Predicting attrition in guided parent-delivered cognitive behavioural therapy for anxious children

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Thesis Declaration Form

I confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Signature:

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Date: 14/07/2014

Overview

Volume one of this thesis consists of three parts.

Part one is a literature review that examines pre-treatment demographic, clinical, parent, child and therapist characteristics as predictors of outcome in the treatment of child anxiety disorders. Methodological weaknesses associated with existing prediction studies are considered and recommendations made for future research.

Part two is an empirical paper which investigates predictors of treatment attrition in a guided manualised self-help CBT intervention for anxious children, delivered solely via parents. The results are discussed in relation to clinical implications and recommendations are made for increasing retention in low-intensity, parent-led treatments for childhood anxiety disorders.

Part three is a critical appraisal which discusses the limitations of using observational measures to assess parent-child interactions and the challenges associated with outcome measurement in child anxiety research. The background context to the research is also outlined and the advantages and disadvantages of conducting research using pre-collected data are considered.

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PART ONE: Literature Review

Predictors of treatment outcome for child and adolescent anxiety disorders

Abstract

Aims. This review examines what is currently known about pre-treatment characteristics as predictors of outcome in the treatment of child anxiety disorders and identifies directions for future research.

Methods. A systematic search resulted in 56 published studies meeting predefined methodological criteria. Seventeen demographic (age, gender, SES, ethnicity), clinical (type of diagnosis, pre-treatment anxiety severity, comorbidity, duration), parent (psychopathology, parenting behaviour), child (threat related selective attention, neurological, genotype, temperament, IQ, perfectionism), and therapist (experience) factors were identified as potential predictors across studies.

Results. The majority of findings suggested that there are no demographic factors that reliably predict treatment outcome however, higher levels of pre-treatment anxiety severity, having a diagnosis of SAnxD and the presence of comorbid mood disorders were more frequently found to be associated with worse treatment outcomes. Parental psychopathology was consistently found to predict treatment outcome but the evidence was stronger for younger children.

Conclusions. Overall, existing studies of pre-treatment variables as predictors of child and adolescent anxiety treatment outcome have provided mixed findings concerning for whom treatments are most effective. Suggestions for future research are discussed.

Introduction

Anxiety disorders are one of the most common childhood mental health problems, with an estimated prevalence rate of five % to 19% (Costello, Mustillo, Erkanli, Keeler & Angold, 2003). Not only do these anxiety disorders interfere with young people's social and academic development (Pine, Helfinstein, Bar-Haim, Nelson & Fox, 2009), but they often follow a chronic life course and have been implicated in the later development of other mental health conditions such as depression (Cole, Peeke, Martin, Truglio & Seroczynski, 1998) and substance misuse (Last, Hansen & Franco, 1997). The pervasiveness of child and adolescent anxiety disorders and their association with adult psychopathology when left untreated highlights the need for effective, accessible treatments.

Treatment of Anxiety Disorders in Children and Adolescents

Cognitive behaviour therapy (CBT) is the most commonly evaluated treatment for child and adolescent anxiety disorders. The majority of CBT treatment programmes are generic (e.g. 'Coping Cat', Kendall, 1990; Kendall & Hedtke, 2006 and 'Cool Kids', Rapee et al., 2006) and are designed to target a range of different anxiety disorders including separation anxiety disorder (SAD), social anxiety disorder (SAnxD), specific phobias (SP) and generalised anxiety disorder (GAD). There have also been some disorder-specific CBT protocols developed for young people with SAnxD (Fisher, Masia-Warner & Klein, 2004) and SP (Davis, Ollendick & Ost, 2009).

The main components of generic child and adolescent anxiety treatment programmes include psychoeducation, emotion recognition, cognitive restructuring, relaxation and graded exposure (Kendall & Hedtke 2006; Rapee et al. 2006). Parents are often involved in treatment to facilitate behavioural practice and help generalise

skills to home and school life although the extent of this involvement typically varies depending on the age of the child and the programme being implemented (Creswell & Cartwright-Hatton, 2007). CBT treatment programmes have also been developed that involve solely working with parents of anxious children (e.g. Cartwright-Hatton, McNally &White, 2005; Thirlwall, Karalus, Willetts, Cooper & Creswell, 2013).

