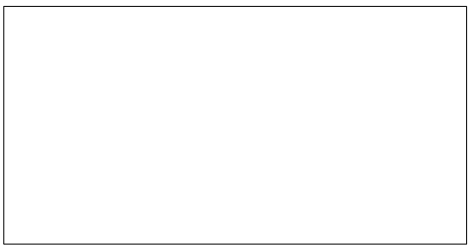

Development of Perfectionism in Junior Athletes:

Examination of Actual and Perceived Parental Perfectionism

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Abstract

Initial research suggests that parental perfectionism is central to the development of athlete perfectionism. However, it is unclear whether perceived or actual parental perfectionism is most important. The present study aimed to address this issue in two ways. First, we re-examined the predictive ability of actual versus perceived parental perfectionism on athlete perfectionism. Second, for the first time, we tested whether perceived parental perfectionism mediated the relationship between actual parental perfectionism and athlete perfectionism. A sample of 150 junior athletes and their parents completed measures of perfectionism (perfectionistic strivings and perfectionistic concerns). Junior athletes completed two measures, one of their own perfectionism and one of perceptions of their parents' perfectionism. Parents completed one measure of their own perfectionism. Regression analyses showed that perceived parental perfectionism predicted athlete perfectionism over and above actual parental perfectionism. Mediation analyses provided support for our proposed model. Overall, the findings suggest that both actual and perceived parental perfectionism are important in the development of perfectionism in junior athletes.

Keywords: perfectionism; development; parents; junior athletes

Introduction

Parents are important in youth sport. They provide transport, money, and time, without which participation would not be possible (Baxter-Jones & Maffulli, 2003). They also shape their children's experiences in youth sport in more subtle ways through their behaviours (Fredricks & Eccles, 2004). If parents provide unconditional love, encouragement, and praise, they can have a positive impact on their children's psychological development and sport experiences (Knight, Boden, & Holt, 2010). In contrast, if parents engage in pressuring behaviours such as excessive expectations and criticism, they can have a negative impact on their children's psychological development and sport experiences (Hayward, Knight, & Mellalieu, 2017). In the current study we were interested in the influence parents have on the development of personality characteristics in their children. Specifically, whether more perfectionistic parents contribute to the development of perfectionism in junior athletes.

Perfectionism

Perfectionism is a multidimensional personality characteristic that comprises setting excessively high standards of performance and tendencies for overly critical evaluations of behaviour (Frost, Marten, Lahart, & Rosenblate, 1990). Whereas perfectionism has been conceptualised in numerous ways (e.g., Frost et al, 1990; Hewitt & Flett, 1991; Terry-Short, Owens, Slade & Dewey, 1995), factor analytic studies provide support for two higher-order dimensions: perfectionistic strivings and perfectionistic concerns (Stoeber & Otto, 2006). Perfectionistic strivings capture excessively high personal standards and a self-oriented striving for perfection. Perfectionistic concerns capture concerns about making mistakes, feelings of discrepancy between one's standards and performance, and negative reactions to imperfection. These higher order dimensions can be measured in reference to general life or in reference to specific domains such as sport (Stoeber & Madigan, 2016).

Recent reviews of research in sport suggest that while the two dimensions of perfectionism are positively correlated, they frequently show different, and sometimes opposite patterns of relationships with outcomes in sport (see Hill, Mallinson-Howard, & Jowett, 2018). Perfectionistic concerns are consistently correlated with negative outcomes (e.g., burnout, training distress, amotivation). In contrast, perfectionistic strivings are more ambiguous in that they are correlated with both negative (e.g., negative affect, depressive symptoms, fear of failure) and positive outcomes (e.g. enjoyment, engagement, performance). These relationships are evident across a wide range of sports, ages, and levels of competition. In regard to the current study, notably, a large number of these findings are drawn from research in recreational and competitive youth sport participants.

