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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

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

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

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

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

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

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

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

96 **Empathic Concern and Dominance as Mediators of the Relation between Narcissism and**
97 **Controlling Behaviors**

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

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

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

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

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

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

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

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

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

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

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

197 **Aims and Hypotheses**

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

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

210 **Method**

211 **Participants**

212 Participants were 493 athletes (328 male, 165 female; age ranging between 16-53 years,
213 $M_{\text{age}} = 21.22$, $SD_{\text{age}} = 3.65$), and 59 accredited coaches (48 males, 11 females; age ranging
214 between 20-68 years, $M_{\text{age}} = 35.90$, $SD_{\text{age}} = 12.71$) from different levels of competition (e.g.,
215 regional, national, international) across the UK; each athlete was linked to only one coach. A
216 variety of sports (e.g., rugby, soccer, swimming) were represented. On average, coaches had
217 12.71 ($SD = 9.24$) years of coaching experience, and athletes had practiced their sport for an
218 average of 7.10 ($SD = 5.11$) years.

219 **Measures**

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

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

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

235 **Empathic concern.** We assessed coach empathy with the 7-item empathic concern
236 subscale of the Interpersonal Reactivity Scale (IRI; Davis, 1983). Response options ranged from
237 0 (*does not describe me well*) to 4 (*describes me well*). A sample item is: “I am often quite
238 touched by things that I see happen.” The scale has good construct validity and internal
239 consistency (Davis, 1983).

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

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

252 **Attitudes toward doping.** Finally, we assessed athletes' attitudes toward doping with the
253 5-item modified version of the Performance Enhancement Attitude Scale (PEAS; Petróczi &
254 Aidman, 2009) used by Gucciardi, Jalleh, and Donovan (2011). A sample item is: "The risks
255 related to doping are exaggerated." Response options ranged from 1 (*strongly disagree*) to 6
256 (*strongly agree*). This scale has satisfactory construct validity and acceptable internal
257 consistency ($\alpha = .67$; Gucciardi et al., 2011).

258 **Procedure**

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

265 **Data Analyses**

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

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

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

319 athletes' perceptions of controlling coach behaviors were positively related to athletes' attitudes
320 toward doping.

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

327 **Discussion**

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

336 **Coach Narcissism, Coach Controlling Behaviors, and Athletes' Need Frustration at the** 337 **Group Level**

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

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

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

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

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

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

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

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

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

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

399 **Summary, Limitations, and Future Directions**

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

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

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

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

432 low on narcissism experience need frustration when interacting with narcissistic coaches, or the
433 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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481 **References**

- 482 Arthur, C. A., & Tomsett, P. (2015). Transformational leadership behaviour in sport. In S. D.
483 Mellalieu & S. Hanton (Eds.), *Contemporary Advances in Sport Psychology: A Review*
484 (pp. 175-201). New York, NY: Routledge.
- 485 Arthur, C.A., Woodman, T., Ong, C.W., Hardy, L., & Ntoumanis, N. (2011). The role of athlete
486 narcissism in moderating the relationship between coaches' transformational leader
487 behaviours and athlete motivation. *Journal of Sport and Exercise Psychology*, *33*, 3-19.
- 488 Balaguer, I., Gonzalez, L., Fabra, P., Castillo, I., Merce, J., & Duda, J. L. (2012). Coaches'
489 interpersonal style, basic psychological needs and the well- and ill-being of young soccer
490 players: A longitudinal analysis. *Journal of Sport Sciences*, *30*, 1619-1629. doi:
491 10.1080/02640414.2012.731517
- 492 Bartholomew, K. J., Ntoumanis, N., Ryan, R. M., Bosch, J. A., & Thøgersen-Ntoumani, C.
493 (2011a). Self-determination theory and diminished functioning: The role of interpersonal
494 control and psychological need thwarting. *Personality and Social Psychology Bulletin*,
495 *37*: 1459-1473. doi: 10.1177/0146167211413125
- 496 Bartholomew, K. J., Ntoumanis, N., Ryan, R. M., & Thøgersen-Ntoumani, C. (2011b).
497 Psychological need thwarting in the sport context: Assessing the darker side of athletic
498 experience. *Journal of Sport & Exercise Psychology*, *33*, 75-102.
- 499 Bartholomew, K. J., Ntoumanis, N., & Thøgersen-Ntoumani, C. (2009). A review of
500 controlling motivational strategies from a self-determination theory perspective:
501 Implications for sports coaches. *International Review of Sport and Exercise*
502 *Psychology*, *2*, 215-233. doi: 10.1080/17509840903235330
- 503 Bartholomew, K. J., Ntoumanis, N., & Thøgersen-Ntoumani, C. (2010). The controlling

