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1 Parent conditional regard and the development of perfectionism in adolescent athletes: The  
2 mediating role of competence contingent self-worth

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### **Abstract**

Despite evidence highlighting the debilitating nature of perfectionism in sport, very few studies have examined how it develops. In explaining the development of perfectionism, theorists emphasize controlling parental practices in family contexts replete with conditional regard. This study, then, tested the role of parent conditional regard in the development of perfectionistic strivings and perfectionistic concerns among adolescent athletes. It also tested the mediating role of competence contingent self-worth in these associations. One hundred and forty eight ( $Mage = 15.12$  years,  $SD = 1.64$ ) adolescent athletes competing at regional level or above in their primary sport completed measures of multidimensional perfectionism, competence contingent self-worth, and parent conditional regard. In line with hypotheses, structural equation modelling showed that perfectionistic strivings and perfectionistic concerns were positively predicted by parental conditional regard. As expected, competence contingent self-worth mediated both relationships. The findings are the first to suggest conditional regard from parents is important in the development of perfectionism among adolescent athletes because these behaviours contribute to contingencies of self-worth that are based on competence.

*Key words:* parenting; sport; stress; development

1           Perfectionism is an achievement-related personality characteristic understood to be  
2 common among athletes (Flett & Hewitt, 2005). Although ostensibly adaptive (e.g., Gould,  
3 Dieffenbach, & Moffett, 2002; Rees et al., 2016; Sarkar & Fletcher, 2014), much research  
4 indicates that perfectionism is a vulnerability to several psychological difficulties in sport.  
5 This includes extensive evidence that perfectionistic athletes are highly stress reactive, cope  
6 poorly with failure, and suffer from burnout (e.g., Dunn, Gotwals, Dunn, & Syrotuik, 2006;  
7 Hill & Curran, 2016; Hill, Hall, Duda, & Appleton, 2011). With these outcomes in mind, it is  
8 surprising that very little research has examined how perfectionism develops. Models of  
9 perfectionism development emphasize parent conditional regard and the internalization of  
10 self-worth contingencies associated with the demonstration of competence (Flett, Hewitt,  
11 Oliver, & Macdonald, 2002; Hewitt, Flett, & Mikail, 2017). This study therefore tested  
12 whether parent conditional regard contributes to adolescent athletes' perfectionism through  
13 the mediating influence of competence contingent self-worth.

#### 14 **Multidimensional perfectionism**

15           Perfectionism encompasses a combination of striving for flawlessness and overly  
16 critical self-evaluation (Frost, Marten, Lahart, & Rosenblate, 1990). It is a multidimensional  
17 personality characteristic, which includes several constructs that together encapsulate two  
18 higher-order dimensions (Stoeber, 2011, 2014). The first dimension, perfectionistic strivings,  
19 entail the self-oriented pursuit of perfection and excessively high performance standards  
20 (Gotwals, Stoeber, Dunn, & Stoll, 2012). The second dimension, perfectionistic concerns,  
21 includes a hypervigilance to mistakes, doubts about one's actions, a fear of negative social  
22 evaluation, and perceptions that significant others hold stringent standards (Dunkley,  
23 Blankstein, Halsall, Williams, & Winkworth, 2000). Although conceptualised as a broad  
24 personality characteristic, research shows that most perfectionists report between-domain  
25 differences in levels of perfectionistic strivings and perfectionistic concerns (see Stoeber &

## RUNNING HEAD: CONDITIONAL REGARD AND PERFECTIONISM

1 Madigan, 2016). This has led to the development of sport-specific assessments of  
2 perfectionism, which have especial within-domain predictive utility (e.g., Gotwals & Dunn,  
3 2009; Hill, Appleton, & Mallinson, 2016).

4 Perfectionistic strivings is the most complex dimension of perfectionism. On the one  
5 hand, perfectionistic strivings are seemingly adaptive because they show positive  
6 relationships with performance outcomes, subjective well-being, and athlete engagement  
7 (e.g., Jowett, Hill, Hall, & Curran, 2016; Kaye, Conroy, & Fifer, 2008; Hill, Stoeber, Brown,  
8 & Appleton, 2014). Yet this disguises susceptibility to motivational and psychological  
9 difficulties that arise from attaching one's self-worth to achievement (Flett & Hewitt, 2016).  
10 Following failure, athletes high in perfectionistic strivings show decrements in performance  
11 and negative cognitions towards the task (Anshel & Mansouri, 2005; Hill et al., 2011).  
12 Perfectionistic concerns, by contrast, possess a more straightforward pattern of debilitating  
13 outcomes. These include (among others) poorer coping, lower subjective well-being, and  
14 higher athlete burnout (e.g., Gaudreau & Verner-Filion, 2012; Jowett, Hill, Hall, & Curran,  
15 2013; Hill, Hall, & Appleton, 2010).

### 16 **Development of multidimensional perfectionism**

17 Given the potentially debilitating nature of perfectionistic strivings and perfectionistic  
18 concerns in sport, it is surprising that scant research has examined how they develop  
19 (Appleton & Curran, 2016). Parent socialization is understood to be especially influential in  
20 this regard. Guided by seminal writing (e.g., Hollender, 1965; Hamachek, 1978; Pacht, 1984),  
21 Hewitt and colleagues (2017) have recently described a model of perfectionism development.  
22 It posits that asynchrony between child attachment needs, for belonging and self-esteem, and  
23 parent supports for those needs, is primarily responsible for the development of  
24 perfectionism. When child attachment needs are only intermittently met through parent  
25 socialization, children come to view others as judgmental, take on a fragile and insecure

1 sense of self-worth, and internalize relational dependencies that are characterized by feelings  
2 of unworthiness and shame. Perfectionism, then, is a socially conditioned coping strategy that  
3 is adopted to avoid the psychological pain of rejection and bolster labile self-worth through  
4 obtaining the approval and validation of significant others.

5         One specific form of parent socialization that can lead to parent-child asynchrony is  
6 conditional regard (Flett et al., 2002). A type of psychological control, parent conditional  
7 regard involves the conditional provision of approval to evoke guilt and shame as levers of  
8 compliance (Barber, 1996). It is especially common in achievement contexts, like sport,  
9 where love and affection are used as reinforcements when a child has met parents'  
10 performance expectations but are withdrawn when they do not (Assor, Roth, & Deci, 2004).  
11 In line with Hewitt et al's (2017) model of perfectionism development, the use of parent  
12 conditional regard teaches young athletes that self-esteem and belonging are labile,  
13 intermittently gained, and conditional upon parent approval (Rogers, 1951). Accordingly,  
14 young athletes learn to set excessive performance standards and become preoccupied with the  
15 avoidance of mistakes and failure because doing so obviates feelings of rejection,  
16 unworthiness, and shame (Hamachek, 1978).