Development of Perfectionism

Despite a substantial body of work examining the correlates and consequences of perfectionism in sport, far fewer studies have examined how it develops in this domain. Flett, Hewitt, Oliver and Macdonald (2002) provide a conceptual model of the development of perfectionism. This model centres on the role of parents and differentiates four distinct pathways through which parents may instil perfectionism in their children. The first pathway posits that perfectionism develops as a consequence of a child's tendency to imitate their parents' perfectionism (social learning pathway). The second pathway posits that perfectionism develops because of extreme parental expectations and parental acceptance that is conditional on achievement (social expectations pathway). The third pathway posits that perfectionism develops as a reaction to a harsh social environment (social reactions pathway). The final pathway posits that perfectionism develops in response to a parents' tendency to react negatively to mistakes (anxious rearing pathway).

A number of researchers have tested Flett and colleagues' (2002) model outside of sport. Research has typically focused on the social expectations pathway and, in turn, provided support

for viewing the development of perfectionism in this manner. For example, Damian, Stoeber, Negru, and Băban (2013) showed that perceived parental expectations predicted longitudinal increases in adolescents' perfectionistic concerns over time. Studies have also found some support for the social learning pathway. For example, research by Spiers Neumeister and colleagues (Speirs Neumeister, 2004; Speirs Neumeister, Williams, & Cross, 2009) in gifted adolescent students has found that when asked about the origins of their perfectionism, some expressed a proclivity to model the perfectionistic behaviours of their parents. Overall, then, current evidence provides support for parts of Flett et al.'s (2002) model and the role of parents in the development of perfectionism.

Development of Perfectionism in Sport

Far fewer studies have examined how perfectionism develops in athletes. However, the studies that do exist also suggest that parents are important. Research, to date, has largely examined the social expectations pathway. For example, McArdle and Duda (2008) showed that parental expectations and parental criticism predicted athlete perfectionistic strivings and perfectionistic concerns, respectively. Likewise, Sapieja, Dunn, and Holt (2011) showed that perceptions of an authoritative/demanding parental style predicted athlete perfectionistic strivings and perfectionistic concerns. More recently, studies have also shown that athlete perfectionistic strivings and perfectionistic concerns are positively correlated with both parental conditional regard (Curran, Hill, & Williams, 2017) and perceived parental pressure to be perfect (Madigan, Stoeber, & Passfield, 2015). Mirroring research outside of sport, the social expectations pathway has therefore garnered support in sport.

As to the other pathways through which perfectionism in sport may develop, there is some evidence for the social learning pathway too. Specifically, Appleton, Hall, and Hill (2010) found that perceived parental perfectionism predicted perfectionism in junior athletes in a pattern consistent with social imitation. That is, the strongest predictor of athlete perfectionism was

perceptions of the corresponding dimension of perfectionism in the parent. Important to the current study, Appleton et al. (2010) also found that it was perceived parental perfectionism, rather than actual parental perfectionism[1], which was the largest predictor of athlete perfectionism. This finding contrasts with research outside of sport which points to the importance of actual parental perfectionism (e.g., Speirs Neumeister, 2004; Speirs Neumeister et al., 2009) and discounts the likely relationship between actual and perceived parental behaviors. The roles of actual and perceived parental perfectionism in the development of perfectionism in junior athletes is therefore an issue that warrants further examination.

In all likelihood, rather than one or the other, both actual and perceived parental perfectionism are likely to be important in the development of perfectionism in junior athletes. This idea is accounted for by Bandura (1977) who highlights how actual behaviors form the basis for internalized perceptions that are acquired through social interaction with significant others ("symbolic coding," p.7). According to Bandura (1977), parental behaviours are internalised via several mediating processes. These processes consider the complex interplay between parents and their child. For instance, the degree of internalisation can be determined by the extent to which a child is exposed to, attunes to, cares about, and remembers parental behaviours. Internalisation will also be affected by other factors, including perfectionism, that "colour" ongoing perceptions and interactions with others (Nordin-Bates, Hill, Cumming, Aujla, & Redding, 2014). In regard to the development of perfectionism, this highlights how actual parental perfectionism affects