- 504 interpersonal style in a coaching context: Development and initial validation of a
505 psychometric scale. *Journal of Sport & Exercise Psychology*, 32, 193–216.
- 506 Byrne, B. M. (2012). Structural equation modeling with *Mplus*. New York, NY: Routledge.
- 507 Campbell, W. K., Hoffman, B. J., Campbell, S. M., & Marchisio, G. (2011). Narcissism in
508 organizational contexts. *Human Resource Management Review*, 21, 268-284. doi:
509 10.1016/j.hrmr.2010.10.007
- 510 Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, N.J.:
511 Lawrence Erlbaum.
- 512 Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a
513 multidimensional approach. *Journal of Personality and Social Psychology*, 44, 113-
514 126. doi: 10.1037/0022-3514.44.1.113
- 515 Emmons, R. A. (1984). Factor analysis and construct validation of the narcissistic personality
516 inventory. *Journal of Personality Assessment*, 48, 291-300. doi:
517 10.1207/s15327752jpa4803_11
- 518 Emmons, R. A. (1987). Narcissism: Theory and measurement. *Journal of Personality and Social*
519 *Psychology*, 52, 11-17. doi: 10.1037/0022-3514.52.1.11
- 520 Felton, L., & Jowett, S. (2015). On understanding the role of need thwarting in the association
521 between athlete attachment and well/ill being. *Scandinavian Journal of Medicine and*
522 *Science in Sports*, 25, 289-298. doi: 10.1111/sms/12196
- 523 Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., &
524 Gough, H. G. (2006). The international personality item pool and the future of public-
525 domain personality measures. *Journal of Research in Personality*, 40, 84-96.
526 doi: 10.1016/j.jrp.2005.08.007

- 527 Gonyea, R. M. (2005). Self-reported data in institutional research: Review and
528 recommendations. *New Directions for Institutional Research*, 127, 73-89. doi:
529 10.1002/ir.156
- 530 Gregg, A. P., & Sedikides, C. (2010). Narcissistic fragility: Rethinking its links to explicit and
531 implicit self-esteem. *Self and Identity*, 9, 142-161. doi: 10.1080/15298860902815451
- 532 Gucciardi, D. F., Jalleh, G., & Donovan, R. J. (2011). An examination of the sport drug control
533 model with elite Australian athletes. *Journal of Science and Medicine in Sport*, 14, 469-
534 476. doi: 10.1016/j.jsams.2011.03.009
- 535 Heck, R. H., & Thomas, S. L. (2015). *An introduction to multilevel modeling techniques: MLM*
536 *and SEM approaches using Mplus*. New York, NY: Routledge.
- 537 Hepper, E. G., Hart, C. M., Meek, R., Cisek, S. Z., & Sedikides, C. (2014). Narcissism and
538 empathy in young offenders and non-offenders. *European Journal of Personality*, 28,
539 201-210. doi: 10.1002/per.1939
- 540 Hodge, K., Hargreaves, E., Gerrard, D., & Lonsdale, C. (2013). Psychological mechanism and
541 underlying doping attitudes in sport: Motivation and moral disengagement. *Journal of*
542 *Sport & Exercise Psychology*, 35, 419-432.
- 543 Horton, R. S., & Sedikides, C. (2009). Narcissistic responding to ego threat: When the
544 status of the evaluator matters. *Journal of Personality*, 77, 1493-1526.
545 doi: 10.1111/j.1467-6494.2009.00590.x
- 546 Hox, J. J. (2010). *Multilevel analysis. Techniques and applications (2nd Ed.)*. New York, NY:
547 Routledge.
- 548 Keashly, L., Trott, V., & MacLean, L. M. (1994). Abusive behavior in the workplace: A
549 preliminary investigation. *Violence and Victims*, 9, 341-357.