Clinical trials have shown that Cognitive Behavioural Therapy (CBT) is an effective treatment for anxiety disorders in young people (James, James**,** Cowdrey, Soler & Choke, 2013), however treatment response is variable and over a third of young people retain an anxiety diagnosis after treatment (Cartwright-Hatton, Roberts, Chitsabesan, Fothergill & Harrington, 2004).

Predictors of Treatment Outcome

A better understanding of the factors associated with treatment outcome for young people with anxiety disorders would help to elucidate for whom current treatments are most effective. Such information could assist in the early identification of young people who may be at risk of poor outcomes, thus permitting modified, longer or more intensive treatments to be implemented accordingly (Rapee, Schniering & Hudson, 2009). It would also inform the evidence base and ensure that child anxiety treatments continue to evolve.

Predictors of treatment outcome are baseline pre-treatment characteristics that influence outcome and have a significant main effect on outcome (Pincus, Miles, Froud, Underwood, Carnes & Taylor, 2011). A range of potential predictors have been investigated in relation to treatment outcome, including child age (Festen et al., 2013) and gender (Shortt, Barrett & Fox, 2001); type of disorder (Crawley, Beidas, Benjamin, Martin & Kendall, 2008); severity and comorbidity (Liber, van Widenfelt, van der Leeden, Goedhart, Utens & Treffers, 2010; Rapee, 2003); and parental

psychopathology (Cooper, Gallop, Willetts & Creswell, 2008). However, there has been no consensus as to which factors can reliably predict treatment response for child anxiety disorders and there has only been one attempt to synthesise this evidence in a systematic review. Nilsen, Eisemann, & Kvernmo, (2013) summarised results from 32 child anxiety and 13 child depression studies that reported on predictors and moderators of outcome for psychological treatments. While several demographic and clinical factors were examined, the authors found little evidence across studies regarding which child pre-treatment characteristics might reliably predict treatment outcome in childhood anxiety disorders. There was however a number of limitations associated with the Nilsen et al (2013) review. Firstly, the predictive factors explored were restricted to child demographic and symptom variables only (i.e. age, gender, IQ, ethnicity, pre-treatment severity and comorbidity), whilst other parent, child and therapist characteristics that have been associated with treatment outcome in several research trials were omitted. Secondly, no rating scale was employed to evaluate the strength and quality of evidence for included studies. Lastly, by excluding studies that included medication groups as well as psychological studies (combination studies), the authors omitted some large evaluations of predictors of change from pre-post treatment.

Rationale and Aims of the Present Review

In an attempt to provide an up-to-date synthesis of the evidence and overcome some of the limitations of the previous review, the current paper reviews the recent literature on all predictors of outcome that have been investigated for child and adolescent anxiety disorders. This will contribute to a more informed understanding of the association between pre-treatment characteristics and treatment outcome for childhood anxiety disorders and establish if it is possible to reliably

predict who is likely to respond well to child anxiety treatment based on available research. Unlike previous reviews, the present review included combination studies as these typically involve large numbers of participants thus providing greater statistical power with which to examine predictors. Also, the current paper included studies which utilised designs other than randomised controlled trials (RCTs) and controlled designs because alternative methodologies may afford a helpful contribution to the evidence base in this area.

In summary, the aim of this systematic review is to conduct a comprehensive evaluation of psychological treatment research regarding the predictors of treatment outcome for childhood anxiety disorders.

Method

Inclusion Criteria

Study inclusion was determined on the basis of the following criteria:

- Studies evaluated the prospective relationship between any pre-treatment child, parent or therapist characteristic and symptom change and reported on the statistical significance of the association.
- At least one treatment condition involved a psychological intervention (combination studies were included).
- Studies were published in peer-reviewed journals and in full text, from 1985 onwards.
- Studies were published in English. Non-English papers were documented but were not included in the review due to a lack of resources for translation.
- Participants in the study were less than 19 years old at the initial assessment.

- Participants had a primary diagnosis of an anxiety disorder with or without comorbid conditions. All diagnostic categories relating to anxiety disorders according to DSM IV and ICD 10 criteria were included (apart from studies investigating PTSD or OCD only, as these are no longer classified as anxiety disorders according to DSM 5).
- Studies reported an outcome measure of anxiety symptoms and/or a diagnostic status of anxiety. Outcome measures were conducted at post-treatment or follow-up.
- Studies focusing on medical problems (e.g. asthma, paediatric health) were excluded.
- Prevention studies were excluded.

