The influence of perceived parental responsiveness on athletes' goal accomplishment, trait cognitive sport anxiety, and thriving: a semi-longitudinal study

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Abstract

The purpose of this study was to examine temporally distal influence at a three-month interval of perceived parental responsiveness on athletes' goal accomplishment, trait cognitive sport anxiety, and thriving. Young players (154 males, 51 females, *M* =12.50 years, *SD* = 0.65) involved in rugby, basketball, and handball participated in the study. Initially, participants set three goals to accomplish over the next three months and completed questionnaires assessing their perceptions of their parents' responsiveness, perceived self-efficacy, and self-esteem. Three months later, participants completed questionnaires assessing their goal accomplishment, worry about sport performance, and thriving. The results showed that athletes' perceptions of their mother's/father's responsiveness, mediated by perceived athletes' self-efficacy to accomplish their goals, influenced their goal accomplishment and trait cognitive sport anxiety three months later. The results also showed that athletes' perceptions of their mother's/father's responsiveness, mediated by athletes' self-esteem, influenced athletes' thriving and trait cognitive sport anxiety three months later. Overall, the present study uniquely contributes to the understanding of parent-athlete relationships by showing that athletes' perceptions of their mother's and father's responsiveness influence certain distal outcomes three months later (i.e., goal accomplishment, sports anxiety, and thriving) while mediated by self-efficacy and self-esteem.

Keywords; Adolescence, Attachment, Parent-Child relationship, Youth sport, Wellbeing

There is a growing consensus regarding the importance of ensuring that athletes experience positive long-term outcomes and optimal wellbeing (i.e., thriving) through their involvement in sport (Bergeron et al., 2015; Harwood et al., 2019). To achieve such outcomes, consideration of the sporting environment, including athletes' support network, is important (Dorsch et al., 2020). For instance, research generally demonstrates that perceived available support from significant others (e.g., parents, coaches, peers) can lead to long-term positive psychosocial outcomes for athletes (Felton & Jowett, 2017; Lee et al., 2018). Similarly, the quality of relationships that athletes have access to has been recognized as a key contributor to thriving in and through sport (Brown et al., 2018).

Within the youth sport setting, parents are particularly important and influential (Knight, 2017). Parents can influence their children's experiences through various avenues including the provision of tangible, emotional, informational, or motivational support (Warmenhoven et al., 2020; Wolfenden & Holt, 2005). For example, by paying for children to participate in sport and transporting children to training and competitions, parents not only facilitate children's participation but also communicate the value and importance they place on their children's participation (Dunn et al., 2016). Further, through the comments they make and the expectations they have for their children, parents can enhance or hinder their children's, motivation, perception of competence, life skills development, or enjoyment in sport (Furusa et al., 2020; Mossman & Cronin, 2019).

Given this influence, researchers have increasingly concerned themselves with trying to understand the mechanisms and factors that affect the quality of parent-athlete relationships and perceptions of parental support (e.g., Clarke et al., 2016; Dorsch et al., 2016; Knight & Holt, 2014). Various factors have been suggested, including warmth and positive affect (Dorsch et al.,

2016), unconditional parental regard (Assor & Tal, 2012), parents' endeavours in understanding their children's sport experiences (Clarke et al., 2016; Knight & Holt, 2014), and the manner and timing of parental feedback and communication (Knight et al., 2011, 2016; Tamminen et al., 2017). Most recently, research has focused upon the concept of parental responsiveness (Cook et al., 2018; Jiang et al., 2017). Anchored in attachment theory as a component of securely attached relationship (Bowlby, 1973), responsiveness is an interpersonal process that describes how people in a relationship attend to and support each other's needs and goals (Reis & Gable, 2015). Within a relationship, the perception of the partner's (e.g., parent) responsiveness includes perceptions of being understood, validated, and cared for (Reis & Gable, 2015).

An initial study examining parental responsiveness in sport identified that both the provision of responsive support from parents, and athletes' perceptions of their parent's responsiveness, were associated with proximal increases in athletes' perceived self-efficacy to accomplish their goals (Rouquette, Knight, Lovett, & Heuzé, 2021). A subsequent study identified that athletes' general perceptions of their mother's and father's responsiveness were positively related with their self-esteem. Athletes' self-esteem mediated the relationship between perceived parental responsiveness, thriving (i.e., life satisfaction, positive affect, vitality), and the worry component of trait cognitive sport anxiety (Rouquette, Knight, Lovett, Barrell, et al., 2021). Together these findings highlight the impact of parental responsiveness on athletes' self-perceptions and thriving and point to the value of encouraging the provision of responsive support from parents. However, although these studies draw attention to the importance of responsive support within youth sport, both studies were cross-sectional and focused only upon proximal outcomes associated with responsiveness, rather than the more temporally distal longer-term consequences of such support.

Drawing on Bowlby's (1973) attachment theory, long-term positive consequences are expected for athletes who perceived their parents as being responsive to their needs. This is because, when parents continuously display responsive behaviours towards their child, over time, these are gradually internalised and assimilated into a secure internal working model (i.e., a cognitive model that represents others as trustworthy, and the self as worthy of respect and attention). A secure internal working model can subsequently, lead to long-term changes in self-perceptions (i.e., self-efficacy and self-esteem) resulting in positive psychosocial outcomes (Bowlby, 1973; Bretherton & Munholland, 2008; Duchesne & Larose, 2007). For instance, longitudinal studies among adolescents have shown that higher levels of attachment security (which includes responsiveness) with their mother predicted higher perceived academic competence and lower anxiety one year later (Maltais et al., 2015, 2017). As such, it may be anticipated that consistency in parental responsiveness will lead to positive long-term changes in self-perceptions for children/young athletes; however, it has yet to be considered in sport.

Developing positive long-term changes in self-perceptions, namely self-efficacy (i.e., individual's beliefs in their capabilities to produce a given attainment by their own actions; Bandura, 1997) and self-esteem (i.e., general sense an individual has about their self; Marsh et al., 2010), are important in sport for a number of reasons. Higher levels of perceived self-efficacy in sport typically result in positive outcomes such as engaging in more challenging goals, selecting effective performance strategies, increased effort and persistence while facing difficulties, and higher performance (Bandura, 2012; Feltz et al., 2008). Further, perceived self-efficacy is consistently related with lower levels of sport anxiety (Besharat & Pourbohlool, 2011; Feltz et al., 2008) and with higher levels of goal accomplishment (Tomlinson et al., 2016). Meanwhile, self-esteem is a relatively stable construct situated at the top of the hierarchy of

individual's self-perceptions (Marsh et al., 2007), with higher levels of self-esteem leading to higher levels of positive affect, life satisfaction, performance, and lower competitive trait anxiety among athletes (Lewthwaite & Scanlan, 1989; Marsh & Perry, 2005). Further, self-esteem plays an important role in mediating a positive relationship between high levels of childhood parental bonding (i.e., emotional warmth, affection, empathy, and closeness) and lower levels of trait anxiety in adulthood (Shimura et al., 2017) as well as between parental responsive support and thriving (Rouquette, Knight, Lovett, Barrell, et al., 2021).

Given the considerable positive consequences associated with higher levels of self-efficacy and self-esteem, identifying factors that may enhance self-efficacy and self-esteem among athletes is clearly valuable. Based on the positive association between a responsive interaction and immediate levels of self-efficacy and self-esteem, combined with the assimilation consequences detailed within attachment theory, it seems likely that parental responsiveness may result in increases in these two constructs over-time. That is, it can be anticipated that as a result of continuous responsive interactions between parents and athletes, young athletes' gradually build a secure internal working model, leading to higher levels of self-esteem and self-efficacy and subsequent long-term outcomes such as long-term goal accomplishment, thriving, and lower anxiety (Duchesne & Larose, 2007; Feeney & Collins, 2015). As such, the aim of the present study was to examine the distal three-month influence of perceived parental responsiveness on athletes' self-perceptions (i.e., self-efficacy and self-esteem), thriving, trait cognitive sport anxiety, and goal accomplishment. Specifically, this study sought to examine four hypotheses:

H1: Athletes' initial (T1) perceptions of their mother's and father's responsiveness would be positively related to their perceptions of their mother's and father's responsiveness three months later (T2).

