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An investigation of the relationship between mindful parenting and child outcomes

By:

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Declaration

I declare that this thesis has not been submitted to any other institution, or for the purpose of obtaining any other qualifications.

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Lay summary

Mindfulness in parenting has started to receive more interest in research due to the positive effects that it can have on both parent and child quality of life (QoL). It has been predicted that mindful parenting interventions will be beneficial in helping parent and child wellbeing. However, there is not much research assessing mindful parenting yet as it is a relatively new concept.

It is important to understand how mindful parenting links with child outcomes; recommendations could be made about how it could be encouraged in everyday life, to improve parent and child outcomes. This is particularly important for parenting when a child has a chronic health condition. Children with chronic health conditions have reduced QoL, and their parents experience greater levels of stress compared to parents of children without chronic health conditions. There is very limited research assessing the associations between mindful parenting and child QoL when the child has a chronic health condition.

An analysis of the literature (meta-analysis) of 12 studies assessed the association between mindful parenting and child outcomes, specifically child wellbeing and child distress. This meta-analysis revealed that the association between mindful parenting and both child outcomes is small, and significant. Moreover, the relationship between mindful parenting and child outcomes changes in size because of various factors, such as whether the parent or the child is completing the child outcome measure. The studies included in the analysis had several weaknesses in how they were conducted, so the results of this analysis should be interpreted with caution. Furthermore, some of the analyses could not be conducted due to there being too few studies focussing on child wellbeing. It is recommended that psycho-education be provided to families and professionals about the associations between mindful parenting and child outcomes. It is also recommended that clinicians consider collecting both parent and child reports of child outcomes when

working with families, as there appears to be high levels of disagreement in their reports of the child outcomes.

A questionnaire design examined whether the association between mindful parenting and child QoL was affected by parenting stress and authoritative parenting (described as high responsiveness and placing reasonable demands), when parenting a child with a chronic health condition. Participants were asked to complete questionnaires across two time points; 250 participants completed the questionnaires at time one and 133 completed them again at time two. The results showed that there was no association between mindful parenting and child QoL. There was however, a relationship between parenting stress and child QoL. Further analysis found that the relationship between parenting stress and child QoL changed when parents had a mindful parenting approach. However, the results should be considered carefully as the relationships were only apparent at one time point and did not hold over time. It is suggested that mindful parenting could be considered as part of a parenting stress intervention, but should not be applied as its own intervention until further research has been conducted in this context.

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Contents

Section two: Research report

Section one: Literature Review

What is the association between mindful parenting, child wellbeing and child distress? A Meta-analysis

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Abstract

Objectives

This meta-analysis aimed to examine the association between mindful parenting and child outcomes, specifically child wellbeing and distress. In addition, the meta-analysis intended to examine the variability across the studies to discover whether the association varied as a function of different moderators.

Method

A systematic search of the literature was conducted using four databases. Studies were included if they measured mindful parenting, measured at least one form of child psychological outcome, were quantitative in design, were written in English, if they reported an appropriate effect size (Pearson's *r*) or one that could be converted. All studies were quality appraised. A random effects meta-analysis was used. When there was significant heterogeneity of a moderate to large size, moderator analyses and subgroup analyses were conducted. Assessment of publication bias was also completed.

Results

Twelve papers were included in the meta-analysis. Meta-analyses were conducted separately for child wellbeing and child distress outcomes. Both meta-analyses revealed small but significant associations between mindful parenting and child outcomes. Moderator analyses revealed that the association varied as a function of several factors including parent or child reports of child outcomes. The studies lacked information regarding statistical power and were limited in child wellbeing outcomes.

Conclusions

There are significant associations between mindful parenting and child wellbeing and distress. Mindful parenting may be of relevance when considering interventions to improve child wellbeing and reduce child distress. Further research is required in this area to strengthen the findings.

Practitioner points

- It would be beneficial to provide psycho-education to parents and professionals about how mindful parenting is associated with child outcomes.
- Consider use of both parent-proxy and child self-reports of child wellbeing and distress in clinical practice, where possible.

Limitations

- All studies lacked sample size power analysis so it is difficult to draw conclusions as to whether the results of the meta-analysis are statistically powered.
- The studies were limited in child wellbeing outcomes, which restricted the moderator analysis that could be conducted.

Keywords: 'Mindful parenting', 'child wellbeing', 'child distress', 'child outcomes'

Introduction

Mindfulness is described as the human ability to embrace; "…moment-to-moment, non-judgmental awareness, cultivated by paying attention in a specific way, that is, in the present moment, and as non-reactively, as non-judgmentally, and as openheartedly as possible" (Kabat-Zinn, 2015, p. 1481). Mindfulness has become increasingly popular, and is now a key component across many psychological therapies for adults including Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999), Mindfulness Based Stress Reduction (MBSR; Kabat-Zinn, 1982) and Dialectical Behaviour Therapy (DBT; Linehan, 1993).

Mindfulness has been assessed as a component of parenting, and is described as parenting in a particular way, which involves paying attention to the child, intentionally in the moment, without judgement (Kabat-Zinn & Kabat-Zinn, 2008). Mindful parenting is increasingly investigated as a possible mechanism for improving the parent-child relationship, and child outcomes. However, as a relatively new concept, the evidence for the impact of mindful parenting on child outcomes is limited, and varied in focus. The findings in this area have yet to be consolidated. It would therefore be valuable to summarise the current research so that future researchers and practising clinicians can grasp a deeper understanding of this relationship. This understanding could then be used to shape future research and clinical work (Quintana, 2015).

Child wellbeing

Child wellbeing is described in numerous ways throughout the literature. However, there is some consensus that child wellbeing is multi-dimensional, and should include aspects of emotional, physical and social wellbeing (Statham & Chase, 2010; Varni, Burwinkle, Seid, & Skarr, 2003). Child wellbeing has been described as positive emotionality and life satisfaction (Diener, Suh, Lucas & Smith, 1999). Disabato, Goodman, Kashdan, Short and Jardan (2016) analysed the associations between two

factors that are commonly used to describe wellbeing: Hedonia (Deci & Ryan, 2008) and eudaimonia (Ryan & Deci, 2001). Hedonia describes the maximisation of pleasure and reduced pain (Deci & Ryan, 2008) whilst eudaimonia relates to self-actualization and achieving one's potential (Ryan & Deci, 2001). Disabato, Goodman, Kashdan, Short and Jardan (2016) found that both factors correlate highly, and suggest that hedonia and eudaimonia can be conceptualised as one factor of wellbeing.

The 'quality of life' (QoL) and 'health related QoL' (HRQoL) of children and young people (CYP) are often measured in research, and these terms are regularly used interchangeably with child wellbeing (Statham & Chase, 2010; Ravens-Sieberer et al., 2006). Health related QoL often refers to emotional, mental, physical, social and behavioural components of wellbeing (Ravens-Sieberer et al., 2006).

Child wellbeing is considered fundamental in the healthy development of CYP. The 'Future in Mind' report, developed by a taskforce that was co-chaired by NHS England and the Department of Health (DoH), focuses on protecting, promoting and improving child wellbeing and mental health (DoH, 2015). The report stresses that 75% of mental health difficulties in adults started before they were 18 years of age. Improvements in mental health services for adults is also urged in the 'Five Year Forward View' report (NHS England, 2014). The report explains that the gap between health and wellbeing will widen if more focus is not placed on prevention and improvements in mental health services for children and adults. Therefore, it is imperative that research is conducted to examine factors that may influence child wellbeing, in order to improve CYP outcomes.

Two of the most commonly used instruments to measure wellbeing in children are the KIDSCREEN (Ravens-Sieberer et al., 2006) and the Pediatric Quality of Life inventory (PedsQL; Varni, Steid, & Rode, 1999). Both explore the aforementioned dimensions that represent child wellbeing. Studies that have measured child wellbeing

have found that children with reduced wellbeing experience more mental health difficulties (Ravens-Sieberer et al., 2006), have worse educational attainment in school (de Roiste, Kelly, Molcho, Gavin, & Gabhainn, 2010) and experience physical health conditions or difficulties (Ottova, Erhart, Rajmil, Dettenborn-Betz, & Ravens-Sieberer, 2012; Bradshaw, 2016).

As there is no single definition of child wellbeing, studies in the current literature are wide ranging. It would therefore be useful to explore child wellbeing outcomes to see whether findings are consistent across studies that used different descriptors of wellbeing.

Child distress

The concept of 'distress' in children does not appear to have one clear definition in the literature. The McGraw-Hill Concise Dictionary of Modern Medicine (2002) defines psychological distress as that which results from: "…Factors such as internal conflicts, psychogenic pain and external stress that prevent a person from self-actualisation and connecting with significant others". Child distress has been described as emotional "ill-being", such as emotional anguish (Drapeau, Marchand, & Beaulieu-Prévost, 2012). Psychological distress is also described as that which has a significant and negative impact on daily psychological functioning (Wheaton, 2007), and has been further characterised in the literature by symptoms of anxiety and depression (Drapeau et al., 2012) and stress (Horwitz, 2007). In a meta-analysis examining forms of distress in refugee children (Bronstein & Montgomery, 2011), 'distress' outcomes included Post Traumatic Stress Disorder (PTSD), depression, anxiety, sleep difficulties and internalising and externalising behaviour or emotions.

Child distress has been a key focus in research as it has such an influence on the lives of both children and their families. Mental health services in the UK for children and adolescents are in high demand due to high rates of mental health difficulties experienced by children. Research shows that 10% of 5-16 year olds have a clinically

diagnosable mental health problem, and it is feared that many children are struggling with mental health difficulties without support (Children's Society, 2008; NHS Digital, 2018). In a report which outlined the progress since the 'Future in Mind' report was released (DoH, 2015), it is suggested that 66.9% of young people aged 16-34 who had attempted suicide had not subsequently received medical or psychological help (Frith, 2016). Mental health difficulties are increasing in children; the number of accident and emergency attendances by children aged 18 or under with a recorded diagnosis of a psychiatric condition has almost tripled since 2010 (Young Minds, 2018). It is vital for researchers to continue to discover effective ways to target the distress experienced by CYP, in order to find a way to prevent further decline in their mental health.

General measures of child distress include YP-CORE (Twigg, Barkham, Bewick, Mulhern, Connell, & Cooper; 2009) which measures depression, anxiety, trauma, physical problems, day to day functioning and relationships. A more commonly used measure of child and adolescent distress is the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1994) which measures emotional problems, conduct problems, hyperactivity, and peer relationship difficulties. Children who have been found to have increased distress and mental health difficulties have been found to also experience increased levels of worry about family relationships and academic performance (Sweeting, West, Young & Der, 2010), psychosomatic problems paired with functional impairment (Van Geelen & Hagquist, 2016) and increased levels of stress (Schramal, Persui, Gross, & Simonsson-Sarnecki, 2011).

Child distress is a multi-dimensional construct and is therefore defined and measured differently across the literature. It is not clear at this point whether outcomes for child distress are consistent across the literature, due to such variability.

Mindful parenting and child outcomes

Mindful parenting has been identified as a process that may support child wellbeing, and reduce child distress. Whilst descriptors of child wellbeing lend themselves to positive emotions, child distress descriptors are often classified with negative emotions. Duncan, Coatsworth and Greenberg (2009) developed a model to hypothesise the relationship between mindful parenting and child outcomes in a normative sample (figure 1). Duncan et al., (2009) hypothesised that mindful parenting affects parenting practice, which in turn affects child outcomes. Whilst this model is the most prominent in the mindful parenting literature, it suggests an indirect relationship between mindful parenting and child outcomes, which contradicts other research in the field, which has found direct associations with mindful parenting and child outcomes. For example, trait mindful parenting has been found to be positively and directly associated with child well-being (Mederios, Gouveia, Canavarro, & Moreira, 2016; Serkel-Schrama et al., 2016). Mindful parenting has also been found to reduce child

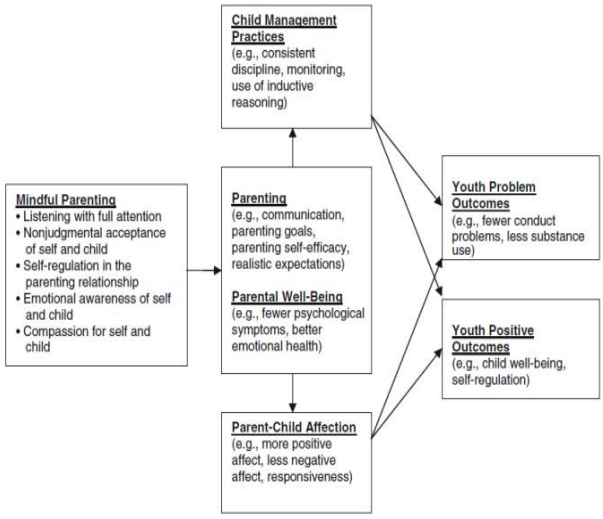

Figure 1. A model of mindful parenting and child outcomes (Duncan et al., 2009)

aggression and self-injury (Singh et al., 2006). Mindful parenting interventions have also been found to be effective in reducing child psychopathology (Bogels, Hellemans, van

Deursen, Romer, & van der Meulen, 2014) and improving youth behaviour (Coatsworth, Timpe, Nix, Duncan, & Greenberg, 2018).

The studies that explore the association between mindful parenting and child outcomes are difficult to compare due to the multidimensional classifications of child wellbeing and child distress. There is currently no meta-analysis to assess the consistency and magnitude of the findings across studies in this area. A meta-analysis of the research findings in the literature thus far would therefore be valuable, to confirm whether and how mindful parenting is associated with child wellbeing and child distress.

Factors that may influence the relationship between mindful parenting and child outcomes

Trait and state mindful parenting. In a review of mindfulness interventions, Creswell (2017) termed the association between hours of a mindfulness intervention and outcomes as 'dosing' and explained that further research into this relationship is needed. Carmody and Baer (2009) found no significant differences between the effect sizes and hours spent in Mindfulness Based Stress Reduction sessions between clinical and non-clinical populations. Carmody and Baer (2009) expressed a need for further investigation into this topic. To date, there has been no exploration of whether there is a difference between effect sizes and outcomes from studies examining trait mindful parenting and from those examining mindful parenting interventions (state mindful parenting). State mindful parenting is described as that which is responsive to contextual factors, showing intra-individual variation (Coatsworth, Timpe, Nix, Duncan & Greenberg, 2018) whereas trait mindful parenting relates to one's predisposition to parent mindfully in daily life, similar to descriptions of trait mindfulness (Baer, Smith, Hopkins, Krietemeyer & Toney, 2006).

Clinical and non-clinical samples. As stated, Carmody and Baer (2009) found no significant differences between the effect sizes and hours spent in MBSR sessions

between clinical and non-clinical populations. However, there is no evidence of whether the effects of the association between mindful parenting and child outcomes are different between clinical and non-clinical populations. Providing this evidence in the literature will provide insight into populations that can be potential targets for mindful parenting interventions. As mentioned, there are high rates of mental health difficulties in children and limited resources to provide support services to all children. If the association between mindful parenting and child outcomes is found across both sample groups, mindful parenting could be suggested as an intervention across different populations. For example, reactive interventions could be provided for those in clinical populations who are already known to services, as well as preventative interventions to non-clinical community samples.

Self-report or parent proxy reports for child outcome measures. Eiser and Morse (2001) conducted research to compare parent proxy reports of child HRQoL with child reports of their own HRQoL. Results indicated that there were higher levels of agreement between parents and children for the more observable outcomes such as physical health, and less agreement for 'non-observable functioning' such as social and emotional functioning. In addition, parents reported significantly lower HRQoL compared to children in samples where the child has a chronic health condition (Eiser & Morse, 2001). The majority of the child outcomes in the mindful parenting literature thus far would be categorised as 'non-observable functioning'. An assessment of parent proxy and child self-reports of child distress and wellbeing would provide guidance to researchers and clinicians for how to evidence child wellbeing and distress in practice.

Child gender. There is a vast amount of research exploring the differences in outcomes for males and females across studies into both child wellbeing and child distress outcomes. Some research into psychosocial outcomes has found that the prevalence of psychosocial problems is higher in boys compared to girls (Bot, den Bouter, & Adriaanse,

2011). However, the relationship with quality of life is worse amongst girls with externalising problems compared to boys (Sharpe, Patalay, Fink, Vostanis, Deighton, & Wolpert, 2016). Providing further insight into how mindful parenting and child outcomes are experienced for male and female children may also support targeting and shaping mindful parenting interventions.

Parent gender. Studies have demonstrated that fathers have lower levels of mindful parenting in comparison to mothers (Moreira & Canavarro, 2017; Mederios et al., 2016). However, it is difficult to make this conclusion indefinitely as fathers are frequently absent from the literature in this area. This could be due to limited access to fathers, as they are often not the primary caregiver, or from deliberate exclusion due to research showing that they spend less time with their children than mothers (Dubas & Gerris, 2002). Whilst differences in mindful parenting between mothers and fathers can be investigated, outcomes may not be generalizable due to limited participation from fathers in the research.

Child age. Young Minds (2018) provided various statistics that outline children's experiences of mental health. Wellbeing and distress affects people of all ages (NHS Digital, 2018). For example, three children in every school classroom in the UK have a diagnosable mental health disorder (Young Minds, 2018). In addition, half of all mental health problems are said to manifest by the age of 14, and nearly half of 17-19 year olds with a diagnosable mental health disorder have self-harmed or attempted suicide at some point (Young Minds, 2018). In their empirical paper, Duncan et al., (2009) suggested that the relationship between children and their parents changes during the child's transition to adolescence. Children experience more difficulties in the parent-child relationship during this transition period (Larson, Richards, Moneta, Holmbeck, & Duckett, 1996). It would valuable to evaluate whether experiences of the relationship between mindful parenting and child outcomes differs by age group. This again would provide further

insight into age groups that may benefit from mindful parenting interventions to support with improving their outcomes.

Aims of the meta-analysis

The aim of this meta-analysis was to test the relationships between mindful parenting and child outcomes, and to analyse the strengths of their association. The following hypothesis were tested:

- Hypothesis 1: There would be a significant positive association between mindful parenting and child wellbeing (as categorised by positive outcomes).
- Hypothesis 2: There would be a significant, negative association between mindful parenting and child distress (as categorised by negative outcomes).

Based on previous research stated, it was anticipated that the association between mindful parenting and child outcomes would be moderated by several factors. Therefore, the following hypotheses were also tested:

- Hypothesis 3: The relationship between mindful parenting and child outcomes would vary as a function of the participant completing the measure of child wellbeing or distress (parent proxy or child self-report) and the magnitude of the relationship would be larger for studies that include parent-proxy ratings.
- Hypothesis 4: The relationship between mindful parenting and child outcomes would vary as a function of parent gender, and would be larger for studies that included more mothers.

Additional exploratory moderation analyses would be conducted for type of mindful parenting (state or trait), sample group (clinical or non-clinical), child gender (male or female) and child age in order to inform the limited evidence base in this area.

Method

Search strategy

Four databases were searched in January 2019. These databases were Scopus, PsycInfo (via ovidSP), CINAHL, and Medline (via ovidSP). The search terms presented in Table 1 were used across the databases.

The search terms were developed by consulting the mindful parenting literature and generating alternative key words through thesaurus consultation. The search terms were selected in order to identify articles that focus on mindful parenting and child outcomes. The * symbol was used for truncation. Keyword searches were conducted for each search term, and then key words were combined with the Boolean operator 'OR'. The search term groups (numbers 1, 2, 3 and 4) were then combined with the Boolean operator 'AND'. The search terms were searched within abstracts, titles and author keywords in each database.

Table 1

Database search terms

Search number	Search terms
1	Parent*OR Maternal OR Paternal OR Father* OR Mother* OR Carer* OR Caregiver* OR Mum* OR Dad*
2	"Mindful* parent*"
3	Child* OR Teen* OR Adolescen* OR Youth OR Daughter* OR Son* OR Young
4	"Quality of life" OR Outcome* OR Well* OR Depress* OR Anxi* OR "mental health" OR Emotion* OR Stress* OR Distress* OR "Positive affect" OR "Negative affect" OR Behavio* OR Ang*

In order to capture all available literature, the reference lists of the final selection of papers were inspected, and a forward citation search was completed. An additional two papers were discovered through forward citation searches. In addition, to protect against

publication bias, a search was conducted within 'OpenGrey', a website that sources grey literature. However, OpenGrey did not reveal any further studies for this meta-analysis. Two authors were contacted to request permission for use of their dissertations within the meta-analysis, but contact could not be made and so the studies were not included.

Selection of articles/inclusion and exclusion criteria

The titles and abstracts of the papers were scanned to assess whether the article was eligible for full screening. Papers were included if they measured mindful parenting, if they measured at least one form of child psychological outcome, were quantitative in design, were written in English, and if they reported an appropriate effect size or one that could be converted. Papers were excluded if they focussed on parent outcomes only, if the child outcome was based on observations or medical tests, if they only measured the quality of the parent-child relationship, and if the papers were reviews, book chapters or general discussion articles. Moreover, papers were excluded if both the parent and child were part of an intervention, and if participants across studies were from the same sample. Figure 2 shows a PRISMA diagram (Moher, Liberati, Tetzlaff & Altman, 2009) which outlines the search strategy used for this meta-analysis.

Critical appraisal

Quality appraisal was carried out on the included articles using the Joanna Briggs Institute (JBI) Critical Appraisal Tools (Joanna Briggs Institute, 2017) for prevalence (cross-sectional) and quasi-experimental studies. The JBI checklists were selected as they allow for assessment of the strengths and weaknesses of the article with specific checklists for different study designs. As recommended, the JBI tools advise scoring for each item as 'yes', 'no', 'unclear', 'not applicable' for each item within the appraisal tool (Appendix A). To generate a quality score, 2 points were given to 'yes'

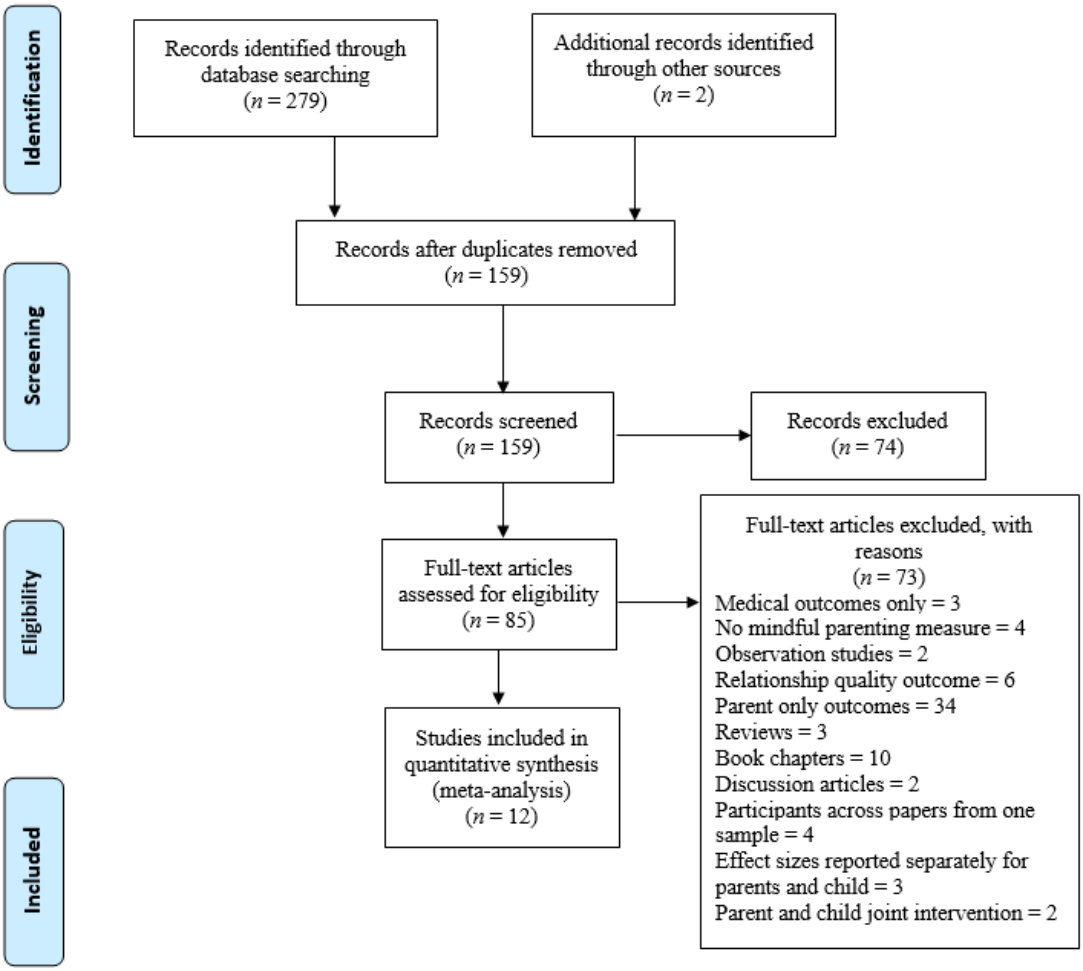

Figure 2. PRISMA flow diagram (2009)

ratings, 1 point to 'unclear' and 0 to 'no'. Total quality scores were given, and then converted to percentages so that article quality could be compared. Ratings of 'not applicable' were not included in the quality scoring. The quality of a random selection of articles (four articles; 33%) was assessed by a peer trainee clinical psychologist who was independent to the review. A discussion between the raters prior to quality appraisal ensured agreement in the reasons for scoring 'unclear' as recommended by the Joanna Briggs Institute (2014). The interrater reliability was good, ICC = .88, 95% CI [.75 - .94], F (35) = 7.95, p <.001. Disagreements in the ratings were discussed between the raters in order to reach consensus.

Meta-analysis strategy

Two meta-analyses were conducted using the Comprehensive Meta-analysis (CMA) software, version 3 (Borenstein, Hedges, Higgins, & Rothstein, 2013). One meta-analysis focussed on the association between mindful parenting and child wellbeing outcomes the other between mindful parenting and child distress outcomes. Pearson's *r* correlations were extracted from the studies and were included in each meta-analysis where available. When Pearson's *r* was not reported (e.g. quasi-experimental studies), *t*-values were converted to *r* using CMA. A random effects model was used across both meta-analyses as high levels of variability within each meta-analysis were expected. Random effects model assumes variability in the data, and considers this in the analysis, which reduces the likelihood of type one error (Hunter & Schmidt, 2000). In studies where effect sizes were reported for subscales of a mindful parenting measure, the subscale effect sizes were averaged using CMA in order to create a single effect size (Card, 2012). As outlined by Cohen (1992) the following guidelines for interpreting effect sizes were used: $r = .10$ is considered a small effect, $r = .30$ is considered a medium effect, $r = .50$ is considered a large effect.

The variability in effect sizes between the studies was evaluated using two approaches, in order to assess whether moderator analyses was required. The *Q* statistic (heterogeneity statistic) assesses the degree of the variability across the pooled effect sizes (Card, 2012). If the *Q* statistic is significant, it can be assumed that there is true heterogeneity across the effect sizes, rather than variability that is purely due to error. The I^2 statistic represents the proportion of the variability that is not present due to error (Higgins & Thompson, 2002). The following I^2 values reflect the different levels of heterogeneity: 25% is considered low, 50% is considered moderate and 75% is considered high (Higgins, Thompson, Deeks, & Altman, 2003). Moderator analyses were conducted when there was significant heterogeneity at a moderate to high level. Moderator analysis

was conducted only when there were at least three studies per subgroup (Card, 2012). Meta-regressions were conducted to analyse the moderator effects of the continuous variables, which were child age, parent gender (percentage of females) and child gender (percentage of females). Although there is no universally accepted optimal number of minimum studies required for meta-regressions, it has been suggested that six to ten studies per subgroup analysis should be considered as minimum for studies with moderate to large samples (Fu et al., 2011).