17         To date, no research has examined the relationship between parent conditional regard  
18 and athletes' perfectionism. However, in the sports parenting literature, controlling parenting  
19 styles have been shown to be problematic for young athletes' motivation and well-being (e.g.,  
20 Holt, Tamminen, Black, Madigo, & Fox, 2009; Juntumaa, Keskivaara, & Punamaki, 2005;  
21 Knight, Little, Harwood, & Goodger, 2016). Likewise, several studies on perfectionism  
22 development in sport are equally suggestive. Curran, Hill, and Williams (2017) recently  
23 found that perceptions of parent conditional regard positively predicted adolescent athletes'  
24 self-critical perfectionism (viz. perfectionistic concerns). In similar samples, Sapieja, Dunn,  
25 and Holt (2011) found that high (but not excessive) parent performance standards were

1 positively correlated with perfectionistic strivings and Appleton, Hall, and Hill (2011)  
2 showed that parent socialization characterized by worry was positively associated with  
3 perfectionistic cognitions (automatic thoughts involving a desire to be perfect). Outside of  
4 sport, too, research links forms of parent psychological control to perfectionistic strivings and  
5 perfectionistic concerns in adolescents (e.g., Soenens, Elliot, et al., 2005; Soenens, Luyckx, et  
6 al., 2008; Soenens, Vansteenkiste, Luyten, Duriez, & Goossens, 2005). Together, this  
7 research offers support for the contribution of parent conditional regard to the two  
8 dimensions of perfectionism.

### 9 **The mediating role of competence contingent self-worth**

10       If it is the case that parent conditional regard contributes to young athletes'  
11 perfectionistic strivings and perfectionistic concerns, an important next step is to ascertain  
12 why by identifying potential mechanisms. One of the reasons parent conditional regard  
13 promotes perfectionistic tendencies is because it fosters a highly contingent sense of self-  
14 worth in the achievement and interpersonal spheres (Hewitt et al., 2017). This, of course,  
15 yields a desire to meet excessively high performance standards, but it also communicates to  
16 athletes that mistakes and failures are indictments upon one's sense of self-worth and, hence,  
17 should be zealously avoided (cf. Burns, 1980; Flett, Besser, Davies, & Hewitt, 2003; Flett,  
18 Russo, & Hewitt, 1994). These conflicting approach and avoidance motives characterize  
19 perfectionistic strivings (high achievement standards) and perfectionistic concerns (aversion  
20 to failure) and are why contingent self-worth is considered a core feature of perfectionism  
21 (e.g., DiBartolo, Frost, Chang, LaSota, & Grills, 2004; Hewitt et al., 2017; Hill, Hall, &  
22 Appleton, 2011).

23       According to Crocker and Park (2004), there are several domains in which self-worth  
24 can be contingent. These include (but are not limited to) competence, competition, others  
25 approval, family affection, physical appearance, God's love, and virtue. In sport, the

1 establishment of self-worth via competence is likely to be an especially important link  
2 between parent conditional regard and perfectionism. This is because demonstrating  
3 competence is an important conditionality of parent regard when child behaviors are enacted  
4 within achievement contexts (e.g., Assor et al., 2004; Assor & Tal, 2012; DiBarolo et al.,  
5 2004). Furthermore, both perfectionistic strivings and perfectionistic concerns encapsulate  
6 the belief that demonstrating competence defines personal ability (i.e., performance goals;  
7 Dunn, Dunn, & Syrotuik, 2002; Stoeber, Uphill, & Hotham, 2009; Stoeber, Stoll, Salmi, &  
8 Tiikkaja, 2009). Hence, as parents condition their love and approval on expressions of  
9 competence in sport (viz. success), so young athletes internalize a sense of self-worth  
10 contingent upon personal competence and, in turn, adopt perfectionistic tendencies as a  
11 means of fulfilling this contingency.

12         No sports research exists to support the role of parent conditional regard in the  
13 development of competence contingent self-worth. However, there is ample evidence in other  
14 domains. Several experimental studies show that the activation of contingent-acceptance  
15 schemata (i.e., if ... then contingencies) is associated with vulnerable self-esteem in college  
16 students (e.g., Baldwin, 1994; Baldwin & Sinclair, 1996; Schimel, Arndt, Pyszczynski, &  
17 Greenberg, 2001). Longitudinal research similarly shows that parent psychological control is  
18 positively associated with children's daily self-worth instability (Kernis, Brown, & Brody,  
19 2000), and ample correlational data links parent conditional regard with failure (viz.  
20 competence) contingent shame and contingent self-worth among young people (e.g., Assor et  
21 al., 2004; Assor & Tal, 2012; McArdle, 2009).

22         As to the interplay of competence contingent self-worth and perfectionism, data  
23 support the positive association of several contingencies of self-worth – including  
24 competence – with perfectionistic strivings and concerns (e.g., Bardone-Cone, Lin, & Butler,  
25 2017; Di Bartolo, Li, & Frost, 2008; McArdle, 2009). Research also suggests that conditional



1 self-worth is a salient source of psychopathology associated with these dimensions of  
2 perfectionism (e.g., Flett et al., 2003; Flett et al., 1994; Sturman, Flett, Hewitt, & Rudolph,  
3 2009). Germaine to this study, a couple of studies have examined the association of  
4 contingencies self-worth with perfectionism dimensions in sport. Hill et al. (2008) showed  
5 that unconditional self-acceptance positively correlated with perfectionistic strivings and  
6 perfectionistic concerns among adolescent elite athletes. In a similar sample, Hill et al. (2011)  
7 also found that contingencies of self-worth for competence were positively related to both  
8 perfectionism dimensions. In sum, research supports the possibility that parent conditional  
9 regard positively predicts competence contingent self-worth that, in turn, positively predicts  
10 perfectionistic strivings and perfectionistic concerns.

### 11 **The present study**

12 The purpose of the current study was to examine the mediating role of competence  
13 contingent self-worth in relationships between parent conditional regard and perfectionism  
14 among adolescent athletes. Based on the aforementioned theory and research, it was  
15 hypothesised that parent conditional regard would exhibit a positive association with both  
16 perfectionistic strivings and perfectionistic concerns. In addition, it was expected that these  
17 positive associations would be mediated by competence contingent self-worth.

## 18 **Method**

### 19 **Participants and procedure**

20 One hundred and fifty-three (93 males, 60 females,  $M$  age = 15.16 years,  $SD$  = 1.65)  
21 adolescents were recruited from sports clubs across the United Kingdom (UK). Recruitment  
22 criteria required participants to be competing at a minimum of regional level (UK County) in  
23 their primary sport. Athletes competed in a range of sports, including athletics, ballroom,  
24 cricket, cross country, football, gymnastics, hockey, karate, netball, rowing, rugby, sailing,  
25 swimming, tennis, and trampolining. They had participated in their sport for an average of

1 7.40 years ( $SD = 2.81$ ) and had been at their clubs for an average of 3.91 years ( $SD = 3.11$ ).  
2 Prior to data collection, the research ethics committee of a British University provided ethical  
3 approval. Then, sports clubs were contacted to enquire about their willingness to support the  
4 research through access to their young athletes. If clubs agreed to support the research,  
5 parental consent was sought for athletes' participation in the first instance. Thereafter, a paper  
6 and pencil questionnaire was administered to participants in a training session setting. It took  
7 approximately 15 minutes to complete.

## 8 **Instruments**

9       **Parental conditional regard.** Perceived parental conditional regard was measured  
10 using the ten-item Parental Conditional Negative Regard Scale (PCNRS; Assor & Tal, 2012).  
11 This instrument assesses the degree to which individuals perceive their mother (five-items) and  
12 father (five-items) to be conditionally regarding. As this scale was initially developed in the  
13 academic domain, the items were adapted to measure parental conditional regard in the sports  
14 domain (e.g., "When I perform badly in sport, my mother/father stops giving me attention for  
15 a while"). The scale is rated on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7  
16 (*strongly agree*) and participants were asked to report on their mothers and fathers separately.  
17 This instrument has psychometric support in previous research with adolescents (Assor & Tal,  
18 2012). The adapted items used in this study exhibited excellent internal reliability (mother  
19 conditional regard  $\alpha = .92$ ; father conditional regard  $\alpha = .89$ ).

