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The Role of Parents in Child Anxiety

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Declaration

This thesis is submitted for the Doctorate in Clinical Psychology at the University of Sheffield. It has not been submitted for any other degree or to any other academic institution.

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Structure and Word Count

Literature review	**7850**
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Abstract

The current thesis consists of a literature review and a research study. The literature review systematically evaluated the parental role in the development of anxious cognitions in children. Studies were identified through electronic database searches, using key terms related to 'parent', 'child', 'anxiety' and 'cognitions'. The review confirmed that parents have a role in the development of child anxious cognitions by behaving in fearful ways, reducing their child's autonomy, verbally communicating fear to their child and indirectly via their own expectations about their child. Findings were consistent with Cresswell, Cooper, and Murray's (2010) model of the parental behavioural pathways that lead to the development of anxious cognitions in children. Findings are limited due to the small number of reviewed studies and low number of fathers included in the studies.

The research study aimed to investigate the relationship between parent anxiety and child anxiety, by examining the role of parental control, parental experiential avoidance and mindful parenting. A cross-sectional design was employed. Parents (N = 85) of children aged 8-12 years were recruited from a community sample. Parents completed a survey of self-report measures that assessed parent anxiety, child anxiety, parental control, parental experiential avoidance and mindful parenting. Significant associations were found between parental experiential avoidance and mindful parenting and child anxiety. Parental experiential avoidance predicted child anxiety, however mindful parenting did not. Parental control and parental experiential avoidance mediated the relationship between parent and child anxiety. Future research should replicate the study using a clinical sample and longitudinal design.

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Table of Contents

Table of Contents (continued)

Part One: Literature Review

A Systematic Review of the Role of Parents in the Development of Child Anxious Cognitions

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Abstract

Objectives

Anxious cognitions and parental behaviour have both been found to be important in the development of child anxiety. The current review aims to critically evaluate parenting as a key factor in the development of child anxious cognitions.

Methods

Online database searches of PsychInfo, Scopus, ProQuest Dissertations and Web of Science were systematically searched using key terms related to 'parent', 'child', 'anxiety' and 'cognitions'. Studies fulfilling inclusion criteria were quality assessed using an adapted version of Downs and Black's (1998) quality rating checklist.

Results

Included studies (N = 16) were reviewed in line with Cresswell, Cooper, and Murray's (2010) model of the parental behavioural pathways that lead to the development of anxious cognitions in children. Reviewed studies suggest that parents have a role in the development of child anxious cognitions via behaving in fearful ways, reducing their child's autonomy, verbally communicating fear to their child and indirectly via their own expectations about their child.

Conclusions

The literature provides support that parental behaviour is important in the development of anxious cognitions in children and for the model by Cresswell et al. (2010). Future research should examine parental behaviour and child anxious cognitions when parents are faced with real-life threatening events.

Practitioner Points

- Parental behaviour may be a potential target within family-based treatments for child anxiety.

- Cognitive bias training for both parents and children may be useful within the context of both the prevention and treatment of child anxiety.
- The review is limited by generalisability as the majority of participants in the included studies were mothers.
- Further research using longitudinal methods should be conducted.

Introduction

Anxiety experienced in childhood and adolescence is common and affects as many as 10% of young people at any one time (Copeland, Angold, Shanahan, & Costello, 2014) and can lead to significant problems in child and family functioning (Remmerswaal, Muris, & Huijding, 2015). Cognitive-behavioural theory of anxiety development suggests that anxious cognitions play a causal role in the development of anxiety disorders (Beck, Emery, & Greenberg, 1985). Anxious cognitions are defined as internal thinking styles that are biased to interpreting threat, negatively interpreting situations and underestimating ability to cope (Bögels, van Dongen, & Muris, 2003). Anxious cognitions impact on a child's perception of their environment, which can in turn result in the development of anxiety (Blossom et al., 2013).

In their information processing model of childhood anxiety, Daleiden, and Vasey (1997), postulate that following encoding, children attach meaning to the information that they are processing. It is at this stage that children with anxiety have been found to interpret the information they are processing as threatening (Muris, Rapee, Meesters, Schouten, & Greers, 2003). Consistent with this theory, Bögels, and Zigterman (2000) found that children with clinical levels of anxiety interpreted hypothetical ambiguous stories as significantly more threatening than children who did not experience anxiety. Following the information processing stage, children then access coping resources stored in memory during the response access stage. Micco, and Ehrenreich (2008) found that children with anxiety disorders underestimate their ability to cope and that this relationship is heightened when the situation is more personally salient to the child.

In order to further understand the mechanisms that are involved in the development of childhood anxiety, research has also considered systemic factors, and

specifically the role of parents. Anxiety runs in families; children of parents with anxiety disorders are seven times more likely to develop an anxiety disorder than children who do not have a parent who experiences anxiety (Turner, Biedel, & Costello, 1987). Waters, Zimmer-Gembeck, and Farrell (2012) suggest that parental anxiety is a significant risk factor for child anxiety and research has shown high incidence rates of anxiety in the parents of anxious children. For example, Gifford, Reynolds, Bell, and Wilson (2008) found that mothers of anxious children had significantly higher levels of anxiety than mothers of children who did not experience anxiety. Theorists have concluded that both genetic and environmental factors may contribute to the development of child anxiety and Eley, and Gregory (2004) have estimated that genetic heritability accounts for up to 50% of the variance. Therefore, the environment is considered to be of equal importance in the development of child anxiety and parents are considered to play a significant role in this (Podina, Mogoase, & Dobrean, 2013).

Social Learning Theory (Bandura, 1971) suggests that children develop anxiety via watching how other people behave and then imitating that behaviour. For example, de Rosnay, Cooper, Tsigaras, and Murray (2006) found that children displayed higher levels of fear when they were faced with a stranger if their mother had modelled fearful behaviour beforehand, in comparison to children of mothers who did not model fearful behaviour. Therefore, parents are role models to their children and if they behave in anxious ways, it is likely that children will learn this behaviour. Parents have also been found to play a role in developing and maintaining anxiety by behaving in over-involved controlling ways where the child becomes dependent on the parent to protect them from harm and the child does not develop their own opinions and make decisions for themselves (Rapee, 1997). For example, in their meta-analysis, van der Bruggen,

Stams, and Bögels (2008) found a medium overall effect size for the relationship between parental control and child anxiety.

Cognitive-behavioural theories and models have been developed in an attempt to understand how parental factors may contribute to the development of child anxious cognitions. Hudson, and Rapee (2004) theorised that parent cognitions about their child's vulnerability in a dangerous world may lead to parents becoming over-protective and over-controlling (Kortlander, Kendall, & Panichelli-Mindel, 1997). The authors theorise that by being over-protective, parents are more likely to encourage their child to avoid situations and also directly verbalise to their child potential threats. Consequently, the child will learn that the world is dangerous. More recently, Cresswell, Cooper, and Murray (2010) proposed that parents' own threat related cognitive style may influence their behaviour with their child via both direct and indirect pathways (see Figure 1). The model posits that parental behaviour can influence children to develop anxious cognitions, which can consequently lead to the development of child anxiety. Parents' own anxious cognitions are thought to directly influence their behaviour by parents modelling a fearful response (e.g. screaming when they see a spider), or by directly communicating fearful information (e.g. telling their child that spiders are dangerous). Parents' own expectations about their child's ability to cope are thought to indirectly influence their behaviour via them restricting autonomy (e.g. not allowing their child to go somewhere because they do not think they will cope). In a feedback cycle, parents' expectations are subsequently reinforced by their experience of parenting a child who is anxious.

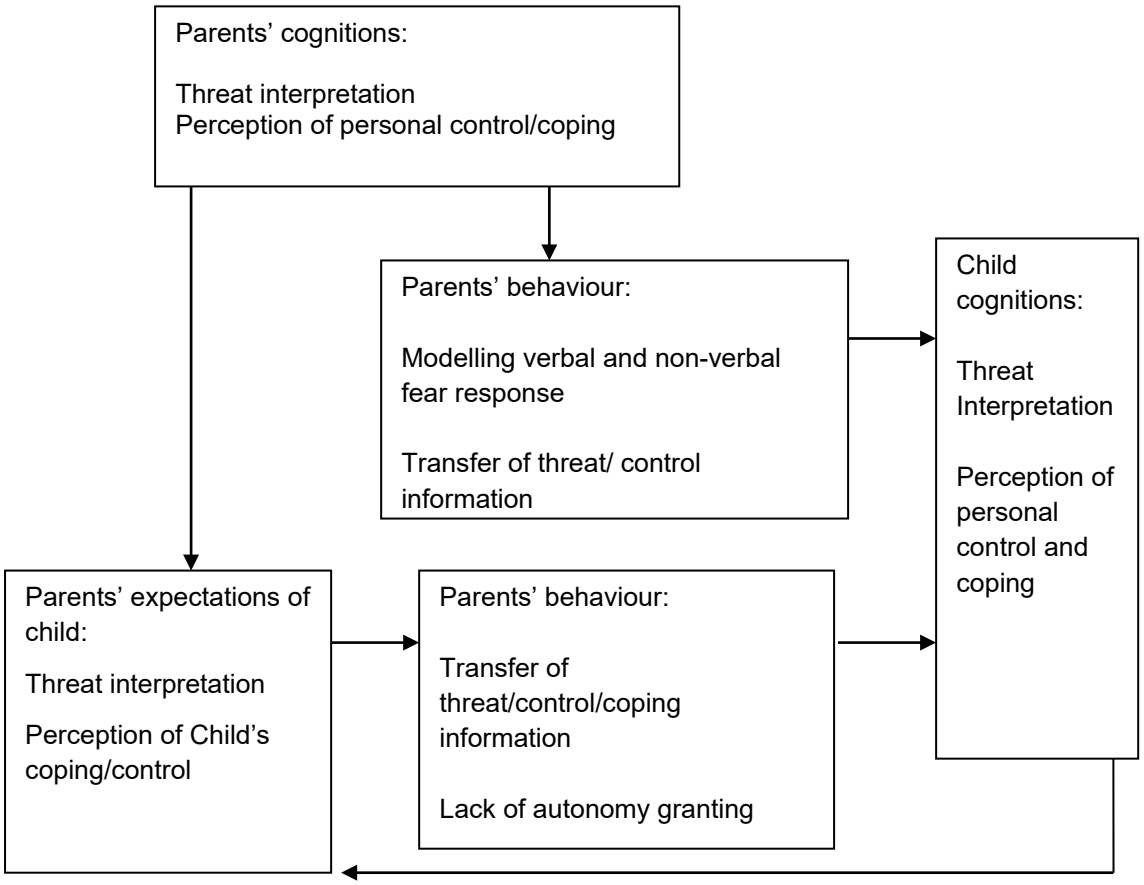

Figure 1. A cognitive-behavioural model of the parental pathways that lead to the development of anxious cognitions in children (Cresswell, Cooper, & Murray, 2010).

Research has provided evidence for the interactions suggested in Cresswell, Cooper, and Murray's (2010) model of the development of child anxious cognitions. Cresswell and O'Connor (2006) reported that mothers who perceived the world as threatening and felt unable to cope were more likely to expect their children to respond in the same way. It is this expectation that is likely to impact on parental behaviour. For example, Cresswell, O'Connor, and Brewin (2008) informed parents that their children would be given a difficult set of puzzles to complete. However, half of the parents were given positive expectations about how their child may perform in the puzzle (e.g. told that the puzzle would be a challenge, but that it would be fun) and half were given

negative expectations about how their child may perform (e.g. told that their child would likely struggle). Parents who were given negative expectations were less likely to allow their child to complete the task independently and were more involved in completing the puzzle with their child. In addition, children who have over-controlling parents, and lack the granting of autonomy, are more likely to interpret their environment as threatening (Chorpita, & Barlow, 1998; Wood, 2006). Parents can also influence their child's cognitions via the transfer of threat information; Barrett, Rapee, Dadds, and Ryan, (1996) reported that following discussion with parents, anxious children were more likely to plan to avoid ambiguous scenarios than children who did not experience anxiety. Emerging evidence therefore suggests that parents have a role to play in the development of child anxious cognitions. Evidence therefore suggests that the pathways proposed in the Cresswell et al. (2010) model of the development of anxious cognitions are useful in explaining the role parents may have in the development of anxious cognitions in children.

The current review aims to critically appraise studies that examine the role parents have in the development of child anxious cognitions. Given that no other models currently address how parents may specifically influence the development of anxious cognitions; the literature will be considered within the context of the model proposed by Cresswell et al. (2010). Studies that examine parental behaviour and measure child anxious cognitions using a sample of parent-child dyads will be critically reviewed. Studies that measure child anxious cognitions as internal thinking styles that are biased to interpreting threat, interpreting situations negatively and underestimating ability to cope (Bögels, van Dongen, & Muris, 2003) will be appraised. The four main pathways proposed by the Cresswell et al. (2010) model; modelling a non-verbal fear response, modelling a verbal fear response, lack of autonomy granting and parental

expectation of child coping will be used to examine the findings. The current review will therefore consider the role parents have in the development of child anxious cognitions and examine if the evidence is consistent with the behavioural pathways proposed by the Cresswell et al. (2010) model.

Method

Identification of Studies

A systematic search strategy was undertaken to reduce potential bias in the selection of studies. Electronic literature searches of PsycInfo (using Abstract), Scopus (using Abstract), ProQuest Dissertations (using Abstract) and Web of Science (using Title) were conducted between 9th November and 21st November, 2016. No date limits were placed on the searches.

Search terms were categorised into four concepts; parent, child, anxiety, and cognitions. Search terms within each concept were combined with the Boolean operator "OR" and search terms across concepts were combined with "AND". Full search terms are presented in Table 1.

Table 1

Search Terms

Concept	Search Terms
Parent	Parent* OR caregiver OR father OR mother OR maternal OR paternal
	AND
Child	Child* OR adolescent*
	AND
Anxiety	Anxiety OR anxious OR fear OR worry
	AND
Cognitions	Cognition* OR thought* OR bias* OR interpretation* OR expectation* OR belief* OR appraisal

The studies were identified as being eligible for review through a process of title screening followed by abstract screening and, finally full text article screening. Full text articles were reviewed in line with inclusion and exclusion criteria. Reference and forward citation searches were performed using Google Scholar. Figure 2 outlines the search process, using the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) method (Moher, Liberati, Tetzlaff, Altman, & The Prisma Group, 2001).

Inclusion and Exclusion Criteria

Studies were included if they fulfilled the following inclusion criteria: (1) participants were parent-child dyads (mother and/or father), (2) child anxiety was measured via child report or parent report, (3) child cognitions were measured via child report or parent report, (3) parental behaviour was measured in relation to child anxious cognitions, and (4) written in English.

Studies were excluded if they did not meet the following criteria: (1) participants were not parent-child dyads (mother and/or father), (2) no measure of child cognitions was included, (3) no measure of child anxiety was undertaken, (4) parental behaviour in relation to child anxious cognitions was not measured (5) the focus on anxiety was related to a chronic health condition, (6) the children were from populations with an intellectual impairment or neurological condition, and (7) not written in English.