A variety of approaches were used to assess for publication bias, as studies with non-significant results are less likely to be published (Quintana, 2015). Funnel plots were visually inspected for each meta-analysis (figures 7 and 8). In a funnel plot, publication bias is suggested when there looks to be an asymmetrical distribution of the individual effect sizes within the meta-analysis. In addition to visually assessing the funnel plots, Egger's regression test (Egger, Smith, Schneider, & Minder, 1997) was conducted to assess for publication bias. The Rosenthal (1979) fail-safe *N* was also calculated; this calculates the estimated number of studies with non-significant results that would be required in the meta-analysis to overturn the overall significant findings (Rosenthal, 1979). The formulation for calculating the fail-safe *N* threshold is $5k + 10$ (where *k* equals the number of studies) (Rosenthal, 1979).

Results

Meta-analysis

In the meta-analysis of mindful parenting and child wellbeing, six studies were included ($N = 1721$). In the meta-analysis of mindful parenting and child distress, 10 studies were included ($N = 2721$).

Meta-analysis of mindful parenting and child wellbeing.

A significant, positive and small association was found between mindful parenting and child wellbeing outcomes ($r = 0.20$, CI 0.12 - 0.28, $z = 4.86$, $p < 0.001$). As

expected, the heterogeneity tests were significant, Q (5) = 12.10, p = 0.03, I^2 = 58.69. As the I^2 value indicated moderate heterogeneity, moderator analyses were conducted in order to gain further insight into the source of variability. Figure 3 shows the forest plot of the effect sizes, CIs and summary effect size for studies in this meta-analysis.

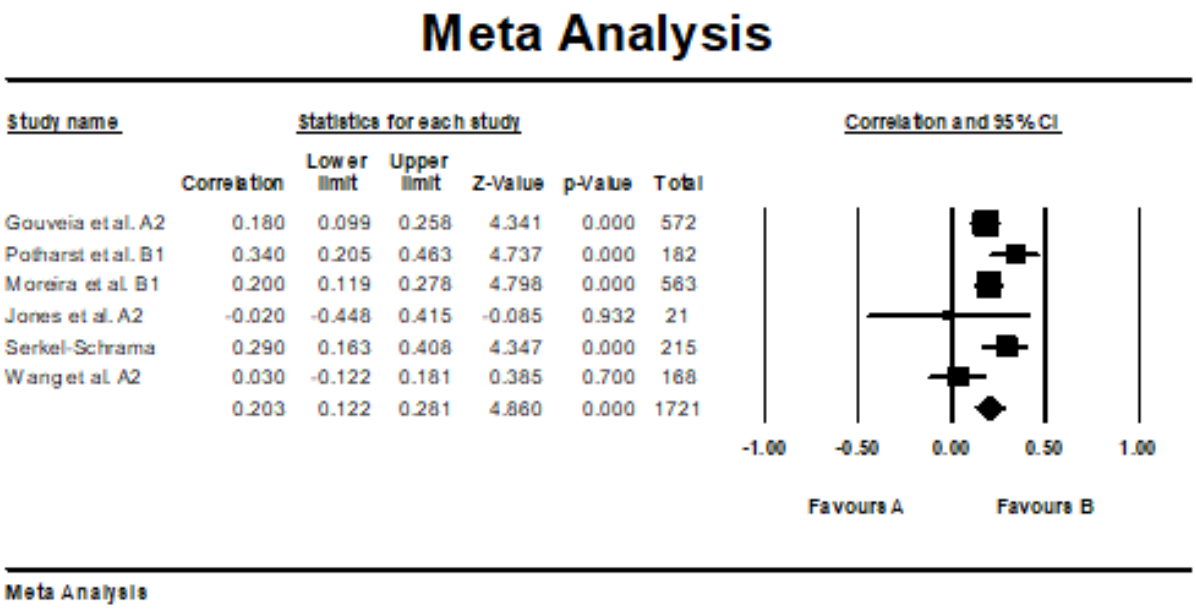

Figure 3. Forest plot of child wellbeing outcomes

Meta-analysis of mindful parenting and child distress.

A significant, negative and small association was found between mindful parenting and child distress outcomes (r = -.019, CI -0.28 – -0.09, z = -3.92, p < .001). As expected, the heterogeneity tests were significant, Q (9) = 39.25, p = <.001, I^2 = 77.07. As the I^2 value indicated high heterogeneity, moderator analyses were conducted in order to gain further insight into the source of variability. Figure 4 shows the forest plot of the effect sizes, CIs and summary effect size for studies in this meta-analysis.

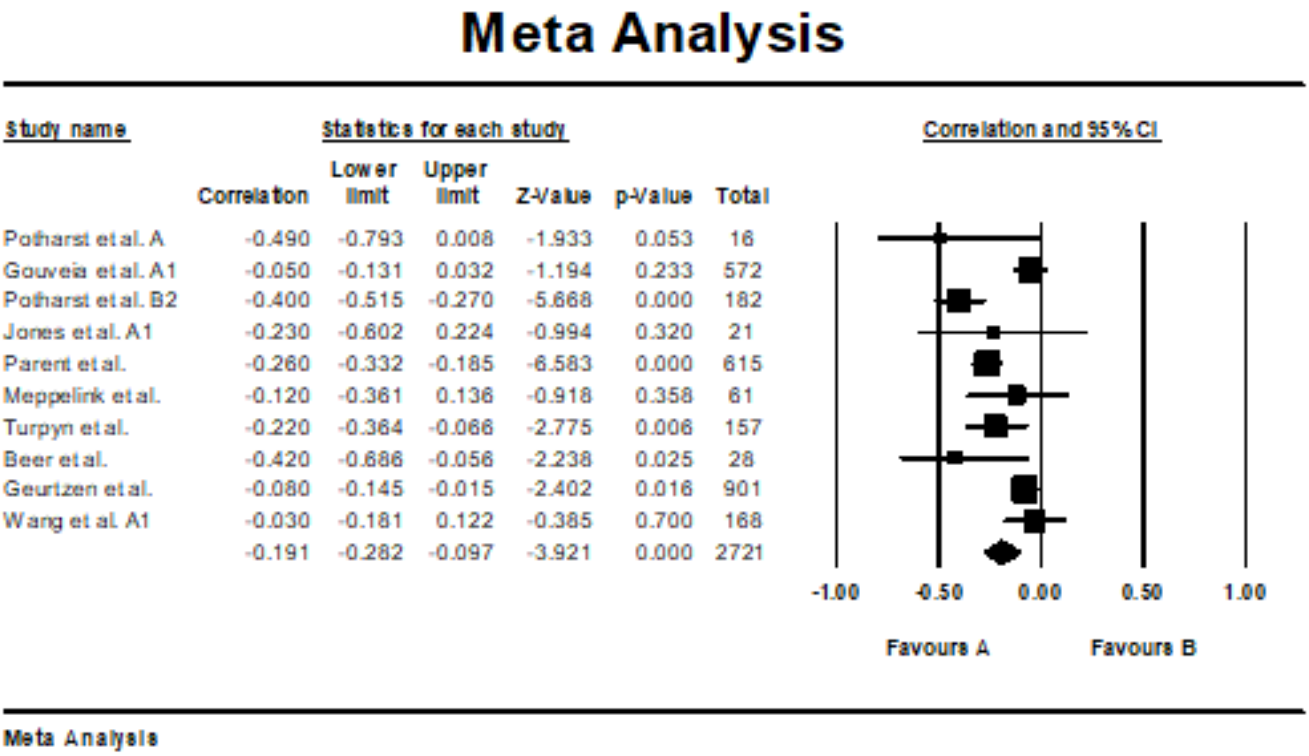

Figure 4. Forest plot of child distress outcomes

Subgroup analysis of the relationship between mindful parenting and child wellbeing (Table 2).

Parent proxy or child self-report measure. The effect sizes of the positive association between mindful parenting and child wellbeing varied significantly depending on the participant who was completing the measure of child wellbeing. Studies that included parent proxy reports of child wellbeing had larger effect sizes compared to studies where children completed their own measure of wellbeing.

Moderator analysis could not be completed for mindful parenting type (state or trait), or for sample type (clinical or non-clinical) due to having less than three studies within the subgroups (Card, 2012).

Table 2

Subgroup analyses of the relationship between mindful parenting and child well being

Moderator		*k*	*n*	*r*	95% CI	*Q*	*p*
Participant		6	1721	0.21	0.15-0.27	4.38	0.00
	Parent proxy	3	418	0.30	0.19-0.39	-	0.00
	Child self-report	3	1303	0.16	0.08-0.24	-	0.00

Subgroup analysis of the relationship between mindful parenting and child distress (Table 3).

State or trait mindful parenting. The effect sizes of the negative association between mindful parenting with child distress varied significantly across mindful parenting type, with studies that investigated mindful parenting as a state showing significantly larger effect sizes than when studies assessed trait mindful parenting.

Clinical or non-clinical sample. The effect sizes of the negative association between mindful parenting with child distress varied significantly across sample type. Studies that used clinical samples had larger effect sizes than those with non-clinical samples.

Parent proxy or child self-report measure. The effect sizes of the negative association between mindful parenting and child distress varied significantly depending on the participant who was completing the measure of child distress. Studies that included parent proxy reports of child distress had larger effect sizes compared to studies where children completed their own measure of distress.

Table 3

Subgroup analyses of the relationship between mindful parenting and child distress

Moderator		*k*	*n*	*r*	95% CI	*Q*	*p*
Mindful parenting		10	2721	-0.18	-0.26, -0.10	2.75	0.00
	State	4	280	-0.31	-0.47, -0.14	-	0.00
	Trait	6	2441	-0.14	-0.24, -0.05	-	0.00
Sample		8	1967	-0.18	-0.28, -0.08	0.90	0.00
	Clinical	4	126	-0.25	-0.42, -0.07	-	0.00
	Non-clinical	4	1841	-0.15	-0.26, -0.03	-	0.01
Participant		10	2721	-0.14	-0.19, -0.09	15.26	0.00
	Parent proxy	6	923	-0.30	-0.39, -0.21	-	0.00
	Child self-report	4	1798	-0.08	-0.14, -0.02	-	0.01

Meta-regression of the association between mindful parenting and child wellbeing. The meta regression revealed that the magnitude of the association between mindful parenting and child wellbeing did not vary as a function of parent gender ($k = 7$), b =-0.69 [-1.82, 0.44], $Q_{model}(1) = 1.42$, $p = 0.23$; child sex ($k = 5$), b = -0.00 [-0.02, 0.01], $Q_{model}(1) = 0.02$, $p = 0.89$; and child age ($k = 5$), $b = 0.09$ [-0.01, 0.18], $Q_{model}(1) = 3.08$, $p = 0.08$. The meta-regressions for child sex and child age did include the suggested minimum number of studies required for meta-regressions, as advised by Fu et al., (2011). Therefore, results should be interpreted with caution.

Meta-regression of the association between mindful parenting and child distress. The meta regression revealed that the magnitude of the association between mindful parenting and child distress did not vary as a function of parent gender ($k = 11$), $b = 0.27$ [-0.40, 0.94], $Q_{model}(1) = 0.63$, $p = 0.43$. However, the magnitude of the association between mindful parenting and child distress did vary as a function of child

age (k = 9), b = 0.04 [0.01, 0.07], Q_{model} (1) = 5.51, p = 0.02. Figure 5 shows that as the age of the child increases, the strength of the negative relationship decreases. Therefore, the effects of the association are not as strong for older children compared to younger children. In addition, the magnitude of the association between mindful parenting and child distress varied as a function of child gender (k = 10), b = 0.01 [0.00, 0.02], Q_{model} (1) = 6.50, p = 0.01. Figure 6 shows that as the percentage of female children in the study increases, the strength of the negative relationship decreases. The effects of the association are not as strong for female CYP as they are for male CYP.

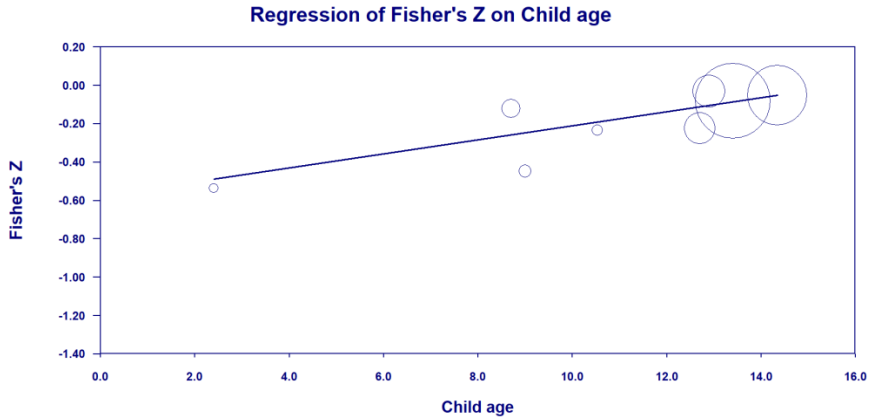

Figure 5. The association between mindful parenting and child distress moderated by child age

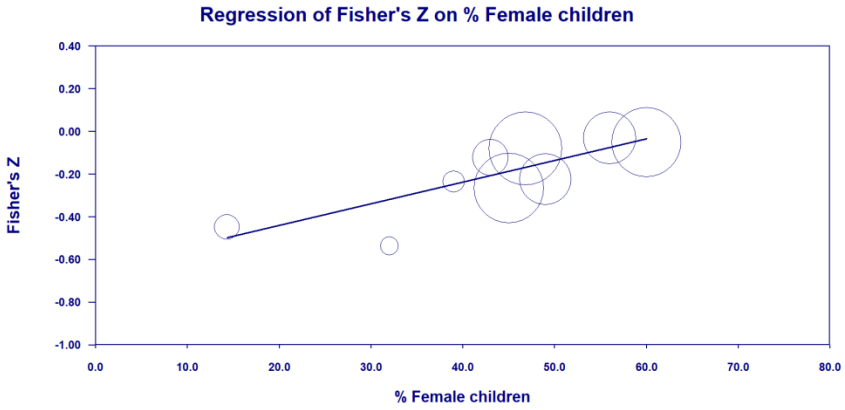

Figure 6. The association between mindful parenting and child distress moderated by percentage of female children

Publication bias: Meta-analysis studies for mindful parenting and child wellbeing. The tests of publication bias provided evidence to suggest the absence of publication bias. Figure 7 shows the funnel plot for the individual meta-analysis. Visual inspection of the funnel plot revealed no signs of asymmetry. In addition, the Egger regression test was non-significant $t(4) = 0.24$, $p = 0.41$. The fail-safe *N* method showed that 84 studies would be needed to overturn the significance of the findings. This value was larger than the fail-safe *N* threshold value of 40 studies. This combined approach supports a lack of publication bias.

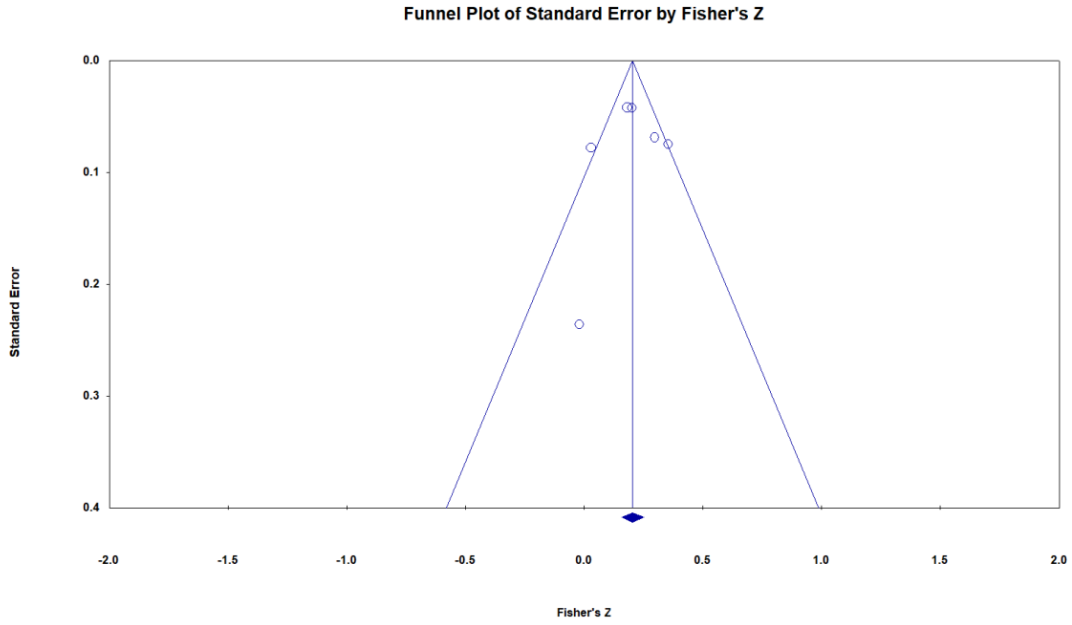

Figure 7. Funnel plot of meta-analysis exploring the association between mindful parenting and child wellbeing

Publication bias the meta-analysis studies for mindful parenting and child distress. Figure 8 shows the funnel plot for the individual meta-analysis. Visual inspection of the funnel plot revealed some signs of asymmetry. However, the Egger regression test was non-significant $t(8) = 0.24$, $p = 1.21$. The fail-safe *N* method showed that 154 studies would be needed to overturn the significance of the findings. This number was larger than the calculated fail-safe *N* threshold value of 60. This combined approach supports a lack of publication bias.

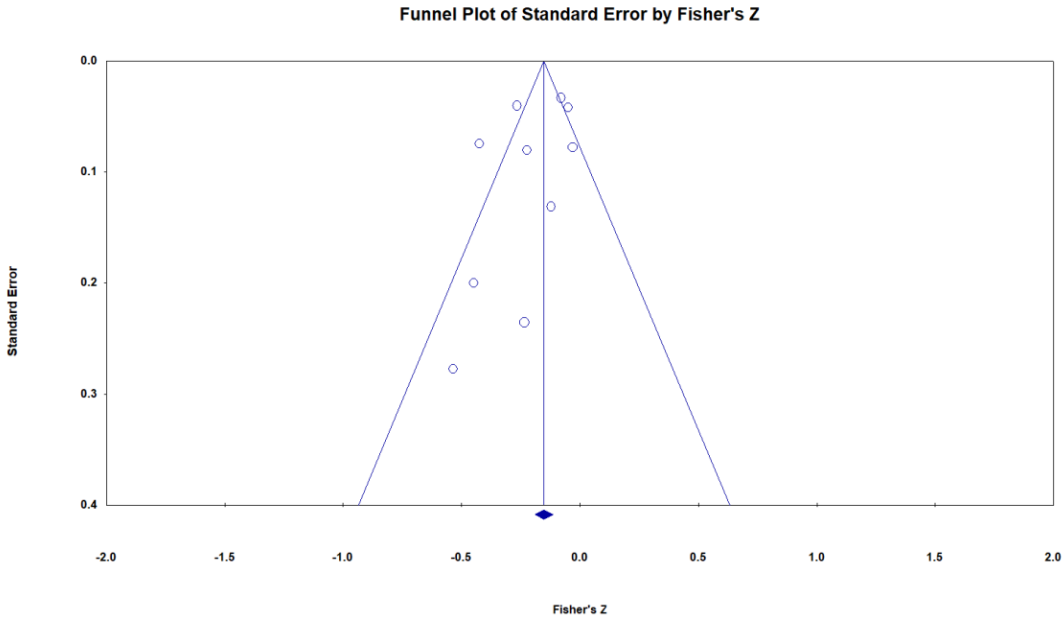

Figure 8. Funnel plot of meta-analysis exploring the association between mindful parenting and child distress

Study characteristics

Twelve studies (k = 12) were included in the overall meta-analysis (N = 3428). The characteristics of the studies can be found in Table 4. Eight studies were conducted in Europe, two in the USA, one in Australia and one in China. The majority of studies involved female parent participants (ranging from 55% to 100%). The percentage of female children varied across the studies (14% to 62%). Sample sizes also varied across the studies, from 16 participants to 901 participants. Children's ages ranged from 2 years to 11 years. Five studies included clinical samples, where children had diagnoses that included Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorder (ASD), learning disabilities (LD), physical or mental health difficulties requiring hospital treatment and diabetes. Five studies included non-clinical samples, and two studies had both clinical and non-clinical samples.

Measures. The majority of the studies used a version of the Interpersonal Mindfulness in Parenting Scale (IEMP; Duncan 2007). Versions of this measure include the original 10 item version (Duncan, 2007), a Dutch 29 item version (De Bruin et al.,

2014), and a Portuguese 29 item version (Moreira & Canavarro, 2017). One study used an alternative measure of mindful parenting called the Bangor Mindful Parenting Scale (Jones et al., 2018). The reliability of the total and the subscale scores across the studies ranged from $\alpha = 0.66$ to $\alpha = 0.92$. Measures of child outcomes varied across the studies; the majority were distress outcomes (see Table 5). Seven studies involved parent proxy measures, and five child self-reports.

State or trait mindful parenting. Studies that measured mindful parenting following an intervention were categorised as state mindful parenting ($k = 4$). Studies that were cross-sectional designs were categorised as trait mindful parenting ($k = 8$).

Quality appraisal

The JBI critical appraisal tools do not state statistical boundaries for assessing total quality scores. It could be surmised that the papers of the highest quality were those with higher scores (including Parent, McKee, Rough, & Forehand, 2016; Serkel-Schrama et al., 2016; Beer, Ward, & Moar, 2013) and those of lowest quality with lower scores (Gouveia, Canavarro, & Moreira, 2018). However, due to a vast amount of 'not clear' responses due to missing information, it cannot be concluded that lower scores are reflective of lower quality studies. As such, all twelve papers were included in the meta-analysis and were considered in light of their strengths and limitations.

Cross-sectional studies. Strengths across all studies included appropriate sampling frames, sufficient coverage of the sample in the statistical analysis, and the use of valid measures for identification of the condition. All but one study (Turpyn & Chaplin, 2016) provided detailed descriptions of participant characteristics, and the study setting. All but one paper used appropriate statistical analyses. Gouveia, Canavarro, and Moreira (2018) found differences between their groups at baseline on child outcome measures but did not consider this in any subsequent analyses.

Consistently across papers, there was a lack of clarity as to whether the samples sizes were appropriate, as power analyses were not reported. This is a significant methodological weakness across all of the studies, as it cannot be said with certainty whether there is adequate statistical power behind the findings. In addition, there was a lack of clarity across all papers as to how participants were recruited to the research studies.

Five out of eight studies provided an explanation as to how response rates across responders and non-responders were handled. However, this was not clear within the remaining three papers (Gouveia, Canavarro, & Moreira, 2018; Geurtzen, Scholte, Engels, Tak, & Van Zundert, 2015; Wang et al., 2018).

Half of the studies measured the condition in a reliable way for all participants involved. However, it was not clear whether this was apparent in three studies (Gouveia, Canavarro, & Moreira, 2018; Turpyn & Chaplin, 2016; Wang et al., 2018). In one study (Moreira, Gouveia, & Canavarro, 2018) the outcomes were measured differently for participants; some measures were completed at participant's home and some were completed within the school setting with a teacher present.

Quasi-experimental studies. Strengths across all studies included there being clarity around the variables that were measured as the potential 'cause' (mindful parenting intervention) of an effect, multiple measures of outcomes at both pre- and post-intervention, consistent measurement of participants used in any comparisons, and use of appropriate statistical analyses. In addition, all studies discussed and/or conducted appropriate analysis where participants were lost to follow up.

Methodological weaknesses across all studies were apparent, as there were no control groups in any study. This makes it difficult for the reader to say with confidence that the magnitude of the associations between mindful parenting and child outcomes were as a result of the mindful parenting intervention (or more specifically relevant to

this meta-analysis, saying the effect is due to ‘state’ mindful parenting). In addition, due to a lack of clarity or reporting across the studies, it is unclear whether the outcomes were measured in the same way across all participants. Half of the studies did not include clear descriptions as to whether participants were involved in any other ‘treatment’ that may influence the findings, or sole causal influence, of the mindful parenting intervention on child outcomes (Potharst, Baartmans, & Bogels, 2018; Jones et al., 2018).