20       **Competence contingent self-worth.** Competence contingent self-worth was measured  
21 with the Competence subscale of the Contingencies of Self-Worth Scale (CSWS; Crocker,  
22 Luhtanen, Cooper, & Bouvrette, 2003). This scale consists of five-items to which participants  
23 provide ratings of agreement on scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).  
24 To anchor responses in the correct domain, the items were adapted to measure competence  
25 contingent self-worth in sport (e.g., "I feel better about myself when I know I'm doing well in

1 sport.”). This instrument has evidence of reliability and validity in previous research (Crocker  
2 et al., 2003). The adapted items used in this study exhibited excellent internal reliability ( $\alpha =$   
3 .72).

4       **Perfectionistic strivings and perfectionistic concerns.** In line with the suggestions of  
5 Stoeber (2011, 2014), two measures were used as indicators of perfectionistic strivings in sport.  
6 These were the seven-item personal standards subscale (e.g., “I hate being less than the best at  
7 things in my sport”) from the Sport Multidimensional Perfectionism Scale (SMPS-2; Gotwals  
8 & Dunn, 2009) and the five item self-oriented perfectionism subscale (e.g., “One of my goals  
9 is to be perfect in everything I do.”) from the Cox et al. (2002) short version of the Hewitt and  
10 Flett (1991) Multidimensional Perfectionism Scale (H-MPS). Also in line with the suggestions  
11 of Stoeber (2011, 2014), three measures were used as indicators of perfectionistic concerns in  
12 sport. These were the eight-item concern over mistakes subscale (e.g., “If I fail in competition  
13 I feel like a failure as a person”) and the six-item doubts about actions subscale (e.g., “I usually  
14 feel unsure about the adequacy of my pre-competition practices”) from the SMPS-2, and the  
15 five-item socially prescribed perfectionism subscale (e.g., “People expect nothing less than  
16 perfection from me.”) from the HMPS. Items on the SMPS-2 were responded to on a 5-point  
17 Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*) and items on the HMPS were  
18 responded to on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). These  
19 subscales have good evidence of validity and reliability in previous sports research (e.g.,  
20 Gotwals & Dunn, 2009; Gotwals, Dunn, Causgrove Dunn, & Gamache, 2010; Jowett et al.,  
21 2013). The items used in this study exhibited good internal reliability (self-oriented  
22 perfectionism  $\alpha = .72$ ; personal standards  $\alpha = .82$ ; socially prescribed perfectionism  $\alpha = .81$ ;  
23 doubts about actions  $\alpha = .69$ ; concern over mistakes  $\alpha = .88$ ).

24       **Analytic strategy.** Data analyses were conducted using full latent variable structural  
25 equation modeling with maximum likelihood estimation (AMOS version 20.0). This approach

1 combines factor analysis with ordinary least squares regression to permit assessment of model  
2 fit and tests of (structural) relationships in the absence of measurement error (Byrne, 2010). A  
3 confirmatory factor analysis was first employed followed by an assessment of the structural  
4 model (Anderson & Gerbing, 1988). This method initially establishes the adequacy of the  
5 measurement model by examining the relationship of the latent factors to their underlying  
6 measured variables prior to assessing hypothesized pathways. The fit of the measurement and  
7 structural models were determined using conventional standards and deemed acceptable if CFI  
8 and  $TLI \geq .90$  and  $RMSEA$  and  $SRMR \leq .10$  (Marsh, Hau, & Wen, 2004).

9 To test for mediation, a causal steps procedure was used (see Holmbeck, 1997). This  
10 approach first tests a model including direct pathways between parental conditional regard and  
11 perfectionism. Then, a full mediation model including indirect paths from parent conditional  
12 regard to the dimensions of perfectionism via competence contingent self-worth is compared  
13 to a partial mediation model that includes these indirect paths and the direct paths from the first  
14 model. If there is an improvement in model fit with the direct paths added, the partial mediation  
15 model (i.e., direct and indirect paths) is preferred. Otherwise, preference is granted to the full  
16 mediation model (i.e., indirect paths only). To test for the statistical significance of the  
17 mediated effects, standardized indirect effects ( $ab$ ) were estimated alongside their 95% bias  
18 corrected and accelerated confidence intervals derived from 5,000 bootstrap resamples with  
19 replacement (BCa CI; Hayes, 2009).

## 20 Results

### 21 Preliminary analysis

22 Missing value analysis revealed that there were 130 complete cases and 23 incomplete  
23 cases. Of these, 1 case had more than 20% of items missing and was removed from the  
24 dataset (Peng, Harwell, Liou, & Ehman, 2006). Data were missing completely at random for  
25 the remaining incomplete cases (Little's  $\chi^2 = 662.51$ ,  $df = 675$ ,  $p = .63$ ). As such, missing

1 values were imputed using the expectation maximisation algorithm at the variable level  
2 (Cole, 2008). Following imputation, in accordance with the recommendations of Osbourne  
3 (2013), univariate and multivariate outliers ( $p < .001$ ) were removed from the dataset ( $N = 4$ ).  
4 Although this process resulted in data that was approximately univariate normal, estimates of  
5 multivariate kurtosis (Mardia's normalized coefficient = 90.98) indicated the data remained  
6 multivariate asymmetrical. Therefore, a bootstrapping procedure that drew 5,000 replication  
7 samples with replacement was employed. Confidence intervals and  $p$  values associated with  
8 the correlation and regression coefficients are those derived from the standard errors from  
9 this bootstrapping procedure. The data screening and cleaning procedure yielded a final  
10 sample of 148 (89 males, 59 females;  $M$  age = 15.12 years,  $SD = 1.64$ ).

11 Turning to the descriptive statistics, akin to previous research with adolescents (e.g.,  
12 Assor & Tal, 2012; Curran et al., 2017), the mean scores for mother and father conditional  
13 regard were low ( $M_{\text{mother}} = 1.53$ ,  $SD = 1.02$ ;  $M_{\text{father}} = 1.72$ ,  $SD = 1.20$ ). Likewise, as in  
14 previous research with adolescent athletes (Hill et al., 2011), the mean score for competence  
15 contingent self-worth was moderate-to-high ( $M = 4.68$ ,  $SD = .98$ ). Consistent with previous  
16 research with adolescent athletes (e.g., Jowett et al., 2016; Hill et al., 2008), the mean scores  
17 for self-oriented perfectionism and personal standards were moderate to high ( $M_{\text{SOP}} = 5.17$ ,  
18  $SD = .89$ ;  $M_{\text{PS}} = 3.21$ ,  $SD = .70$ ), whereas the means scores for socially prescribed  
19 perfectionism, doubts about actions, and concern over mistakes were moderate to low ( $M_{\text{SPP}}$   
20  $= 3.21$ ,  $SD = 1.24$ ;  $M_{\text{DAA}} = 2.63$ ,  $SD = .60$ ;  $M_{\text{COM}} = 2.53$ ,  $SD = .85$ ).

