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Author names and affiliations: Catherine Lilley (University of Sheffield; catannel@hotmail.com), Dr Fuschia Sirois (University of Sheffield; f.sirois@sheffield.ac.uk) and Dr Georgina Rowse (University of Sheffield; g.rowse@sheffield.ac.uk)

Corresponding author: Catherine Lilley (email: catannel@hotmail.com; address: Clinical Psychology Unit, University of Sheffield, 1 Vicar Lane, Sheffield, S1 1HD; no telelphone number available)

Affiliation address: Clinical Psychology Unit, University of Sheffield, 1 Vicar Lane, Sheffield, S1 1HD

A Meta-Analysis of Parental Multidimensional Perfectionism and Child Psychological Outcomes

Abstract

Multidimensional perfectionism is a vulnerability factor for poor individual psychological well-being. Less is known about how parental perfectionism is associated with risk for poor child psychological outcomes. The aim of the current meta-analysis was to summarise the nature and magnitude of the association between dimensions of parental perfectionism (perfectionistic concerns; PC or perfectionistic strivings; PS) and child psychological outcomes. Fourteen studies (N = 2,721) met inclusion criteria. The random effects meta-analysis revealed a small, significant, and positive average association between parental PC and child distress when unadjusted, r_{avg} = .153, *CI* [.08, .22], and when accounting for the contributions of parental PS, r_{avg} = .164, *CI* [.08, .25]. Moderation analysis of the unadjusted effects found that they varied as a function of the perfectionism scale used, but were robust to differences in parent and child gender. For parental PS, there was a non-significant negative average association with child distress, r_{avg} = -.049, *CI* [-.13, .04], which was significant after accounting for the contributions of parental PC, r_{avg} = -.084, *CI* [-.15, -.02]. The current findings suggest that the differential links of perfectionism dimensions with psychological well-being extend to the parent-child relationship, and that parental PC creates vulnerability for child distress.

Key words: Perfectionism, parents, children, distress, well-being

Abbreviations: CPOs: child psychological outcomes, PC: perfectionistic concerns, PS: perfectionistic strivings.

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1. Introduction

The desire to improve and pursue ideal standards is characteristically human, and has driven great accomplishments throughout history. Yet this pursuit can be unrelenting, whereby some people set unrealistically high standards and criticise themselves for not achieving goals or making mistakes (see Frost, Marten, Lahart, & Rosenblate, 1990). This concept is referred to as 'perfectionism', which is commonly viewed as a trait that remains stable over time (Sirois & Molnar, 2016). Previously perfectionism was understood as a unidimensional concept (e.g. Horney, 1950, as cited in Sirois & Molnar, 2016). However, theorists now recognise perfectionism as a multidimensional construct, with dimensions that have distinguishable and often divergent effects on behaviour and consequential outcomes (Sirois & Molnar, 2016).

Although multidimensional perfectionism has been conceptualised in a number of ways (e.g. see Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991; and Slaney, Rice, Mobley, Trippi, & Ashby, 2001), confirmatory factor analyses support two higher-order factors (Bieling, Israeli, & Anthony, 2004). Perfectionistic strivings (PS) refer to the tendency to set extremely high personal standards that demand nothing short of perfection from the individual (Sirois & Molnar, 2016), whereas perfectionistic concerns (PC) involve obsessive self-scrutiny, critical self-evaluations, preoccupation with others' evaluations, and a lack of satisfaction even when a goal is achieved (Sirois & Molnar).

1.1 Perfectionism and Psychological Health

There is a growing evidence base suggesting that PS and PC are differentially related to a number of consequential outcomes with respect to psychological health and well-being. For example, PC has been linked to poor mental health and distress across a number of contexts and domains (e.g., Dunkley, Mandel, & Ma, 2014; Hill & Curran, 2015). Research

also indicates that PC is associated with poor well-being (Chang, Watkins, & Banks, 2004; Dunkley, Zuroff, & Blankenstein, 2003), and higher levels of negative affect (Gadreau & Thompson, 2010). The higher levels of negative affect that characterise PC are proposed to arise from the persistent negative self-evaluations that plague PC in the form of self-blame for failure, self-criticism, and a tendency towards rumination (Sirois, Molnar & Hirsch, 2017), which when combined can contribute to poor self-regulation and further distress. In contrast, PS has been linked to levels of positive affect (Bieling, Israeli, Smith, & Anthony, 2003), lower levels of negative affect (Gadreau & Thompson, 2010), and higher life satisfaction (Bergman, Nyland, & Burns, 2007), which in turn can translate to better self-regulation (Sirois, Molnar & Hirsch).

Despite this, it is questionable whether PS consistently relates to positive psychological outcomes. For instance, Limburg, Watson, Hagger, and Egan (2017) found that both PC and PS were significantly associated with various psychological disorders, including suicidal ideation and psychological distress. PS were also uniquely associated with anorexia nervosa. Furthermore, research by Flett, Nepon, and Hewitt (2016) found that socially-prescribed perfectionism (a form of PC) and self-orientated perfection (a form of PS) were both associated with high levels of worry and rumination. This raises the question of whether PS contributes to negative or positive psychological outcomes, and if so, in what contexts this might occur. It also challenges the aforementioned idea that PC and PS are differentially related to positive or negative psychological outcomes. Alternatively, it may be that a combination of PC and PS affect outcomes in different ways, as research has found that the combination of high PC and PS is associated with poor physical health (Sirois et al., 2019).

1.2 Perfectionism in Parents and Child Health Outcomes

The implications of personal characteristics for psychological health are not confined to a dynamic that occurs within an individual. Research suggests that parental personality

traits and cognitions are associated with child psychological outcomes (CPOs, defined here as forms of child distress or well-being). For example, decreased parental acceptance, increased parental control, and modelling of anxious behaviours have all been associated with child anxiety (see Degnan, Almas, & Fox, 2010; Drake & Ginsberg, 2011; McLeod, Wood, & Weisz, 2007; and Wood, McLeod, Sigman, Hwang, & Chu, 2003 for reviews). Similarly, parental perfectionism may be a trait that has detrimental effects on CPOs. Indeed, the idea that parental perfectionism can affect outcomes for children was first observed by Bruch and Hewlett in 1947, with respect to children who were diagnosed with diabetes. They stated that the family response is rooted in their tendency to have a "perfectionistic attitude toward the child" (p. 205). Bruch subsequently published work on the nature and aetiology of anorexia nervosa, proposing that girls experiencing this condition were driven to achieve perfect standards that are underpinned by the perfectionistic demands of their parents (Bruch, 1962).

Because PC can involve interpersonal dynamics, it is possible that parental PC could have an effect on children's well-being. To this end, Greblo and Bratko (2014) found that parental 'negative' perfectionism (i.e. PC) was positively associated with parental criticism and controlling behaviours, which may lower the child's self-esteem or increase anxiety. Maternal acceptance has also been found to be negatively correlated with child depressive symptoms (Garber, Robinson, & Valentiner, 1997), whilst PC could reduce acceptance because it features high parental criticism and expectations. In addition, Flett, Hewitt, Oliver, and McDonald (2002) suggest a parenting model, whereby perfectionistic parents are anxious about being imperfect, and so attempt to reduce error through over controlling behaviours. This theory suggests that children of perfectionistic parents are at higher risk of negative mental health outcomes, by conveying that mistakes represent threats. Considering that children often internalise messages received from caregivers to inform self-beliefs (e.g. Ryle & Kerr, 2002), it appears likely that if those messages contain high levels of unrealistic

expectations and criticism (as per PC), children may be predisposed to feelings of low self-esteem or failure. Furthermore, they may be at higher risk of anxiety about failure or negative evaluation, and depression when excessively high standards are not met. This theory and evidence therefore suggests that PC in parents may have negative implications for their child's psychological health, through their parenting behaviours.

There is less evidence to support theory regarding PS and their effect on CPOs, although Lee, Schoppe-Sullivan, and Kamp Dush (2012) found that self-orientated perfectionism was associated with higher levels of parenting satisfaction in mothers, and greater self-efficacy, higher parental satisfaction and lower parenting stress in fathers. This contrasts with findings from Randles, Flett, Nash McGregor, and Hewitt (2010), who found that whilst self-orientated perfectionism (a form of PS) is associated with behavioural activation, it is also associated with behavioural inhibition, suggesting avoidance tendencies that could theoretically have an effect on parenting style. To explain their results, Lee, Schoppe-Sullivan and Kamp Dush suggest that negative outcomes associated with PS are not only related to perceived self-failures, but the extent to which 'failure' is accompanied by criticism (which pertains to PC). Therefore, and as suggested to operate within individuals, perhaps a combination of parental PS and PC contribute to negative psychological outcomes in children. However, Curran, Hill, Madigan, and Stornæs (in press) found that parental PS (but not PC) correlated with child perceptions of conditional regard. Therefore, it may be that parental high self-standards affect parenting style, e.g. through a parent striving to do what they believe makes a 'good parent', which might feature control. In addition, Curran, Hill, Madigan, and Stornæs found that child perceptions of conditional regard are associated in turn with child PS and PC. This could activate negative psychological outcomes in the child, as already described.

1.3 The Current Study

The theory and research presented highlights the importance of understanding the nature of the relationship between parental multidimensional perfectionism and CPOs. Yet to date it is unclear whether the association between PC and negative psychological outcomes at the individual level can be extended to the relationship between parental PC and child distress/lower well-being. In addition, the relationship of PS to psychological outcomes, which is often inconsistent, has yet to be fully tested for parental-child relationships.