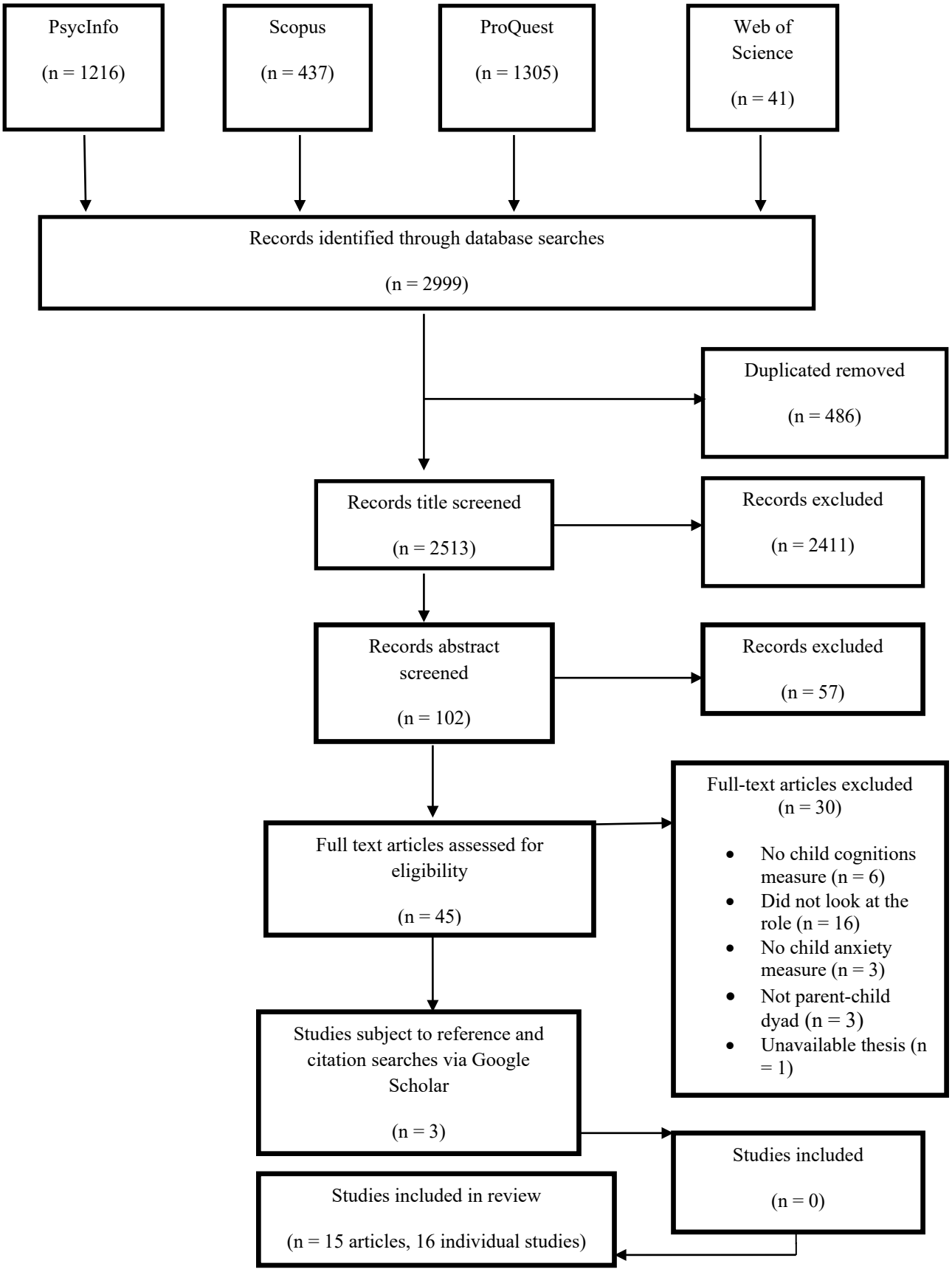

Figure 2. PRISMA flow diagram of the selection process

Quality Appraisal

The methodological quality of the studies was assessed through an adapted version of the Downs and Black's (1998) quality rating checklist. This checklist has been rated as a high quality rating tool for the appraisal of healthcare outcome studies (Deeks et al., 2003). Consistent with previous reviews (e.g. Sohanpal, Hooper, Hames, Prieber, & Taylor, 2012), the checklist was modified to suit the purpose of this review. Twelve checklist items that were not applicable to cross-sectional methods and only to intervention studies were removed. Question 4 was adapted from, 'are the interventions clearly described?' to, 'are the methods undertaken clearly described?' to ensure that the replicability of the studies was assessed. All items were scored either 0 or 1, with a score of 1 denoting 'yes' and a score of 0 denoting 'no' or 'unable to determine'. An exception to this is item 5 which measures potential confounders, and is scored 0, 1 or 2 (a score of 0 denotes 'no', 1 denotes 'partially' and a score of 2 denotes 'yes'). The maximum overall score available was 16 (see Appendix A for adapted version). The first author conducted the quality assessment of all 16 individual studies and a third-year Doctor of Clinical Psychology trainee independently appraised the quality of 50% of randomly selected studies using the same criteria. The process resulted in 75% agreement and Cohen's kappa (Cohen, 1960) was conducted to determine inter-rater reliability. There was substantial agreement between the two raters, $\kappa = .665$, $p < .001$ (Landis, & Koch, 1977). Any discrepancies were resolved through discussion, which resulted in an agreed total quality rating score. Given that the number of available studies is limited, all articles were retained, and quality was considered as part of the review.

Results

Table 2 summarises the characteristics of the 16 individual studies that met criteria for the current review, including the quality appraisal score.

Study Characteristics

In total, the reviewed studies included 1705 parent-child dyads and an aggregated number of 3410 participants in total. Sample sizes ranged from 24 to 488 parent-child dyads. Eight studies had a sample of both mother and father dyads and eight studies had a sample of mother-child dyads only. Of the studies that reported parent gender ratio (n = 15), 86% of participants were mothers and 14% of participants were fathers. The child sample age ranged from 2 years to 17 years (M = 9.44, SD = 1.63). All studies reported child gender ratios and there was a relatively even division of boys (48%) and girls (52%) included in the studies. In total, 59% of parent-child dyads were recruited from the community and 41% of parent-child dyads were recruited from a clinical sample.

Child anxious cognitions were measured using validated self-report measures (n = 13) and measures devised by the authors for the purpose of the study (n = 3). The Ambiguous Stories Questionnaire (ASQ, Barrett, Rapee, Dadds, & Ryan, 1996) was employed by six of the studies and the Fear Beliefs Questionnaire (FBQ, Field, Argyris, & Knowles, 2001) was employed by four of the studies to measure child anxious cognitions. Child anxiety was measured by self-report measures (n = 10), parent-report measures (n = 2) or both (n = 4). The Screen for Child Anxiety Related Emotional Disorders (SCARED; Birmaher, Khetarpal, Brent, & Cully, 1997) was employed by four of the studies and the Fear Survey Schedule for Children-Revised (FSSC-R; Ollendick, 1983) was employed by four of the studies to measure child anxiety.

Quality Appraisal of Included Studies

The quality rating scores ranged from 9-14, with a mean score of 12 (SD=1.26) out of a possible 16. See Table 2 for total quality appraisal score and Appendix B for individual item scores for each study. All of the included studies clearly described the aims, methods and findings. The characteristics of participants were clearly described for all studies except one (Blossom et al., 2013), where parent gender ratio was not described. Studies with the highest score of 14 (Muris, van Zwol, Huijding, & Mayer, 2010; Remmerswaal, Muris, Mayer, & Sweets, 2010) were experimental in design and were given the highest possible score for each question except it was not possible to determine if any findings were based on 'data dredging' or if participants were recruited over the same period of time. A clear weakness in methodological quality was the creation of non-validated questionnaires to measure child anxious cognitions in three studies (Becker & Ginsburg, 2011; Cobham, Dadds, & Spence, 1999; Thirlwall, & Cresswell, 2010) and child anxiety in one study (Becker, & Ginsburg, 2011). Methodological quality will be further considered when discussing the findings.

Table 2

Summary of included studies (N= 16)

Author(s) and year	**Sample**	**Child age range (years)**	**Population**	**Parent role examined**	**Child anxiety measure**	**Child cognitions measure**	**Quality rating score (0-16)**
Affrunti, & Ginsburg (2012**a**), United States	75 parent-child dyads (62 mothers, 13 fathers)	7-12	Community	Autonomy granting	SCARED-C	ASQ	13
Becker, & Ginsburg (2011), United States	75 mother-child dyads	6-14	Community	Autonomy granting Modelling non-verbal fearful behaviour	Children asked to rate anxiety on a scale 0-8	Children given 3 questions and asked to rate on a scale 1-5	11
Blossom, Ginsburg, Birmaher, Walkup, Kendall, Keeton, Langley, Piacentini, Sakolsky, & Albano (2013), United States	488 parent-child dyads	7-17	Clinical	Family dysfunction Parent expectation	SCARED-C SCARED-P	ASQ	13
Burstein, & Ginsburg (2010), United States	25 parent-child dyads (13 mothers, 12 fathers)	8-12	Community	Modelling non-verbal fearful behaviour	SCARED-P STAIC	C-FAT	12
Cobham, Dadds, & Spence (1999), Australia	73 mother-child dyads	7-14	Clinical and community	Modelling verbal fear response	RCMAS	Predictive rating form created using rating scale 1-5	11

Table 2 continued

Author(s) and year	Sample size	Child age range	Population	Parent role examined	Child anxiety measure	Child cognitions measure	Quality rating score (0-16)
Cresswell, Shildrick, & Field (2011), United Kingdom	110 parent-child dyads (103 mothers, 4 fathers)	5-9	Community	Parent expectation	10 item measure adapted from items on CBCL and ARBQ	ASQ	9
Fliek Dibbets, Roelofs, & Muris (2016), The Netherlands	258 parent-child dyads (199 mothers, 117 fathers)	7-12	Community	Modelling verbal fear response Modelling of non-verbal fearful behaviour	SCARED-C	ASQ	12
Lester, Seal, Nightingale, & Field (2010), United Kingdom	92 mother-child dyads	6-11	Community	Modelling of non-verbal fearful behaviour	STAI-C	ASQ	11
Micco, & Ehrenreich (2008), United States	80 mother-child dyads	7-14	40 clinical 40 community	Parent expectation	RCADS ADIS-C	CARBQ	13
Muris, van Zwol, Huijding, & Mayer (2010), The Netherlands	88 parent-child dyads (72 mothers, 16 fathers)	8-13	Community	Modelling verbal fear response	FSSC-R	FBQ	14
Ooi, Dodd, & Walsh (2015), United Kingdom	50 parent-child dyads (45 mothers, 5	2.7 -5.8	Community	Modelling verbal fear response	PAS-R	ASQ	11

	fathers)						

Table 2 continued

Author(s) and year	Sample size	Child age range	Population	Parent role examined	Child anxiety measure	Child cognitions measure	Quality rating score (0-16)
Remmerswaal, Muris, & Huijding (2015a), The Netherlands	122 mother-child dyads	8-13	Community	Modelling verbal fear response	FSSC-R	FBQ	12
Remmerswaal, Muris, & Huijding (2015b), The Netherlands	49 mother-child dyads	9-12	Community	Modelling verbal fear response	FSSC-R	FBQ	12
Remmerswaal, Muris, Mayer & Smeets (2010), The Netherlands	52 mother-child dyads	9-12	Community	Modelling verbal fear response	FSSC-R	FBQ	14
Thirlwall & Cresswell (2010), United Kingdom	24 mother – child dyads	4-5	Community	Autonomy granting	ARBQ	The performance scale and the feelings scale	13
Viana, Dixon, Stevens & Ebesutani (2016), United States	44 mother-child dyads	8-12	Clinical	Minimising and punitive behaviour	ADIS-C RCMAS	CNCEQ	12

Note. ASR = Adult Self Report (Achenbach, & Rescorla, 2003); ASQ = Ambiguous Situations Questionnaire (Barrett, Rapee, Dadds, & Ryan, 1996) ; ADIS-C = Anxiety Disorders Interview Schedule: Child Version (Silverman, & Albano, 1996); ARBQ = Anxiety Related Behaviours Questionnaire (Eley, Bolton, O'Connor, Perrin, Smith, & Plomin, 2003); C-FAT = Child Feelings and Thoughts Measure (Burstein, & Ginsburg, 2010); CARBQ = Cognitive and Avoidant Response Biases Questionnaire (Micco, & Ehrenreich, 2008); CNCEQ = Children's Negative Errors Questionnaire (Leitenberg, Yost, & Carroll-Wilson, 1986); FBQ = Fear Beliefs Questionnaire (Field, Argyris, & Knowles, 2001); FSSC-R =

Fear Survey Schedule for Children- Revised (Ollendick, 1983); PAS-R = Revised Preschool Anxiety Scale (Edwards, Rapee, & Kennedy, 2010); Performance Scale and the Feelings Scale (Thirwall, & Cresswell, 2010); RCADS = Revised Child Anxiety and Depression Scale (Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000); RCMAS = Revised Children's Manifest Anxiety Scale (Reynolds, & Richmond, 1978); SCARED-C= Screen for Child Anxiety Related Emotional Disorders-Child Version; SCARED-P = Screen for Child Anxiety Related Disorders-Parent Version (Birmaher, Khetarpal, Brent, & Cully, 1997); STAI = State Trait Anxiety Inventory for Children (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs ,1973).

Main Findings

In order to review and synthesise the role of parents in the development of anxious cognitions, studies are organised into four sub-categories based on the Cresswell et al. (2010) model: modelling a non-verbal fear response; modelling a verbal fear response; lacking autonomy granting; parental expectations of the child. Studies that examine parental behaviour not explained by the model will be considered following this.

Modelling a non-verbal fear response. The Cresswell at al. (2010) model suggests that parents influence their child to develop anxious cognitions by behaving in fearful ways and consequently modelling fearful responses to their child. Of the 16 studies reviewed, four examined the role parental modelling of fearful behaviour may have on the development of anxious cognitions in children. Fearful behaviours demonstrated by parents in the included studies were defined as pacing, rigid posture, lip biting, wringing of hands, rocking in a chair and avoidance. In an experimental design, Burnstein, and Ginsburg (2010) discovered that when parents were trained to act in fearful ways, children reported higher levels of anxious cognitions and desired avoidance of a spelling test than when parents were trained to behave in a calm manner (e.g. sitting still and appearing relaxed). Hence, exposure to parental modelling of anxiety for only 2-3 minutes had significant effects on child anxious cognitions, regardless of parent gender. The sample used in this study is however, relatively small (N = 25) and it is difficult to make inferences from the findings to real life. Similar findings were reported in the Becker, and Ginsburg (2011) study, which used a larger sample size (N = 75) and examined non-verbal fearful behaviour in 'vivo' by recording mothers preparing their child to deliver a speech about themselves. Further, using a larger sample size (N = 258) and both mothers and fathers, Fliek, Dibbets, Roelofs, and

Muris (2016) discovered that high levels of child anxious cognitions mediated the relationship between paternal, but not maternal modelling of fearful behaviour and child anxiety. Hence, findings suggest that when fathers behave in anxious ways, this may be more important in the development of child anxious cognitions than when mothers behave in the same way. However, the Fliek et al. (2016) study is a cross-sectional design and therefore no causative interpretations can be made. Lester, Seal, Nightingale, and Field (2010) examined parental fear behaviour by asking children to predict what their mother would do in various ambiguous situations. When children anticipated that their mother would deal with situations as though they were threatening, the children were also likely to interpret the situation as threatening. Therefore, all of the four studies appear to offer support for Cresswell, Cooper, and Murray's (2010) model that postulates that parent modelling of fearful behaviour has a role in the development of child anxious cognitions. However, it is worth bearing in mind that all four studies were also examining other mechanisms, therefore making conclusions that parental fearful behaviour has a unique and specific effect on child anxious cognitions is difficult as it is likely that this mechanism and other mechanisms may have been working in tandem.