### 21 **Assessment of the measurement model and error-free correlations**

22 The measurement model consisted of four inter-correlated latent variables. The five  
23 mother and five father conditional regard items were combined and used as the measured  
24 variables for the parental conditional regard factor (five indicators). Items were also used as  
25 the measured variables for the competence contingent self-worth factor (five indicators). For

RUNNING HEAD: CONDITIONAL REGARD AND PERFECTIONISM

1 the perfectionism dimensions, subscales were used as measured variables for perfectionistic  
 2 strivings (two indicators; self-oriented perfectionism and personal standards) and  
 3 perfectionistic concerns (three indicators; socially prescribed perfectionism, doubts about  
 4 actions, and concern over mistakes). Error-free correlations and composite reliabilities for the  
 5 latent variables are presented in Table 1.

6 All standardised factor loadings for the measured variables on their latent factors were  
 7 significant (parental conditional regard  $\beta$  range = .76 to .97; competence contingent self-  
 8 worth  $\beta$  range = .41 to .80; perfectionistic strivings  $\beta$  range = .66 & .88; perfectionistic  
 9 concerns  $\beta$  range = .42 to .82). Furthermore, each of these latent factors demonstrated  
 10 acceptable composite reliability (parental conditional regard  $\rho$  = .95; competence contingent  
 11 self-worth  $\rho$  = .71; perfectionistic strivings  $\rho$  = .75; perfectionistic concerns  $\rho$  = .71). The  
 12 measurement model exhibited an acceptable fit to the data:  $\chi^2 = 151.64$  (84),  $p < .05$ ;  $\chi^2/df =$   
 13 1.81; TLI = .93; CFI = .95; SRMR = .05; RMSEA = .07 (90% CI = .06 to .09). All error-free  
 14 correlations between latent factors were positive, statistically significant, and ranged in  
 15 magnitude from moderate-to-large according to conventional effect size criteria (i.e., small  $\geq$   
 16 .10, moderate  $\geq$  .30, large  $\geq$  .50; Cohen 1988).

### 17 **Assessment of the hypothesised relationships**

18 Prior to testing the hypothesised mediation model, the causal steps model building  
 19 procedure was used to determine whether direct effects were needed in the model (i.e., full vs  
 20 partial mediation; Holmbeck, 1997). First, a model including only direct paths between  
 21 parent conditional regard and the perfectionism dimensions was tested. With the exception of  
 22 the RMSEA, fit indexes suggested that this model possessed an acceptable fit to the data:  $\chi^2 =$   
 23 98.41 (32),  $p < .001$ ;  $\chi^2/df = 2.98$ ; TLI = .91; CFI = .94; SRMR = .10; RMSEA = .12 (90% CI  
 24 = .09 to .14). As hypothesised, parental conditional regard positively predicted perfectionistic  
 25 strivings ( $\beta = .29$ , 95% BCa CI. .10, .46) and perfectionistic concerns ( $\beta = .63$ , 95% BCa CI.

1 .45, .77). The model accounted for 49% of the variance in perfectionistic strivings and 70%  
2 of the variance in perfectionistic concerns.

3 Next, a full mediation model including indirect paths from parent conditional regard  
4 to the dimensions of perfectionism via competence contingent self-worth was compared with  
5 a partial mediation model that included these indirect paths and the direct paths from the first  
6 model. A chi-square difference test revealed that the partial mediation model possessed  
7 significantly better fit than the full mediation model ( $\chi^2 \Delta 20.22 [2], p < .001$ ). Accordingly,  
8 the partial mediation model was used for tests of parameter estimates and indirect effects.

9 The partial mediation model including both indirect and direct paths can be seen in  
10 Figure 1. Fit indexes suggested that this model possessed an acceptable fit to the data:  $\chi^2 =$   
11 159.70 (85),  $p < .001$ ;  $\chi^2/df = 1.89$ ; TLI = .93; CFI = .94; SRMR = .07; RMSEA = .08 (90%  
12 CI = .06 to .10). Parental conditional regard positively predicted competence contingent self-  
13 worth ( $\beta = .31$ , 95% BCa CI. .13, .47). In turn, competence contingent self-worth positively  
14 predicted both perfectionistic strivings ( $\beta = .66$ , 95% BCa CI. .42, .83) and perfectionistic  
15 concerns ( $\beta = .68$ , 95% BCa CI. .44, .84). This model accounted for 10% of the variance in  
16 competence contingent self-worth, 48% of the variance in perfectionistic strivings, and 77%  
17 of the variance in perfectionistic concerns.

### 18 **Indirect effects**

19 To test the magnitude and statistical significance of the mediated pathways in the  
20 model, we calculated standardised indirect effects alongside 95% bias corrected confidence  
21 intervals derived from 5,000 bootstrap iterations. The positive standardised indirect effect for  
22 the pathway from parental conditional regard to perfectionistic strivings via competence  
23 contingent self-worth was significant ( $ab = .21$ , 95% BCa CI. .09, .37), as was the positive  
24 standardised indirect effect for the pathway from parental conditional regard to perfectionistic  
25 concerns via competence contingent self-worth ( $ab = .21$ , 95% BCa CI. .10, .37).

## 1 **Discussion**

2 The purpose of this study was to test the mediating role of competence contingent  
3 self-worth in relationships between parent conditional regard and dimensions of  
4 perfectionism among adolescent athletes. It was hypothesized that parent conditional regard  
5 would exhibit a positive association with both perfectionistic strivings and perfectionistic  
6 concerns. In addition, it was expected that these positive associations would be mediated by  
7 competence contingent self-worth. Analyses fully supported these hypothesized relationships.

### 8 **Parent conditional regard and dimensions of perfectionism**

9 Before discussing the mediated effects, relationships between parent conditional  
10 regard and perfectionism warrant consideration as this is the first test of their interplay in  
11 sport. The associations of parent conditional regard with perfectionistic strivings and  
12 perfectionistic concerns were positive. These findings support sport specific models of  
13 perfectionism development (e.g., Appleton & Curran, 2016), as well as theory on the origins  
14 of trait perfectionism (e.g., Curran & Hill, in press; Flett et al., 2002; Hewitt et al., 2017).  
15 They also substantiate several studies that have observed similar effects in other domains  
16 (e.g., McArdle & Duda, 2004; Soenens et al., 2005; Soenens et al., 2008). When parents  
17 condition their love and affection upon success in sport, our data appear to indicate that  
18 adolescent athletes adopt excessively high standards (perfectionistic strivings) and a  
19 preoccupation with others approval (perfectionistic concerns).

20 There were differences, though, in the magnitude of these effects. Parent conditional  
21 regard and perfectionistic concerns shared a large correlation, whereas the relationship  
22 between parent conditional regard and perfectionistic strivings was moderate. This difference  
23 is perhaps not surprising. A dependence on others approval for self-worth is likely to  
24 influence a preoccupation with other-imposed evaluative criteria most acutely (i.e.,  
25 perfectionistic concerns; Hewitt & Flett, 1991). For perfectionistic strivings, the findings



1 indicate that other developmental processes may be equally important. There is evidence that  
2 children's perfectionistic strivings are learned and modelled from the perfectionistic strivings  
3 of their parents (e.g., Appleton et al., 2010; Frost, Lahart, & Rosenblate, 1991; Vieth & Trull,  
4 1999). Likewise, children's excessively high standards have been shown to emerge from  
5 excessively high parental demands (Neumeister, 2004). Accordingly, parent perfectionism  
6 and/or parent demands warrant consideration in subsequent research involving conditional  
7 regard.