The aim of this meta-analysis was to test the nature and magnitude of the association between dimensions of parental perfectionism (PC or PS) and CPOs (child distress or child well-being). Specifically, it was expected that parental PC would be positively related to child distress, and negatively related to child well-being. In contrast, parental PS was expected to be negatively associated with child distress, and positively related to child well-being. Because PC and PS are known to be moderately correlated (Sirois, Molnar, & Hirsch, 2017), researchers recommend that this overlap be accounted for to better understand the unique contribution of each higher order perfectionism dimension to consequential outcomes (Stoeber & Gaudreau, 2017; Stoeber & Otto, 2006). Accordingly, meta-analyses were conducted on both the unadjusted associations of parental PS/PC and distress/well-being, and the semi-partial correlations of PC/PS.

Taking a meta-analytic approach provides a robust way of understanding how parental perfectionism dimensions may differentially relate to CPOs, which is valuable for areas where that has been a substantial growth in research (Cumming, 2014). However, meta-analysis also provides the means to probe the factors that may limit or amplify these associations by testing for potential moderators. Consistent with other meta-analyses (Sirois & Molnar, 2017; Sirois et al., 2017), it was hypothesised that the associations between parental multidimensional perfectionism and child distress/well-being would vary as a function of the perfectionism scale used. Specifically, studies that used the Almost Perfect

Scale – Revised (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001) were expected to have effects that were larger in magnitude, as has been found in previous research (Sirois, Molnar, & Hirsch, 2017). This is because there is some debate as to whether the APS-R confounds perfectionism with negative affect (Flett, Mara, Hewitt, Sirois, & Molnar, 2016), and conscientiousness (Blasberg, Hewitt, Flett, Sherry, & Chen, 2016). As previous research has also noted that perfectionism is associated with gender and age (Stoeber & Stoeber, 2009), and gender differences are associated with mental health (World Health Organisation, n.d.), these demographic factors were tested as potential moderators.

2. Method

2.1 Search Strategy

Systematic literature searching was conducted for empirical research into parental perfectionism and CPOs between 14 January and 18 February 2019, using online databases covering allied health fields up to January 2019 (Scopus, Medline, Web of Science and PsycInfo). A final scan was completed between 24th June and 9th July to retrieve any more recent studies. The PICO framework (population of interest, intervention, condition and outcome) informed the search strategy. Search terms were informed by those used in the available literature and by mapping terms to subject headings on electronic databases whilst scoping for titles. Variations on terms regarding parents/carers included "parent*", "caregiver", "mother" or "father", terms relating to children/adolescents included "child*", "adolescen*", "son" or "daughter", and variants regarding psychological outcomes in children were "well-being$", "distress", "anxiety", "depression", "mental health", "negative affect", "positive affect" or "stress". Variations of "parental perfectionism" (including "parental satisfaction", "overcontrol", "criticism", "pressure", "achievement goals" and "perceived parenting") were also included during initial scoping, however using these terms

did not yield any further papers that met the eligibility criteria than simply using the term "perfect*". Rather, they generated a large number of irrelevant titles, and literature consistently distinguished these constructs from perfectionism. Therefore, these terms were not included in the final search.

Reference lists within eligible papers were also checked, along with unpublished literature (i.e. 'grey literature'; see Quintana, 2015). Grey literature was searched using the New York Academy of Medicine grey literature search engine. Electronic databases used also found grey literature, as searches were not filtered by paper source.

2.2 Eligibility Criteria

A broad eligibility criteria was set, as the relationship between parental multidimensional perfectionism and CPOs has not been reviewed before. There were no exclusion criteria set in terms of date of publication, country, population or study design. Also, if associations between parental perfectionism and CPOs were assessed in the context of wider study aims, the paper was eligible but only findings related to the aims of this review were included. In terms of exclusion, only papers reporting empirical studies featuring usable effects and those written in English were included.

2.2.1 Parental Perfectionism. Studies needed to assess an aspect of parental PC or PS as an independent variable, and parents were defined as any person with parental responsibility (as defined under the Children Act, 1989). Studies measuring unidimensional constructs of perfectionism were excluded. Similarly, studies measuring other-orientated perfectionism were not eligible, as there is limited research regarding how this relates to PC or PS (Sirois & Molnar, 2016). Furthermore, papers that reported aspects of perfectionism (e.g. perfectionistic parenting) as an independent variable were included, provided that it was possible to identify whether it corresponded to parental PC or PS.

2.2.2 CPOs. Studies were eligible if they measured child distress or well-being as a

dependent variable (using any outcome measure completed by a parent or child). Child distress was defined as a child's feeling of emotional ill-being, and could be characterised through symptoms of anxiety and depression (Veit & Ware, 1983; Tanaka & Huba, 1984), stress and strain (Ridner, 2004), emotional suffering (Drapeau et al., 2010), irritability and obsessive-compulsions (Tanaka & Huba, 1984). Child well-being was conceptualised as a child's positive emotionality, happiness, high self-esteem or life satisfaction (see Diener, Suh, Lucas, & Smith, 1999). It should be noted that low scores of 'distress' (on measures where high scores pertain to high distress) might indicate a form of higher well-being, and vice versa. However, the absence of distress as defined above does not necessarily indicate positive emotionality, happiness, high self-esteem or life satisfaction, and it would be contentious to conclude that the absence of well-being must therefore indicate a form of 'distress'. Given these issues, we assumed that effects extracted from studies would reflect the relationship between multidimensional perfectionism and the chosen dependent variable that study measures were designed to capture. The child could be any age, as long as they were conceptualised as a 'child' in relation to a parent.

2.3 Data Management and Selection Process

All were screened by the title and abstract. There were no papers found via grey literature searches and all papers screened were published. Of the 78 full-texts that remained after screening, 64 did not meet inclusion criteria. Therefore, 14 studies were included in the final review. See Figure 1 for a summary.

2.4 Data Extraction

Study characteristics were extracted, including the authors, year of publication, country of origin, study design, sample type, parent age, parent gender, child gender, measures used to assess parental PC or PS, type of CPO measured, measures used to assess CPO, and main effects regarding the relationship between parental perfectionism and

CPOs/data that enabled the calculation/checking of effect sizes (see section 2.5.1). All eligible studies were types of observational study (i.e. cross-sectional or case-control).

Further information regarding effect sizes was requested from authors of four studies. The requested information was provided for two papers, one author did not respond, and the other was unable to provide the requested data. The paper written by the author that did not respond did not report effect sizes, but did provide *F*-values, which was used to calculate effect sizes. Regarding the paper where the author was unable to provide requested information, results regarding some subscales from the perfectionism measure used were reported and some were not (see Table 1). Therefore, results were generated using available information only.

2.5 Meta-analytic Strategy

This meta-analysis was conducted with Comprehensive Meta-Analysis, version 3 (CMA; Borenstein, Hedges, Higgins, & Rothstein, 2013). A random-effects model was selected to integrate effect sizes, to reduce the chance of a Type 1 error occurring (Borenstein, Hedges, Higgins, & Rothstein, 2010). CMA transforms all effect sizes into Fisher's *z* (Hedges & Olkin, 1985) to enable the calculation of an integrated effect size. Integrated effect sizes are presented as *r* in this meta-analysis to enable clear reporting. According to Cohen (1992), effect sizes $r = .10$ are considered small, $r = .30$ are medium and $r = .50$ are large. These guidelines are used to assess the strength of relationships reported in this meta-analysis. The criteria for statistical significance was set at an alpha value of $< .05$ in line with convention (Borenstein, Hedges, Higgins, & Rothenstein, 2009), and data is presented regarding 95% confidence intervals of the effect size.

As aims were to differentiate how higher-order dimensions of parental perfectionism related to positive or negative forms of CPOs (i.e. child distress or well-being), separate meta-analyese were planned for (1) parental PS to child distress, (2) parental PS to child

well-being, (3) parental PC to child distress, and (4) parental PC to child well-being. However, only two studies measured aspects of child well-being (life satisfaction; Randall, Bohnert, & Travers, 2015; and self-esteem; Soenens, Vansteenkist, Duriez, & Goossens, 2006). Therefore, it was not possible to run a meta-analysis for parental PS or PC and child well-being.

2.5.1 Statistical Approach to Integrating Effect Sizes. The majority of papers included in this meta-analysis ($k = 12$) reported Pearson's *r* between parental PS/PC and CPOs. Two studies (Lloyd, Schmidt, Simic, & Tchanturia, 2015, and Woodside et al., 2002) reported between-group differences in parental parental PS/PC (in mothers with children with anorexia, or without). Lloyd et al. conducted *t*-tests to compare groups and reported effect sizes as Cohen's *d*. Therefore, an independent-groups design was used to check Cohen's *d* (as per Morris & DeShon, 2002), by imputing means, standard deviations and the sample size into an online calculator (Lenhard & Lenhard, 2014). The *t*-test values were input to aggregate effects with *r* in CMA. Woodside et al. conducted analysis of variance – as the first degrees of freedom were equal to 1 and the mean squared error was not reported, methods described by Thalheimer and Cook (2002) were appropriate to follow, whereby Cohen's *d* can be calculated based on *F*-values and sample sizes provided for each group. These calculations were carried out using the online calculator.