Table 4

Summary of included studies and characteristics (k = 12)

Authors, year and location	Study design	Participant characteristics	Mindful parenting measure	Child outcome/s	Parent proxy or child report	*n* parents	Key findings	Original ES or *t* statistics	Converted / averaged ES	Quality rating
Potharst, Zeegers, & Bogels (2018) Netherlands	Quasi experimental	Parents: *M* age = 37.3 years (*SD* = 3.9), 100% female. Children: *M* age = 2.4 (*SD* = 0.6); 32% female Recruited from a mental health clinic. Clinical sample.	IMPS Dutch version (29 item)	Psychopathology Dysregulation	Parent proxy	16	Child psychopathology decreased from pre to post mindful parenting intervention ($p < .05$; medium effect). Dysregulation did not significantly change at post-intervention (small effect)	*t* = -2.33* *t* = -1.85	*r* = -0.53 *r* = -0.44 Averaged: *r* = -0.49	77%
Gouveia, Canavarro, & Moreira (2018) Portugal	Cross sectional	Parents*: M age not reported for total sample;* 78% female. Children: *M* age = 14.34 (*SD* = 1.59), 60% female. Recruited from schools and paediatric hospitals. Clinical and non-clinical sample.	IMPS Portuguese version (29 item)	Self-compassion Emotional eating	Self-report	572	Positive, significant correlation between mindful parenting and adolescent self-compassion ($p < .05$; small effect) Negative correlation between mindful parenting and adolescent's emotional eating (small effect, non-significant)	*r* = 0.18** *r* = -0.05	N/A	72%
Potharst, Baartmans, & Bogels (2018) Netherlands	Quasi experimental	Parents: *M* age clinical setting = 43.8 (*SD* = 6.1) Non-clinical = 42.4 (*SD* = 6.9), 82% female. Children: *Mean age & % female not reported.* Recruited from children's health clinic or outpatient mental health clinic. Clinical and non-clinical sample.	IEMP (10 item)	Child wellbeing Child problem behaviour	Parent proxy	182	Improvements in MP in the non-clinical setting significantly associated with improvements in child problem behaviour but not significantly associated with improvements in child wellbeing. Improvement in MP in the clinical setting associated with improvement in child wellbeing, not child behaviours.	*t* = 4.92** *t* = -5.84**	*r* = 0.34 *r* = -0.40	61%

IMPS: Interpersonal Mindfulness in Parenting Scale; IEMP: Interpersonal Mindfulness in Parenting Scale; * $p < .05$, ** $p < .001$

Authors, year and location	Study design	Participant characteristics	Mindful parenting measure	Child outcome/s	Parent proxy or child report	*n* parents	Key findings	Original ES	Converted / averaged ES	Quality rating
Moreira, Gouveia, & Canavarro (2018) Portugal	Cross-sectional	Parents: *M* age = 43.38 (*SD* = 5.36), 96% female. Adolescents: 14.26 (*SD* = 1.66), 61.5% female. Recruited from nine schools in central and northern Portugal. Non-clinical sample.	IM-P Portuguese version (29 item)	Mindfulness Self-compassion Wellbeing	Self-report	563	Significant small to medium effects were found between mindful parenting and adolescent mindfulness, self-compassion and wellbeing. Covariates: Adolescent age & gender	*r* =.15** *r* =.23** *r* =.22**	Averaged: *r* = 0.20	78%
Jones et al., (2018) UK	Quasi-experimental	Parents: *M* age = 45 years (*SD* = 6.48), 86% female. Adolescents: *M* age = 10.53 years (*SD* = 3.16), 39% female. Recruited from schools who agreed to run the intervention & other schools locally. Clinical sample.	BMPS (15 items)	Adaptive functioning Behaviour difficulties	Parent proxy	21	There were no significant reductions in child's problem behaviours and no change in adaptive functioning following intervention.	*t* = -0.21 *t* = -1.02	*r* = -0.05 *r* = -0.23	77%
Parent, McKee, Rough, & Forehand (2016) USA	Cross-sectional	Parents: *M age = not reported for total sample*, 55% female. Children: *M age = not reported for total sample*, 45% female. Recruited via Mechanical Turk – US crowdsourcing application. Non-clinical sample.	IEMP (8 items)	Internalising and externalising problems	Parent proxy	615	There were significant negative associations between mindful parenting and youth internalising and externalising problems.	*r* = -0.26*** *r* = -0.25***	Averaged: *r* = -.026	83%

IMPS: Interpersonal Mindfulness in Parenting Scale, IM-P: Interpersonal Mindfulness in Parenting Scale, BMPS: Bangor Mindful Parenting Scale, IEMP: Interpersonal Mindfulness in Parenting Scale; * $p < .05$, ** $p < .01$, *** $p < .001$

Authors, year and location	Study design	Participant characteristics	Mindful parenting measure	Child outcome/s	Parent proxy or child report	*n* parents	Key findings	Original ES	Converted / averaged ES	Quality rating
Serkel-Schrama et al., (2016) Netherlands	Cross-sectional	Parents: *M* age = *M age = not reported for total sample*, 85% female. Adolescents: *M* age = 14 years (*SD* = 2), 48% female. Recruited from a national online survey of people with Diabetes. Clinical sample.	IM-P-NL: (Dutch IMPS) 29 item	Quality of life	Parent proxy	215	Adolescents who had a greater quality of life score had a parent with a more mindful parenting style No moderation effects were found for adolescent age, sex or duration of illness.	*r* = .29**	N/A	89%
Meppelink, de Bruin, Wanders-Mulder, Vennik, & Bogels (2016) Netherlands	Quasi-experimental (8 week mindful parenting training for parents only)	Parents: *M* age = 42.0 years (*SD* = 7.2), 93% female. Children: *M* age = 8.7 years (*SD* = 3.4), 43% female. Recruited from 3 outpatient mental health care clinics (originally referred due to child psychopathology). Clinical sample.	IMPS Dutch version (9 of the original 10 items included)	Child psychopathology	Parent proxy	61	There was a significant decrease in child total psychopathology symptoms as reported by parents following after the mindful parenting training (small ES)	Parameter estimate = -.25*	*r* = -0.12	83%
Turpyn & Chaplin (2016) USA	Cross-sectional	Parents: *M age = not reported for total sample*, 96% female. Adolescents: *M* age = 12.7 years (*SD* = 0.7 years), 49% female. Recruited from advertisements, flyers and mailings. Non-clinical sample.	IM-P 10 item	Adolescent substance use Adolescent sex behaviours	Self-report	157	There was a significant negative relationship between mindful parenting and adolescent substance use and sex behaviours	*r* = -.24* *r* = -.20*	Averaged*:* *r* = -0.22	78%

IMPS: Interpersonal Mindfulness in Parenting Scale, IM-P: Interpersonal Mindfulness in Parenting Scale, BMPS: Bangor Mindful Parenting Scale, IEMP: Interpersonal Mindfulness in Parenting Scale; * $p < .05$, ** $p < .01$, *** $p < .001$

Authors, year and location	Study design	Participant characteristics	Mindful parenting measure	Child outcome/s	Parent proxy or child report	*n* parents	Key findings	Original ES	Converted / averaged ES	Quality rating
Beer, Ward, & Moar (2013) Australia	Cross-sectional	Parents: *M* age = 43.18 (*SD* = 8.43), 86% female. Children: *M* age = 9 years (*SD* = 4.33), 14.3% female. Recruited from a paediatric medical centre. Clinical sample.	IMPS (31 item)	Child problem behaviours	Parent proxy	28	The total mindful parenting scores were significantly, negatively correlated with total child problem behaviour scores	*r* = -0.42*	N/A	83%
Geurtzen, Scholte, Engels, Tak, & van Zundert (2015) Netherlands	Cross-sectional	Parents: *M* age = 45.2 (*SD* = 4.0), 94% female. Children: *M* age = 13.4 years (*SD* = .60), 46.8% female. Recruited from pre intervention stage of a larger school 'depression prevention programme'. Non-clinical sample.	IMPS (29 item translated to English)	Depression and anxiety	Self-report	901	Mindful parenting dimensions were significantly, negatively associated with adolescent anxiety and depression (small effects)	-.08*, -.11** -.10**, -.09** -.08*, -.08* -.15**, -.14** -.10**, -.02 -.00, -.00	Averaged: *r* = -0.08	78%
Wang et al., (2018) China	Cross-sectional	Parents: *M* age = 42.45 (*SD* = 3.14), 100% female. Children: 12.89 (*SD* = 0.56), 56% female. Recruited from a public middle school in South China. Non-clinical sample.	IM-P (10 item)	Child mindfulness Emotional problem	Self-report	168	Mindful parenting was not significantly correlated with child mindfulness or with child emotional problems	*r* = .030 *r* = -.030	N/A	78%

IMPS: Interpersonal Mindfulness in Parenting Scale, IM-P: Interpersonal Mindfulness in Parenting Scale, BMPS: Bangor Mindful Parenting Scale, IEMP: Interpersonal Mindfulness in Parenting Scale; *$p < .05$, **$p < .01$, ***$p < .001$

Table 5

Child outcomes in each study categorised by wellbeing and distress

Wellbeing	**Distress**
Self-compassion	Psychopathology
Wellbeing	Emotion dysregulation
Mindfulness	Emotional eating
Wellbeing	Child problem behaviour
Quality of life	Behaviour difficulties
Child mindfulness	Adaptive functioning
	Internalising problems
	Externalising problems
	Child psychopathology
	Adolescent substance use
	Adolescent sex behaviours
	Child problem behaviours
	Depression
	Anxiety
	Emotional problems

Discussion

This is the first meta-analysis to focus on the associations between mindful parenting and child psychological outcomes (wellbeing and distress). Consistent with Hypothesis 1, the findings indicate that mindful parenting and child wellbeing have a small, positive association. Moderator analyses were conducted to explore the heterogeneity and revealed that the relationship between mindful parenting and child wellbeing varies as a function of the participant who is completing the child outcome measure (parent proxy or child self-report), which supports Hypothesis 3. As hypothesised, the associations were larger in magnitude when the studies included parent proxy reports compared to child self-reports. There were an insufficient number of studies

within subgroups to conduct moderation analysis for mindful parenting type (state or trait) or sample type (clinical or non-clinical). In line with Hypothesis 2, findings revealed a negative, small association between mindful parenting and child distress. Moderator analyses revealed that the association between mindful parenting and child distress varies as a function of mindful parenting type (state or trait), sample type (clinical or non-clinical), child age and percentage of female children. Consistent with Hypothesis 3, the relationship between mindful parenting and child distress varied as a function of the participant completing the outcome measure, with studies that had parent-proxy reports having associations greater in magnitude than those with child self-reports. Hypothesis 4 was not supported; parent gender did not affect the magnitude of the effect between mindful parenting and child distress.

The direct association between mindful parenting and child outcomes

Findings of this meta-analysis indicate that there is a direct association between mindful parenting and child outcomes. These findings provide additional information to the hypothesised model developed by Duncan et al., (2009) which indicated that mindful parenting was indirectly associated with child outcomes via parenting practices.

Child wellbeing and distress have been a focus of research due to the impact that they have on other child outcomes. Although cause and effect cannot be determined, findings of this meta-analysis indicate that mindful parenting is a vital component of child wellbeing and distress. The effects of this association are small but significant, and should be carefully considered by researchers and clinicians when exploring potential avenues for improving child outcomes.

Factors that moderate the relationship between mindful parenting and child outcomes

This meta-analysis confirms previous findings by Eiser and Morse (2001) which found that there are significant discrepancies between parent and child reports of child

quality of life when measuring ‘non observable’ functioning. This outcome was expected within this meta-analysis as the outcomes were classed as ‘non-observable’ (emotional or psychological in nature). Across the findings for both child wellbeing and distress, the magnitude of the associations with mindful parenting were larger (double in size) for parent reports than for child self-reports. In addition, the discrepancies were larger when reporting child distress, in comparison to reporting child wellbeing. Conclusions cannot be drawn as to whether parents over report or children under report their wellbeing and distress. However, what is important to note is that there are discrepancies and this research provides a case for including both parent and child reports of quality of life in future studies.

Effect sizes were larger for state mindful parenting compared to trait mindful parenting in the association between mindful parenting and child distress. It is important to acknowledge that the underlying methodologies of the studies that were categorised into state mindful parenting (quasi-experimental studies) and trait mindful parenting (cross-sectional data) could explain this outcome. Mindful parenting measures were collected immediately post intervention when skills are fresh and are less likely to have been practiced in natural settings where confounding variables are more influential. The current findings indicate that child distress may be experienced to a lesser extent where a parent has enhanced mindful parenting, or when they learn new skills in mindful parenting as part of an intervention. These findings add to the evidence base on the positive impact of mindful parenting for reduced levels of distress in children (Singh et al., 2006; Bogels, Hellemans, van Deursen, Romer, & van der Meulen, 2014 & Coatsworth, Timpe, Nix, Duncan, & Greenberg, 2018). Regardless of cause and effect, it appears that mindful parenting is a positive factor in child negative outcomes.

Effects were also larger for studies when parents had children who had a clinical diagnosis (e.g. diagnosis of ADHD, ASD, LD or mental health diagnoses). Where there

are additional child difficulties compared to the norm, the association between mindful parenting and child distress is greater in magnitude. Similar findings have been found in other research on mindfulness practice. In a school setting, Flook et al., (2010) found that children with the poorest executive functioning improved the most from mindfulness interventions, compared to students without additional difficulties. Mindful parenting is associated with reduced distress in children and could be beneficial as part of preventative or reactive interventions in clinical and community settings.

The relationship between mindful parenting and child distress varied as a function of child age and with percentage of the parent's children that were female. The magnitude of the negative associations were not as strong for older children compared to younger children and are not as strong for females as they are for males. Children become more autonomous as they transition to adolescence (Larson, Richards, Moneta, Holmbeck, & Duckett, 1996) and may therefore be less influenced by their parents behaviours, including mindful parenting; this contrasts hypotheses by Duncan et al., (2009) who theorised that mindful parenting may result in increased connection between parents and adolescents. For female children, it could be suggested that mindful parenting may not be as strong an influencer on their level of distress in comparison to other factors. Whereas for boys, mindful parenting may be more associated with their distress levels. Both moderation analyses were exploratory in nature; however, they provide preliminary evidence as to the potential mechanisms that affect the associations between mindful parenting and child distress. The factors both warrant further investigation, but could be used as potential indicators of who may benefit from targeted mindful parenting interventions or practice.

In the current meta-analysis, parent gender did not appear to affect the magnitude of the association between mindful parenting and child outcomes. This is not consistent with previous findings, which indicate that fathers have lower levels of mindful parenting

in comparison to mothers (Moreira & Canavarro, 2017; Mederios, Gouveia, Canavarro, & Moreira, 2016). The majority of parents across the studies were female (55%-100%) and therefore the samples may be biased, suggesting results should be interpreted with caution. However, findings of this meta-analysis may provide new insight into the mindful parenting of parents; regardless of levels of mindful parenting between mothers and fathers, the association between mindful parenting and child outcomes do not vary as a function of the parent's gender.

All twelve studies included in this meta-analysis were quality assessed using the JBI quality assessment checklists for prevalence and quasi-experimental studies. The methodological strengths across the studies included appropriate sampling frames, statistical analyses and collecting data across multiple time points. Weaknesses across the studies included a lack of power analyses to determine required sample sizes and lack of control groups in the quasi-experimental studies. The findings of this meta-analysis should be considered in light of the methodological strengths and weaknesses of the studies it is based on.

Limitations, strengths and future research

As mentioned, there is no evidence that power analyses have been conducted within each study. Therefore, it is difficult to draw conclusions about the generalizability of the findings, as they may be underpowered. In addition, there are larger numbers of studies that assess the relationship between mindful parenting and child distress, in comparison to mindful parenting and child wellbeing. It would be of benefit for future research to conduct studies that focus on both wellbeing and distress outcomes, to gain a more detailed understanding of how mindful parenting associates with both child outcomes.

This meta-analysis examined associations between variables, therefore causal inferences cannot be made. The heterogeneity across the meta-analyses was moderate to

high, but the heterogeneity was not fully explained by the moderator analyses conducted. This indicates that there are additional confounding variables that affect the association between mindful parenting and child outcomes. In their empirical report, Duncan et al., (2009) hypothesise that the relationship between mindful parenting and child outcomes is mediated by parent wellbeing and parenting practices (e.g. consistent discipline). It may be of benefit for future researchers to explore parent wellbeing and parenting practices as moderators within a meta-analysis, to test whether they explain any of the heterogeneity found across the studies.

Although the JBI tools are used widely to appraise a variety of research deigns, they do not assess for risk of bias. To account for this, searches of grey literature were conducted, and risk of publication bias was conducted using a variety of approaches within the meta-analysis. The tests of publication bias provided evidence to suggest the absence of publication bias across both meta-analyses. This is a significant strength of this meta-analysis and supports the reliability of the findings. However, it would be of benefit for future emerging research to replicate and extend this meta-analysis to confirm the findings and add further evidence to the literature.

Although the meta-analysis has methodological limitations, there are a number of strengths in the methodological rigour. Standardised approaches were used to conduct this meta-analysis including moderation analyses and risk of publication bias. A thorough search of the literature was conducted; four databases and the grey literature were searched, forward citations searches were conducted and reference lists examined. Quality appraisals were performed on all studies included in the meta-analysis, which were quality checked by a fellow trainee clinical psychologist.

Clinical implications

Whilst holding in mind the methodological limitations of the meta-analysis, the findings can be considered in terms of their clinical implications. Mindful parenting could

be considered as a component of parenting interventions where the child is experiencing increased levels of psychological distress. Although the overall effect sizes were small, they were significant, highlighting an association between mindful parenting and child psychological outcomes. However, it may be worth considering mindful parenting as one factor within parenting interventions, until future research can delineate the mechanisms as to why and how it influences child outcomes. In the meantime, psychoeducation could be provided to parents via schools, hospitals, health services and communities about how mindful parenting is associated with child outcomes.

It is of worth considering using both parent proxy reports and child reports of child distress and wellbeing in clinical practice. It may be argued that child self-report measures should be solely collected, if the child is the target of the intervention. However, a systemic approach may be taken to understand child outcomes from both child and parent perspectives (e.g. in family therapy) (Moran, 2017). Therefore, it could be suggested that it would be beneficial to receive both viewpoints. Clinicians need to consider whom they should take measures from in clinical practice, and how to work with reports of both parent proxy and child self-reports. For example, what might the discrepancies between parent proxy and child self-reports indicate in clinical practice.

Finally, it is worth holding in mind how different age groups and child genders experience mindful parenting. This should be considered when providing psychoeducation to children and their families until further research has been conducted to understand the function of mindful parenting across all genders (beyond just male and female), and across child age groups.

Conclusion

This meta-analysis confirms that mindful parenting is associated with child wellbeing and distress, such that there is a small positive association with wellbeing, and a small negative association with distress. The between study variability warranted further

investigation, which revealed that the association between mindful parenting and child outcomes vary as a function of a number of factors including, but not limited to, parent-proxy or child self-reports of child outcomes. This was the first meta-analysis of this kind, and was developed in response to a lack of consolidated evidence regarding the association between mindful parenting and child outcomes (both wellbeing and distress). There were methodological limitations within the studies that influence the overall power and generalizability of the findings. As mindful parenting is a relatively new concept and area of research, studies investigating the relationship between mindful parenting and child outcomes are limited, and vary greatly in their content. Further research is needed so that more reliable and in depth evidence can be gathered to further inform the literature and clinical practice.

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**Studies included in the meta-analysis*

Appendix

Appendix A: Joanna Briggs quality appraisal tables of included studies

Cross sectional studies

	Was the sample frame appropriate to address the target population?	Were study participants sampled in an appropriate way?	Was the sample size adequate?	Were the study subjects and the setting described in detail?	Was the data analysis conducted with sufficient coverage of the identified sample?	Were valid methods used for the identification of the condition?	Was the condition measured in a standard, reliable way for all participants?	Was there appropriate statistical analysis?	Was the response rate adequate, and if not, was the low response rate managed appropriately?	**Quality appraisal total (%)**
Gouveia, Canavarro, & Moreira (2018)	2	1	1	2	2	2	1	1	1	13/18 (72%)
Moreira, Gouveia, & Canavarro (2018)	2	1	1	2	2	2	0	2	2	14/18 (78%)
Parent, McKee, Rough, & Forehand (2016)	2	1	1	2	2	2	2	2	2	16/18 (89%)
Serkel-Schrama et al., (2016)	2	1	1	2	2	2	2	2	2	16/18 (89%)
Turpyn & Chaplin (2016)	2	1	1	0	2	2	1	2	2	14/18 (78%)

Cross sectional studies

	Was the sample frame appropriate to address the target population?	Were study participants sampled in an appropriate way?	Was the sample size adequate?	Were the study subjects and the setting described in detail?	Was the data analysis conducted with sufficient coverage of the identified sample?	Were valid methods used for the identification of the condition?	Was the condition measured in a standard, reliable way for all participants?	Was there appropriate statistical analysis?	Was the response rate adequate, and if not, was the low response rate managed appropriately?	**Quality appraisal total (%)**
Beer, Ward, & Moar (2013)	2	1	1	2	2	2	2	2	2	16/18 (89%)
Geurtzen, Scholte, Engels, Tak, & van Zundert (2015)	2	1	1	2	2	2	2	2	1	15/18 (83%)
Wang et al., (2018)	2	1	1	2	2	2	1	2	1	14/18 (78%)

Quasi experimental studies

Authors and year	Is it clear in the study what is the 'cause' and what is the 'effect' (i.e. there is no confusion about which variable comes first)?	Were the participants included in any comparisons similar?	Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest?	Was there a control group?	Were there multiple measurements of the outcome both pre and post the intervention/exposure?	Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed?	Were the outcomes of participants included in any comparisons measured in the same way?	Were outcomes measured in a reliable way?	Was appropriate statistical analysis used?	Quality rating total (%)
Potharst, Zeeger, & Bogels (2018)	2	2	2	0	2	2	2	1	2	15/18 (83%)
Potharst, Baartmans, & Bogels (2018)	2	2	1	0	2	2	2	1	2	14/18 (77%)
Jones et al., (2018)	2	2	1	0	2	2	2	1	2	14/18 (77%)
Meppelink, de Bruin, Wanders-Mulder, Vennik, & Bogels (2016)	2	2	2	0	2	2	2	1	2	15/18 (83%)

Section two: Research report

Parenting in the context of childhood chronic health conditions: The role of trait mindful parenting

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Abstract

Objective

To test whether the relationship between mindful parenting and child quality of life (QoL) is mediated by illness specific parenting stress and authoritative parenting, in a parenting relationship where the child has a chronic health condition.

Design

A quantitative, prospective online survey design was used to answer the research question and test the hypotheses over time.

Methods

A sample of 250 parents of children with epilepsy, type 1 diabetes or asthma completed online measures of mindful parenting, illness specific parenting stress, parenting style and child QoL. All measures were completed again 4 weeks later by 133 participants. Correlational and path analyses were conducted.

Results

Parenting stress and authoritative parenting were not significantly associated with both mindful parenting and child QoL, so a mediation analysis could not be completed. Mindful parenting positively correlated with authoritative parenting. Parenting stress correlated negatively with child QoL. Cross-sectional exploratory moderation analysis revealed that mindful parenting moderated the relationship between parenting stress and child QoL, but this association was not significant in the prospective analysis.

Conclusion

The findings suggest that mindful parenting is not directly associated with child QoL, but may indirectly influence the relationship between parenting stress and child QoL. Mindful parenting could be considered as a component of interventions that target

parenting stress in the context of child chronic health, rather than as a stand-alone parenting intervention. Further research is needed to explore mindful parenting in this context, using a more reliable measure of mindful parenting.

Practitioner points

- In the context of childhood chronic health conditions, mindful parenting is not directly associated with child QoL but parenting stress is directly associated with child QoL
- The strength of the relationship between parenting stress and child QoL may be influenced by mindful parenting
- Mindful parenting may be worth considering as an element of interventions that target parenting stress in the context of child chronic health.

Limitations

- The mindful parenting measure in this study had less than adequate reliability
- The findings have limited generalizability due to the sample being mostly mothers

Keywords. ‘Mindful parenting’, ‘parenting stress’, ‘parenting style’, ‘child quality of life’, ‘child chronic health’

Introduction

Chronic health conditions in children have increased in the last two decades (Van Cleave, Gortmaker, & Perrin, 2010; Halfon & Newacheck, 2010). The term 'chronic health condition' is defined differently in the UK and USA, however there is a consensus that it relates to a health condition that lasts longer than 12 months (Wijlaars, Gilbert, & Hardelid, 2016). It is estimated that 15% of 11-15 year olds in the UK are diagnosed with a chronic health condition (Hagell, Shah, & Coleman, 2017).

Chronic health conditions in children aged 18 and under are wide-ranging and include, as three of the most common (Royal College of Paediatrics and Child Health, 2017); type 1 diabetes (T1D), asthma and epilepsy. Asthma is the most common UK chronic health condition in children, and is estimated to occur in one in 11 children (Asthma UK, n.d.). Research shows that over 29,000 children in the UK have T1D (Juvenile Diabetes Research Foundation, 2018) and one in every 220 children have a diagnosis of epilepsy (Young epilepsy, 2019).

Children with chronic health conditions have reduced health related quality of life (QoL) in comparison to children who do not have chronic health conditions (Bai, Houben Van Herten, Landgraf, Korfage, & Raat, 2017). Moreover, in the US, the rates of emotional, behavioural and developmental difficulties in children with chronic health conditions are three times higher than in children without chronic health conditions (Blackman, Gurka, Gurka, & Oliver, 2011). The stresses that come with a chronic health condition also extend to educational attainment, as children and young people with chronic health conditions have been found to have lower educational attainment compared to those without chronic health conditions (Champaloux & Young, 2015). Children with chronic health conditions have also been found to have worse social and emotional outcomes as adults (Whitaker, Dearth-Wesley, Gooze, Becker, Gallagher, & McEwen, 2014).

Childhood chronic health conditions have also been found to impact negatively on parent's health and wellbeing. Initially learning that their child has a health condition can be extremely traumatic for parents (Wallander & Varni, 1998). The adjustment and uncertainty surrounding a child's chronic health condition has been associated with an increase in parent's own experiences of physical (e.g. pain) and psychological (e.g. depressive) symptoms (Holm, Patterson, Rueter, & Wamboldt, 2008). Parents are often responsible for the management of the child's chronic health condition (Drotar, 1992). Parents of children with chronic health conditions may have difficulties parenting 'effectively' due to the time and energy required to manage their child's health condition (Pinquart, 2013). This can affect child psychological adjustment and wellbeing (Wood, Miller, & Lehman, 2015).

To understand the processes that affect parenting a child with a chronic health condition, researchers have looked to the parent-child relationship. Pinquart (2013) conducted a meta-analysis to analyse whether the quality of the parent-child relationship differs in families who have a child with or without a chronic health condition. The findings showed that the parent-child relationship quality was significantly reduced in families where the child had a chronic health condition; largest effects were found for specific child health conditions including asthma, epilepsy and T1D.

One factor that contributes to the parent-child relationship in the context of childhood chronic health is parenting style. Baumrind (1971) proposed that there are three types of parenting style: Authoritarian, authoritative and permissive. In the context of childhood chronic health, a more authoritative parenting style (described as high responsiveness and placing reasonable demands) has been associated with better QoL in children with diabetes (Botello-Harbaum, Nansel, Haynie, Iannotti, & Simons-Morton, 2008; Davis et al., 2001). A more authoritative parenting style has also been linked to children being less overweight (Rhee, Lumeng, Appugliese, Kaciroti, & Bradley, 2006).

Less permissive (described as non-controlling, non-demanding) and less authoritarian (detached and controlling) styles have been linked with more successful dermatitis management in children (Mitchell, Fraser, Morawska, Ramsbotham, & Yates, 2016). It is possible that authoritarian parenting is used when parenting a child with a chronic health condition as a way to exert more control or authority in the face of a strained parent-child relationship. In contrast, a permissive style may be used when parents view their child as less able and vulnerable, resulting in fewer parent derived boundaries and guidance (Morawska, Calam, & Fraser, 2015).

There is a wealth of research that shows parenting stress to have a negative impact on the parent-child relationship in the context of childhood chronic health conditions (Bogels, Lehtonen & Restifo, 2010; Cousino & Hazen, 2013; Wood, Miller, & Lehman, 2015). Parenting stress occurs when parenting demands are of such severity that parents cannot use their 'go to' resources to cope (such as social support and parenting knowledge) (Deater-Deckard, 2004). Therefore, higher levels of parenting stress in the context of child chronic health conditions (Cousino & Hazen, 2013) and reduced child QoL (Wood, Miller, & Lehman, 2015) is not surprising due to parent's additional responsibilities of managing their child's health condition. Greater parenting stress has been linked with less authoritative parenting (Pinquart, 2013). Parents may be less available to their child's needs (Eckshtain, Ellis, Kolmodin, & Naar-King, 2009) or may become over-involved, controlling or critical (Fiese, Winter, Anbar, Howell, & Poltrock, 2008).

Mindful parenting is one factor that is known to contribute to healthy parent-child relationships (Duncan, Coatsworth, & Greenberg, 2009; Bogels et al., 2010). Mindfulness in parenting is described as parents paying attention to their child in a particular way that is non-judgemental and intentional (Kabat-Zinn & Kabat-Zinn, 2008). Mindful parenting has been found to be positively associated with authoritative parenting and reduced

parenting stress in normative samples (Bogels et al., 2010), and is more likely to be associated with positive parenting practises such as authoritative parenting (Gouveia, Carona, Canavarro, & Moreira, 2016; de bruin et al, 2014; Duncan, Coatsworth, Gayles, Geier & Greenberg, 2015). In the context of childhood chronic health, mindful parenting has been associated with greater QoL in children with T1D (Serkel-Schrama et al., 2016). In their empirical paper, Bogels et al., (2010) propose that mindful parenting is associated with greater parental attention, which in turn has a positive impact on parental stress and parental preoccupation in normative samples. In the context of child chronic health, this increased focus and attention may contribute to better attunement with their child's needs regarding their health condition. As a result, parents may be less stressed and feel less need to be permissive or authoritarian.

The first, most recognised model that extended the conceptualisation and application of mindfulness to the parent-child relationship was developed by Duncan, Coatsworth and Greenberg (2009) (figure 1). The hypothesised model outlines how mindful parenting affects parenting skills and parental well-being, which in turn influence child management practices (e.g. consistent discipline) and parent-child affection. These associated relationships then influence child outcomes. This conceptualised model provided a framework for researchers to test aspects of the hypothesised relationships within the model (Duncan et al., 2009). Gouveia, Carona, Canavarro and Moirera (2016) tested an aspect of Duncan et al., model on a normative sample. They found that higher levels of mindfulness were positively associated with higher levels of mindful parenting, which in turn was linked with reduced stress and higher levels of authoritative parenting. In addition, Coatsworth, Duncan, Greenberg, and Nix (2010) found that a mindful parenting pilot intervention improved parent-child relationships and child management practices. However, neither Gouveia et al., nor Coatsworth et al., measured child outcomes.