### 8 **The mediating role of competence contingent self-worth**

9 In line with the hypotheses, mediated effects of parental conditional regard on  
10 perfectionistic strivings and perfectionistic concerns via competence contingent self-worth  
11 were significant. Although this causal chain is discussed in many theoretical accounts of  
12 perfectionism development (e.g., Flett et al., 2002; Hamacheck, 1975; Hewitt et al., 2017),  
13 this study is the first to give it empirical support. Using conditional regard, parents withhold  
14 love and affection when their children have failed to meet their expectations. Hence, this  
15 parenting practice inculcates contingencies of self-worth associated with expressions of  
16 competence and these contingencies perpetuate a state of hyper-vigilance for competence-  
17 affirming (and disconfirming) information. To avoid the psychological pain of incompetence  
18 signalling love-withdrawal, then, young athletes appear to respond by adopting excessively  
19 high personal standards and harsh self-evaluative tendencies that are indicative of  
20 perfectionistic strivings and perfectionistic concerns.

21 As competence contingent self-worth predicted commensurate portions of variance in  
22 both perfectionism dimensions, the mediated effects in this study were of a similar  
23 magnitude. Nonetheless, parent conditional regard remained a significant predictor of  
24 perfectionistic concerns (but not perfectionistic strivings) when competence contingent self-  
25 worth was added to the model. For this dimension of perfectionism, then, other self-worth

1 contingencies may be at play. Perfectionistic concerns are governed by a cognitive  
2 preoccupation with how a defective self appears to others (Hewitt et al., 2017). Hence,  
3 alongside competence, interpersonal self-worth contingencies, such as outperforming others  
4 or gaining others approval, are likely to be important in revealing their development (Hill et  
5 al., 2011). Future research would do well to include interpersonal sources of self-worth  
6 contingency alongside competence in models of perfectionistic concerns.

### 7 **Implications for parenting in sport**

8         In recent years, parenting in youth sport has become an important theme for talent and  
9 positive youth development (Knight, Berrow, & Harwood, 2017). Here, the findings  
10 contribute to knowledge of parental styles that safeguard athlete well-being (Harwood &  
11 Knight, 2015). On this topic, there are several applied implications for parenting in sport.  
12 Most notably, they suggest that parent conditional regard is likely to foster fragile self-worth  
13 and perfectionism among young athletes. In sport, appropriate structure (i.e., high  
14 demandingness and low responsiveness) and autonomy support have been shown to be far  
15 more adaptive forms of socialization (e.g., Curran, Hill, & Niemeic, 2013; Curran, Hill,  
16 Ntoumanis, Hall, & Jowett, 2016; Holt et al., 2009). Strategies associated with these forms of  
17 socialization include recognizing and attempting to empathise with negative emotions,  
18 providing detailed rationales for rules, limits, and expectations, offering unconditional  
19 support and constructive positive feedback when athletes have tried but failed, and  
20 encouraging input into decision-making that is, where possible, joint (Grolnick, 2003). All of  
21 these should be communicated to parents as important to their overall parenting style and –  
22 importantly – that which is specifically employed in achievement contexts such as sport.

### 23 **Limitations and future research**

24         This study has limitations. Although commensurate with similar samples, the levels of  
25 parent conditional regard and perfectionism reported here are low relative to their respective

1 scales. This may reflect either a low prevalence of conditional regard and/or perfectionism in  
2 the population or a broader tendency to recruit healthy samples. Where possible, it will be  
3 important for future research to determine whether the extent of covariation observed in this  
4 study differs at the higher ends of parent conditional regard and perfectionism. Further, akin  
5 to previous research (e.g., Curran et al., 2017), perceived mother and father conditional  
6 regard were combined in our analysis. This approach may overlook certain primary caregiver  
7 effects (Cook & Kearney, 2009; Frost et al., 1991) and future research should seek to  
8 disaggregate mother from father conditional regard to test them. The cross-sectional design  
9 does not permit inference of temporality or causality. Reverse and reciprocal relationships are  
10 an important consideration in this regard since perfectionistic adolescents show a  
11 commitment to excessively high achievement standards (Kopala-Sibley & Zuroff, 2014;  
12 Luyten, Corveleyn, & Blatt, 2005), and parents may respond with conditional regard to  
13 reinforce this behavior. Subsequent work may test whether conditional regard predicts change  
14 in perfectionism dimensions over time (or vice-versa). Finally, within-person combinations of  
15 the perfectionism dimensions offer a useful means of examining their combined influence on  
16 outcomes (i.e., high/high, low/low, high/low, low/high; see Gaudreau, 2012) and it would be  
17 useful for future research to examine the contribution of parental conditional regard to these  
18 within-person combinations.

## 19 **Conclusion**

20 This study is the one of the first to find evidence for the parental origins of  
21 perfectionism among adolescent athletes. Here, analyses showed that family contexts which  
22 emphasize conditional regard are likely to promote both perfectionistic strivings and  
23 perfectionistic concerns. Moreover, these effects can be attributed, in part, to competence  
24 contingent self-worth. The findings substantiate conceptual accounts of perfectionism

1 development that center on psychological control and offer insight in terms of the possible  
2 mediating processes.

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### 6 **References**

- 7 Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A  
8 review and recommended two-step approach. *Psychological Bulletin, 103*, 411-423.
- 9 Anshel, M. H., & Mansouri, H. (2005). Influences of perfectionism on motor performance,  
10 affect, and causal attributions in response to critical information feedback. *Journal of*  
11 *Sport Behavior, 28*, 99-124.
- 12 Appleton, P. R. & Curran, T. (2016). The origins of perfectionism in sport, dance, and  
13 exercise: an introduction to the conceptual model of perfectionism development. In A.  
14 P. Hill (Ed.), *The Psychology of Perfectionism in Sport, Dance and Exercise* (pp. 57-  
15 82). London: Routledge.
- 16 Appleton, P. R., Hall, H. K., & Hill, A. P. (2011). Examining the influence of the parent-  
17 initiated and coach-created motivational climates upon athletes' perfectionistic  
18 cognitions. *Journal of Sports Sciences, 29*, 661-671.
- 19 Assor, A., & Tal, K. (2012). When parents' affection depends on child's achievement:  
20 Parental conditional positive regard, self-aggrandizement, shame and coping in  
21 adolescents. *Journal of Adolescence, 35*, 249-260.
- 22 Assor, A., Roth, G., & Deci, E. L. (2004). The emotional costs of parents' conditional regard:  
23 A Self-Determination Theory analysis. *Journal of personality, 72*, 47-88.
- 24 Baldwin, M. W. (1994). Primed relational schemas as a source of self-evaluative  
25 reactions. *Journal of Social and Clinical Psychology, 13*, 380-403.