As recommended by Card (2012), weighted averages were calculated (using CMA) in cases where multiple effect sizes were reported in one paper (e.g. where papers reported relationships between parental PC/PS and multiple measurements of distress), and where effects were reported separately for mothers and fathers. This resulted in one overall effect size for each perfectionism dimension per paper (see Table 1).

2.5.2 Heterogeneity. Heterogeneity was tested for using the *Q*-test and the *I*-squared test statistic. As per Higgins, Thompson, Deeks, and Altman (2003), I^2 values of 25%

variance were interpreted to represent low variance, 50% suggested moderate variance, and 75% indicated high variance. A forest plot to visualise effect sizes and confidence intervals was also produced.

Moderation analyses were run where tests of heterogeneity yielded significant results. Moderators were identified *a priori*, comprising the perfectionism measure used, parent age, parent gender, and child gender. Sub-group moderation analyses were conducted where variables were categorical (i.e. perfectionism measure used), and were only run if there were ≥ 3 studies per group (in line with Card, 2012). Type of distress was also considered as a potential moderator, however it was not possible to test because there were $k < 3$ that could be meaningfully placed per sub-group. Meta-regression was used with continuous moderators (i.e. parent age, parent gender and child gender, represented as the proportion of females in the study), and were only run if there were at least 10 studies.

2.5.3 Publication Bias. According to Quintana (2015) studies with large effect sizes are more likely to be published, meaning that there is potential for bias in studies included in meta-analyses. In line with Quintana, publication bias was assessed for using a funnel plot (to visualise standard errors vs. effect sizes, with the trim-and-fill method used where the funnel plot was asymmetrical), Egger's regression test, and the fail-safe *N*.

3. Results

Fourteen studies were included in this meta-analysis. Table 1 presents extracted data and weighted average effect sizes, and semi partial correlations (where possible) for each study. Table 1 presents effect size data for the meta-analysis of parental perfectionism dimensions and CPOs. There were $k = 11$ papers in the analysis testing the association between parental PS and child distress (including $N = 1{,}710$ participants), and $k = 14$ in the analysis testing parental PC and child distress (with $N = 2{,}721$ participants). All papers measured child distress using mono-source designs, whereby perceptions of distress

(measured via psychometric measures) were used. The meta-analysis of the unadjusted effects revealed a non-significant negative association between parental PS and child distress, r_{avg} = -.049 [*CI* -.13, .04], p = .256, and a significant, positive and small effect size for parental PC and child distress, r_{avg} = .153, *CI* [.08, .22], p < .0001.

There were seven studies (total N = 1,029) for which the semi-partial correlations could be calculated. For parental PS, the meta-analysis revealed a significant small and negative average association with distress, r_{avg} = -.084, *CI* [-.15, -.02], p = .012, after the contribution of parental PC was accounted for. For parental PC, the meta-analysis revealed a significant small and positive average association with distress, r_{avg} = .164, *CI* [.08, .25], p < .0001, after the contribution of parental PS was accounted for. The tests of heterogeneity were non-significant for parental PS, $Q(6) = 6.62$, p = .36; I^2 = 9.33. For parental PC the tests of heterogeneity were significant, $Q(6) = 10.92$, $p < .001$; I^2 = 45.07, indicating a moderate degree of variance in the sizes of the effects across studies. However, as there were only seven studies, moderation tests were not viable and therefore not conducted.

Tests of heterogeneity of the effect sizes were significant for both parental PS – child distress, *Q*total (10) = 27.20, $p < .01$; I^2 = 63.23, and parental PC – child distress, *Q*total (13) = 36.64, $p < .0001$; I^2 = 64.52. The I^2 values for both dimensions of parental perfectionism to child distress were above 50%, suggesting moderate between-study heterogeneity. Therefore, moderator analyses were run to probe the source of this heterogeneity.

3.1 Moderator analyses of PPS and Child Distress

Papers were grouped according to the perfectionism measure used. However, there were $k < 3$ papers in groups using the APS-R, PNPS and MPS-HF. Consideration was given to grouping papers using these scales into an 'other' group, yet this was not deemed sufficient to provide a meaningful analysis, because it would only involve comparisons of the MPS-F versus all other measures. Therefore, the moderating role of perfectionism measure was not

assessed for parental PS.

Table 2 shows the results of the meta-regression testing for a moderating effect of parent and child gender. There were < k = 10 studies reporting parent age, and so a meta-regression using this variable could not be conducted (Higgins & Green, 2011). Both meta-regressions for parent gender (b = -.001, *CI* [-.006, .004], p = .84) and child gender (b = -.002, *CI* [-.002, .006], p = .33) were not significant, suggesting that the associations of parental PS with child distress were robust to differences in gender.

3.2 Moderator analyses of PPC and Child Distress

Table 3 summarises the sub-group moderator analyses of parental PC and child distress. Papers were grouped by perfectionism measure used. Papers using the APS-R and PNPS were grouped into an 'other' group as both measures conceptualise multidimensional perfectionism as consisting of 'adaptive' and 'maladaptive' forms (see Slaney, Rice, Mobley, Trippi, & Ashby, 2001 and Terry-Short, Owens, Slade, & Dewey, 1995). The analysis found significant between-group heterogeneity ($Q_{between}$ (2) = 8.93, p = .011), indicating that the magnitude of the effects varied as a function of the perfectionism measure used. The largest effect size was also found in the 'other' group, and all subgroup effect sizes were significant.

The meta-regression of the effects of gender of the association of parental PC and child distress were not significant. This suggests that the effects were robust to the influence of parent (b = -.00, *CI* [-.005, .004], p = .8) and child (b = -.00, *CI* [-.006, -.002], p = .3) gender. As there were only five studies that reported parent age, meta-regression was not conducted for this variable.

3.3 Publication Bias

For parental PC to child distress, the fail-safe N analysis found that 171 studies with null results would be needed to reduce the significance of the effects to be greater than p to < .05. This was well above the threshold of 65 studies using methods described in Rosenthal

(1979). The funnel plot (see Figure 2) was relatively symmetrical and confirmed this result. Similarly, the trim-and-fill test resulted in zero studies being trimmed, and Egger's test also found a non-significant result (t (9) = 1.57, p = .151). Collectively, these tests suggested the absence of publication bias.

For parental PS and child distress, tests were less conclusive regarding evidence of publication bias. The fail-safe N statistic was 0, which was below the threshold value of 65. However, the funnel plot was fairly symmetrical (although two studies fell outside of the funnel area; see Figure 3). Furthermore, Egger's test was non-significant (t (9) = 2.17, p = .06), and the trim-and-fill test resulted in zero studies being trimmed.

4. Discussion

The current meta-analysis is the first to examine the relationship between multidimensional parental perfectionism (PC and PS) and CPOs. Across the 14 studies included in the meta-analysis, there was a small, significant, and positive average association between parental PC and child distress, which remained after accounting for the contributions of parental PS, further highlighting PC as a core vulnerability factor for poor psychological well-being. In contrast, parental PS was not significantly associated with child distress for the unadjusted associations. However, when the overlap between PC and PS was accounted for, the average association between parental PS and child distress was positive and significant. However, as this was a very small effect, caution is advised when concluding an effect of parental PS on child distress. There were, however, not enough studies to meta-analyse the association between parental PS or PC and child well-being.

Moderation analyses found that the perfectionism measure used significantly explained between-study heterogeneity in the effects of parental PC and child distress. Specifically, papers using measures included in the 'other' group (i.e. APS-R and PNPS) generated larger effects sizes. The APS-R has been found to inflate effect sizes for PC in

other research (Sirois & Molnar, 2017; Sirois et al., 2017), in part because it has been suggested that it confounds perfectionism with negative affect (Blasberg et al., 2016). The current findings are consistent with this suggestion and previous research (e.g. Smith et al., 2019). Moderation analyses also indicated that there remained a large amount of unexplained variance, which was not explained by parent or child gender for both PS and PC. Besharat (2003) has suggested that cultural factors influence the relationship between mothers' or fathers' perfectionism and test anxiety. Similarly, Rice, Tucker, and Desmond (2008) found differential relationships between parental perfectionism and child distress, depending on parents' ethnicity. This research suggests that cultural factors may be an important moderator to explore. Future research that includes a larger number of studies would be well positioned to facilitate a more thorough investigation of the sources of this variance via other potential moderators.

Although effects found are statistically significant, all of the effects found were small. Therefore, it may be that the effect between parental perfectionism and child distress is transmitted via third variables. Indeed, many eligible papers in this meta-analysis suggested a link between parental perfectionism and child distress through the use of parental overcontrol. For example, Soenens, Vansteenkiste, Duriez, and Goossens (2006) demonstrated that parental overcontrol was an intervening variable between parental perfectionism and adolescent depression, loneliness, and self-esteem. Affrunti and Woodruff-Borden (2014) also found that parental overcontrol mediated the relationship between parental perfectionism and child anxiety. In addition, Barber and Harmon (2002) have discussed how psychologically controlling parenting can hinder the development of the child's autonomy, whilst autonomy has been positively associated with well-being (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). Overcontrol may therefore be an important moderator of the relationship between parental perfectionism and CPOs, and may warrant

further study. One other proposed variable that might influence the significant but small effects found between parental PC and child distress is child perfectionism. Specifically, parental perfectionism has been associated with the development of perfectionism in children (e.g. Frost, Lahart, & Rosenblate, 1991; Vieth & Trull, 1999). Using a parenting model proposed by Flett, Hewitt, Oliver, and McDonald (2002) regarding how parental overcontrol might relate to child anxiety, it can be theorised that children become anxious when their parent's perfectionism conveys threat, which they try to mitigate against by trying to achieve perfectionism themselves. Therefore, it is possible that child perfectionism may be implicated in, and could amplify the association between parental perfectionism and CPOs.