H2: Athletes' perceived self-efficacy to reach their goals at T1 would mediate the relationship between athletes' perceived mother/father responsiveness at T1 and their goals accomplishment at T2.

H3: Athletes' self-esteem at T1 would be positively related to their self-esteem at T2 and would mediate the relationship between athletes' perceived mother/father responsiveness at T1 and thriving at T2.

H4: Athletes' perceived self-efficacy and self-esteem at T1 would be negatively related to trait cognitive sport anxiety at T2 and mediate the relationship between athletes' perceived mother/father responsiveness and trait cognitive sport anxiety.

Method

Participants. The sample size was determined based on Monte Carlo power analysis simulations for mediation models (Schoemann et al., 2017). Simulations were run for two parallel mediators with the following inputs: 1000 power analysis replications with 5000 Monte Carlo draws per replication, confidence level = 95%, predictor-outcome correlation = 0.35, predictor-mediator correlation = 0.35, mediators-outcome correlation = 0.35, correlations between mediators = 0.2. The results of the simulations showed that the study needed between 140 participants to achieve power at .82, and 200 participants to achieve power at .94. Based on those simulations, the desired number of participants was set at: N = 200. In total, 205 young players (154 males and 51 females) participated at data collection point one (T1) and, 171 of the 205 participants (131 males and 40 females) at point two (T2) (retention rate of 83.41%). The participants ranged from 10 to 15 years (M_{age} = 12.50, SD = 1.14). This age range was selected to ensure that participants were capable of answering the questions and producing self-determined goals (Harter, 2012) while their parents still had a large influence in their lives (Wylleman &

Rosier, 2016). Participants were involved in rugby (n = 83), basketball (n = 69), and handball (n = 53) at regional level. Players were all in the specialisation phase of their sport development (Côté, 1999), they trained on average 2.57 times/week (*SD* = 0.65) and were involved in sport for an average of 5.39 years (*SD* = 2.35).

Procedure. Following receipt of ethical approval, technical directors of French regional leagues in rugby, handball, and basketball were contacted to help identify clubs and coaches who may be interested in participating in the study. Clubs were subsequently contacted and, if interested, coaches or managers coordinated a time for the researcher to attend a training session to speak about the study. Potential participants were given an information sheet and informed of the schedule of the data collection at their club. Interested athletes were asked to return the consent form signed by their parents on the day of the first data collection (T1).

Data collection occurred twice at each club, three months apart during the regular season. Time one (T1) of data collection occurred during the first half of the season (i.e., between October and December) while (T2) occurred during the second half of the season (i.e., between January and April). At time one (T1), participants were informed of the study procedures and were invited to set three important sport-related goals that they wanted to accomplish over the next three months. They were asked to write these goals on a sheet of paper and complete a series of questionnaires assessing their perceptions of their parent's responsiveness, along with their own perceived self-efficacy and self-esteem. At the second data collection point (T2), athletes received a copy of the goals they had previously written and were asked to indicate the extent to which they had accomplished these. They subsequently completed a series of questionnaires assessing their mother's and father's perceived responsiveness, their self-esteem, sport anxiety, and the thriving factors of positive affect, vitality, life satisfaction, and health

quality. The content of the goal was not critical for the study, rather the aim of the activity was to set a reference point from which to evaluate athletes' self-efficacy (T1) and goal accomplishment (T2). A such, the content of the goal was not used in further analyses.

Measures. For each questionnaire, internal consistency was assessed with Omega $_{total}$ (ω_t; Revelle & Zinbarg, 2009). Further examination of construct validity was assessed when necessary (i.e., modified scale, composite variable) with confirmatory factorial analysis (CFA). Support for the goodness of fit between the model and the observed data were considered when; (a) comparative fit index (CFI) and Tucker Lewis index (TLI) values were close to .95 or greater, and; (b) root mean square error of approximation (RMSEA) values were close to .06 or below, and standardized root mean square residual (SRMR) values were close to .08 or below (Brown, 2015). CFA analysis considered parameter estimates (e.g., factor loadings, error variances, factor variances) such as standardized residuals and the content of each problematic item (e.g., weak factor loading, cross-loading) to ensure that its deletion would not affect the theoretical meaning of a construct (Brown, 2015). Due to potential non-normal distribution of the data, CFA analysis were computed with robust maximum likelihood estimator with Satorra-Bentler scaled tests.

Perceived parental responsiveness. At T1 and T2, athletes' perceptions of parental responsiveness were assessed with a six-item version of the Perceived Partner Responsiveness Scale (PPRS; Reis et al., 2017). The PPRS was used to assess the extent to which participants perceived that a particular relationship was responsive to their needs. The six items are: my mother/father usually, (a) *knows me well, (b) understands me*, (c) *really listens to me*, (d) *seems interested in what I am thinking and feeling, (e) values my abilities and opinions, and (f) is responsive to my needs.* Responses were provided on a 7-point Likert scale ranging from 1 (*not at all*) to 7 (*completely true*). An additional *NA* option was provided for participants who

reported having no contact with one of their parents. Athletes' perception of father responsiveness at T1 and T2 (ω_t = 0.90, ωt = 0.93 respectively) and athletes' perception of mother responsiveness at T1 and T2 (ω_t = 0.82, ωt = 0.88 respectively) showed a good internal consistency. The six items accounting for athletes' perceptions of their father and mother were averaged respectively into single scores of perceived father/mother responsiveness with higher scores representing stronger perceptions of father/mother responsiveness.

Perceived self-efficacy. At T1, athletes' perceived self-efficacy to accomplish their goals was assessed with a five-item self-efficacy scale (Bandura, 2012). The measure of self-efficacy was designed to reflect athletes' perceived capability to execute the goals they had set and included the perceived level of difficulty of the tasks. For each of the three goals that athletes had set, they were asked to indicate on a 5-point Likert scale anchored by 1 (*not at all*) and 5 (*extremely*) the extent to which they perceived, (a) the goal was important for them (i.e., *importance*), (b) they felt capable to accomplish this goal (i.e., *capability*), (c) if they were capable of continuous efforts to reach this goal (i.e., *effort*), (d) if they will pursue the goal continuously (i.e., *pursuit*), and (e) if this goal was difficult to reach (i.e., *difficulty*). Perceived capability, effort, and pursuit were weighted by importance and difficulty. The three items of self-efficacy demonstrated a sufficient factor loading (0.55–0.73) and fair internal consistency (ω_t = 0.69). An average score of perceived self-efficacy was computed with higher scores representing stronger perceptions of self-efficacy.

Self-esteem. The five items from the short version of the Physical Self-Description Questionnaire (Marsh et al., 2010) assessing self-esteem were used at T1 and T2. The athletes indicated the extent to which, during the last month in their everyday life, (a) *they had a lot to be proud of*, (b) *they did well*, or (c) *things turned out well*; and (d) *if they were no good* or (e) *if*

nothing they did ever seemed to turn out right (reverse items). Their responses were provided on a 5-point Likert scale anchored by 1 (*strongly disagree*) and 5 (*strongly agree*). The scale showed a good internal consistency at T1 and T2 (ω_t = 0.74, ωt = 0.79 respectively). The five items were averaged to create a global score of self-esteem with higher scores indicating higher levels of self-esteem.

Goal accomplishment. At T2, for each of the three goals that the athletes had previously set, they were asked to indicate on a 5-point Likert scale, anchored by 1 (*not at all*) and 5 (*extremely*), the extent to which they perceived that; (a) the goal was still important for them (i.e., *importance*); (b) they had achieved this goal (i.e., *achievement*); (c) if they had to make continuous efforts to reach this goal (i.e., *effort*), and; (d) if this goal was difficult to reach (i.e., *difficulty*). For each of the three goals, achievement and effort were weighted by importance and difficulty. The three goals demonstrated a sufficient factor loading (0.50–0.71) and fair internal consistency (ω_t = 0.66). An average score of goal achievement for the three goals was subsequently computed with higher scores representing higher goal accomplishment.

