'
395 attitudes toward doping. Athletes who perceive their coaches as controlling could feel oppressed,
396 inadequate, or rejected (Balaguer et al., 2012). Feeling inadequate and rejected may lead athletes
397 to develop more positive attitudes toward doping (and potentially use illegal performance
398 enhancing substances), as a result of their desire to increase their competence and relatedness
399 (feelings of acceptance by the coach) by accomplishing success. Such need restoration efforts
400 (cf. Radel, Pelletier, Sarrazin, & Milyavskaya, 2011) are important to address in future research
401 on doping.

402 **Summary, Limitations, and Future Directions**

403 The results of the current study make novel contributions to the literature by testing the
404 proximal and distal antecedent role of coach narcissism on athletes' perceptions of controlling
405 coach behaviors and feelings of compromised psychological needs. We showed that these
406 antecedents can positively predict a highly topical issue, athletes' positive attitudes toward
407 doping. We further extend previous literature by examining the relations among coach
408 personality, coach and athlete motivational factors, and athlete doping attitudes via obtaining
409 reports from both coaches and athletes and via testing such relations simultaneously within a
410 multilevel path analysis framework.

411 We acknowledge several limitations, which point to research directions. The study was
412 based on self-report data, which are amenable to socially desirable responding (Gonyea, 2005).

413 Future research may consider alternative assessments, such as observational methods for coach
414 behaviors and implicit measures for doping attitudes (Petróczi, 2013b). Additionally, given the
415 low internal consistency of the attitudes toward doping measure (Gucciardi et al., 2011), future
416 research should test the replicability of the current findings using different measures of attitudes
417 toward doping (e.g., full 17-item PEAS; Petróczi & Aidman, 2009). Further work should also
418 employ longitudinal designs to examine the temporal ordering of the relations among the study
419 variables, with particular emphasis on testing need restoration efforts via engaging in doping use.
420 Additionally, researchers could examine the moderating role of sport type on the effect of
421 controlling coach behaviors on attitudes toward doping. Controlling behaviors may have a
422 stronger effect on doping attitudes in some sports (e.g., strength based, endurance based) because
423 doping is seen as more effective for the key performance attributed in those sports compared to
424 others.

425 Our study was concerned with the relation between grandiose narcissism (i.e., NPI
426 narcissism) and controlling interpersonal style. Future research could test the relations between
427 other forms of narcissism, such as vulnerable narcissism (Gregg & Sedikides, 2010) and coach
428 controlling interpersonal style. Additionally, researchers could address other components of the
429 dark triad beyond narcissism (i.e., Machiavellianism, psychopathy; Paulhus & Williams, 2002).
430 The “dark triad” factors share common traits such as self-promotion, lack of empathy, and
431 aggressiveness, and hence they might also serve as proximal and distal antecedents of coach
432 controlling behaviors, athletes’ frustrated needs, and attitudes toward doping. Finally, researchers
433 could examine the interplay between coach and athlete narcissism (Arthur, Woodman, Ong,
434 Hardy, & Ntoumanis, 2011). For example, it would be interesting to test how athletes high and

435 low on narcissism experience need frustration when interacting with narcissistic coaches, or the
436 types of behaviors coaches use when interacting with narcissistic athletes.
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Footnote

¹ A reviewer requested to investigate the role of each need frustration (i.e., need for competence, autonomy, and relatedness) and each controlling behavior (i.e., controlling use of rewards, intimidation, negative conditional regard, and excessive personal control) independently in the model. We ran such models but they produced inadmissible solutions. As an alternative, we have tested for the correlations between each need frustration subscale with and attitudes toward doping, and between each controlling behaviors subscales and doping attitudes, at both the within- and between-levels. The correlation matrix for the individual need frustration subscales showed similar correlations compared to the correlations between overall need frustration and doping attitudes. Similarly, the correlation matrix for the controlling subscales showed similar correlations compared to the correlations between overall controlling behaviors and doping attitudes (with the exception of the controlling use of rewards-doping attitudes correlation which was non-significant). These results are available from the first author upon request.