According to Beck's causal theory of depression (1967), 'dysfunctional' parenting gives rise to 'dysfunctional' attitudes in children, putting them at higher risk of developing depression. Although 'dysfunctional parenting' is defined as consisting of low care and overprotection (Whisman & Kwon, 1992), Randolph and Dykman (1998) expanded upon this to include perfectionistic expectations and parental criticism, which align with definitions of PC (but not PS; Sirois & Molnar, 2016). Therefore, perhaps the finding that parental PC (but not parental PS) is associated with child distress is because only this dimension of perfectionism leads to dysfunctional attitudes in children. This would particularly make sense given that PC feature interpersonal dimensions of perfectionism (Hewitt & Flett, 1991), and therefore be more likely to contribute to dysfunctional attitudes in children.

4.1 Implications

Our findings have a number of important implications for theory and research on perfectionism and its outcomes. The findings of this meta-analysis are consistent with previous theory and evidence that parental traits are instrumental in the development of CPOs (e.g. Degnan, Almas, & Fox, 2010; Drake & Ginsberg, 2011; McLeod, Wood, & Weisz, 2007; and Wood, McLeod, Sigman, Hwang, & Chu, 2003). More specifically, findings

suggest that parental PC should be considered as a parental trait that can predispose children to distress, perhaps through the use of parental overcontrol or through its contribution to the development of child perfectionism. Findings from this meta-analysis could also suggest that it would be beneficial to consider interventions for parents that have potential to reduce criticism, harsh self-scrutiny and self-evaluation, as per parental PC. However, this is speculative; more research is needed to account for other possible intervening variables.

4.2 Limitations and Strengths

The findings of this meta-analysis should be considered in the context of its strengths and limitations. The studies and data analysed in the meta-analysis were mainly cross-sectional, making it difficult to ascertain the direction of the associations (i.e. whether CPOs are dependent on parental perfectionism or vice versa). However, the theorised direction from perfectionism to CPO is consistent with a trait view of perfectionism, and a meta-analysis of longitudinal research which found that perfectionism predicts depression (Smith et al., 2016). Another limitation was that some potential sources of between-study heterogeneity were not assessed. It was not possible to include type of distress as a moderator, as each study measured a different form of child distress. Furthermore, there were only 14 studies included in the meta-analysis. As such, it was not always possible to run moderation analyses to explain heterogeneity. For example, effect sizes generated by papers using the APS-R and PNPS had to be grouped together when looking for a moderating effect of perfectionism measure between parental PC and child distress. There were also an insufficient number of studies to conduct meaningful subgroup analysis for the role of perfectionism scale in the association between parental PS and CPO. Meta-regressions into the potentially moderating effect of parent age between both parental PC and parental PS with child distress were also not possible due to the low number of studies. Finally, because all studies measured perceptions of child distress, findings cannot be generalised to an association between

parental perfectionism and actual examples of child distress or well-being.

These limitations aside, testing the associations of parental PC and parental PS in relation to CPOs helps to build a cumulative knowledge base in an under-studied area within perfectionism research (Cumming, 2014). Accordingly, the current findings can inform future research by highlighting that the differential outcomes of PS and PC with well-being extend beyond the individual to children.

5. Conclusion

To conclude, the current meta-analysis found a small, positive and significant average association between parental PC and child distress, which remained after the contributions of PS were taken into account. Although the association between parental PS and child distress was not significant for the unadjusted effects, once the variance attributed to PC was accounted for, parental PS was negatively associated with child distress. However, this was a very small effect. These findings have implications in terms of our understanding of parental PC, in that its interpersonal aspect appears to have an effect on the psychological health of other people. Accordingly, parental PC may predispose children to distress and should be considered a core vulnerability factor when addressing the effects of PC on psychological well-being both for the self and children.

References

An asterix precedes studies that were included in the meta-analysis.

Achenbach, T. M., & Rescorla, L. (2001). In Cook, L. C., & Kearney, C. A. (2009). Parent and youth perfectionism and internalizing psychopathology. *Personality and Individual Differences*, *46*, 325-330. https://doi.org/10.1016/j.paid.2008.10.029

*Affrunti, N. W., Geronimi, E. M. C., & Woodruff-Borden, J. (2015). Language of perfectionistic parents predicting child anxiety diagnostic status. *Journal of Anxiety Disorders, 30,* 94-102. http://doi.org/ 10.1016/j.janxdis.2015.01.001

*Affrunti, N. W., & Woodruff-Borden, J. (2014). Parental perfectionism and overcontrol: Examining mechanisms in the development of child anxiety. *Journal of Abnormal Child Psychology, 43*, 517-529. https://doi.org/10.1007/s10802-014-9914-5

Barber, B. K., & Harmon, E. L. (2002). Violating the self: Parental psychological control of children and adolescents. In Soenens, B., Vansteenkiste, M., Duriez, B., & Goossens, L. (2006). In search of the sources of psychologically controlling parenting: The role of parental separation anxiety and parental maladaptive perfectionism. *Journal of Research on Adolescence*, *16*, 539-559. https://doi.org/10.1111/j.1532-7795.2006.00507.x

Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects*. Philadelphia, PA: University of Pennsylvania Press.

Beck, A. T., Ward, C., Mendelson, M., Mock, J., & Erbaugh, J. (1961). In Enns, M. W., Cox, B. J., & Clara, I. (2002). Adaptive and maladaptive perfectionism: Developmental origins and association with depression proneness. *Personality and Individual Differences, 33,* 921-935. https://dx.doi.org/10.1016/S0191-8869(01)00202-1

Bergman, A. J., Nyland, J. E., & Burns, L. R. (2007). Correlates with perfectionism and the

494 utility of a dual process model. *Personality and Individual Differences*, *43*, 389-399.
495 https://doi.org/10.1016/j.paid.2006.12.007
496 *Besharat, M. A. (2003). Parental perfectionism and children's test anxiety. *Psychological*
497 *Reports, 93*, 1049-1055. https://doi.org/10.2466/pr0.2003.93.3f.1049
498 Bieling, P. J., Israeli, A., Smith, J., & Antony, M. M. (2003). Making the grade: The
499 behavioural consequences of perfectionism in the classroom. *Personality and*
500 *Individual Differences*, *35*, 163-178. https://doi.org/10.1016/S0191-8869(02)00173-3
501 Bieling, P. J., Israeli, A. L., & Antony, M. M. (2004). Is perfectionism good, bad, or both?
502 Examining models of the perfectionism construct. *Personality and Individual*
503 *Differences*, *36*, 1373-1385. https://doi.org/10.1016/S0191-8869(03)00235-6
504 Blasberg, J. S., Hewitt, P. L., Flett, G. L., Sherry, S. B., & Chen, C. (2016). The importance
505 of item wording: The distinction between measuring high standards versus measuring
506 perfectionism and why it matters. *Journal of Psychoeducational Assessment, 34*, 702-
507 717. doi:10.1177/0734282916653701
508 Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2009). *Introduction to*
509 *meta-analysis*. Chichester, UK: John Wiley & Sons.
510 Borenstein, M., Hedges, L. V., Higgins, J. P., & Rothstein, H. R. (2010). A basic introduction
511 to fixed-effect and random-effects models for meta-analysis. *Research Synthesis*
512 *Methods*, *1*, 97-111. https://doi.org/10.1002/jrsm.12
513 Borenstein, M., Hedges, L. V., Higgins, J. P., & Rothstein, H. R. (2013). Comprehensive
514 Meta-Analysis Version 3 [Computer software]. Englewood, NJ: Biostat.
515 Bruch, H. (1962). Perceptual and conceptual disturbance in anorexia nervosa. *Psychosomatic*
516 *Medicine, 24,* 187 – 194. Retrieved February 14, 2019, from
517 http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.320.7064&rep=rep1&type
518 =pdf

519 Bruch, H. & Hewlett, I. (1947). Psychological aspects of the medical management of diabetes
520 in children. *Psychosomatic Medicine, 9,* 205 – 209. Retrieved February 14, 2019,
521 from
522 https://journals.lww.com/psychosomaticmedicine/Citation/1947/05000/Clinical_Note
523 s__Psychologic_Aspects_of_the_Medical.6.aspx
524 Card, N. A. (2012). *Applied meta-analysis for social science research*. New York, NY:
525 Guildford Press.
526 Chang, E. C., Watkins, A., & Banks, K. H. (2004). How adaptive and maladaptive
527 perfectionism relate to positive and negative psychological functioning: Testing a
528 stress-mediation model in black and white female college students. *Journal of*
529 *Counseling Psychology*, *51*, 93-102. http://dx.doi.org/10.1037/0022-0167.51.1.93
530 Children Act (1989) Section 3. Retrieved June 4, 2017, from
531 http://www.legislation.gov.uk/ukpga/1989/41/contents
532 Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*, 155-159.
533 http://dx.doi.org/10.1037/0033-2909.112.1.155
534 * Cook, L. C., & Kearney, C. A. (2009). Parent and youth perfectionism and internalizing
535 psychopathology. *Personality and Individual Differences*, *46*, 325-330.
536 https://doi.org/10.1016/j.paid.2008.10.029
537 Cumming, G. (2014). The new statistics: Why and how. *Psychological Science*, *25*, 7-29.
538 https://doi.org/10.1177/0956797613504966
539 Curran, T., Hill, A. P., Madigan, D. J., & Stornæs, A. V. (in press). A test of social learning
540 and parent socialization perspectives on the development of perfectionism.
541 Personality and Individual Differences.
542 Degnan, K. A., Almas, A. N., & Fox, N. A. (2010). Temperament and the environment in the
543 etiology of childhood anxiety. *Journal of Child Psychology and Psychiatry*, *51*, 497-