Preliminary Search Strategy

To identify relevant published studies for inclusion in this review, a literature search was conducted using Web of Science (1970 to December 2013) and the NHS Evidence Healthcare Databases (formerly The National Library for Health databases) which incorporates results from MEDLINE (1950 to December 2013), PsychInfo (1806 to December 2013) and EMBASE (1980 to December 2013).

As predictor analyses are often conducted in addition to main study questions and therefore not mentioned in abstracts, a broad approach was initially adopted to identify all child and adolescent psychological treatment studies. After excluding papers that obviously failed to meet inclusion criteria from examination of the title and abstract, full text papers were scrutinised to ensure all pre-treatment predictor analyses were identified.

In order to cater for variations in search terms, including differences in English and American spelling, truncations and wild cards were employed. The

search terms used were combinations of anxiety-related key terms: internaliz* or anxi* or worry or fear* or obses* or compul*or OCD or panic or phobi*or inhibit* or shy* or somat*, crossed with key terms related to psychological treatment: CBT or cognitive* or behavior* or behaviour*or cognitive behavio?r therap* or psychotherapy or "psychological intervention" or counsel?ing and key terms to identify studies involving children and adolescents: child* or adolesc* or juvenil* or school* or p?ediatri* or teen* or young or youth* (McLeod, Wood & Weisz, 2007).

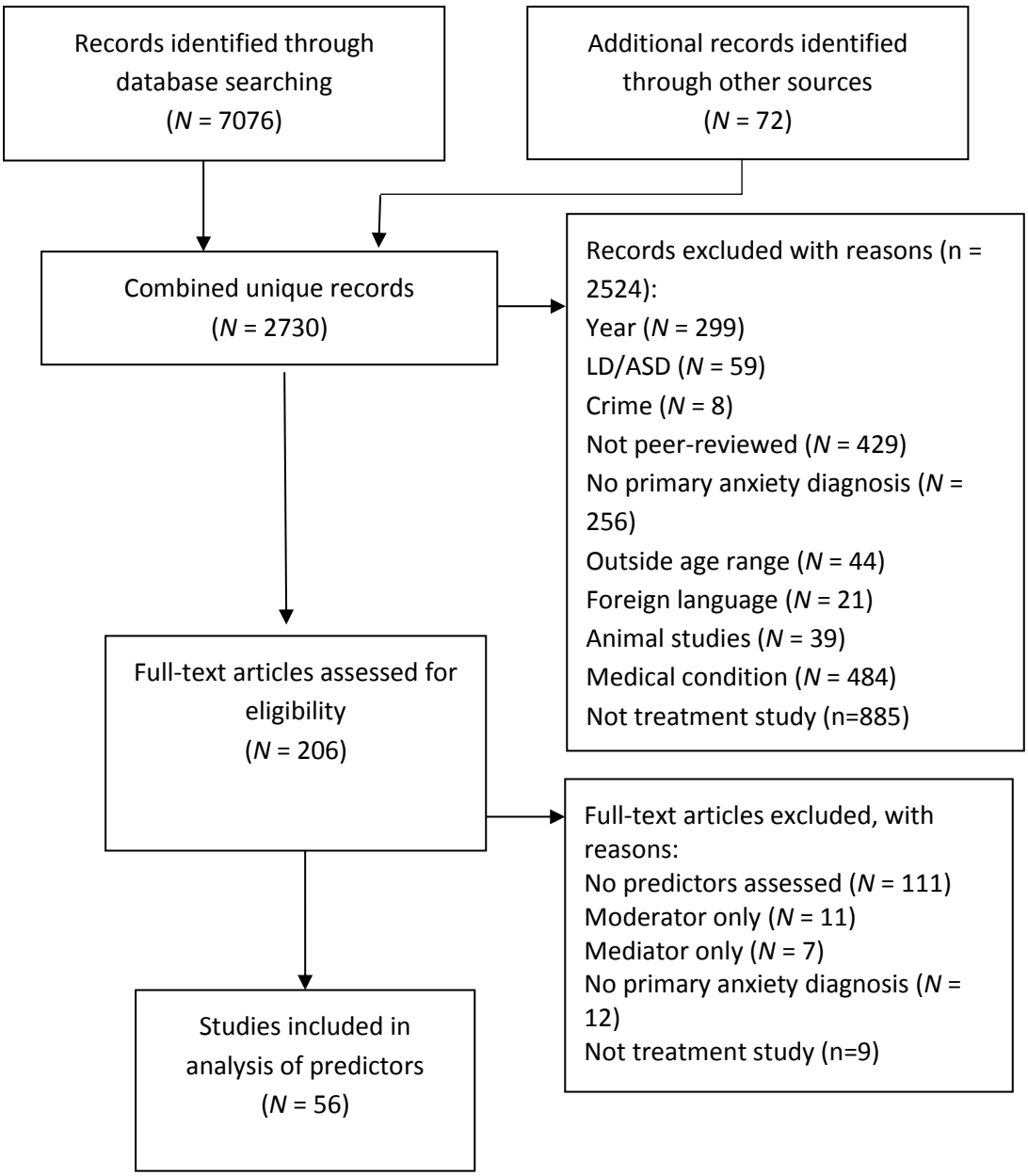
These search terms generated 7,076 hits, and after the exclusion of duplicates, the titles and abstracts were checked for relevance. Reference lists of primary studies detected by the database searches were also examined to identify additional potentially pertinent studies. Journals containing high numbers of appropriate studies were then hand searched for recent publications that might not yet have been added to the electronic databases. Finally, a cited reference search of included studies was performed to identify any other potential papers. The terms 'OCD', 'obsess*' and 'compul*' were included for completeness to ensure that studies including young people with co-morbid OCD were captured. However, studies that included children with only OCD or PTSD were excluded in keeping with DSM V criteria that does not categorise these conditions as anxiety disorders.