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[1]For clarity of communication, the term "actual" is used to refer to self-reported perfectionism (by parents). While we acknowledge the complexities involved in measuring perfectionism, we use this term so as to clearly differentiate it from our use of "perceived" perfectionism (by athletes).

athlete perfectionism via athletes' (imperfect) perceptions of their parents' perfectionism. This mediation model is important as it reconciles previous research via the inclusion of both actual and perceived parental perfectionism but has yet to be examined inside or outside of sport.

The Present Study

The present study had two aims. First, we re-examined the predictive ability of actual versus perceived parental perfectionism on athlete perfectionism. Second, we provided the first test of whether perceived parental perfectionism mediated the relationship between parental perfectionism and athlete perfectionism (see Figure 1). Based on previous research, we expected that athlete perfectionism is best explained by perceived parental perfectionism. In addition, following Bandura (1977; 1986), we expected that perceived parental perfectionism would mediate the relationship between parental perfectionism and athlete perfectionism.

Method

Participants and procedure

Participants were 150 junior athlete-parent dyads (athlete *M* age = 14.74 years, *SD* = 1.43; parent *M* age = 46.14 years, *SD* = 5.39). Junior athletes competed in a range of sports (e.g., soccer, hockey, gymnastics) at recreational (*N* = 19), club (*N* = 77), regional (*N* = 47), and national (*N* = 5) levels. Athletes trained on average 5.51 hours per week (*SD* = 3.50). The study was approved by a university ethics committee. Informed consent was obtained from all participants prior to them completing the questionnaire. In addition, parental consent was obtained from participants below the age of 18 years. Data collection took place at the participants' sports clubs.

Measures

Athlete perfectionism. To measure athlete perfectionism , we used two subscales from the Multidimensional Inventory of Perfectionism in Sport (MIPS; Stoeber, Otto, Pescheck, Becker, & Stoll, 2007). To measure perfectionistic strivings, we used the subscale capturing striving for

perfection (5 items; e.g. “I strive to be as perfect as possible”). To measure perfectionistic concerns, we used the subscale capturing negative reactions to imperfection (5 items; e.g., “I feel extremely stressed if everything does not go perfectly”). Junior athletes were instructed to indicate how they usually felt during competition. We focussed on competition to reflect the important personal meaning and value of this domain for athletes (Munroe-Chandler, Hall, & Weinberg, 2004). This is a common approach in research on perfectionism in athletes (e.g., Stoeber, Stoll, Pescheck, & Otto, 2008). Athletes responded to items using a 6-point Likert scale (1 = *never* to 6 = *always*). Previous studies have shown that both subscales are valid and reliable indicators of perfectionistic strivings and perfectionistic concerns (see Stoeber & Madigan, 2016; Madigan, 2016).

Perceived parental perfectionism. To measure perceived parental perfectionism, we used a modified version of the MIPS. Specifically, we modified the items to reflect the perceptions of their most involved parent (e.g., “My mother/father feels extremely stressed if everything does not go perfectly”). This is a common practice when aiming to examine perceptions of others’ characteristics (e.g., Appleton et al., 2010; Duda & Hom, 1993; Ebbeck & Becker, 1994). Athletes responded on the same six-point scale (1 = *never* to 6 = *always*) and were asked to consider the parent most involved in their sport and to please indicate how they thought their parents generally feel. There were two reasons for this last point. First, all items can be answered without a parent having participated in sport. Second, this captures a more inclusive perception of their parents whereby the child may not be exposed to their parent in all achievement scenarios (e.g., work).

Actual parental perfectionism. To measure actual parental perfectionism, we used the same two subscales from the MIPS. In this instance, however, parents were instructed to indicate how they generally felt in achievement scenarios in sport.

