Adolescent perfectionism

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Adolescent perfectionism: structural features of the frost multidimensional perfectionism scale and correlates with attachment and psychopathology

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Abstract

Objectives: Perfectionism is recognised as a significant risk factor for psychopathology. Emerging research links attachment to perfectionism in adult and college-age samples. The Frost Multidimensional Perfectionism Scale (FMPS) has been used in adults and adolescents with a variety of factor structures found. This study sought to establish the factor structure in a general adolescent sample prior to testing for associations between perfectionism, attachment and psychopathology in the same sample.

Design: A cross-sectional survey design was used. confirmatory factor analysis, correlational and regression analyses were employed.

Methods: 290 adolescents, aged 12-18 years, were recruited from a state secondary school. All completed the FMPS along with brief measures of attachment and psychopathology.

Results: Exploratory and confirmatory factor analyses failed to replicate previously published models, and a new 6-item, 1-factor model representing perfectionism was found instead. This new variable was then used to establish a role for perfectionism and attachment anxiety in predicting internalising problems. Perfectionism also correlated with conduct problems and hyperactivity.

Conclusions: This study established a novel factor structure for the FMPS, allowing proof of principle of the role of perfectionism in a relationship with attachment and psychopathology, which after replication, may inform new interventions for perfectionism. Caution is noted about the use of extant perfectionism measures that are not properly developmentally informed and which do not capture the dynamic nature of adolescence and adolescent perfectionism.

Practitioner Points

1. Perfectionism is a feature of adolescent psychopathology, including internalising and externalising problems
2. Perfectionism is associated with attachment anxiety, and together contribute to internalising problems

3. Current conceptualisations of perfectionism may not capture the specific developmental and dynamic aspects of adolescence, and should not be regarded as a stable personality trait

Introduction

Perfectionism appears as a common theme in adolescent presentations to mental health services with an established association between perfectionism and internalising psychological problems including eating disorders (ED),obsessive-compulsive disorder (OCD) (Cassidy *et al*., 1999), depression (Donaldson *et al*., 2000), self-harm (Enns, Cox & Inayatulla, 2003), and multi-problem presentations (Freudenstein *et al*., 2012). By contrast, a possible association between externalising symptoms (behavioural problems) and perfectionism has not been found in the literature. Perfectionistic thinking can undermine outcomes in short-term structured therapies such as CBT (e.g. Sutander-Pinnock *et al*., 2003; Hewitt *et al*., 2003; Shahar *et al*., 2004), and has been found to persist post-recovery from eating disorders (Nilsson, Sundbom & Hägglöf, 2008), but not depression (Jacobs *et al*., 2009).

Whilst perfectionism is understood to be a cognitive construct, there have been a few recent attempts to examine it from an interpersonal perspective. Theoretically, perfectionism may be driven by interpersonal needs, expressed through perfectionistic self-presentation and concern for meeting others' standards around love and acceptance (Baumeister & Leary, 1995), evidenced through associations between perfectionism and attachment in adults (Gamble & Roberts, 2005; Dunkley, Berg & Zuroff, 2012; Iannantuono and Tylka, 2012; Reis & Grenyer, 2002; Shanmugam, Jowett & Meyer, 2012), whilst only one study with adolescents found a strong mediating role for perfectionism in explaining the relationship between fearful attachment and social disconnection (Chen *et al*., 2012). The relationship between attachment, perfectionism and psychopathology has been captured in a theoretical models of eating disorders (Fairburn, Cooper & Shafran, 2003). Perfectionism may therefore function as a personality-based predictor of psychopathology, or as a mechanism facilitating the effect of attachment on psychopathology.

Whilst the role of attachment insecurity in the development of psychopathology is well-established, the role of perfectionism in this relationship has yet to be fully mapped and findings have been compromised by use of non-validated attachment measures (Gamble & Roberts, 2005) and the paucity of research with adolescents, despite a reported prevalence of more than 50% in a large school sample, including 30% displaying maladaptive perfectionism (Sironic & Reeve, 2015). Developmental considerations are largely ignored both in terms of adolescent development and also the evolution of perfectionism in the individual. The lack of clarity in perfectionism's role may have arisen from the development of perfectionism theory in adult populations with insufficient consideration given to how adult characteristics develop during childhood and adolescence – the appearance and effect of non-linear multiple developmental pathways, and the multifarious influences on development are largely missing from perfectionism theory. Perfectionism is hypothesised to develop during childhood and by adolescence is assumed to present as an enduring personality trait (Blatt, 1995; Flett *et al*., 2011).

Parental expectations, parental role-modelling, perfectionism as a coping mechanism in the presence of adversity, and anxious or over-involved parenting are all proposed as possible causes of perfectionism (Flett & Hewitt, 2002), and a reasonable body of evidence exists to support these hypotheses in the general population (see Anon, in submission, for a review). However, there has been no specific empirically–tested developmental model leading to a focused measure. Consequently, perfectionism can be postulated as predictor or mediator in the development of psychopathology. Given the instability of core psychosocial characteristics, including perfectionism (e.g. Dunkley, Berg & Zuroff, 2012) and attachment (Allen & Manning, 2007) during adolescence, it could be predicted that perfectionism might function as either, and it would be inadvisable to view it as a stable personality trait before adulthood.

Conceptualisations of perfectionism include, but are not limited to, adaptive versus maladaptive perfectionism (Hamachek, 1978; Enns, Cox & Clara, 2002), intrapersonal and interpersonally focused perfectionism (self-oriented, other-oriented perfectionism, perfectionistic self-promotion; Hewitt *et al*, 1991) and order, organisation and control (Frost *et al*., 1990). Although there appears to be general consensus that perfectionism in the general population, including adolescents, is multi-dimensional (see Flett & Hewitt, 2015 for a review), a single-dimensional model has been proposed for clinical perfectionism (Shafran, Cooper & Fairburn, 2002). This pragmatic model has been challenged theoretically (Hewitt *et al.*, 2003; Dunkley *et al*., 2006) and initial validations have challenged the single factor structure (Stöber & Damian, 2014). Therefore, a lack of consensus persists in the adult literature, and the child and adolescent literature suffers as a result. The Child and Adolescent Perfectionism Scale, which is the only dedicated measure of childhood perfectionism, is translated directly from Hewitt & Flett's adult model. Many researchers prefer to use adult measures with more established reliability.

One of the most commonly used models in adult and adolescent perfectionism research is that of Frost *et al*. (1990). His Multidimensional Perfectionism Scale (FMPS) was designed to assess six factors measuring perfectionism, including 'Concern Over Mistakes' (CM), 'Personal Standards' (PS), 'Parental Expectations' (PE), 'Parental Criticism' (PC), 'Doubts About Actions' (D), and 'Organization' (O). The sub-scales have been associated with adolescent psychopathology, including bulimia (PE; Young et al, 2004), eating disorder (Wade *et al*, 2015), body dissatisfaction (all subscales; Wade & Tiggemann, 2013), depression, stress and anxiety (CM, D, PE & PC; Sironic & Reeve, 2015).