The model of mindful parenting developed by Duncan et al., (2009) is the most dominant in the mindful parenting literature. However, this model and the hypothesised relationships were developed considering a normative sample and not considered in the context of childhood chronic health conditions. As evidenced, parents of children with chronic health conditions experience increased stress (Cousino & Hazen, 2013), which is associated with more permissive and authoritarian parenting styles (Pinquart, 2013). Research shows that both parenting stress and permissive or authoritarian styles are associated with reduced child QoL in children with chronic health conditions (Botello-Harbaum, Nansel, Haynie, Iannotti, & Simons-Morton, 2008; Davis et al., 2001). However, there is a gap in the literature regarding how mindful parenting, parenting stress, and parenting style link with child QoL when the child has a chronic health condition. Further research into the specific processes and relationships involved with parenting in the context of child chronic health may help parents adjust to living with the difficulties associated with such conditions. In addition, further research to test the validity of the hypothesised model proposed by Duncan et al., (2009) is warranted. Therefore, this study will extend Duncan et al., hypotheses, to test the model in the context of childhood chronic health conditions.

Research shows how mindful parenting can be taught successfully through interventions, which in turn has a positive impact on parent and child outcomes (Coatsworth et al., 2010; Bogels, Hellemans, Van Deursen, Romer, & Van Der Meulen, 2014). Yet there is limited research that focuses on trait mindfulness in parenting. In addition, Gouveia et al., (2016) tested Duncan et al., (2009) model using a cross-sectional design and were therefore unable to draw conclusions as to whether the effect of mindful parenting on parent outcomes remains stable over time. Therefore, this study will use a prospective design with two time-points to assess time-lagged associations, focussing on trait mindful parenting.

It is hypothesised that the relationship between mindful parenting and child outcomes is influenced by parent outcomes, including parent wellbeing and child management practices (Duncan et al., 2009). For this current study, parenting stress was considered as a parental wellbeing outcome, and parenting style as a child management outcome (figure 2). This current study measured child QoL as a positive child outcome. Research exploring child outcomes in this context is limited. Therefore, it would be of benefit to attempt to replicate the findings by Serkel-Schrama et al., (2016) who explored mindful parenting and child QoL in the context of child T1D.

The overall aim of this current study was to examine how mindful parenting, illness specific parenting stress and parenting style are prospectively linked to parent's reports of their child's QoL in a parenting relationship where the child has a chronic health condition. The following research question was addressed: Is the association between mindful parenting and child QoL mediated by parental illness specific stress and authoritative parenting, when parenting a child with a chronic health condition?

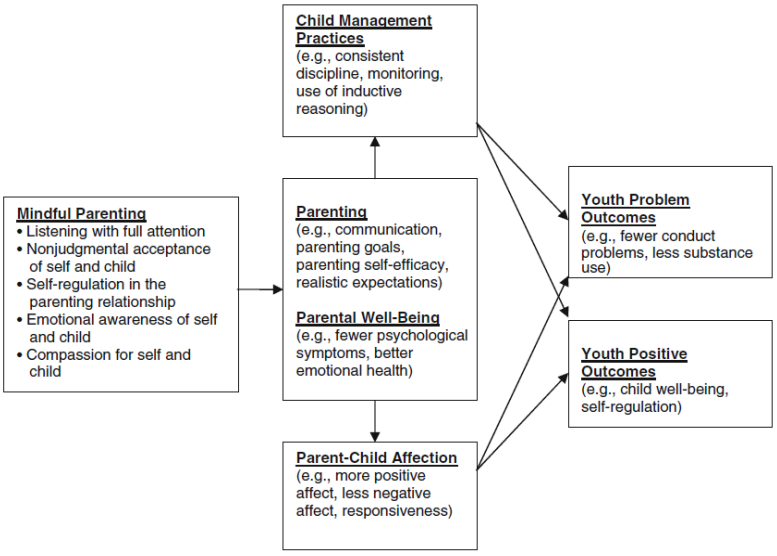

Figure 1: Duncan et al., (2009) hypothesised model of the influence of mindful parenting on child outcomes

Hypotheses:

1) Mindful parenting will be positively associated with child QoL at time one (T1) and time two (T2)
2) Mindful parenting will be negatively associated with illness specific parenting stress at T1 and T2
3) Mindful parenting will be positively associated with authoritative parenting style at T1 and T2
4) Authoritative parenting and parenting illness specific stress will be correlated with child QoL at T1 and T2
5) The relationship between mindful parenting and child QoL will be mediated by lower levels of parental stress and authoritative parenting style
6) Hypothesis 5 will remain stable across time points 1 and 2

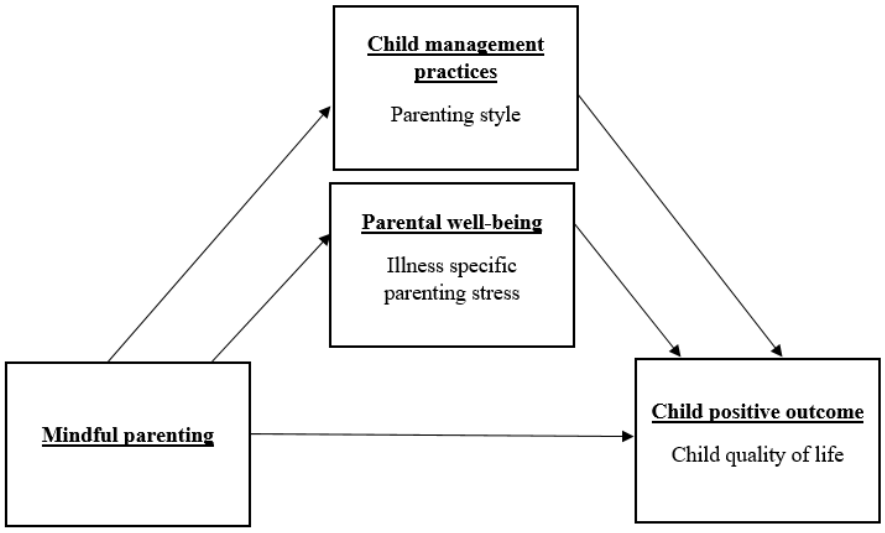

Figure 2: Aspects of Duncan et al's model that are being tested in this project

Method

Ethical Approval

This project received ethical approval from the NHS Proportionate Review Sub-committee of the London South-East Research Ethics Committee in June 2018 (Appendix A).

Design

A quantitative, prospective design was used to address the research question. The independent variable was mindful parenting. The dependent variable was the parental reports of their child's QoL. The mediators were illness specific parenting stress, and parenting style.

Participants

Parents of children (aged 2 to 18 years of age) who had T1D, asthma or epilepsy were invited to participate in this study. The parents were recruited in the UK.

Participants were excluded if they were unable to complete the measures (e.g. those who did not have access to a computer, who had difficulties with reading, those who were not fluent in English).

The majority of parents were female (95.6%) and mothers (95.2%). The majority of parents were within the age category of 31 to 40 years (41.2%) or 41 to 50 years (40.8%). Most parents held parental responsibility (99.2%) and were the primary caregiver (97.6%). There was almost an even split in child gender (49.2% female, 49.6% male). Almost half of the children were within the age category 8 to 12 years (44.8%), with an age range of 2 years to 18 years. The most common health condition amongst the children was T1D (66.8%).

Sample size

An a priori power analysis was completed using Cohen's tables (Cohen, 1992) to calculate the required sample size for this project. The effect size from the Serkel-

Schrama et al., (2016) paper on mindful parenting and the wellbeing of children with T1D (r = .29, medium effect size), the total of independent variables (n = 1) and the potential covariates (n = 7) in this study were used in the calculation (8 predictors). A sample size of 107 was required for power of 0.80 and a p-value of 0.05 at time two. In order to account for attrition rates due to the prospective design of the study, research by Hiskey and Troop (2002) was referred to as a guide. Hiskey and Troop (2002) assessed the viability of conducting online, longitudinal survey research and found 40% attrition over a three-month period. In order to account for 40% attrition in this study, a sample size of 178 participants was required at time one.

The baseline data for this study was collected in conjunction with another Trainee Clinical Psychologist as part of their doctoral thesis (see Appendix B for further information).

Recruitment

Recruitment took place August 2018 to January 2019. A purposive sampling method was used to recruit parents of children who attended three UK hospitals for routine appointments within asthma, T1D or epilepsy children's services. Clinical Psychologists from each of the hospitals who worked with children with the aforementioned chronic health conditions were contacted by the researchers to see whether they could support with recruitment. Staff members were asked to hand out leaflets (Appendix C) to the parents who attended the hospitals for routine appointments. The leaflet contained a link to Qualtrics (Qualtrics© 2018 software), online survey platform, which held the online survey for this study. The researchers also attended different clinics at the hospitals to hand out leaflets to potential participants. Prior to commencement of recruitment at the hospitals, NHS ethical approval had to be obtained, as well as individual approval from each hospital's research and development (R&D)

team (Appendix D). Following R&D approval, posters were placed in clinic waiting rooms (Appendix E).

Opportunistic and snowballing sampling methods were also used to recruit participants from charities that were specific to the chronic health conditions, via social media (e.g. Twitter and Facebook) and on websites that advertised online psychological studies. Adverts on social media contained a link to the Qualtrics© platform (Appendix F).

Procedure

T1: When participants entered the survey link into their personal web browsers, they were presented with an information sheet (Appendix G). Following the information sheet, participants were asked to read a consent form (Appendix H) and to tick the box on the survey if they wished to give their consent to participate. Participants could not access the survey unless they ticked the box to give their consent to participate. If participants gave their consent, they were then presented with a demographics questionnaire and a set of measures (see measures section for further information). If participants did not give their consent, they were directed to a page of information, which explained that they could not go any further (Appendix I).

Following completion of the baseline data, participants were asked to provide their email address so that the researchers could send a follow up link to the second phase of the study. Qualtrics© randomly allocated participant's email addresses into one of two follow up studies (this prospective survey study or the other Trainee Clinical Psychologist's separate intervention study).

T2: The participants, who were randomly allocated to this prospective survey study, were sent an email invitation, via Qualtrics©, following a four-week interval (in line with the time frame appropriate for completing the child QoL measure). The participants were asked to complete four of the same questionnaires from the baseline

phase, which were relevant to the research aims of the current study (measures of mindful parenting, illness-specific parenting stress, parenting style and child QoL).

Following completion of the T2 survey, participants were shown a debrief sheet (Appendix J). The participants were also asked to provide their email address if they wished to be entered into a prize draw (see ethical considerations section).

Measures

Demographic information. At baseline, participants completed a questionnaire that captured their demographic information including parent age, gender, relationship to the child, child age, child gender, child chronic health condition, parental responsibility and primary caregiver status (Appendix K)

Mindful parenting. The Interpersonal Mindfulness in Parenting Scale (IEM-P; Duncan, 2007) is a 10-item self-report measure that assesses mindful parenting. The statements that are to be rated in the questionnaire describe how parents interact with their child on a daily basis. The IEM-P has a rating scale of one ('never true') to five ('always true'). Higher scores on the IEM-P reflect higher levels of mindfulness in parenting. Responses on the IEM-P are scored as one total scale score, or three subscales ('awareness and present centred attention', 'non-judgement' and 'non-reactivity'). The total scale score was used in the current study. Participants completed the IEM-P at T1 and T2 of the current study. The reliability of the total IEM-P scale is acceptable ($\alpha = .72$; Duncan, 2007). In this study, the reliability of the measure was poor at T1 ($\alpha = .63$) and acceptable at T2 ($\alpha = .70$). (Appendix L).

Parenting stress. The Pediatric Inventory for Parents (PIP; Streisand, Braniecki, Tercyak, & Kazak, 2001) is a 42-item measure of parental stress related to parenting a child with an illness. The PIP items are grouped into four domains; 'communication', 'emotional functioning', 'medical care', and 'role function'. Participants use a five-point likert scale from one ('not at all') to five ('extremely') to respond to statements about the

frequency of each item over the last week and the level of difficulty associated with the item. Frequency and difficulty scores are scored separately under each domain. The scores are then added together to develop an overall frequency score and overall difficulty score. The PIP has good reliability (Frequency: α = .95; Difficulty: α = .96) and construct validity (Streisand, Braniecki, Tercyak, & Kazak, 2001). Reliability analysis for the PIP scale in the current study was good for both Frequency (α = .95) and difficulty (α = .96) subscales at T1, and both Frequency (α = .97) and difficulty (α = .97) subscales at T2. (Appendix M).

Parenting style. The Parenting Styles and Dimensions Questionnaire short form (PSDQ; Robinson, Mandleco, Olsen, & Hart, 1995) is a 32-item self-report measure of parenting style. When scored, the items are organised into three factors: Authoritative, authoritarian and permissive parenting styles. The statements refer to different reactions that parents have to their child's behaviours. Responses are given on a five-point likert scale from one ('never') to five ('always'). Participants receive a mean score for each factor. This measure has adequate to good reliability for each parenting style dimension (Authoritative: α = 0.91; Authoritarian: α = 0.86; Permissive: α = 0.75) and adequate construct validity (Locke & Prinze, 2002). Participants completed the PSDQ at T1 and T2. All items on the PSDQ were administered at both time points, but only the authoritative factor outcomes were used in the analysis of this study. The reliability of the authoritative subscale in this study was good at T1 (α = .86) and at T2 (α = .88). (Appendix N).

Parent proxy report of child QoL. The Pediatric QoL Scale (PedsQL; Varni, Seid, & Rode, 1999) measures parent's perception of their child's QoL in the context of their chronic health condition. The PedsQL has four subscales: Physical, emotional, social and school functioning. The PedsQL is analysed using the 'physical functioning' subscale (physical subscale only), and the 'psychosocial functioning' subscale (emotional, social

and school) as well as a total scale score for all items. Participants use a five-point likert scale from zero ('never') to four ('almost always') to rate their child's QoL over the last month. The form for children aged two to four years includes 21 items. The other forms for ages five to seven years, eight to twelve years and thirteen to eighteen years all include 23 items. The PedsQL has good reliability between patient and parent reports (α = 0.86) and good internal consistency (α = .93) (Varni, Seid, & Rode, 1999). In this study, the reliabilities of the total scale and subscales were good across all age groups at T1 (ranging from α = .87 to α = .95) and T2 (α = .76 to α = .96). (Appendix O). See Appendix P for a full reporting of scale reliabilities across all age groups and scales on the PedsQL.

Ethical considerations

The researchers applied for ethical approval via NHS Proportionate review. Proportionate review was appropriate as the participants would remain anonymous and the questionnaires were not highly sensitive. This research was also conducted in accordance with the British Psychological Society (BPS) ethics guidance for internet-mediated research (BPS, 2017).

Participants were informed that they could withdraw from the research, if they wished to, up to the completion of data analysis. The participants were asked to provide their email address after completing the baseline questionnaires. Participant's email addresses were used to send the link to the second stage of the study (T2), to send reminder emails about completing T2 of the study in order to increase response rates, and to enable an email to be sent to the winner of the prize draw. Participant email addresses were encrypted and stored on a private computer. The email addresses were only accessible to the lead researcher, and were deleted after analysis and the prize draw.

Participants were provided with information for the Samaritans, were advised to contact their GP, and given the details of the appropriate charities in case participating in the research was distressing for them in any way.

Participants were offered the option to receive information about the outcomes of the study (by contacting the lead researcher). Participants were given the opportunity to enter into a prize draw for their participation in the study. The prize was £50.00 Amazon vouchers. This amount was deemed a proportionate amount to incentivise participation without coercion (BPS Code of Ethics, 2010).

Data analysis

Data was analysed using the Statistical Package for the Social Sciences (SPSS, Version 25, IMB Corp, 2017).

Data screening. T1 and T2 datasets were checked for missing data. Participant's data was excluded from analysis if they had more than 80% of items within a questionnaire missing, or if at least one full questionnaire was incomplete at either time point. If questionnaires had missing items of less than 80%, linear interpolation was used (Noor, Yahaya, Ramil, & Bakri, 2014). Parametric assumptions of normality were conducted and outliers were examined for errors in data entry or coding. No errors in the data were found; therefore, the outliers remained in the dataset as it was assumed that they reflected the participant's true scores (Field, 2018). Histograms and *QQ* plots (Appendix Q) were analysed to check the normality of the data. All distributions were considered normal although two were slightly skewed. Parametric statistics were reported for all continuous outcomes, as parametric tests are robust enough to manage small deviations in normality (Field, 2018).

Descriptive and baseline analysis. Descriptive analyses were completed for all baseline demographics and outcome variable (percentages were calculated for demographic data; means and standards deviations were calculated for continuous data). Due to the estimated attrition rate from T1 to T2, chi-square tests and independent samples *t*-tests were conducted to assess whether there were statistically significant differences in the participant demographics, and the baseline continuous data, of those

who had full data sets across T1 and T2 (completers) compared to those who did not complete T2 measures (non-completers).

Preliminary analysis. To test whether mindful parenting was associated with parenting stress, authoritative parenting style, and child QoL, bivariate correlation analyses were conducted. Independent sample *t-test*s and One Way Analysis of Variance (ANOVA) were conducted to analyse whether there were statistically significant differences in the outcomes on the dependent variable (child QoL) for the different demographic groups at baseline. Outcomes from *t-test*s and ANOVAS would be controlled for as covariates in the mediation analysis.

Planned mediation analyses. Indirect effects and direct effects were analysed using PROCESS Macro (Hayes, 2012) in SPSS. PROCESS Macro for mediation analysis produces outcomes of direct effects (path 'c' from the IV to the DV), and indirect effects (path 'a' from the IV to the mediator, and 'b' path from the mediator to the DV) (Preacher & Hayes, 2004). PROCESS Macro uses bootstrapping (5,000 bootstrapped samples from the dataset) to estimate the indirect effects. This method accounts for non-normality in distributions (Preacher & Hayes, 2004). Indirect and direct effects were tested cross-sectionally (all T1 variables) and prospectively (T1 mindful parenting, parenting stress and parenting style and T2 child QoL outcomes).

Results

Descriptive and baseline analysis

The T1 survey was completed by 329 participants. Of the 329, 74 participants were excluded as five participant's children were under the age of two so they could not complete the PedsQL, and 69 participants had incomplete data sets (>80% missing data across measures or within one measure). Of the 255 participants who were invited to complete T2, 172 completed the T2 survey. There was an attrition rate of 33% from T1 to T2. Of the 172 participants at T2, 39 were excluded as they had more than 80% data

missing across measures or within one measure. A further five participant's data was excluded from analyses due to completing the T1 or T2 survey twice. In total, there were 250 completed T1 data sets and 133 matched, completed T2 data sets.

Demographic descriptive statistics and results of the statistical analysis for the differences between completers (n = 133) and non-completers (n = 117) are presented in Table 1. Where statistical analyses revealed assumptions had been violated, likelihood ratios were reported. There were no significant differences between completers and non-completers on participant demographics. There were no significant differences between completers and non-completers across the majority of the outcome measures (Table 2). There were significant differences between completers and non-completers on the PedsQL total score and subscale scores. The mean scores showed that non-completers had lower mean scores on the PedsQL compared to completers.

Preliminary analysis

Table 3 shows the Pearson's Product Moment correlations for the continuous variables. Table 4 shows the *t-test*s and ANOVA outcomes for categorical variables.

Correlations between variables. T1 and T2 mindful parenting did not significantly correlate with T1 and T2 child QoL outcomes (total or subscale scores). Therefore, hypothesis one was not supported. T1 and T2 mindful parenting did not significantly correlate with the T1 and T2 illness specific parenting stress outcomes (for both subscales); therefore, hypothesis two was not supported. In support of hypothesis three, mindful parenting was significantly correlated with authoritative parenting style at T1 and T2. Hypothesis four was partially supported; T1 and T2 authoritative parenting style did not correlate significantly with child QoL outcomes (total or subscale scores). However, T1 and T2 illness specific parenting stress did negatively correlate with child QoL (total and subscale scores).

Testing for covariates. Table 4 summarises the *t-test* and ANOVA outcomes for the baseline categorical variables. There were significant differences in the baseline DV outcomes across parent age categories and child chronic health condition categories.

The mean score for the 41 to 50 years age group on the total PedsQL scale (*M* = 61.72, *SD* = 19.35) was significantly larger than the 20 and under age group (*M* = 40.22, *SD* = 20.00) and the 31 to 40 age group (*M* = 53.87, *SD* = 19.69). Similarly, the mean score for the 41 to 50 age group on the psychosocial subscale score on the PedsQL (*M* = 57.75, *SD* = 20.44) was significantly larger than the 20 and under age group (*M* = 35.24, *SD* = 17.60). The mean score for group the 41 to 50 years age group on the physical subscale score of the PedsQL (M = 69.18, SD = 21.62) was significantly larger than the 21 to 30 age group (*M* = 52.21, *SD* = 22.39) and the 31 to 40 age group (*M* = 58.98, *SD* = 23.23). There were no other significant differences across the parent age groups on the PedsQL outcomes.

The mean score for parents with a child with epilepsy on the total PedsQL scale (*M* = 45.05, *SD* = 19.54) was significantly lower than T1D (*M* = 60.78, *SD* = 17.95) and asthma (*M* = 63.58, *SD* = 19.96). Similarly, the mean score for epilepsy on the psychosocial subscale of the PedsQL (*M* = 42.66, *SD* = 19.21) was significantly lower than T1D (*M* = 57.48, *SD* = 18.76) and asthma (*M* = 62.58, *SD* = 22.57). The mean physical subscale score on the PedsQL for epilepsy (*M* = 49.57, *SD* = 26.61) was also significantly lower from T1D (*M* = 66.99, *SD* = 20.69) and asthma (*M* = 65.44, *SD* = 18.37). There was no significant difference between T1D and asthma on the PedsQL outcomes. Due to aforementioned differences in the DV outcomes, parent age and child chronic health were entered as covariates in subsequent analyses.

Table 1

Baseline demographics overall, by completion status and test statistics for group differences

Variable	Baseline total (250) *n* (%)	Completers (133) *n* (%)	Non-completers (117) *n* (%)	Completers (133) v non-completers (117)
Gender of parent				$\chi^2 = 1.037$, $p = .154$
Male	11 (4.4)	8 (6.0)	3 (2.6)	
Female	239 (95.6)	125 (94.0)	114 (97.4)	
Parent age category (years)				$\chi^2 = 6.708$, $p = .166$
<20	7 (2.8)	4 (3.0)	3 (2.6)	
21-30	17 (6.8)	5 (3.8)	12 (10.3)	
31-40	103 (41.2)	54 (40.6)	49 (41.9)	
41-50	102 (40.8)	61 (45.9)	41 (35.0)	
>50	21 (8.4)	9 (6.8)	12 (10.3)	
Primary caregiver				$\chi^2 = 3.528$, $p = .101$
Yes	244 (97.6)	132 (99.2)	112 (95.7)	
No	6 (2.4)	1 (0.8)	5 (4.3)	
Parental responsibility				$\chi^2 = .008$, $p = 1.00$
Yes	248 (99.2)	132 (99.2)	116 (99.1)	
No	2 (0.8)	1 (0.8)	1 (0.9)	

Variable	Baseline total (250) *n* (%)	Completers (133) *n* (%)	Non-completers (117) *n* (%)	Completers (133) v non-completers (117)
Relationship to child				$\chi^2 = 1.986$, $p = .754$
Biological mother	238 (95.2)	125 (94.0)	113 (96.6)	
Biological father	9 (3.6)	6 (4.5)	3 (2.6)	
Biological grandparent	1 (0.4)	10.8)	0 (0.0)	
Other	2 (0.8)	1(0.8)	1 (0.9)	
Child gender				$\chi^2 = .169$, $p = .658$
Male	124 (49.6)	68 (51.1)	56 (47.9)	
Female	123 (49.2)	63 (47.4)	60 (51.3)	
		2 (1.5)	1 (0.9)	
Child age category(years)				$\chi^2 = 2.014$, $p = .733$
2-4	21 (8.4)	11 (8.3)	10 (8.5)	
5-7	46 (18.4)	24 (18.0)	22 (18.8)	
8-12	112 (44.8)	61 (45.9)	51 (43.6)	
13-16	57 (22.8)	32 (24.1)	25 (21.4)	
17+	14 (5.6)	5 (3.8)	9 (7.7)	
Chronic health condition				$\chi^2 = 3.453$, $p = .384$
T1D	167 (66.8)	94 (70.7)	73 (62.4)	
Epilepsy	65 (26.0)	30 (22.6)	35 (29.9)	
Asthma	17 (6.8)	9 (6.8)	8 (6.8)	
Prefer not to say	1 (0.4)	0 (0)	1 (0.9)	

Note. χ^2 = chi-square statistic

Table 2

Baseline and T2 outcome scores by completion status with group difference statistics

Variable	Completers Mean (*SD*)	Non-completers Mean (*SD*)	Completers v non-completers
T1IEMP	35.20 (4.33)	35.26 (3.92)	$t(248) = 0.102$, $p = .919$
T1PIPOFT	130.97 (32.26)	137.85 (29.54)	$t(248) = 1.750$, $p = .081$
T1PIPDIF	126.46 (31.51)	133.90 (32.52)	$t(248) = 1.834$, $p = .068$
T1AUTHIVE	3.98 (0.52)	3.97 (0.52)	$t(248) = -.150$, $p = .881$
T1PEDSTOT	60.11 (20.08)	52.88 (18.88)	$t(248) = -2.919$, $p = .004$*
T1PEDSPSYSOC	57.23 (20.72)	49.96 (19.26)	$t(248) = -2.862$, $p = .005$*
T1PEDSPHYS	65.55 (22.70)	58.39 (23.88)	$t(248) = -2.431$, $p = .016$*
T2IEMP	35.44 (4.16)	38.33 (2.31)	-
T2PIPOFT	123.79 (33.37)	111.17 (31.32)	-
T2PIPDIF	121.26 (33.36)	90.00 (27.84)	-
T2AUTHIVE	3.79 (0.49)	4.09 (0.17)	-
T2PEDSTOT	60.75 (20.20)	73.81 (26.94)	-
T2PEDSPSYSOC	58.10 (20.70)	75.00 (29.92)	-
T2PEDSPHYS	65.74 (23.49)	71.88 (22.10)	-

Note. IEMP = Interpersonal Mindfulness in Parenting Scale; PIPOFT = Pediatric Inventory for Parents 'how often' subscale; PIPDIF = Pediatric Inventory for Parents 'how difficult' subscale; AUTHIVE = Parenting Styles and Dimensions Questionnaire 'authoritative' subscale; PEDSTOT = Pediatric QoL Scale total; PEDSPSYSOC = Pediatric QoL Scale psychosocial subscale; PEDSPHYS = Pediatric QoL Scale physical subscale; *$p < .05$

Table 3

Correlations between continuous variables at T1 (N=250) and T2 (N=133)

Variable	1	2	3	4	5	6	7
1. IEMP	-	-.015	-.094	.511**	.026	.052	-.018
2. PIPOFT	.040	-	.765**	.038	-.688**	-.673**	-.588**
3. PIPDIF	-.016	.773**	-	-.014	-.657**	-.659**	-.531**
4. AUTHIVE	.567**	.145*	.035	-	-.007	-.002	-.009
5. PEDSTOT	.051	-.643**	-.640**	.039	-	.958**	.888**
6. PEDSPSYSOC	.031	-.616**	-.608**	.023	.954**	-	.719**
7. PEDSPHYS	.074	-.560**	-.565**	.059	.877**	.693**	-

Notes: T1 data is presented to the left and below the diagonal, T2 data is presented above the diagonal to the right: *$p < .05$; ** $p < .01$; IEMP = Interpersonal Mindfulness in Parenting Scale; PIPOFT = Pediatric Inventory for Parents 'how often' subscale; PIPDIF = Pediatric Inventory for Parents 'how difficult' subscale; AUTHIVE = Parenting Styles and Dimensions Questionnaire 'authoritative' subscale; PEDSTOT = Pediatric QoL Scale total; PEDSPSYSOC = Pediatric QoL Scale psychosocial subscale; PEDSPHYS = Pediatric QoL Scale physical subscale.