Analytic Strategy

First, because we adapted the MIPS to measure perceived and actual parental perfectionism, we then assessed the factor structures of each instrument using Confirmatory Factor Analysis (CFA). We did so using the robust maximum likelihood estimator in Mplus 7.0 (Muthén & Muthén, 1998–2012). To evaluate model fit, we chose the following fit indices: the chi-square statistic (χ^2), comparative fit index (CFI), Tucker–Lewis index (TLI [also known as non-normed fit index, NNFI]), standardised root mean square residual (SRMR), and the root mean square error of approximation (RMSEA; see Marsh, Hau, & Wen, 2004). We used the following cut-off values as benchmarks for acceptable (χ^2 /df < 3, CFI > .90, TLI > .90, SRMR < .10, RMSEA < .10; Marsh et al., 2004).

We then examined the bivariate correlations between all variables. Next, we computed a series of multiple regressions to examine how actual parental perfectionism and perceived parental perfectionism predicted athlete perfectionism. We performed separate regressions for perfectionistic strivings and perfectionistic concerns. In the first step, we examined the predictive ability of actual parental perfectionism. In the second step, we entered perceived parental perfectionism and in doing so examined the unique predictive ability of perceived parental perfectionism over and above parents' actual levels of perfectionism. These regressions included bias-corrected bootstrapped (1000 samples) estimates of confidence intervals. Then, to test the mediational model in Figure 1, we employed Mplus 7.0 (Muthén & Muthén, 1998–2012). Overall model fit was evaluated using the same parameters and cut-off values that were used for the CFA. To test mediation, we again used bias-corrected bootstrapping (1000 samples) to estimate indirect effects (Rucker, Preacher, Tormala, & Petty, 2011). If the 95% confidence interval (CI) does not contain zero, the indirect effects are significant at the $p < .05$ level (Rucker et al., 2011).

Results

Data Screening

Following the recommendations of Tabachnick and Fidell's (2014), we first inspected the data for missing values. Because very few item responses were missing (i = 6), missing responses were replaced with the mean of the item responses of the corresponding scale (Graham, Cumsille, & Elek-Fisk, 2003). Next, we examined the scales scores' reliability by computing Cronbach's alphas. All scores showed satisfactory reliability (see Table 1). Finally, we screened the data for univariate and multivariate outliers. When considering univariate outlier, no standardised scores were greater than z = 3.29. However, one participant showed a Mahalanobis distance larger than the critical value of $\chi^2(6) = 22.46$, $p < .001$ and was removed from further analyses. This resulted in a final sample of N = 149.

Confirmatory Factor Analyses

The CFAs of the original and adapted versions of the MIPS all demonstrated adequate-to-good fit to the data: athlete perfectionism (χ^2 [34] = 74.95, $p < .001$, χ^2 /df = 2.20, CFI = .95, TLI = .94, SRMR = .05, RMSEA = .09), perceived parental perfectionism (χ^2 [34] = 97.63, $p < .001$, χ^2 /df = 2.87, CFI = .95, TLI = .93, SRMR = .05, RMSEA = .11), and actual parental perfectionism (χ^2 [34] = 95.13, $p < .001$, χ^2 /df = 2.80, CFI = .93, TLI = .91, SRMR = .06, RMSEA = .11).

Bivariate Correlations

When the bivariate correlations were examined, all variables displayed positive intercorrelations. As predicted, athlete perfectionistic strivings displayed a small, but significant, correlation with actual parental perfectionistic strivings and a moderate significant correlation with perceived parental perfectionistic strivings. Similarly, athlete perfectionistic concerns displayed a significant small correlation with actual parental perfectionistic concerns and a moderate significant correlation with perceived parental perfectionistic concerns. Bivariate correlations are displayed in Table 1.