- 550 Keller Hansbrough, T., & Jones, G. E. (2014). Inside the minds of narcissists: How narcissistic
551 leaders' cognitive processes contribute to abusive supervision. *Zeitschrift fur*
552 *Psychologie*, 222, 214-220. doi:10.1027/2151-2604/a000188
- 553 Keltner, D., Gruenfeld, D. H., & Anderson, C. (2003). Power, approach, and inhibition.
554 *Psychological Review*, 110, 265-284. doi: 10.1037/0033-295X.110.2.265
- 555 Kenny, D. A., Korchmaros, J. D., & Bolger, N. (2003). Lower level mediation in multilevel
556 models. *Psychological Methods*, 8, 115-128. doi:10.1037/1082-989X.8.2.115
- 557 Lazuras, L., Barkoukis, V., Rodafinos, A., & Tzorbatzoudis, H. (2010). Predictors of doping
558 intentions in elite-level athletes: A social cognition approach. *Journal of Sport &*
559 *Exercise Psychology*, 32, 694-710.
- 560 Mageau, G. A., & Vallerand, R. J. (2003). The coach-athlete relationship: A motivational
561 model. *Journal of Sport Sciences*, 21, 883-904. doi: 10.1080/0264041031000140374
- 562 Matosic, D., Ntoumanis, N., Boardley, I. D., Sedikides, C., Stewart, B. D., & Chazisarantis, N.
563 (2015). Narcissism and coach interpersonal style: A self-determination theory
564 perspective. *Scandinavian Journal of Medicine and Science in Sports*. Advanced online
565 publication. doi: 10.1111/sms.12635
- 566 Matosic, D., Ntoumanis, N., & Quested, E. (2016). Antecedents of need supportive and
567 controlling interpersonal styles from a self-determination theory perspective: A review
568 and implications for sport psychology research (pp. 145-180). In M. Raab, P. Wylleman,
569 R. Seiler, A. M. Elbe, & A. Hatzigeorgiadis (Eds.), *Sport and exercise psychology*
570 *research: From theory to practice*. London, UK. Elsevier.
- 571 Morf, C. C., & Rhodewalt, F. (2001). Unraveling the paradoxes of narcissism: A dynamic self-
572 regulatory processing model. *Psychological Inquiry*, 12, 177-196. doi:

- 573 10.1207/S15327965PLI1204_1
- 574 Muthén, L.K., & Muthén, B.O. (1998-2015). *Mplus user's guide* (7th ed.). Los Angeles, CA:
575 Muthén & Muthén.
- 576 Ntoumanis (2012). A self-determination theory perspective on motivation in sport and
577 physical education: Current trends and possible future research directions. In G. C.
578 Roberts & S. C. Treasure (Eds), *Motivation in sport and exercise: Volume 3* (pp. 91-
579 128). Champaign, IL: Human Kinetics.
- 580 Ntoumanis, N., Ng, J. Y. Y., Barkoukis, V., & Backhouse, S. (2014). Personal and psychosocial
581 predictors of doping use in physical activity settings: A meta-analysis. *Sports Medicine*,
582 44, 1603-1624. doi: 10.1007/s40279-014-0240-4
- 583 Occhino, J. L., Mallet, C. J., Rynne, S. B., & Carlisle, K. N. (2014). Autonomy- supportive
584 pedagogical approach to sports coaching: Research, challenges and opportunities.
585 *International Journal of Sports Science & Coaching*, 9, 401-415. doi: 10.1260/1747-
586 9541.9.2.401
- 587 Ojanen, T., Findley, D., & Fuller, S. (2012). Physical and relational aggression in early
588 adolescence: Associations with narcissism, temperament, and social goals. *Aggressive*
589 *Behavior*, 38, 99-107. doi: 10.1002/ab21413
- 590 Paulhus, D. L., & Williams, K. M. (2002). The Dark Triad of personality: Narcissism,
591 Machiavellianism, and psychopathy. *Journal of Research in Personality*, 36, 556-563.
592 doi: 10.1016/S0092-6566(02)00505-6
- 593 Pelletier, L. G., Seguin-Levesque, C., & Legault, L. (2002). Pressure from above and
594 pressure from below as determinants of teachers' motivation and teaching behaviors.
595 *Journal of Educational Psychology*, 94, 186-196. doi:10.1037//0022-

