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# Effect of parent responsiveness on young athletes' self-perceptions and thriving: An exploratory study in a Belgian French-Community

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7 **Effect of Parent Responsiveness on Young Athletes' Self-Perceptions and Thriving: An**  
8 **Exploratory Study in a Belgian French-Community**

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## PARENTAL RESPONSIVENESS IN YOUTH SPORT

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**Abstract**

**Objective:** The purpose of this study was to examine the influence of parental responsive support (observed) and perceived parental responsive support on athletes' self-perceptions and thriving.

**Methods:** Forty-one French-speaking Belgian individual sport athletes aged 12-15 years ( $M = 13.13$ ,  $SD = 0.90$ ) and one of their parent's spent 10 minutes discussing three important athletes' sport-related goals for the next season. The discussion was video-taped and coded to identify parents' responsive support behaviors. After the discussion, athletes responded to a series of questionnaires measuring perceived parental responsiveness, self-efficacy, self-esteem, and thriving indicators (i.e., positive affect, vitality, life satisfaction, and health quality).

**Results:** The results show that observed and perceived parental responsive support contributed to athletes' proximal perceptions of self-efficacy. Both parental observed responsive support and athletes' **perceived parental responsiveness**, mediated by athletes' self-efficacy, were positively related to athlete's self-esteem. Further, athletes' **perceived parental responsiveness** was positively related with thriving while mediated in series by self-efficacy and self-esteem.

**Conclusion:** Overall, it appears that parents' responsive support (observed) and athletes' perception of responsive support are associated with positive self-perceptions and optimal wellbeing in young athletes. This study demonstrates that parents can provide responsive support to their children in the sport context. These results add further weight to suggestions that sport organizations should actively include, rather than exclude, parents in their processes.

*Keywords:* adolescent athletes; parent-child relationships; perceived responsiveness; responsive support; thriving; youth sport

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47 **Effect of Parent Responsiveness on Young Athletes' Self-Perceptions and Thriving: An**  
48 **Exploratory Study in a Belgian French-Community**

49 Research has provided extensive evidence that the different sport experiences children  
50 have are largely influenced by the quality of their sport environment (Knight et al., 2017).  
51 Within such environments, parents, coaches, and peers have been consistently recognized as  
52 influencing young athletes' experiences in sport, for instance throughout the motivational  
53 climate they create (Keegan et al., 2010), or through the quality of their relationships with  
54 athletes (Babkes & Weiss, 1999). In particular, parents play a pivotal role, being the most  
55 important social influence in an athlete's life until the age of 13 years, and a continuing  
56 influence throughout an athlete's entire career (Wylleman & Rosier, 2016). Parents influence  
57 their children's sporting careers in multiple ways, not least through their provision of social  
58 support (i.e., the provision of aid and assistance through interpersonal exchanges and within  
59 relationship; Beets et al., 2010). For example, parents provide tangible support by committing  
60 time and money to enable participation. Further, parents provide emotional support at, and in  
61 preparation for, competitions, as well as informational support (Lauer et al., 2010). By  
62 providing such support, parents can influence athletes' psychosocial experiences, long-term  
63 engagement, and performance in sport (Knight et al., 2017).

64 However, it is not simply a matter of whether parents provide support or not that will  
65 influence athletes' experiences, rather, it is athletes' perception of support that is particularly  
66 important (Leff & Hoyle, 1995). That is, the extent to which athletes perceive their parents'  
67 behaviors as supportive, irrespective of what is actually being provided, will influence  
68 psychosocial outcomes and sporting performance (Babkes & Weiss, 1999). Parental behaviors  
69 that athletes may or may not perceive as supportive, can include, attendance at competitions,  
70 specific comments about performances, or their provision of tangible assistance. Further, it  
71 may include athletes' perception of their parents' beliefs about competency, or their

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72 perception of parents providing positive responses. When athletes perceive their parents'  
73 behaviors, attitudes, and beliefs as supportive, it can lead to increased motivation, enjoyment,  
74 self-esteem, or reduced stress and burnout (Babkes & Weiss, 1999; Leff & Hoyle, 1995).

75 Despite the potential for certain supportive parental behaviors to result in positive  
76 psychosocial outcomes, these are not guaranteed (Charbonneau & Camiré, 2019). For  
77 instance, Knight et al. (2011) demonstrated that athletes can perceive the behaviors of their  
78 parents (such as being present and vocal at competitions) as supportive, but if they are not  
79 presented in the “right ways” such behaviors can also lead to feelings of embarrassment.  
80 Athletes can perceive that their parents are providing necessary tangible support such as time,  
81 energy, effort, and money to enable them to participate in sport, but as a result of their  
82 investment, athletes may feel pressurized to perform (Lauer et al., 2010). Similarly, parents'  
83 attendance at competitions may appear to be supportive, but it can lead to them feeling they  
84 are being pressurized and controlled rather than supported (Charbonneau & Camiré, 2019).

85 One reason for such conflicting outcomes arising from seemingly supportive behaviors  
86 may be the extent to which the behaviors/support are responsive. The construct of  
87 responsiveness describes how individuals attend to and support each other's needs and goals.  
88 Reis et al. (2004) posits three key components of responsiveness which are *understanding*,  
89 *validation*, and *caring for*. *Understanding* refers to the support provider (e.g., a parent)  
90 comprehending the support recipient's (e.g., athlete) core self (e.g., needs, desire,  
91 weaknesses); *validation* is respect for or valuing the support recipient's view of the self; and  
92 *caring for* is associated with expressing affection, warmth, and concern for the support  
93 recipient's wellbeing (Reis et al., 2004; Reis & Gable, 2015). Previous research has shown  
94 that responsive support can result in positive outcomes such as positively influencing support  
95 recipients' self-efficacy (Lemay & Neal, 2014), self-esteem (Feeney, 2007; Smith & Reis,

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96 2012), and wellbeing (Tomlinson et al., 2016). Moreover, it can predict immediate and long-  
97 term increases in wellbeing a decade later among romantic couples (Selcuk et al., 2016).

98 Overall, responsiveness is a core process that has pushed forward understanding of how  
99 close relationships can promote optimal wellbeing (i.e., thriving) (Reis & Gable, 2015). Given  
100 such findings, it is anticipated that the construct of responsiveness could help to better  
101 understand the effect of parent's support within sport. However, it has yet to be examined in  
102 relation to parent-athlete relationships or sport settings more broadly. Applying and  
103 understanding responsiveness within the parent-child relationship is important because sport  
104 participation can be considered as a context that provides athletes with life opportunities for  
105 positive development and thriving (Carr, 2013). In such contexts, high quality relationships  
106 and family support are identified as key facilitators leading to athletes' experiencing thriving  
107 and performance benefits (Brown et al., 2018). To this end, the purpose of this study was to  
108 examine the influence of parental responsive support (observed) and perceived responsive  
109 support on athletes' self-perception and thriving within a Belgian French-Community.