The principal factor solution has since been challenged with various alternatives proposed (Parker & Adkins, 1995; Parker & Stumpf, 1995; Purdon, Antony, & Swinson, 1999; Rhéaume *et al*., 1995). Stöber (1998) in a review and replication of factor analyses of the FMPS in adult samples concluded that apparent factorial instability may be due to retaining too many components, and recommended

parsimony. Exploratory factor analysis of the FMPS has been conducted using samples of young people, including gifted children, and diverse ethnic groups; however, like the adult literature, support for the original six factor FMPS is limited, and inconsistent (see Table 1 for a summary). Models have ranged from 2 to 6 factors and 15 to 35 items. Shih (2011) established adaptive and maladaptive perfectionism factors, whilst Boone et al (2010) referred to personal standards (healthy) and evaluative concerns (unhealthy). Others have used some variation on the original construct.

Insert table 1 here

This variability reflects in part *a priori* decisions about sub-scale inclusion/exclusion, but beyond this there has been an almost uniform failure to replicate either the original or subsequent factor structures, casting doubt on research that has relied upon the subscales to test specific associations with psychopathology. Despite these inconsistencies, all evidence supports a multi-dimensional model. The scale has face validity as a measure of adolescent perfectionism due to its explicit reference to parental factors, reflecting the potential influences on the expression of perfectionism in a younger population, clearly referencing dominant theories of perfectionism development (Flett & Hewitt, 2002). The lack of consensus argues for the need to examine how perfectionism is constructed in UK adolescents, prior to testing associations between perfectionism and other variables.

The aim of this study was to, firstly, establish the validity of the FMPS for use in a general Scottish adolescent population, and, secondly, to identify any relationship between perfectionism, attachment and psychopathology in the same sample. Therefore, the first hypothesis was: Factor analysis of the FMPS will confirm a theoretically meaningful model with good fit in a general adolescent sample. Hypothesis two was: There will be an association between perfectionism,

attachment style and psychopathology, in which perfectionism functions as a predictor of psychopathology and/or a mediator between attachment and psychopathology.

Design

This was a quantitative empirical study using a cross-sectional survey approved by the National Health Service (NHS) and University Ethics Committees.

Methods

Participants

Participants were 290 school students from a state secondary school in Scotland, UK. The sample included 152 (52.41%) females and 138 (47.59%) males. The mean age was 15.56 years (SD = 1.79; range = 12-18 years). Ethnic identification was predominantly White British (n=220, 76%), followed by White other (n=27, 9%); Asian or Asian British (n=23, 8%); Mixed (n=14, 5%); Black or Black British (n=4, 1%); and 'Other' or undisclosed (n=2). One of the participants reported being disabled, 4 stated they had been diagnosed with OCD and 5 with an eating disorder. All school pupils aged 12-18 years, who had capacity to provide consent, and were fluent in the English language, were eligible to participate.

Measures

Frost Multidimensional Perfectionism Scale (FMPS; Frost *et al*., 1990). The Frost Multidimensional Perfectionism Scale is a 35-item questionnaire designed to measure six dimensions of perfectionism: Concern Over Mistakes (CM), Doubts About Actions (D), Personal Standards (PS), Parental Expectations (PE), Parental Criticism (PC), and Organization (O). Each item uses a 5-point Likert-type scale (1 = disagree strongly, 5 = agree strongly). It is well validated with adult populations, with Cronbach's α ranges from .70 to .93, and an overall reliability of .90 in college student samples (Frost, Lahart & Rosenblate, 1991; Rice & Mirzadeh, 2000). In this sample, reliability estimates ranged from Cronbach's α= .592 (poor) - .898 (good) (see Table 2).

Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991). The RQ, examines attachment categorically and dimensionally, asking participants to select one of four attachment categories which bests describes them: A (secure), B (fearful), C (preoccupied) or D (dismissing), and then to rate agreement with each category on a seven-point scale. For the purpose of this study, phrasing related to the young person's relationship with their parent. The dimensional items were used in this analysis. Due to the brevity of the scale it cannot be subjected to routine reliability analysis, but the original validation showed high correspondence with interview and friend ratings confirming the underpinning two-dimensional model of attachment anxiety and avoidance. In this sample, there was a significant Pearson's correlation between the two high anxiety attachment sub-types (B and C: r = .352, p<.0001) and a non-significant correlation between the two high avoidance sub-types (B and D: r =.062, p= n.s.)

Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997, 2001). The SDQ is a mental health screening instrument designed to measures six areas of functioning on a 25-item 3-point scale; emotional, conduct, hyperactivity, inattentiveness, peer relationships, and pro-social behaviour, and was specifically designed to measure emotional and behavioural constructs of young people aged between 4 and 17 years, with a self-report version for children and young people aged 11 years plus, which was used in this study. Whilst Goodman & Goodman (2009) recommend collapsing the subscales further in community samples, so subscales were examined for relationships with other kay variables before being retained or collapsed. Reliability estimates ranged from Cronbach's α=.550 (poor) - .738 (acceptable) (see Table 2).

Procedure

Opt-out parental consent was acquired for individuals under the age of 16 years. Testing was carried out within a classroom setting during school hours. Students had approximately 45 minutes to

complete the battery. Preliminary data analysis and regression analyses was conducted using SPSS 21.0; confirmatory factor and mediational analyses were conducted using MPlus 7.1.

Statistical Analyses

A power analysis using GPower established that a sample size of 172 was required to find a small effect size with 10 predictors (all possible predictive variables) and power of 0.95. For factor analysis, a minimum of 200 participants are normally recommended (Kelloway, 2015), with the ratio of participants:parameters estimated at between 5:1 and 10:1 (Bentler & Chou, 1987).

Exploratory factor analysis (EFA) was conducted by replicating previously found factor structures in adolescents for the FMPS (Table 1) using Maximum Likelihood extraction method and Varimax rotation to ensure consistency between proposed models. An additional factor analysis was conducted in which variables were allowed to load freely after removing the Organisation subscale, as suggested by Frost (1990).

Confirmatory factor analyses using MPlus 7.2 were then conducted to establish model fit. The sample was randomly split to allow testing of a successful measurement model, and bootstrapping employed to compensate for the reduction in sample size.

Mediation and regression analyses were used to test the predictive effect of perfectionism and attachment on psychopathology.

Results

Associations between key variables and gender and age were tested using one-way ANOVAs and Pearson's correlations respectively (see tables 2 and 3). Significant associations were found between gender and prosocial behaviour, emotional problems, secure attachment and the FMPS Organisation sub-scale, with girls showing higher scores in all cases. Age showed a small significant negative correlation with conduct problems (r=-.139, p=.019) and hyperactive problems (r=-.136, p=.021), consistent with developmental norms. There were no other significant associations between age

and experimental variables. Data was normally distributed, notwithstanding kurtosis associated with the floor effects found when using clinical measures in a general population. As the effects of kurtosis on analysis tend to disappear with samples over 200 (Waternaux, 1976), the data was judged adequate for factorial analysis. Table 2 shows Pearson's correlations between the FMPS and other experimental variables.

Insert Table 2 here

Insert Table 3 here

Question 1: What factor structure works best for a UK general adolescent sample?

Exploratory factor analysis and confirmatory factor analysis with modifications as required ruled out previously published models (see appendix I for fit indices).