Trait cognitive sport anxiety (Worry). Athletes' worry was assessed at T2 with five items from the Sport Anxiety Scale - 2 (Smith et al., 2006). Athletes indicated the extent to which they usually felt before or while competing in sport (a) *worry that they will not play well*, (b) *worry that they will let others down*, (c) *worry that they will not play at their best*, (d) *worry that they will play badly*, and (e) *worry that they will mess up during the game*. Their responses were provided on a 5-point Likert scale anchored by 1 (*not at all*) and 5 (*very much*). The scale showed a good internal consistency (ω_t = 0.94). The five items were averaged to create a global score, with higher scores indicating higher levels of cognitive trait anxiety in sport.

Thriving. In the present study thriving was conceptualized as an optimal state of wellbeing (Feeney & Collins, 2015). Research indicates that the wellbeing sub-components belonging to different categories can be explain by a general factor of wellbeing (i.e., thriving) (Longo et al., 2016). Usual indicators include positive affect, vitality, and life satisfaction, and health quality (Gallagher et al., 2009; Longo et al., 2016), and thus these were selected as the measures for thriving within the current study. The specific measures selected were the Positive Affect and Negative Affect Schedule for Children (PANAS-C; Ebesutani et al., 2012) to assess players' positive affect, the subjective vitality scale (Ryan & Frederick, 1997) to assess participants' vitality, the Cantril Ladder of self-rated life satisfaction (Cantril, 1965) to assess participants' life satisfaction, and a single indicator of health quality (Benjamins et al., 2004). These scales were selected because they demonstrated good psychometric properties among a similar sample (Duda et al., 2013).

Affect. At T2, positive affect was assessed with the five positive affect items from the 10-item PANAS-C (Ebesutani et al., 2012). The positive affect dimension demonstrated good internal reliability (ω_t = 0.87). The items were averaged to create a global score of positive affect, with higher scores indicating higher levels of positive affect.

Subjective vitality. At T2, athletes' subjective vitality was assessed with the 5-item subjective vitality scale (Ryan & Frederick, 1997). Athletes rated, on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*), the extent to which, during the last month in their everyday life, (a) *they felt full of excitement*, (b) *they had high spirit*, (c) *they looked forward to each day*, (d) *they felt alert and awake*, and (e) *if they had a lot of energy* (Ryan & Frederick, 1997). The five items demonstrated a good internal reliability (i.e., ω_t = 0.87). The five items

were averaged to create a global score of vitality with higher scores indicating higher levels of vitality.

Life satisfaction. At T2, life satisfaction was assessed using the single item of Cantril's Ladder of self-rated life satisfaction (Cantril, 1965). This ladder ranged from 0 (*I have the worst possible life for me at the moment*) to 10 (*I have the best possible life for me at the moment*). A higher score indicated higher levels of life satisfaction.

Health Quality. At T2, health quality was assessed using a single item scale from 1 (*my health is poor*) to 4 (*my health is excellent*) (Benjamins et al., 2004). Higher scores indicated a higher perception of health quality.

Thriving. The components of thriving (affect, vitality, life satisfaction, and health quality) were positively correlated (i.e., r ranging from 0.24 to 0.58; see Table 1). A CFA demonstrated a good fit to the data: χ^2 (51) = 60.26, p = 0.17, CFI = 0.95, TLI = 0.94, RMSEA = 0.03, SRMR = 0.05. The components significantly loaded on the higher order factor of thriving and this general measure demonstrated good internal reliability (i.e., ω_t = 0.90). Consequently, positive affect, vitality, life satisfaction, and health quality scores were averaged as a new variable, *thriving (M* = 3.92, *SD* = 0.62), with higher scores representing higher levels of thriving.

Data analysis. The full script of analyses, questionnaires used, and comprehensive results are available upon request from the corresponding author. Main analyses consisted of mediations accounting for the full paths of direct and indirect effects (Yzerbyt et al., 2018). The mediation analyses were performed with structural equation modeling (Brown, 2015). Latent variables were estimated with single indicators and fixed reliability (α = 0.90). This method controls for measurement errors and helps to maintain acceptable Type-1 error rate without increasing of the variability of the estimates (Brown, 2015; Savalei, 2019). The hypotheses were tested together

with one model accounting for participants' perceptions of their mother's responsiveness, and one model accounting for their perceptions of father's responsiveness.

Results

All bivariate correlations (see Table 1) were in the expected directions. The correlations (Table 1) indicated that perceived father responsiveness at T1 and T2 were positively correlated (r = .78), and that perceived mother responsiveness at T1 and T2 were positively correlated (r = .71.). T2 thriving was positively correlated with T1 and T2 self-esteem (r = .38, and r = .58 respectively). T2 trait cognitive anxiety was negatively correlated with T1 and T2 self-esteem (r = -.35, and r = -.37 respectively). Athletes' gender was used as a control variable throughout analyses.

*****Insert Table 1 here *****

Influence of perceived mother responsiveness. The first mediation (see Figure 1) tested the influence of perceived mother responsiveness (T1 and T2) through self-efficacy (T1) and self-esteem (T1 and T2) on athletes' goal accomplishment (T2), trait cognitive anxiety (T2), and thriving (T2). The model demonstrated a good fit to the data: SEM (Satorra-Bentler): χ^2 (17) = 24.766, p = 0.100, CFI = 0.976, TLI = 0.948, RMSEA = 0.055 90% CI = [0.000: 0.101], SRMR = 0.040. The mediation analysis indicated that perceptions of mother responsiveness at T1 were positively related to athletes' perceived self-efficacy to reach their goals (T1, β = .264, p = 0.002) and with athletes' self-esteem (T1, β = .234, p = 0.005). Subsequently, athletes' perceived self-efficacy was positively related to goal accomplishment (T2, β = .348, p < 0.001) and trait cognitive sport anxiety three months later (T2, β = .217, p = 0.016). Athletes' self-esteem at T1 was positively related with self-esteem at T2 (β = .526, p < 0.001). Athletes' self-esteem at T2 was negatively related to trait cognitive sport anxiety (T2, β = -.408, p < 0.001), but positively

associated with thriving (T2, β = .520, p < 0.001). In line with H1, the results showed that players' perceptions of mother responsiveness at T1 were positively related with their perceptions of mother responsiveness at T2 (β = 732, p < 0.001). Perceptions of mother responsiveness at T2 were also directly positively related to athletes' thriving at T2 (β = 302, p = 0.001). Athletes' gender (female) was negatively related to their self-esteem at T1 (β = -.672, p = 0.001), but positively associated with goal accomplishment at T2 (β =.459, p = 0.021).

*****Insert Figure 1 here *****

As suggested in the H3, indirect effects (see Table 2) showed that athletes perceived self-efficacy at T1 mediated the relationship between perceptions of mother responsiveness at T1 and athletes' goal accomplishment at T2, r^2 = 0.153. In line with H3, the results showed that athletes' self-esteem at T1 and T2 mediated the relationship between perceptions of mother responsiveness and athletes' thriving at T2, r^2 = 0.490. Eventually, partially supporting H4, the results showed that athletes' perceived self-efficacy at T1 and self-esteem at T1 and T2 also mediated the relationship between perceived mother responsiveness (T1) and trait cognitive anxiety (T2), r^2 = 0.276.