Multiple Regression Analyses. Results of multiple regression analyses predicting athlete perfectionistic strivings showed that actual parental perfectionistic strivings was a statistically

significant positive predictor (Step 1). When actual parental perfectionistic strivings was controlled for, perceived parental perfectionistic strivings emerged as a significant positive predictor (Step 2). Results from the multiple regression analyses predicting athlete perfectionistic concerns replicated the above findings by demonstrating that perceived parental perfectionistic concerns was a predictor over and above actual parental perfectionistic concerns. Multiple regression analyses are displayed in Table 2.

Model Analysis. The hypothesized model provided a good fit to the data (χ^2 [6] = 6.51, p = .37, χ^2/df = 1.09, CFI = .99, TLI = .99, SRMR = .04, RMSEA = .02; 90% CI .00 to .11). Standardised path coefficients are reported in Figure 2. A combination of actual parental and perceived of parental perfectionistic strivings accounted for 17% of variance in the athlete perfectionistic strivings. Similarly, the combination of actual parental and perceived parental perfectionistic concerns accounted for 21% of variance in athlete perfectionistic concerns.

Indirect effects. In the mediation model, actual parental perfectionistic strivings had a positive indirect effect on athlete perfectionistic strivings via perceived parental perfectionistic strivings (indirect effect = .15; 95% CI = .08 to .25). Furthermore, actual parental perfectionistic concerns had a positive indirect effect on athlete perfectionistic concerns via perceived parental perfectionistic concerns (indirect effect = .12; 95% CI = .05 to .21).

Discussion

The present study had two aims. First, we re-examined the predictive ability of actual versus perceived parental perfectionism on athlete perfectionism. Second, we examined whether perceived parental perfectionism mediated the relationship between actual parental perfectionism and athlete perfectionism. We hypothesised that athlete perfectionism would be best predicted by perceived parental perfectionism and that perceived parental perfectionism would mediate the relationship between actual parent perfectionism and athlete perfectionism. In line with our hypotheses, perceived parental perfectionism predicted athlete perfectionism over and above

actual parental perfectionism. In addition, perceived parental perfectionism mediated the relationship between actual parental perfectionism and athlete perfectionism.

Actual Versus Perceived Parental Perfectionism

In finding that perceived parental perfectionism predicted athlete perfectionism after controlling for actual parental perfectionism, our findings replicate Appleton et al. (2010). This is noteworthy because much of the research outside of sport examining the development of perfectionism has typically emphasized actual parental perfectionism. Instead, it appears that subjective experiences of junior athletes in regard to parental behaviours may be a more importance basis for imitation and social learning. As highlighted by Appleton et al (2010), this is consistent with broader findings in sport examining other personality characteristics such as goal orientations (e.g., Givvin, 2001). As such, when seeking to better understand the development of perfectionism in junior athletes, what junior athletes think the characteristics of their parents are is more important than what characteristics their parents say they have.

Mediation Effects

While these findings elude to the importance of perceived parental perfectionism, they do not mean that actual perfectionism is unimportant or inconsequential. Indeed, affirming the importance of actual parental perfectionism in the development of perfectionism is one of the key contributions of the current study. Specifically, mediational analysis confirmed that actual parental perfectionism has an indirect influence on athlete perfectionism via perceived parental perfectionism. We used Bandura's (1977) notion of symbolic coding as the basis for this expectation - that is actual behaviour is the initial source from which information is attended to but later internalised. As such, actual parental perfectionism should be considered important to the way in which athletes socially learn perfectionism and should not be discounted in sole favour of perceived parental perfectionism.