- 596 663.94.1.186
- 597 Petróczi, A. (2013a). The doping mindset-Part I: Implications of the functional use theory on
598 mental representations of doping. *Performance Enhancement & Health*, 2, 153-163. doi:
599 10.1016/j.peh.2014.06.001
- 600 Petróczi, A. (2013b). The doping mindset-Part II: Potentials and pitfalls in capturing athletes'
601 doping attitudes with response-time methodology. *Performance Enhancement & Health*,
602 2, 164-181. doi: 10.1016/j.peh.2014.08.003
- 603 Petróczi, A., & Aidman, E. (2009). Measuring explicit attitude toward doping: Review of the
604 psychometric properties of the Performance Enhancement Attitude Scale. *Psychology of*
605 *Sport and Exercise*, 10, 390-396. doi: 10.1016/j.psychsport.2008.10.001
- 606 Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and
607 comparing indirect effects in multiple mediator models. *Behavior Research Methods*,
608 40, 879-891. doi: 10.3758/BRM.40.3.879
- 609 Preacher, K. J., & Kelley, K. (2011). Effect size measures for mediation models: Quantitative
610 strategies for communicating indirect effects. *Psychological Methods*, 16, 93-115. doi:
611 10.1037/a0022658
- 612 Preacher, K. J., Zyphur, M. J., & Zhang, Z. (2010). A general multilevel SEM framework for
613 assessing multilevel mediation. *Psychological Methods*, 15, 209-233. doi:
614 10.1037/a0020141
- 615 Radel, R., Pelletier, L. G., Sarrazin, P., & Milyavskaya, M. (2011). Restoration process of the
616 need for autonomy: The early alarm stage. *Journal of Personality and Social Psychology*,
617 101, 919-934. doi: 10.1037/a0025196

- 618 Raskin, R., Novacek, J., & Hogan, R. (1991). Narcissistic self-esteem management.
619 *Journal of Personality and Social Psychology*, 60, 911-918. doi:10.1037/0022-
620 3514.60.6.911
- 621 Raskin, R., & Terry, H. (1988). A principal-components analysis of the Narcissistic Personality
622 Inventory and further evidence of its construct validity. *Journal of Personality and Social*
623 *Psychology*, 54, 890-902. doi: 10.1037/0022-3514.54.5.890
- 624 Raykov, T. (2009). Evaluation of scale reliability for unidimensional measures using latent
625 variable modeling. *Measurement and Evaluation in Counseling and Development*, 42,
626 223-232. doi: 10.1177/0748175609344096
- 627 Reeve, J., Vansteenkiste, M., Assor, A., Ahmad, I., Cheon, S. H., Jang, H., ... Wang, C. K. J.
628 (2014). The beliefs that underlie autonomy-supportive and controlling teaching: A
629 multinational investigation. *Motivation and Emotion*, 38, 93-110. doi: 10.1007/s11031-
630 013-9367-0
- 631 Rosenthal, S. A., & T. L. Pittinsky (2006). Narcissistic leadership. *The Leadership Quarterly*,
632 17, 617-633. doi: 10.1016/j.leaqua.2006.10.005
- 633 Ryan, R. M., & Deci, E. L. (2000). The darker and brighter sides of human existence: Basic
634 psychological needs as a unifying concept. *Psychological Inquiry*, 11, 319-338. doi:
635 10.1207/S15327965PLI1104_03
- 636 Ryan, R. M., & Deci, E. L. (2002). An overview of self-determination theory. In E. L. Deci &
637 R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3-33). Rochester,
638 NY: University of Rochester Press.
- 639 Schoel, C., Stahlberg, D., & Sedikides, C. (2015). Psychological insecurity and leadership styles.
640 In P. J. Carroll, R. M. Arkin, & A. L. Wichman (Eds.), *The handbook of personal*