Table 4

T-tests & ANOVAS for baseline categorical variables

IV	DV (PEDSTOT)	DV (PEDSPSYSOC)	DV (PEDSPHYS)
Parent gender	$t(248) = .786$, $p = .432$	$t(248) = 1.404$, $p = .162$	$t(248) = .257$, $p = .797$
Parent age	$F(4, 245) = 3.74$, $p = .006$*, $\eta^2 = .06$	$F(4, 245) = 3.22$, $p = .013$*, $\eta^2 = .05$	$F(4, 245) = 4.58$, $p = .000$**, $\eta^2 = .07$
Child gender	$t(245) = -.529$, $p = .597$	$t(245) = -.460$, $p = .646$	$t(245) = -1.076$, $p = .283$
Child age	$F(4, 245) = 1.056$, $p = .379$	$F(4, 245) = 1.416$, $p = .229$	$F(4, 245) = 1.97$, $p = 1.00$
Condition	$F(2, 246) = 18.097$, $p = .00$**, $\eta^2 = .01$	$F(2, 246) = 15.86$, $p = .00$**, $\eta^2 = .01$	$F(2, 246) = 14.52$, $p = .00$**, $\eta^2 = .01$

Note. $n = 250$; IV = independent variable; DV = dependent variable; PEDSTOT = Pediatric QoL Scale total; PEDSPSYSOC = Pediatric QoL Scale psychosocial subscale; PEDSPHYS = Pediatric QoL Scale physical subscale; *$p < .05$; ** $p < .01$; η^2 = eta squared (effect size statistic) calculated for significant ANOVA outcomes.

Planned mediation analysis

Due to the fact that neither of the mediators (parenting stress and authoritative parent) correlating with both the IV (mindful parenting) and DV (child QoL), hypotheses five and six could not be tested. For a mediation analysis, it is recommended that there be evidence of a significant indirect effect (between the IV and mediator, and mediator and DV) (Rucker, Preacher, Tormala & Petty, 2011; Field, 2018). In this study, the mediators correlated with either the IV (mindful parenting with authoritative parenting) or the DV (illness specific parenting stress with child QoL). Therefore, mediation analysis was not appropriate, as there was no evidence of a statistically significant association between the variables.

Exploratory moderation analysis

Correlation analyses revealed significant, negative associations between illness specific parenting stress (frequency and difficulty) and child QoL (total and subscale scores). As illness specific parenting stress increases, child QoL decreases. Due to the prevalence of the association between mindful parenting and parenting stress in the literature, further tests of this relationship were warranted, considering the influence of mindful parenting. This exploratory moderation analysis tested whether the relationship between parenting stress (frequency and difficulty) and child QoL (total and subscale scores) changed in strength as a function of mindful parenting. Two models indicated significant moderator effects of mindful parenting.

Illness specific parenting stress difficulty and child QoL total score. (A visual representation of this relationship as moderated by mindful parenting is presented in figure 3). In the overall model, 42% of the variance could be explained by all three variables: $F(3, 246) = 59.84$, $p = .000$, $R^2 = .42$. Parenting stress difficulty independently and significantly predicted total child QoL $b = -.93$, $t(246) = -3.63$, $p = .000$. However, mindful parenting did not independently predict total child QoL. There was a significant

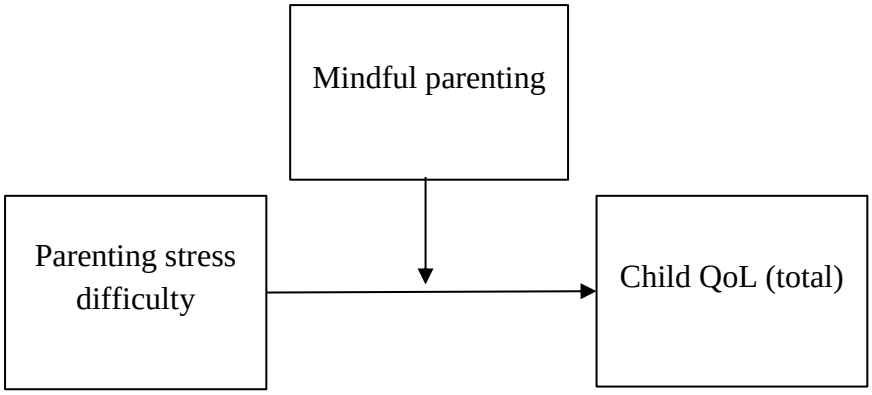

Figure 3. Mindful parenting as a moderator of the relationship between parenting stress difficulty and child total QoL

interaction between mindful parenting and stress difficulty in predicting child total QoL: $b = 0.02$, 95% CI [0.00, 0.03], $t(246) = 2.10$, $p = .04$. This indicates a significant moderator effect of mindful parenting; however, there were no significant transition points within the observed range of the moderator using the Johnson-Neyman method (as cited in Montoya, 2019, p. 64). The interaction remained significant when parent age category and child chronic health condition were entered as covariates $b = .02$, 95% CI [0.00, 0.03], $t(243) = 2.37$, $p = .02$. When the moderator analysis was tested longitudinally (T1 parenting stress and T2 total child QoL), the interaction became non-significant.

Illness specific parenting stress difficulty and QoL physical subscale score (A visual representation of this relationship as moderated by mindful parenting is presented in figure 4**).** In the overall model, 34% of the variance could be explained by all three variables: F (3, 246) = 41.97, p =.000, $R^2 = .34$. Parenting stress difficulty independently and significantly predicted child physical QoL: $b = -.42$, 95% CI [-.49, -.34], $t(246) = -11.03$, $p = .000$. Mindful parenting did not independently predict child physical QoL. There was a significant interaction between mindful parenting and stress difficulty in predicting child physical QoL: $b = .02$, $t(246) = 2.38$, $p = .02$. However, there were no significant transition points within the observed range of the moderator using the

Johnson-Neyman method (as cited in Montoya, 2019, p. 64). The interaction remained significant when parent age category and child chronic health condition were entered as covariates b = .02, 95% CI [0.00, 0.04], $t(243) = 2.72$, p = .01. When the moderator analysis was tested longitudinally (T1 parenting stress and T2 total child QoL), the interaction became non-significant.

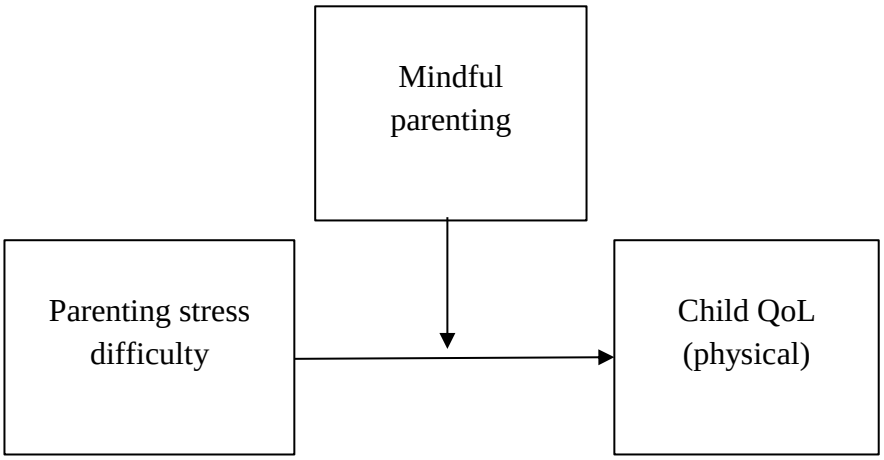

Figure 4. Mindful parenting as a moderator of the relationship between parenting stress difficulty and child physical QoL

Discussion

The aim of this study was to test whether mindful parenting, illness specific parenting stress and parenting style were prospectively linked to parent reports of child QoL when the child has a chronic health condition. Specifically, this study aimed to answer the research question; is the relationship between mindful parenting and child QoL mediated by illness specific parenting stress and authoritative parenting? The findings in this study suggest that there is no relationship between mindful parenting and child QoL. In addition, there is no relationship between mindful parenting and illness specific parenting stress (frequency or difficulty). Therefore, hypothesis one and two in this study were not supported. The findings of this study support hypothesis three, as there was a relationship between mindful parenting and authoritative parenting, and partially support hypothesis four as parenting stress was associated with child QoL. Unfortunately,

due to an absence of a relationship between mindful parenting and both mediators, plus both mediators with child QoL, a mediation analysis could not be conducted to test hypotheses five and six.

Exploratory moderation analyses were conducted to investigate whether mindful parenting influenced the relationship between parenting stress and child QoL. Evidence suggests that parenting stress is more prevalent when parenting a child with a chronic health condition, compared to parenting a child without a chronic health condition (Cousino & Hazen, 2013). In addition, parenting stress is associated with poor psychological adjustment in children with chronic health conditions (Cousino & Hazen, 2013; Wood et al, 2015). Mindful parenting has previously been linked to reduced levels of parenting stress (Gouveia, Carona, Canavarro, & Moirera, 2016), and is predicted to be an effective approach to targeting parental stress in the context of child chronic health (Emerson & Bogels, 2017). The exploratory moderation analyses revealed that mindful parenting affects the strength of the relationship between parenting stress difficulty and total child QoL scores, and child physical QoL scores. However, the specific way that mindful parenting effects the relationship is unclear. Caution should be taken when interpreting these findings due to the risk of potential type one error because of the exploratory analyses (Field, 2018).

The current study did not find that mindful parenting was associated positively with child QoL. This finding contrasts that of Serkel-Schrama et al., (2016), who found that mindful parenting was positively associated with child QoL in the context of childhood diabetes. The differences in the outcomes within this current study and Serkel-Schrama et al., study could be because of the constraints in the design of this study. A different mindful parenting measures was used by Serkel-Schrama et al., compared to this study; Serkel-Schrama et al., used an extended version of the IEM-P which had better reliability in their sample, compared to the original 10-item version used in this study. In

addition, Serkel Schrama et al., included parents of children with T1D only in their sample, which contrasts to this current study where wider samples of chronic health conditions were included. It could be possible that the association between mindful parenting and child QoL varies across health conditions. However, as this study and Serkel-Schrama et al., study are the only two to report on the relationship between mindful parenting and child chronic health in the literature, it is difficult, at this stage, to draw conclusions as to why differences in findings were apparent.

This study tested an aspect of Duncan et al., (2009) model of mindful parenting. The mindful parenting model developed by Duncan et al., was not originally conceptualised in the context of childhood chronic health conditions. The findings of this study regarding the association between mindful parenting, parent psychological symptoms and emotional health (parenting stress), parenting practices (authoritative parenting) and child QoL in the context of childhood chronic health conditions did not support the Duncan et al., model. However, this study grouped parent outcomes into one construct rather than testing the specific indirect association suggested by Duncan et al. It is important to acknowledge that parenting stress is only one aspect of parent's emotional health that may affect the relationship between mindful parenting and child QoL. For example, parental depression is directly associated with elevated emotional and behavioural difficulties in children (Mustillo, Dorsey, Conover & Burns, 2011). It is estimated that 15 million children live with parents who have depression (National Research Council and Institute of Medicine, 2009) and rates of depression in children with depressed parents range from 20 to 70% (Goodman, 2007). Parents with depression are more likely to engage in negative parenting practices (be critical or permissive; Jaser et al., 2008; England & Sim, 2009), spend less time with their children (Bronte-Tinkew, Moore, Matthews & Carrano, 2001; Palaez, Field, Pockens & Hart, 2008) and demonstrate lower levels of parental warmth (Schudlich & Cummings, 2007). It could be

suggested that parents' ability to engage in mindful parenting may also be affected by their experiences of depression or other, distinct factors that were not measured or controlled for in this study.

This study found that mindful parenting was positively associated with authoritative parenting which is in line with findings of previous research in normative samples (Bogels, Lehtonen, & Restifo, 2010). However, authoritative parenting in this study was not associated with child QoL, which is in contrast to other studies testing this association in the context of child chronic health (Botello-Harbaum, Nansel, Haynie, Iannotti, & Simons-Morton, 2008; Davis et al., 2001). This study focussed on authoritative parenting, and not authoritarian or permissive parenting due to findings that mindful parenting is more likely to be associated with positive parenting practices (e.g. authoritative parenting) (Gouveia, Carona, Canavarro, & Moreira, 2016; de bruin et al., 2014; Duncan et al., 2015). The significance of the association between mindful parenting and authoritative parenting in this study does not disregard that mindful parenting is associated with authoritarian or permissive parenting.

The findings of this study did not support previous research, which found that lower levels of parenting stress were associated with mindful parenting in normative samples (Bogels, Lehtonen, & Restifo, 2010; Gouveia, Carona, Canavarro, & Moreira, 2016) and in the context of child chronic health conditions (Pinquart, 2013). However, this study did find significant associations between parenting stress and child QoL, which supports findings of previous research (Wood, Miller, & Lehman, 2015). In this study, the measures of parenting stress and child QoL were developed for use in the context of childhood chronic health (PIP; Streisand, Braniecki, Tercyak, & Kazak, 2001; PedsQL; Varni, Seid, & Rode, 1999). The significance of the association between these variables supports the validity of the sampling, and precision of the measurement of these variables. While the moderation analyses revealed that mindful parenting influences the strength of

the relationship between parenting stress and child QoL, this interaction did not hold over time. It is therefore difficult to conclude that mindful parenting truly influences the strength of the relationship between parenting stress and child QoL due to methodological limitations in this study. Therefore, results of the cross-sectional moderation analyses should be interpreted with caution due to the threats on the statistical and internal validity of the analysis.

Strengths, limitations and future directions

The findings should be considered in light of several limitations. Firstly, the IEM-P used in this study had poor reliability at T1. Therefore, it cannot be confirmed that the 10-item IEM-P reliably measured mindful parenting in this sample. This shortened version of the original 31-item IEM-P was selected in order to reduce participant burden. However, this shortened measure has not been validated in a childhood chronic health sample. The only study of mindful parenting in a childhood chronic health sample is that of Serkel-Schrama et al., (2016) who used a 29 item Dutch version of the IEM-P. They found good reliability in the IEM-P in their sample. In addition, previous studies have measured different facets of mindful parenting that make up the subscales of mindful parenting measures (e.g. 'listening with full attention'). Further research into mindful parenting in the context of childhood chronic health would benefit from testing whether the findings in this study are replicated when using a mindful parenting measure with a greater number of items, and through testing subscales that reflect the different hypothesised components of mindful parenting.

This current study included parent proxy reports of child QoL, and not child self-reports. Parent proxy reports are common in child research (Lee et al., 2016) and the PedsQL has been found to be a valid and reliable parent-proxy measure of child health QoL (Varni, Seid, & Rode, 1999). However, research shows that while parents and children produce similar reports of the child's physical health, there is more discrepancy

between parent and children reports of ‘non-observable' aspects such as emotional functioning (Eiser & Morse, 2001). This current study is limited to parent only reports of child QoL, which may bias the outcomes. Future research would benefit from including both parent proxy and child self-reports of the child’s QoL.

The majority (95.2 %) of participants in this study were biological mothers. This percentage was similar to the study by Serkel-Schrama et al., (2016) who had 85% mothers in their sample. The small proportion of fathers in this study may indicate potential sampling bias making it difficult to generalise the findings to the parenting population. On the recruitment advertisements, participants were required to be primary caregivers. The majority of parents in this study were mothers, which may reflect that mothers are more likely to be primary caregivers. Future research would benefit from analysing whether being a primary caregiver influences the associations between mindful parenting and child outcomes. If it does not, then researchers could encourage more fathers to participate in research in this context, as fathers also experience greater levels of stress when parenting a child with a chronic health condition (Pinquart, 2013).

Despite the limitations of this study, this study has contributed to the limited evidence base in this area. This is the first study to analyse the role of mindful parenting in the context of different childhood chronic health conditions. Although the sample is mostly mothers, recruitment methods were maximised in this study to increase the ecological validity of the findings. NHS recruitment ensured a spread of childhood chronic health condition complexity, rather than relying purely on community or internet samples alone, where presentations may be less severe. In addition, online recruitment allowed contact to be made with a huge community of parents who are seeking support for themselves and their children. Recruitment across a range of samples also increased participation and provided the required sample size to adequately power this study, which strengthens the findings. This study also identified that QoL scores vary by type of

childhood chronic health condition, and parent age. Moreover, this study identified that parents of children with better QoL were more likely to participate in the longitudinal aspect of this research, possibly indicating that they have more resources to engage in such processes. These findings add to the evidence base and warrant future exploration to see whether the results can be replicated and extended.

Clinical implications

Notwithstanding the limitations outlined in this study, this study found no relationship between mindful parenting and child QoL, or mindful parenting and parenting stress. However, this study did find a significant moderator effect of mindful parenting on the relationship between parenting stress and child QoL (total and physical) on cross-sectional data. Mindful parenting has been tested as an intervention for child mental health in a group setting, and has been found to be effective (Meppelink, de Bruin, Wanders-Mulder, Vennik, & Bogels, 2016). However, mindful parenting in the context of child chronic health has not yet been tested extensively as an intervention (Emerson & Bogels, 2017). The results of this study suggest that targeting mindful parenting as a stand-alone factor may not contribute to change in child QoL. However, mindful parenting may be worth considering as an element of focus within an intervention that targets parenting stress in the context of child chronic health.

It is evident that parenting stress and child QoL are associated in this context. Clinicians would benefit from having an awareness of child QoL, and should consider the parent's levels of stress. Although we cannot predict cause and effect, we can see that greater parenting stress is linked to reduced QoL for children with chronic health conditions. Psychological assessment of children and their families who present to services in this context should include questions that focus on both parent and child QoL, to gain an holistic understanding of both parent and child.

Clinicians would benefit from becoming aware of online support groups and charities that are available to parents who have children with chronic health conditions. Clinicians could signpost parents and young people to online information, and local or national groups for further support.

Conclusion

This is the first study to examine the relationship between mindful parenting, parenting stress, parenting style and child QoL when parenting a child with a chronic health condition. Mindful parenting was not associated with child QoL, or parenting stress in this study, but was positively associated with authoritative parenting. Exploratory analyses revealed that mindful parenting influences the strength of the relationship between parenting stress and child QoL, but this relationship does not hold over time, and it is unclear how it specifically affects the cross-sectional relationship. Further research is needed to explore mindful parenting in this context, using a more reliable measure of mindful parenting. It would be of benefit for mindful parenting to be considered as a component in interventions that target parenting stress, rather than as a stand-alone parenting intervention. It is important that clinicians consider child QoL and parenting stress in the context of child chronic health.

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Appendix A

NHS ethical approval letters

NHS
Health Research Authority

London - South East Research Ethics Committee
Barlow House
3rd Floor
4 Minshull Street
Manchester
M1 3DZ

Please note: This is the favourable opinion of the REC only and does not allow you to start your study at NHS sites in England until you receive HRA Approval

21 June 2018

Miss Kirsteen Meheran
Trainee Clinical Psychologist
The University of Sheffield
Clinical Psychology Unit
Department of Psychology
Floor F, Cathedral Court
1 Vicar Lane, Sheffield
S1 2LT

Dear Miss Meheran

Study title:	**Parenting in the context of childhood chronic health conditions: The role of mindful parenting**
REC reference:	**18/LO/1060**
Protocol number:	**155727**
IRAS project ID:	**240190**

The Proportionate Review Sub-committee of the London - South East Research Ethics Committee reviewed the above application on 15 June 2018.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this favourable opinion letter. The expectation is that this information will be published for all studies that receive an ethical opinion but should you wish to provide a substitute contact point, wish to make a request to defer, or require further information, please contact hra.studyregistration@nhs.net outlining the reasons for your request. Under very limited circumstances (e.g. for student research which has received an unfavourable opinion), it may be possible to grant an exemption to the publication of the study.

Ethical opinion

On behalf of the Committee, the sub-committee gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

Conditions of the favourable opinion

The REC favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).

Guidance on applying for HRA and HCRW Approval (England and Wales)/ NHS permission for research is available in the Integrated Research Application System, www.hra.nhs.uk or at http://www.rdforum.nhs.uk.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of management permissions from host organisations.

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database. This should be before the first participant is recruited but no later than 6 weeks after recruitment of the first participant.

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to request a deferral for study registration within the required timeframe, they should contact hra.studyregistration@nhs.net. The expectation is that all clinical trials will be

registered, however, in exceptional circumstances non registration may be permissible with prior agreement from the HRA. Guidance on where to register is provided on the HRA website.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion").

Summary of discussion at the meeting

The PR Sub-Committee agreed that this was a well presented study with no material ethical issues.

Approved documents

The documents reviewed and approved were:

Document	*Version*	*Date*
Copies of advertisement materials for research participants [Social media advert]	1	20 December 2017
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only)		05 September 2017
IRAS Application Form [IRAS_Form_24052018]		24 May 2018
IRAS Checklist XML [Checklist_24052018]		24 May 2018
Letter from sponsor [Letter from sponsor for KM]	1	22 January 2018
Letters of invitation to participant [Leaflet invitation to participants attending appointments]	1	20 December 2017
Non-validated questionnaire [Demographics questionnaire]	1	20 December 2017
Other [Study 1 debrief]	1	22 November 2017
Other [NHS poster]	1	02 March 2018
Other [Linked study baseline questionnaire Perfectionistic cognitions inventory]	1	12 December 2017
Other [Linked study baseline questionnaire Self Compassion Scale]	1	12 December 2017
Other [Linked study baseline questionnaire_PANAS-X psychometric]	1	12 December 2017
Other [Linked study baseline questionnaire_ State self-compassion items]	1	12 December 2017
Other [Validation Clarification Email]		08 June 2018
Participant consent form [Participant consent form for overall project]	2	21 May 2018
Participant information sheet (PIS) [Participant information sheet for overall project]	2	20 December 2017
Referee's report or other scientific critique report		20 September 2017
Research protocol or project proposal [KM_protocol]	2	22 November 2017
Summary CV for Chief Investigator (CI) [KM_CV_Chief Investigator]	1	02 January 2018
Summary CV for student [KM_CV]	1	02 January 2018

Summary CV for supervisor (student research) [G.Rowse CV]	1	07 April 2018
Summary CV for supervisor (student research) [Supervisor CV F. Sirois]	1	07 April 2018
Summary, synopsis or diagram (flowchart) of protocol in non-technical language [Flowchart of full project]	2	30 April 2018
Validated questionnaire [Paediatric Inventory for Parents]		12 December 2017
Validated questionnaire [Interpersonal mindfulness in parenting scale]		12 December 2017
Validated questionnaire [Parenting styles a dimensions questionnaire]		12 December 2017
Validated questionnaire [PedsQL]		12 December 2017

Membership of the Proportionate Review Sub-Committee

The members of the Sub-Committee who took part in the review are listed on the attached sheet.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website:
http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/

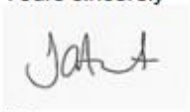
HRA Training

We are pleased to welcome researchers and R&D staff at our training days – see details at http://www.hra.nhs.uk/hra-training/

With the Committee's best wishes for the success of this project.

18/LO/1060	Please quote this number on all correspondence

Yours sincerely



pp
Ms Stephanie Cooper
Chair

Email: nrescommittee.london-southeast@nhs.net

Enclosures: *List of names and professions of members who took part in the review*

"After ethical review – guidance for researchers"

Copy to: *Mr Amrit Sinha*
Gillian Gatenby, Sheffield Children's NHS Foundation Trust Miss

Ymchwil Iechyd a Gofal Cymru
Health and Care Research Wales

NHS
Health Research Authority

Miss Kirsteen Meheran
Trainee Clinical Psychologist
The University of Sheffield
Clinical Psychology Unit
Department of Psychology, The University of Sheffield
Floor F, Cathedral Court, 1 Vicar Lane, Sheffield
S1 2LT

Email: hra.approval@nhs.net
Research-permissions@wales.nhs.uk

09 July 2018

Dear Miss Meheran

HRA and Health and Care Research Wales (HCRW) Approval Letter

Study title:	**Parenting in the context of childhood chronic health conditions: The role of mindful parenting**
IRAS project ID:	**240190**
Protocol number:	**155727**
REC reference:	**18/LO/1060**
Sponsor	**The University of Sheffield**

I am pleased to confirm that **HRA and Health and Care Research Wales (HCRW) Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

How should I continue to work with participating NHS organisations in England and Wales?
You should now provide a copy of this letter to all participating NHS organisations in England and Wales, as well as any documentation that has been updated as a result of the assessment.

Following the arranging of capacity and capability, participating NHS organisations should **formally confirm** their capacity and capability to undertake the study. How this will be confirmed is detailed in the "*summary of assessment*" section towards the end of this letter.

You should provide, if you have not already done so, detailed instructions to each organisation as to how you will notify them that research activities may commence at site following their confirmation of capacity and capability (e.g. provision by you of a 'green light' email, formal notification following a site initiation visit, activities may commence immediately following confirmation by participating organisation, etc.).

IRAS project ID	240190

It is important that you involve both the research management function (e.g. R&D office) supporting each organisation and the local research team (where there is one) in setting up your study. Contact details of the research management function for each organisation can be accessed here.

How should I work with participating NHS/HSC organisations in Northern Ireland and Scotland? (if applicable)
HRA and HCRW Approval does not apply to NHS/HSC organisations within the devolved administrations of Northern Ireland and Scotland.

If you indicated in your IRAS form that you do have participating organisations in either of these devolved administrations, the final document set and the study wide governance report (including this letter) has been sent to the coordinating centre of each participating nation. You should work with the relevant national coordinating functions to ensure any nation specific checks are complete, and with each site so that they are able to give management permission for the study to begin.

Please see IRAS Help for information on working with NHS/HSC organisations in Northern Ireland and Scotland.

How should I work with participating non-NHS organisations? (if applicable)
HRA and HCRW Approval does not apply to non-NHS organisations. You should work with your non-NHS organisations to obtain local agreement in accordance with their procedures.

What are my notification responsibilities during the study?
The document "*After Ethical Review – guidance for sponsors and investigators*", issued with your REC favourable opinion, gives detailed guidance on reporting expectations for studies, including:

- Registration of research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics, and is updated in the light of changes in reporting expectations or procedures.

I am a participating NHS organisation in England or Wales. What should I do once I receive this letter?
You should work with the applicant and sponsor to complete any outstanding arrangements so you are able to confirm capacity and capability in line with the information provided in this letter.

The sponsor contact for this application is as follows:

Name: Mr Amrit Sinha
Tel: 01142226650
Email: a.sinha@sheffield.ac.uk

IRAS project ID	240190

Who should I contact for further information?
Please do not hesitate to contact me for assistance with this application. My contact details are below.

Your IRAS project ID is **240190**. Please quote this on all correspondence.

Yours sincerely

Isobel Lyle | Senior Assessor
Health Research Authority
T: 0207 972 2496
HRA, Holland Dr, Newcastle upon Tyne NE2 4NQ
Hra.approval@nhs.net or Isobel.lyle@nhs.net
www.hra.nhs.uk

Copy to: *Mr Amrit Sinha, Sponsor, University of Sheffield*
Gillian Gatenby, Lead R&D, Sheffield Children's NHS Foundation Trust

IRAS project ID	240190

List of Documents

The final document set assessed and approved by HRA and HCRW Approval is listed below.