517. https://doi.org/10.1111/j.1469-7610.2010.02228.x

Derogatis, L. R., & Melisaratos, N. (1983). In Frost, R. O., Lahart, C. M., & Rosenblate, R. (1991). The development of perfectionism: A study of daughters and their parents. *Cognitive Therapy and Research*, *15*, 469-489. https://doi.org/10.1007/BF01175730

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). In Randall, E. T., Bohnert, A. M., & Travers, L. V. (2015). Understanding affluent adolescent adjustment: The interplay of parental perfectionism, perceived parental pressure, and organized activity involvement. *Journal of Adolescence, 41*, 56-66. http://doi.org/ 10.1016/j.adolescence.2015.03.005

Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*, 276-302. http://dx.doi.org/10.1037/0033-2909.125.2.276

Drake, K. L., & Ginsburg, G. S. (2011). Parenting practices of anxious and nonanxious mothers: A multi-method, multi-informant approach. *Child & Family Behavior Therapy*, *33*, 299-321. https://doi.org/10.1080/07317107.2011.623101

Drapeau, A., Beaulieu-Prévost, D., Marchand, A., Boyer, R., Préville, M., & Kairouz, S. (2010). A life-course and time perspective on the construct validity of psychological distress in women and men. Measurement invariance of the K6 across gender. *BMC Medical Research Methodology*, *10*, 68-84. https://doi.org/10.1186/1471-2288-10-68

Dunkley, D. M., Mandel, T., & Ma, D. (2014). Perfectionism, neuroticism, and daily stress reactivity and coping effectiveness 6 months and 3 years later. *Journal of Counseling Psychology*, *61*, 616. https://doi.org/10.1037/cou0000036

Dunkley, D. M., Zuroff, D. C., & Blankstein, K. R. (2003). Self-critical perfectionism and daily affect: Dispositional and situational influences on stress and coping. *Journal of*

Personality and Social Psychology, *84*, 234-252. http://dx.doi.org/10.1037/0022-3514.84.1.234

Eckblad, M., & Chapman, L. J. (1983). In Randolph, J. J., & Dykman, B. M. (1998). Perceptions of parenting and depression-proneness in the offspring: Dysfunctional attitudes as a mediating mechanism. *Cognitive Therapy and Research, 22,* 377-400. http://dx.doi.org/10.1023/A:1018761229824

* Enns, M. W., Cox, B. J., & Clara, I. (2002). Adaptive and maladaptive perfectionism: Developmental origins and association with depression proneness. *Personality and Individual Differences, 33,* 921-935. http://dx.doi.org/10.1016/S0191-8869(01)00202-1

Flett, G. L., Hewitt, P. L., Oliver, J. M., & Macdonald, S. (2002). Perfectionism in children and their parents: A developmental analysis. In Flett, G. L. & Hewitt, P. L. (Eds.), *Perfectionism: Theory, research and treatment* (pp. 89 – 132). Washington, DC: American Psychological Association

Flett, G. L., Mara, C. A., Hewitt, P. L., Sirois, F., & Molnar, D. S. (2016). How should discrepancy be assessed in perfectionism research? A psychometric analysis and proposed refinement of the Almost Perfect Scale–Revised. *Journal of Psychoeducational Assessment, 34*, 718-732. doi:10.1177/0734282916651382

Flett, G. L., Nepon, T., & Hewitt, P. L. (2016). Perfectionism, worry, and rumination in health and mental health: A review and a conceptual framework for a cognitive theory of perfectionism. In Sirois, F. M. & Molnar, D. S. (Eds.) (2016). *Perfectionism, health, and well-being* (pp.121-156). Cham, Switzerland: Springer International Publishing.

*Frost, R. O., Lahart, C. M., & Rosenblate, R. (1991). The development of perfectionism: A study of daughters and their parents. *Cognitive Therapy and Research*, *15*, 469-489.

https://doi.org/10.1007/BF01175730

Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research*, *14*, 449-468. https://doi.org/10.1007/BF01172967

Garber, J., Robinson, N. S., & Valentiner, D. (1997). The relation between parenting and adolescent depression: Self-worth as a mediator. *Journal of Adolescent Research*, *12*, 12-33. https://doi.org/10.1177/0743554897121003

Gaudreau, P., & Thompson, A. (2010). Testing a 2× 2 model of dispositional perfectionism. *Personality and Individual Differences*, *48*, 532-537. https://doi.org/10.1016/j.paid.2009.11.031

Greblo, Z., & Bratko, D. (2014). Parents' perfectionism and its relation to child rearing behaviors. *Scandinavian Journal of Psychology*, *55*, 180-185. https://doi.org/10.1111/sjop.12116

Harter, S. (1988). In Soenens, B., Vansteenkiste, M., Duriez, B., & Goossens, L. (2006). In search of the sources of psychologically controlling parenting: The role of parental separation anxiety and parental maladaptive perfectionism. *Journal of Research on Adolescence*, *16*, 539-559. https://doi.org/10.1111/j.1532-7795.2006.00507.x

Hedges, L. V., & Olkin, I. (1985). *Statistical methods for meta-analysis*. London, UK: Academic Press Inc.

Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology, 60*, 456-470. http://hewittlab.sites.olt.ubc.ca/files/2014/11/MPS.pdf

Hewitt, P. L., Flett, G. L., Turnbull-Donovan, W., & Mikail, S. F. (1991). The Multidimensional Perfectionism Scale: Reliability, validity, and psychometric

properties in psychiatric samples. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, *3*, 464-468. http://dx.doi.org/10.1037/1040-3590.3.3.464

Higgins, J. P. T. & Green, S. (Eds.). (2011). Cochrane handbook for systematic reviews of interventions. Version 5.1.0 (updated March 2011). Retrieved March 14, 2019, from http://www.cochrane-handbook.org

Higgins, J. P. T., Thompson, S. G., Deeks, J. J., & Altman, D. G. (2003). Measuring inconsistency in meta-analyses. *British Medical Journal*, *327*, 557-560. https://doi.org/10.1136/bmj.327.7414.557

Hill, R. W., Huelsman, T. J., & Araujo, G. (2010). Perfectionistic concerns suppress associations between perfectionistic strivings and positive life outcomes. *Personality and Individual Differences*, *48*, 584-589. https://doi.org/10.1016/j.paid.2009.12.011

Horney, K. (1950). In Sirois, F. M. & Molnar, D. S. (Eds.) (2016). *Perfectionism, health, and well-being.* Cham, Switzerland: Springer International Publishing, pp. 4.

Lee, M. A., Schoppe-Sullivan, S. J., & Kamp Dush, C. M. (2012). Parenting perfectionism and parental adjustment. *Personality and Individual Differences*, *52*, 454-457. http://doi.org/10.1016/j.paid.2011.10.047

Lenhard, W., & Lenhard, A. (2014). Computation of effect sizes. *Psychometrica*. Retrieved from https://www.psychometrica.de/index.html

Limburg, K., Watson, H. J., Hagger, M. S., & Egan, S. J. (2017). The relationship between perfectionism and psychopathology: A meta-analysis. *Journal of Clinical Psychology, 73*, 1301-1326. http://doi.org/10.1002/jclp.22435

* Lloyd, S., Schmidt, U., Simic, M., & Tchanturia, K. (2015). Self-reported and performance based perfectionism in mothers of individuals with Anorexia Nervosa: a pilot study. *Neuropsychiatrie, 29*, 192-199. http://doi.org/1 0.1007/s40211-015-0161-y

Lovibond, P. F., & Lovibond, S. H. (1995). In Sarkhanlou, S. S., & Kiamanesh, A. (2015).

The relationship between personality characteristics, perfectionism of mothers and emotional problems of their daughters. In K. Maree (Ed.), *Proceedings of 3rd World Conference on Psychology and Sociology*, *185,* pp. 460-468. https://doi.org/10.1016/j.sbspro.2015.03.455

McLeod, B. D., Wood, J. J., & Weisz, J. R. (2007). Examining the association between parenting and childhood anxiety: A meta-analysis. *Clinical Psychology Review*, *27*, 155-172. https://doi.org/10.1016/j.cpr.2006.09.002

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D.G. (2009). *P*referred *R*eporting *I*tems for *S*ystematic Reviews and *M*eta-*A*nalyses: The PRISMA statement. *Annals of Internal Medicine, 151*, 264-269, doi: 10.7326/0003-4819-151-4-200908180-00135

Morris, S. B., & DeShon, R. P. (2002). Combining effect size estimates in meta-analysis with repeated measures and independent-groups designs. *Psychological Methods*, *7*, 105-125. http://dx.doi.org/10.1037/1082-989X.7.1.105

Quintana, D. S. (2015). From pre-registration to publication: A non-technical primer for conducting a meta-analysis to synthesize correlational data. *Frontiers in Psychology*, *6*, 1549-1558. https://doi.org/10.3389/fpsyg.2015.01549

Radloff, L. S. (1977). In Rice, K. G., Tucker, C. M., & Desmond, F. F. (2008). Perfectionism and depression among low-income chronically ill African American and white adolescents and their maternal parent. *Journal of Clinical Psychology in Medical Settings, 15*, 171-181. http://doi.org/ 10.1007/s10880-008-9119-6

*Randall, E. T., Bohnert, A. M., & Travers, L. V. (2015). Understanding affluent adolescent adjustment: The interplay of parental perfectionism, perceived parental pressure, and organized activity involvement. *Journal of Adolescence, 41*, 56-66. http://doi.org/ 10.1016/j.adolescence.2015.03.005

*Randall, E. T., Smith, K. R., Kronman, C. A., Conroy, C., Smith, A. M., & Simons, L. E.