*****Insert Table 2 here *****

Influence of perceived father responsiveness. The second mediation (see Figure 1) tested the influence of perceived father responsiveness (T1 and T2) through self-efficacy (T1) and self-esteem (T1 and T2) on athletes' goal accomplishment (T2), trait cognitive anxiety (T2), and thriving (T2). The model demonstrated a good fit to the data: SEM (Satorra-Bentler): χ^2 (17) = 23.030, p = 0.148, CFI = 0.984, TLI = 0.967, RMSEA = 0.048 90% CI = [0.000: 0.094], SRMR = 0.042. The mediation analysis indicated that perceptions of father responsiveness at T1 were positively related to athletes' perceived self-efficacy to reach their goals (T1, β = .284, p =

0.005) and with athletes' self-esteem (T1, $\beta = .326$, $p < 0.001$). Subsequently, athletes' perceived self-efficacy was positively related to goal accomplishment (T2, $\beta = .360$, $p < 0.001$) and trait cognitive sport anxiety three months later (T2, $\beta = .216$, $p = 0.017$). Athletes' self-esteem at T1 was positively related with self-esteem at T2 ($\beta = .452$, $p < 0.001$). Athletes' self-esteem at T2 was negatively related to trait cognitive sport anxiety (T2, $\beta = -.397$, $p < 0.001$), but positively associated with thriving (T2, $\beta = .452$, $p < 0.001$). In line with H1, the results showed that players' perceptions of father responsiveness at T1 were positively related with their perceptions of father responsiveness at T2 ($\beta = 828$, $p < 0.001$). Perceptions of father responsiveness at T2 were also directly positively related to athletes' thriving at T2 ($\beta = 422$, $p < 0.001$). Athletes' gender (female) was negatively related to their self-esteem at T1 ($\beta = -.564$, $p = 0.006$), but positively associated with goal accomplishment at T2 ($\beta = .447$, $p = 0.015$).

As expected in H2, indirect effects (see Table 3) showed that athletes' perceived self-efficacy at T1 mediated the relationship between perceptions of father responsiveness at T1 and athletes' goal accomplishment at T2, $r^2 = 0.1653$. In line with H3, the results showed that athletes' self-esteem at T1 and T2 mediated the relationship between perceptions of father responsiveness and athletes' thriving at T2, $r^2 = 0.537$. Eventually, partially supporting H4, the results showed that athletes' perceived self-efficacy at T1 and self-esteem at T1 and T2 also mediated the relationship between perceived mother responsiveness (T1) and trait cognitive anxiety (T2), $r^2 = 0.264$.

*****Insert Table 3 here *****

Discussion

The purpose of the present study was to examine the distal three-month influence of perceived parental responsiveness on athletes' self-perceptions (i.e., self-efficacy and self-

esteem), thriving, trait cognitive sport anxiety, and goal accomplishment. Extending initial research that has demonstrated the proximal influences of parental responsiveness on youth athletes' self-efficacy, thriving, and cognitive trait anxiety (Rouquette, Knight, Lovett, Barrell, et al., 2021; Rouquette, Knight, Lovett, & Heuzé, 2021), the present study demonstrates that athletes' perceptions of their mother's and father's responsiveness can have an influence on athletes' thriving, trait cognitive anxiety, and goal accomplishment, while mediated by athletes' self-efficacy and self-esteem, three months later. As such, this study reinforces the importance of encouraging parents to take time to understand their child's sporting experiences (Harwood & Knight, 2015; Knight & Holt, 2014), address their individual child's support needs (Knight et al., 2010), and demonstrate that they value their child (Clarke et al., 2016).

The results of this study supported the first hypothesis as they showed that athletes' perceptions of their mother's and father's responsiveness at T1 of data collection were positively related with their perceptions of mother's and father' responsiveness at T2. Therefore, while the results of the present study are novel in the context of sport participation, they closely align perspectives from attachment theory assuming that athletes who perceived their parents as continuously responsive to their needs gradually build a secure internal working model (i.e., a cognitive model that represent others as trustworthy, and the self and as worthy of respect and attention) leading to a change in their self-perceptions and psychosocial outcomes three months later (Bowlby, 1973; Duchesne & Larose, 2007). This is important because recent research demonstrated that lower variability in perceived responsiveness was associated with more positive psychosocial outcomes among romantic couples, whereas higher variability in perceived responsiveness was associated with higher attachment anxiety (Gunaydin et al., 2020).

The results of the present study also supported the second hypothesis, demonstrating a positive relationship between athletes' perceptions of their mother's and father's responsiveness and their self-efficacy to accomplish their goals. Further, and as expected, the results of the present study demonstrated a positive relationship between athletes' perceived self-efficacy to accomplish their goals and their goal accomplishment three months later. The results showed an indirect effect of perceived mother's and father's responsiveness and their goal accomplishments three months later while mediated by athletes' self-efficacy.

The positive association between athletes' perceived parental responsiveness and their self-efficacy to accomplish their goals may help to explain findings such as those by Knight et al. (2016) who, in a study of elite canoeists, identified that certain parental behaviours (i.e., valuing their children's engagement in sport, or valuing their child's progress) helped athletes to focus more successfully upon their performances and to build their perceived competence. The link between athletes' perceived responsiveness from their parents and their increased self-efficacy aligns with expectancy-value theory which posits that children's expectations for success (i.e., perceived self-efficacy) are influenced by their perception of their socializers' beliefs and expectations of completing the task (Eccles & Wigfield, 2002). Based on the expectancy-value theory, the relationship between athletes' perceptions of their parents' responsiveness and their self-efficacy may have occurred because athletes' expectations of success in sport were influenced by their perceptions of their parents valuing their sport involvement and having high expectations for them.

The third hypothesis stated that athletes' self-esteem at T1 would be positively related to their self-esteem at T2 and would mediate the relationship between athletes' perceived mother/father responsiveness and thriving three month later. This hypothesis was, again,

supported by the results of the present study. Consistency in athletes' general self-esteem aligns with Shavelson et al.'s (1976) conceptualisation of individual's self-concept as multidimensional and organised, with general self-esteem being relatively stable and situated at the apex of the hierarchy (Marsh et al., 2010; Marsh & Perry, 2005). Longitudinal research in sport previously demonstrated consistency in athletes' general self-esteem (Cheval et al., 2017), and that self-esteem mediated the relationship between high quality relationship and optimal wellbeing (Kang et al., 2003; Rouquette, Knight, Lovett, Barrell, et al., 2021). The results of the present study further reinforce such perspectives by demonstrating the distal three-month influence of athletes' perceived mother/father responsiveness on thriving outcomes while mediated by self-esteem. Importantly, the longitudinal design of the present study showed that while perceived mother and father responsiveness at T1 was positively associated with athletes' self-esteem at T1, and that athletes' self-esteem at T1 was positively associated with their self-esteem at T2, self-esteem at T1 was not related to athletes' perceptions of their mother's and father's responsiveness at T2. This reinforces findings from Rouquette, Knight, Lovett, Barell et al. (2021) and suggest a causal ordering from mother's and father's responsiveness toward athletes' self-esteem but not the opposite. These results are important because they demonstrate that when athletes consistently perceive their parents as being responsive to their needs, they gradually build a more positive and stable view of themselves (i.e., self-esteem) leading to optimal wellbeing (i.e., thriving).

Finally, we hypothesised that athletes' perceived self-efficacy at T1 and self-esteem at T2 would be negatively related to trait cognitive sport anxiety at T2 and mediate the relationship between athletes' perceived mother's/father's responsiveness and trait cognitive sport anxiety. This relationship was predicted because research demonstrates that perceived self-efficacy and self-esteem are related with lower levels of sport anxiety (Fox & Lindwall, 2014; Smith et al.,

2006). As expected, athletes' self-esteem at T2 was negatively related to athletes' trait cognitive sport anxiety. However, contrary to the hypothesis, the results showed that athletes' perceived self-efficacy to accomplish their goals at T1 was associated with increased levels of trait cognitive sport anxiety three months later. Although seemingly counterintuitive, the relationship between self-efficacy and increased levels of trait cognitive sport anxiety could be potentially explained by drawing on the control-value theory of achievement emotions (Pekrun, 2006).

Pekrun (2006) defines achievement emotions as emotions that relate to achievement activities (e.g., participating in competitions) and/or achievement outcomes (e.g., successes and failures). Pekrun (2006) posits two groups of appraisals for achievement emotions based on subjective value (e.g., importance of success) and subjective control (e.g., perceived causal inferences). When the subjective value is high, and the expectation of success is moderate due to a lack of control, individuals could either feel hope, if the focus is on success, and/or anxiety if the focus is on failure (Pekrun, 2006). Based on this distinction, the positive relationship between athletes' perceived self-efficacy to accomplish their goals and their sport anxiety could be explained as follows: higher levels of perceived self-efficacy to accomplish their goals meant that athletes believed in their own agency to perform the behaviours necessary to produce the desired outcomes (Bandura, 1997). Yet, despite their self-efficacy beliefs, competitive sport is inherently uncertain and can result in success and/or failure (Carr, 2013). Consequently, the uncertainty of sport combined with the probable high value that the participants placed on their sport involvement may have led them to experience higher levels of sport anxiety (Pekrun, 2006). Future research is needed to clarify the potential positive association between perceived self-efficacy beliefs and sport anxiety.