A single factor model was tested, in line theoretically with Shafran, Cooper & Fairburn (2002), and to follow the parsimony principle of factor analysis (Crawford & Henry, 2003). Following Frost's assertion that the Organisation sub-scale does not belong within the overall perfectionism construct (Frost, 1990), its associated items were excluded from analysis. The sample was randomly split into a test and a validation sample, and after ensuring no significant difference on demographic or experimental variables, a single-factor six-item model emerged with good fit across three of four indices (χ^2 =259.586, df=15, p<.0001; CFI=0.956, TLI=0.917, RMSEA=0.069, SRMR=0.034, see Fig. 1). This model was successful replicated with the validation sample. Face validity was good, with each item being clearly unique in its phrasing, and captured items from four of the five subscales (no items from the Concern over Mistakes subscale survived). The new scale had a Cronbach's α = .701 (acceptable). It was therefore used in the next stage of analysis, and the scale items can be found in Table 4. There was no significant association between perfectionism and age or gender.

Insert Fig. 1

Insert Table 4 here: scale items

Question 2: Is there an association between perfectionism, attachment and psychopathology?

Pearson's correlations (see Table 5) revealed significant ($p<.01$) positive correlations between perfectionism and fearful attachment, emotional problems, conduct problems and peer problems, and a smaller but significant ($p<.05$) negative correlation with secure attachment, and positive correlations with preoccupied attachment and hyperactivity (all $P<.05$). As conduct and hyperactivity problems were not also associated with attachment, no further analysis was conducted with these variables.

Insert table 5 here: correlations between perfectionism and experimental variables

As there appeared to be a three-way association between attachment, perfectionism and psychopathology, those variables with significant correlations were tested in a structural equation model.

Perfectionism was hypothesised to mediate the relationship between attachment anxiety (fearful and preoccupied items) and internalising problems (emotional and peer problems), with gender moderating the effect.

The proposed structural equation model had a poor fit on all indices, even after modifications. Due to the weak path between attachment anxiety and perfectionism, a regression model was also tested in which perfectionism and attachment anxiety (fearful and preoccupied) were independent variables in a linear model. Due to the gender difference for emotional problems, the sample was split by gender first. Initial regression results showed identical predictive patterns for emotional and peer problems. Following Goodman & Goodman's (2009) recommendation, these two subscales were combined to form an internalising problems variable which produced a stronger model for

both genders. Preoccupied attachment and perfectionism predicted internalising problems in boys with a medium effect size (R^2 = .23 for Step 1; ΔR^2 = .30 for Step 2 (p <.001) – see Table 6). Preoccupied attachment, fearful attachment and perfectionism predicted internalising problems in girls with a medium effect size (R^2 = .17 for Step 1; ΔR^2 = .27 for Step 2; ΔR^2 = .29 for Step 3 (p <.001) – see table 6). The results confirmed a combined predictive role for attachment anxiety and perfectionism in internalising problems, with attachment anxiety specified to preoccupied attachment in boys.

Discussion

Summary of main findings

This study set out to establish a valid factor structure for the Frost Multidimensional Perfectionism Scale (FMPS) prior to testing its association with attachment and indicators of psychopathology. A small single-factor model was found describing perfectionism. This did not support any previously published factor analyses with the FMPS and unexpectedly includes items relating to healthy (adaptive) perfectionism (personal standards) as well as from the subscales more typically associated with unhealthy (maladaptive) perfectionism. This may suggest an underlying construct common to the subtypes of perfectionism elicited by different measures of perfectionism, consistent with the theory (unsupported by evidence) of Shafran, Cooper & Fairburn (2002). "Adaptive" perfectionism may still be a risk factor for psychopathology and reflects that Frost et al (1990) originally proposed a total (excluding Organisation) score that included Personal Standards. The findings of this study raise questions about the structure of perfectionism as captured by the FMPS, but also provides some novel findings about how perfectionism associates with key psychosocial variables in adolescents.

Perfectionism was significantly associated with fearful attachment but this association was not strong enough to support a mediating role between attachment and internalising problems.

However, perfectionism and attachment together predicted internalising problems in boys and girls. Both fearful and preoccupied attachment predicted internalising problems in girls, reflecting a novel finding in gender difference. This study is one of the first to establish a relationship between attachment and perfectionism in adolescence, albeit a weak association, and adds to the literature on gender differences and attachment in adolescence. Muris, Meesters and van den Berg (2003) also found gender differences in expressions of attachment and psychopathology, but did not delineate between types of insecure attachment. In a meta-analysis of attachment insecurity and anxiety in childhood and adolescence, the elevated risk in adolescence was noted. However, gender was not identified as a factor and types of attachment insecurity were not considered (Colonnesi, Draijer & Stams, 2011). Ronnlund & Karlsson (2006) found a similar pattern to the current findings between insecure attachment characteristics and gender in relation to externalising problems, but treated gender differently in their analysis such that the gender differences are not extrapolated to the same extent. Thus, the current findings both corroborate and extend upon previous findings.

This study found a small but significant positive correlation between conduct problems and perfectionism. Due to the (unexpected) lack of association between conduct problems and attachment insecurity there was no merit in further examination of this relationship, but in itself introduces a new angle to the clinical conceptualisation of conduct problems, suggesting that thwarted effort and/or failure to meet others' expectations might be expressed behaviourally as well as through internalising difficulties. The association also challenges assumptions about perfectionistic young people controlling their behaviour to meet their own and others' expectations. This might reflect that over-control in perfectionistic youth leads to 'spill-over' behavioural problems. This original finding, and its implications, requires further validation and extending upon.

The rationale for using the FMPS with this sample was both theoretically and empirically driven. The measure makes explicit reference to parental influences – expectations and criticism, in line with

theory and evidence for the role of parents in the development of perfectionism and in doing so potentially recognises that adolescent self-identity may not yet be fully individuated from their parents' identities and perception of them. Although not designed specifically with adolescents in mind, the inclusion of such items in the scale arguably makes it as developmentally focused (albeit in different ways) as, for example, the Child and Adolescent Perfectionism Scale (Flett *et al*., 2000), which derives directly from their adult Multidimensional Perfectionism Scale (Hewitt *et al*., 1991). Furthermore, the FMPS has been used in several studies with adolescents, with positive associations with other variables of interest repeatedly made. However, the decision to conduct our own confirmatory factor analysis, rather than relying on one of the established factor structures was well-founded. We were unable to replicate any of the previous models. This failure to replicate reflects either sample-specific or scale-specific characteristics.

Firstly, there may be issues with the way that the FMPS constructs perfectionism leading to poor internal consistency. The original measure has several items that are worded almost identically. This improves the internal consistency of the sub-scales but without demonstrating conceptual strength. If this is the case, a substantially reduced version of the scale should give a more economical picture of perfectionism characteristics that are valid for the adolescent population. Brief versions of the FMPS used with adult population have yielded two-factor structures (e.g. Burgess, DiBartolo & Rendón, 2016; Magurean, Sālāgean, & Tulbure, 2016) with good fit and excellent reliability. However, the failure to replicate such models in an adolescent sample suggests that the FMPS may be fundamentally unsuited to younger populations and requires substantive changes or, even, complete re-development before being reliable and valid for use with adolescents.