### 110 **Theoretical Underpinnings**

111 Feeney and Collins' (2015) model of thriving through relationships was selected to  
112 underpin this study. This model integrates and builds upon well-known theories such as  
113 attachment theory (Bowlby, 1988), self-determination theory (Ryan & Deci, 2017), and  
114 traditional social support theories (Beets et al., 2010). The advantages of using Feeney and  
115 Collins' (2015) model for the understanding parent-athlete relationships are that; (a) it  
116 specifically accounts for the positive influences that social support can have in the context of  
117 life opportunities (e.g., sport participation); (b) it specifies the support behaviors that promote  
118 thriving in such contexts, and; (c) it specifically identifies the links between specific  
119 responsive interactions and thriving. Further, this model has been proposed as relevant to  
120 understand thriving in the context of elite sport participations (Brown et al., 2018).

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121 Feeney and Collins' (2015) model comprises two general pathways that detail how  
122 individuals may thrive as a result of their responsive interactions with close others. Thriving  
123 is the desired end-state of optimal wellbeing of the model and comprises five related  
124 components of hedonic (e.g., subjective wellbeing), eudemonic (e.g., goal accomplishment),  
125 psychological (e.g., positive self-regards), social (e.g., meaningful and deep connections with  
126 others), and health quality (e.g., health, fitness). The pathways correspond to the two life  
127 contexts of life adversity (e.g., losses, injuries, illnesses) and life opportunities (e.g., sport  
128 development, new opportunities). The current study focuses specifically upon the social  
129 support behaviors and pathway of thriving through relationships during life opportunities.

130 Feeney and Collins (2015) suggest that when individuals are in situations that are seen as  
131 life opportunities, supportive relationships can promote thriving through the provision of  
132 responsive support (termed relational-catalyst support by Feeney and Collins). Responsive  
133 support can be displayed throughout implicit and explicit behaviors (e.g., communicating,  
134 listening, providing encouragement, not unnecessarily interfering). When individuals  
135 encounter life opportunities, the provision of responsive support by the support provider (e.g.,  
136 a parent), combined (directly or indirectly) with the perception of the responsiveness of the  
137 support by the recipient (e.g., an athlete) can lead to various proximal psychosocial outcomes  
138 (e.g., perceived capability, or self-efficacy). Support for this pathway was identified by  
139 Tomlinson et al. (2016) in a study with romantic couples. In particular, Tomlinson and  
140 colleagues identified that, the provision and perception of responsive support during a 10-  
141 minute conversation about future goals predicted proximal outcomes in the recipient, such as  
142 their perceived capability to reach their goals. Based on these findings, the current study  
143 adopted a similar method to examine responsive support in the parent-athlete relationship.

144 Proximal outcomes such as perceived self-efficacy or competence are central mediators  
145 between responsive interactions (i.e., characterized by the provision and/or perception of



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146 responsive support) and thriving (Feeney & Collins, 2015), and thus were of particular  
147 interest within the current study. However, when seeking to apply Feeney and Collins' model,  
148 some clarity is required regarding the definitions of, and interactions between, self-efficacy  
149 and self-esteem. Feeney and Collins do not provide a clear definition of self-esteem and  
150 recent studies based on their model (e.g., Feeney, 2007; Tomlinson et al., 2016) have  
151 considered self-esteem as a unidimensional construct rather than adopting the  
152 multidimensional perspective that is currently accepted (Marsh et al., 2018). Moreover, in  
153 their research (Feeney et al., 2017), self-efficacy is measured with a global measure that could  
154 be confounded with self-esteem (Maddux, 2009). To prevent issues in the current study, a  
155 clarification of the conceptualization of self-efficacy and self-esteem were made.

156 In line with Bandura's (2006) definition, self-efficacy was considered to be an individual's  
157 belief in their capabilities to produce a given attainment. Thus, self-efficacy was viewed as  
158 specific and prospective, and an indicator of what individual's perceived they would be able  
159 to accomplish in a particular context. As such, self-efficacy was anticipated to be a proximal  
160 outcome of a specific parent-athlete interaction. In contrast, self-esteem was conceptualized as  
161 a broader construct situated at the apex of individuals' hierarchy of self-perceptions, that is  
162 largely based on evaluating past-accomplishments and the general sense an individual has  
163 about their self. Thus, self-esteem was seen to more strongly predict distal (rather than  
164 proximal) outcomes (Marsh et al., 2018). Based on this theoretical standpoint, it was  
165 anticipated that after a specific interaction in a positive context (e.g., life opportunity),  
166 responsive interactions would lead to a proximal increase in the support recipient's self-  
167 efficacy (Feeney & Collins, 2015). The support recipient's self-efficacy (which is specific and  
168 prospective), would subsequently influence general self-esteem (Marsh et al., 2018) because.  
169 interactions that are responsive in specific situations, leading to proximal outcomes (e.g., self-  
170 efficacy), should also reflect the typical responsive interactions among dyads therefore

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171 leading to the generalization of the outcomes (i.e., self-esteem) (Feeney & Collins, 2015).

172 Eventually, it was anticipated that higher levels of general self-esteem would predict higher

173 levels of thriving (Feeney & Collins, 2015; Marsh et al., 2018).

### 174 **The Current Study**

175 Based on Feeney and Collins' (2015) thriving through relationship model, the purpose of

176 this study was to examine the influence of parental responsive support (observed) and

177 perceived responsive support on athletes' self-perception and thriving within a Belgian

178 French-Community. Three hypotheses were proposed:

179 • Hypothesis 1: After a specific interaction, the observed parents' provision of responsive  
180 support and athletes' perceived parental responsiveness (PPR) would be positively related  
181 to athletes' perceived self-efficacy to reach their goals.

182 • Hypothesis 2: Athletes' perceived self-efficacy to reach their goals would mediate the  
183 relationship between responsive interactions and athletes' general self-esteem.

184 • Hypothesis 3: Athletes' self-esteem would subsequently be related with the general  
185 thriving components of positive affect, vitality, life satisfaction, and health quality.

### 186 **Method**

#### 187 **Study Context**

188 It is important to situate the understanding parent-child relationships through the prism of  
189 their cultural context because different parenting practices may serve the same function, and

190 the same practices may serve different functions in different contexts (Bornstein, 1995, 2012).

191 For instance, an authoritarian parenting style (high control, low warmth) may lead to positive

192 outcomes in African American and Hong Kong school children, while an authoritative

193 parenting style (high warmth, high control) may lead to positive outcomes in European

194 American school children (Leung et al., 1998). The present study took place in the French-

195 Community in Belgium. Belgium is considered a progressive and liberal European country

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196 where parents remain an important source of socialization for their children even in late  
197 adolescence (Beyers & Goossens, 2008). In this context, research shows that supportive  
198 parenting is characterized by high levels of responsiveness and autonomy support, and low  
199 levels of behavioral and psychological control (Delhay et al., 2012).