Study Selection

The author and a second researcher (VS) independently screened titles and abstracts and then full papers. Abstracts were read and reviewed against the protocol inclusion/exclusion criteria. Commentaries, dissertations, literature reviews, case studies, and animal studies were also excluded. Full text articles were retrieved for studies meeting the criteria or when reviewing suitability via abstract alone was insufficient. These were screened and included if they met the inclusion criteria. Any

disagreements about study eligibility were discussed and resolved by consensus after referring to the protocol. See Figure 1 for a flow chart detailing the study identification and selection process, following guidelines from PRISMA (Moher, Liberati, Tetzlaff & Altman, 2009).

Figure 1. *PRISMA diagram of study identification and selection*



Data Extraction

Data on study characteristics and findings was independently extracted by the author and a second researcher and entered into an Access database.

The following information was extracted for each study: a) demographic information including ethnicity; socio-economic status; child gender; child age range and mean age. b) treatment trial information including study location; setting and design; whether it was part of a larger study; number of participants; child anxiety diagnostic tools (i.e. ADIS C/P); assessment time points; exclusion criteria; name of intervention; outcome measures; number of treatment sessions; therapist qualification (i.e. clinical psychologist, doctoral student or psychotherapist); predictors examined; significant predictors; treatment outcome/recovery criteria (i.e. remission from primary anxiety disorder or remission from any anxiety disorder); how parental psychopathology was measured (i.e. questionnaire or interview); method of data analysis; findings; effect sizes and any ethical issues or sources of bias. c) child disorder information including type of anxiety diagnoses (i.e. social anxiety, generalised anxiety, separation anxiety, specific phobia, panic or agoraphobia or general anxiety symptoms) and co-morbid diagnoses (i.e. depression, ADHD or ODD). References were organised using the bibliographic software, EndNote.

Quality Evaluation

The criteria for the quality assessment of predictor analyses were based on existing quality criteria outlined in two recent publications by Knopp, Knowles, Bee, Lovell and Bower (2013) and Barnicot et al., (2012).

The criteria were as follows:

1. The sample size for the predictors analysis ($N < 30=0$; $30 \leq N > 100=0.5$; $N \geq 100=1$).
2. < 5 predictors tested: The precision of a predictor model decreases with the number of factors in the model; measuring fewer variables may increase the reliability/credibility of identified predictor effects (5 or more predictors = 0; < 5 predictors = 1).
3. Evidence that results were not biased by missing data either by showing that participants with missing outcome data did not differ from those with complete data on any of the predictor variables, or showing that predictor–outcome relationships remained the same after adjusting for data missingness, or showing that a sensitivity analysis using multiple imputation demonstrated the same results (evidence not obtained=0; evidence obtained=1; data available for entire sample of interest = n.a.).
4. *A priori* hypothesis of anticipated predictor effect: The selection of predictors ought to be theory or evidence-driven with the view to produce confirmatory results. Hence, authors ought to state the anticipated predictor effect (no priori hypothesis stated = 0; priori hypothesis was stated = 1).
5. Analysis used continuous rather than dichotomised predictors when appropriate. This method increases statistical power to detect relationships between variables (Brauer, 2002) and does not involve arbitrary division of predictor variables into "high" and "low" categories. (Continuous predictor variable was dichotomised in the predictor analysis = 0; continuous predictor was entered as continuous variable in predictor analysis = 1; predictor was categorical originally = n.a.).