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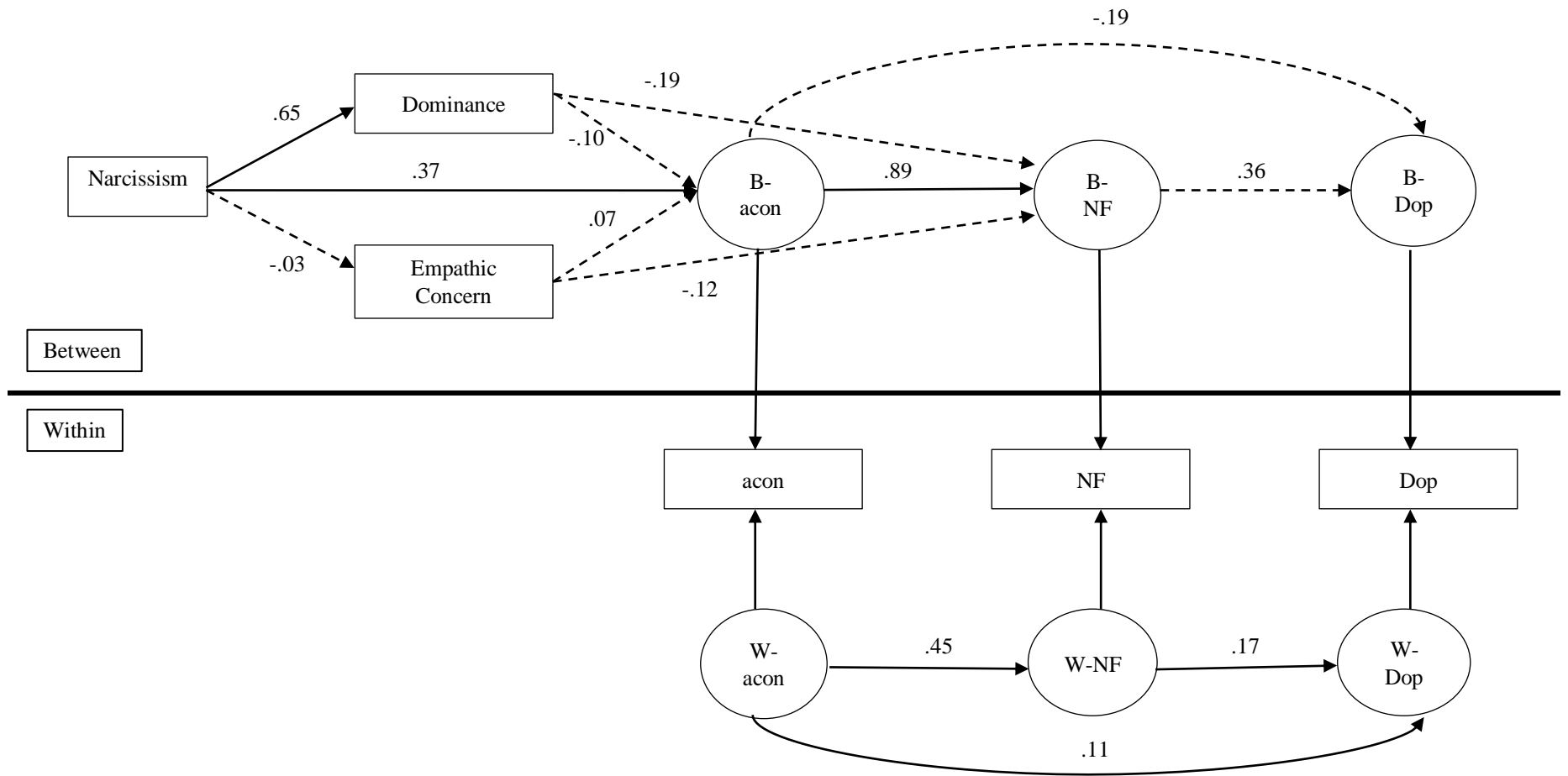


Figure 1. Multilevel path analysis model testing coach narcissism, dominance and empathic concern in relation to athletes' perceptions of coach behaviors, need frustration, and attitudes toward doping

Note: Model displays results of both within- and between-level analyses. Dashed lines represent non-significant relations. acon = athletes' perceptions of coach controlling behaviors; NF = athlete need frustration; dop = athlete attitudes toward doping; W = within-level; B = between-level; * $p < .05$, ** $p < .01$.

Table 1

Descriptive Statistics, Between-level and Within-level Correlations between Study Variables and Intraclass Correlations

Variable	1	2	3	4	5	6	ICC
1. Narcissism	.85						-
2. Dominance	<i>.65**</i>	.86					-
3. Empathic Concern	<i>-.03</i>	<i>-.15</i>	.78				-
4. Athletes' perceptions of controlling behaviors	<i>.31*</i>	<i>.14</i>	<i>.07</i>	.90	<i>.45**</i>	<i>.19**</i>	.30
5. Need frustration	<i>.06</i>	<i>-.05</i>	<i>-.03</i>	<i>.86**</i>	.91	<i>.21**</i>	.17
6. Attitudes toward doping	<i>-.09</i>	<i>.26</i>	<i>-.14</i>	<i>.13</i>	<i>.37</i>	.63	.05
Possible Range	0-40	1-5	0-4	1-7	1-7	1-6	
<i>M</i>	14.23	3.11	3.09	2.67	2.53	2.46	
<i>SD</i>	6.74	.52	.40	1.07	1.11	.85	
Skewness	.962	-.125	-.529	.336	.389	.353	
Kurtosis	.997	-.224	.046	-.682	-.553	-.235	

Note. ICC = Intraclass correlation coefficients. Raykov (2009) composite reliability coefficients are in bold along the diagonal. Between-level correlations coefficients are represented on the left side of diagonal. Within-level correlation coefficients are represented on the right side of diagonal and are in italics. * $p < .05$, ** $p < .01$.

Table 2

Indirect Effects and Asymmetric CIs

	Estimate ^a	SE	95 % CI		κ^2
			LL	UL	
Within					
Acon→NF→dop	0.08	0.03	0.03	0.13	0.07
Between					
Narc→dom→acon	0.22	0.42	-1.05	0.59	0.05
Narc→empat→acon	-0.01	0.09	-0.21	0.16	0.00
Narc→acon→NF	0.85	0.45	0.02	1.79	0.50
dom→acon→NF	0.05	0.10	-0.25	0.14	0.15
empat→acon→NF	0.04	0.10	-0.15	0.24	0.14
acon→NF→dop	0.12	0.33	-0.52	0.77	0.13

Note. ^aunstandardized estimate. SE = standard error; CI = confidence interval; LL = lower limit; UL = upper limit; κ^2 = kappa squared; acon = athletes' perceptions of coach controlling behaviors; NF = athlete need frustration; dop = athlete attitudes toward doping; Narc = coach narcissism; dom = coach dominance; empat = coach empathic concern.