**200 Participants**

201 Following Schweizer and Furley's (2016) recommendations for reproducible research, a  
202 priori power analyses were conducted to determine the minimal sample based on key  
203 variables (i.e., responsive support, PPR, self-efficacy and self-esteem) from studies with a  
204 similar methodology (Feeney et al., 2017; Lemay & Neal, 2014; Tomlinson et al., 2016). In  
205 those studies, the association between the observed and perceived responsive support, and  
206 their subsequent association with perceived self-efficacy and self-esteem consistently  
207 demonstrated moderate ( $r = 0.3$ ) to large ( $r = 0.5$ ) effect sizes. Specifically, a priori power  
208 analyses using MedPower (Kenny, 2017) were used to determine the minimal sample for  
209 indirect effects with the following inputs:  $r = (0.30 : 0.50)$ ,  $\alpha = 0.10$ , power  $(1-\beta) = 0.80$ . The  
210 minimal sample size for indirect effects was estimated between  $N = 30$  ( $r = .50$ ) and  $N = 89$  ( $r$   
211  $= .30$ ). In total, 41 parent-athlete dyads participated. The issue of the sample size is addressed  
212 later when describing the procedure.

213 The 41 athletes were all French speaking, living in Belgium. Individual sports from the  
214 French-Community were chosen as appropriate because in Belgium, the organization of sport  
215 is a responsibility of the communities, with each of the three communities (Flemish, French,  
216 and German speaking communities) having their own policy, structures, and legal instrument  
217 to rule sports matter (Scheerder et al., 2011). French-speaking sport federations are generally  
218 small, with two-thirds of them having less than 5000 members (Winand et al., 2010), and  
219 relying heavily upon volunteers (Scheerder et al., 2011). It is therefore usual for parents to be  
220 involved in sport, especially in individual sports (Zintz, 2005). Selecting participants from

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221 individual sports in the Belgian French-Community ensured parents were committed and  
222 involved in their children's sport, and had a good understanding of the sport context.

223 Athletes were aged between 12 and 14 years ( $M = 13.13$ ,  $SD = 0.90$ ). This age range was  
224 selected because: (a) athletes were deemed to be cognitively capable of answering the  
225 questions (Harter, 2012); (b) participants would be able to produce self-determined goals; (c)  
226 parents are a large influence in their lives (Wylleman & Rosier, 2016), and; (d) athletes were  
227 in the specialization phase of sport development (Côté, 1999) and as such were committed to  
228 training and competition. Athletes involved in individual sports were selected to ensure they  
229 would discuss their own rather than team goals. Athletes were from athletics ( $n = 14$ ), sport  
230 climbing ( $n = 12$ ), tennis ( $n = 7$ ), gymnastics ( $n = 4$ ), and swimming ( $n = 4$ ). They trained on  
231 average 3.03 times/week ( $SD = 0.72$ ) and had been involved in sport for an average of 7.33  
232 years ( $SD = 2.30$ ).

233 In total, 24 mothers and 17 fathers participated in the study, with a mean age of 44.83 years  
234 ( $SD = 5.20$ ). Eight parents were single parents (19.51%). Parents had on average 2.39 children  
235 ( $SD = 0.86$ ) Parents' highest level of education were: professional qualification ( $n = 8$ ),  
236 secondary education ( $n = 6$ ), undergraduate/bachelor's degree ( $n = 11$ ), Master's degree ( $n =$   
237 13), and PhD ( $n = 8$ ). Six of the parents had no sport experience (14.63%); all other parents  
238 were involved in sport in some form.

**239 Procedure**

240 Following receipt of ethical approval, sports coaches, managers, and committee members  
241 from sport clubs were contacted to identify if they were happy for the lead researcher to  
242 attend their training venue and speak to potential participants about the study. If interested,  
243 the researcher arranged a time to attend and share information about the study with parent and  
244 athlete dyads. The parent who self-identified as the most involved in their child's sport (to  
245 ensure they had a good understanding of the sport environment; Knight & Holt, 2014) was the

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246 second member of the dyad. Dyads were given an information sheet and asked to contact the  
247 researcher if they were interested in the study to schedule a time for data collection.

248 When participants arrived for the study, they were reminded of the purpose and signed the  
249 consent/assent form. Then, the athlete and their parent were invited into a semi-private room  
250 at their sport club. The room was equipped with chairs, a table, and a discrete audio/video  
251 recording system. When entering the room, the parent and athlete received an instruction  
252 **sheet** detailing the goal setting task and the instructions were read aloud by the researcher.  
253 Specifically, the researcher asked the young athlete to spend 10 minutes setting three  
254 important sport-related goals for the next year and discussing these with their parent, and to  
255 write them on the provided sheet. Athletes were informed their goals could include anything  
256 they considered as important linked to their sport participation such as skills they wanted to  
257 develop, something they want to do more/less, or their performance. Athletes were told these  
258 goals would not be shared with their club or coach and would remain confidential.

259 The parent-athlete interaction was unobtrusively videotaped while the researcher sat in a  
260 different room. Following the goal setting activity, the athlete completed a series of  
261 questionnaires assessing their perceptions of parental responsiveness, self-efficacy, self-  
262 esteem, and thriving factors of affect, vitality, life satisfaction, and health quality. The  
263 completion of the questionnaires took approximately 20 minutes and during this time, parents  
264 were asked to respond to general demographic questions.

**265 Measures**

266 Questionnaires either available in French or translated from English into French using a  
267 back-translation procedure as recommended by Hambleton and Zenisky (2010) were used in  
268 the present study. For each questionnaire, internal consistency were assessed with  $\Omega_{\text{total}}$   
269 ( $\omega_t$ ; Revelle & Zinbarg, 2009). Further examination of construct validity was assessed when  
270 necessary (i.e., modified scale, composite variable) with confirmatory factorial analysis

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271 (CFA). Support for the goodness of fit between the model and the observed data were  
272 considered when; (a) comparative fit index (CFI) and Tucker Lewis index (TLI) values were  
273 close to .95 or greater, and; (b) root mean square error of approximation (RMSEA) values  
274 were close to .06 or below, and standardized root mean square residual (SRMR) values were  
275 close to .08 or below (Brown, 2015). CFA analysis considered parameter estimates (e.g.,  
276 factor loadings, error variances, factor variances) such as standardized residuals (Brown,  
277 2015) and the content of each problematic item (e.g., weak factor loading, cross-loading) to  
278 ensure that its deletion would not affect the theoretical meaning of a construct (Carpenter,  
279 2018). Due to potential non-normal distribution of the data, CFA analysis were computed  
280 with robust maximum likelihood estimator with Satorra-Bentler scaled tests (Brown, 2015).