Each included study was scored against each criterion and the scores for each study were then averaged to give a quality score for that study, with higher scores reflecting higher quality. Predictor–outcome analyses in six studies were given low quality scores (≤ 0.5), twenty-seven moderate scores (> 0.5 and ≤ 0.80), twenty-three high scores (>0.80 and ≤ 1.0). The quality score reflects the quality of the study's analysis of predictor–outcome relationships, rather than the quality of the study as a whole (Barnicot et al., 2012). See Table 1 for the quality evaluation scores for each study. For a table explaining the calculation of the quality score for each study, see Appendix A.

Characteristics of Included Studies

Fifty six papers met review inclusion criteria. The characteristics of the 56 included studies are summarised in Table 1.

Participants. Sample sizes ranged from 18 to over 750, but the majority (91%) included between 60 and 196 participants. Participants had a mean age of 10.2 years and on average study samples consisted of similar numbers of boys and girls. Ethnicities were reported in 64% of studies and of these, between 26% and 100% of young people were Caucasian.

The majority of studies recruited children and young people with a variety of anxiety disorders (e.g. SAD, SAnxD; or avoidant disorder, SP, GAD; or over-anxious disorder) and the presence of comorbid anxiety, depression and/or externalising disorders was common. Some studies focused on a specific anxiety disorder (i.e. 3 specific phobia and 2 social phobia) whilst others explicitly excluded children with OCD, PTSD, and specific phobias. The majority of studies excluded children with learning disabilities or pervasive developmental disorder (PDD). The use of other exclusion criteria was more variable, but having psychosis, severe

depression/suicidal ideation, current medication for internalising disorders, autistic spectrum disorder (ASD) and recent CBT were commonly noted as reasons not to include young people in studies.

Table 1

Characteristics of included studies

Author/year	Sample size	Age range	Child diagnostic tool	Diagnoses	Country	Intervention(s)	Psychological intervention intensity	Quality rating
Barrett et al., 1996	79	7 to 14	ADIS C/P	OAD, SAnxD, SAD	Australia	Coping Cat	12 sessions.	0.3
Beidel et al., 2000	67	8 to 12	ADIS C/P	GAD, OAD, SAnxD, SP, Ag	USA	SET-C	12 x2 weekly	0.5
Berman et al., 2000	106	6 to 17	ADIS C/P	GAD, OAD, SAnxD, SP, Ag	USA	Manualised beh txt	10-12 sessions	0.6
Bodden et al., 2008	128	8 to 18	ADIS C/P	GAD, SAD, SAnxD, SP, PD	Netherlands	CBT- No manual name	13 sessions	0.8
Cobham et al., 1998	67	7 to 14	ADIS C/P	OAD, SAnxD, SAD, GAD, Ag	Australia	Coping Koala and PAM	10 sessions	0.7
Cooper et al., 2007	67	6 to 15	ADIS C/P	GAD, SAD, SAnxD, SP	UK	CBT- No manual	Variable	0.63
Crawford & Manassis., 2001	61	8 to 12	DICA-R	GAD, SAD, SAnxD, SP, PD, other	Canada	Coping Bear & Keys to PYAC	12 sessions	0.7
Crawley et al., 2008	166	7 to 17	ADIS C/P	GAD, SAD, SAnxD	USA	Coping Cat	16 sessions	1
Crawley et al., 2013	26	6 to 13	ADIS C/P	GAD, SAD, SAnxD	USA	Coping Cat	8 sessions	0.6
Creswell et al., 2008	22	6 to 12	ADIS C/P	GAD, SAD, SAnxD, SP	UK	Cool Kids	8 sessions	0.9
Creswell et al., 2010	41	5 to 12	ADIS C/P	GAD, SAD, SAnxD, SP	UK	Overcoming	8 sessions	0.75
Festen et al., 2013	145	8 to 18	ADIS C/P	GAD, SAD, SP, SAnxD,Pd	Netherlands	Coping Cat	12 sessions	1
Ginsburg et al., 2011	488	7 to 17	ADIS C/P	GAD, SAD, SAnxD	USA	Coping Cat & C.A.T. Project	14 sessions	0.8
Ginsburg et al., 2012	32	7 to 17	ADIS C/P	GAD, SAD, SAnxD, SP, ADNOS	USA	Coping Cat & C.A.T. Project	12 sessions	0.6
Hedtke et al., 2009	87	7 to 13	ADIS C/P	GAD, SAD, SAnxD	USA	Coping Cat	16 sessions	0.5
Hirshfeld-Becker et al., 2010	64	4 to 7	K-SADS-E	OAD, SAD, SAnxD/AvDis, SP	USA	Being Brave	Variable	0.7
Hudson et al., 2013a	384	6 to 13	ADIS C/P	GAD, SAD, SP, SAnxD, Pd	UK & Australia	Various CBT	Variable	0.6
Hudson et al., 2013b	209	6 to 13	ADIS C/P	GAD, SAD, SAnxD, SP, PD, OCD, PTSD	Australia	Cool Kids	12 sessions	1
Hughes & Kendall., 2007	138	9 to 13	ADIS C/P	OAD, SAD, AvDis	USA	Coping Cat	16 sessions	0.6
Hum et al., 2013	47	8 to 12	ADIS C/P	GAD, SAD, SAnxD	Canada	Coping Bear	12 sessions	0.6