Document	*Version*	*Date*
Copies of advertisement materials for research participants [Social media advert]	1	20 December 2017
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only)		05 September 2017
HRA Schedule of Events [HRA assessed]	2.0	27 June 2018
HRA Statement of Activities [HRA assessed]	2.0	27 June 2018
IRAS Application Form [IRAS_Form_24052018]		24 May 2018
Letter from sponsor [Letter from sponsor for KM]	1	22 January 2018
Letters of invitation to participant [Leaflet invitation to participants attending appointments]	1	20 December 2017
Non-validated questionnaire [Demographics questionnaire]	1	20 December 2017
Other [Study 1 debrief]	1	22 November 2017
Other [NHS poster]	1	02 March 2018
Other [Linked study baseline questionnaire_Perfectionistic cognitions inventory]	1	12 December 2017
Other [Linked study baseline questionnaire_Self Compassion Scale]	1	12 December 2017
Other [Linked study baseline questionnaire_PANAS-X psychometric]	1	12 December 2017
Other [Linked study baseline questionnaire_ State self compassion items]	1	12 December 2017
Other [Validation Clarification Email]		08 June 2018
Participant consent form [Participant consent form for overall project]	2	21 May 2018
Participant information sheet (PIS)	3.0	03 July 2018
Referee's report or other scientific critique report		20 September 2017
Research protocol or project proposal [KM_protocol]	2	22 November 2017
Summary CV for Chief Investigator (CI) [KM_CV_Chief Investigator]	1	02 January 2018
Summary CV for student [KM_CV]	1	02 January 2018
Summary CV for supervisor (student research) [G.Rowse CV]	1	07 April 2018
Summary CV for supervisor (student research) [Supervisor CV F. Sirois]	1	07 April 2018
Summary, synopsis or diagram (flowchart) of protocol in non technical language [Flowchart of full project]	2	30 April 2018
Validated questionnaire [Paediatric Inventory for Parents]		12 December 2017
Validated questionnaire [Interpersonal mindfulness in parenting scale]		12 December 2017
Validated questionnaire [Parenting styles a dimensions questionnaire]		12 December 2017
Validated questionnaire [PedsQL]		12 December 2017

IRAS project ID	240190

Summary of assessment

The following information provides assurance to you, the sponsor and the NHS in England and Wales that the study, as assessed for HRA and HCRW Approval, is compliant with relevant standards. It also provides information and clarification, where appropriate, to participating NHS organisations in England and Wales to assist in assessing, arranging and confirming capacity and capability.

Assessment criteria

Section	Assessment Criteria	Compliant with Standards	Comments
1.1	IRAS application completed correctly	Yes	No comments
2.1	Participant information/consent documents and consent process	Yes	The content of the Patient Information sheet has been revised to include transparency wording as per GDPR
3.1	Protocol assessment	Yes	No comments
4.1	Allocation of responsibilities and rights are agreed and documented	Yes	A statement of activities will act as agreement of an NHS organisation to participate. The sponsor is not requesting and does not expect any other site agreement.
4.2	Insurance/indemnity arrangements assessed	Yes	No comments
4.3	Financial arrangements assessed	Yes	No application for funding is being made. No funding is being made to participating NHS organisations.
5.1	Compliance with the Data Protection Act and data security issues assessed	Yes	No comments
5.2	CTIMPS – Arrangements for compliance with the Clinical Trials Regulations assessed	Yes	No comments
5.3	Compliance with any applicable laws or regulations	Yes	No comments
6.1	NHS Research Ethics Committee favourable opinion	Yes	No comments

IRAS project ID	240190

Section	Assessment Criteria	Compliant with Standards	Comments
	received for applicable studies		
6.2	CTIMPS – Clinical Trials Authorisation (CTA) letter received	Yes	No comments
6.3	Devices – MHRA notice of no objection received	Yes	No comments
6.4	Other regulatory approvals and authorisations received	Yes	No comments

IRAS project ID	240190

Participating NHS Organisations in England and Wales

This provides detail on the types of participating NHS organisations in the study and a statement as to whether the activities at all organisations are the same or different.
There is one site 'type'. The participating NHS organisation(s) will act as a Participant Identification The Chief Investigator or sponsor should share relevant study documents with participating NHS organisations in England and Wales in order to put arrangements in place to deliver the study. The documents should be sent to both the local study team, where applicable, and the office providing the research management function at the participating organisation. If chief investigators, sponsors or principal investigators are asked to complete site level forms for participating NHS organisations in England and Wales which are not provided in IRAS, the HRA or HCRW websites, the chief investigator, sponsor or principal investigator should notify the HRA immediately at hra.approval@nhs.net or HCRW at Research-permissions@wales.nhs.uk. We will work with these organisations to achieve a consistent approach to information provision.

Principal Investigator Suitability

This confirms whether the sponsor position on whether a PI, LC or neither should be in place is correct for each type of participating NHS organisation in England and Wales, and the minimum expectations for education, training and experience that PIs should meet (where applicable).
The Chief Investigator will be responsible for research activities at site. GCP training is not a generic training expectation, in line with the HRA/HCRW/MHRA statement on training expectations.

HR Good Practice Resource Pack Expectations

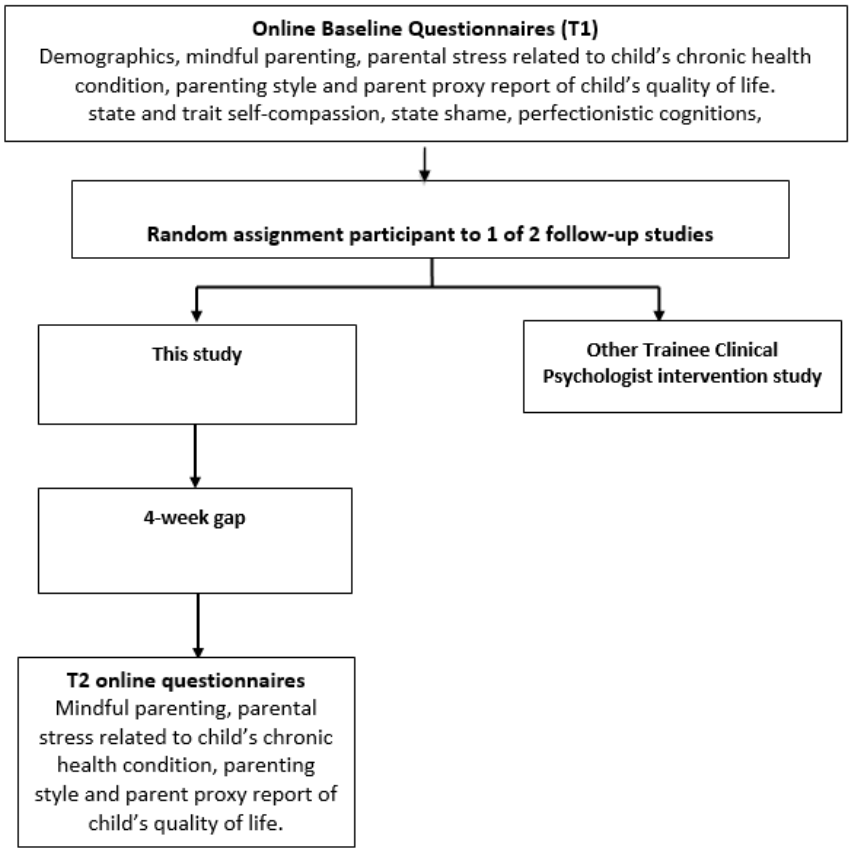
This confirms the HR Good Practice Resource Pack expectations for the study and the pre-engagement checks that should and should not be undertaken
Where arrangements are not already in place, research staff not employed by the NHS host organisation undertaking any of the research activities listed in the research application would be expected to obtain a Letter of Access based on standard DBS checks and occupational health clearance.

Other Information to Aid Study Set-up

This details any other information that may be helpful to sponsors and participating NHS organisations in England and Wales to aid study set-up.
The applicant has indicated that they do not intend to apply for inclusion on the NIHR CRN Portfolio.

Appendix B

Details of the aspects of the project conducted in collaboration with another trainee clinical psychologist (shared baseline survey)



Element of research	Overlap between studies (✔ = Yes, ✘ = No)
Design	✘
Variables of interest	✘
Participant data included at baseline	✘
Participant data included at follow-up	✘
Sample size	✘
Materials used to recruit for baseline (e.g. leaflets)	✔
Procedure up to completion of baseline	✔
Procedure following completion of baseline	✘
Baseline measures of interest	✘
Follow-up measures	✘
Analysis	✘
Ethics	✘
Costing	✘
Information and consent form	✔
Debrief sheet	✘
Analysis	✘
Write up	✘

Appendix C

Recruitment leaflet

ARE YOU A PARENT OF A CHILD WITH TYPE 1 DIABETES, ASTHMA OR EPILEPSY?

If so, we would like to invite you to take part in a research study exploring parenting experiences in the context of caring for a child with a chronic health condition.

Anyone who has parental responsibility for a child under 18 with type 1 diabetes, asthma or epilepsy is eligible to participate.

The study involves completing a set of online questionnaires (this will take 20-30 minutes), then either:

- Completing the same questionnaires again four weeks later
- OR taking part in a short online task aiming to support parents with managing the stress of caring for a child with a chronic health condition followed by some of the same questionnaires to see if it helped.

You may or may not find some of the questions feel intrusive, but you can stop them at any time and contact the researcher if you do feel this way. Your responses will be anonymous.

For participating you will be given a chance to win a £50 Amazon voucher.

For more information and/or to participate please follow this link:
https://sheffieldpsychology.eu.qualtrics.com/jfe/form/SV_8cOWJqJYCll1wR7

Or scan this barcode using your mobile phone!

Many thanks!!

The University Of Sheffield.

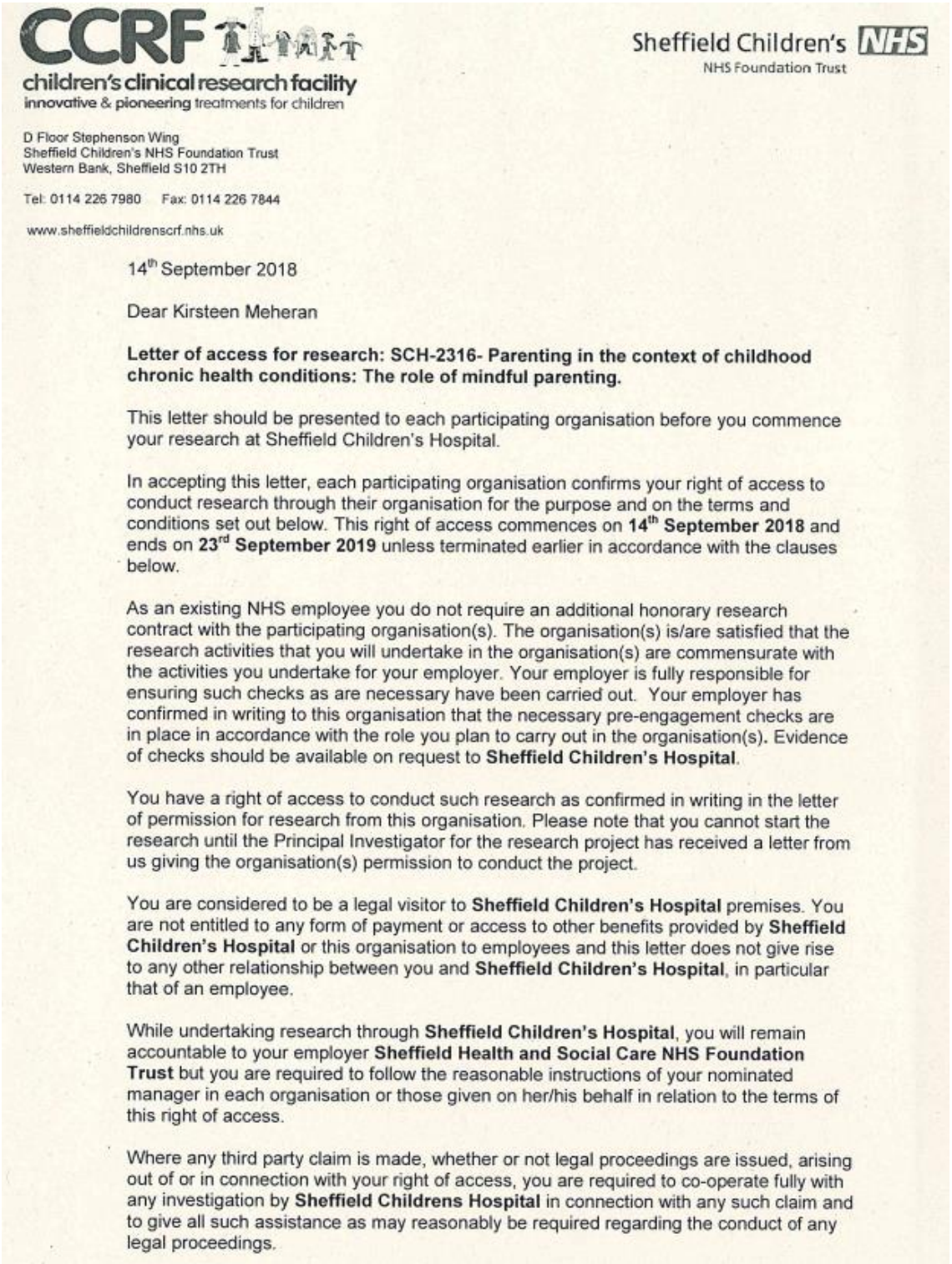
NHS

This research is being conducted by Kirsteen Meheran and Catherine Lilley (Trainee Clinical Psychologists), under the supervision of Dr Fuschia Sirois (f.sirois@sheffield.ac.uk) and Dr Georgina Rowse (g.rowse@sheffield.ac.uk) from the Department of Psychology at the University of Sheffield. It has received ethics approval from the NHS Ethical Review board.

Appendix D

Hospital approval letters

Sheffield Children's Hospital



CCRF children's clinical research facility
innovative & pioneering treatments for children

Sheffield Children's NHS
NHS Foundation Trust

D Floor Stephenson Wing
Sheffield Children's NHS Foundation Trust
Western Bank, Sheffield S10 2TH

Tel: 0114 226 7980 Fax: 0114 226 7844

www.sheffieldchildrenscrf.nhs.uk

14th September 2018

Dear Kirsteen Meheran

Letter of access for research: SCH-2316- Parenting in the context of childhood chronic health conditions: The role of mindful parenting.

This letter should be presented to each participating organisation before you commence your research at Sheffield Children's Hospital.

In accepting this letter, each participating organisation confirms your right of access to conduct research through their organisation for the purpose and on the terms and conditions set out below. This right of access commences on **14th September 2018** and ends on **23rd September 2019** unless terminated earlier in accordance with the clauses below.

As an existing NHS employee you do not require an additional honorary research contract with the participating organisation(s). The organisation(s) is/are satisfied that the research activities that you will undertake in the organisation(s) are commensurate with the activities you undertake for your employer. Your employer is fully responsible for ensuring such checks as are necessary have been carried out. Your employer has confirmed in writing to this organisation that the necessary pre-engagement checks are in place in accordance with the role you plan to carry out in the organisation(s). Evidence of checks should be available on request to **Sheffield Children's Hospital**.

You have a right of access to conduct such research as confirmed in writing in the letter of permission for research from this organisation. Please note that you cannot start the research until the Principal Investigator for the research project has received a letter from us giving the organisation(s) permission to conduct the project.

You are considered to be a legal visitor to **Sheffield Children's Hospital** premises. You are not entitled to any form of payment or access to other benefits provided by **Sheffield Children's Hospital** or this organisation to employees and this letter does not give rise to any other relationship between you and **Sheffield Children's Hospital**, in particular that of an employee.

While undertaking research through **Sheffield Children's Hospital**, you will remain accountable to your employer **Sheffield Health and Social Care NHS Foundation Trust** but you are required to follow the reasonable instructions of your nominated manager in each organisation or those given on her/his behalf in relation to the terms of this right of access.

Where any third party claim is made, whether or not legal proceedings are issued, arising out of or in connection with your right of access, you are required to co-operate fully with any investigation by **Sheffield Childrens Hospital** in connection with any such claim and to give all such assistance as may reasonably be required regarding the conduct of any legal proceedings.

You must act in accordance with **Sheffield Children's Hospital** policies and procedures, which are available to you upon request, and the Research Governance Framework. You are required to co-operate with **Sheffield Children's Hospital** in discharging its duties under the Health and Safety at Work etc Act 1974 and other health and safety legislation and to take reasonable care for the health and safety of yourself and others while on **Sheffield Children's Hospital** premises. Although you are not a contract holder, you must observe the same standards of care and propriety in dealing with patients, staff, visitors, equipment and premises as is expected of a contract holder and you must act appropriately, responsibly and professionally at all times.

If you have a physical or mental health condition or disability which may affect your research role and which might require special adjustments to your role, if you have not already done so, you must notify your employer and each participating organization prior to commencing your research role at each site.

You are required to ensure that all information regarding patients or staff remains secure and *strictly confidential* at all times. You must ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice and the Data Protection Act 2018. Furthermore you should be aware that under the Act, unauthorised disclosure of information is an offence and such disclosures may lead to prosecution.

The organisation(s) will not indemnify you against any liability incurred as a result of any breach of confidentiality or breach of the Data Protection Act 1998. Any breach of the Data Protection Act 2018 may result in legal action against you and/or your substantive employer.

You should ensure that, where you are issued with an identity or security card, a bleep number, email or library account, keys or protective clothing, these are returned upon termination of this arrangement. Please also ensure that while on the premises you wear your ID badge at all times, or are able to prove your identity if challenged. Please note that the organisation(s) accept no responsibility for damage to or loss of personal property.

This letter may be revoked and your right to attend the organisation(s) terminated at any time either by giving seven days' written notice to you or immediately without any notice if you are in breach of any of the terms or conditions described in this letter or if you commit any act that we reasonably consider to amount to serious misconduct or to be disruptive and/or prejudicial to the interests and/or business of the organisation(s) or if you are convicted of any criminal offence. You must not undertake regulated activity if you are barred from such work. If you are barred from working with adults or children this letter of access is immediately terminated. Your employer will immediately withdraw you from undertaking this or any other regulated activity and you MUST stop undertaking any regulated activity immediately.

Your substantive employer is responsible for your conduct during this research project and may in the circumstances described above instigate disciplinary action against you.

If your circumstances change in relation to your health, criminal record, professional registration or suitability to work with adults or children, or any other aspect that may impact on your suitability to conduct research, or your role in research changes, you must inform the organisation that employs you through its normal procedures. You must also inform the nominated manager in each participating organisation.

Yours sincerely

D. Nash

Dominic Nash
R&D Manager, Sheffield Children's NHS Foundation Trust
cc: HR department at Sheffield Children's NHS Foundation Trust
HR department of the substantive employer (and provider of honorary clinical contract, where applicable)

Alder Hey Children's Hospital

Alder Hey Children's NHS
NHS Foundation Trust

Alder Hey
Eaton Road
Liverpool
L12 2AP

Telephone: 0151 228 4811
www.alderhey.com

1st August 2018

Kirsteen Meheran

Dear Kirsteen,

Letter of Access for Research

This letter confirms your right of access to conduct research through Alder Hey Children's NHS Foundation Trust for the purpose and on the terms and conditions set out below. This right of access commences on 1st August 2018 and will end 30th September 2019, unless terminated earlier in accordance with the clauses below.

You have a right of access to conduct such research as confirmed in writing in the letter of permission for research from this NHS organisation. Please note that you cannot start the research until the Principal Investigator for the research project has received a letter from us giving permission to conduct the project.

The information supplied about your role in research at Alder Hey Children's NHS Foundation Trust has been reviewed and you do not require an honorary research contract with this NHS organisation. We are satisfied that such pre-engagement checks as we consider necessary have been carried out.

You are considered to be a legal visitor to Alder Hey Children's NHS Foundation Trust premises. You are not entitled to any form of payment or access to other benefits provided by this NHS organisation to employees and this letter does not give rise to any other relationship between you and this NHS organisation, in particular that of an employee.

While undertaking research through Alder Hey Children's NHS Foundation Trust you will remain accountable to your employer, Sheffield Health and Social Care NHS, but you are required to follow the reasonable instructions of your Research Supervisor, Dr Anna Simmons, in this NHS organisation or those given on their behalf in relation to the terms of this right of access.

Where any third party claim is made, whether or not legal proceedings are issued, arising out of or in connection with your right of access, you are required to co-operate fully with any investigation by this NHS organisation in connection with any such claim and to give all such assistance as may reasonably be required regarding the conduct of any legal proceedings.

You must act in accordance with Alder Hey Children's NHS Foundation Trust policies and procedures, which are available to you upon request, and the Research Governance Framework.

You are required to co-operate with Alder Hey Children's NHS Foundation Trust in discharging its duties under the Health and Safety at Work etc Act 1974 and other health

and safety legislation and to take reasonable care for the health and safety of yourself and others while on Alder Hey Children's NHS Foundation Trust premises. You must observe the same standards of care and propriety in dealing with patients, staff, visitors, equipment and premises as is expected of any other contract holder and you must act appropriately, responsibly and professionally at all times.

You are required to ensure that all information regarding patients or staff remains secure and *strictly confidential* at all times. You must ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice (http://www.dh.gov.uk/assetRoot/04/06/92/54/04069254.pdf) and the Data Protection Act 1998. Furthermore you should be aware that under the Act, unauthorised disclosure of information is an offence and such disclosures may lead to prosecution.

You should ensure that, where you are issued with an identity or security card, a bleep number, email or library account, keys or protective clothing, these are returned upon termination of this arrangement. Please also ensure that while on the premises you wear your ID badge at all times, or are able to prove your identity if challenged. Please note that this NHS organisation accepts no responsibility for damage to or loss of personal property.

We may terminate your right to attend at any time either by giving seven days' written notice to you or immediately without any notice if you are in breach of any of the terms or conditions described in this letter or if you commit any act that we reasonably consider to amount to serious misconduct or to be disruptive and/or prejudicial to the interests and/or business of this NHS organisation or if you are convicted of any criminal offence. Your substantive employer is responsible for your conduct during this research project and may in the circumstances described above instigate disciplinary action against you.

Alder Hey Children's NHS Foundation Trust will not indemnify you against any liability incurred as a result of any breach of confidentiality or breach of the Data Protection Act 1998. Any breach of the Data Protection Act 1998 may result in legal action against you and/or your substantive employer.

If your current role or involvement in research changes, or any of the information provided in your Research Passport changes, you must inform your employer through their normal procedures. You must also inform your nominated manager in this NHS organisation.

Yours sincerely

Chloe McKay
HR Assistant
Alder Hey Children's NHS Foundation Trust

Chesterfield Royal Hospital

Chesterfield Royal Hospital NHS
NHS Foundation Trust

Calow
Chesterfield
S44 5BL

Tel: 01246 277271
Minicom: 01246 512611
www.chesterfieldroyal.nhs.uk

enrich

Research Department
Chief Executive Office

Tel: 01246 516872
e-mail: kmoxham@nhs.net

12 December 2018

Ref: 2018/37 (240190) KM/jw

Dr Martha Laxton-Kane
Lead Clinical Psychologist for Learning Disabilities
CRH

Dear Martha

Re: Parenting in the context of childhood chronic health conditions: The role of mindful parenting [REC reference: 18/LO/1060]

I would like to confirm Chesterfield Royal Hospital NHS Foundation Trust's agreement to participate in the above study as a Patient Identification Site only.

Documents reviewed:

- Protocol v2 (22 November 2017)

Yours sincerely

Karen Moxham
General Manager

Copy to

- kmeheran2@sheffield.ac.uk

Appendix E

Recruitment poster

2nd March 2018 (version 1)

ARE YOU A PARENT OF A CHILD WITH TYPE 1 DIABETES, ASTHMA OR EPILEPSY?

If your child is under the age of 18 and has any of the conditions above, we invite you to take part in research exploring parenting experiences when caring for a child with a chronic health condition.

The study involves:

- Completing a set of online questionnaires (this will take approximately 20-30 minutes), then completing the same questionnaires 4 weeks later* ***OR***
- Completing online questionnaires then taking part in a short online intervention/ task about your parenting experiences*

**Your responses will be anonymous.*

You will also be given the chance to win a £50 Amazon voucher!

For more information and to sign up, visit:
https://sheffieldpsychology.eu.qualtrics.com/jfe/form/SV_8cOWJqJYCIl1wR7

Please share with anyone who may be eligible and interested.
Your participation is greatly appreciated!

This research is being conducted by Kirsteen Meheran and Catherine Lilley (Trainee Clinical Psychologists) under the supervision of Dr. Fuschia Sirois (f.sirois@sheffield.ac.uk) and Dr Georgina Rowse (g.rowse@sheffield.ac.uk) from the Department of Psychology at the University of Sheffield. The research has received ethical approval from the NHS Ethical Review board.

The University of Sheffield.

NHS

https://sheffieldpsychology.eu.qualtrics.com/jfe/form/SV_8cOWJqJYCIl1wR7

Appendix F

Social media advertisement

Advert to be used in social media adverts and emails.

Subject line: Are you a parent of a child with Type 1 diabetes, asthma or epilepsy? Participate in a study to win £50!

Are you currently a parent of a child with Type 1 diabetes, asthma or epilepsy, living in the UK? If so, we would like to invite you to take part in a research study exploring parenting experiences in the context of caring for a child with a chronic health condition.

Anyone who has parental responsibility for a child under 18 with type 1 diabetes, asthma or epilepsy is eligible to participate. Participation involves completing online research surveys. Some people may also be invited to take an online intervention aiming to support parents with managing the stress of caring for a child with a chronic health condition. Your responses will be anonymous.

For participating you will be given a chance to win an £50 Amazon voucher.
For more information and/or to participate please click here. [link to be added]

This research is being conducted by Catherine Lilley and Kirsteen Meheren (Trainee Clinical Psychologists), under the supervision of Dr. Fuschia Sirois (f.sirois@sheffield.ac.uk) and Dr Georgina Rowse (g.rowse@sheffield.ac.uk) from the Department of Psychology at the University of Sheffield. It has received ethics approval from the NHS Ethical Review board.

Please feel free to pass this message on to anyone who may be eligible and interested. Many thanks.

Appendix G

Participant information sheet

Clinical Psychology Unit
University of Sheffield
Cathedral Court
Floor F
1 Vicar Lane,
Sheffield, S1 1HD

Participant Information Sheet

Research project:
Exploring parenting difficulties in the context of caring for a child with a chronic health condition.

Invitation
You are being invited to take part in this research. Before agreeing to take part, it is important that you are aware of why this research is being conducted and what is involved in taking part. Please read this information carefully. If you would like any further information before you decide, please contact one of the lead researchers (see below for contact details).

What is the purpose of the study?
This study is to explore parenting experiences in the context of caring for a child with a chronic health condition. We hope that a greater understanding of this would: (1) enable the development of effective interventions which help parents feel more supported in health care services; (2) help parents feel better equipped to help their child manage their chronic health condition.

Why have I been chosen?
You have been chosen because you have a child with a chronic health condition. As such, you have knowledge and experience of supporting a child living with a chronic health condition.

Do I have to take part?
It is entirely up to you whether or not you take part. If you do decide to take part, you are free to change your mind (see withdrawal section).