281

282 **Perceived parental responsiveness.** Athletes' perceptions of parental responsiveness  
283 (PPR) was assessed through the perceived partner responsiveness questionnaire (Tomlinson et  
284 al., 2016). This questionnaire comprises nine items and responses were provided on a 5-point  
285 Likert scale ranging from 1 (*not at all*) to 5 (*extremely*). Slight modifications to the original  
286 scale were made in order to refer to the athlete's parent rather than a romantic partner. The  
287 CFA analysis showed that three items had a low factor loading and low variance. Based on  
288 the rules indicated above, these items were discarded leaving six items that demonstrated a  
289 sufficient factor loading and good internal consistency (i.e.,  $\omega_t = 0.83$ ). The six remaining  
290 items were: When you shared your goals, your parent was (a) *affectionate*, (b) *helpful/*  
291 *supportive*, (c) *comforting /reassuring*, (d) *giving of assistance*, (e) *encouraging*, and (f)  
292 *sensitive/responsive*. The CFA with robust errors showed a good fit to the data:  $\chi^2(9) = 9.84$ ,  
293  $p = 0.37$ , CFI = 0.98, TLI = 0.98, RMSEA = 0.05, SRMR = 0.06. The six items were  
294 averaged into a single score of PPR with higher scores representing stronger perceptions of  
295 parental responsiveness.

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296       **Perceived self-efficacy.** A perceived self-efficacy scale was specifically built for the  
297 purpose of this study. Following Bandura's (2006) recommendations, the measure of self-  
298 efficacy was designed to reflect athletes' perceived capability to execute the goals they had  
299 set with their parents and included the perceived level of difficulty of the tasks. For each of  
300 the three goals the athletes discussed with their parent, they were asked to indicate on a 5-  
301 point Likert scale anchored by 1 (*not at all*) and 5 (*extremely*) the extent to which they  
302 perceived, (a) the goal was important for them (i.e., *importance*), (b) they felt capable to  
303 accomplish this goal (i.e., *capability*), (c) if they were capable of continuous efforts to reach  
304 this goal (i.e., *effort*), (d) if they will pursue the goal continuously (i.e., *pursuit*), and (e) if this  
305 goal was difficult to reach (i.e., *difficulty*). The computation of self-efficacy scores followed  
306 Kiresuk and Sherman's (1968) methodology to aggregate scores from various types of goals  
307 that are important to the individual. Therefore, for each of the three goals that athletes had set,  
308 perceived capability, effort, and pursuit were weighted by importance and difficulty. The  
309 three items of self-efficacy demonstrated a sufficient factor loading (0.46–0.75) and fair  
310 internal consistency ( $\omega_t = 0.61$ ). An average score of perceived self-efficacy was computed  
311 with higher scores representing stronger perceptions of self-efficacy (Bandura, 2006).

312       **Global self-esteem.** The five items from the short version of the Physical Self-Description  
313 Questionnaire (Marsh & Richards, 1994) assessing self-esteem were used. The athletes  
314 indicated the extent to which, during the last month in their everyday life, they had a lot to be  
315 proud of, they did well, or things turned out well; and if they were no good or if nothing they  
316 did ever seemed to turn out right (reverse items). Their responses were provided on a 5-point  
317 Likert scale anchored by 1 (*strongly disagree*) and 5 (*strongly agree*). The scale showed a  
318 good internal consistency (i.e.,  $\omega_t = 0.71$ ) and the five items were averaged to create a global  
319 score of self-esteem with higher scores indicating higher levels of self-esteem.

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320 **Affect.** Positive and negative affect were assessed using the 10-item Positive and Negative  
321 Affect scale for Children (PANAS-C; Ebesutani et al., 2012). Athletes rated on a 5-point  
322 Likert scale from 1 (*not at all*) to 5 (*extremely*) the extent to which they, at the moment, felt  
323 *joyful, miserable, cheerful, mad, happy, afraid, lively, scared, proud, and sad*. The five-  
324 negative affect (NA) items lacked variance and did not allowed to compute reliability  
325 estimates. Consequently, the decision was made to only retain the positive affect (PA) scale  
326 for further analyses. The five PA items demonstrated a good internal reliability (i.e.,  $\omega_t =$   
327 0.80) and were averaged to create a global score of positive affect with higher scores  
328 indicating higher levels of positive affect.

329 **Subjective vitality.** Athletes rated, on a 5-point Likert scale from 1 (*strongly disagree*) to  
330 5 (*strongly agree*), the extent to which, during the last month in their everyday life, they felt  
331 full of excitement, they had high spirit, they looked forward to each day, they felt alert and  
332 awake, and if they had a lot of energy (Ryan & Frederick, 1997). The five items demonstrated  
333 a good internal reliability (i.e.,  $\omega_t = 0.84$ ) and were averaged to create a global score of  
334 vitality with higher scores indicating higher levels of vitality.

335 **Life satisfaction.** Life satisfaction was assessed using the single item of Cantril Ladder of  
336 self-rated life satisfaction (Cantril, 1965). This ladder ranged from 0 (*I have the worst*  
337 *possible life for me at the moment*) to 10 (*I have the best possible life for me at the moment*).

338 **Health quality.** Health quality was assessed using a single item scale from 1 (*my health is*  
339 *poor*) to 4 (*my health is excellent*) (Benjamins et al., 2004).

340 **Responsive support (observed).** The provision of responsive support comprises implicit  
341 and explicit behaviors that are not necessarily perceived by the support provider themselves  
342 (Feeney & Collins, 2015). Consequently, behavioral video-coding to assess the provided  
343 responsive support was required. This methodology has been regularly used to assess the  
344 provision of responsive support (Feeney et al., 2017; Lemay & Neal, 2014).



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345 **Video coding procedure.** Video recordings were used to develop a behavioral coding  
346 system assessing the responsive support provided by parents. The behavioral coding system  
347 was developed using Aslpand and Gardner's (2003) recommendations for observational  
348 measures. Based on Tomlinson et al.'s (2016) study, nine behaviors were proposed for coding  
349 responsive support behaviors, but changes were needed to reflect the parent-athlete  
350 interactions and to take into account the sport context. Thus, a pilot study with six parent-  
351 athlete dyads with similar characteristics to those involved in the full study was carried out to  
352 generate a coding **manual** and to develop the final responsive support coding system. The  
353 recordings of the dyad goal-setting activities were initially independently coded by the lead  
354 researcher and two other members of the research team using Tomlinson et al.'s (2016) items  
355 of responsive support. The coders then shared their results and discussed the difficulties and  
356 clarifications needed in the coding manual in order to increase the coding consistency.