Kendall et al., 1997	94	9 to 13	ADIS C/P	OAD, SAD, AvDis	USA	Coping Cat	16-20 sessions	1
Kendall et al., 2001	173	8 to 13	ADIS C/P	OAD, SAD, AvDis, GAD	USA	Coping Cat	16-20 sessions	0.6
Kendall et al., 2008	161	7 to 14	ADIS C/P	GAD, SAD, SAnxD	USA	Coping Cat	16 sessions	0.8
Kerns et al., 2013	91	8 to 14	ADIS C/P	GAD, SAD, SAnxD	USA	Coping Cat	16 sessions	0.88
Kley et al., 2012	75	8 to 13	Kinder-Dips	SAnxD	Germany	CBT manual for SAnxD	12 sessions	0.9
Legerstee et al., 2008	178	8 to 16	ADIS C/P	GAD, SAD, SAnxD, SP	Netherlands	FRIENDS	10 sessions	1
Legerstee et al., 2009	131	8 to 16	ADIS C/P	GAD, SAD, SAnxD, SP	Netherlands	FRIENDS	10 sessions	0.8
Legerstee et al., 2010	91	8 to 16	ADIS C/P	GAD, SAD, SAnxD, SP	Netherlands	FRIENDS	10 sessions	0.7
Liber et al., 2008	124	8 to 12	ADIS C/P	GAD, SAD, SAnxD, SP	Netherlands	FRIENDS	10 sessions	1
Liber et al., 2010	124	8 to 12	ADIS C/P	GAD, SAD, SAnxD, SP	Netherlands	FRIENDS	10 sessions	1
Manassis et al., 2002	78	8 to 12	DICA-R	GAD, SAD, SP, SAnxD,Pd	Canada	Coping Bear & Keys to PYAC	12 sessions	0.83
Manassis et al., 2013	74	8 to 12	ADIS C/P	GAD, SAD, SAnxD	USA	Coping Cat	16 sessions	0.88
Mitchell et al., 2013	67	6 to 13	ADIS C/P	GAD, SAD, SP, SAnxD, OCD	Australia	Cool Kids Program	10 sessions	0.9
Nauta et al., 2001	18	8 to 15	ADIS C/P	GAD, SAD, SAnxD,Pd	Netherlands	Coping Cat &CPT	12 sessions	0.5
Nauta et al., 2003	79	7 to 18	ADIS C/P	GAD, SAD, SAnxD,Pd	Netherlands	Coping Cat &CPT	12 sessions	0.5
Ollendick et al., 2009	196	7 to 16	ADIS C/P	SP	USA & Sweden	OST	1 session of 3 hours	0.6
Ollendick et al., 2010	100	7 to 16	ADIS C/P	SP	USA & Sweden	OST	1 session of 3 hours	1
O'Neil & Kendall., 2012	72	7 to 14	ADIS C/P	GAD, SAD, SAnxD	USA	Coping Cat	16 sessions	0.88
Ost et al., 2001	67	7 to 17	ADIS C/P	SP	Sweden	OST	1 session of 3 hours	0.63
Pina et al., 2003	131	6 to 16	ADIS C/P	GAD, OAD, SAnxD, SP, Ag	USA	CBT- No manual name	10-12 sessions	0.75
Podell & Kendall., 2011	45	9 to 13	ADIS C/P	GAD, OAD, SAnxD	USA	Coping Cat	16 sessions	1
Podell et al., 2013	279	7 to 17	ADIS C/P	GAD, SAD, SAnxD	USA	Coping Cat & C.A.T. Project	14 sessions	0.88
Rapee, 2000	95	7 to 16	ADIS C/P	GAD, SAD, SAnxD	Australia	Coping Koala	9 sessions	0.75
Rapee, 2003	165	7 to 16	ADIS C/P	GAD, SAD, SAnxD,Pd, OCD, SP	Australia	Coping Koala	9 sessions	0.9
Rapee, 2012	750	6 to 18	ADIS C/P	GAD, SAD, SAnxD,Pd, OCD, SP	Australia	Cool Kids	10 sessions	1