Modelling a verbal fear response. The Cresswell et al. (2010) model suggests that parents may model a fear response by directly communicating fearful information to their child. Of the studies reviewed, seven investigated parents verbally communicating threatening information to their child and child anxious cognitions. Using an experimental design, Cobham, Dadds, and Spence (1999) reported that discussion with parents did not have any impact on children's cognitions before they were recorded giving a brief talk, regardless of child anxiety or whether the child's parent experienced anxiety or not. Hence, this study does not provide support for the model; however, the authors suggest that the task was possibly not sufficiently anxiety

provoking and therefore anxious cognitions may not have been activated in the children. However, Muris, de Zwol, Huijding, and Mayer (2010), Remmerswaal, Muris, Mayer, and Smeets (2010), Remmerswaal, Muris and Huijding (2015a) and Burnstein and Ginsburg (2010) reported contrasting results from experimental methods. Muris et al. (2010) reported that when parents were given negative information about a novel animal, they were more likely to use threatening narratives about the animal in discussions with their child than parents who were given positive information. The children of parents who had been given negative information developed higher levels of fear beliefs than the children whose parents were given positive information. Remmerswaal et al. (2010) conducted a similar study with a community sample and found that the children of mothers who displayed a fear related confirmation bias where they sought less information to invalidate the likelihood that a novel animal was dangerous developed this bias following discussion with their mother. Remmerswaal et al. (2015a) also demonstrated that mothers have an impact on children's cognitive bias as when a community sample of children were trained by their mothers toward a negative information search strategy, they demonstrated an increase in their search for negative information and in fear beliefs. Further, Burnstein et al. (2010) found that when parents were trained to make fearful remarks to their child before a spelling test, their child showed higher anxiety levels and anxious cognitions about their performance in the test. In this study, fathers were found to have a more significant impact on child anxious cognitions than mothers. The experimental nature of the studies means that parents will have potentially been aware that the threat was fictitious and consequently they may not have behaved as they would in a 'real-life' threatening situation. Further, the children may have responded with increased wariness as their parent was potentially reacting in an unexpected manner. Remmerswaal, Muris, and Huijding (2015b)

examined the relationship in more natural circumstances. A community sample of children and their mothers were presented with ambiguous information about novel animals and they were instructed to work together on an information task about the animals. Findings confirmed that the number of fear related questions about the animals asked by the mothers to their child significantly predicted child anxious cognitions. Ooi, Dodd, and Walsh (2015) also used a more naturalistic scenario and discovered that children whose parents told their child a threatening story ending had higher threat interpretations than children whose parents gave a non-threatening ending. Despite having a sample of mothers and fathers, only 5% of the sample were fathers, therefore it is difficult to make any conclusions about fathers in this study. Given that parent-child interactions were not coded in either study (Ooi et al., 2015; Remmerswaal et al., 2015b), it is difficult to know if other mechanisms, as well as verbal transmission may have been involved in the transfer of fear information from parents. In line with the Cresswell et al. (2010) model, it is possible that parents may have also modelled fear behaviours; however, this was not reported.

As the majority of discussed studies used samples of mothers or samples with the majority of parent participants being mothers, it is difficult to make conclusions about the role of fathers. However, Fliek et al. (2016) reported the findings of a large cross-sectional study of both mothers and fathers (mothers = 199, fathers = 117) and found that child anxious cognitions mediated the relationship between parental communication of threatening information and child anxiety. Hence, findings suggest that child anxious cognitions may be an important mechanism in the relationship between parents communicating threatening information and children becoming anxious. The overall findings of the included studies are consistent with the Cresswell et

al. (2010) model that suggests that parents can verbally transmit fear information to their child which influences the development of child anxious cognitions.

Parent lack of autonomy granting. The Cresswell et al. (2010) model suggests that parents may transfer threat information by restricting the autonomy of their child by behaving in controlling and overprotective ways. Three studies examined the role of controlling behaviours in parenting on the development of anxious cognitions in children. All three studies reported a significant relationship between controlling parenting behaviour and child anxious cognitions. In an experimental study, Thirlwall, and Cresswell (2010) measured the resultant changes in child cognitions depending on whether mothers were trained to act in controlling or autonomy granting ways. The children of mothers who behaved in controlling ways whilst preparing their child to give a speech experienced more anxious cognitions about their performance prior to delivering the speech than children who had been granted autonomy. Consistent with this finding, Becker, and Ginsburg (2011) also found a relationship between high levels of maternal control and increased child anxious cognitions in a speech preparation task. However, Becker, and Ginsburg (2011) measured parental behaviour in more natural circumstances by coding actual controlling behaviour in the task. Therefore, findings by Thirlwall et al. (2010) and Becker et al. (2011) suggest that maternal control may play a causative role in the development of anxious cognitions in children. However, conclusions about the role of fathers in the development of anxious cognitions in children cannot be made as both studies used mother-child dyads. Using a sample of both mothers and fathers, Affrunti, and Ginsburg (2012a) found that child interpretation biases to threat mediate the relationship between parental control and child anxiety. Given that Affrunti, and Ginsburg (2012a) used a cross-sectional design, it is not possible to make any causative conclusions, however findings suggest that child

anxious cognitions are an important mechanism in the relationship between parents behaving in controlling ways and children experiencing anxiety.

Parental expectations of the child. The Cresswell et al. (2010) model postulates that by conveying expectations about poor coping and distress, parents indirectly influence the development of child anxious cognitions. Of the studies reviewed, three examined the role parental expectation may have on child anxious cognitions. Consistent with the Cresswell et al. (2010) model, Blossom et al. (2013) found that the children of parents who expected their child to experience greater anxious cognitions, perceived more threat when presented with ambiguous situations. However, it is not clear whether parental expectations of child anxious cognitions are an indication of parents' knowledge of their child's cognitions, rather than evidence that parents indirectly influence their child's cognitions. Blossom et al. (2013) used generic ambiguous situations to examine parental expectations; however, Micco, and Ehrenreich (2008) used personally salient situations that are more likely to occur in the children's real lives to examine mothers' expectations of their child's coping. Consistent with the model, maternal expectation of coping predicted child coping expectations. Cresswell, Shildrick, and Field (2011) examined the stability of the relationship between parental expectations and child anxious cognitions by measuring parental expectations and child interpretation of ambiguous scenarios at three time points over a year. Findings suggested that the relationship between parent and child anxious cognitions was not mediated by parental expectations, except at time point three. Low internal consistency in the expectancy measures at some time points in the study suggests that the inconsistent findings may have been a result of low robustness in measurement. However, if the finding reflects a true result, then it would suggest that parents' expectations may develop over time. Consistent with the Cresswell et al.

(2010) model, the included studies provide evidence that parental expectation about their child's ability to cope indirectly influences the development of child anxious cognitions. However, despite all of the three studies examining the relationship between parental expectations and child anxious cognitions, none of them consider how the expectations of the parent may then go on to impact parental behaviour (i.e. lack of autonomy granting).

Other types of parental behaviour. Parental behaviours which are not included in the Cresswell et al. (2010) model, have been examined in relation to child anxious cognitions. Firstly, a recent study by Vianna, Dixon, Stevens, and Ebesutani (2016) examined whether non-supportive responses from parents effects child anxious cognitions. In a cross-sectional study, the authors measured punitive (e.g. sending a child to their room to calm down) and minimising behaviours (e.g. telling a child not to make a big deal out of a situation) in a sample of children with an anxiety disorder. Findings confirmed that the relationship between child anxious cognitions and child anxiety was weakened when mothers displayed high levels of punitive and minimising behaviours. The cross-sectional nature of this study limits the interpretation of the true direction of the associations found. However, the findings suggest that unsupportive parental behaviour may lead to a reduction in child anxious cognitions, which consequently leads to a reduction in child anxiety. Given that the model by Cresswell et al. (2010) is explaining how parental behaviour enhances the development of child anxious cognitions, it is not surprising that non-supportive parental behaviours are not included. However, for the purpose of the review, it is interesting to find that non-supportive parental behaviour is potentially important in lessening the development of child anxious cognitions.

Blossom et al. (2013) examined family dysfunction in relation to child anxious cognitions using cross-sectional methods. Family dysfunction was defined in terms of consistency, interpersonal relationships and communication. Using a large sample of parent-child dyads (N = 488), the authors established that child reported family dysfunction was a significant predictor of child anxious cognitions. Given that the authors were focusing on family behaviour and not parental behaviour exclusively; one would not expect family functioning to be a mechanism in the model by Cresswell et al (2010). However, given that parents are considered to be significantly influential in the development of child anxious cognitions, it is likely that some of the mechanisms measured within the concept of family functioning may also be important for parents alone.

Discussion

The purpose of the current review was to critically appraise studies that examine the role of parents in the development of child anxious cognitions. Findings were considered in relation to the Cresswell et al. (2010) model of parental behavioural pathways that lead to the development of child anxious cognitions. Included studies were considered in relation to each individual pathway: parental modelling of a non-verbal fear response, parental modelling of a verbal fear response, parental lack of autonomy granting and parental expectations of child. Studies included in the review that examined parental behaviours not considered in the model were also appraised.

The studies included in the review provide evidence that parental behaviour contributes to the development of child anxious cognitions. The finding is consistent with theories of anxiety development that posit that parental behaviour provides an environmental context for the development of child anxiety (Craske, 1999). The current review also provides support for the Cresswell et al. (2010) model of behavioural

pathways that lead to the development of child anxious cognitions. Of the included studies, the proposed pathways by Cresswell et al. (2010) that parents model a verbal and non-verbal fear response in the development of child anxious cognitions received the strongest support as the largest proportion of included studies examined these pathways. The review findings are consistent with social learning theories that posit that children may adopt the anxious cognitions of their parents via modelling, vicarious learning and information transmission (Bandura, 1986). Given that a proportion of the included studies measuring both pathways are experimental in design, one can conclude that there is a causal relationship between parents communicating their fear both verbally and non-verbally and the development of child anxious cognitions. It is likely that parents engage in both of these behaviours at the same time and therefore that when they are combined, the impact of them on their child developing anxious cognitions may be stronger. However, Fliek et al. (2016) measured both pathways and concluded that the verbal communication of threat is a stronger pathway in the development of child anxious cognitions than when parents behave in non-verbal fear related behaviours.

Although proportionately less studies included in the review measured the proposed pathway by Cresswell et al. (2010) that parental lack of autonomy granting leads to the development of child anxious cognitions, the studies that did measure this relationship demonstrated strong support. Findings are consistent with the theory proposed by Chorpita, and Barlow (1998) that when parents do not grant their children autonomy, children do not learn that they have any control over their environment. Hence, when children are exposed to this type of parental behaviour, they may develop anxious cognitions because they do not develop a sense of self-efficacy. In support of this idea, Affrunti, and Ginsburg (2012b) demonstrated that the relationship between

parental control and child anxiety was mediated by child cognitions related to the child's perceived competence. The Cresswell et al. (2010) model proposes that it is the expectations of parents about their child's ability to cope that may lead to them behaving in ways that restrict their child's autonomy. However, none of the included studies examined this relationship.

In relation to the reviewed studies, the model by Cresswell et al. (2010) provides a good explanation of the role parents may have in the development of child anxious cognitions. However, the review did highlight parental behaviours that are not considered in the model. The finding that non-supportive parental behaviour potentially weakens the development of child anxious cognitions is not explained by the model. Given that the aim of the model is to provide an explanation of how parental behaviour contributes to the development of anxious cognitions, one would not expect parental behaviours that may minimise this process to be considered. However, as further research is undertaken examining child anxious cognitions and parenting, it may be that other types of parental behaviour are found to help reduce the development of child anxious cognitions. If this is the case, the Cresswell et al. (2010) model may benefit from being revised in order to accommodate both parental behaviour that enhances and minimises the development of child anxious cognitions.

The review finding that there is a relationship between family dysfunction and child anxious cognitions is not explained by the Cresswell et al. (2010) model. Given that that the Blossom et al. (2013) study is not specifically focusing on parents but the family as a whole, it is difficult to comment on how important the findings may be in relation to the Cresswell et al. (2010) model. However, as parents are considered to be significantly influential in the development of child anxious cognitions (Remmerswaal et al., 2010), it is probable that some of the concepts measured within the notion of

family functioning, may also be important to parents alone. The Blossom et al. (2013) study serves to highlight a limitation of the Cresswell et al. (2010) model, in that the model does not take into account systemic factors in the development of child anxious cognitions. Manassis, and Bradley (1994) posit that the development of child anxious cognitions is caused and maintained by a complex interplay between several mechanisms, including systemic factors, such as interactions with other family members and teachers in school and attachment relationships. Therefore, the Cresswell et al. (2010) model is inherently limited because of its focus on parental behaviour and it not accounting for all of the factors that may be involved in the development of child anxious cognitions.

Conclusions from the present review concerning differences between the behaviour of mothers and fathers in relation to the development of child anxious cognitions are compromised by the low number of participating fathers. It is unlikely that in two parent families, only one parent has an influence over their child's cognitions. Therefore, from the review findings, one can be more confident that maternal behaviour contributes to the development of child anxious cognitions than paternal behaviour. Research does indicate differences between maternal and paternal behaviour and the impact of this on child anxiety. For example, a recent meta-analytic review demonstrated that the association between parental behaviour and child anxiety symptoms was stronger for fathers than mothers (Möller, Nikolic, Majdandzic, & Bögels, 2016).

Future Research

The current review has highlighted a number of specific gaps in the literature for future research to address. It would be useful for several of the reviewed studies to be replicated using both mothers and fathers in their samples, in order to establish the role

of both parents in the development of child anxious cognitions. Future longitudinal research would also be useful in establishing if it is parental behaviour that leads to the development of child anxious cognitions or whether parents behave in fearful ways in response to their child being anxious. Additional research is needed in order to make firm conclusions about the role parents have in the development of child anxious cognitions. It would therefore be useful for future research to establish the unique variance that each pathway proposed by Cresswell et al. (2010) accounts for in explaining the development of child anxious cognitions. Hence, conclusions about the type of behaviour that has the strongest impact on the development of child anxious cognitions could be made.

Given that much of the research included in the review is experimental and cross-sectional in design, it is important for future research to measure how parents may behave when faced with real-life threatening events in which there are potential consequences for their child's safety. An important direction for future research would be to establish if child developmental stage impacts on the parental role in the development of child anxious cognitions. Given that research on child anxiety has demonstrated that parental behaviour is influenced by child age (Hagekull, Bohlin, & Hammerberg, 2001), further research using longitudinal methods would be needed to clarify how changes in parental behaviour may impact on the development of child anxious cognitions. Further, it would be useful for future research to decipher if parental behaviour has a specific effect on each individual type of cognitive bias and whether parental behaviour has a stronger effect on some types of biases developing in comparison to others. It would also be beneficial for future research to examine if there are other parental behaviours not explained by the Cresswell et al. (2010) model that are important in either the development or in the prevention of child anxious cognitions.

Lastly, future research should further explore the relationship between systemic factors and the development of child anxious cognitions.