- 1 Baldwin, M. W., & Sinclair, L. (1996). Self-esteem and "if... then" contingencies of  
2 interpersonal acceptance. *Journal of Personality and Social Psychology*, *71*, 1130-  
3 1141.
- 4 Barber, B. K. (1996). Parental psychological control: Revisiting a neglected construct. *Child*  
5 *Development*, *67*, 3296-3319.
- 6 Bardone-Cone, A. M., Lin, S. L., & Butler, R. M. (2017). Perfectionism and Contingent Self-  
7 Worth in Relation to Disordered Eating and Anxiety. *Behavior Therapy*, *48*, 380-390.
- 8 Bieling, P. J., Israeli, A. L., & Antony, M. M. (2004). Is perfectionism good, bad, or both?  
9 Examining models of the perfectionism construct. *Personality and Individual*  
10 *Differences*, *36*, 1373-1385.
- 11 Bögels, S. M., & van Melick, M. (2004). The relationship between child-report, parent self-  
12 report, and partner report of perceived parental rearing behaviors and anxiety in  
13 children and parents. *Personality and Individual Differences*, *37*, 1583-1596.
- 14 Burns, D. D. (1980). The perfectionist's script for self-defeat. *Psychology today*, *14*, 34-52.
- 15 Byrne, B. (2010). *Structural equation modeling with AMOS: Basic concepts, applications*  
16 *and programming* (2nd ed.). New York, NY: Routledge.
- 17 Cole, J. C. (2008). How to deal with missing data: Conceptual overview and details for  
18 implementing two modern methods. In J. W. Osbourne (Ed.), *Best Practices in*  
19 *Quantitative Methods* (pp. 214-238). Thousand Oaks: Sage Publications.
- 20 Cook, L. C., & Kearney, C. A. (2009). Parent and youth perfectionism and internalizing  
21 psychopathology. *Personality and Individual Differences*, *46*, 325-330.
- 22 Cox, B. J., Enns, M. W., & Clara, I. P. (2002). The multidimensional structure of  
23 perfectionism in clinically distressed and college student samples. *Psychological*  
24 *Assessment*, *14*, 365-373.

- 1 Crocker, J., & Park, L. E. (2004). The costly pursuit of self-esteem. *Psychological*  
2 *bulletin*, *130*, 392-414.
- 3 Crocker, J., Luhtanen, R. K., Cooper, M. L., & Bouvrette, A. (2003). Contingencies of self-  
4 worth in college students: theory and measurement. *Journal of personality and social*  
5 *psychology*, *85*, 894-908.
- 6 Curran, T. & Hill, A. P. (in press). Is perfectionism rising over time? A meta-analysis of birth  
7 cohort differences from 1989 to 2015. *Psychological Bulletin*.
- 8 Curran, T., Hill, A. P., & Niemiec, C. P. (2013). A conditional process model of children's  
9 behavioral engagement and behavioral disaffection in sport based on self-  
10 determination theory. *Journal of Sport and Exercise Psychology*, *35*, 30-43.
- 11 Curran, T., Hill, A. P., Ntoumanis, N., Hall, H. K., & Jowett, G. E. (2016). A three-wave  
12 longitudinal test of self-determination theory's mediation model of engagement and  
13 disaffection in youth sport. *Journal of Sport and Exercise Psychology*, *38*, 15-29.
- 14 Curran, T., Hill, A. P., & Williams, L. J. (2017). The relationships between parental  
15 conditional regard and adolescents' self-critical and narcissistic  
16 perfectionism. *Personality and Individual Differences*, *109*, 17-22.
- 17 DiBartolo, P. M., Frost, R. O., Chang, P., LaSota, M., & Grills, A. E. (2004). Shedding light  
18 on the relationship between personal standards and psychopathology: The case for  
19 contingent self-worth. *Journal of Rational-Emotive & Cognitive-Behavior*  
20 *Therapy*, *22*, 237-250.
- 21 DiBartolo, P. M., Li, C. Y., & Frost, R. O. (2008). How do the dimensions of perfectionism  
22 relate to mental health?. *Cognitive Therapy and Research*, *32*, 401-417.
- 23 Dunkley, D. M., Blankstein, K. R., Halsall, J., Williams, M., & Winkworth, G. (2000). The  
24 relation between perfectionism and distress: Hassles, coping, and perceived social  
25 support as mediators and moderators. *Journal of Counseling Psychology*, *47*, 437-453.

## RUNNING HEAD: CONDITIONAL REGARD AND PERFECTIONISM

- 1 Dunn, J. G., Dunn, J. C., & Syrotuik, D. G. (2002). Relationship between multidimensional  
2 perfectionism and goal orientations in sport. *Journal of Sport and Exercise*  
3 *Psychology, 24*, 376-395.
- 4 Dunn, J. G., Gotwals, J. K., Dunn, J. C., & Syrotuik, D. G. (2006). Examining the  
5 relationship between perfectionism and trait anger in competitive sport. *International*  
6 *Journal of Sport and Exercise Psychology, 4*, 7-24.
- 7 Flett, G. L., & Hewitt, P. L. (2005). The perils of perfectionism in sports and  
8 exercise. *Current Directions in Psychological Science, 14*, 14-18.
- 9 Flett, G. L., Besser, A., Davis, R. A., & Hewitt, P. L. (2003). Dimensions of perfectionism,  
10 unconditional self-acceptance, and depression. *Journal of Rational-Emotive and*  
11 *Cognitive-Behavior Therapy, 21*, 119-138.
- 12 Flett, G. L., Hewitt, P. L., Oliver, J. M., & Macdonald, S. (2002). Perfectionism in children  
13 and their parents: A developmental analysis. In G. L. Flett & P. L. Hewitt (Eds.),  
14 *Perfectionism: Theory, research, and treatment* (pp. 89-132). Washington, DC:  
15 American Psychological Association.
- 16 Flett, G. L., Russo, F. A., & Hewitt, P. L. (1994). Dimensions of perfectionism and  
17 constructive thinking as a coping response. *Journal of Rational-Emotive & Cognitive-*  
18 *Behavior Therapy, 12*, 163-179.
- 19 Frost, R. O., Heimberg, R. G., Holt, C. S., Mattia, J. I., & Neubauer, A. L. (1993). A  
20 comparison of two measures of perfectionism. *Personality and Individual*  
21 *Differences, 14*, 119-126.
- 22 Frost, R. O., Lahart, C. M., & Rosenblate, R. (1991). The development of perfectionism: A  
23 study of daughters and their parents. *Cognitive Therapy and Research, 15*, 469-489.
- 24 Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of  
25 perfectionism. *Cognitive Therapy and Research, 14*, 449-468.

- 1 Gaudreau, P., & Verner-Filion, J. (2012). Dispositional perfectionism and well-being: A test  
2 of the 2× 2 model of perfectionism in the sport domain. *Sport, Exercise, and*  
3 *Performance Psychology, 1*, 29-43.
- 4 Gotwals, J. K., & Dunn, J. G. (2009). A multi-method multi-analytic approach to establishing  
5 internal construct validity evidence: The Sport Multidimensional Perfectionism Scale  
6 *2. Measurement in Physical Education and Exercise Science, 13*, 71-92.
- 7 Gotwals, J. K., Dunn, J. G., Dunn, J. C., & Gamache, V. (2010). Establishing validity  
8 evidence for the Sport Multidimensional Perfectionism Scale-2 in intercollegiate  
9 sport. *Psychology of Sport and Exercise, 11*, 423-432.
- 10 Gotwals, J. K., Stoeber, J., Dunn, J. G., & Stoll, O. (2012). Are perfectionistic strivings in  
11 sport adaptive? A systematic review of confirmatory, contradictory, and mixed  
12 evidence. *Canadian Psychology/Psychologie canadienne, 53*, 263-279.
- 13 Gould, D., Dieffenbach, K., & Moffett, A. (2002). Psychological characteristics and their  
14 development in Olympic champions. *Journal of Applied Sport Psychology, 14*, 172-  
15 204.
- 16 Grolnick, W. S. (2003). *The psychology of parental control: How well meant parenting*  
17 *backfires*. Mahwah: Erlbaum.
- 18 Hamachek, D. E. (1978). Psychodynamics of normal and neurotic perfectionism. *Psychology,*  
19 *15*, 27–33.
- 20 Harwood, C. G., & Knight, C. J. (2015). Parenting in youth sport: A position paper on  
21 parenting expertise. *Psychology of sport and exercise, 16*, 24-35.
- 22 Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new  
23 millennium. *Communication Monographs, 76*, 408-420.