Secondly, there may be characteristics of this sample that make it less suited to the original or alternative published factor structures. However, the scale was designed for westernised general population samples, and it could be argued this sample was more typical of the general population

than other studies. The majority of papers that have examined perfectionism in young people using the FMPS have done so with atypical adolescent populations. These include gifted students (Parker, & Stumpf, 1995; Chan, 2009) and athletes (Ommundsen *et al.*, 2005), and Caucasian adolescents from privileged backgrounds (Hawkins *et al.*, 2006; Boone *et al.*, 2010). These groups are arguably unrepresentative samples that may have biased the various factor structures produced from the FMPS.

Thirdly, there may be fundamental issues with the perfectionism construct, irrespective of model or measure. These problems might relate to its conceptualisation as a personality construct. Describing a clinical feature as a stable personality characteristic is particularly problematic for adolescent samples, when personality is still developing. Curiously, the notion of perfectionism as a personality trait is relatively untested. The literature is unclear as to what extent perfectionism is an established trait by puberty, and the top-down translation of adult theories of perfectionism to children and young people implies no difference between adults and children. Lloyd *et al.* (2014) found medium-large effect sizes for changes in perfectionism when intervened with as part of psychotherapy for various psychological disorders in adults. This meta-analysis suggests that the small number of studies (8) that have examined interventions for perfectionism in the adult clinical population have seen significant changes, suggesting that in the clinical population, change potential might be under-estimated.

Flett & Hewitt (2014) reviewed a number of perfectionism interventions directed at children and adolescents, the majority of which produced some reduction in perfectionism. In a more recent school-based preventative intervention, Nehmy & Wade (2015) found significant improvements in unhelpful perfectionism, sustained over a 12-month period. Flett & Hewitt (2014) called for more focus on preventative interventions and proposed their own model. Their focus on school as a setting for intervention appropriately responds to the challenge of simultaneously encouraging

success in children and avoiding promotion of perfectionistic ideals. When success-driven education is coupled with parental modelling and expectations, children may experience insidious encouragement of perfectionism that clinicians must be sensitive to in assessment and formulation, irrespective of the nature of the presenting mental health problem.

All perfectionism interventions to date have a broadly cognitive focus, from which an attachment perspective is largely missing. Flett & Hewitt (2014) suggest self-compassion as a potentially helpful ingredient, indicating that (self-) nurture might have a role to play. The findings of the current study add to a small body of literature implying a role for attachment in relation to perfectionism, and justifies further examination in research and practice. Such examination should incorporate known interpersonal features of perfectionism (e.g. socially prescribed perfectionism, perfectionistic self-presentation/promotion), developmental characteristics (parental role modelling and behaviours), and their interaction with interpersonal variables and developing psychopathology in children and adolescents. Attachment and associated peer problems may help explain connections between these variables.

Limitations of this study

The Relationship Questionnaire was brief and is popular with younger samples for this reason. It performed well in this study as a proxy measure for attachment, showing significant associations with predicted variables, but there is considerable evidence to show instability of attachment systems during adolescence and a weak association between attachment behaviour and attachment states of mind (Allen & Manning, 2007). Measurement of attachment through self-report measures is noticeably less reliable than measurement through interview, but for large adolescent samples such as this, a pragmatic solution must be found. The SDQ was used as a well-established screening for psychopathology. Although it is relatively comprehensive for a short self-report tool, it does not have excellent specificity or sensitivity, and alternative measures of specific psychopathology might have proved more rigorous, if not more arduous for participants to complete. Use of the SDQ did

allow us to measure externalising symptoms and the discovery of an association between these and perfectionism appears to be a completely novel finding with no precedent in the published literature.

Broader theoretical/empirical implications

Although adolescence has been recognised as a sensitive period in the development of perfectionism, the current body of research does not differentiate between adolescence and adulthood in measuring how perfectionism is constructed or understood. Given the particular stages of cognitive, social and emotional development typically seen during adolescence, it could be hypothesised that perfectionism might be conceptualised differently at this time. For example, beliefs about the need for perfection might be held more absolutely, or with more generalisation attached. The importance of standards set by others, especially peers, might be perceived as more significant than for adults, but may not be communicated explicitly as such. The influence of parents might be more implicit and therefore not easily captured in items explicitly referring to parental expectations and behaviours. There is an argument to be made for developing and refining a model of adolescent perfectionism that is driven by developmental theories, recognising the complex and dynamic nature of interpersonal influences and relationships, self-perception, and cognitive aspects. This would allow for a more meaningful conceptualisation of perfectionism that could then be translated into clinical settings and lead to a more reliable understanding of the association between perfectionism and core constructs such as attachment, psychosocial variables including interpersonal functioning and affect regulation, and psychopathology.

Conclusions

This study achieves a number of aims, but also poses several challenges. A novel one-factor structure for the FMPS was found for a general adolescent population that was theoretically and statistically viable. This allowed further analysis, but the failure to replicate any previous model

suggests that this measure may not effectively capture adolescent perfectionism, and that perfectionism may be culturally and developmentally specific. This study also found expected associations between attachment and psychopathology, and between both internalising and externalising problems and perfectionism, with evidence for perfectionism and attachment together predicting psychopathology. As such the study demonstrates proof-of-principle, and replication with a more developmentally-informed, conceptually robust measure of perfectionism is needed.

References

1. Allen, J. P., & Manning, N. (2007). From safety to affect regulation: Attachment from the vantage point of adolescence. *New Directions for Child and Adolescent Development*, *2007*(117), 23–39. https://doi.org/10.1002/cd.192
2. Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, *61*(2), 226. https://doi.org/10.1037/0022-3514.61.2.226
3. Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497–529. https://doi.org/10.1037/0033-2909.117.3.497
4. Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*(2), 238–246. https://doi.org/10.1037/0033-2909.107.2.238
5. Bentler, P. M., & Chou, C.-P. (1987). Practical Issues in Structural Modeling. *Sociological Methods & Research*, *16*(1), 78–117. https://doi.org/10.1177/0049124187016001004
6. Blatt, S. J. (1995). The destructiveness of perfectionism: Implications for the treatment of depression. *American Psychologist*, *50*(12), 1003–1020. https://doi.org/10.1037/0003-066X.50.12.1003
7. Boone, L., Soenens, B., Braet, C., & Goossens, L. (2010). An empirical typology of perfectionism in early-to-mid adolescents and its relation with eating disorder symptoms. *Behaviour Research and Therapy*, *48*(7), 686–691. https://doi.org/10.1016/j.brat.2010.03.022
8. Burgess, A. M., DiBartolo, P. M., & Rendón, M. J. (2016). Can the Frost Multidimensional Perfectionism Scale Assess Perfeccionismo? *Psychological Assessment*. Advance online publication, no pagination specified. https://doi.org/10.1037/pas0000374