Applied implications. The results of the present study demonstrate that athletes' perceptions of responsive support from their parents resulted in positive outcomes both in terms of perceived self-efficacy and in increasing athletes' self-esteem and thriving. Given such a finding, it is clear that parents actively contribute to their children's sporting and psychosocial development not only through their involvement in sport, but also considering their broader interactions with their child. Therefore, sport organisations could seek to provide parents with strategies and suggestions (e.g., discussion points, scenarios for discussion) to facilitate regular communication with their child to learn about their specific needs and desires, as well as their likes and dislikes both within and beyond sport. Similarly, parents should take time to learn about and subsequently demonstrate their understanding of their child and their sport, and to seek to demonstrate that they value and care for all their children's interests and needs. Specifically, parents may benefit from engaging in regular discussions with their children in order to better understand their children's wishes and needs in sport, particularly leading up to and following key transitions (Knight & Holt, 2014). Moreover, reflecting with their child regarding the support that they provide may be valuable in order to establish whether their provision of support suits their child's needs. These seemingly small acts are of great importance, as responsive support will lead to positive impact over time for young athletes.

Limitations and future directions. The results should be considered within the limitations of the study. First, the data collection occurred in sport clubs and were carried out in group settings. Despite the researcher providing clear instructions that questionnaires and responses were for individuals to complete, it is possible that other participants might have influenced athletes' responses during the goal setting activity and encouraged socially desirability responses on the self-reported questionnaires. Second, as the data collection occurred within sports clubs, it

is possible that the specific culture within each team influenced the results. This means that variations in the results might not only account for differences in individual's perceptions, but also reflect systematic variations at a team level. Further work could utilise multilevel hierarchical analysis to shed light on these potential effects. Third, athletes' gender, gender role, and sex stereotypes were not fully accounted for due to the large gender imbalance in participants. The results of the present study showed that gender did not influence athletes' perceived self-efficacy to accomplish their goals. However, athletes' gender, notably being female, was negatively related with their self-esteem and positively related with their goal accomplishment. Although the negative association between gender (female) and self-esteem is not surprising in the context of sport participation (Marsh et al., 2007; von Rosen et al., 2019), the reason(s) why female athletes experience lower self-esteem compare to male athletes is still unclear. Further, the positive association in the results between gender (female) and higher level of goal accomplishment is both surprising and unexplained. Examination of athletes' gender, gender role, and sex stereotypes would be necessary to fully understand such differences.

Finally, this study was carried out within the context of competitive team sports in a single region in France. The results of the present study extend the findings from Rouquette, Knight, Lovett, and Heuzé (2021) carried out in Belgium among a small sample of individual athletes, and from Rouquette, Knight, Lovett, Barell et al. (2021) involving a large number of youth male rugby players in the UK to different sports (i.e., basketball, handball, and rugby) in France. Together, these three studies reinforce the generalizability of the finding in various sports and cultures, and therefore reinforce the value of considering parental responsiveness in sport. Nonetheless, more diverse participants, contexts, and cultures are still required to fully grasp the potential influences of perceived parental responsiveness in youth sport. Future

research is also needed to continue the efforts aiming at better understanding the nuances in how significant others such as parents, peers, and coaches could influence and be influenced by a athletes in youth sport (Dorsch et al., 2020).

Conclusion. The results of this study showed that athletes' perceptions of their mother's/father's responsiveness, mediated by athletes' perceived self-efficacy to accomplish their goals, influenced their goal accomplishment and trait cognitive sport anxiety three months later. The results also showed that athletes' perceptions of their mother's/father's responsiveness, mediated by athletes' self-esteem, influenced athletes' thriving and trait cognitive sport anxiety three months later. Overall, the present study uniquely contributes to our understanding of parent-athlete relationships by showing that athletes' perception of their mother's and father's responsiveness influenced certain long-term outcomes (i.e., goal accomplishment, sports anxiety, and thriving) mediated by self-efficacy and self-esteem. The present study extends the finding from two previous studies and generalize their findings to different sports and European countries.

References

Assor, A., & Tal, K. (2012). When parents' affection depends on child's achievement: Parental conditional positive regard, self-aggrandizement, shame and coping in adolescents. *Journal of Adolescence*, *35*(2), 249–260. https://doi.org/10.1016/j.adolescence.2011.10.004

Bandura, A. (1997). *Self-efficacy: The exercise of control*. WF Freeman.

Bandura, A. (2012). On the functional properties of perceived self-efficacy revisited. *Journal of Management*, *38*(1), 9–44. https://doi.org/10.1177/0149206311410606

Benjamins, M. R., Hummer, R. A., Eberstein, I. W., & Nam, C. B. (2004). Self-reported health and adult mortality risk: An analysis of cause-specific mortality. *Social Science & Medicine*, *59*(6), 1297–1306. https://doi.org/10.1016/j.socscimed.2003.01.001

Bergeron, M. F., Mountjoy, M., Armstrong, N., Chia, M., Côté, J., Emery, C. A., Faigenbaum, A., Hall, G., Kriemler, S., Léglise, M., Malina, R. M., Pensgaard, A. M., Sanchez, A., Soligard, T., Sundgot-Borgen, J., van Mechelen, W., Weissensteiner, J. R., & Engebretsen, L. (2015). International Olympic Committee consensus statement on youth athletic development. *British Journal of Sports Medicine*, *49*, 843–851. https://doi.org/10.1136/bjsports-2015-094962

Besharat, M. A., & Pourbohlool, S. (2011). Moderating effects of self-confidence and sport self-efficacy on the relationship between competitive anxiety and sport performance. *Psychology*, *2*(7), 760. https://doi.org/10.4236/psych.2011.27116

Bowlby, J. (1973). *Attachment and loss: Separation, anxiety, and anger* (Vol. 2). Basic Books.

Bretherton, I., & Munholland, K. (2008). Internal working models in attachment relationships: Elaborating a central construct in attachment theory. In *Handbook of attachment: Theory, research, and clinical applications* (pp. 102–127).

Brown, D. J., Arnold, R., Reid, T., & Roberts, G. (2018). A qualitative exploration of thriving in elite sport. *Journal of Applied Sport Psychology*, *30*(2), 129–149. https://doi.org/10.1080/10413200.2017.1354339

Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (Second edition). The Guilford Press.

Carr, S. (2013). *Attachment in sport, exercise and wellness*. Routledge.

Cheval, B., Chalabaev, A., Quested, E., Courvoisier, D. S., & Sarrazin, P. (2017). How perceived autonomy support and controlling coach behaviors are related to well- and ill-being in elite soccer players: A within-person changes and between-person differences analysis. *Psychology of Sport and Exercise*, *28*, 68–77. https://doi.org/10.1016/j.psychsport.2016.10.006

Clarke, N. J., Harwood, C. G., & Cushion, C. J. (2016). A phenomenological interpretation of the parent-child relationship in elite youth football. *Sport, Exercise, and Performance Psychology*, *5*(2), 125–143. https://doi.org/10.1037/spy0000052

Cook, W. L., Dezangré, M., & De Mol, J. (2018). Sources of perceived responsiveness in family relationships. *Journal of Family Psychology*, *32*(6), 743–752. https://doi.org/10.1037/fam0000411

Côté, J. (1999). The influence of the family in the development of talent in sport. *The Sport Psychologist*, *13*, 395–417. https://doi.org/10.1123/tsp.13.4.395