## RUNNING HEAD: CONDITIONAL REGARD AND PERFECTIONISM

- 1 Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts:  
2 conceptualization, assessment, and association with psychopathology. *Journal of*  
3 *Personality and Social Psychology*, *60*, 456.
- 4 Hewitt, P. L., Flett, G. L., & Mikail, S. F. (2017). *Perfectionism: a relational approach to*  
5 *conceptualization, assessment, and treatment*. London: Guilford.
- 6 Hill, A. P., & Curran, T. (2016). Multidimensional perfectionism and burnout: A meta-  
7 analysis. *Personality and Social Psychology Review*, *20*, 269-288.
- 8 Hill, A. P., Appleton, P. R., & Mallinson, S. H. (2016). Development and initial validation of  
9 the Performance Perfectionism Scale for Sport (PPS-S). *Journal of Psychoeducational*  
10 *Assessment*, *34*, 653-669.
- 11 Hill, A. P., Hall, H. K., & Appleton, P. R. (2010). Perfectionism and athlete burnout in junior  
12 elite athletes: The mediating role of coping tendencies. *Anxiety, Stress, & Coping*, *23*,  
13 415-430.
- 14 Hill, A. P., Hall, H. K., & Appleton, P. R. (2011). The relationship between multidimensional  
15 perfectionism and contingencies of self-worth. *Personality and Individual*  
16 *Differences*, *50*, 238-242.
- 17 Hill, A. P., Hall, H. K., Appleton, P. R., & Kozub, S. A. (2008). Perfectionism and burnout in  
18 junior elite soccer players: The mediating influence of unconditional self-  
19 acceptance. *Psychology of Sport and Exercise*, *9*, 630-644.
- 20 Hill, A. P., Hall, H. K., Duda, J. L., & Appleton, P. R. (2011). The cognitive, affective and  
21 behavioural responses of self-oriented perfectionists following successive failure on a  
22 muscular endurance task. *International Journal of Sport and Exercise Psychology*, *9*,  
23 189-207.

- 1 Hill, A. P., Stoeber, J., Brown, A., & Appleton, P. R. (2014). Team perfectionism and team  
2 performance: A prospective study. *Journal of Sport and Exercise Psychology, 36*,  
3 303-315.
- 4 Hollender, M. H. (1965). Perfectionism. *Comprehensive Psychiatry, 6*, 94-103.
- 5 Holmbeck, G. N. (1997). Toward terminological, conceptual, and statistical clarity in the  
6 study of mediators and moderators: examples from the child-clinical and pediatric  
7 psychology literatures. *Journal of Consulting and Clinical Psychology, 65*, 599-610.
- 8 Holt, N. L., Tamminen, K. A., Black, D. E., Mandigo, J. L., & Fox, K. R. (2009). Youth sport  
9 parenting styles and practices. *Journal of sport and exercise psychology, 31*, 37-59.
- 10 Jowett, G. E., Hill, A. P., Hall, H. K., & Curran, T. (2013). Perfectionism and junior athlete  
11 burnout: The mediating role of autonomous and controlled motivation. *Sport,*  
12 *Exercise, and Performance Psychology, 2*, 48-61.
- 13 Jowett, G. E., Hill, A. P., Hall, H. K., & Curran, T. (2016). Perfectionism, burnout and  
14 engagement in youth sport: The mediating role of basic psychological  
15 needs. *Psychology of Sport and Exercise, 24*, 18-26.
- 16 Juntumaa, B., Keskiavaara, P., & Punamaki, R. L. (2005). Parenting, achievement strategies  
17 and satisfaction in ice hockey. *Scandinavian Journal of Psychology, 46*, 411-420.
- 18 Kaye, M. P., Conroy, D. E., & Fifer, A. M. (2008). Individual differences in incompetence  
19 avoidance. *Journal of Sport and Exercise Psychology, 30*, 110-132.
- 20 Kernis, M. H., Brown, A. C., & Brody, G. H. (2000). Fragile self-esteem in children and its  
21 associations with perceived patterns of parent-child communication. *Journal of*  
22 *Personality, 68*, 225-252.
- 23 Knight, C. J., Berrow, S. R., & Harwood, C. G. (2017). Parenting in Sport. *Current Opinion*  
24 *in Psychology, 16*, 93-97.

- 1 Knight, C. J., Little, G. C., Harwood, C. G., & Goodger, K. (2016). Parental involvement in  
2 elite junior slalom canoeing. *Journal of Applied Sport Psychology, 28*, 234-256.
- 3 Kopala-Sibley, D. C., & Zuroff, D. C. (2014). The developmental origins of personality  
4 factors from the self-definitional and relatedness domains: A review of theory and  
5 research. *Review of General Psychology, 18*, 137-155.
- 6 Luyten, P., Corveleyen, J., & Blatt, S. J. (2005). The convergence among psychodynamic and  
7 cognitive-behavioral theories of depression: A critical review of empirical research. In  
8 J. Corveleyn, P. Luyten, & S. J. Blatt (Eds.), *The theory and treatment of depression:  
9 Towards a dynamic interactionism model* (pp. 107-146). Mahwah: Erlbaum.
- 10 Marsh, H. W., Hau, K. T., & Wen, Z. (2004). In search of golden rules: Comment on  
11 hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in  
12 overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling, 11*,  
13 320-341.
- 14 McArdle, S. (2009). Exploring the development of perfectionistic cognitions and self-beliefs.  
15 *Cognitive Therapy and Research, 33*, 597-614.
- 16 McArdle, S., & Duda, J. L. (2004). Exploring social-contextual correlates of perfectionism in  
17 adolescents: A multivariate perspective. *Cognitive Therapy and Research, 28*, 765-  
18 788.
- 19 Neumeister, K. L. S. (2004). Factors influencing the development of perfectionism in gifted  
20 college students. *Gifted Child Quarterly, 48*, 259-274.
- 21 Osbourne J. W. (2013). *Best practices in data cleaning: A complete guide to everything you  
22 need to do before and after collecting your data*. Thousand Oaks: Sage Publications.
- 23 Pacht, A. R. (1984). Reflections on perfection. *American psychologist, 39*, 386-390.