9. Cassidy, E., Allsopp, M., & Williams, T. (1999). Obsessive-compulsive symptoms at initial presentation of adolescent eating disorders. *European Child & Adolescent Psychiatry*, *8*(3), 193–199. https://doi.org/10.1007/s007870050129
10. Chan, D. W. (2009). Dimensionality and Typology of Perfectionism: The Use of the Frost Multidimensional Perfectionism Scale With Chinese Gifted Students in Hong Kong. *Gifted Child Quarterly*, *53*(3), 174–187. https://doi.org/10.1177/0016986209334963
11. Chen, C., Hewitt, P. L., Flett, G. L., Cassels, T. G., Birch, S., & Blasberg, J. S. (2012). Insecure attachment, perfectionistic self-presentation, and social disconnection in adolescents. *Personality and Individual Differences*, *52*(8), 936–941. https://doi.org/10.1016/j.paid.2012.02.009
12. Colonnesi, C., Draijer, E. M., Jan J. M. Stams, G., Van der Bruggen, C. O., Bögels, S. M., & Noom, M. J. (2011). The Relation Between Insecure Attachment and Child Anxiety: A Meta-Analytic Review. *Journal of Clinical Child & Adolescent Psychology*, *40*(4), 630–645. https://doi.org/10.1080/15374416.2011.581623
13. Cox, B. J., Enns, M. W., & Clara, I. P. (2002). The multidimensional structure of perfectionism in clinically distressed and college student samples. *Psychological Assessment*, *14*(3), 365–373. https://doi.org/10.1037//1040-3590.14.3.365
14. Crawford, J. R., & Henry, J. D. (2003). The Depression Anxiety Stress Scales (DASS): Normative data and latent structure in a large non-clinical sample. *British Journal of Clinical Psychology*, *42*(2), 111–131. https://doi.org/10.1348/014466503321903544
15. Donaldson, D., Spirito, A., & Farnett, E. (2000). The role of perfectionism and depressive cognitions in understanding the hopelessness experienced by adolescent suicide attempters. *Child Psychiatry & Human Development*, *31*(2), 99–111. doi:10.1023/A:1001978625339
16. Dunkley, D. M., Berg, J.-L., & Zuroff, D. C. (2012). The Role of Perfectionism in Daily Self-Esteem, Attachment, and Negative Affect: Perfectionism and Daily Affect. *Journal of Personality*, *80*(3), 633–663. https://doi.org/10.1111/j.1467-6494.2011.00741.x

17. Dunkley, D. M., Blankstein, K. R., Masheb, R. M., & Grilo, C. M. (2006). Personal standards and evaluative concerns dimensions of "clinical" perfectionism: A reply to Shafran et al. (2002, 2003) and Hewitt et al. (2003). *Behaviour Research and Therapy*, *44*(1), 63–84. https://doi.org/10.1016/j.brat.2004.12.004
18. Enns, M. W., Cox, B. J., & Inayatulla, M. (2003). Personality Predictors of Outcome for Adolescents Hospitalized for Suicidal Ideation. *Journal of the American Academy of Child & Adolescent Psychiatry*, *42*(6), 720–727. https://doi.org/10.1097/01.CHI.0000046847.56865.B0
19. Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive behaviour therapy for eating disorders: a "transdiagnostic" theory and treatment. *Behaviour Research and Therapy*, *41*(5), 509–528. https://doi.org/10.1016/S0005-7967(02)00088-8
20. Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39, 175–191. DOI: 10.3758/BF03193146
21. Flett, G. L., Coulter, L.-M., Hewitt, P. L., & Nepon, T. (2011). Perfectionism, Rumination, Worry, and Depressive Symptoms in Early Adolescents. *Canadian Journal of School Psychology*, *26*(3), 159–176. https://doi.org/10.1177/0829573511422039
22. Flett, G. L., Hewitt, P. L., Boucher, D. J., Davidson, L. A., & Munro, Y. (2000). The child-adolescent perfectionism scale: Development, validation, and association with adjustment. *Unpublished manuscript*.
23. Flett, G. L., & Hewitt, P. L. (Eds.). (2002). *Perfectionism: Theory, research, and treatment.* Washington: American Psychological Association. https://doi.org/10.1037/10458-000
24. Flett, G. L., & Hewitt, P. L. (2014). A proposed framework for preventing perfectionism and promoting resilience and mental health among vulnerable children and adolescents: The Prevention of Perfectionism. *Psychology in the Schools*, *51*(9), 899–912. https://doi.org/10.1002/pits.21792

25. Flett, G. L., & Hewitt, P. L. (2015). Measures of perfectionism. In G. J. Boyle, D. H. Saklofske, & G. Matthews (Eds.), *Measures of personality and social psychological constructs* (pp. 595–618). St. Louis, MO: Academic Press. http://dx.doi.org/10.1016/B978-0-12-386915-9.00021-8
26. Freudenstein, O., Valevski, A., Apter, A., Zohar, A., Shoval, G., Nahshoni, E., … Zalsman, G. (2012). Perfectionism, narcissism, and depression in suicidal and nonsuicidal adolescent inpatients. *Comprehensive Psychiatry*, *53*(6), 746–752. https://doi.org/10.1016/j.comppsych.2011.08.011
27. 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*(6), 469–489. https://doi.org/10.1007/BF01175730
28. Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research*, *14*(5), 449–468. doi:10.1007/BF01172967
29. Gamble, S. A., & Roberts, J. E. (2005). Adolescents' Perceptions of Primary Caregivers and Cognitive Style: The Roles of Attachment Security and Gender. *Cognitive Therapy and Research*, *29*(2), 123–141. https://doi.org/10.1007/s10608-005-3160-7
30. Goodman, A., & Goodman, R. (2009). Strengths and Difficulties Questionnaire as a Dimensional Measure of Child Mental Health. *Journal of the American Academy of Child & Adolescent Psychiatry*, *48*(4), 400–403. https://doi.org/10.1097/CHI.0b013e3181985068
31. Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A Research Note. *Journal of Child Psychology and Psychiatry*, *38*(5), 581–586. https://doi.org/10.1111/j.1469-7610.1997.tb01545.x
32. Goodman, R. (2001). Psychometric Properties of the Strengths and Difficulties Questionnaire. *Journal of the American Academy of Child & Adolescent Psychiatry*, *40*(11), 1337–1345. https://doi.org/10.1097/00004583-200111000-00015

33. Hamachek, D. E. (1978). Psychodynamics of normal and neurotic perfectionism. *Psychology: A Journal of Human Behavior, 15,* 27-33. Retrieved from http://psycnet.apa.org/psycinfo/1979-08598-001

34. Hawkins, C. C., Watt, H. M. G., & Sinclair, K. E. (2006). Psychometric Properties of the Frost Multidimensional Perfectionism Scale With Australian Adolescent Girls: Clarification of Multidimensionality and Perfectionist Typology. *Educational and Psychological Measurement*, *66*(6), 1001–1022. https://doi.org/10.1177/0013164405285909

35. Hewitt, Paul L., Flett, G. L., Sherry, S. B., Habke, M., Parkin, M., Lam, R. W., … Stein, M. B. (2003). The interpersonal expression of perfection: Perfectionistic self-presentation and psychological distress. *Journal of Personality and Social Psychology*, *84*(6), 1303–1325. https://doi.org/10.1037/0022-3514.84.6.1303

36. Hewitt, Paul 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*(3), 464. http://dx.doi.org/10.1037/1040-3590.3.3.464

37. Hewitt, P.L., Flett, G. L., Besser, A., Sherry, S. B., & McGee, B. (2003). Perfectionism Is Multidimensional: a reply to Shafran, Cooper and Fairburn (2002). *Behaviour Research and Therapy*, *41*(10), 1221–1236. https://doi.org/10.1016/S0005-7967(03)00021-4

38. Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

39. Iannantuono, A. C., & Tylka, T. L. (2012). Interpersonal and intrapersonal links to body appreciation in college women: An exploratory model. *Body Image*, *9*(2), 227–235. https://doi.org/10.1016/j.bodyim.2012.01.004

40. IBM Corp. Released 2012. IBM SPSS statistics for windows, Version 21.0. Armonk, NY: IBM Corp.

41. Jacobs, R. H., Silva, S. G., Reinecke, M. A., Curry, J. F., Ginsburg, G. S., Kratochvil, C. J., & March, J. S. (2009). Dysfunctional Attitudes Scale Perfectionism: A Predictor and Partial Mediator of Acute Treatment Outcome among Clinically Depressed Adolescents. *Journal of Clinical Child & Adolescent Psychology*, *38*(6), 803–813. https://doi.org/10.1080/15374410903259031
42. Kelloway, E.K. (2015). *Using MPlus for Structural Equation Modeling. A Researcher's Guide*. Los Angeles: Sage. 2nd Ed.
43. Lloyd, S., Schmidt, U., Khondoker, M., & Tchanturia, K. (2015). Can Psychological Interventions Reduce Perfectionism? A Systematic Review and Meta-analysis. *Behavioural and Cognitive Psychotherapy*, *43*(06), 705–731. https://doi.org/10.1017/S1352465814000162
44. Magurean, S., Sālāgean, N., & Tulbure, B. T. (2016). Factor structure and psychometric properties of two short versions of frost multidimensional perfectionism scale in Romania. *Romanian Journal of Experimental Applied Psychology*, *7*. Retrieved from http://www.e-cbt.info/pdf/Magurean%20et%20al%202016%20Factor%20structure%20of%20Frost_MPS.pdf
45. Muris, P., Meesters, C., & van den Berg, S. (2003). Internalizing and Externalizing Problems as Correlates of Self-Reported Attachment Style and Perceived Parental Rearing in Normal Adolescents. *Journal of Child and Family Studies*, *12*(2), 171–183. https://doi.org/10.1023/A:1022858715598
46. Nehmy, T. J., & Wade, T. D. (2015). Reducing the onset of negative affect in adolescents: Evaluation of a perfectionism program in a universal prevention setting. *Behaviour Research and Therapy*, *67*, 55–63. https://doi.org/10.1016/j.brat.2015.02.007
47. Nilsson, K., Sundbom, E., & Hägglöf, B. (2008). A longitudinal study of perfectionism in adolescent onset anorexia nervosa-restricting type. *European Eating Disorders Review*, *16*(5), 386–394. https://doi.org/10.1002/erv.850

48. Ommundsen, Y., Roberts, G. C., Lemyre, P.-N., & Miller, B. W. (2005). Peer relationships in adolescent competitive soccer: Associations to perceived motivational climate, achievement goals and perfectionism. *Journal of Sports Sciences*, *23*(9), 977–989. https://doi.org/10.1080/02640410500127975
49. Parker, W. D., & Stumpf, H. (1995). An Examination of the Multidimensional Perfectionism Scale with a Sample of Academically Talented Children. *Journal of Psychoeducational Assessment*, *13*(4), 372–383. https://doi.org/10.1177/073428299501300404
50. Parker, Wayne D., & Adkins, K. K. (1995). A psychometric examination of the Multidimensional Perfectionism Scale. *Journal of Psychopathology and Behavioral Assessment*, *17*(4), 323–334. doi:10.1007/BF02229054
51. Purdon, C., Antony, M. M., & Swinson, R. P. (1999). Psychometric properties of the Frost Multidimensional Perfectionism Scale in a clinical anxiety disorders sample. *Journal of Clinical Psychology*, *55*(10), 1271–1286. https://doi.org/10.1002/(SICI)1097-4679(199910)55:10<1271::AID-JCLP8>3.0.CO;2-A
52. Reis, S., & Grenyer, B. F. S. (2002). Pathways to anaclitic and introjective depression. *Psychology and Psychotherapy: Theory, Research and Practice*, *75*(4), 445–459. https://doi.org/10.1348/147608302321151934
53. Rhéaume, J., Freeston, M. H., Dugas, M. J., Letarte, H., & Ladouceur, R. (1995). Perfectionism, responsibility and Obsessive-Compulsive symptoms. *Behaviour Research and Therapy*, *33*(7), 785–794. https://doi.org/10.1016/0005-7967(95)00017-R
54. Rice, K. G., & Mirzadeh, S. A. (2000). Perfectionism, attachment, and adjustment. *Journal of Counseling Psychology*, *47*(2), 238–250. https://doi.org/10.1037/0022-0167.47.2.238
55. Rönnlund, M., & Karlsson, E. (2010). The Relation Between Dimensions of Attachment and Internalizing or Externalizing Problems During Adolescence. *The Journal of Genetic Psychology*. Retrieved from http://www.tandfonline.com/doi/abs/10.3200/GNTP.167.1.47-63

56. Shafran, R., Cooper, Z., & Fairburn, C. G. (2002). Clinical perfectionism: a cognitive–behavioural analysis. *Behaviour Research and Therapy*, *40*(7), 773–791. https://doi.org/10.1016/S0005-7967(01)00059-6

57. Shahar, G., Blatt, S. J., Zuroff, D. C., Krupnick, J. L., & Sotsky, S. M. (2004). Perfectionism Impedes Social Relations and Response to Brief Treatment for Depression. *Journal of Social and Clinical Psychology*, *23*(2), 140–154. https://doi.org/10.1521/jscp.23.2.140.31017

58. Shanmugam, V., Jowett, S., & Meyer, C. (2012). Eating psychopathology amongst athletes: Links to current attachment styles. *Eating Behaviors*, *13*(1), 5–12. https://doi.org/10.1016/j.eatbeh.2011.09.004

59. Shih, S.-S. (2011). Perfectionism, Implicit Theories of Intelligence, and Taiwanese Eighth-Grade Students' Academic Engagement. *The Journal of Educational Research*, *104*(2), 131–142. https://doi.org/10.1080/00220670903570368

60. Sironic, A., & Reeve, R. A. (2015). A combined analysis of the Frost Multidimensional Perfectionism Scale (FMPS), Child and Adolescent Perfectionism Scale (CAPS), and Almost Perfect Scale—Revised (APS-R): Different perfectionist profiles in adolescent high school students. *Psychological Assessment*, *27*(4), 1471–1483. https://doi.org/10.1037/pas0000137

61. Stöber, J. (1998). The Frost Multidimensional Perfectionism Scale revisited: More perfect with four (instead of six) dimensions. *Personality and Individual Differences*, *24*(4), 481–491. https://doi.org/10.1016/S0191-8869(97)00207-9

62. Stoeber, J., & Damian, L. E. (2014). The Clinical Perfectionism Questionnaire: Further evidence for two factors capturing perfectionistic strivings and concerns. *Personality and Individual Differences*, *61–62*, 38–42. https://doi.org/10.1016/j.paid.2014.01.003