554 Dorsch, T. E., Smith, A. L., Blazo, J. A., Coakley, J., Côté, J., Wagstaff, C. R. D., Warner, S., &
555 King, M. Q. (2020). Toward an integrated understanding of the youth sport system.
556 *Research Quarterly for Exercise and Sport*, *0*(0), 1–15.
557 https://doi.org/10.1080/02701367.2020.1810847
558 Dorsch, T. E., Smith, A. L., & Dotterer, A. M. (2016). Individual, relationship, and context
559 factors associated with parent support and pressure in organized youth sport. *Psychology*
560 *of Sport and Exercise*, *23*, 132–141. https://doi.org/10.1016/j.psychsport.2015.12.003
561 Duchesne, S., & Larose, S. (2007). Adolescent parental attachment and academic motivation and
562 performance in early adolescence. *Journal of Applied Social Psychology*, *37*(7), 1501–
563 1521. https://doi.org/10.1111/j.1559-1816.2007.00224.x
564 Duda, J. L., Quested, E., Haug, E., Samdal, O., Wold, B., Balaguer, I., Castillo, I., Sarrazin, P.,
565 Papaioannou, A., Ronglan, L. T., Hall, H., & Cruz, J. (2013). Promoting Adolescent
566 health through an intervention aimed at improving the quality of their participation in
567 Physical Activity (PAPA): Background to the project and main trial protocol.
568 *International Journal of Sport and Exercise Psychology*, *11*(4), 319–327.
569 https://doi.org/10.1080/1612197X.2013.839413
570 Dunn, C. R., Dorsch, T. E., King, M. Q., & Rothlisberger, K. J. (2016). The impact of family
571 financial investment on perceived parent pressure and child enjoyment and commitment
572 in organized youth sport: Family investment in youth sport. *Family Relations*, *65*, 287–
573 299. https://doi.org/10.1111/fare.12193
574 Ebesutani, C., Regan, J., Smith, A., Reise, S., Higa-McMillan, C., & Chorpita, B. F. (2012). The
575 10-item positive and negative affect schedule for children, child and parent shortened
576 versions: Application of item response theory for more efficient assessment. *Journal of*

Psychopathology and Behavioral Assessment, *34*(2), 191–203. https://doi.org/10.1007/s10862-011-9273-2

Eccles, J., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, *53*, 109–132. https://doi.org/10.1146/annurev.psych.53.100901.135153

Feeney, B. C., & Collins, N. L. (2015). A new look at social support: A theoretical perspective on thriving through relationships. *Personality and Social Psychology Review*, *19*(2), 113–147. https://doi.org/10.1177/1088868314544222

Felton, L., & Jowett, S. (2017). Self-determination theory perspective on attachment, need satisfaction, and well-being in a sample of athletes: A longitudinal study. *Journal of Clinical Sport Psychology*, *11*, 304–323. https://doi.org/10.1123/jcsp.2016-0013

Feltz, D. L., Short, S. E., & Sullivan, P. J. (2008). *Self-efficacy in sport*. Human Kinetics.

Fox, K. R., & Lindwall, M. (2014). Self-esteem and self-perceptions in sport and exercise. In A. Papaioannou & D. Hackfort (Eds.), *Routledge Companion to Sport and Exercise Psychology* (pp. 58–72). Routledge.

Furusa, M. G., Knight, C. J., & Hill, D. M. (2020). Parental involvement and children's enjoyment in sport. *Qualitative Research in Sport, Exercise and Health*, *0*(0), 1–19. https://doi.org/10.1080/2159676X.2020.1803393

Gallagher, M. W., Lopez, S. J., & Preacher, K. J. (2009). The hierarchical structure of well-being. *Journal of Personality*, *77*(4), 1025–1050. https://doi.org/10.1111/j.1467-6494.2009.00573.x

Harter, S. (2012). *The construction of the self: Developmental and sociocultural foundations*. The Guilford Press.

599 Harwood, C. G., & Knight, C. J. (2015). Parenting in youth sport: A position paper on parenting
600 expertise. *Psychology of Sport and Exercise*, *16*(1), 24–35.
601 https://doi.org/10.1016/j.psychsport.2014.03.001
602 Harwood, C. G., Knight, C. J., Thrower, S. N., & Berrow, S. R. (2019). Advancing the study of
603 parental involvement to optimise the psychosocial development and experiences of young
604 athletes. *Psychology of Sport and Exercise*, *42*, 66–73.
605 https://doi.org/10.1016/j.psychsport.2019.01.007
606 Jiang, L. C., Yang, I. M., & Wang, C. (2017). Self-disclosure to parents in emerging adulthood:
607 Examining the roles of perceived parental responsiveness and separation–individuation.
608 *Journal of Social and Personal Relationships*, *34*(4), 425–445.
609 https://doi.org/10.1177/0265407516640603
610 Kang, S.-M., Shaver, P. R., Sue, S., Min, K.-H., & Jing, H. (2003). Culture-Specific Patterns in
611 the Prediction of Life Satisfaction: Roles of Emotion, Relationship Quality, and Self-
612 Esteem. *Personality and Social Psychology Bulletin*, *29*(12), 1596–1608.
613 https://doi.org/10.1177/0146167203255986
614 Knight, C. J. (2017). Family influences on talent development in sport. In J. Baker, S. Cobley, J.
615 Schorer, & N. Wattie (Eds.), *Routledge Handbook of Talent Identification and*
616 *Development in Sport* (1st ed., pp. 181–191). Routledge.
617 https://doi.org/10.4324/9781315668017-13
618 Knight, C. J., Boden, C. M., & Holt, N. L. (2010). Junior tennis players' preferences for parental
619 behaviors. *Journal of Applied Sport Psychology*, *22*(4), 377–391.
620 https://doi.org/10.1080/10413200.2010.495324

621 Knight, C. J., & Holt, N. L. (2014). Parenting in youth tennis: Understanding and enhancing
622 children's experiences. *Psychology of Sport and Exercise*, *15*(2), 155–164.
623 https://doi.org/10.1016/j.psychsport.2013.10.010
624 Knight, C. J., Little, G. C. D., Harwood, C. G., & Goodger, K. (2016). Parental involvement in
625 elite junior slalom canoeing. *Journal of Applied Sport Psychology*, *28*(2), 234–256.
626 https://doi.org/10.1080/10413200.2015.1111273
627 Knight, C. J., Neely, K. C., & Holt, N. L. (2011). Parental behaviors in team sports: How do
628 female athletes want parents to behave? *Journal of Applied Sport Psychology*, *23*(1), 76–
629 92. https://doi.org/10.1080/10413200.2010.525589
630 Lee, C. G., Park, S., & Yoo, S. (2018). The longitudinal effect of parental support during
631 adolescence on the trajectory of sport participation from adolescence through young
632 adulthood. *Journal of Sport and Health Science*, *7*(1), 70–76.
633 https://doi.org/10.1016/j.jshs.2016.12.004
634 Lewthwaite, R., & Scanlan, T. K. (1989). Predictors of competitive trait anxiety in male youth
635 sport participants. *Medicine & Science in Sports & Exercise*, *21*(2), 221–229.
636 Longo, Y., Coyne, I., Joseph, S., & Gustavsson, P. (2016). Support for a general factor of well-
637 being. *Personality and Individual Differences*, *100*, 68–72.
638 https://doi.org/10.1016/j.paid.2016.03.082
639 Maltais, C., Duchesne, S., Ratelle, C. F., & Feng, B. (2015). Attachment to the mother and
640 achievement goal orientations at the beginning of middle school: The mediating role of
641 academic competence and anxiety. *Learning and Individual Differences*, *39*, 39–48.
642 https://doi.org/10.1016/j.lindif.2015.03.006