Clinical Implications

The current review confirmed that parental behaviour contributes to the development of child anxious cognitions. Therefore, parental behaviour may be a potential target within family-based treatments for child anxiety. For example, parents may benefit from psycho-education around how their behaviour may serve to exacerbate or maintain child anxious cognitions. It may be beneficial for ready established evidence based parenting programmes such as 'From Timid to Tiger' (Cartwright-Hatton, Laskey, Rus,t & McNally, 2010) to incorporate information about how parental behaviour can lead to the development of child anxious cognitions. The findings also imply that cognitive biases training may be a useful intervention. Research in adult populations has demonstrated that modification of anxious cognitions leads to reductions in anxiety (Matthews, Ridgeway, Cook, & Yiend, 2007). Therefore, targeting cognitive biases in children and parents could be beneficial in both the context of the prevention and intervention of child anxiety. Finally, the finding that when parents behave in minimising ways, the relationship between child anxious cognitions and child anxiety is weakened has possible clinical implications. For example, it may be that parents who tend to use excessive reassurance with their child could be instructed to appropriately minimise their child's distress, which may in turn challenge their anxious cognitions.

Strengths and Limitations of the Review

The current review represents a systematic and comprehensive assessment of the literature, in the context of a clearly defined research question. In order to reduce systematic bias, the author and an independent rater assessed the quality of the included

studies. Despite these strengths, the current review has several limitations. Given that research on child anxious cognitions is relatively recent, the current review did not focus on distinguishing between different types of cognitions. Therefore, it is difficult to make generalisations about parental behaviour and child anxious cognitions as it is likely that parental behaviour may have a unique effect on each type of cognition. The review also only focused on the cognitive processing stages of attaching meaning to incoming information and the accessing coping resources stage. It is likely that other stages of cognitive processing such as attentional processes are relevant in looking at the role parents have in the development of anxious cognitions. Lastly, there may have been studies that did not fulfil the inclusion criteria but would have also been important when considering the research question.

Conclusions

The present systematic review provides evidence that, in line with the Cresswell et al. (2010) model, parents contribute to the development of child anxious cognitions by behaving in fearful ways, reducing their child's autonomy, verbally communicating fear and indirectly via their own expectations about their child. The review also highlighted that parent minimisation and punitive methods, may be important pathways that reduce the impact parents may have on the development of child anxious cognitions. Further, it is possible that other parental behaviours, such as inconsistency may be important in the development of child anxious cognitions. However, all conclusions made must be viewed as tentative, given that they are based on a small number of studies with a number of methodological limitations. Future research should focus on further establishing the role that parents have in the development of child anxious cognitions through examining parental behaviour in real-life scenarios and through the use of longitudinal methods. The findings suggest that parental behaviour

and the anxious cognitions of parents and children are important targets in the treatment of child anxiety.

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Appendices

Appendix A: Adapted Downs and Black (1998) quality rating checklist

Checklist Item	Score	Scoring Guidance
1. Is the hypothesis/aim/objective of the study clearly described?	Yes = 1 No = 0	
2. Are the main outcomes to be measured clearly described in the Introduction or Methods section?	Yes = 1 No = 0	If the main outcomes are first mentioned in the results section, the question should be answered no.
3. Are the characteristics of the participants included in the study clearly described?	Yes = 1 No = 0	Inclusion or exclusion criteria and the recruitment source of participants should be given.
4. Is the method clearly described?	Yes = 1 No = 0	
5. Are the distribution of principle confounders within the sample clearly described?	Yes = 2 Partially = 1 No = 0	A list of principle confounders is provided.
6. Are the main findings of the study clearly described?	Yes = 1 No = 0	Simple outcome data should be reported for all major findings so that the reader can check all major analyses and conclusions. This question does not consider statistical tests which are considered below.
7. Does the study provide estimates of the random variability in the data for the main outcomes?	Yes = 1 No = 0	In non-normally distributed data, the inter-quartile range of results should be reported. In normally distributed data, the standard error, standard deviation or confidence intervals should be reported. If the distribution of the data is not described, it must be assumed that the estimates used were appropriate and the question should be answered yes.
8. Have actual probability values been reported (e.g. 0.035 rather than <0.05) for the main outcomes except where the probability value is less than 0.001?	Yes = 1 No = 0	

Appendix A continued

Checklist Item	Score	Scoring guidance
9. Were the subjects asked to participate in the study representative of the entire population from which the study subjects were derived?	Yes = 1 No = 0	The source population and a description of how they were selected must be given.
10. Were those subjects who were prepared to participate representative of the entire population from which they were recruited?	Yes = 1 Unable to determine = 0 No = 0	The proportion of those asked who agreed should be stated.
11. If any of the results were based on data dredging, was this made clear?	Yes = 1 Unable to determine = 0 No = 0	Any analyses that had not been planned at the outset of the study should be clearly indicated.
12. Were the statistical tests used to test the main outcomes appropriate?	Yes = 1 Unable to determine = 0 No = 0	The statistical tests used must be appropriate to the data. For example, non-parametric methods should be used for small sample sizes. When little statistical analysis has been undertaken, but where there is no evidence of bias, the question should be answered yes. If the distribution of data (normal or not) is not described, it must be assumed that the estimates used were appropriate and the question should be answered yes.
13. Were the main outcome measures used accurate (valid and reliable)?	Yes = 1 Unable to determine = 0 No = 0	For studies where the outcome measures are clearly described, the question should be answered yes. For studies which refer to other work or that demonstrates the outcome measures are accurate, the question should be answered yes.
14. Were the study subjects recruited over the same period of time?	Yes = 1 Unable to determine = 0 No = 0	For a study which does not specify the time period over which subjects were recruited, the question should be answered as unable to determine.
15. Was there adequate adjustment for confounding in the analyses from which the main findings were drawn?	Yes = 1 Unable to determine = 0 No = 0	If the effect of the main confounders was not investigated or confounding was not demonstrated but no adjustment was made in the final analyses the question should be answered as no.

Appendix B: Individual quality ratings for eligible studies using an adapted version of Downs and Black (1998) checklist.

Total Score	Studies	Checklist Questions														
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
13	Affrunti & Ginsburg (2012)	1	1	1	1	2	1	1	1	1	1	0	1	1	0	0
11	Becker & Ginsburg (2011)	1	1	1	1	1	1	1	1	1	0	0	1	0	0	1
12	Blossom et al. (2013)	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1
12	Burnstein & Ginsburg (2010)	1	1	1	1	1	1	1	1	1	0	0	1	1	0	1
11	Cobham, dads & Spence (1999)	1	1	1	1	1	1	1	1	1	0	0	1	0	0	1
9	Cresswell, Shildrick & Field (2011)	1	1	1	1	1	1	0	1	1	0	0	1	0	0	0
12	Fliek, Dibbets, Roelofs & Muris (2016)	1	1	1	1	1	1	1	1	1	0	0	1	1	0	1
11	Lester, Seal, Nightingale & Field (2010)	1	1	1	1	1	1	1	1	1	0	0	1	1	0	0
13	Micco & Ehrenreich (2008)	1	1	1	1	2	1	1	1	1	1	0	1	0	0	1
14	Muris, van Zwol, Huijding & Mayer (2010)	1	1	1	1	2	1	1	1	1	1	0	1	1	0	1
11	Ooi, Dodd & Walsh (2015)	1	1	1	1	1	1	0	1	1	0	0	1	1	0	1
12	Remmerswaal, Muris & Huijding (2015a)	1	1	1	1	1	1	1	1	1	0	0	1	1	0	1
12	Remmerswaal, Muris & Huijding (2015b)	1	1	1	1	1	1	1	1	1	0	0	1	1	0	1
14	Remmerswaal, Muris, Mayer & Smeets (2010)	1	1	1	1	2	1	1	1	1	0	1	1	1	0	1
13	Thirlwall & Cresswell (2010)	1	1	1	1	2	1	1	1	1	0	0	1	1	0	1
12	Viana, Dixon, Stevens & Ebesutani (2016)	1	1	1	1	1	1	1	1	1	0	0	1	1	0	1

Part Two: Research Report

The Intergenerational Relationship of Anxiety and Parenting Factors

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Abstract

Objectives

Parenting style plays a role in the relationship between parent and child anxiety and parental control has been found to be the most consistent predictor of child anxiety. The current study aimed to explore whether parental experiential avoidance and mindful parenting predict child anxiety and whether parental control, parental experiential avoidance and mindful parenting mediate the relationship between parent and child anxiety.

Design

The study employed a quantitative methodology using a cross-sectional design.

Method

Parents (N = 85) from a community sample of 8-12-year-old children self-reported on a survey measuring parent anxiety, child anxiety, parental control, parental experiential avoidance and mindful parenting.

Results

Parental experiential avoidance and mindful parenting were significantly associated with child anxiety. A hierarchical regression demonstrated that parental experiential avoidance significantly predicted child anxiety and accounted for a further 3% of the variance in child anxiety, over and above parental control. Mindful parenting did not predict child anxiety. An interaction was found between parental control and parental experiential avoidance. Parental control and parental experiential avoidance mediated the relationship between parent and child anxiety.

Conclusions

The current study provides support for the role of parental experiential avoidance in child anxiety and that parental control and parental experiential avoidance are important

in the intergenerational relationship of anxiety. Future research should replicate the study with a clinical sample and explore whether parental experiential avoidance is a potential pathway to parental control.

Practitioner Points

- Parents accessing adult mental health services for anxiety could be targeted and given parenting interventions with the aim of preventing their child developing anxiety.
- Parental experiential avoidance could be an element in both the prevention and treatment of child anxiety. Traditional Cognitive Behavioural Therapy (CBT) methods involve parents supporting their child to be exposed to anxiety provoking situations. If parents are engaging in experiential avoidance they may not be able to tolerate doing this and consequently behave in ways that may serve to maintain their child's anxiety.
- Teaching mindful parenting interventions may reduce parents engaging in experiential avoidance in their parenting.
- Further research is required using a longitudinal design to disentangle the direction of the relationships between parent anxiety, parental control, parental experiential avoidance and mindful parenting in child anxiety.
- The replication of the study findings using a clinical sample is required.

Introduction

Fear, worry and anxiety are common during childhood and for most children occur as part of normal development. However, for some children anxiety symptoms become worse over time and interfere with daily routine and interpersonal functioning (Muris, & Merckelbach, 1998). Anxiety has been found to be one of the most common psychiatric problems in children and adolescents (Costello, Egger, & Angold, 2005) and Beesdo, Knappe, and Pine (2009) reported a prevalence of up to 15-20% of children experience some level of anxiety at one time. Children have been found to experience anxiety at all stages of childhood; however, middle childhood (8-12 years) is a common time for children to present to services with anxiety as it is around this time that children begin to draw connections about their emotions (Burnstein, & Ginsburg, 2010). Due to the high prevalence rates and associated costs to the National Health Service (NHS), it is vital that an understanding of the development of anxiety in children is gained (Ballash, Leyfer, Buckley, & Woodruff-Borden, 2006).

Research has consistently identified that parental anxiety is a risk factor for childhood anxiety (Donovan, & Spence, 2000) and children of parents who have an anxiety disorder are five to seven times more likely to be diagnosed with an anxiety disorder themselves compared to children of parents who do not have an anxiety disorder (Biedel, & Turner, 1997). The co-occurrence of parental and child anxiety has led many researchers to suggest that anxiety is transmitted from parent to child (Remmerswaal, Muris, & Huijding, 2015). Burnstein, and Ginsburg (2010) have suggested that this transmission is partially genetic and researchers have found that genetic heritability accounts for approximately 50% of the variance in children having an anxious disposition (Eley, & Gregory, 2004). However, the estimated heredity of anxiety disorders, more specifically, is estimated to be lower (Kendler, Neale, Kessler,

Heath, & Eaves, 1992). Given that genetic heredity does not account for all the variance in child anxiety, studies have focused on parental characteristics such as parental attachment (Brumariu, & kerns, 2010) and parenting style (Waite, Whittington, & Cresswell, 2014) in order to further understand the relationship between parent and child anxiety. However, the exact mechanism of the transmission of anxiety from parent to child remains unclear (Ballash, Leyfer, Buckley, & Woodruff-Borden, 2006).

Craske's (1999) model of anxiety development postulates that parenting style provides an environmental context that can influence the development and maintenance of anxiety. For example, a relationship between child anxiety and high levels of parental rejection and parental control has been found (Bögels, & Brechman-Toussaint, 2006; van der Sluis, van Steensel, & Bögels, 2015). Over the past two decades several systematic literature reviews have suggested that high levels of control in parenting is the most consistent parenting style predictor of anxiety in childhood (Ballash et al., 2006; McLeod et al., 2007; Murray et al., 2009, & Wood et al., 2003). Parental control is characterised by parents excessively monitoring their children's activities, discouragement of independent thinking and high levels of intrusion (Bogels, & Brechmann-Toussaint, 2006). Parental control has also been referred to as parental overprotection and low autonomy granting in the literature (Ollendick, & Grills, 2016). Chorpita, and Barlow (1998) suggest that parental control can lead to a vulnerability to child anxiety due to a reduction in the child's development of autonomy and a child believing that they have little control over their environment. Barlow's (2002) model of anxiety development suggests that perceived lack of external and internal control is an important attribute in the development of anxiety for both adults and children. Therefore, it is likely that if parents are behaving in controlling ways, they are teaching their children to perceive that they lack internal and external control, hence leading to

the development of anxiety. In support of this, Thirlwall, and Cresswell (2010) instructed parents to behave in controlling or autonomy granting ways towards their children. The children reported experiencing greater levels of anxiety when their parent behaved in controlling ways. Further, Whaley, Pinto, and Sigman (1999) found that anxious adults reported experiencing higher levels of controlling parenting in their childhood than non-anxious adults. Despite the consistent link between parental control and child anxiety (Murray et al., 1999), the link between parent anxiety and parental control is less clear. There is empirical support for a link between parent anxiety and controlling parenting behaviour (Whaley, Pinto, & Sigman, 1999), but in a meta-analytic review of 23 studies, van der Bruggen, Stams, and Bögels (2008) reported a non-significant relationship between parent anxiety and control. Further, Turner, Beidel, Robertson-Nay, and Tervo (2003) found no difference between anxious and non-anxious parents in levels of parental control.

More recently, researchers have investigated whether parental control is a mechanism that could explain the relationship between parent and child anxiety, with mixed results. Affrunti, and Woodruff-Borden (2015) did not find that parental control mediated the relationship between parent and child anxiety. Conversely, Borelli, Margolin, and Rasmussen (2015) found that maternal control mediated the relationship between maternal anxiety and child anxiety; however, paternal control was not found to mediate the relationship between paternal anxiety and child anxiety. Parental control has not been found to account for all of the variance in child anxiety; in a meta-analysis, McLeod et al. (2007), reported that parental control accounted for only 6% of the variance in child anxiety. More recently, in a cross-sectional study, Affrunti, and Ginsburg (2012) found that maternal control accounted for 15% of the variance in child anxiety. Given that parental control does not account for all of the variance in child

anxiety, it is important to explore other parenting styles that may also play a role in predicting child anxiety. More recent research in parenting and child mental health has begun to explore the concepts of parental experiential avoidance and mindful parenting.