357 The nine responsive support parental behaviors were: (a) *warmth and positive affect* (e.g.,  
358 the parent demonstrates a positive tone); (b) *listening and attentive* (e.g., when the child  
359 speaks, the parent does not interrupt); (c) *confidence in the child's ability* (e.g., the parent  
360 values the child's ability to manage the goals and related requirements autonomously); (d)  
361 *support for the child's goals* (e.g., agreement to the child's goals); (e) *responsive emotional*  
362 *support* (e.g., the parent understands or strives to understand, validate, and care for the child's  
363 goal); (f) *responsive instrumental support* (e.g., the parent proposes planning, organizing  
364 based on child's requirements); (g) *goal reflection* (e.g., the parent reflects and nurtures the  
365 child's desire); (h) *proximity-seeking behaviors* (e.g., oriented to the child); and (i)  
366 *sensitive/responsive caregiving* (e.g., general feeling of whether the parent is responsive and  
367 sensitive to the child's needs and wishes).

368 Subsequently, three independent coders, blind to the study hypotheses, were trained based  
369 on the pilot videos. The coders were asked to assess the extent to which parents showed

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370 support for their child's sport goals. These behaviors were coded on visual analogue scales  
371 ranging from "Not at all" to "A great deal." The order of the videos for coding was  
372 randomized between coders. Coders watched the videos twice, in a quiet environment with  
373 headphones and without pauses. Immediately after watching the videos, they scored the  
374 parents' behaviors across the nine responsive support items. The coders also noted down the  
375 key behaviors they had considered when scoring each item. Coders' notes for the key  
376 behaviors of parents observed demonstrating high levels of responsive support included the  
377 following: The parent is confident in their child's ability and asked further questions to  
378 confirm that the goal is achievable; the tone is positive, warm, and the parent smiles during  
379 the interaction; the parent listens to their child and does not interrupt when the child is  
380 speaking. In contrast, notes for behaviors demonstrating a low level of responsive support  
381 included the following: the parent interrupts their child and dictates their own goals, their tone  
382 is neutral but there is a lack of smiling; when the child expresses their desire for their parent  
383 to support them more in sport, the parent does not react; the parent restrains their child's goals  
384 in sport and tries to convince them to reduce their ambitions.

385 The inter-rater reliability (IRR) of the coding was evaluated with a fully-crossed design (all  
386 coders coded all videos) and scores computed using intra-class correlation (ICC) (Hallgren,  
387 2012). All variables were standardized before analysis, and the ICC analysis performed as  
388 two-way models on items consistencies (Hallgren, 2012). The intra-class correlations were:  
389 (a) *warmth and positive affect* = 0.73; (b) *listening and attentive* = 0.48; (c) *confidence in the*  
390 *child's ability* = 0.50; (d) *support for the child's goals* = 0.76; (e) *responsive emotional*  
391 *support* = 0.66; (f) *responsive instrumental support* = 0.74; (g) *goal reflection* = 0.57; (h)  
392 *proximity-seeking behaviors* = 0.52; and (i) *sensitive/responsive caregiving* = 0.60. Item 6  
393 (i.e., responsive instrumental support) was reported as problematic by coders as the  
394 instrumental support was only relevant for 19 parents (out of 41). Thus, item 6 was removed

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395 from further analyses. For each item, the scores from the three coders were subsequently  
396 averaged, and the eight remaining items demonstrated a good internal reliability ( $\omega_t = 0.95$ ).  
397 A CFA with robust errors showed that a one factor model with eight items demonstrated a  
398 good fit to the data:  $\chi^2(17) = 21.51, p = 0.20, CFI = 0.99, TLI = 0.98, RMSEA = 0.08, SRMR$   
399  $= 0.05$ . The eight items were averaged into a single variable of observed responsive support  
400 with higher scores indicating higher levels of observed parental responsive support.

### 401 **Data Analysis**

402 All data were analyzed with R-statistics (R Core Team, 2018). Since most variables  
403 were negatively skewed and non-normally distributed (see Table 1), the decision was made to  
404 use the non-parametric Spearman rank-order correlation for the preliminary analysis.  
405 Subsequently, the main analysis consisted of mediation analyzes performed with Structural  
406 Equation Modelling (SEM) (Hayes, 2018). Following Savalei's (2019) recommendations for  
407 small samples, latent variables were estimated with single indicators and fixed reliability ( $\alpha =$   
408  $0.90$ ). This method controls for measurement errors and helps to maintain good Type-1 error  
409 rate without increasing of the variability of the estimates (Savalei, 2019). Considering the  
410 small sample involved in the present research, further measures were taken to ensure  
411 transparency and reproducibility of the findings (Button et al., 2013). **As such, instruction**  
412 **sheets, coding manual, questionnaires used, the full script of analyzes, and complete results**  
413 **are available upon request to the corresponding author.**

## 414 **Results**

### 415 **Preliminary Analyzes**

416 During the 10-minute interaction, athletes and parents freely set and discussed a variety of  
417 goals pertaining to athletes' aims to increase their sport participation (22.95%), competitive  
418 outcomes (20.49%), self-referenced performances (18.85%), specialization into their main  
419 sport (6.56%), management of emotions and affect (6.56%), task/mastery goals (5.74%),

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420 parental involvement in sport (5.74%), health (3.28%) enjoyment in sport (2.46%),  
421 relationships with peers (3.28%) and with their coach (1.64%), sport/life balance (1.64%),  
422 and, finally, school (0.82%). The content of the goals discussed was not critical for the study,  
423 rather the aim of the activity was simply to establish a typical parent-athlete interaction in the  
424 context of life opportunities, which would subsequently enable analysis of parental  
425 responsiveness. Therefore, the content of the goals was not used in further analyses.

426 Demographic information such as parents' education, family structure, and type of sport  
427 was entered in preliminary analysis and did not demonstrate any relationship with the  
428 predictor or outcome variables. Thus, the decision was made not to use them in subsequent  
429 analyses. As expected, due to the positive focus of the study, most variables demonstrated a  
430 high mean and were negatively skewed. The correlation between parent's responsive support  
431 (observed) and athletes' PPR was not significant ( $r = 0.04$ , *ns*). All other correlations (see  
432 Table 1) were in the expected directions.

433 \*\*\*\*\*INSERT TABLE 1 HERE \*\*\*\*\*

434 The four components of thriving (e.g., positive affect, vitality, health quality, and life  
435 satisfaction) were positively correlated (see Table 1),  $r = [0.32-0.48]$ , and the account of these  
436 components as a higher order factor of thriving is theoretically relevant (Feeney & Collins,  
437 2015). Thus, using a CFA, a one factor model of thriving created from merging the scales was  
438 conducted. The CFA demonstrated a good fit to the data:  $\chi^2(52) = 55.70$ ,  $p = 0.34$ , CFI =  
439 0.98, TLI = 0.94, RMSEA = 0.04, SRMR = 0.08. The four components significantly loaded  
440 on the higher order factor of thriving: positive affect ( $\beta = 0.71$ ), vitality ( $\beta = 0.95$ ), life  
441 satisfaction ( $\beta = 0.79$ ), and health quality ( $\beta = 0.59$ ), and the scale demonstrated a good  
442 internal reliability (i.e.,  $\omega_t = 0.72$ ). Thus, the scores of positive affect, vitality, health quality,  
443 and life satisfaction were averaged as a new variable, *thriving* ( $M = 4.12$ ,  $SD = 0.52$ ), with  
444 higher scores representing higher levels of thriving. Spearman correlations (Table 1) showed

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445 that the thriving component was positively correlated with athletes' self-efficacy ( $r = .30$ ) and  
446 self-esteem ( $r = .58$ ), and negatively correlated with athletes age ( $r = -.30$ ).