(2018). Feeling the pressure to be perfect: Effect on pain-related distress and dysfunction in youths with chronic pain. *Journal of Pain, 19*, 418-429. https://doi.org/10.1016/j.jpain.2017.11.012

Randles, D., Flett, G. L., Nash, K. A. , McGregor, I. D., & Hewitt, P. L. (2010). Dimensions of perfectionism, behavioral inhibition, and rumination. *Personality and Individual Differences, 49*, 83–87. https://doi.org/10.1016/j.paid.2010.03.002

*Randolph, J. J., & Dykman, B. M. (1998). Perceptions of parenting and depression-proneness in the offspring: Dysfunctional attitudes as a mediating mechanism. *Cognitive Therapy and Research, 22,* 377-400. http://dx.doi.org/10.1023/A:1018761229824

Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, J., & Ryan, R. M. (2000). Daily well-being: The role of autonomy, competence, and relatedness. *Personality and Social Psychology Bulletin*, *26*, 419-435. https://doi.org/10.1177/0146167200266002

*Rice, K. G., Tucker, C. M., & Desmond, F. F. (2008). Perfectionism and depression among low-income chronically ill African American and White adolescents and their maternal parent. *Journal of Clinical Psychology in Medical Settings, 15,* 171-181. doi: 10.1007/s10880-008-9119-6

Ridner, S. H. (2004). Psychological distress: concept analysis. *Journal of Advanced Nursing, 45,* 536 – 545. https://doi.org/10.1046/j.1365-2648.2003.02938.x

Rosenthal, R. (1979). The file drawer problem and tolerance for null results. *Psychological Bulletin*, *86*, 638-641. http://dx.doi.org/10.1037/0033-2909.86.3.638

Ryle A., & Kerr, I. B. (2002). *Introducing Cognitive Analytic Therapy: Principles and practice.* West Sussex, UK: John Wiley & Sons Ltd.

*Sarkhanlou, S. S., & Kiamanesh, A. (2015). The relationship between personality characteristics, perfectionism of mothers and emotional problems of their daughters.

In K. Maree (Ed.), *Proceedings of 3rd World Conference on Psychology and Sociology, 185,* pp. 460-468. https://doi.org/10.1016/j.sbspro.2015.03.455

Silverman, W. K. & Albano, A. M. (1996). In Affrunti, N. W., Geronimi, E. M. C., & Woodruff-Borden, J. (2015). Language of perfectionistic parents predicting child anxiety diagnostic status. *Journal of Anxiety Disorders, 30*, 94-102. http://doi.org/ 10.1016/j.janxdis.2015.01.001

Simons, L. E., Sieberg, C. B., Carpino, E., Logan, D., & Berde, C. (2011). In Randall, E. T., Smith, K. R., Kronman, C. A., Conroy, C., Smith, A. M., & Simons, L. E. (2018). Feeling the pressure to be perfect: Effect on pain-related distress and dysfunction in youths with chronic pain. *Journal of Pain, 19*, 418-429. https://doi.org/10.1016/j.jpain.2017.11.012

Sirois, F. M. & Molnar, D. S. (Eds.) (2016). *Perfectionism, health, and well-being.* Cham, Switzerland: Springer International Publishing.

Sirois, F. M. & Molnar, D. S. (2017). Perfectionistic strivings and concerns are differentially associated with self-rated health beyond negative affect. *Journal of Research in Personality*, *70*, 73-83. https://doi.org/10.1016/j.jrp.2017.06.003

Sirois, F. M., Molnar, D. S., & Hirsch, J. (2017). A meta-analytic and conceptual update on the associations between procrastination and multidimensional perfectionism. *European Journal of Personality*, 137-159. https://doi.org/10.1002/per.2098

Sirois, F. M., & Molnar, D. S. (2017). Perfectionistic strivings and concerns are differentially associated with self-rated health beyond negative affect. *Journal of Research in Personality, 70*, 73-83. doi:https://doi.org/10.1016/j.jrp.2017.06.003

Sirois, F. M., Toussaint, L., Hirsch, J. K., Kohls, N., Weber, A., & Offenbacher, M. (2019). Trying to be perfect in an imperfect world: A person-centred test of perfectionism and health in fibromyalgia patients versus healthy controls, *Personality and Individual*

Differences, 137, 27-32. https://doi.org/10.1016/j.paid.2018.08.005

Slaney, R. B., Rice, K. G., Mobley, M., Trippi, J., & Ashby, J. S. (2001). The revised almost perfect scale. *Measurement and Evaluation in Counseling and Development*, *34*, 130. Retrieved January 17, 2019, from https://psycnet.apa.org/record/2001-05693-001

Smith, M. M., Sherry, S. B., Rnic, K., Saklofske, D. H., Enns, M., & Gralnick, T. (2016). Are Perfectionism Dimensions Vulnerability Factors for Depressive Symptoms After Controlling for Neuroticism? A Meta-analysis of 10 Longitudinal Studies. *European Journal of Personality, 30*, 201-212. doi:10.1002/per.2053

Smith, M. M., Sherry, S. B., Vidovic, V., Saklofske, D. H., Stoeber, J., & Benoit, A. (2019). Perfectionism and the five-factor model of personality: A meta-analytic review. *Personality and Social Psychology Review, 23,* 367-390. https://doi.org/10.1177/1088868318814973

* Soenens, B., Vansteenkiste, M., Duriez, B., & Goossens, L. (2006). In search of the sources of psychologically controlling parenting: The role of parental separation anxiety and parental maladaptive perfectionism. *Journal of Research on Adolescence*, *16*, 539-559. https://doi.org/10.1111/j.1532-7795.2006.00507.x

Speilberger, C. D., Gorsuch, R. L., & Lushene, R. E. (1970). In Besharat, M. A. (2003). Parental perfectionism and children's test anxiety. *Psychological Reports, 93,* 1049-1055. https://doi.org/10.2466/pr0.2003.93.3f.1049

Stoeber, J., & Gaudreau, P. (2017). The advantages of partialling perfectionistic strivings and perfectionistic concerns: Critical issues and recommendations. *Personality and Individual Differences, 104*, 379-386. doi:http://dx.doi.org/10.1016/j.paid.2016.08.039

Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism: Approaches, evidence, challenges. *Personality and Social Psychology Review, 10*, 295-319.

744 Stoeber, J., & Stoeber, F. S. (2009). Domains of perfectionism: Prevalence and relationships
745 with perfectionism, gender, age, and satisfaction with life. *Personality and Individual*
746 *Differences*, *46*, 530-535. https://doi.org/10.1016/j.paid.2008.12.006
747 Straathof, M. A. E., & Treffers, P. H. D. A. (1988). In Soenens, B., Vansteenkiste, M.,
748 Duriez, B., & Goossens, L. (2006). In search of the sources of psychologically
749 controlling parenting: The role of parental separation anxiety and parental
750 maladaptive perfectionism. *Journal of Research on Adolescence*, *16*, 539-559.
751 https://doi.org/10.1111/j.1532-7795.2006.00507.x
752 Sullivan, M. J., Bishop, S. R., & Pivik, J. (1995). In Randall, E. T., Smith, K. R., Kronman,
753 C. A., Conroy, C., Smith, A. M., & Simons, L. E. (2018). Feeling the pressure to be
754 perfect: Effect on pain-related distress and dysfunction in youths with chronic pain.
755 *Journal of Pain, 19*, 418-429. https://doi.org/10.1016/j.jpain.2017.11.012
756 Tanaka, J. S., & Huba, G. J. (1984). Confirmatory hierarchical factor analyses of
757 psychological distress measures. *Journal of Personality and Social Psychology, 46*,
758 621-635. http://dx.doi.org/10.1037/0022-3514.46.3.621
759 Terry-Short, L. A., Owens, R. G., Slade, P. D., & Dewey, M. E. (1995). In Besharat, M. A.
760 (2003). Parental perfectionism and children's test anxiety. *Psychological Reports, 93*,
761 1049-1055. https://doi.org/10.2466/pr0.2003.93.3f.1049
762 Thalheimer, W., & Cook, S. (2002). How to calculate effect sizes from published research: A
763 simplified methodology. *Work-Learning Research,* 1-9. Retrieved March 11, 2019,
764 from http://www.bwgriffin.com/gsu/courses/edur9131/content/Effect_Sizes_pdf5.pdf
765 Veit, C. T., & Ware, J. E. (1983). The structure of psychological distress and well-being in
766 general populations. *Journal of Consulting and Clinical Psychology, 51*, 730-
767 742. http://dx.doi.org/10.1037/0022-006X.51.5.730
768 Vervoort, T., Goubert, L., Eccleston, C., Bijttebier, P., & Crombez, G. (2005). In Randall, E.