Experiential avoidance can be defined as the inability or unwillingness to remain in contact with ones' own internal distress (Heckler, 2012). In finding ways of regulating emotional distress, one may engage in behaviours or strategies to suppress, avoid or escape these feelings. Repeated engagement in experiential avoidance is considered to hamper an individual in developing resources needed cope in difficult situations (Cernvall et al., 2015). Experiential avoidance has been found to be important in both the development and maintenance of anxiety in both adults and children (Simon, & Verboon, 2016). Given that anxious adults are likely to engage in experiential avoidance (Barman, Wheaton, McGrath, & Abramowitz, 2010); it follows that parents who are anxious may also engage in it in a parenting context. An anxious parent may deal with difficult parenting experiences that lead to their own internal distress by avoiding, suppressing or controlling (Tiwari et al., 2008). For example, if a child becomes distressed at seeing a spider, the parent may also feel internal distress at seeing their child in discomfort. In this situation, the parent may focus on finding ways of relieving their own resulting distress, which may mean that they intervene by, for example, removing their child from the situation. Hence, the parent may not allow their child to engage in 'trial and error' learning which leads to the development of self-efficacy (Cartwright-Hatton et al., 2010). Subsequently, the child may not develop a sense of self-efficacy and be vulnerable to developing anxiety. Consistent with this idea, Hudson, Comer, and Kendall (2008) reported that mothers of anxious children were more likely to show less warmth and behave intrusively when their child displayed negative emotions, compared to when the child displayed positive emotions. The

authors suggest that parents may have felt uncomfortable when their child expressed negative affect and because of this, were driven to behave in ways to reduce their own discomfort as well as their child's negative emotions.

Tiwari et al. (2008) postulated that consistent experiential avoidance in parenting may result in the child being more likely to experience anxiety. To date, only one study has examined the relationship between parental experiential avoidance and child anxiety; Cheron, Ehrenreich, and Pincus (2009) reported that experiential avoidance in parenting was significantly associated with high levels of child anxiety in a sample of children with anxiety disorder. In addition, parents who reported high levels of experiential avoidance in their daily lives, also reported high levels of experiential avoidance in their parenting style and were more likely to experience anxiety themselves. These findings provide support that experiential avoidance may have a role in the relationship between parent and child anxiety. However, replication of the previous finding is required to confirm a consistent association between parental experiential avoidance and child anxiety. Bögels, and Brechman-Toussaint (2006) have suggested that further research that investigates mechanisms that mediate the relationship between parental factors and child anxiety is needed. Therefore, establishing if parental experiential avoidance mediates the relationship between parent and child anxiety is important.

Mindfulness has been posited as an alternative coping style that contrasts with experiential avoidance (Thompson, & Waltz, 2010). In Acceptance and Commitment Therapy (ACT), mindfulness approaches are used to help increase psychological flexibility as engaging in such approaches can lead to a reduction in experiential avoidance (Brown, Whittingham, & Sofronoff, 2014). Mindfulness in the parenting role has become the focus of recent research in child mental health. Mindfulness is defined

as the awareness that emerges through purposely paying attention to the present moment without judgement (Parent, McKee, Rough, & Forehand, (2015). Given that previous research has suggested that experiential avoidance in parenting is linked to child anxiety, it is possible that low levels of mindfulness in parenting may also be an important predictor in child anxiety. Mindful parenting encompasses the idea that the core values of mindfulness are integrated into the parent's cognitions, feelings and behaviours, such that the parents pay attention to their child without judgement and in the present moment (Geurtzen et al., 2015). Duncan, Coatsworth, and Greenberg (2009) developed a model which suggests five dimensions of mindful parenting: (1) being able to listen with full attentiveness, (2) being non-judgemental to self and child, (3) having emotional awareness of self and child, (4) being able to self-regulate, and (5) having compassion to self and child. Research on mindful parenting has examined various different parent constructs, such as child attachment style (Medeiros, Gouveia, Canavarro & Moreira, 2016) and parent stress (Bögels, Hellemans, van Deursen, Römer, & van der Meulen, 2014). Intervention programmes aimed at increasing mindfulness in parenting have found that an increase in mindful parenting can lead to changes in parental behaviour and improvements in child mental health. For example, Bögels, Hellemans, van Deursen, Römer, and van der Meulen (2014) reported that after attending an 8-week mindful parenting program (Bögels, & Restifo, 2014), parents reported a shift in their parenting styles, with an increase in mindful parenting, a reduction in controlling parenting and an increase in autonomy granting behaviour. Thus mindful parenting programmes may serve to target the parenting styles that have been shown to be the most consistent parenting predictors of child anxiety. The mindful parenting programme has also resulted in significant improvements in reducing child internalising and child externalising (e.g. Bögels et al., 2014; Meppelink, de Bruin,

Wanders-Mulder, Vennik, & Bögels, 2016). Further, Meppelink et al. (2016) demonstrated that improvement in mindful parenting, but not general mindful awareness in parents, predicted improvements in child internalising and externalising. Therefore, increased mindful parenting is associated with improvements in child mental health. When mindful parenting was measured as a general parenting characteristic, Parent, McKee, Rough, and Forehand (2015) found that a higher level of mindfulness in parenting was directly related to lower levels of internalising and externalising of problems in young childhood, middle childhood and adolescence. Also, Geurtzen et al. (2015) in a community sample found that children of parents who reported higher levels of non-judgemental acceptance of their own parenting reported less problems with internalising. Given that low levels of mindful parenting are related to child internalising; it is likely that low levels of mindful parenting may be linked with child anxiety. Therefore, an important question in the literature is to establish if mindful parenting is associated with child anxiety. If mindful parenting is found to predict child anxiety, it would be useful to further examine this concept to establish if mindful parenting mediates the relationship between parent and child anxiety.

Aims

The aim of this study was to examine whether specific parenting styles are associated with child anxiety and predict child anxiety over and above parental control. Given that previous research has been unable to consistently establish if parental control mediates the relationship between parent and child anxiety, this study also aimed to further assess whether parental control is a mechanism that explains this relationship. The study also aimed to establish if parental experiential avoidance and mindful parenting mediate the relationship between parent and child anxiety.

Hypotheses

1. Parental experiential avoidance will be positively associated with child anxiety and mindful parenting will be negatively associated with child anxiety.

2. Parent anxiety will be positively associated with and predict child anxiety.

3. High levels of parental experiential avoidance and low levels of mindful parenting will predict child anxiety.

4. Parental control, parental experiential avoidance and mindful parenting will mediate the relationship between parent and child anxiety.

Method

Design

This study employed a quantitative methodology, using a cross sectional design where parents from a convenience sample completed self-report measures of their own anxiety, mindful parenting, parental experiential avoidance, parental control and anxiety levels in their child.

Participants and Procedure

Parents of children aged between 8 and 12 years, who were the main caregiver and had sufficient proficiency in English were invited to take part in the study. A total of 120 questionnaires were distributed to a community sample; 85 parents returned completed measures.

Participants were recruited by means of advertisements (Appendix D and E) distributed to four local primary schools via notice boards and emails and to two community groups: a dance school and a football team via group leader distribution or the group waiting area. Advertisements informed parents that if they wished to take part in the study, they could collect a paper version of the study information sheet (Appendix

F) and questionnaire (Appendix G-L) from the reception area of their child's school or from the community group leader or waiting area. Parents were able to collect questionnaires with sealed envelopes. If, after reading the participant information sheets, parents wished to complete the questionnaire, they were requested to leave completed questionnaires in the sealed envelope in a dedicated covered box left at the reception desk of the school or with the group leader. The return of questionnaires was considered as implied consent.

If parents had more than one child between 8-12 years, they were instructed to base their responses on the child whose age was closest to the mid-range (i.e. 10 years). If parents had children who were the same age (i.e. twins), they were asked to bring one of their children to mind when completing the questionnaire.

Ethical Considerations

Ethical approval for this study was obtained from the NHS research ethics committee (Appendix C)**.** Approval was sought from the NHS committee as it was planned that a small sub-sample of parents from a clinical sample would also be recruited. However, no completed questionnaires were returned from the clinical sample.

Given that the focus of the questionnaires was on parenting, it was possible that a parent may feel distressed whilst completing the questionnaire. Therefore, the webpage for a mental health support charity and the telephone number for a local mental health support helpline were included on the participant information sheet. In order to reduce participant burden in the completion of long questionnaires, the fewest amount of items were chosen as much as possible by using short versions or only relevant parts of questionnaires. Parents in the community were consulted prior to data collection to check that burden in completing the questionnaires was acceptable.

Participants were not required to give any personally identifying information about themselves or their child when completing questionnaires.

Power Analysis

An a priori power calculation was undertaken for multiple regression analysis. Assuming a medium effect size of R^2 =.15, a significance level of alpha = .05, and four predictor variables, a sample size of 85 was required to achieve 80% power. The number of participants required was also calculated using the system devised by Green (1991) for regression based analysis where a 'rule of thumb' is suggested for calculating a sample size based on 50 participants plus the number of predictors multiplied by eight. Using this formula (50+(8*4)), with the inclusion of four predictor variables in the analysis, 81 participants were deemed to be required for the multiple regression to have enough statistical power to be viable.

Measures

Parent rated child anxiety symptoms were measured using the Spence Children's Anxiety Scale, Parents Version (SCAS-P; Spence, 1998, see Appendix I). The SCAS-P is a 39-item parent-report measure which generates total scores and subscale scores in accordance with DSM-IV anxiety disorder clusters. Parents are asked to rate the degree to which their child experiences each symptom (e.g.," my child complains of feeling afraid") on a 4-point likert scale, from never (0) to always (3). Total scores range from 0-114, where higher scores indicate higher levels of child anxiety. Norms for total scores of children with an anxiety disorder range from 30.1 (SD 14.9) to 33.0 (SD 14.9) and in the community sample, norm total scores range from 11.8 (SD 8.3) to 16.0 (SD 11.6) in children aged between 6 and 18 years (Nauta et al., 2004). The SCAS-P has been found to have high validity and reliability with an overall

coefficient alpha of .89. and consistency has been found between child and parent versions. In the current study, the Cronbach's alpha coefficient was 0.96.

Parent anxiety symptoms were measured using the State Trait Anxiety Inventory (STAI, Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983, see Appendix H). The STAI is a 40-item self-report questionnaire which includes two subscales measuring both state and trait levels of anxiety. For the purpose of this study, only the trait subscale was used to measure parent's anxiety as only the stable, enduring levels of parents' anxiety are relevant in the current study. This subscale has 20 items and participants are asked to indicate how they generally feel about different symptoms (e.g., "I feel nervous and restless") using a 4-point likert scale from 1 (almost never) to 4 (almost always) and this yields a total score. Nine items were reverse coded (items 21, 23, 26, 27, 30, 33, 34, 36 and 39). Scores range from 20 to 80, where higher scores indicate greater levels of trait anxiety. Clinical cut-off scores have not yet been defined. However, in a sample with parents with an anxiety disorder, Teetsel, Ginsburg, and Drake (2014) reported the mean total score for mothers to be 49.82 (SD = 8.29) and for fathers to be 49.81 (SD = 9.16). The STAI correlates highly with other measures of adult anxiety and has shown good test-retest reliability in other samples (r = 0.73 to r = 0.85; Spielberger et al., 1983). In the current study, the Cronbach's alpha coefficient was 0.95.

Parental control was measured using The University of Southern California Parental Control Scale (USC-POS, Borelli, & Margolin, 2013, see Appendix K). This is a 10-item scale designed to measure behavioural, affective and cognitive aspects of parental control (e.g, "I expect my child to tell me what happens when he/she is away from home"). Parents rate each item on a 5-point likert scale from 0 (not at all descriptive) to 4 (extremely descriptive). Item 1 is reverse coded. Total scores range

from 0 to 40, with higher scores indicating higher levels of control used in parenting. This measure has demonstrated good internal consistency (α = .81) and validity. In the current study, the Cronbach's alpha coefficient was 0.88.

Experiential avoidance in parenting was measured using the Parental Acceptance and Action Questionnaire (PAAQ, Cheron et al., 2009, see Appendix J). This is a 15 item self-report measure of a parent's willingness to witness their child experiencing distress as well as a parent's own ability to manage their reaction to their child's distress. Statements (e.g., "worries can get in the way of my child's success") are evaluated on a 7-point likert scale ranging from 1 (never true) to 7 (always true). Items 1, 4, 5, 7, 10 and 12 are reverse coded. Total scores range from 15 to 105 and higher scores indicate a higher degree of parental experiential avoidance. The PAAQ has demonstrated moderate internal consistency (α=.64-.65) and moderate test re-test reliability (α=.68-.74). In the current study, the Cronbach's alpha coefficient was 0.83.

Mindfulness in parenting was measured using the Mindfulness in Parenting Scale (IM-P, Duncan, 2007, see Appendix L)**.** This measure contains 10 items that reflect parents' ability to maintain; present-centered attention and emotional awareness during parenting interactions, non-judgemental receptivity to their child and the ability to regulate their reactivity to their child. Parents respond to each item (e.g., "I find myself listening to my child with one ear because I am busy doing or thinking about something else at the same time") on a 5-point Likert scale. Items 1, 5, 9 and 10 are reverse coded. Total scores range from 10-50, with higher scores indicating a greater degree of mindful parenting. Internal consistency for this scale has been found to be adequate (α. = .62). In the current study, the Cronbach's alpha coefficient was 0.84.

Demographic Variables

Parents reported the following demographic information: child age, child gender, parent age, parent gender, parental relationship to child, ethnicity and average household income.

Data Analytic Plan

Data were analysed using the Statistical Package for Social Sciences (SPSS) version 23 and examined to check assumptions of multivariate analyses (Tabachnick, & Fidell, 2007). Data were checked for normality using skewness and kurtosis z-scores, where scores greater than 1.96 indicated significant ($p < .05$) levels of skewness or kurtosis (Field, 2013). Multicollinearity among variables was investigated by computing collinearity statistics inspecting the tolerance, variance inflation factors and variance proportions for all regression analyses. Visual inspections of graphs were conducted to check assumptions of linearity and homoscedasticity were not violated. Data were screened for missing variables and individual missing questions were replaced with the participants mean score (Hanna, & Dempster, 2012). Prior to hypothesis testing, the data were screened for outliers by distance and Cook's and Leverage values were checked to examine outliers of influence.

Descriptive statistics and correlations were calculated prior to conducting analyses related to study hypotheses. Independent t-tests using bootstrapping procedures with 1000 re-samples and the bias corrected confidence interval were conducted to test if differences in mean anxiety score were significant between boys and girls and if differences in parental control, parental experiential avoidance and mindful parenting score were significant between mothers and fathers. Field (2013) recommends using independent t-tests with bootstrapping to reduce the impact of any bias in the distribution as opposed to using non-parametric methods. Any significant differences

found in gender mean scores, were controlled for in further analysis as a covariate. Correlations were calculated to test the associations between the variables of interest. As assumptions in linearity of the data could not be assumed, Spearman's Rho correlations were conducted to test the associations between child anxiety, parent anxiety, parental control, parental experiential avoidance and mindful parenting. Guidance from Evans (1996) was used in interpreting the strength of the correlation; .00 -.19 = "very weak" effect, .20-.39 = "weak effect", .40 - .59 = "moderate effect", .60 - .79 = "strong effect" and .80 - .10 = "very strong effect".

Hierarchical regression analyses were performed to examine the amount of variance in child anxiety could be explained by parental control, parental experiential avoidance and mindful parenting when significant demographic variables and parent anxiety were controlled for. As recommended by Field (2013), for data that is not normally distributed, bootstrapping tests with 1000 re-samples and the bias corrected confidence interval were performed for regression analyses. Variables were entered into the regression model using a forced entry method. At block one, covariates and significant predictors associated with the dependent variable were entered. At block two, parental control was entered. At block three, parental experiential avoidance and mindful parenting were entered into the regression model.