Settipani et al., 2013	111	7 to 14	ADIS C/P	GAD, SAD, SAnxD	USA	Coping Cat	16 sessions	1
Shortt et al., 2001	71	6.5-10	DISCAP	SAD, GAD, SAnxD	Australia	FRIENDS	10 sessions	0.63
Silk et al., 2013	67	9 to 13	K-SADS-PL	SAD, GAD, SAnxD	USA	Coping Cat	16 sessions	0.7
Southam-Gerow et al., 2001	135	7 to 15	ADIS C/P	GAD, OAD, SAnxD SAD, AvDis	USA	Coping Cat	12 sessions	1
Spence et al., 2000	50	7 to 14	ADIS C/P	SAnxD	Australia	Social skills training	12 sessions	0.5
Thirlwall et al., 2013	194	7 to 12	ADIS C/P	GAD, SAD, SAnxD, SP, ag, PD, ADNOS	UK	Overcoming	8 or 4 sessions	0.88
Tiwari et al., 2013	61	7 to 13	ADIS C/P	SAD, GAD, SAnxD	USA	Coping Cat	16 sessions	0.63
Tobon et al., 2011	34	8 to 12	DICA-IV	GAD, SAD, SAnxD, SP, ADNOS	UK & Canada	The Worry Warriors program	12 sessions	0.7
Toren et al., 2000	24	6 to 13	K-SADS	SAD, OAD	Israel	CBT- No manual name	10 sessions	0.75
Treadwell et al., 1995	81	9 to 13	ADIS C/P	OAD, SAD, AvDis	USA	Coping Cat	16 sessions	1
Waters et al., 2012	35	7 to 11	ADIS C/P	GAD, SAnxD	Australia	Take Action Program	10 sessions	0.7

Note: SAD = separation anxiety disorder; SAnxD = social anxiety disorder; SP = specific phobia; GAD = generalised anxiety disorder; Ag = agoraphobia; PD = panic disorder; OCD = obsessive compulsive disorder; PTSD = post-traumatic stress disorder; AvDis = avoidant disorder; OAD = overanxious disorder; ADNOS = anxiety disorder not otherwise specified.

Interventions. Study interventions varied in terms of content, duration, intensity, and delivery. Intervention content largely consisted of manualised CBT programmes.