- 641 *security* (pp. 55-73). New York, NY: Psychology Press.
- 642 Sedikides, C., Rudich, E. A., Gregg, A. P., Kumashiro, M., & Rusbult, C. (2004). Are normal
643 narcissists psychologically healthy? Self-esteem matters. *Journal of Personality and*
644 *Social Psychology, 87*, 400-416. doi: 10.1037/0022-3514.87.3.400
- 645 Smith, A. C. T., Stewart, B., Oliver-Bennetts, S., McDonald, S., Ingerson, L., Anderson, A.,
646 Dickson, G., Emery, P., & Graets, F. (2010). Contextual influences and athlete attitudes
647 to drugs in sport. *Sport Management Review, 13*, 181-197. doi:
648 10.1016/j.smr.2010.01.008
- 649 Smoll, F. L., Smith, R. E., & Cumming, S. P. (2007). Coaching behaviors, motivational climate,
650 and young athletes' sport experiences. In C. Goncalves, M. Coelho e Silva, L. Adelino, &
651 R. M. Malina (Eds.), *Sport and Education* (pp. 165-176). Coimbra, Portugal: Coimbra
652 University Press.
- 653 Soenens, B., & Vansteenkiste, M. (2010). A theoretical upgrade of the concept of psychological
654 control: Proposing new insights on the basis of self-determination theory. *Developmental*
655 *Review, 30*, 74-99. doi: 10.1016/j.dr.2009.11.001
- 656 Stebbings, J., Taylor, I. M., Spray, C. M., & Ntoumanis, N. (2012). Antecedents of perceived
657 coach interpersonal behaviors: The coaching environment and coach psychological
658 well- and ill-being. *Journal of Sport & Exercise Psychology, 34*, 481-502.
- 659 Tofighi, D. T., & MacKinnon, D. P. (2011). RMediation: An R package for mediation analysis
660 confidence intervals. *Behavior Research Methods, 43*, 692-700. doi: 10.3758/s13428-
661 011-0076-x
- 662 Trumpeter, N. N., Watson, P. J., O'Leary, B. J., & Weathington, B. L. (2008). Self-functioning
663 and perceived parenting: Relations of parental empathy and love inconsistency with

- 664 narcissism, depression, and self-esteem. *The Journal of Genetic Psychology*, 169, 51-
- 665 71. doi: 10.3200/GNTP.169.1.51-71
- 666 Vansteenkiste, M., Claes, L., Soenens, B., & Verstuyf, J. (2013). Motivational dynamics among
- 667 eating-disordered patients with and without nonsuicidal self-injury: A self-determination
- 668 theory approach. *European Eating Disorders Review*, 21, 209-214. doi: 10.1002/erv.2215
- 669 WADA (2015). *World anti-doping code*. Montreal, Canada: World Anti-Doping Agency.
- 670 Wink, P., & Gough, H. G. (1990). New narcissism scales for the California Psychological
- 671 Inventory and MMPI. *Journal of Personality Assessment*, 54, 446-462. doi:
- 672 10.1080/00223891.1990.96740