The findings have more widespread implications for understanding perfectionism in sport. Specifically, researchers examining perfectionism have demonstrated that perfectionism is related to the experiences of youth athletes (e.g., Mallinson-Howard, Knight, Hill, & Hall, 2018). Our mediation model highlights how the experiences of athletes are traceable to the actual characteristics of their parents. In doing so, we reiterate the importance of parents in shaping the experiences of junior athlete and also show why the inclusion of parents in interventions aimed at improving youth sport experiences are so important. Given the current findings we anticipate that the most successful interventions that aim to reduce perfectionism in junior athletes will involve parents working collaboratively to influence and facilitate the child's psychological development (Harwood, Knight, Thrower, & Berrow, 2019). More broadly, it is also likely that other social agents that exert an influence on junior athletes may also need to be included in similar interventions. Coaches, in particular, have also been found to influence the development of perfectionism in junior athletes so warrant especial consideration in this regard (Madigan, Curran, Stoeber, Hill, Smith, & Passfield, 2019).

Limitations and Future Research

The present study has several limitations. First, the study used self-report measures. This can result in common method variance whereby correlations between constructs are inflated as a consequence. In order to overcome this issue, future research should consider utilising informant reports of participants (e.g., Sherry et al., 2013). Second, athlete perfectionism was captured in the context of competition. Therefore, the findings may not generalise to other aspects of junior athletes' lives (e.g., practice). Third, parent perfectionism was measured in only one parent. While this parent was chosen based on the child indicating which parent was the most influential in sport (Appleton et al., 2010), such a choice could be based on which parent provides tangible support (e.g., travel to and from training/matches). Thus, it is unclear whether there would be differences between parents. To capture the full extent to which parents influence their child's

perfectionism, future research should look to measure more than one parent or guardian, when possible. Fourth, participants were junior athletes. It is therefore unclear if the present findings would generalise to younger or older athletes. Consequently, future research would benefit from examining these relationships in different ages.

Conclusion

The present study found that perceived parental perfectionism predicts athlete perfectionism after controlling for actual parental perfectionism. In addition, mediational analyses showed that parental perfectionism affects athletes' perfectionism indirectly via perceived parental perfectionism. As such both actual parent perfectionism and perceived parental perfectionism are important in the development of perfectionism in junior athletes.

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Table 1

Descriptive Statistics, Cronbach's Alphas, and Bivariate Correlations

Variable	1	2	3	4	5	6
1. Athlete perfectionistic strivings						
2. Athlete perfectionistic concerns	.53**					
3. Actual Parental perfectionistic strivings	.20*	.09				
4. Actual Parental perfectionistic concerns	.24**	.17*	.66**			
5. Perceived parental perfectionistic strivings	.44**	.34**	.39**	.37**		
6. Perceived parental perfectionistic concerns	.29**	.48**	.17**	.32**	.61**	
M	4.28	3.22	3.44	2.69	3.41	2.75
SD	1.09	1.15	1.10	0.99	1.26	1.18
α	0.88	0.88	0.91	0.86	0.93	0.92

Note. $N = 149$.

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

Table 2

Summary of Multiple Regression Analyses

Model	R^2	β	*B*	BCa 95% CI
Model 1: *DV = Athlete perfectionistic strivings*				
Step1: *F* (1, 147) = 6.25*	.04*			
Actual parental perfectionistic strivings		.20	.20*	[.04, .36]
Step 2: *F* (2, 146) = 17.36**; ΔF (1,146) = 27.35**	.19**			
Actual parental perfectionistic strivings		.04	.04	[-.12, .20]
Perceived parental perfectionistic strivings		.42	.37**	[.23, .50]
Model 2: *DV = Athlete perfectionistic concerns*				
Step1: *F* (1, 147) = 4.32*	.03*			
Actual parental perfectionistic concerns		.17	.20*	[.01, .38]
Step 2: *F* (2, 146) = 22.20**; ΔF (1,146) = 38.96**	.23**			
Actual parental perfectionistic concerns		.01	.02	[-.16, .19]
Perceived parental perfectionistic concerns		.48	.47**	[.32, .61]

Note. *N* = 149. DV = dependent variable. *B* = unstandardized regression weight. BCa 95% CI = bias corrected accelerated 95% confidence intervals. β = standardised regression weight.