447 **Main Findings**

448 Descriptive analysis showed positive correlations between the parent's responsive support  
449 (observed) ( $r = .32$ ) and athletes' PPR ( $r = .40$ ) with athletes' self-efficacy. Spearman  
450 correlations also showed that athletes' self-efficacy was positively correlated with their  
451 general self-esteem ( $r = .36$ ). Consequently, a mediation analysis was appropriate to test the  
452 first and second hypotheses together (Hayes, 2018). The first mediation tested the relationship  
453 between athletes' PPR and parental responsive support (observed) on athletes' self-esteem,  
454 mediated by athletes' perceived self-efficacy to reach their goals. Athletes' age and gender,  
455 parents' age and gender, and athletes' years of involvement in their sport were entered as  
456 control variables in the model.

457 The results of the first mediation showed that: (a) Athletes' PPR ( $\beta = .39$ ) and observed  
458 parental responsive support ( $\beta = .20$ ) were positively related with athletes' self-efficacy ( $r^2 =$   
459  $0.55$ ), and (b) athletes' self-efficacy was in turn positively related with athletes' self-esteem ( $\beta$   
460  $= .53$ ). But the mediation showed that only athletes' PPR was related with athletes' self-  
461 esteem while mediated through athletes' self-efficacy ( $\beta = .20$ ),  $r^2 = 0.47$ ,  $p = 0.035$  (see  
462 **Table 2**). Athletes' age was directly and negatively related to athletes' self-efficacy ( $\beta = -.11$ )  
463 and self-esteem ( $\beta = -.14$ ). The other control variables (i.e., athletes' gender, parents' age and  
464 gender, and athletes' years of involvement in sport) did not demonstrated any significant  
465 effect in the model.

466 \*\*\*\*\*INSERT TABLE 2 HERE \*\*\*\*\*

467 Based on results of the first mediation, it was decided to pursue a serial mediation testing  
468 the relationship between athletes' PPR and observed parental responsive support on athletes'  
469 thriving, mediated in series by perceived self-efficacy and self-esteem. Athletes' age and

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470 gender, parents' age and gender, and athletes' years of involvement in their sport were entered  
471 as control variables in the model.

472 The results of the serial mediation showed that athletes' PPR ( $\beta = .39$ ) and observed  
473 parents' responsive support ( $\beta = .20$ ) were positively related to athletes' self-efficacy ( $r^2 =$   
474  $0.55$ ), which in turn was positively related with self-esteem ( $\beta = .53$ ;  $r^2 = 0.47$ ), and then  
475 positively related ( $\beta = .79$ ) with thriving. The association of athletes' PPR on thriving was  
476 mediated in series through athletes' perceived self-efficacy and self-esteem:  $\beta = .16$  (see  
477 Table 3),  $r^2 = 0.55$ ,  $p = 0.055$ . Athletes' age was negatively related to athletes' self-efficacy ( $\beta$   
478  $= -.11$ ) and self-esteem ( $\beta = -.14$ ). The other control variables (i.e., athletes' gender, parents'  
479 age and gender, and athletes' years of involvement in sport) did not demonstrate any  
480 significant effect in the model.

481 \*\*\*\*\*INSERT TABLE 3 HERE \*\*\*\*\*

### 482 Discussion

483 The purpose of this study was to examine the influence of parental responsive support  
484 (observed) and perceived responsive support on athletes' self-perception and thriving within a  
485 Belgian French-Community. The first hypothesis was that parent's responsive support and  
486 athlete's PPR would be positively related to athletes' immediate perceptions of self-efficacy  
487 to reach their goals. The second hypothesis stated athletes' perceived self-efficacy to reach  
488 their goals would mediate the relationship between responsive interactions and athletes' self-  
489 esteem. The third hypothesis stated that athletes' self-esteem would be related with the  
490 general thriving components of positive affect, vitality, life satisfaction, and health quality.

491 The results supported the first hypothesis as parent's responsive support (observed) and  
492 athletes' PPR significantly contributed to athletes' immediate perceptions of self-efficacy.  
493 The results partially supported the second hypothesis as athletes' perceived self-efficacy to  
494 reach their goals only mediated the association between athletes' PPR and their self-esteem.

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495 This means that athletes whom perceived their parents understood them, valued their person,  
496 and cared for them (i.e., the three components of perceived responsiveness; Reis & Gable,  
497 2015) during a specific interaction, reported higher perceptions of self-efficacy to reach their  
498 goals and subsequent higher levels of self-esteem. The results further supported the third  
499 hypothesis, indicating that athletes' perceptions of self-esteem were significantly and  
500 positively related to a general indicator of thriving comprising positive affect, vitality, life  
501 satisfaction, and health quality. Overall, the results of the study showed that after a 10-minute  
502 interaction, athletes' PPR, mediated by athletes' self-efficacy, was positively related to  
503 athletes' self-esteem. Further, athletes' PPR was positively related with thriving, while  
504 mediated in series by self-efficacy and self-esteem.

505 A unique finding was that higher levels of parent-athlete responsive interactions were  
506 positively related with higher levels of athletes' perceived self-efficacy to accomplish their  
507 goals. During these interactions, both the parent's (observed) responsive support and athletes'  
508 perceptions of the responsiveness of the support contributed to increased athletes' perceived  
509 self-efficacy. These results reveal that parents' responsiveness could be a source of self-  
510 efficacy for athletes to accomplish their sport-related goals. As such, the results of the present  
511 study reinforce the idea that optimal parental involvement in sport is dependent upon, or  
512 influenced by, parent's development of an understanding emotional climate (Knight & Holt,  
513 2014). These results also provide a **possible explanation** to findings reported in previous  
514 qualitative studies which have indicated that when parental support was perceived as  
515 appropriate by young athletes, it positively influenced their sport involvement, motivation,  
516 and perceptions of competence (Knight et al., 2011). Similarly, these results resonate with  
517 findings from Clarke et al. (2016) in youth elite football, which indicated that players valued  
518 their fathers' involvement when they had the feeling their father cared for them.