What do I have to do?
You will be asked to complete electronic questionnaires relating to how you feel about parenting a child with a chronic health condition and how you respond to difficult situations more generally. Should you agree to take part, you will complete online questionnaires then be randomly allocated to one of two follow-up studies: (1) Taking part in an online intervention aiming to help parents deal with distress that can occur as part of parenting a child with a chronic health condition, and (2) Exploring how parenting style links to child quality of life.

For both studies you will repeat some of the online questionnaires you did when you first agreed to take part.

Please note that if you took part in either study you may also receive an emailed link to another intervention. This will be because you were either randomly allocated to a group that did not receive the intervention in study (2), or you were randomly allocated to study (1), and we thought you may like to complete it. If you decide to take this intervention you can do this in your own time and will not need to do the questionnaires again.

Before you complete the set of questionnaires you will be asked to provide your email address so that you can be entered into a £50 Amazon voucher prize draw. When the study is closed, we will select one random winner per study, and notify them by email. All email addresses will be encrypted and not shared. After the study has ended, all email addresses will be deleted and removed from our database.

What are the possible benefits of taking part?
We will be asking you to reflect upon your experiences of supporting a child with a chronic health condition and on parenting in general. We hope that you will find this a meaningful and helpful experience. You may also be offered an intervention which aims to help you manage any distress you might experience as part of caring for your child.

What are the possible risks and disadvantages of taking part?
We do not anticipate that there will be any risks in taking part in this project. However, we appreciate that filling out questionnaires or an intervention can feel time consuming. Every effort has been made to keep time to a minimum whilst still enabling us to gather detailed information to answer our research question.
If you do feel that you need further support at any time, you can speak to your GP, or the professionals involved in your child's care and they will be able to advise you.
You can also speak to the Samaritans by phoning: (0114)116 123.
Charities can also be a source of support. Therefore, it may be that the following are of interest to you:
Asthma UK: https://www.asthma.org.uk
Juvenile Diabetes Research Foundation Ltd: https://jdrf.org.uk
Young Epilepsy: http://www.youngepilepsy.org.uk

Withdrawal
If you no longer wish to take part in the study, you can withdraw at any time without question within 2 weeks of completing the final round of questionnaires. After this time your data will be anonymised, making it impossible to extract your questionnaires from others. To withdraw, please contact one of the lead researchers within this time frame.

Confidentiality
The researchers involved in this project would not have access to any personal information other than that which is included in the questionnaires. However the lead researchers will temporarily have access to your email address so that prompts can be sent for the next questionnaires. This will not be shared with anyone outside of this study and protected under the Data Protection Act, 1998.

What will happen to the results of the project?

The results of the study will form part of a Clinical Psychology Doctoral thesis. It is also the researchers' aim to publish the results of this project in a relevant academic journal, however participants will not be identifiable in the publication as all data will be anonymous. If you would like a copy of the report once it is ready, please contact one of the lead researchers and ask to be added to our circulation list.

Who is organising and funding this research?
The project is being conducted by Catherine Lilley (Clinical Psychologist in Training) and Kirsteen Meheran (Clinical Psychologist in Training) as part of their training towards becoming a Doctor of Clinical Psychology at the University of Sheffield. They are being supervised by Dr. Fuschia Sirois and Dr Georgina Rowse, who are based at the University of Sheffield.

Who has ethically reviewed this project?
This study has been approved by the NHS Ethical Review board as a proportionate review. This means that it has been agreed that it is unlikely to pose risk to those that take part, and it has approval to be conducted in the NHS and in the community.

How do I make a complaint?
If you would like to make a complaint about this project, in the first instance you should contact the lead researcher or their supervisor. If you do not feel satisfied that your complaint has been dealt with appropriately you can contact the University of Sheffield's Registrar and Secretary to take your complaint further. The University of Sheffield's Registrar and Secretary is Dr Philip Harvey. He can be contacted at the following address: Dr Philip Harvey, The Registrar and Secretary's Office, University of Sheffield, Firth Court, Western Bank, Sheffield S10 2TN, UK.

Further information and contact details
Lead researcher contact details:
Kirsteen Meheran:kmeheran2@sheffield.ac.uk
Supervisor contact details:
Dr Fuschia Sirois: f.sirois@sheffield.ac.uk
Dr Georgina Rowse: g.rowse@sheffield.ac.uk

Appendix H

Participant consent form

Consent

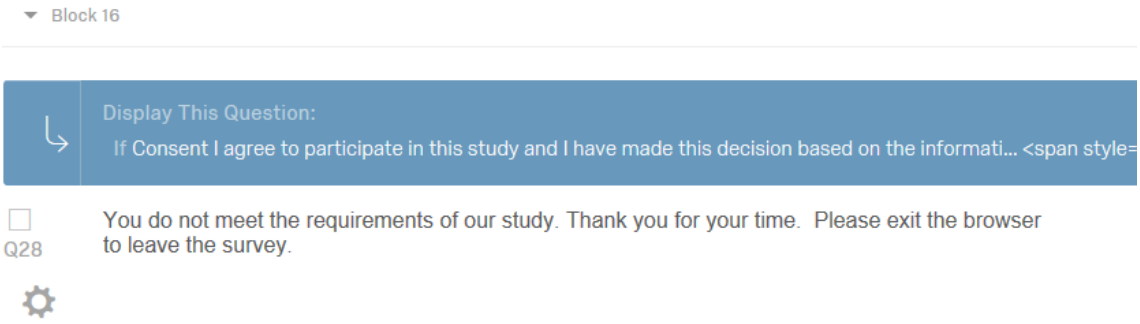
Please tick the appropriate boxes	Yes	No
Taking Part in the Project		
I have read and understood the project information sheet dated XX (If you will answer No to this question please do not proceed with this consent form until you are fully aware of what your participation in the project will mean.)	☐	☐
I have been given the opportunity to ask questions about the project (via email to the researcher).	☐	☐
I agree to take part in the project. I understand that taking part in the project will include completing questionnaires, and possibly a short task.	☐	☐
I understand that my taking part is voluntary and that I can withdraw from the study anytime up to the point that I submit my survey. I do not have to give any reasons for why I no longer want to take part and there will be no adverse consequences if I choose to withdraw.	☐	☐
How my information will be used during and after the project		
I understand my personal details such as my email address and will not be revealed to people outside the project.	☐	☐
I understand and agree that my anonymous words may be quoted in publications, reports, web pages, and other research outputs.	☐	☐
I understand and agree that other authorised researchers will have access to this anonymous data only if they agree to preserve the confidentiality of the information as requested in this form.	☐	☐
I understand and agree that other authorised researchers may use my anonymous data in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.	☐	☐
I give permission for the anonymous data that I provide to be deposited in the Dept. of Psychology at the University of Sheffield so it can be used for future research and learning.	☐	☐
So that the information you provide can be used legally by the researchers		
I agree to assign the copyright I hold in any materials generated as part of this project to The University of Sheffield.	☐	☐

Do you wish to continue? To acknowledge that you have read and understood this information and would like to continue with the research study, please click on "I agree".

I agree | No, thank you

Appendix I

Statement when consent not provided



Appendix J

Debrief sheet

Appendix J: Participant debrief sheet

Clinical Psychology Unit
University of Sheffield
Cathedral Court
Floor F
1 Vicar Lane,
Sheffield, S1 1HD

Thank you for completing this study.

This study explored the relationship between mindful parenting, parenting style, illness specific parenting stress, and parent's reports of their child's health related quality of life. We hope that a greater understanding of this relationship will enable the development of effective interventions which help parents to feel more supported in health care services and feel better equipped to help their child manage their chronic health condition.

What will happen to the results of the project?

It is the researchers aim to publish the results of this project however you will not be identified in the publication.

What next?

If you would like to be entered into our prize draw to win a £50 Amazon voucher please enter your email address below. After all data is collected we will select a winner at random and contact them via email. All email addresses will be removed from the database following the prize draw.

Email: _____

If you would like to receive further information about the findings of the study, please contact the lead researcher.

How do I make a complaint?

If you would like to make a complaint about this project, in the first instance you should contact the lead researcher or their supervisor. If you do not feel satisfied that your complaint has been dealt with appropriately you can contact the University of Sheffield's Registrar and Secretary to take your complaint further. The University of Sheffield's Registrar and Secretary is Dr Philip Harvey. He can be contacted at the following address: Dr Philip Harvey, The Registrar and Secretary's Office, University of Sheffield, Firth Court, Western Bank, Sheffield S10 2TN, UK.

Further information and contact details

Lead researcher contact details:

Kirsteen Meheran: kmeheran2@sheffield.ac.uk

Supervisor contact details:

Dr Georgina Rowse: g.rowse@sheffield.ac.uk

Dr Fuschia Sirois: f.sirois@sheffield.ac.uk

Relevant charities

Asthma UK: https://www.asthma.org.uk

Juvenile Diabetes Research Foundation Ltd: https://jdrf.org.uk

Young Epilepsy: http://www.youngepilepsy.org.uk

Appendix K

Demographics questionnaire

We need to know a little about you and your child for this study. This information will only be used for the purpose of this study. The questionnaire should be completed by the primary caregiver, who should also have parental responsibility. If you have any questions or require further guidance, please contact the lead researcher.

Please complete the following questions:

About you

1) Are you the primary caregiver for your child?

□ Yes □ No □ Prefer not to say

2) Would you say that you bear parental responsibility for your child?

□ Yes □ No □ Prefer not to say

3) What is your age?

□ < 20 □ 21 – 30 □ 31 – 40 □ 41 – 50 □ >50 □ Prefer not to say

4) What is your gender?

□ Male □ Female □ Prefer not to say

About your child:

5) What is your relationship to the child?

□ Biological mother □ Biological father □ Adoptive mother

□ Adoptive father □ Biological grandparent □ Adoptive grandparent

□ Foster mother

□ Foster father

□ Biological sibling (sole carer)

□ Prefer not to say

Other (please state):

6) What chronic condition is your child diagnosed with?

□ Type 1 diabetes mellitus

□ Epilepsy

□ Asthma

□ Prefer not to say

7) What is your child's age?

□ < 12 months

□ 1 – 3

□ 4 – 7

□ 8 – 12

□ 13 – 16

□ 17 +

□ Prefer not to say

8) What is your child's gender?

□ Male

□ Female

□ Prefer not to say

Appendix L

Interpersonal Mindfulness in Parenting Scale (IEM-P)

Instructions: The following statements describe different ways that parents interact with their children on a daily basis. Please tell me whether you think the statement is "Never True," "Rarely True," "Sometimes True," "Often True," or "Always True" for you. Remember, there are no right or wrong answers and please answer according to what *really reflects* your experience rather than what you think your experience *should* be. Please treat each statement separately from every other statement.

	Never True	*Rarely True*	*Sometimes True*	*Often True*	*Always True*
1. I find myself listening to my child with one ear because I am busy doing or thinking about something else at the same time.	1	2	3	4	5
2. When I'm upset with my child, I notice how I am feeling before I take action.	1	2	3	4	5
3. I notice how changes in my child's mood affect my mood.	1	2	3	4	5
4. I listen carefully to my child's ideas, even when I disagree with them.	1	2	3	4	5
5. I often react too quickly to what my child says or does.	1	2	3	4	5
6. I am aware of how my moods affect the way I treat my child.	1	2	3	4	5
7. Even when it makes me uncomfortable, I allow my child to express his/her feelings.	1	2	3	4	5
8. When I am upset with my child, I calmly tell him/her how I am feeling.	1	2	3	4	5
9. I rush through activities with my child without being really attentive to him/her.	1	2	3	4	5
10. I have difficulty accepting my child's growing independence.	1	2	3	4	5

Appendix M

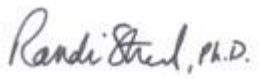
Pediatric Inventory for Parents (PIP)

Dear Colleague,

Thank you for your interest in the Pediatric Inventory for Parents. Included in this e-mail are the measure and scoring instructions. I grant you permission to use the measure in your work. Please keep me informed of any results as your work progresses, and feel free to contact me with any further questions.

In addition to the measure you will also find scoring instructions attached. Further, attached are references from investigations that have included the PIP, following the initial article from 2001*.

Best wishes on your research,



Randi Streisand, PhD, CDE

Diabetes Team Director of Psychology Research and Service

Children's National Medical Center

Associate Professor of Psychology & Behavioral Health, and Pediatrics,

The George Washington University

(202) 476-2730

rstreis@cnmc.org

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Appendix N

Parenting Styles and Dimensions Questionnaire

REMEMBER: Make two ratings for each item; (1) rate how often your spouse exhibits this behavior with your child and (2) how often you exhibit this behavior with your child.

SPOUSE EXHIBITS BEHAVIOR:	I EXHIBIT THIS BEHAVIOR:
1 = Never	1 = Never
2 = Once In A while	2 = Once In Awhile
3 = About Half of the Time	3 = About Half of the Time
4 = Very Often	4 = Very Often
5 = Always	5 = Always

[He] [I]

_____ _____ 1. [He is] [I am] responsive to our child's feelings and needs.

_____ _____ 2. [He uses] [I use] physical punishment as a way of disciplining our child.

_____ _____ 3. [He takes] [I take] our child's desires into account before asking the child to do something.

_____ _____ 4. When our child asks why he/she has to conform, [he states] [I state]: because I said so, or I am your parent and I want you to.

_____ _____ 5. [He explains] [I explain] to our child how we feel about the child's good and bad behavior.

_____ _____ 6. [He spanks] [I spank] when our child is disobedient.

_____ _____ 7. [He encourages] [I encourage] our child to talk about his/her troubles.

_____ _____ 8. [He finds] [I find] it difficult to discipline our child.

_____ _____ 9. [He encourages] [I encourage] our child to freely express himself/herself even when disagreeing with parents.

_____ _____ 10. [He punishes] [I punish] by taking privileges away from our child with little if any explanations.

_____ _____ 11. [He emphasizes] [I emphasize] the reasons for rules.

_____ _____ 12. [He gives] [I give] comfort and understanding when our child is upset.

_____ _____ 13. [He yells or shouts] [I yell or shout] when our child misbehaves.

_____ _____ 14. [He gives praise] [I give praise] when our child is good.

_____ _____ 15. [He gives] [I give] into our child when the child causes a commotion about something.

_____ _____ 16. [He explodes] [I explode] in anger towards our child.

_____ _____ 17. [He threatens] [I threaten] our child with punishment more often than actually giving it.

_____ _____ 18. [He takes] [I take] into account our child's preferences in making plans for the family.

_____ _____ 19. [He grabs] [I grab] our child when being disobedient.

_____ _____ 20. [He states] [I state] punishments to our child and does not actually do them.

_____ _____ 21. [He shows] [I show] respect for our child's opinions by encouraging our child to express them.

_____ _____ 22. [He allows] [I allow] our child to give input into family rules.

_____ _____ 23. [He scolds and criticizes] [I scold and criticize] to make our child improve.

_____ _____ 24. [He spoils] [I spoil] our child.

_____ _____ 25. [He gives] [I give] our child reasons why rules should be obeyed.

_____ _____ 26. [He uses] [I use] threats as punishment with little or no justification.

_____ _____ 27. [He has] [I have] warm and intimate times together with our child.

_____ _____ 28. [He punishes] [I punish] by putting our child off somewhere alone with little if any explanations.

[He] [I]

_____ _____ 29. [He helps] [I help] our child to understand the impact of behavior by encouraging our child to talk about the consequences of his/her own actions.

_____ _____ 30. [He scolds or criticizes] [I scold or criticize] when our child's behavior does not meet our expectations.

_____ _____ 31. [He explains] [I explain] the consequences of the child's behavior.

_____ _____ 32. [He slaps] [I slap] our child when the child misbehaves.

Appendix O

Pediatric QoL Scale

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Appendix P

Reliability of the PedsQL for each subscale by age group

Age group	T1TOT	T1PSYCH	T1PHYS	T2TOT	T2PSYCH	T2PHYS
2-4	.93	.91	.87	.80	.79	.86
5-7	.92	.91	.89	.95	.92	.94
8-12	.95	.93	.90	.96	.95	.92
13-16	.94	.92	.87	.95	.94	.87
17+	.93	.90	.88	.94	.92	.76

Note. nT1 = 250; nT2 = 133; TOT = Total score; PSYCH = Psychosocial subscale; PHYS = Physical subscale

Appendix Q

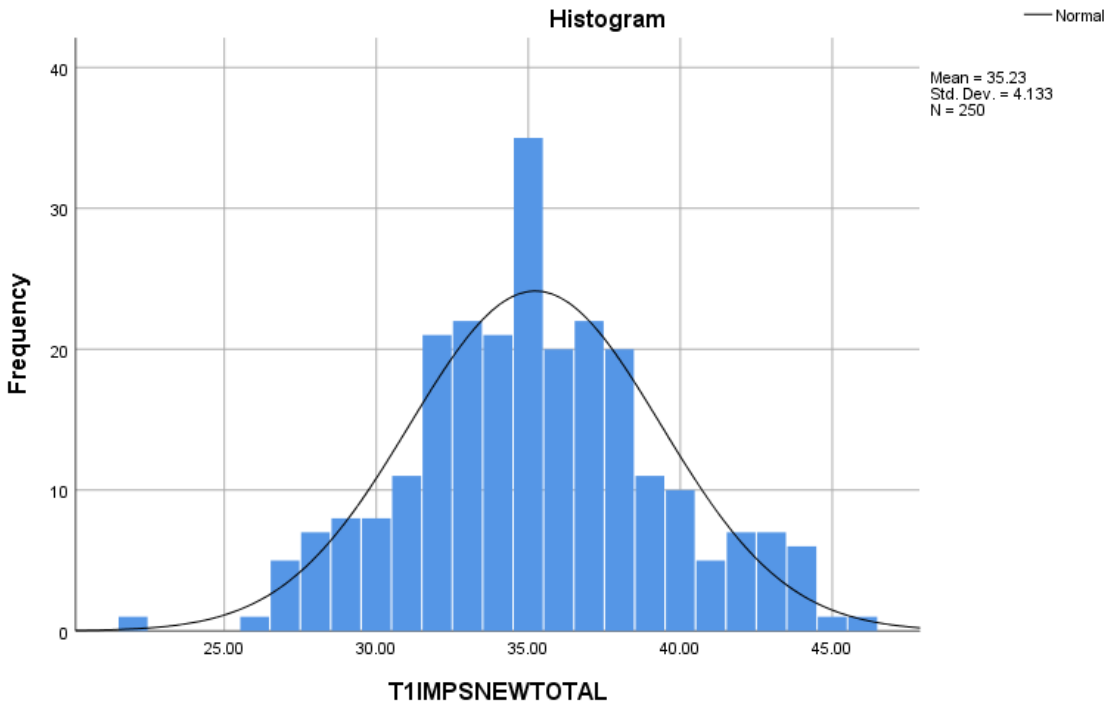
Tests of normality

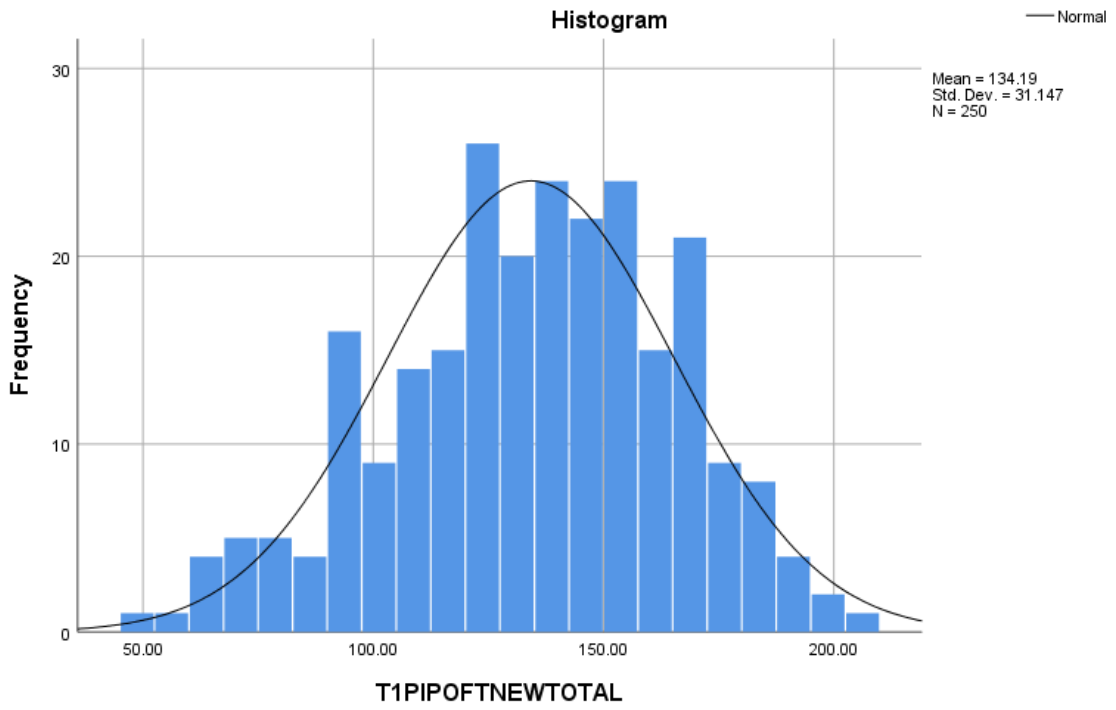
Tests of Normality

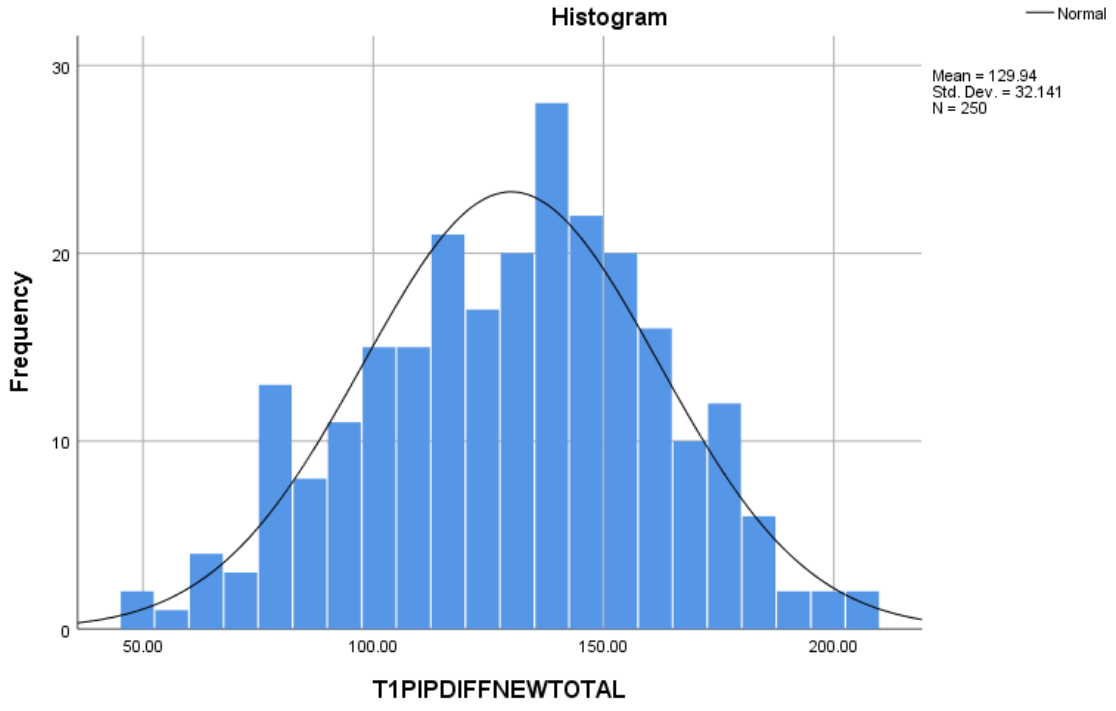
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
T1IMPSNEWTOTAL	.082	250	.000	.989	250	.045
T1PIPOFTNEWTOTAL	.049	250	.200*	.988	250	.042
T1PIPDIFFNEWTOTAL	.049	250	.200*	.993	250	.238
T1AUTHIVENEWTOTAL	.072	250	.003	.984	250	.006
FINALPEDST1TOTAL	.064	250	.016	.984	250	.006
FINALT1PEDSPSYSOCIAL	.062	250	.020	.988	250	.043
FINALT1PEDSPHYSIC	.116	250	.000	.956	250	.000

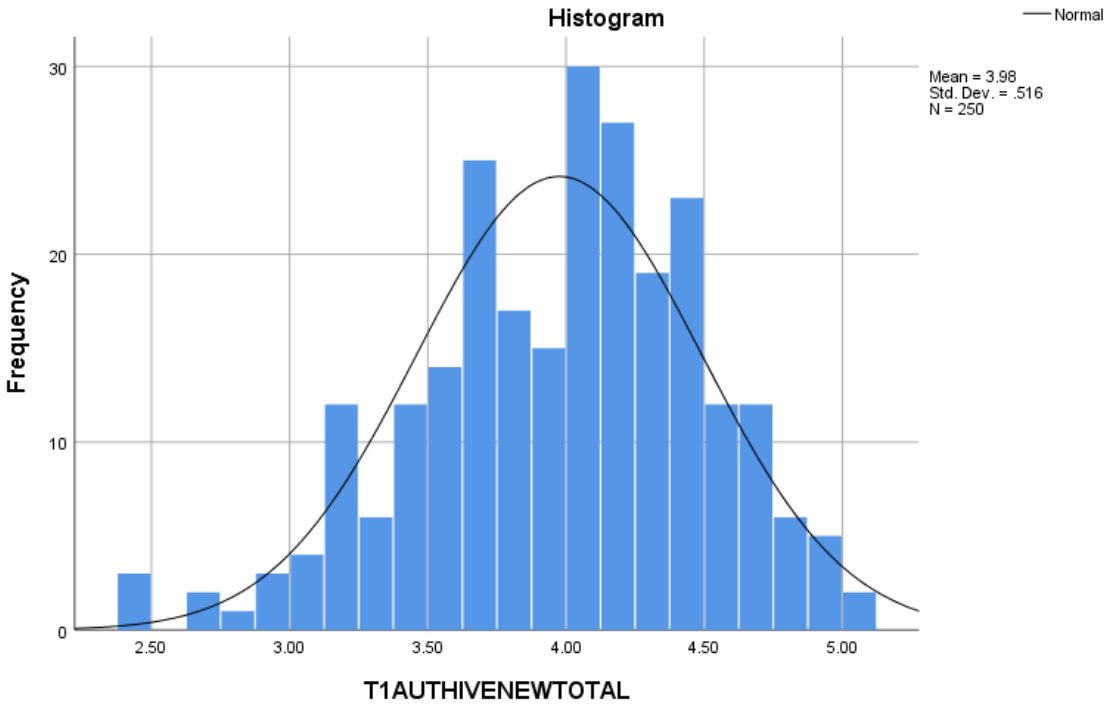
*. This is a lower bound of the true significance.