Mediation analyses were performed using model 4 of the PROCESS macro for SPSS (Hayes, 2013). Any significant demographic variables were entered as covariates; parent anxiety was entered as the independent variable; child anxiety was entered as the dependent variable. The paths from the independent variable to the mediator(s) (path a), the mediator(s) to the dependent variable (path b) and the independent variable to the dependent variable (path c) were checked for significance. If the path between the independent variable and the dependent variable (path c') became non-significant when

controlling for mediating variable(s), a mediation effect was indicated. If this occurred, as recommended by Preacher, and Hayes (2004) bootstrapping procedures were applied with 5000 re-samples and the bias corrected confidence interval to establish whether indirect effects through individual potential mediator(s) were significant.

Results

Sample Characteristics

The sample comprised 85 parents (12 fathers, 73 mothers). The children (38 boys, 47 girls) that the parents reported on had a mean age of 9.83 years (SD = 1.28). The majority of the sample of participants identified themselves as White British (80%), with the remaining participants identifying themselves as being either Irish (2.4%), American (2.4%), Asian (1.2%), black Caribbean (3.5%), Indian (2.4%), black British (3.5%), white European (3.5%) or did not specify (1.2%). No participants were below 25 years in age; 9.4% of parents were between ages 25-35, 61.2% of parents were between ages 35-45 and 29.4% of parents were over 45. Parents reported a range in average annual household income; 11.8% reported less than £20,000, 7.1% reported £20-30,000, 17.7% reported £30-50,000, 32.9% reported £50-70,000, 16.5% reported £70-100,000 and 14.1% reported over £100,000.

Data Screening

Visual inspections of the shape of each variable's distribution indicated a violation of the assumption of normality for both skewness and kurtosis. Examinations of z scores revealed that all variables indicated violations of normal distribution in skewness and all variables, except parent anxiety indicated violations of normal distribution in kurtosis. An inspection of parent anxiety score showed that 16 participants (19%) scored above and 27 (32%) participants scored within one standard deviation above and below clinical norm mean scores (Teetsel, Ginsburg, & Drake,

2014). The dependent variable of child anxiety showed a positive skew in anxiety score with peaks in score around 10-15 (total possible score is 114). Further inspection of child anxiety score showed that 12 participants (14%) reported their child to score over the clinical norm mean score and a total of 44 participants scored their child within one standard deviation above and below the mean norm score for clinical levels of anxiety (Nauta et al., 2004).

Multicollinearity was not deemed to be problematic. However, visual inspections of graphs indicated that it was not possible to make confident assumptions of linearity and homoscedasticity for all variables. Data screening for missing data revealed that three individual items (0.04%) out of the full dataset of questionnaires were missing; these were replaced with the participant's mean score on that measure. Checks indicated no outliers influenced overall findings.

Descriptive Analyses

Child gender. Differences between anxiety score were found between boys (M = 27.18, SD = 22.50) and girls (M = 14.47, SD = 11.93) and this difference was significant, t (53.51) = 2.90, p< .005, with boys reported as experiencing greater levels of anxiety than girls. However, the effect size (d = 0.14) was small. Child gender was subsequently controlled for as a covariate in all regression and mediation analyses. Descriptive statistics for parent reported child anxiety are reported in Table 1.

Parent gender. The mean anxiety score was higher for fathers (M = 46.25, SD = 18.47) than mothers (M = 38.12, SD = 10.42) but this difference was not significant, t (12.18) = 1.49, p > .05. The mean parental control score was higher for fathers (M = 14.75, SD = 10.91) than mothers (M = 7.92, SD = 5.47) but this difference was not significant, t (11.93) = 2.13, p > .05. The mean parental experiential avoidance score was higher for fathers (M = 58.25, SD = 23.11) than mothers (M = 49.67, SD = 11.30)

but this difference was not significant, t (11.88) = 1.26, p > .05. The mean mindful parenting score was higher for mothers (M = 34.07, SD = 4.31) than fathers (M = 30.67, SD = 10.29) but this difference was not significant, t (12.18) = 1.49, p > .05. Parent gender was therefore not controlled for as a covariate in regression and mediation analysis. Descriptive statistics for each parent measure appear in Table 1.

Correlational Analysis

Correlations between all primary measures are reported in Table 1. The hypothesis that parent anxiety would be associated with child anxiety was supported by a significant moderate correlation between the two variables; parents who reported high levels of anxiety, also reported that their child experienced high levels of anxiety. The hypothesis that parental experiential avoidance would be associated with child anxiety was supported by a significant moderate correlation between the two variables; parents who reported high levels of experiential avoidance, also reported that their child experienced high levels of anxiety. The hypothesis that mindful parenting would be associated with child anxiety was supported by a significant weak negative correlation between the two variables; parents who reported low levels of mindful parenting, also reported that their child experienced high levels of anxiety.

Table 1

Descriptive statistics and correlations between all primary measures (N = 85)

Variable (n=85)	Parent anxiety	Child anxiety	Mindful parenting	Parent control	Parent experiential avoidance
Parental anxiety	-				
Child anxiety	.51**	-			
Mindful parenting	-.41**	-.34**	-		
Parent control	.48**	.43**	-.49**	-	
Parent experiential avoidance	.46**	.54**	-.45**	.61**	.-

Range	22-75	0-76	16-43	1-31	21-89
M (SD)	39.27 (12.07)	20.71 (18.31)	33.58 (5.58)	8.88 (6.85)	50.88 (13.72)

** p<.001

Regression Analyses

Table 2 reports the regression analysis. In block one, child gender and parent anxiety explained 58% of the variance in child anxiety, R^2=.58, $R^2_{Adjusted}$ = .57, F (2, 82) = 56.97, p = < .001, with parent anxiety explaining a significant amount of the variance. The addition of parental control at block two explained a further 7% of the variance in child anxiety, ΔR^2 = .07, $R^2_{Adjusted}$ = .07, F (3, 81) = 50.84, p < .001, making a significant contribution to the model. The addition of experiential avoidance and mindful parenting at block three explained a further 3% of the variance in child anxiety, ΔR^2 = 0.3, $R^2_{Adjusted}$ = .02, F (5, 79) = 33.22, p < .001, with only experiential avoidance making a significant contribution to the variance. Therefore, the hypothesis that parental experiential avoidance would predict child anxiety was supported in the regression model. However, the hypothesis that mindful parenting would predict child anxiety was not supported in the regression model. When experiential avoidance and mindful parenting were added to the model, parental control was no longer significant. The association of parental control was reduced in beta size magnitude from β = .39 in block two to a non-significant β = .21 in block three when experiential avoidance and mindful parenting were entered. Although parent anxiety remained significant when parental control, experiential avoidance and mindful parenting were controlled for, there was a decrease in beta size, therefore, as recommended by Preacher and Hayes (2008) mediation was conducted to establish whether experiential avoidance and control may mediate the relationship between parent and child anxiety.

Table 2

Summary of regression analysis. Standardised coefficients are reported and confidence intervals and standard errors are based on 1000 bootstrap samples.

Block	Variable	B	SE(B)	B	Confidence Intervals	
					Lower	Upper
1	Child gender	-.54	2.80	-.02	-5.95	4.57
	Parent anxiety	1.15	.15	.76***	.80	1.38
2	Child gender	-.62	2.51	-.07	-5.60	3.69
	Parent anxiety	.72	.16	.48***	.42	.98
	Parent control	1.03	.29	.39***	.45	1.66
3	Child gender	-.72	2.48	-.02	-5.38	3.56
	Parent anxiety	.60	.19	.40**	.25	.89
	Parent control	.55	.32	.21	-.05	1.33
	Experiential avoidance	.27	.11	.20*	.05	.50
	Mindful parenting	-.37	.40	-.11	-1.14	.43

Note. $N = 85$. Block 1 $\Delta R^2 = .58$***, Block 2 $\Delta R^2 = .07$***, Block 3$\Delta R^2 = .03$***
*$p < .05$, **$p < .01$, *** $p<.001$.

Mediation Analyses

Parent anxiety was a significant predictor of parental control (path a), B = .41, SE = .05, P< .001 and control was a significant predictor of child anxiety (path b), B = .69, SE = .29, p = .020. Parent anxiety was also found to be a significant predictor of experiential avoidance (path a), B = .74, SE = .10, p < .001 and experiential avoidance was a significant predictor of child anxiety (path b), B = .74, SE = .10, p = .029. These results support the hypothesis that the relationship between parent and child anxiety is mediated by parental control and parental experiential avoidance (Figure 1). However, parent anxiety continued to be a significant predictor of child anxiety after controlling for parental control and parental experiential avoidance (path c'), B = .65, SE = .15, p <

.001, indicating that parental control and parental experiential avoidance were not fully mediating the relationship. Bootstrapping procedures indicated the indirect effects of parental control, B = .25, 95% BCa CI [.03, .51] and parental experiential avoidance, B = .19, 95% BCa CI [.05, .37] were both significant.

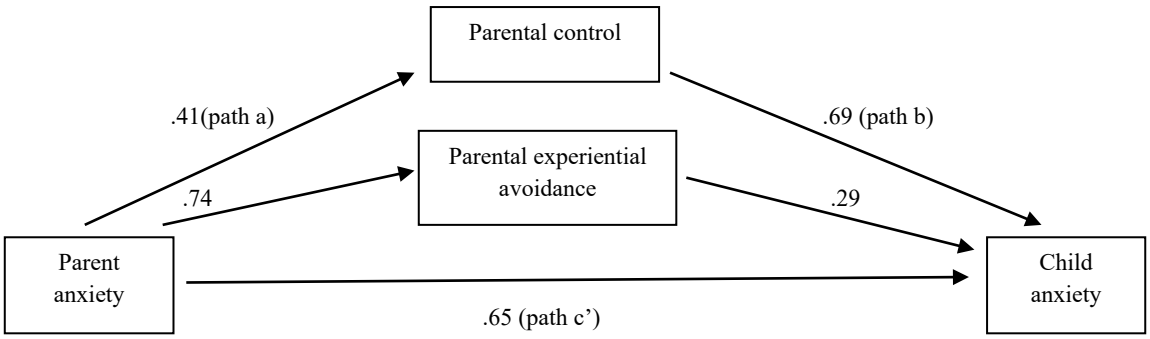

Figure 1

Illustration of the indirect association of parent anxiety and child anxiety via parental control and parental experiential avoidance reporting standardised coefficients.

Discussion

The current study aimed to investigate the intergenerational relationship between parent and child anxiety, and to specifically examine parenting styles that may be associated with and account for the variance in child anxiety. The primary aims were to examine if parental experiential avoidance and mindful parenting were associated with and predicted child anxiety, after accounting for parental control and to establish if parental control, experiential avoidance and mindful parenting mediate the relationship between parent and child anxiety.

As expected and in line with previous research (Francis, & Chorpita, 2011), parent anxiety was a significant predictor of child anxiety. The finding lends further support to research that has found that anxiety co-occurs in parents and children (Waters, Zimmer-Gembeck, & Farrell, 2012). As anticipated parental control was a

significant predictor of child anxiety and was found to account for 7% of the variance in child anxiety in the regression model. The amount of variance explained by parental control is consistent with findings by McLeod et al. (2007) in their meta-analysis. Similarly, previous research has found a relationship between parental control and child anxiety (Murray et al., 1999). The association replicated here lends support to theories that emphasise parental control in the development and maintenance of child anxiety (Chorpita, & Barlow, 1998). Hence, when parents fail to give their child the opportunity to experience control in age appropriate contexts, they are vulnerable to developing anxiety (Barlow, 2002).

The findings confirmed that parental experiential avoidance is significantly associated with and predicts child anxiety. The inclusion of parental experiential avoidance, after controlling for parent anxiety and parental control, explained a further 3% of the variance in child anxiety in the regression model. This finding is in line with the supposition that parents of children with anxiety will be more likely to struggle to tolerate seeing their child in distress and will engage in behaviours to rid themselves of their own associated distress (Tiwari et al., 2008). Therefore, experiential avoidance used in parenting may impair a parent's ability to respond sensitively to situations that induce anxiety in their child (Raftery-Helmer, Moore, Coyne, & Reed, 2016). The finding is consistent with Cheron, Ehrenreich, and Pincus (2009) who also found that parental experiential avoidance predicts child anxiety. When experiential avoidance was added into the regression model, parental control became non-significant. Although not anticipated, the finding suggests that there may be an interaction between parental experiential avoidance and parental control that impacts on child anxiety. Tiwarii et al. (2008) has theorised that experiential avoidance may be a mechanism that leads parents to behave in controlling ways. Hence, in order to control, alter or avoid intolerable

thoughts and feelings in relation to their child being in distress, parents may behave in controlling ways in order to diminish their own internal distress (Tiwari et al., 2008). By behaving in controlling ways, the child may not learn valuable coping skills, which in turn may lead to them being vulnerable to developing anxiety (Chorpita, & Barlow, 1998). Support for this theory comes from Hudson, Comer, and Kendall (2008) who found that mothers of anxious children were more intrusive when their child displayed negative emotions, as opposed to positive emotions. Further, although not a hypothesis of the current study, a significant positive association was found between parental experiential avoidance and parental control. Although no causative conclusions can be made, the current findings suggest that it is possible that experiential avoidance is a pathway that leads to anxious parents behaving in controlling ways.

The mediation analysis confirmed that both parental control and parental experiential avoidance are important in the intergenerational relationship of anxiety between parent and child. Therefore, findings confirm that parents who are anxious are more likely to engage in controlling behaviour and experiential avoidance in relation to parenting and that these parenting styles predict child anxiety. The current study is the first to examine parental experiential avoidance as a potential mediator of the relationship between parent and child anxiety. The finding that parental control mediates the relationship between parent and child anxiety is consistent with findings by Borelli, Margolin, and Rasmussen (2015). Further, the finding that parent anxiety predicts parental control is consistent with findings by Whaley, Pinto, and Sigman (1999) and adds further clarification to an inconsistent evidence base that anxious parents are more likely to behave in controlling ways (Affruniti, & Woodruff-Borden, 2015; Turner, Beidel, Robertson-Nay, & Tervo, 2002). In addition, the finding that parents who experience anxiety are more likely to engage in experiential avoidance in

their parenting is consistent with findings by Cheron et al. (2009) and Wenzlaff, & Wegner (2000).

The finding that parental control and parental experiential avoidance are both mediators of the relationship between parent and child anxiety suggests that both concepts may be interacting together in this relationship. Consistent with the supposition by Tiwari et al. (2008), it is possible that both concepts are important in the intergenerational relationship of anxiety because parental experiential avoidance is a pathway for parental control. Anxious parents may engage in experiential avoidance in their parenting as a way of responding to their child's distress. This may manifest in controlling behaviour toward their child by parents, for example, engaging in high levels of intrusion or excessively monitoring their child's activities (Bögels, & Brechman-Toussaint, 2006). In turn, their child is less likely to develop self-mastery and consequently may be more vulnerable to experiencing anxiety (Chorpita, & Barlow, 1998). Future research should explicitly investigate the proposed potential pathway of parental experiential avoidance being a pathway for parental control in the inter-generational relationship of anxiety from parent to child further.

An important direction for future research would be to focus on disentangling the direction of the findings through using a longitudinal design. It is not clear whether anxious children evoke experiential avoidance and controlling parenting or whether parental control and parental experiential avoidance develops as a response to the parent's own anxiety. It would also be important for future research to examine other unhelpful parenting behaviours that parents may employ when they engage in experiential avoidance, which may impact on child anxiety. For example, parental rejection has also been found to be an important parenting behaviour in child anxiety (Bögels, & Brechman-Toussaint, 2006). It may be that parents are more likely to behave

in rejecting ways when they are finding it difficult to tolerate their child's distress. Further, the current study measured the concept of experiential avoidance in terms of parents finding it difficult to tolerate seeing their child in distress (Cheron et al., 2009). It is however possible that parents who experience anxiety may also engage in experiential avoidance when they experience difficult emotions in relation to their child behaving in a way that may be anxiety provoking for them, but not causing any distress to the child (Tiwari et al., 2008). Therefore, future research would benefit from examining this aspect of experiential avoidance that parents may engage in, in relation to parent and child anxiety.