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519 In order to be responsive, parents do not necessarily need to be an expert in sport, rather  
520 they need to simply demonstrate their interest, desire to understand, supporting to their child's  
521 goals, listening, being attentive, or interacting in a positive tone (Feeney & Collins, 2015).  
522 Further, being responsive does not mean that parents must praise and reward certain types of  
523 goals (e.g., mastery goals) to the detriment of other types of goals (e.g., ego goals). Rather, in  
524 the present study, responsive interactions were characterized by parents and athletes  
525 discussing various and indiscriminate types of goals, and such responsive interactions were  
526 related to athletes having higher perceived self-efficacy to accomplish their goals.

527 The current study also showed that parents' responsive behaviors (coded by three  
528 independent coders) were not related to athletes' perceptions of their parent's responsiveness.  
529 This finding aligns with previous research in sport that has indicated that actual parental  
530 behaviors are not necessarily perceived by athletes (e.g., Babkes & Weiss, 1999). Further, this  
531 finding converges with an alternative pathway proposed by Feeney and Collins' (2015). This  
532 pathway proposes that the proximal outcomes of responsive interactions may be predicted  
533 directly by the provision of responsive support, without such support being perceived (e.g., by  
534 the athlete), when the support is provided invisibly or subtlety (e.g., non-intrusive listening,  
535 directing attention to opportunities), or because responsive support may involve saying  
536 something that the recipient does not want to hear (e.g., reframing unattainable goals).

537 In an attempt to further understand the discrepancies between observed parental responsive  
538 support and athletes' PPR, exploratory analysis was carried out with a transformation of  
539 observed responsive support based on the median scores in a two-factor categorical variable  
540 (low, high) that provided new insights. The median scores of PPR were not significantly  
541 different depending on the level of observed parental responsive support, low responsive  
542 support (Median = 4.30), vs. high responsive support (Median = 4.00),  $W = 205$ ,  $p = 0.90$ . A  
543 non-parametric Siegel-Tukey test showed a significant reduction in the variance in athletes'



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544 PPR for the parents that were observed demonstrating high level of responsive support,  $p =$   
545 0.01. Parents who were categorized based on the observations as providing high responsive  
546 support were also more consistently identified by athletes as providing high support,  
547 illustrated through a significant reduction in the variance of athletes' PPR. That is, when  
548 parents were observed demonstrating high level of responsive support, it appeared to lead to  
549 athletes developing homogeneous perceptions of their parents' behaviors, but when parents  
550 were observed demonstrating low level of responsive support, athletes' perceptions of such  
551 support increased in variability. These results could be interpreted in accordance with  
552 arguments suggesting that the perception of responsive support is the result of both accurately  
553 detecting supportive behaviors and the perceiver's cognitive biases (Lemay & Neal, 2014).  
554 For instance, it is possible that athletes perceived their parent's behaviors were more  
555 responsive because of the high value they placed on their relationship with them (Lemay &  
556 Neal, 2014). It may also be that athletes with parents who were observed demonstrating a  
557 high level of responsive support were more accurate in their perceptions of support because  
558 they have gradually internalized the benefits of such responsive support through their  
559 continuous interactions with their parents (Bowlby, 1988). Athletes with parents  
560 demonstrating a low level of responsive support may be unaware of what is required to be  
561 responsive to their needs, leading to more variable responses on their level of PPR.

562 The results showed that of the control variables that were entered in the models (i.e.,  
563 athletes' age and gender, parents' age and gender, and athletes' years of involvement in  
564 sport), only participants' age was negatively related to self-efficacy and self-esteem. This  
565 negative relationship between participants' age and their self-perceptions (e.g., self-efficacy  
566 and self-esteem) aligns with developmental models suggesting a decline in self-perception  
567 associated with increased cognitive abilities and increased capacity for social comparison in  
568 early adolescence (Harter, 2012). Hence, it is possible that a decrease in participants' self-

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569 perception with age could be related to their increased reliance on peer comparison rather than  
570 relying on their parental influences. A decrease in adolescent self-perception could also be  
571 related to changes in the type and amount, and relative importance, of the activities in which  
572 they are involved (Inchley et al., 2011). In sport the similar negative effect of age on self-  
573 perception at adolescence has also been reported (Coatsworth & Conroy, 2006; Marsh et al.,  
574 2006), therefore supporting the need to control for such variables in the models. Another  
575 explanation for the reduced influence of parents observed and perceived responsiveness on  
576 young athletes' self-perception and thriving with age could be related to the gradual decrease  
577 in parental involvement around adolescence, associated with an increased influence of  
578 coaches and peers (Wylleman & Rosier, 2016).

**579 Applied Implications**

580 The results of the present study showed that (a) parents' observed responsive support was  
581 not necessarily perceived by young athletes, (b) athletes' perceptions of their parent's  
582 responsiveness was central to their positive self-perceptions (i.e., self-efficacy and self-  
583 esteem) and thriving in sport, and (c) these relationships stood even when the parental  
584 responsive support was not detected by young athletes. Thus, it seems that rather than  
585 focusing on what support parents provide or do not provide for their children, it is more  
586 important to acknowledge that parent-athlete relationships are complex endeavors and must  
587 be examined and considered at an individual level (Knight et al., 2017). Potentially, certain  
588 parental behaviors may appear from the outside to be unresponsive, but if such behaviors are  
589 perceived by that specific athlete as responsive, they can still result in positive outcomes.  
590 Similarly, certain parental behaviors may appear to be appropriate or responsive but if they  
591 are perceived as unresponsive by the athlete, they could result in the perception of pressure  
592 and related negative outcomes. Consequently, prudence is required by coaches and sport

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593 organizations when externally viewing parents' behaviors and consequently interpreting or  
594 assuming what impact they will have upon children.

595 Further, the present study demonstrated that parents can and do provide responsive support  
596 to their children in the sport context, when discussing sport-related goals. Such responsive  
597 support resulted in positive outcomes for young athletes both in terms of perceived self-  
598 efficacy and in increasing athletes' self-esteem and thriving. Given such a finding, it is clear  
599 that parents are and should be recognized as allies that actively contribute to their children's  
600 sporting and psychosocial development. As such, the results of the present study add further  
601 weight to suggestions that sport organizations should actively include, rather than exclude,  
602 parents in their processes (e.g., Thrower et al., 2017). Such engagement could occur by clubs/  
603 organizations sharing the sport-related goals that athletes have set with their parents. This  
604 would allow parents the opportunity to have a better understanding of their children's needs  
605 and wishes in sport, and enable parents to provide responsive support for such aims.