63. Sutandar-Pinnock, K., Blake Woodside, D., Carter, J. C., Olmsted, M. P., & Kaplan, A. S. (2003). Perfectionism in anorexia nervosa: A 6-24-month follow-up study. *International Journal of Eating Disorders*, *33*(2), 225–229. https://doi.org/10.1002/eat.10127

64. Wade, T. D., & Tiggemann, M. (2013). The role of perfectionism in body dissatisfaction. *Journal of Eating Disorders*, *1*(1), 2. https://doi.org/10.1186/2050-2974-1-2

65. Wade, T. D., Wilksch, S. M., Paxton, S. J., Byrne, S. M., & Austin, S. B. (2015). How perfectionism and ineffectiveness influence growth of eating disorder risk in young adolescent girls. *Behaviour Research and Therapy*, *66*, 56–63. https://doi.org/10.1016/j.brat.2015.01.007

66. Waternaux, C. M. (1976). Asymptotic Distribution of the Sample Roots for a Nonnormal Population. *Biometrika*, *63*(3), 639. https://doi.org/10.2307/2335746

67. Wilson, H.M., Taylor, E.P. & DiFolco, S. (in submission). The association between parental perfectionism, parental control and the development of perfectionism in youth: a systematic review.

68. Young, E. A., Clopton, J. R., & Bleckley, M. K. (2004). Perfectionism, low self-esteem, and family factors as predictors of bulimic behavior. *Eating Behaviors*, *5*(4), 273–283. https://doi.org/10.1016/j.eatbeh.2003.12.001

Table 1: Factor Solutions of the FMPS in Adolescent Samples

Reference	N scale items	N factors	% variance accounted for
Parker & Stumpf (1995)	35 (all	6	64.6
Ommundsen et al (2005)	30	5 (O excluded)	55.0
Hawkins, Watt & Sinclair (2006)	33	4 (O, PS, PEC, CMD)	48
Chan (2009)	15	5 (D excluded)	43.1
Boone et al (2010)	18	2 (PS, EC (CM+D))	NR
Shih et al (2011)	18	2 (Adaptive Perfectionism (PS+O), Maladaptive Perfectionism (CM +D)	NR

Key: O: Organisation, PS: Personal Standards, PE: Parental expectations, PC: Parental Criticism, CM: Concern over Mistakes, D: Doubts about Actions, PEC: Parental Expectations and Criticism, CMD, Concern over mistakes and doubts, EC: Evaluative Concerns

Table 2: Relationship between FMPS and psychosocial variables; reliability statistics

	Secure Attachment (A)	Fearful Attachment (B)	Preoccupied Attachment (C)	Dismissing Attachment (D)	Emotional Problems	Conduct Problems	Hyperactivity Problems	Peer Problems	Prosocial Behaviour	Age	FMPS Cronbach's α
FMPS Personal Standards	.009	.163*	.117	**.180****	.041	-.104	-.230**	.127*	.141*	.026	.688
FMPS Parental Expectations	.017	-.045	-.021	.149*	.127*	.194**	.060	.151*	.010	-.059	.722
FMPS Parental Criticism	-.052	.117	.119	-.036	**.373****	**.326****	**.286****	**.184****	-.042	-.076	.694
FMPS Doubts about Actions	-.039	.156*	.050	-.030	**.417****	**.196****	**.251****	**.260****	.036	**-.196***	.592
FMPS Organisation	.140*	.019	-.024	.008	.029	**-.251****	**-.371****	-.057	**.247****	-.022	.896
FMPS Concern over Mistakes	-.134*	.184**	.166*	.005	**.392****	.154*	.121*	**.268****	-.011	.047	.868
Age	-.081	-.090	-.131	-.020	-.143	-.140	**-.208***	-.006	.009		
Cronbach's α	n/a	n/a	n/a	n/a	.724	.564	.738	.550	.659		

Table 3: Gender and Psychosocial Variables: Means, SD, and Difference (one-way ANOVA)

		Boys	Girls	F	p
Secure Attachment (A)	Mean (SD)	4.10 (1.65)	4.70 (1.64)	8.328	.004
	N	114	134		
Fearful Attachment (B)	Mean (SD)	2.61 (1.80)	3.12 (1.84)	4.830	.029
	N	112	134		
Preoccupied Attachment (C)	Mean (SD)	2.49 (1.48)	2.79 (1.70)	2.200	.139
	N	113	134		
Dismissing Attachment (D)	Mean (SD)	3.67 (1.91)	3.39 (1.89)	1.299	.256
	N	110	134		
Emotional Problems	Mean (SD)	**2.6667 (2.16)**	**4.09 (2.54)**	**25.577**	**.000**
	N	135	132		
Conduct Problems	Mean (SD)	2.5778 (1.69)	2.20 (1.86)	3.138	.078
	N	135	152		
Hyperactivity Problems	Mean (SD)	4.7259 (2.58)	4.76 (2.46)	.011	.918
	N	135	152		
Peer Problems	Mean (SD)	2.1481 (1.88)	1.83 (1.56)	2.464	.118
	N	135	152		
Prosocial Behaviour	Mean (SD)	**6.4044 (1.85)**	**7.76 (1.79)**	**39.644**	**.000**
	N	136	152		
FMPS Personal Standards	Mean (SD)	20.98 (5.05)	20.09 (4.73)	2.269	.133
	N	129	140		
FMPS Parental Expectations	Mean (SD)	14.64 (3.88)	14.29 (3.95)	.569	.451
	N	136	146		
FMPS Parental Criticism	Mean (SD)	10.85 (3.51)	11.35 (4.02)	1.212	.272
	N	134	146		
FMPS Doubts about Actions	Mean (SD)	7.73 (2.27)	8.23 (2.58)	3.037	.082
	N	135	147		
	Mean (SD)	**18.17 (4.62)**	**20.28 (5.60)**	**11.703**	**.001**

FMPS Organisation	N	134	145		
FMPS Concern over Mistakes	Mean (SD)	18.49 (6.24)	19.33 (7.26)	1.062	.304
	N	130	145		

Table 4: Single-Factor Model items, factor loadings, and original sub-scales

Item	Factor loading	Wording	Sub-scale
FMPS24	.496	Other people seem to accept lower standards from themselves than I do	Personal Standards
FMPS19	.431	I have extremely high goals	Personal Standards
FMPS15	.613	Only outstanding performance is good enough in my family	Parental Expectations
FMPS14	.613	If I fail partly, it is as bad as being a complete failure	Concern over Mistakes
FMPS10	.544	I should be upset if I make a mistake	Concern over Mistakes
FMPS22	.493	I never feel like I can meet my parents' expectations	Parental Criticism

Table 5: Correlations between perfectionism and psychosocial variables

	Secure Attachment (A)	Fearful Attachment (B)	Preoccupied Attachment (C)	Dismissing Attachment (D)	Emotional Problems	Conduct Problems	Hyperactivity Problems	Peer Problems	Prosocial Behaviour
Fearful Attachment (B)	-.078								
Preoccupied Attachment (C)	-.066	**.352****							
Dismissing Attachment (D)	-.136*	.062	-.050						
Emotional Problems	-.128*	**.368****	**.296****	-.151*					
Conduct Problems	-.053	-.038	-.001	.071	.117*				
Hyperactivity Problems	-.022	.093	.028	.026	**.273****	**.449****			
Peer Problems	**-.236****	**.333****	**.170****	-.007	**.418****	.114	.086		
Prosocial Behaviour	**.258****	**.182****	.133*	-.100	**.240****	**-.306****	**-.213****	-.046	
Perfectionism	-.142*	**.190****	.160*	.014	**.392****	**.166****	.138*	**.277****	-.021