T., Smith, K. R., Kronman, C. A., Conroy, C., Smith, A. M., & Simons, L. E. (2018). Feeling the pressure to be perfect: Effect on pain-related distress and dysfunction in youths with chronic pain. *Journal of Pain, 19,* 418-429. https://doi.org/10.1016/j.jpain.2017.11.012

Vieth, A. Z., & Trull, T. J. (1999). Family patterns of perfectionism: An examination of college students and their parents. *Journal of Personality Assessment*, *72*, 49-67. https://doi.org/10.1207/s15327752jpa7201_3

Weissman, A. N., & Beck, A. T. (1978). In Randolph, J. J., & Dykman, B. M. (1998). Perceptions of parenting and depression-proneness in the offspring: Dysfunctional attitudes as a mediating mechanism. *Cognitive Therapy and Research, 22,* 377-400. http://dx.doi.org/10.1023/A:1018761229824

Whisman, M. A., & Kwon, P. (1992). Parental representations, cognitive distortions, and mild depression. *Cognitive Therapy and Research*, *16*(5), 557-568. https://doi.org/10.1007/BF01175141

Wichstrøm, L. (1995). In Soenens, B., Vansteenkiste, M., Duriez, B., & Goossens, L. (2006). In search of the sources of psychologically controlling parenting: The role of parental separation anxiety and parental maladaptive perfectionism. *Journal of Research on Adolescence*, *16*, 539-559. https://doi.org/10.1111/j.1532-7795.2006.00507.x

Wood, J. J., McLeod, B. D., Sigman, M., Hwang, W. C., & Chu, B. C. (2003). Parenting and childhood anxiety: Theory, empirical findings, and future directions. *Journal of Child Psychology and Psychiatry*, *44*, 134-151. https://doi.org/10.1111/1469-7610.00106

*Woodside, D. B., Bulik, C. M., Halmi, K. A., Fichter, M. M., Kaplan, A., Berrettini, W. H., & Kaye, W. H. (2002). Personality, perfectionism, and attitudes toward eating in parents of individuals with eating disorders. *International Journal of Eating Disorders*, *31*, 290-299. https://doi.org/10.1002/eat.10032

World Health Organisation (n.d.). Gender disparities in mental health. Retrieved January 21, 2019, from https://www.who.int/mental_health/media/en/242.pdf?ua=1

Zemore, R., Fischer, D. G., Garratt, L. S., & Miller, C. (1990). In Enns, M. W., Cox, B. J., & Clara, I. (2002). Adaptive and maladaptive perfectionism: Developmental origins and association with depression proneness. *Personality and Individual Differences, 33,* 921-935. http://dx.doi.org/10.1016/S0191-8869(01)00202-1

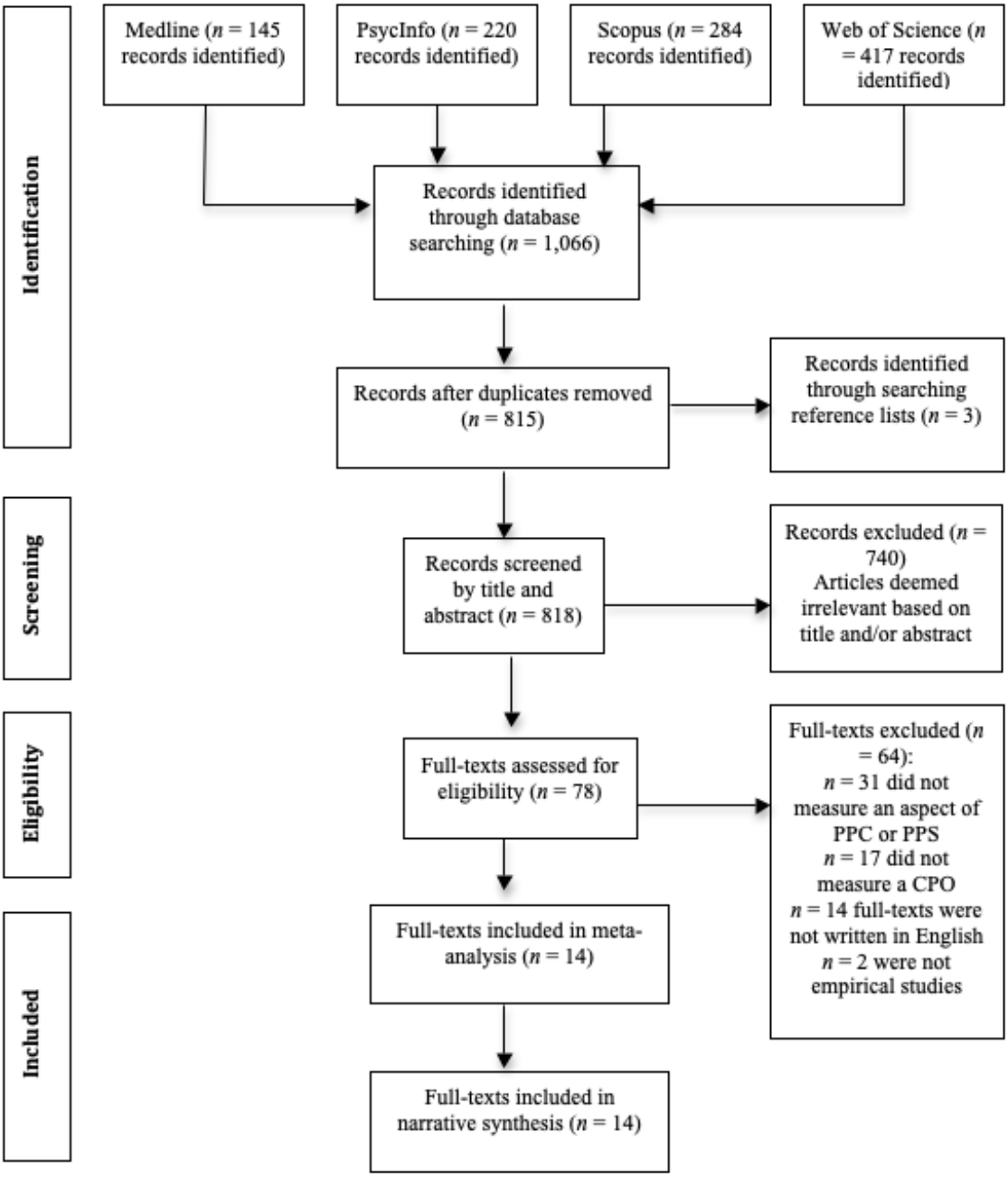

Figure 1: PRISMA (2009) Flow diagram. Adapted from Moher, Liberati, Tetzlaff, and Altman, D.G. (2009).

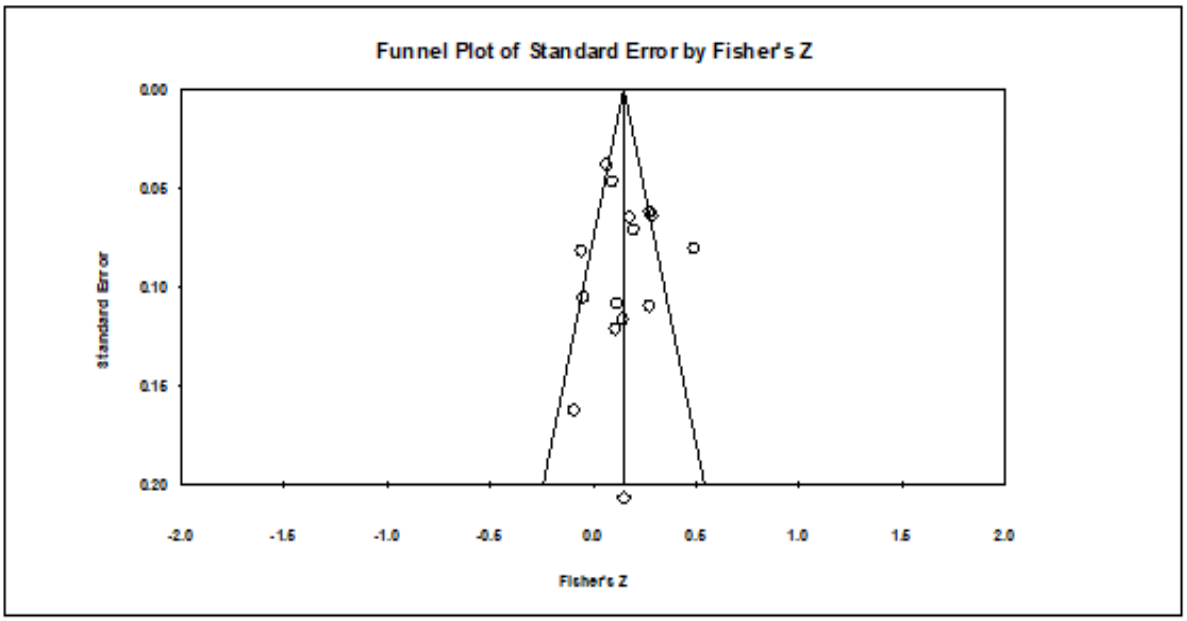

Figure 2: Funnel Plot to Assess Publication Bias – PPC to child distress.