The findings from the current study confirmed that mindful parenting is significantly associated with child anxiety. Parents who reported low levels of mindful parenting also reported that their child experienced high levels of anxiety. This finding is consistent with previous research that has found an association between low levels of mindful parenting and child internalising problems (Geurtzen et al. 2015; Parent, McKee, Rough, & Forehand, 2015). It is likely that parents who reported high levels of mindful parenting are more sensitive to detecting their child's needs and therefore more accepting, responsive and non-reactive (Medeiros, Gouveia, Canavarro, & Moreira, 2016) which results in less internalising difficulties. In support of this, Wei, and Kendall (2014) found that children who reported high levels of maternal acceptance in parenting experienced lower levels of anxiety. Further, Borelli, Rasmussen, St. John, West, and Piacentini (2015) theorised that children of parents who show high levels of reactivity in fearful situations may learn that a resolution to fear is not possible and consequently engage in avoidance behaviours that may lead to anxiety. Despite the significant association identified in the current study, one must bear in mind that the correlation

was weak and based on nonparametric tests, which may lack power (Whitley, & Ball, 2002).

When mindful parenting was added into the regression model with parental experiential avoidance, it did not account for any of the variance over and above parental control in child anxiety. Therefore, experiential avoidance in parenting may be a more important predictor of child anxiety than mindful parenting. However, it is possible that mindful parenting and experiential avoidance in parenting share similar attributes. For example, on inspection of the PAAQ (Cheron et al., 2009) and the IM-P (Duncan, 2007), it is clear that the individual items in the measures are both focused on what parents do when they notice their own and their child's emotions. Further, Tiwari et al. (2008) postulates that experiential avoidance is the opposite of psychological acceptance. Psychological acceptance is the openness or willingness to experience private events without struggle (Hayes, Strosahl, & Wilson, 1999). Being able to remain present centred is a key dimension in mindful parenting as it allows a parent to listen attentively, have emotional awareness and self-regulate (Geurtzen, Scholte, Engels, Tak, & van Zundert, 2015). It may be that it is the consequences of having an inability to remain present focused (i.e. parents engaging in behaviours to suppress, avoid and control their internal distress) that may be more important in child anxiety than whether a parent can or cannot remain present focused. If it is the consequences of not being present-focused that are more important in a parenting situation, this would explain why experiential avoidance is a stronger predictor of child anxiety than mindful parenting. Future research should examine the relationship between these two parenting concepts further to examine if experiential avoidance predicts low levels of mindful parenting.

The individual dimensions of mindful parenting may also bear some similarities with other well established parenting variables, such as parental sensitivity. Parental

sensitivity involves a parent accurately perceiving and responding to a child's needs and behaviour (Kertz, Smith, Chapman, & Woodruff-Borden, 2008). In order to be sensitive to a child's needs, a parent may need to be able to keep their attention within the present moment and focused on the child. One could argue that the concept of mindful parenting is broader than parental sensitivity as it includes other unique aspects, such as parental self-regulation (Duncan et al., 2009). It is also possible that parental sensitivity could be an observable behaviour of mindful parenting. In support of this idea, Lippold, Duncan, Coatsworth, Nix, and Greenberg (2015) suggest that mindful parenting is a meta-cognitive and meta-emotional process of parenting. Therefore, one could surmise that being mindful in the parenting role enhances a parent's ability to engage in parenting behaviours that are associated with developing a positive parent-child relationship (Gouveia, Carona, Canavarro, & Moreira, 2016). It would be useful for future research to consider the potential conceptual overlaps between mindful parenting and other parenting variables.

The present study used the short version of the IM-P (Duncan, 2007) and measured mindful parenting as one general concept, as opposed to measuring the individual dimensions of mindful parenting as proposed by Duncan et al. (2009), such as being able to self-regulate and being non-judgemental to self and child. When different facets of mindful parenting have been measured, non-judgemental acceptance of their own functioning as a parent has been found to be the only significant predictor of reduced child internalising symptoms (Geurtzenet al., 2015). Therefore, it would be important for future research to replicate the current study by measuring the individual dimensions of mindful parenting through using the full 31-item version of the IM-P (Duncan, 2007).

As part of a Mindful Parenting intervention study, Meppelink, de Bruin, Wanders-Mulder, Vennik, and Bögels (2016) found that increased mindful parenting after the intervention predicted improvements in child mental health but general mindful awareness did not. Therefore, it is possible that an intervention in mindful parenting may be necessary before mindful parenting as a construct becomes predictive in improving child wellbeing. It makes sense that when parents are trained to be more mindful in difficult parenting situations that improvements in child mental health may occur. It is possible that when parents report high levels of general mindful parenting, that these parents are not necessarily able to access this style of parenting in all parenting situations. Therefore, future research measuring mindful parenting as a general construct and as a construct after a mindful parenting intervention is necessary in order to clarify this issue.

Although not a direct hypothesis, it is interesting to note that in the current study, parents of boys reported that their child experienced significantly higher levels of anxiety than parents of girls. This finding contrasts with previous research, which has found that girls experience higher rates of anxiety than boys (e.g. Roza, Hofstra, van der Ende, & Verhulst, 2003; Waters, Zimmer-Gembeck, & Farrell, 2012). Researchers have suggested that girls are more likely to internalise emotions and that boys are more likely to externalise emotions (Feng, Shaw & Silk, 2008). Middle childhood has been found to be an anxiety provoking time for boys who are pre-adolescent (Feng et al., 2008). Therefore, the finding may be related to the developmental stage of the boys that parents were reporting on. It would be important for future research to examine if middle childhood is a period of time where boys may experience higher levels of anxiety than girls using both child and parent reports of child anxiety.

Limitations and Future Research

A notable strength of the present study is that mothers and fathers were recruited in the sample to examine the intergenerational relationship between child anxiety and parenting variables. Although considerably more mothers were included in the sample than fathers, previous research has often focused on mothers only, with fathers being neglected in the literature (Parent, McKee, Rough, & Forehand, 2015). The current study has a number of limitations that should be noted. Given that the study employed a cross-sectional design, the direction of the relationships and inferences regarding causality could be not established. Research using longitudinal and experimental designs is required to disentangle the direction of the relationships between parent anxiety, parental control, parental experiential avoidance and mindful parenting in child anxiety. The results of this study provide direction in terms of the key variables of interest for future research.

The current study relied on parent report of parenting behaviour and child anxiety. Although measuring parent behaviour through parent report is a common approach reported in the literature (Bögels, & Brechman-Toussaint, 2006; Borelli, Margolin, & Rasmussen, 2015), studies have found that parents often under report negative parenting behaviour, when compared to child reports of the same behaviour (Bögels, & van Melick, 2004). Furthermore, when parent and child reports of child anxiety are compared, there is often low agreement between informants (Bögels, & Brechman-Toussaint, 2006). This is thought to be due to anxiety being an internal phenomenon where children may have symptoms outside parent awareness (Comer, & Kendall, 2004). Another possibility is that if parents experience anxiety themselves, they may have an attentional bias towards threat in their child's environment which may lead to over-reporting of their child's symptoms (Affrunti, & Ginsburg, 2012).

Therefore, future work should include multiple reporting with both parent and child reports and observational measures.

The majority of participants in this study described themselves as being white British and were mostly mothers from a community sample in one part of Northern England; therefore, the generalisability of the findings is limited. A replication using a more diverse sample is imperative in order to understand how experiential avoidance and mindful parenting predict child anxiety in families from a more diverse background.

The current study measured anxiety in children in middle childhood and therefore findings about the parenting styles cannot be generalised to children at other developmental stages. Previous research has suggested that the effect of parental behaviour on child anxiety may be different depending on child age (Hagekull, Bohlin, & Hammerberg, 2001). Therefore, future research is needed to replicate findings with children across childhood and adolescence. Further, despite there being a range in the level of child anxiety reported by parents, as the current study relied on a community population, conclusions cannot be made about the relationship between the parenting variables measured and children with can anxiety disorder. Therefore, it would be important for the current study to be replicated with parents with children from a clinical population.

As there were biases in the distribution of the current sample, bootstrap re-sampling techniques were employed (Field, 2013). Although the bootstrap method has been validated in the literature and is preferred over other methods in assessing the existence of mediation among variables (Bearden, Feinstein, & Cohen, 2012), Haukoos, and Lewis (2005) warn that the limitations of using methods such as this are not entirely understood. Therefore, current findings should be replicated with a sample that is normally distributed using statistical methods without the bootstrap method.

Clinical Implications

The present findings have a number of clinical implications. Given that parent anxiety and the behaviours anxious parents engage in are related to child anxiety, targeting parents who experience anxiety may be important in the prevention or treatment of child anxiety. For example, it may be helpful to target parents who are seeking treatment for their own anxiety in adult mental health services and provide parent interventions that teach parents about the impact their behaviour may have on their own child developing anxiety and in maintaining their child's anxiety. The content from established parenting programmes such as 'From Timid to Tiger' (Cartwright-Hatton, Laskey, Rust, & McNally, 2010), which is a programme for anxious children and their parents could be used to inform programmes for anxious parents accessing adult mental health services.

The highlighted role of parental control in child anxiety suggests that if parents are able to reduce the amount of control they employ in their parenting; this may reduce the risk of anxiety in their child. In the treatment of anxiety in childhood, Cognitive Behavioural Therapy (CBT) has been identified as an empirically supported intervention (see James, James, Cowdrey, Soler, & Choke, 2013 for a meta-analytic review). Borelli, Margolin, and Rasmussen (2015) suggest that in order to work on reducing parental control, parents could be supported to use imaginal exposure or behavioural experiments to slowly reduce the amount of control they exert over their children. However, given that the current study has also found that the concept of parental experiential avoidance is an important predictor in child anxiety, it may be that these methods would be difficult for parents who struggle to tolerate their anxious child's distress and consequently their own distress. Therefore, it may be more useful for parent interventions to target parental experiential avoidance first. Pertinent to this

idea, when children receive CBT, a key component of the treatment is that they are exposed to situations that make them feel anxious (Barmish, & Kendall, 2010). However, it is often the parents who may be involved in supporting their child to do this as being exposed to anxious situations often takes place between therapy sessions. Hence, parents are in effect, asked to support their child experiencing distress during these intentionally anxiety provoking situations. If parents engage in experiential avoidance, it is likely that they may not tolerate supporting their child to do this and might either not do the home exercises with their child or behave in ways to rid themselves of their distress, which in turn may maintain their child's anxiety. Therefore, addressing parental experiential avoidance should be an element in both the prevention and treatment of child anxiety.

Acceptance and Commitment Therapy (ACT) aims to reduce experiential avoidance and increase psychological flexibility (Brown, Whittingham, & Sofronoff, 2014). Parenting has been identified as an important application for ACT, however clinical research is limited (Coyne, & Wilson, 2004). Techniques such as mindfulness are used in ACT to support an individual to learn to tolerate internal distress and stay present focused (Raftery-Helmer, Moore, Coyne, & Reed, 2016). It would be useful for future research to evaluate if reductions in parental experiential avoidance through using ACT techniques, lead to improvements in child anxiety.

Although mindful parenting was not found to significantly predict child anxiety, an association was found between lower levels of mindful parenting and child anxiety. Given that a dimension of mindful parenting is having the ability to remain present focused, it is likely that teaching parents mindful parenting could help minimise engagement in experiential avoidance. Teaching mindful parenting as a group intervention has been found to positively impact on child mental health (Meppelink, de

Bruin, Wanders-Mulder, Vennik, and Bögels, 2016). Hence, incorporating mindful parenting as a parent intervention for parents who have an anxious child may be useful. Further research is needed to verify if teaching mindful parenting to parents leads to reductions in child anxiety. However, it is likely that if parents are present centred, non-judgemental and not reactive, that this kind of parenting would allow a child to learn that they have control over the world around them, can tolerate distress and cope with an unpredictable world (Raftery-Helmer et al., 2016).

Conclusion

Overall, the findings from the current study confirmed that parental experiential avoidance predicts child anxiety and accounts for some of the variance in child anxiety above and beyond parental control. Mindful parenting was associated with but did not predict child anxiety. Parental control and experiential avoidance were both found to be important in the relationship between parent and child anxiety. Further, current findings suggest that parental experiential avoidance and parental control may interact together in the relationship between parent and child anxiety. Future research should further examine the role of parental experiential avoidance and mindful parenting in child anxiety.

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Appendix C: Ethical Approval

WoSRES
West of Scotland Research Ethics Service

NHS
Greater Glasgow and Clyde

West of Scotland REC 3
West of Scotland Research Ethics Service
West Glasgow Ambulatory Care Hospital
(former Royal Hospital for Sick Children Yorkhill)
Dalnair Street
Glasgow G3 8SW
www.nhsggc.org.uk

Mrs Claire Ogielda
Trainee Clinical Psychologist
Sheffield Health and Social care
Clinical Psychology Unit
The University of Sheffield
Western Bank, Sheffield
S10 2TN

Date 10th March 2016
Your Ref
Our Ref
Direct line 0141 232 1805
E-mail WOSREC3@ggc.scot.nhs.uk

Dear Mrs Ogielda

Study title:	**Intergenerational Transmission of Anxiety; Moderating Effects of Mindfulness, Experiential Avoidance and Overcontrol in Parenting.**
REC reference:	**16/WS/0063**
IRAS project ID:	**197161**

The Proportionate Review Sub-committee of the West of Scotland REC 3 reviewed the above application on 03 March 2016. Thank you for clarifying the issues over the telephone.

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 the REC Manager Mrs Liz Jamieson, wosrec3@ggc.scot.nhs.uk. 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.

1) It is suggested for security reasons in respect of flyers being left at CAMHS Centres and schools that although they are being left in a dedicated box it may be worth considering

using stamped addressed envelopes. This is merely a suggestion and the decision is up to you.

2) It is suggested that consent is not really necessary as returning the questionnaires is implied consent. However the PRS Committee agreed that again this decision will be left to you.
3) The Participant Information Sheet should be amended as follows:

a) The document should be headed up 'Participant Information Sheet'
b) Near the beginning there should be a paragraph added stating 'Who is conducting the Research' and details given.
c) At 'Who can I contact for further information' the supervisors should be named as the 'independent contacts'.

You should notify the REC once all conditions have been met (except for site approvals from host organisations) and provide copies of any revised documentation with updated version numbers. Revised documents should be submitted to the REC electronically from IRAS. The REC will acknowledge receipt and provide a final list of the approved documentation for the study, which you can make available to host organisations to facilitate their permission for the study. Failure to provide the final versions to the REC may cause delay in obtaining permissions.

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 Approval (England)/ 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.

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 by email

Recruitment arrangements and access to health information, and fair participant selection

The PRS Committee was unclear about the community recruitment and the Vice Chair telephoned to ask for clarification. You responded as follows:

Appendix C: Ethical approval continued

Two primary schools have already been approached in Sheffield and the Head Teachers have been spoken to about the possibility of their schools allowing the Investigator to recruit parents. The Head Teachers have agreed to send out the flyer via email to all parents of key stage 2 (years 3-6) children. They have also agreed that the flyer will be placed on the school Notice Board and copies of the questionnaires with envelopes will also be left in the reception area of the school. Parents can then collect information sheets, consent sheets and questionnaires from the reception area if they wish to take part in the study. If the uptake is poor then the flyer will be sent via email again with a link to the questionnaire via Qualtrics. The schools have agreed to send the email again if needed. The Children will not be involved in the study, only the parents.