*p<.05, **p<.01

Table 6: Predictors of internalising problems

Model	b	SE B	β	p
(Boys)* Step 1				
Constant	2.295 (1.298-3.292)	.503		.000
Fearful Attachment	.888 (.576-1.201)	.158	.480	.000
Step 2				
Constant	-.491 (-2.355-1.373)	.940		.602
Fearful Attachment	.820 (.520-1.120)	.151	.443	.000
Perfectionism	.184 (.078-.290)	.053	.282	.001
GirlsStep 1**				
Constant	2.347 (.787-3.906)	.788		.003
Perfectionism	.216 (.130-301)	.043	.406	.000
Step 2				
Constant	.729 (-.891-2.349)	.819		.375
Perfectionism	.194 (.114-.275)	.041	.366	.000

Preoccupied Attachment	.705 (.394-1.017)	.157	.342	.000
Step 3				
Constant	.294 (-1.353-1.941)	.832		.725
Perfectionism	.177 (.097-.258)	.041	.334	.000
Preoccupied Attachment	.597 (.273-.920)	.163	.290	.000
Fearful Attachment	.332 (.025-.639)	.155	.173	.034

*R^2 = .23 for Step 1; ΔR^2 = .30 for Step 2 (p <.001)
**R^2 = .17 for Step 1; ΔR^2 = .27 for Step 2; ΔR^2 = .29 for Step 3 (p <.001)

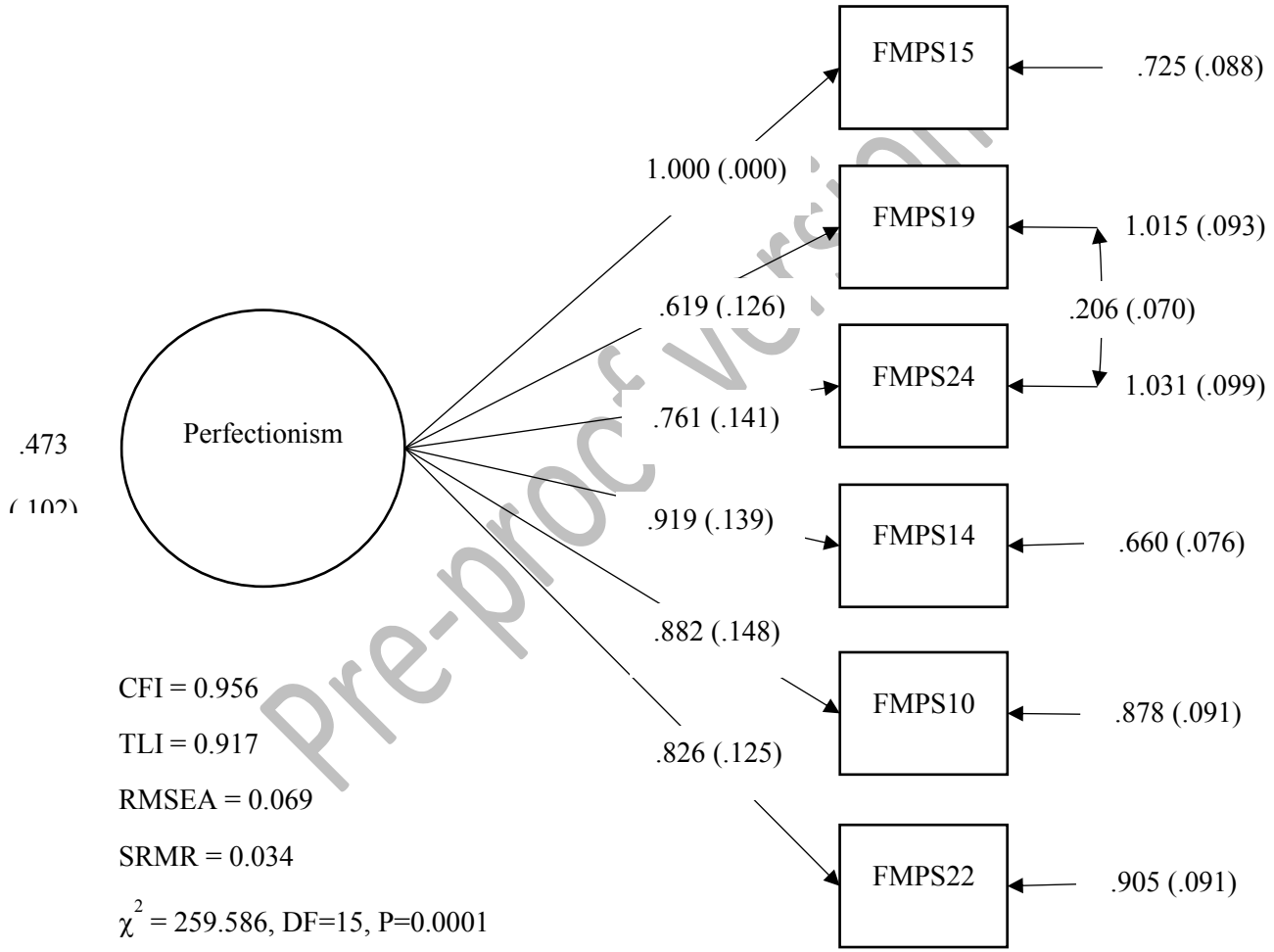
Table 7: Predictors of peer problems

Model	b	SE B	β	p
(Boys)* Step 1				
Constant	.991 (.465-1.517)	.265		.000
Fearful Attachment	.393 (.228-.558)	.083	.418	.000
Step 2				
Constant	.042 (-.972-1.057)	.512		.935
Fearful Attachment	.370 (.206-.533)	.082	.393	.000
Perfectionism	.063 (.005-.120)	.029	.189	.033
GirlsStep 1**				
Constant	.695 (-.032-1.422)	.367		.061
Perfectionism	.069 (.029-.109)	.020	.292	.001
Step 2				
Constant	.149 (-.634-.933)	.396		.707
Perfectionism	.062 (.023-.101)	.020	.262	.002

Preoccupied Attachment	.238 (.087-.389)	.076	.259	.002

*R^2 = .21 for Step 1; ΔR^2 = .19 for Step 2 (p <.001)
**R^2 = .09 for Step 1; ΔR^2 = .14 for Step 2 (p <.001)

Figure 1: Factor Structure of FMPS-6



Appendix I: Fit Indices for previously published FMPS models

Model	N items	X^2	df	P	CFI	TLI	SRMR	RMSEA
Ommundsen 4 factor model oblique	17	183.709	113	0.0001	0.9*	0.88	0.074*	0.067
Hawkins 4 factor model oblique	24	500.198	246	0.0001	0.781	0.754	0.085	0.086
Hawkins 4 factor model: adaptive-maladaptive model	24	509.843	250	0.0001	0.776	0.752	0.100	0.086

*Indicating 'adequate' fit according to Bentler (1990)/Hu & Bentler (1999).