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

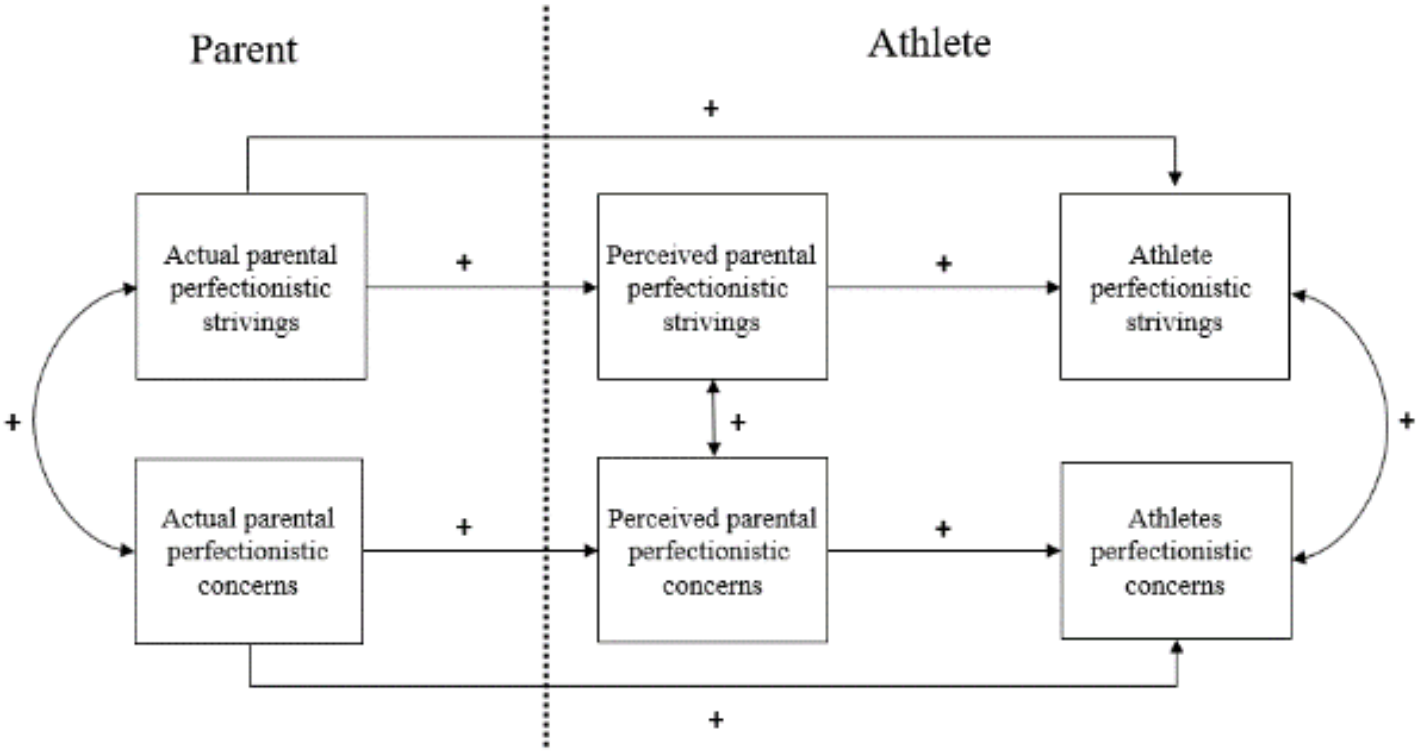

Figure 1. Hypothesised model of the relationships between actual parental perfectionism, perceived parental perfectionism, and athlete perfectionism.