### 606 **Limitations and Future Research Directions**

607 The results of this study should be considered within the limitations. The study was a  
608 cross-sectional explorative study with a relatively small number of participants. The  
609 exploratory nature arose due to the numerous advances that were required at a theoretical  
610 level (i.e., implementing a new theoretical framework in sport science) and at a  
611 methodological level (i.e., development of a video-coding procedure) for this study. These  
612 novelties led to the selection of a parsimonious design for the data collection, which is why a  
613 cross-sectional design with purposefully chosen participants was deemed appropriate.  
614 Participants were purposefully sampled from individual sports clubs and may not be  
615 representative of the general population nor the sport population. For instance, the high  
616 educational level of parents that participated in the study should be acknowledged and might  
617 influence the generalizability of the results. Moreover, participants from a Belgian French-

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618 Community were actively recruited as parents are highly involved in their child's sport, but  
619 consequently the results may not apply in contexts that require less involvement from parents.

620 A number of steps were taken to mitigate issues of normativity (i.e., responding in a typical  
621 averaged fashion) and desirability (i.e., tendency to endorse positive characteristics) effects  
622 (Deal, 2019). For instance, participants were not aware of what behaviours were being coded,  
623 and parents were not aware of the subsequent measures for the athletes that were only  
624 described in general term. Nevertheless, it should be acknowledged that the audio-video taped  
625 interactions and subsequent observational measures of parental responsiveness could have led  
626 to some normativity and desirability effects.

627 The results of this study highlight numerous areas for further research. For instance, future  
628 research could aim to examine the extent to which athletes can accurately detect (or not) the  
629 responsiveness of parental support, and what specific factors influence such perceptions.  
630 Also, the current study only measured observed parental responsive support and athletes' PPR  
631 in a very specific situation. Further research could extend this by measuring, for instance,  
632 athletes' PPR at a more general level.

633 Further research to investigate the role of self-esteem in athletes' thriving may also be  
634 warranted. The current study showed that vitality, positive emotion, health quality, and life  
635 satisfaction can be merged into a single factor of thriving but not self-esteem. In the current  
636 study, athletes' self-esteem was considered as a mediator between responsive support and  
637 thriving. This consideration is congruent with the suggestion that athletes' self-esteem can be  
638 considered as a higher-order construct that has an influence on various subcomponents of  
639 their self-perceptions (Marsh et al., 2018). Finally, other research avenues that may benefit  
640 from investigation include (but are not limited to) the specific influences of mothers' and  
641 fathers' responsive support and the long-term effects of parental responsive support on  
642 athletes' sport and personal development.

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643 **Conclusion**

644 Overall, this study enhances understanding of parent-athlete relationships at a theoretical  
645 and methodological level. At a theoretical level, to the best of our knowledge, this study is the  
646 first to have used Feeney and Collins' (2015) thriving through relationship model and Reis  
647 and Gable's (2015) construct of responsiveness in sport. Feeney and Collins' model seems  
648 well-suited to the sport setting and for examining the mechanisms involved in parent-athlete  
649 relationships. The unique contribution of this study in understanding parent-athlete  
650 relationships is that it revealed the positive influence of the responsiveness of parental support  
651 on athletes' self-efficacy, self-esteem, and various factors of thriving. Further, the study  
652 demonstrated the value and parsimony of Reis and Gable's (2015) construct of responsiveness  
653 and highlighted the unique influence of parental responsive support (observed) and athletes'  
654 perceptions of such support on their perceived self-efficacy, self-esteem, and thriving (i.e.,  
655 positive affect, vitality, life satisfaction and health quality).

656 At a methodological level, this study developed a video-based behavioral coding system to  
657 assess parental responsive support that is adapted to parent-athletes interaction in sport.  
658 Finally, the results highlight new areas for future studies on parent-athlete interactions.  
659 Together, the use of a strong theoretical framework combined with advanced data collection  
660 methods provide unique evidence showing that responsive interactions between parents and  
661 athletes can lead to an increase in athletes' self-perception and thriving.

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834 Table 1

835 Spearman correlations table

Variable	Mean	SD	Skewness	1	2	3	4	5	6	7	8	9	10
1. PPR	4.02	0.76	-0.81										
2. Responsive Support	0.00	0.64	-0.25	.04									
3. Self-Efficacy	4.09	0.48	-0.21	<b>.40**</b>	<b>.33*</b>								
4. Self-Esteem	4.14	0.50	-1.21	-.06	.25	<b>.36*</b>							
5. Positive Affects	3.86	0.72	-0.39	.22	.26	.14	<b>.41*</b>						
6. Vitality	4.06	0.67	-0.13	.03	-.06	<b>.38*</b>	<b>.70**</b>	<b>.40*</b>					
7. Health Quality	3.54	0.78	-1.97	.24	.20	.23	.25	<b>.32*</b>	<b>.36*</b>				
8. Life Satisfaction	8.27	0.98	-0.23	.27	.12	.16	<b>.40*</b>	<b>.38*</b>	<b>.48*</b>	<b>.47*</b>			
9. Thriving	4.12	0.52	-0.63	.24	.15	<b>.30*</b>	<b>.58**</b>	<b>.73**</b>	<b>.74**</b>	<b>.72**</b>	<b>.71**</b>		
10. Age Athlete	13.14	0.91	0.22	.17	-.19	-.21	<b>-.48**</b>	<b>-.43*</b>	-.20	-.13	-.11	<b>-.30*</b>	

847 *Note.* PPR = Perceived Parental Responsiveness. Thriving is a higher order factor gathering positive affect, vitality, health quality, and life848 satisfaction. \*  $p < .05$ ; \*\*  $p < .001$ .

849 Table 2

850 Summary table of indirect mediation effect of PPR and Responsive Support through self-efficacy.

<b>X</b>	<b>M1</b>	<b>Y</b>	<b>indirect effect</b>	<i>se</i>	<b>90% CI indirect effect (lower and upper)</b>	
PPR	Self-Efficacy	Self-Esteem	0.20	0.10	[0.05 : 0.37]	852 853
Responsive Support	Self-Efficacy	Self-Esteem	0.11	0.09	[-0.04 : 0.25]	854 855
						856

857 *Note.* PPR = Perceived Parental Responsiveness. X = predictors; M1 = mediator; Y = dependent variable. These values represent standardized

858 path coefficient. 90% CI indirect effect = the 90% confidence interval with lower and upper bounds for indirect effects.

859 Table 3

860 Summary table of indirect mediation effect of PPR and Responsive Support through self-efficacy and self-esteem.

<b>X</b>	<b>M1</b>	<b>M2</b>	<b>Y</b>	<b>indirect effect</b>	<i>se</i>	<b>90% CI indirect effect (lower and upper)</b>
PPR	Self-Efficacy	Self-Esteem	Thriving	0.16	0.08	[0.02 : 0.30]
Responsive Support	Self-Efficacy	Self-Esteem	Thriving	0.09	0.07	[-0.04 : 0.21]

861

862 *Note.* PPR = Perceived Parental Responsiveness. X = predictors; M1 = mediator 1; M2 = mediator 2; Y = dependent variable. These values

863 represent standardized path coefficient. 90% CI indirect effect = the 90% confidence interval with lower and upper bounds for indirect effects.