The PRS Committee was happy with this response.

Informed consent process and the adequacy and completeness of participant information

The PRS Committee agreed that this was technically implied consent, i.e. if the parents receive the link, email or questionnaires and return them then they have consented. It was agreed to suggest this to you but the final decision would be left to you. This is merely a suggestion.

There were minor editorial issues around the Participant Information Sheet which are stated at the beginning of this letter.

Approved documents

The documents reviewed and approved were:

Document	*Version*	*Date*
Copies of advertisement materials for research participants [Flyer for school]	one	16 February 2016
Copies of advertisement materials for research participants [Flyer for community group]	one	16 February 2016
Covering letter on headed paper [covering letter]	one	16 February 2016
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Indemnity Insurance]	one	27 January 2016
Participant consent form [NHS sample consent]	one	16 February 2016
Participant consent form [Community sample consent sheet]	one	16 February 2016
Participant information sheet (PIS) [NHS sample Information sheet]	one	16 February 2016
Participant information sheet (PIS) [Community sample Participant Information Sheet]	one	16 February 2016
REC Application Form [REC_Form_25022016]		25 February 2016
Referee's report or other scientific critique report [Scientific Approval Letter]	one	01 February 2016
Research protocol or project proposal [Research Protocol]	Two	16 February 2016
Summary CV for Chief Investigator (CI) [Curriculum Vitae]	one	16 February 2016
Summary CV for supervisor (student research) [Curriculum Vitae]	one	16 February 2016
Validated questionnaire [Questionniare]	one	16 February 2016

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.

Appendix C: Ethical approval continued

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.

16/WS/0063	**Please quote this number on all correspondence**

Yours sincerely

[redacted]

Liz Jamieson
REC Manager
On behalf of Eoin MacGillivray, Vice Chair

Appendix D: Participant advertising poster - schools

Parents needed to participate in research project.

University of Sheffield
Clinical Psychology Unit

Are you a parent of a child aged between 8-12 years?

Would you be willing to answer some questions on a questionnaire that will take approximately 10-15 minutes to complete?

What is the study about?
This study will look at the relationship between parent and child anxiety and identifying factors that may explain why some children are more likely to experience anxiety than others. Parents of children with anxiety and without anxiety are being asked to complete a questionnaire about themselves and their children. Your children are not being asked to take part in the study. You will not be asked to put your name or your child's name on the questionnaire and there will be no way of the researcher knowing that the answers belong to you.

What do I need to do if I am interested in taking part?
If you are interested in taking part in this study, please take a questionnaire from the reception of your child's school and read the information sheet about what the study involves.

Appendix E: Participant advertising poster - community group

Parents needed to participate in research project.

University of Sheffield
Clinical Psychology Unit

Are you a parent of a child aged between 8-12 years?

Would you be willing to answer some questions on a questionnaire that will take approximately 10-15 minutes to complete?

What is the study about?
This study will look at the relationship between parent and child anxiety and identifying factors that may explain why some children are more likely to experience anxiety than others. Parents of children with anxiety and without anxiety are being asked to complete a questionnaire about themselves and their children. Your children are not being asked to take part in the study. You will not be asked to put your name or your child's name on the questionnaire and there will be no way of the researcher knowing that the answers belong to you.

What do I need to do if I am interested in taking part?
If you are interested in taking part in this study, please take a questionnaire from the waiting area and read the information sheet about what the study involves.

Appendix F: Participant information sheet

Sheffield University
Department Of Psychology.
Clinical Psychology Unit.
Western Bank
Sheffield
S10 2TN

(Version Three , 16/3/2016)

Patient Information Sheet

Research project on child anxiety and parenting style.

I would like to invite you to take part in my research project which focuses on child anxiety and the factors that may help to explain why some children are more likely to experience anxiety than others. This information sheet explains the purpose of the study and what will happen if you take part. This study is interested in the opinions of you as a parent and will not be asking your child to take part.

You should only participate if you want to and choosing not to take part will not disadvantage you in any way. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please take the time to read the following information carefully and discuss it with others if you wish. Please do not hesitate to ask if anything is not clear or you would like further information.

Who is conducting the research?
This research is being conducted by Claire Ogielda as part of a doctorate in Clinical Psychology at The University of Sheffield.

What is the purpose of the study?
This study is interested in the relationship between parent and child anxiety and identifying factors that may explain why some children are more likely to experience anxiety than others. It is hoped that the project will provide new information around what may be associated with the development of child anxiety and help to inform intervention and ways of reducing the risk of child anxiety.

Why have I been chosen?
Parents of children aged between 8 and 12 years old are being asked to take part in the project. Parents of children who may experience anxiety and who may not experience anxiety are being asked to participate. Your children are not being asked to take part in the study.

Do I have to take part?
Taking part in this study is entirely voluntary and it is totally up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and a consent form to complete.

What will happen if I take part?

- If you do decide to take part, you will be asked to complete some questionnaires which will take approximately ten minutes to complete. The questionnaires will ask you questions about you as a parent and also your child. You are being asked to complete the questions and leave them in a dedicated place.
- You will not be asked to put your name or your child's name on the questionnaire and there will be no way of the researcher knowing that the answers belong to you.
- If you decide that you no longer wish to participate in the study once you begin completing the questionnaire, you will be able to withdraw from completing it, without having to give a reason.

Appendix F: continued

What are the possible disadvantages and risks of taking part?
As this study involves completing some questions, it is not envisaged that there are any possible risks or disadvantages to taking part in the study. However, if you do feel any level of distress whist completing the questions, the website address and telephone number of the charity MIND and helpline telephone number for Rethink in Sheffield are included at the end of this information sheet.

Whilst there are no immediate benefits for those people participating in the study, it is hoped that this work will help to provide new information around what influences child anxiety and ways of reducing the risk and treating child anxiety.

What if something goes wrong?
If you have any complaints about any aspect of this study, you should contact myself (details are at the top of this sheet) or the independent contacts, Lisa-Marie Emerson and Georgina Rowse (details are at the end of this sheet). Should you feel that any complaint is not handled to your satisfaction, you should contact the Registrar and Secretary at Sheffield University at Firth Court, Western Bank, Sheffield, S10 2TN.

Will my taking part in the study be kept confidential?
Yes, the research will follow ethical and legal practice and all the information you complete will be handled in confidence. You are not required to put your name or your child's name on the questionnaires, so the researcher will have no way of identifying you. All of the information will be kept strictly confidential and you will not be able to be identified in any reports or publications.

What will happen to the results of the research project?
The data collected during this project will be used as part of the researcher's thesis dissertation for a doctorate in Clinical Psychology at Sheffield University. The results of the study may also be published in a journal in the future.

Who is organising and funding the project?
This research project is sponsored by Sheffield University.

Who has ethically reviewed the project?
This study has been granted ethical permission by the NHS ethics committee.

Who can I contact for further information?
You can contact the researcher by telephone on 01142 226650 or the Independent Contacts on 01142226567. Alternatively you can write to;;

Claire Ogielda (Lead Researcher) or Lisa-Marie Emerson and Georgina Rowse (Independent Contacts).

The Department of Clinical Psychology
Sheffield University
Western Bank
Sheffield
S10 2TN

Support can be accessed from: www.mind.org.uk
Sheffield Rethink 24 hour helpline- 0808 801 004

Appendix G: Demographic information sheet

Department of Psychology.
Clinical Psychology Unit.

The following pages will ask you some questions about yourself and your child. Some of the questions will describe different ways that parents interact with their children. Remember there are no right or wrong answers and that it is important that you answer according to what really reflects your experience, and not what you think you should be experiencing.

Age of child (please circle) **8** **9** **10** **11** **12**

Sex of child (please circle) **Male** **Female**

Your age range (please circle) **under 25** **25-35** **35-45** **over 45**

Relationship to child (please circle) **Mother** **Father** **Legal guardian**
Other family member **Foster parent**
other (please state)

What is your ethnicity?

Average household income (circle) **less than £20,000** **£20,000-£30,000**
£30,000-£50,000 **£50,000- £70,000** **£70,000-100,000**
over £100,00

Appendix H: State Trait Anxiety Inventory (Trait scale only)

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Appendix I: Spence Children's Anxiety Scale, Parents version

BELOW IS A LIST OF ITEMS THAT DESCRIBE CHILDREN. FOR EACH ITEM PLEASE CIRCLE THE RESPONSE THAT BEST DESCRIBES YOUR CHILD. PLEASE ANSWER ALL THE ITEMS.

1.	My child worries about things.....	Never	Sometimes	Often	Always
2.	My child is scared of the dark.....	Never	Sometimes	Often	Always
3.	When my child has a problem, s(he) complains of having a funny feeling in his / her stomach	Never	Sometimes	Often	Always
4.	My child complains of feeling afraid.....	Never	Sometimes	Often	Always
5.	My child would feel afraid of being on his/her own at home.....	Never	Sometimes	Often	Always
6.	My child is scared when s(he) has to take a test.....	Never	Sometimes	Often	Always
7.	My child is afraid when (s)he has to use public toilets or bathrooms.....	Never	Sometimes	Often	Always
8.	My child worries about being away from us / me.....	Never	Sometimes	Often	Always
9.	My child feels afraid that (s)he will make a fool of him/herself in front of people.....	Never	Sometimes	Often	Always
10.	My child worries that (s)he will do badly at school.....	Never	Sometimes	Often	Always
11.	My child worries that something awful will happen to someone in our family.....	Never	Sometimes	Often	Always
12.	My child complains of suddenly feeling as if (s)he can't breathe when there is no reason for this.....	Never	Sometimes	Often	Always
13.	My child has to keep checking that (s)he has done things right (like the switch is off, or the door is locked)..	Never	Sometimes	Often	Always
14.	My child is scared if (s)he has to sleep on his/her own.....	Never	Sometimes	Often	Always
15.	My child has trouble going to school in the mornings because (s)he feels nervous or afraid.....	Never	Sometimes	Often	Always
16.	My child is scared of dogs	Never	Sometimes	Often	Always
17.	My child can't seem to get bad or silly thoughts out of his / her head.....	Never	Sometimes	Often	Always
18.	When my child has a problem, s(he) complains of his/her heart beating really fast.....	Never	Sometimes	Often	Always

Appendix I: continued

19.	My child suddenly starts to tremble or shake when there is no reason for this.....	Never	Sometimes	Often	Always
20.	My child worries that something bad will happen to him/her.....	Never	Sometimes	Often	Always
21.	My child is scared of going to the doctor or dentist	Never	Sometimes	Often	Always
22.	When my child has a problem, (s)he feels shaky.....	Never	Sometimes	Often	Always
23.	My child is scared of heights (eg. being at the top of a cliff).....	Never	Sometimes	Often	Always
24.	My child has to think special thoughts (like numbers or words) to stop bad things from happening.....	Never	Sometimes	Often	Always
25.	My child feels scared if (s)he has to travel in the car, or on a bus or train	Never	Sometimes	Often	Always
26.	My child worries what other people think of him/her.....	Never	Sometimes	Often	Always
27.	My child is afraid of being in crowded places (like shopping centres, the movies, buses, busy playgrounds).....	Never	Sometimes	Often	Always
28	All of a sudden my child feels really scared for no reason at all.....	Never	Sometimes	Often	Always
29.	My child is scared of insects or spiders.....	Never	Sometimes	Often	Always
30.	My child complains of suddenly becoming dizzy or faint when there is no reason for this.....	Never	Sometimes	Often	Always
31.	My child feels afraid when (s)he has to talk in front of the class.....	Never	Sometimes	Often	Always
32.	My child's complains of his / her heart suddenly starting to beat too quickly for no reason	Never	Sometimes	Often	Always
33.	My child worries that (s)he will suddenly get a scared feeling when there is nothing to be afraid of.....	Never	Sometimes	Often	Always
34.	My child is afraid of being in small closed places, like tunnels or small rooms.....	Never	Sometimes	Often	Always
35.	My child has to do some things over and over again (like washing his / her hands, cleaning or putting things in a certain order).....	Never	Sometimes	Often	Always
36.	My child gets bothered by bad or silly thoughts or pictures in his/her head	Never	Sometimes	Often	Always
37.	My child has to do certain things in just the right way to stop bad things from happening	Never	Sometimes	Often	Always
38.	My child would feel scared if (s)he had to stay away from home overnight.....	Never	Sometimes	Often	Always
39.	Is there anything else that your child is really afraid of?	YES	NO		
	Please write down what it is, and fill out how often (s)he is afraid of this thing: _____	Never	Sometimes	Often	Always
	_____	Never	Sometimes	Often	Always
	_____	Never	Sometimes	Often	Always

Appendix J: Parental Acceptance and Action Questionnaire

Below you will find a list of statements. Please rate the truth of each statement as it applies to you. Use the following scale to make your choices.

1	2	3	4	5	6	7
Never True	Very Seldom True	Seldom True	Sometimes True	Frequently True	Almost Always True	Always True

_____ 1. I am able to take action about my child's fears, worries, and feelings even if I am uncertain what is the right thing to do.

_____ 2. When I feel depressed or anxious, I am unable to help my child manage their fears, worries, or feelings.

_____ 3. I try to suppress thoughts and feelings about my child that I don't like by just not thinking about them.

_____ 4. It's OK for my child to feel depressed or anxious.

_____ 5. I rarely worry about getting my child's anxieties, worries, and feelings under control.

_____ 6. In order for my child to do something important, I have to have all my doubts about it worked out.

_____ 7. I'm not afraid of my child's feelings.

_____ 8. I try hard to avoid having my child feel depressed or anxious.

_____ 9. It is bad if my child feels anxious.

_____ 10. Despite my doubts, I feel as though I can set a plan for managing my child's feelings.

_____ 11. If I could magically remove all the painful experiences my child has had in his or her life, I would do so.

_____ 12. If I get frustrated with my child, then I can still help him or her.

_____ 13. Worries can get in the way of my child's success.

_____ 14. I often catch myself daydreaming about things I've done with my child and what I would do differently next time.

_____ 15. When I compare myself to other parents, it seems that most of them are handling their lives better than I do.

Appendix K: University of Southern California Parental Control Scale

Please indicate the extent to which each statement is descriptive of you when parenting your child.

	Not at all descriptive	Slightly descriptive	Somewhat descriptive	Moderately descriptive	Extremely descriptive
1. I encourage my child to be curious, to explore, and to question things.	0	1	2	3	4
2. I do not allow my child to get angry with me.	0	1	2	3	4
3. I don't think children should be given sexual information.	0	1	2	3	4
4. I believe that talking with my child about his/her worries will only make him/her more upset.	0	1	2	3	4
5. When my child expresses negative feelings, I am negative in return.	0	1	2	3	4
6. There are lots of ways that I'd like to change my child.	0	1	2	3	4
7. I expect my child to tell me everything that happens when he/she is away from home.	0	1	2	3	4
8. I think my child disobeys me just to upset me.	0	1	2	3	4
9. When I am disappointed or irritated with my child, I withhold affection.	0	1	2	3	4
10. I am less friendly when my child doesn't see things my way.	0	1	2	3	4

Appendix L: Mindfulness in Parenting Scale

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

Thank you so much for giving up your time to complete this questionnaire. Please put it in the envelope provided.