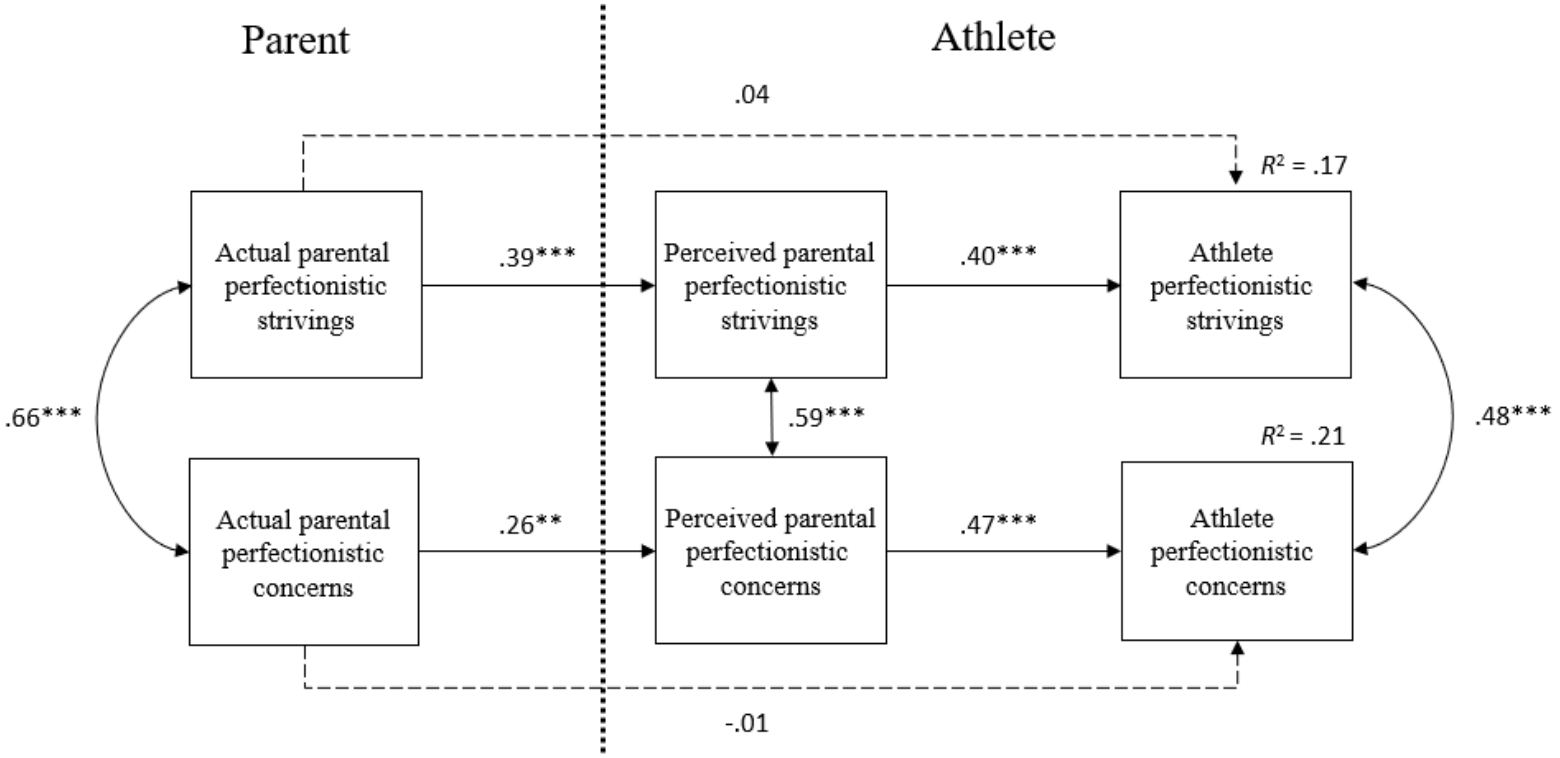

Figure 2. Path model of actual parental perfectionism, perceived parental perfectionism, and athlete perfectionism (N = 149). Dashed paths are nonsignificant (p > .05). ∗p < .05. ∗∗p < .01. ∗∗∗p < .001.