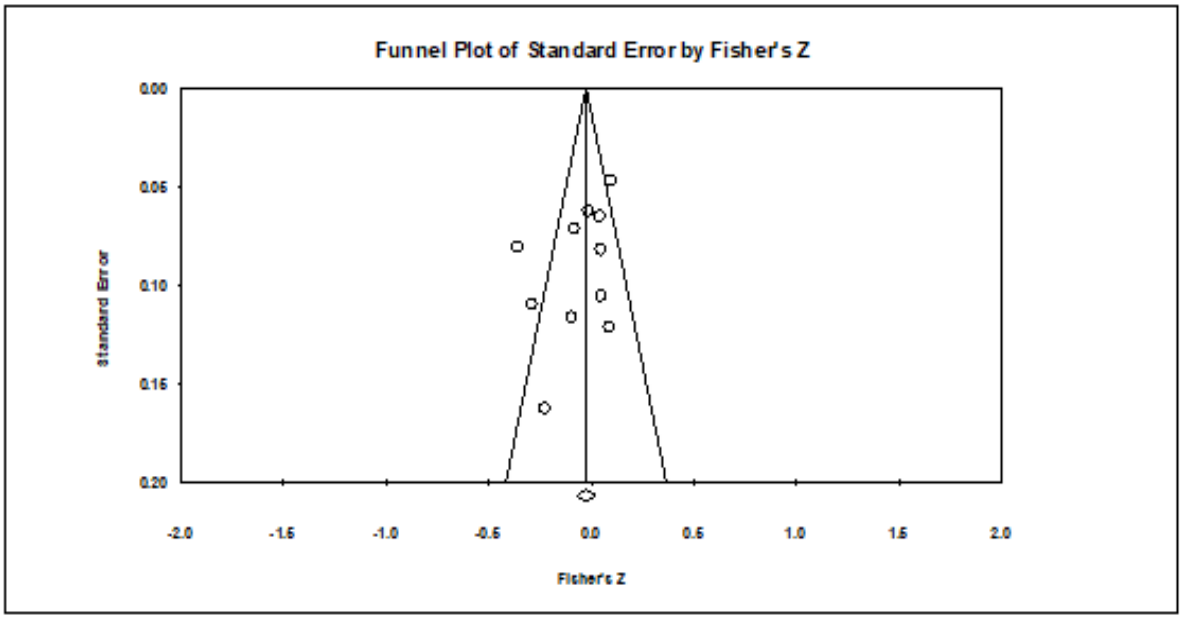

Figure 3: Funnel Plot to Assess Publication Bias – PPS to child distress.

Table 1.

Meta-Analysed Effect Sizes Between Child Psychological Outcomes (CPOs), Parental Perfectionistic Concerns (PPC), and Parental Perfectionistic Strivings (PPS) Across 14 Studies (Total N = 2,721).

Study	*N*	CPO	Perfect. measure	PPC – PPS *r*	PPC-CPO *r*	PPC-CPO s_r	PPS – CPO *r*	PPS – CPO s_r
1. Affrunti, Geronimi, & Woodruff-Borden (2015)	71	Anxiety (ADIS-IV – P/C)	MPS-F	.438	.107	.065	.086	.034
2. Affrunti & Woodruff-Borden (2014)	77	Anxiety (ADIS-IV – P/C)	MPS-F	.356	.143	.180	-.096	-.150
3. Besharat (2003)	90	Test anxiety (STAI)	PNPS	---	.453	---	-.345	---
4. Cook & Kearney (2009)	97	Youth internalised psychopathology (YSR)	MPS-HF	0.57	-.058	-.094	.052	.092
5. Enns, Cox, & Clara (2002)	261	Depression proneness (BDI, DPRS)	MSPS + PPSS	0.28	.268	.272	-.015	-.093
6. Frost, Lahart, & Rosenblate (1991)	93	General psychiatric symptoms (BSI, PST and (PSDI).	MPS-F	---	-.048	---	.047	---

7. Lloyd, Schmidt, Simic, & Tchanturia (2015)	41	Anorexia nervosa (pre-diagnosed).	MPS-F	---	.09	---	.225	---
8. Randall, Bohnert, & Travers (2015)	88	Adolescent adjustment (YSR) and life satisfaction (SWLS).	MPS-HF	---	.115	---	---	---
9. Randall et al. (2018)	239	Pain-related fear (FPQC) and pain catastrophising (PSPC)	MPS-HF	.46	.175	.168	.04	-.077
10. Randolph & Dykman (1998)	246	Depression (BDI), depression proneness (DPRS) and dysfunctional cognitions (MIS)	MSPS	---	.279	---	---	---
11. Rice, Tucker, & Desmond (2008)	84	Depression (CES-D)	APSR	-.147	.267	.225	-.282	-.242
12. Sarkhanlou & Kiamenesh (2015)	200	Depression, anxiety and stress (DASS-21)	PNPS	.178	.194	.209	-.083	-.118
13. Soenens, Vansteenkist, Duriez, & Goossens (2006)	677	Depression (CES-D), self-esteem (child self-worth subscale of the SPP-AC) and loneliness (STLS)	MPS-F	---	.065	---	---	---

14. Woodside et al. (2002)	457	Presence of anorexia nervosa (pre-diagnosed)	MPS-F	---	.093	---	.094	---
Meta-analysis results		Average r (k)			.153	.164	-.049	-.084
		95 % CI			[.08, .22]	[.08, .25]	[-.13, .04]	[-.15, -.02]
		N			2,721	1,029	1,710	1,029

Note: *r* = effect size, *sr* = partial effect size, MPS-F = Frost Multidimensional Perfectionism Scale (Frost, Marten, Lahart, & Rosenblate, 1990), ADIS-IV – P/C = Anxiety Disorders Interview Schedule-Fourth Edition-Parent/Child (Silverman & Albano, 1996), PNPS = Positive and Negative Perfectionism Scale (Terry-Short, Owens, Slade, & Dewey, 1995), STAI = State Trait Anxiety Inventory (Speilberger, Gorsuch, & Lushene, 1970), MPS-HF = Hewitt and Flett Multidimensional Perfectionism Scale (Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991), YSR = Youth Self Report (Achenbach & Rescorla, 2001), PPSS = Parental Personal Standards Scale (Enns, Cox, & Clara, 2002), MSPS = Modified Socially Prescribed Perfectionism Scale (Randolph & Dykman, 1998), BDI = Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), DPRS = Depression Proneness Rating Scale (Zemore, Fischer, Garratt, & Miller, 1990), BSI= Brief Symptom Inventory (Derogatis & Melisaratos, 1983), PST=Positive Symptom Total, PSDI= Positive Symptom Distress Index, YSR-D = Youth Self Report – Depression (Achenbach & Rescorla), YSR-A = Youth Self Report – Anxiety (Achenbach & Rescorla), SWLS = Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), FPQC = Fear of Pain Questionnaire for Children (Simons, Sieberg, Carpino, Logan, & Berde, 2011), PCSC = Pain Catastrophising Scale for Children (Sullivan, Bishop, & Pivik, 1995; Vervoort, Goubert, Eccleston, Bijttebier, Crombez, 2005), DAS = Dysfunctional Attitudes Scale (Weissman & Beck, 1978), MIS = Magical Ideation Scale (Eckblad & Chapman, 1983), AA = African-American, APS-R = Almost Perfect Scale – Revised (Slaney, Rice, Mobley, Trippi, & Ashby, 2001), CES-D = Center for Epidemiological Studies – Depression Scale

(Radloff, 1977), DASS-21 = Depression, Anxiety and Stress Scale (Lovibond & Lovibond, 1995), SPPA = Self Perception Profile for Adolescents (Harter, 1988; Straathof & Treffers, 1988; Wichstrøm, 1995), STLS = State-trait Loneliness.

Table 2.
Meta-regression of the associations of Parental PS and PC with child distress

				Parental PS				
Moderator	*N*	*k*	r^2	*b*	[95% *CI*]	Q_{model}	*df*	*p*
Parent gender	1,449	10	.00	-.001	[-.006, .004]	.04	1	.84
Child gender	1,669	10	.00	.002	[-.002, .006]	.95	1	.33
				Parental PC				
Parent gender	2,214	12	.00	-.00	[-.005, .004]	0.07	1	.80
Child gender	2,680	13	.00	-.00	[-.006, .002]	1.08	1	.30

N = number of participants, *k* = number of papers, *b* = co-efficient, *CI* = confidence interval, Q_{model} = Q-test statistic regarding model, *df* = degrees of freedom, *p* = p-value

Table 3.
Sub-group analyses of the associations of Parental PC with child distress

Moderator	Groups	*N*	*k*	*r*	95% *CI*	*p*
Perfectionism measure	MPS-F	1,416	6	.069	[.02, .12]	.010**
	MPS-HF	931	5	.178	[.07, .28]	.001**
	Other (PNPS and APS-R)	374	3	.298	[.13, .47]	.001**

N = number of participants, *k* = number of papers, *r* = effect size, *CI* = confidence interval, *p* = p-value, MPS-F = Frost Multidimensional Perfectionism Scale, ***p* < .01, MPS-HF = Hewitt and Flett Multidimensional Perfectionism Scale, PNPS = Positive and Negative Perfectionism Scale, APS-R = Almost Perfect Scale – Revised