643 Maltais, C., Duchesne, S., Ratelle, C. F., & Feng, B. (2017). Learning climate, academic
644 competence, and anxiety during the transition to middle school: Parental attachment as a
645 protective factor. *European Review of Applied Psychology*, *67*(2), 103–112.
646 https://doi.org/10.1016/j.erap.2017.01.002
647 Marsh, H. W., Gerlach, E., Trautwein, U., Lüdtke, O., & Brettschneider, W.-D. (2007).
648 Longitudinal study of preadolescent sport self-concept and performance: Reciprocal
649 effects and causal ordering. *Child Development*, *78*(6), 1640–1656.
650 https://doi.org/10.1111/j.1467-8624.2007.01094.x
651 Marsh, H. W., Martin, A. J., & Jackson, S. (2010). Introducing a short version of the physical
652 self description questionnaire: New strategies, short-form evaluative criteria, and
653 applications of factor analyses. *Journal of Sport & Exercise Psychology*, *32*(4), 438–482.
654 https://doi.org/10.1123/jsep.32.4.438
655 Marsh, H. W., & Perry, C. (2005). Self-concept contributes to winning gold medals: Causal
656 ordering of self-concept and elite swimming performance. *Journal of Sport & Exercise*
657 *Psychology*, *27*(1), 71. https://doi.org/10.1123/jsep.27.1.71
658 Mossman, G. J., & Cronin, L. D. (2019). Life skills development and enjoyment in youth soccer:
659 The importance of parental behaviours. *Journal of Sports Sciences*, *37*(8), 850–856.
660 https://doi.org/10.1080/02640414.2018.1530580
661 Pekrun, R. (2006). The control-value theory of achievement emotions: Assumptions, corollaries,
662 and implications for educational research and practice. *Educational Psychology Review*,
663 *18*(4), 315–341. https://doi.org/10.1007/s10648-006-9029-9
664 Reis, H. T., Crasta, D., Rogge, R. D., Maniaci, M. R., & Carmichael, C. L. (2017). Perceived
665 Partner Responsiveness Scale (PPRS). In D. L. Worthington & G. D. Bodie (Eds.), *The*

sourcebook of listening research: Methodology and measures (pp. 516–521). John Wiley & Sons, Ltd. https://doi.org/10.1002/9781119102991.ch57

Reis, H. T., & Gable, S. L. (2015). Responsiveness. *Current Opinion in Psychology*, *1*, 67–71. https://doi.org/10.1016/j.copsyc.2015.01.001

Revelle, W., & Zinbarg, R. E. (2009). Coefficients Alpha, Beta, Omega, and the glb: Comments on Sijtsma. *Psychometrika*, *74*(1), 145. https://doi.org/10.1007/s11336-008-9102-z

Rouquette, O. Y., Knight, C. J., Lovett, V. E., Barrell, D., & Heuzé, J.-P. (2021). The positive association between perceived parental responsiveness and self-esteem, anxiety, and thriving among youth rugby players: A multigroup analysis. *Journal of Sports Sciences*, 1–11. https://doi.org/10.1080/02640414.2021.1883311

Rouquette, O. Y., Knight, C. J., Lovett, V. E., & Heuzé, J.-P. (2021). Effect of parent responsiveness on young athletes' self-perceptions and thriving: An exploratory study in a Belgian French-community. *Psychology of Sport and Exercise*, *52*. https://doi.org/10.1016/j.psychsport.2020.101801

Ryan, R. M., & Frederick, C. (1997). On energy, personality, and health: Subjective vitality as a dynamic reflection of well-being. *Journal of Personality*, *65*(3), 529–565. https://doi.org/10.1111/j.1467-6494.1997.tb00326.x

Savalei, V. (2019). A comparison of several approaches for controlling measurement error in small samples. *Psychological Methods*, *24*(3), 352–370. https://doi.org/10.1037/met0000181

Schoemann, A. M., Boulton, A. J., & Short, S. D. (2017). Determining power and sample size for simple and complex mediation models. *Social Psychological and Personality Science*, *8*(4), 379–386. https://doi.org/10.1177/1948550617715068

689 Shavelson, R. J., Hubner, J. J., & Stanton, G. C. (1976). Self-concept: Validation of construct
690 interpretations. *Review of Educational Research*, *46*(3), 407–441.
691 https://doi.org/10.3102/00346543046003407
692 Shimura, A., Takaesu, Y., Nakai, Y., Murakoshi, A., Ono, Y., Matsumoto, Y., Kusumi, I., &
693 Inoue, T. (2017). Childhood parental bonding affects adulthood trait anxiety through self-
694 esteem. *Comprehensive Psychiatry*, *74*, 15–20.
695 https://doi.org/10.1016/j.comppsych.2016.12.005
696 Smith, R. E., Smoll, F. L., Cumming, S. P., & Grossbard, J. R. (2006). Measurement of
697 multidimensional sport performance anxiety in children and adults: The sport anxiety
698 scale-2. *Journal of Sport and Exercise Psychology*, *28*(4), 479–501.
699 https://doi.org/10.1123/jsep.28.4.479
700 Tamminen, K. A., Poucher, Z. A., & Povilaitis, V. (2017). The car ride home: An interpretive
701 examination of parent–athlete sport conversations. *Sport, Exercise, and Performance*
702 *Psychology*, *6*(4), 325–339. https://doi.org/10.1037/spy0000093
703 Tomlinson, J. M., Feeney, B. C., & Van Vleet, M. (2016). A longitudinal investigation of
704 relational catalyst support of goal strivings. *The Journal of Positive Psychology*, *11*(3),
705 246–257. https://doi.org/10.1080/17439760.2015.1048815
706 von Rosen, P., Olofsson, O., Väsbom, S., & Heijne, A. (2019). Correlates of health in adolescent
707 elite athletes and adolescents: A cross-sectional study of 1016 adolescents. *European*
708 *Journal of Sport Science*, *19*(5), 707–716.
709 https://doi.org/10.1080/17461391.2018.1552721

Warmenhoven, J., Weissensteiner, J. R., & MacMahon, C. (2020). “Dad! Let’s go have a hit…”: Sources and types of support in female cricket players. *Journal of Science and Medicine in Sport*, *23*(10), 991–998. https://doi.org/10.1016/j.jsams.2020.03.012

Wolfenden, L. E., & Holt, N. L. (2005). Talent development in elite junior tennis: Perceptions of players, parents, and coaches. *Journal of Applied Sport Psychology*, *17*(2), 108–126. https://doi.org/10.1080/10413200590932416

Wylleman, P., & Rosier, N. (2016). Holistic perspective on the development of elite athletes. In M. Raab, P. Wylleman, R. Seiler, A.-M. Elbe, & A. Hatzigeorgiadis (Eds.), *Sport and Exercise Psychology Research* (pp. 269–288). Academic Press.

Yzerbyt, V., Muller, D., Batailler, C., & Judd, C. M. (2018). New recommendations for testing indirect effects in mediational models: The need to report and test component paths. *Journal of Personality and Social Psychology*, *115*(6), 929. https://doi.org/10.1037/pspa0000132

Table 1

Spearman Correlations Between the Studied Variables at Both Times

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1. T1 PFR	4.22	0.79													
2. T1 PMR	4.33	0.62	.67** [.59, .74]												
3. T1 Self-esteem	3.83	0.65	.33** [.20, .45]	.23** [.09, .35]											
4. T1 Self-efficacy	4.16	0.44	.26** [.12, .38]	.30** [.16, .42]	.12 [-.02, .26]										
5. T2 PFR	4.07	0.88	.78** [.71, .83]	.51** [.39, .62]	.28** [.14, .42]	.20** [.05, .35]									
6. T2 PMR	4.21	0.75	.54** [.43, .64]	.71** [.63, .78]	.15* [.00, .29]	.15 [-.00, .30]	.68** [.59, .75]								
7. T2 Self-esteem	3.72	0.66	.27** [.13, .41]	.17* [.02, .32]	.50** [.38, .60]	.02 [-.14, .17]	.36** [.22, .48]	.25** [.10, .39]							
8. T2_Goal accomp.	2.65	0.82	.05 [-.11, .20]	.06 [-.10, .21]	.08 [-.08, .23]	.29** [.14, .42]	.07 [-.09, .22]	.09 [-.06, .24]	.04 [-.11, .20]						
9. T2 Anxiety	3.11	1.19	-.20** [-.35, -.06]	-.18* [-.32, -.03]	-.35** [-.47, -.21]	.12 [-.04, .27]	-.23** [-.37, -.08]	-.20** [-.34, -.05]	-.37** [-.49, -.23]	.15 [-.00, .30]					
10. T2 Positive	3.82	0.91	.39** [.25, .51]	.28** [.13, .41]	.31** [.17, .44]	.28** [.14, .42]	.48** [.35, .59]	.42** [.29, .54]	.47** [.34, .58]	.07 [-.08, .22]	-.31** [-.44, -.17]				
11. T2 Vitality	3.73	0.84	.40** [.27, .52]	.29** [.15, .42]	.32** [.18, .45]	.16* [.01, .31]	.53** [.42, .63]	.38** [.25, .50]	.47** [.34, .58]	.07 [-.09, .22]	-.29** [-.42, -.15]	.58** [.47, .67]			
12. T2 Health quality	3.45	0.68	.21** [.06, .35]	.20* [.05, .34]	.18* [.03, .32]	.03 [-.13, .18]	.25** [.10, .39]	.11 [-.05, .25]	.31** [.16, .44]	-.13 [-.28, .03]	-.20** [-.34, -.05]	.24** [.09, .38]	.34** [.20, .46]		
13. T2 Life satisfaction	7.62	1.48	.36** [.22, .48]	.26** [.12, .40]	.34** [.20, .47]	.07 [-.08, .22]	.45** [.32, .57]	.37** [.23, .49]	.50** [.38, .61]	-.07 [-.22, .08]	-.43** [-.55, -.30]	.54** [.42, .63]	.41** [.28, .53]	.28** [.13, .41]	
14. T2 Thriving	3.92	0.62	.46** [.33, .57]	.34** [.20, .47]	.38** [.24, .50]	.19* [.03, .33]	.57** [.46, .67]	.43** [.29, .54]	.58** [.48, .68]	-.03 [-.18, .13]	-.41** [-.53, -.27]	.81** [.75, .85]	.79** [.73, .84]	.63** [.53, .71]	.73** [.65, .79]