- 1 Peng, C.-Y. J., Harwell, M., Liou, S.-M., & Ehman, L. H. (2007). Advances in missing data  
2 methods and implications for educational research. In S. S. Sawilowsky (Ed.), *Real*  
3 *data analysis* (pp. 31–78). Charlotte: Information Age.
- 4 Rees, T., Hardy, L., Güllich, A., Abernethy, B., Côté, J., Woodman, T., ... & Warr, C. (2016).  
5 The great British medalists project: a review of current knowledge on the  
6 development of the world's best sporting talent. *Sports Medicine*, *46*, 1041-1058.
- 7 Rogers, C. R. (1951). *Client-centered therapy: Its current practice, implications and theory*.  
8 Boston: Houghton-Mifflin.
- 9 Sapieja, K. M., Dunn, J. G., & Holt, N. L. (2011). Perfectionism and perceptions of parenting  
10 styles in male youth soccer. *Journal of Sport and Exercise Psychology*, *33*, 20-39.
- 11 Sarkar, M., & Fletcher, D. (2014). Psychological resilience in sport performers: a review of  
12 stressors and protective factors. *Journal of Sports Sciences*, *32*, 1419-1434.
- 13 Schimel, J., Arndt, J., Pyszczynski, T., & Greenberg, J. (2001). Being accepted for who we  
14 are: evidence that social validation of the intrinsic self reduces general  
15 defensiveness. *Journal of Personality and Social Psychology*, *80*, 35-52.
- 16 Soenens, B., Elliot, A. J., Goossens, L., Vansteenkiste, M., Luyten, P., & Duriez, B. (2005).  
17 The intergenerational transmission of perfectionism: parents' psychological control as  
18 an intervening variable. *Journal of Family Psychology*, *19*, 358-366.
- 19 Soenens, B., Luyckx, K., Vansteenkiste, M., Luyten, P., Duriez, B., & Goossens, L. (2008).  
20 Maladaptive perfectionism as an intervening variable between psychological control  
21 and adolescent depressive symptoms: a three-wave longitudinal study. *Journal of*  
22 *Family Psychology*, *22*, 465-474.
- 23 Soenens, B., Vansteenkiste, M., Luyten, P., Duriez, B., & Goossens, L. (2005). Maladaptive  
24 perfectionistic self-representations: The mediational link between psychological  
25 control and adjustment. *Personality and Individual Differences*, *38*, 487-498.

- 1 Stoeber, J. (2011). The dual nature of perfectionism in sports: Relationships with emotion,  
2 motivation, and performance. *International Review of Sport and Exercise*  
3 *Psychology, 4*, 128-145.
- 4 Stoeber, J. (2014). Perfectionism in sport and dance: A double-edged sword. *International*  
5 *Journal of Sport Psychology, 45*, 385-394.
- 6 Stoeber, J., & Madigan, D. J. (2016). Measuring perfectionism in sport, dance, and exercise:  
7 Review, critique, recommendations. In A. P. Hill (Ed.), *Perfectionism in sport, dance,*  
8 *and exercise* (pp. 31-56). London: Routledge.
- 9 Stoeber, J., Stoll, O., Salmi, O., & Tiikkaja, J. (2009). Perfectionism and achievement goals  
10 in young Finnish ice-hockey players aspiring to make the Under-16 national  
11 team. *Journal of Sports Sciences, 27*, 85-94.
- 12 Stoeber, J., Uphill, M. A., & Hotham, S. (2009). Predicting race performance in triathlon:  
13 The role of perfectionism, achievement goals, and personal goal setting. *Journal of*  
14 *Sport and Exercise Psychology, 31*, 211-245.
- 15 Sturman, E. D., Flett, G. L., Hewitt, P. L., & Rudolph, S. G. (2009). Dimensions of  
16 perfectionism and self-worth contingencies in depression. *Journal of Rational-*  
17 *Emotive & Cognitive-Behavior Therapy, 27*, 213-231.
- 18 Vieth, A. Z., & Trull, T. J. (1999). Family patterns of perfectionism: An examination of  
19 college students and their parents. *Journal of personality assessment, 72*, 49-67.
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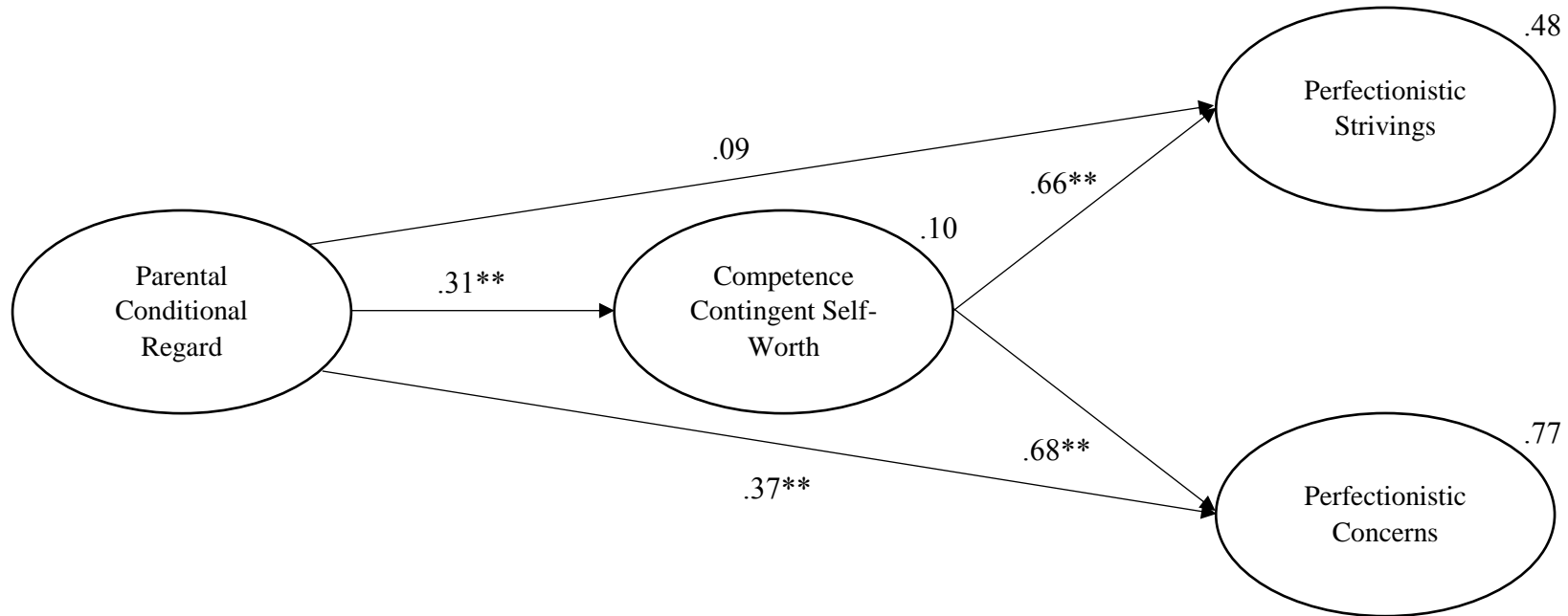
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**Table 1**  
**Error-free correlations and composite reliabilities for latent variables.**

	1	2	3	24
				425
1. Parental conditional regard	--			26
2. Competence contingent self-worth	.31**	--		27
3. Perfectionistic striving	.29**	.64**	--	28
4. Perfectionistic concerns	.59**	.75**	.71**	29
Composite reliability ( $\rho$ )	.95	.71	.75	--30
				.7B1
				32

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*Note.* Overall sample ( $N = 152$ ). Error-free correlations appear below the diagonal.  
\*\* $p < .01$ .



**Figure 1.**

**Results of structural equation modelling for the partial mediation model**

*Note.* :  $\chi^2 = 159.70$  (85),  $p < .001$ ;  $\chi^2/df = 1.89$ ; TLI = .93; CFI = .94; SRMR = .07; RMSEA = .08 (90% CI = .06 to .10).

\*\* $p < .01$ .