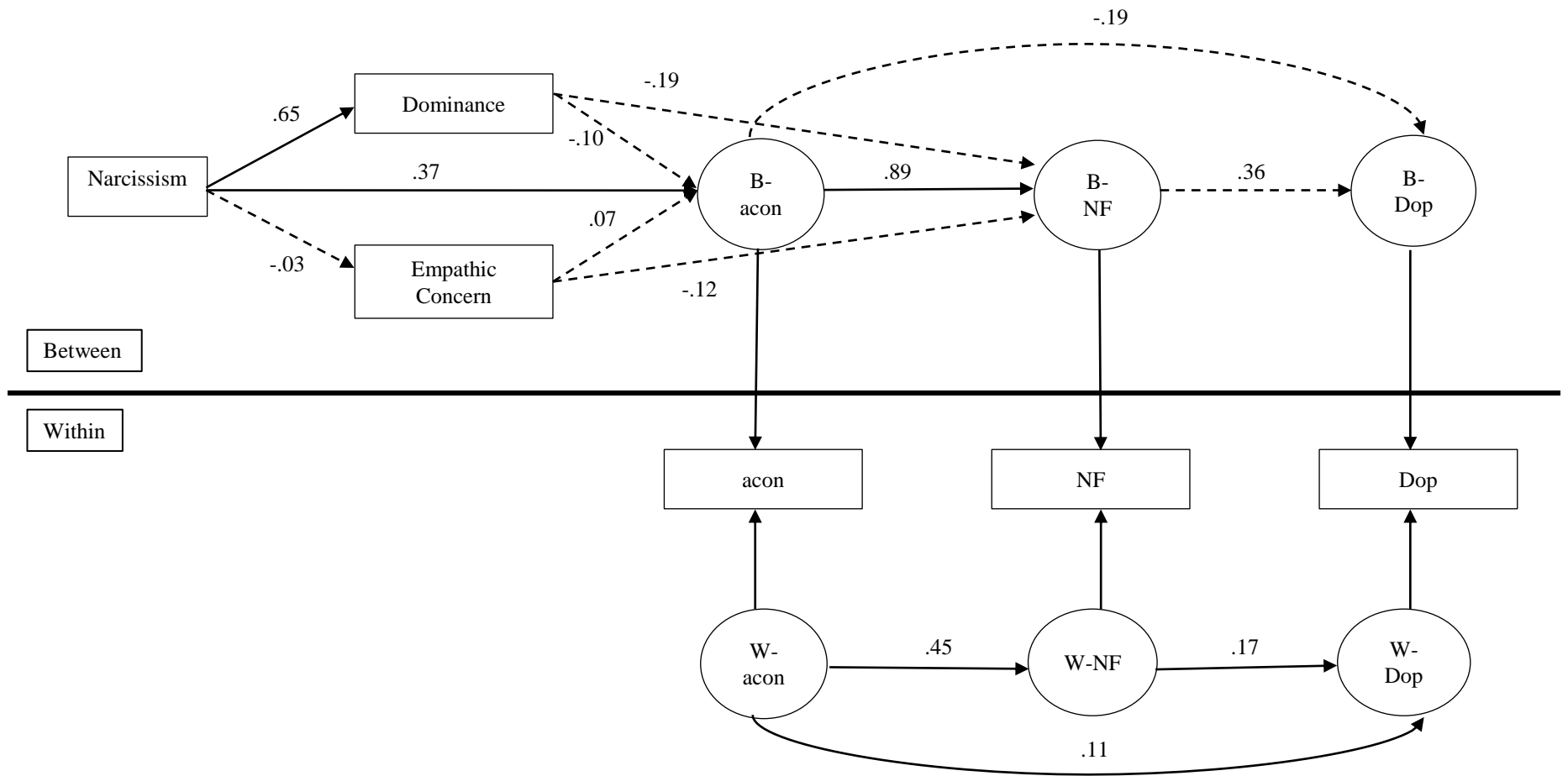


Figure 1. Multilevel path analysis model testing coach narcissism, dominance and empathic concern in relation to athletes' perceptions of coach behaviors, need frustration, and attitudes toward doping

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.