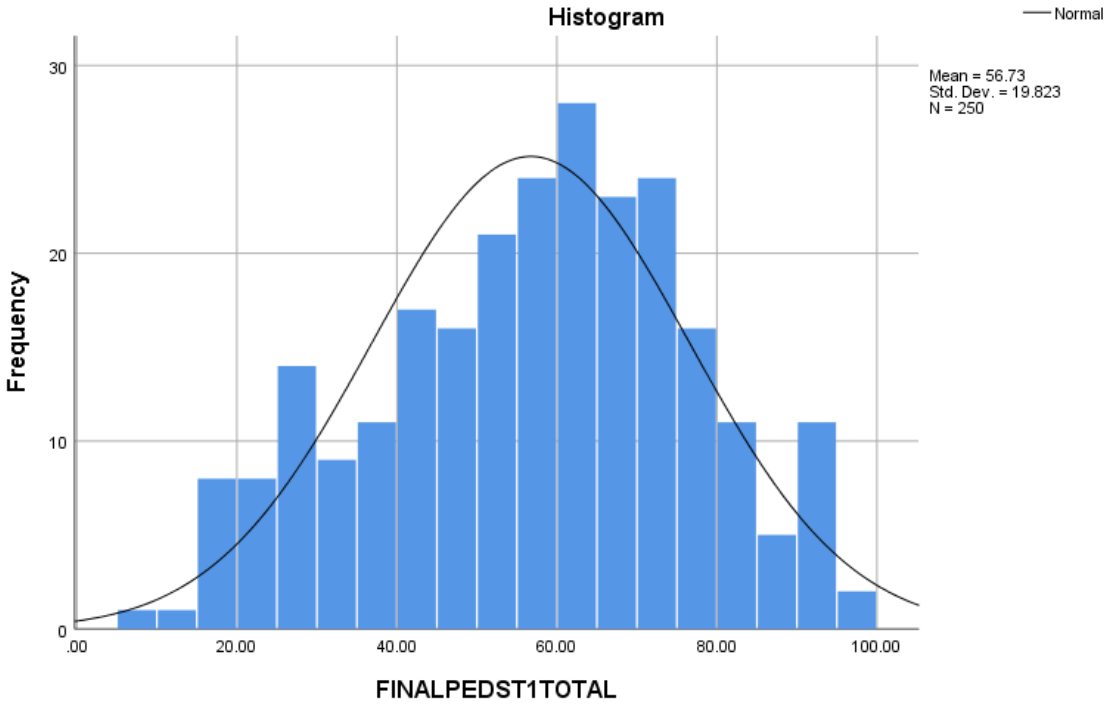
a. Lilliefors Significance Correction

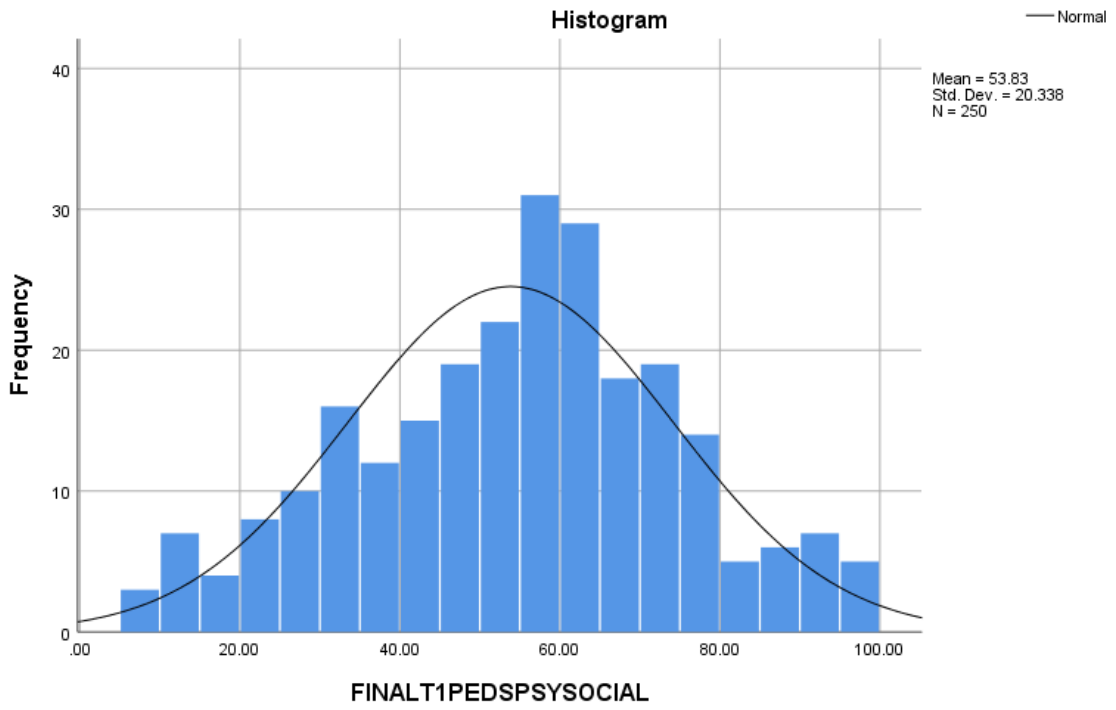


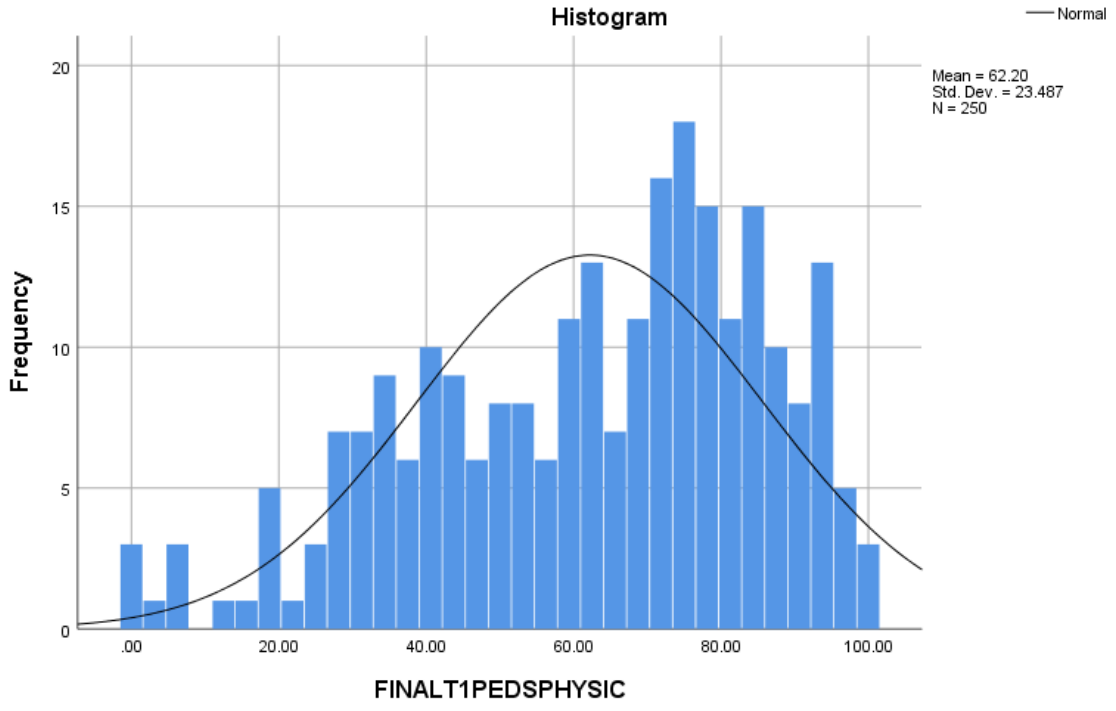

Histogram
Normal
Mean = 134.19
Std. Dev. = 31.147
N = 250
Frequency
30
20
10
0
50.00
100.00
150.00
200.00
T1PIPOFTNEWTOTAL


Histogram
Normal
Mean = 129.94
Std. Dev. = 32.141
N = 250
Frequency
30
20
10
0
50.00
100.00
150.00
200.00
T1PIPDIFFNEWTOTAL


Histogram
Normal
Mean = 3.98
Std. Dev. = .516
N = 250
Frequency
30
20
10
0
2.50
3.00
3.50
4.00
4.50
5.00
T1AUTHIVENEWTOTAL


Histogram
Normal
Mean = 56.73
Std. Dev. = 19.823
N = 250
Frequency
30
20
10
0
.00
20.00
40.00
60.00
80.00
100.00
FINALPEDST1TOTAL


Histogram
Normal
Mean = 53.83
Std. Dev. = 20.338
N = 250
Frequency
40
30
20
10
0
.00
20.00
40.00
60.00
80.00
100.00
FINALT1PEDSPSYSOCIAL

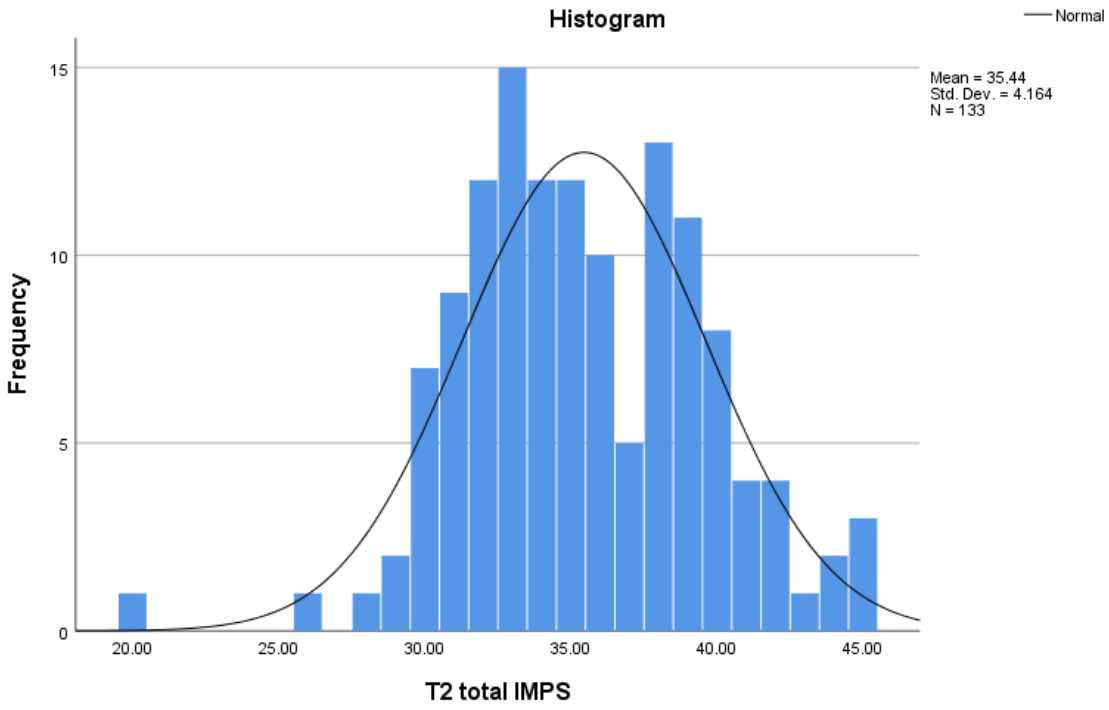

Histogram
Normal
Mean = 62.20
Std. Dev. = 23.487
N = 250
Frequency
20
15
10
5
0
.00
20.00
40.00
60.00
80.00
100.00
FINALT1PEDSPHYSIC

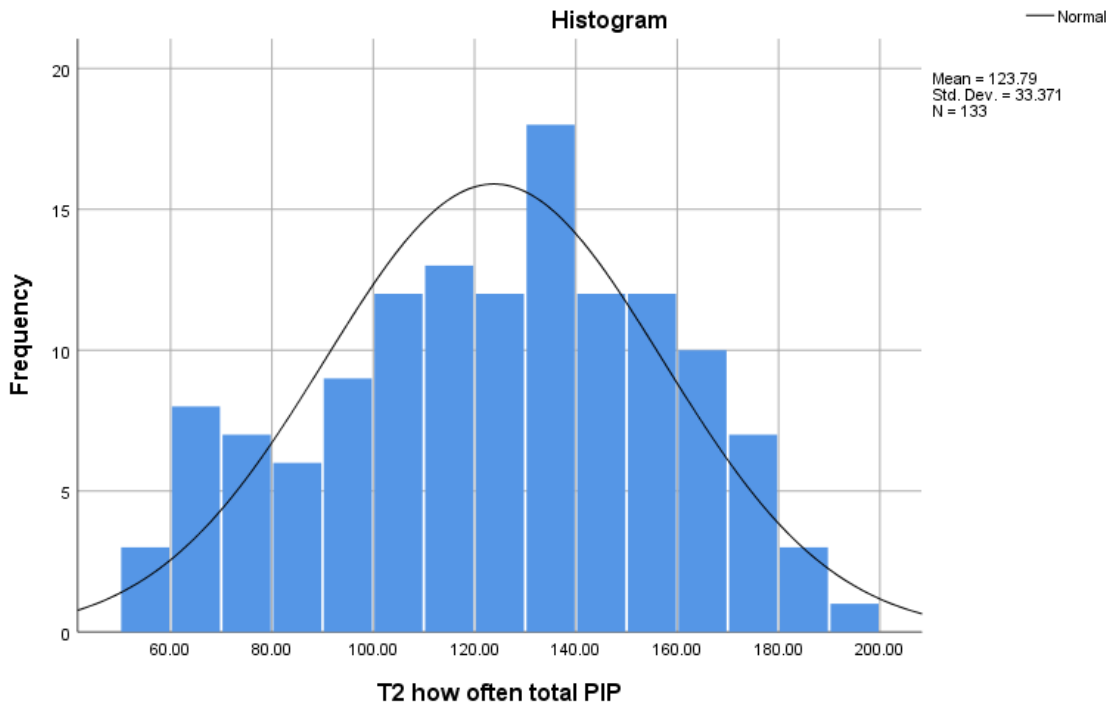
Tests of Normality

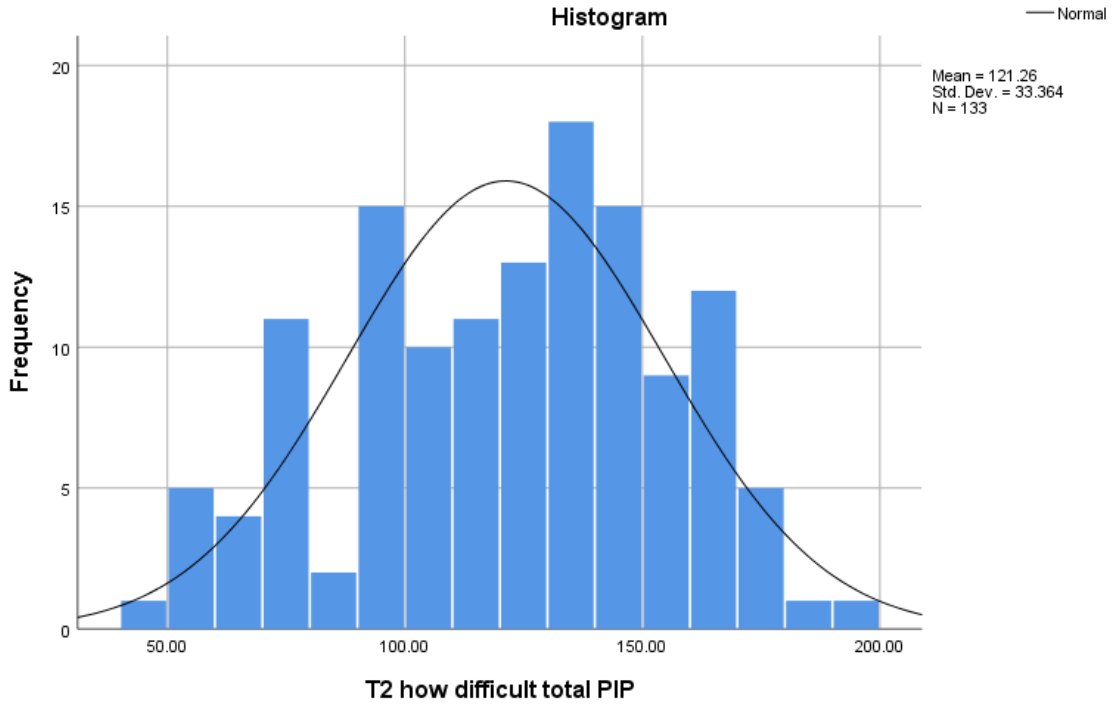
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
T2 total IMPS	.087	133	.016	.976	133	.019
T2 how often total PIP	.053	133	.200*	.983	133	.094
T2 how difficult total PIP	.069	133	.200*	.980	133	.043
Time 2 total authoritative subscale PSDQ	.074	133	.070	.976	133	.017
T2pedstot	.073	133	.082	.981	133	.061
T2psychosocialtotal	.048	133	.200*	.987	133	.233
T2physicaltotal	.107	133	.001	.942	133	.000

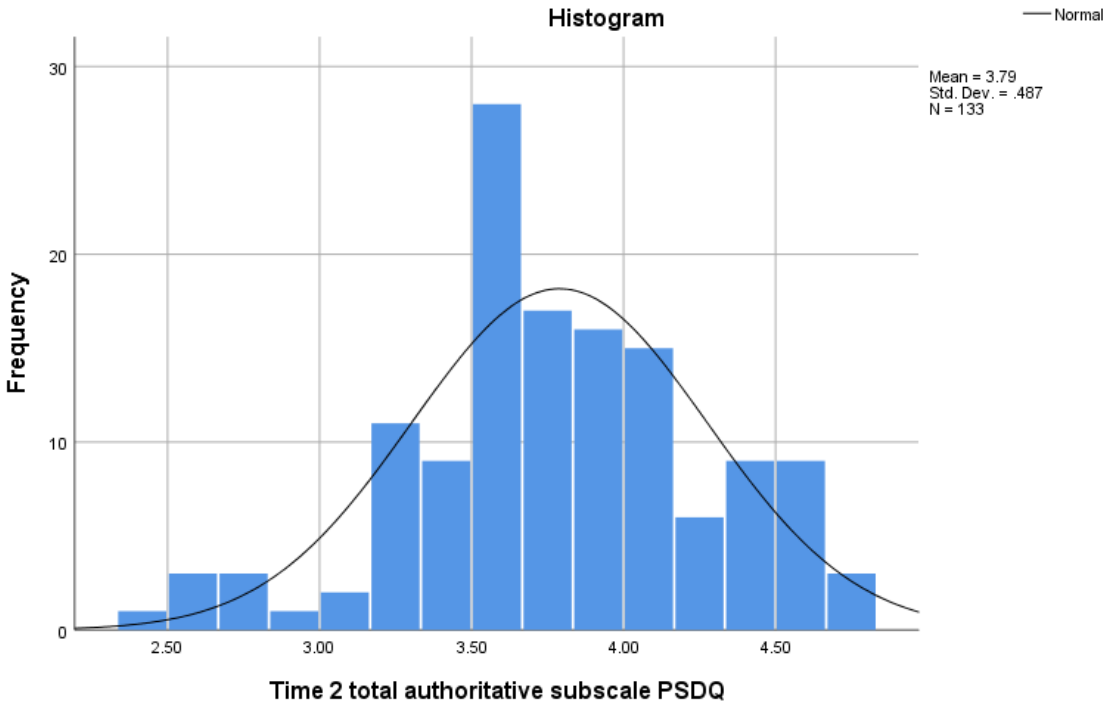
*. This is a lower bound of the true significance.

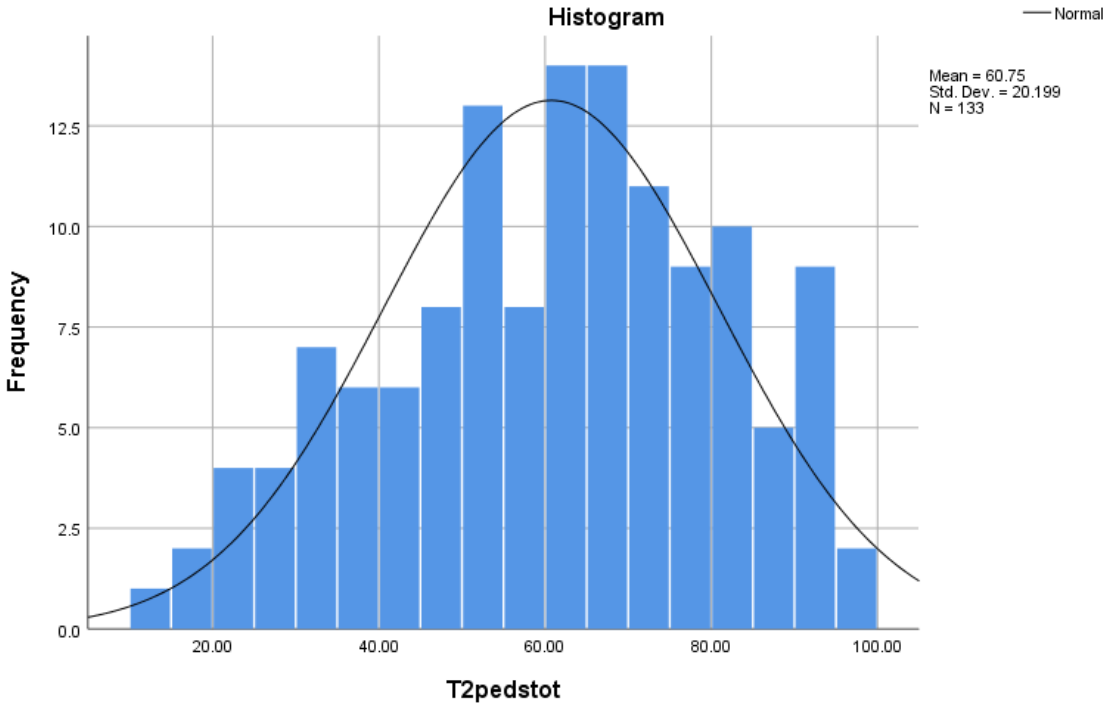
a. Lilliefors Significance Correction

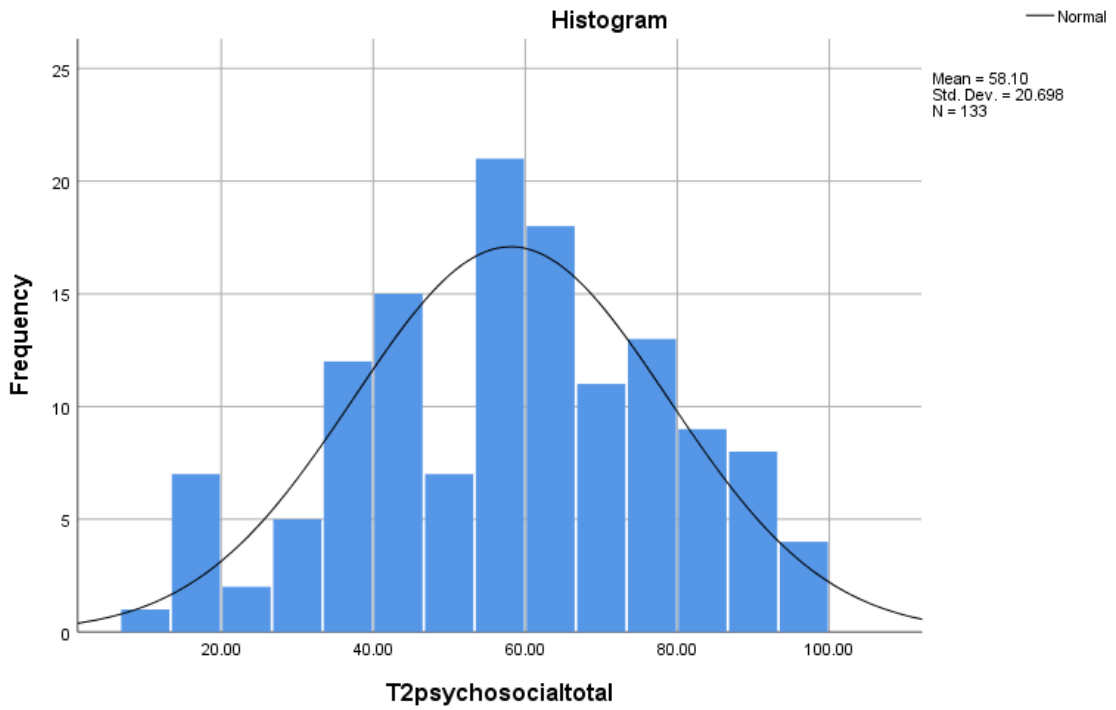


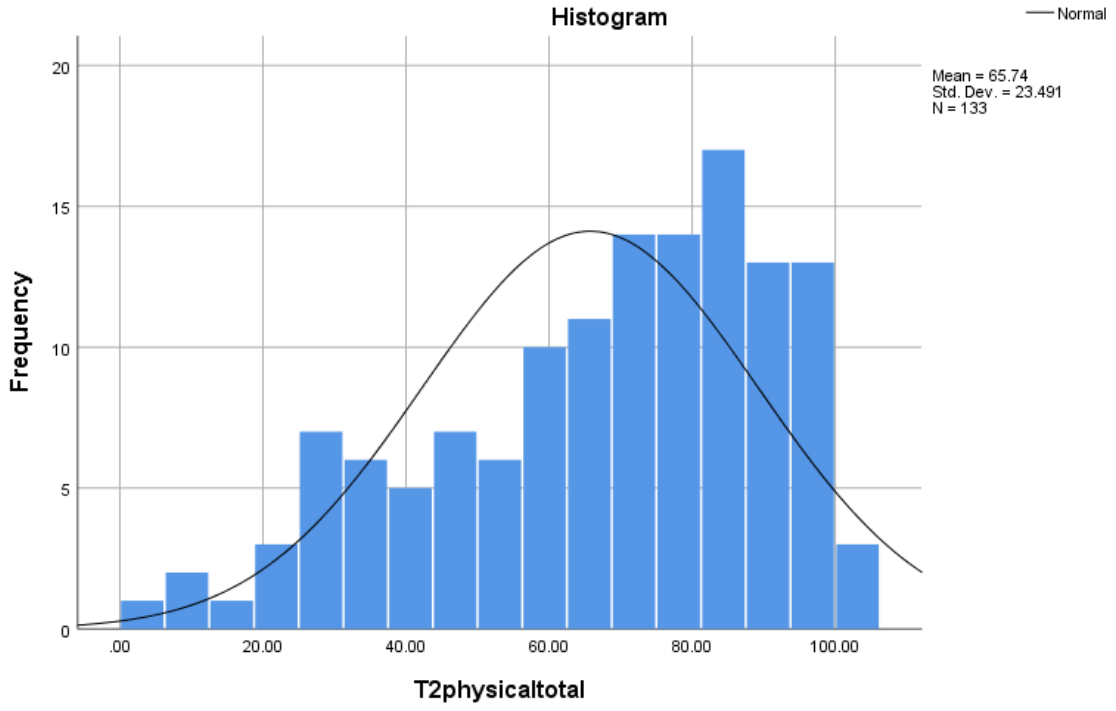

Histogram
Normal
Mean = 123.79
Std. Dev. = 33.371
N = 133
Frequency
20
15
10
5
0
60.00
80.00
100.00
120.00
140.00
160.00
180.00
200.00
T2 how often total PIP


Histogram
Normal
Mean = 121.26
Std. Dev. = 33.364
N = 133
Frequency
20
15
10
5
0
50.00
100.00
150.00
200.00
T2 how difficult total PIP


Histogram
Normal
Mean = 3.79
Std. Dev. = .487
N = 133
Frequency
30
20
10
0
2.50
3.00
3.50
4.00
4.50
Time 2 total authoritative subscale PSDQ


Histogram
Normal
Mean = 60.75
Std. Dev. = 20.199
N = 133
Frequency
12.5
10.0
7.5
5.0
2.5
0.0
20.00
40.00
60.00
80.00
100.00
T2pedstot


Histogram
Normal
Mean = 58.10
Std. Dev. = 20.698
N = 133
Frequency
25
20
15
10
5
0
20.00
40.00
60.00
80.00
100.00
T2psychosocialtotal


Histogram
Normal
Mean = 65.74
Std. Dev. = 23.491
N = 133
Frequency
20
15
10
5
0
.00
20.00
40.00
60.00
80.00
100.00
T2physicaltotal