Note. T1 = time one of data collection; T2 = time two of data collection (three months later); PFR = Perceived Father Responsiveness; PMR = Perceived Mother Responsiveness. Goal accomp. = goal accomplishment, Anxiety = Trait cognitive sport anxiety. Positive = Positive affect dimension. Thriving is a higher order factor gathering positive affect, vitality, health quality, and life satisfaction.

* $p < .05$; ** $p < .001$

Table 2

Indirect Effects of Athletes' Perception of their Mother Responsiveness

Indirect effect	β	p-value
T1 PMR → T1 Self-esteem → T2 Self-esteem → T2 Thriving	0.064	0.015
T1 PMR → T1 Self-esteem → T2 Self-esteem → T2 Anxiety	-0.050	0.027
T1 PMR → T2 PMR → T2 Self-esteem → T2 Thriving	0.081	0.008
T1 PMR → T2 PMR → T2 Self-esteem → T2 Anxiety	-0.064	0.024
T1 PMR → T2 PMR → T2 Thriving	0.221	0.001
T1 PMR → T2 PMR → T2 Anxiety	-0.091	0.168
T1 PMR → T1 Self-efficacy → T2 Goal accomplishment	0.092	0.008
T1 PMR → T1 Self-efficacy → T2 Anxiety	0.057	0.055

Note. T1 = time one of data collection; T2 = time two of data collection (three months later); PMR = Perceived Mother Responsiveness; Anxiety = Trait cognitive sport anxiety.

Table 3

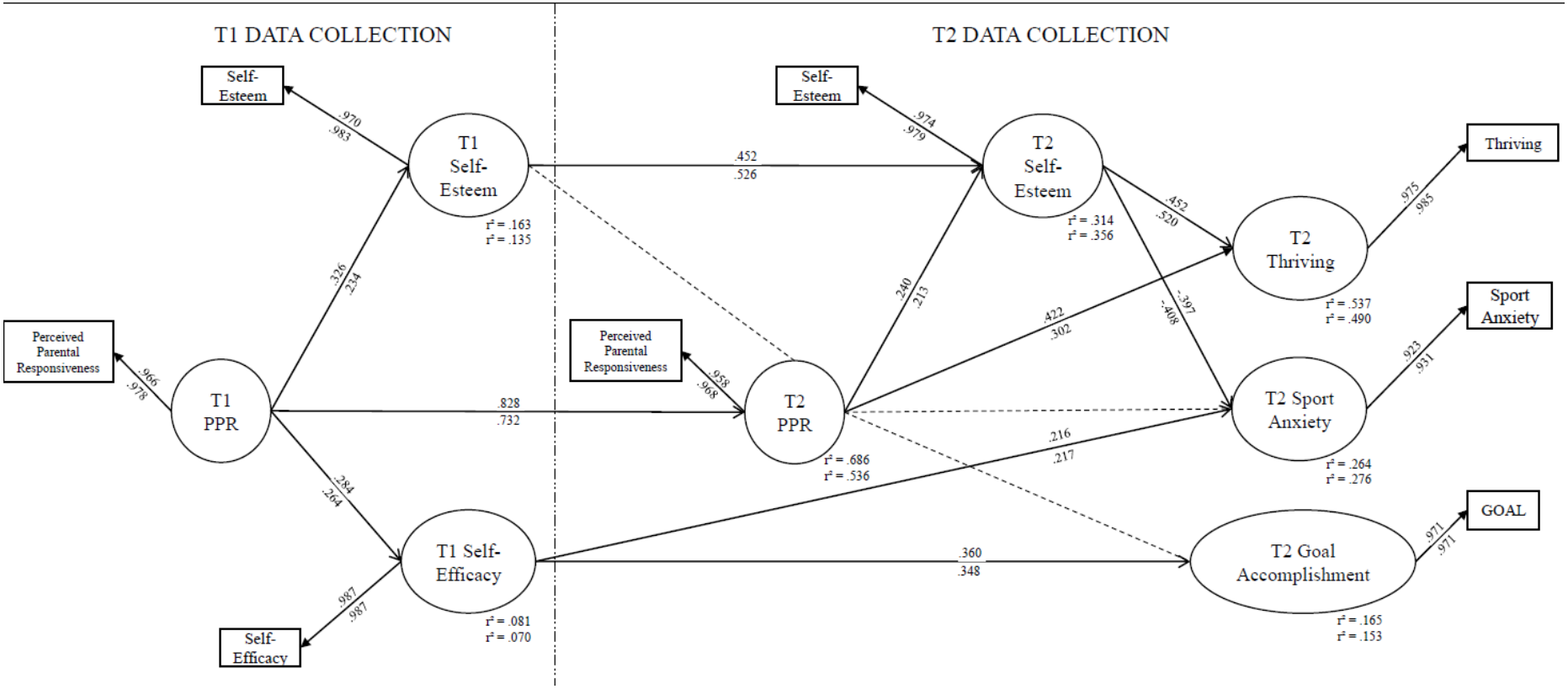
Indirect Effects of Athletes' Perception of their Father Responsiveness

Indirect effect	β	p-value
T1 PFR → T1 Self-esteem → T2 Self-esteem → T2 Thriving	0.067	0.011
T1 PFR → T1 Self-esteem → T2 Self-esteem → T2 Anxiety	-0.059	0.019
T1 PFR → T2 PFR → T2 Self-esteem → T2 Thriving	0.090	0.006
T1 PFR → T2 PFR → T2 Self-esteem → T2 Anxiety	-0.079	0.017
T1 PFR → T2 PFR → T2 Thriving	0.350	0.001
T1 PFR → T2 PFR → T2 Anxiety	-0.118	0.094
T1 PFR → T1 Self-efficacy → T2 Goal accomplishment	0.102	0.011
T1 PFR → T1 Self-efficacy → T2 Anxiety	0.031	0.063

Note. T1 = time one of data collection; T2 = time two of data collection (three months later); PFR = Perceived Father Responsiveness, Anxiety = Trait cognitive sport anxiety.

Figure 1

Summary of the significant effects ($p < 0.05$) of perceived parental responsiveness at T1 through self-efficacy and self-esteem at on athletes' goal accomplishment, trait cognitive sport anxiety, and thriving three months later.



Note. Score above the lines represent athletes' perception of their father's responsiveness. Scores below the lines represent athletes' perception of their mother's responsiveness. These values represent standardized path coefficient. T1 = time one of data collection; T2 = time two of data collection, three months after T1. PPR = Perceived Parental Responsiveness