The most frequently utilised manualised CBT programme was Coping Cat (Kendall, 1994) which was used in twenty-three studies. Adaptions of Coping Cat such as the Coping Koala programme (an Australian version of Coping Cat; Barrett, Dadds & Rapee, 1991 cited in Barrett, Dadds & Rapee, 1996) was used in three studies, Coping Bear (a group version; Scapillato & Mendlowitz, unpublished, 1993) accompanied by Keys to Parenting Your Anxious Child (Manassis, 1996) was used in three studies and Being Brave: A Program for Coping with Anxiety for Young Children and Their Parents (Hirshfeld-Becker et al., 2008) was used in one study. One study used Coping Koala and a Family Management (PAM) programme (Barrett, Dadds, & Rapee, 1991). The CoolKids programme (Rapee et al., 2006) was used in four studies and FRIENDS (Barrett & Turner, 2000) was used in six studies. Predominantly behavioural treatment programmes such as OST (Öst, & Ollendick, 2001) and Social Effectiveness Therapy for Children (SET-C; Beidel, Turner & Morris, 2004) were adopted by four studies. Other programmes used in single studies included: Social fears and social anxiety disorder in childhood and adolescence (Tuschen-Caffier, Kühl & Bender, 2009); Social skills training: Enhancing social competence with children and adolescents (Spence, 1995); guided parent-delivered CBT treatment (Creswell et al., 2013); The Worry Warriors program (Eichstedt, Wilde, Hols Tucker and Collins, 2006) and Take Action Program (Waters, Wharton, Zimmer-Gembeck, & Craske, 2008).

On average participants received 10.9 treatment sessions and sessions lasted between 45 and 90 minutes. Study interventions were delivered by a range of

professionals with varying levels of experience and training, including clinical psychologists, psychiatrists, psychotherapists, behaviour therapists, health care psychologists, counsellors and doctorate students.

Nineteen of the 56 studies overlapped in terms of research group, or were part of the same larger trial, or drew their samples from those used in previous studies (see Appendix B).

If a predictor was assessed more than once in an overlapping sample, the study with the largest sample size and/or highest quality evaluation rating was selected for inclusion in the systematic review.

Assessment of treatment outcome. Definitions of treatment outcome varied considerably across studies. Whilst some studies employed conservative definitions that required an absence of all anxiety diagnoses at post treatment (Ginsburg et al, 2011; Southam-Gerow et al., 2001), others defined treatment success as the absence of only the primary diagnosis (Hudson et al., 2013) or a reduction in symptom severity (Hedtke et al., 2009). In addition, while some studies relied entirely on categorical assessment of anxiety to determine outcomes, other studies gave a greater weight to dimensional symptom scales (Crawford and Mannasis, 2007). Studies also varied as to which informants report (i.e. clinician, child, parent or teacher) was given most credence. All included studies collected outcome measures at post treatment. Forty nine studies repeated diagnostic interviews at post treatment and/or follow up, whilst others assessed the level of anxiety symptoms using a range of different child, parent and teacher report measures. Some studies conducted additional follow up assessments with durations ranging from one month to 15 months.

Child anxiety diagnoses. All included studies used semi-structured interviews to diagnose child and adolescent anxiety disorders. The Anxiety Disorders Interview Schedule for DSM IV for Children- Child and Parent Versions (ADIS-C/P; Silverman and Albano, 1996) was the most frequently reported (48 of 56; 86%) . The Diagnostic Inventory for Children and Adolescents-Revised-Parent Version (DICAR-P; Reich and Welner, 1988) was administered in four of 56 (7%) studies, whilst the Schedule for Affective Disorders and Schizophrenia, Epidemiologic Version (K-SADS-E) for *DSM–IV* (Orvaschel, 1994) was used in three (5%) studies. In addition, one study utilised the Diagnostic Interview for Mental Disorders in Children and Adolescents (Kinder-DIPS; Unnewehr, Schneider, & Margraf, 1995).

Child anxiety symptoms. The questionnaire measures most commonly administered to assess symptoms of child anxiety included the Child Behavior Checklist (CBCL; 30 studies; Achenbach, 1991a); Children's Depression Inventory (CDI; 20 studies; Kovacs, 1992); the Revised Children's Manifest Anxiety Scale (RCMAS; 16 studies; Reynolds & Richmond, 1979); the Multidimensional Anxiety Scale for Children (MASC; 14 studies; March, Parker, Sullivan, Stallings, & Conners, 1997); the Fear Survey for Children Revised (FSSC-R; 11 studies'; Ollendick, 1983); the State-Trait Anxiety Inventory for Children (STAI-C; 10 studies; Spielberger & Edwards, 1973); the Spence Child Anxiety Scale, child and parent versions (SCAS; eight studies; Spence, 1998); the Teacher Report Form (TRF; seven studies; Achenbach, 1991b); The Negative Affectivity Self-Statement Questionnaire (NASSQ; two studies; Ronan, Kendall, & Rowe, 1994).

Assessment of predictors of treatment outcome. A range of predictors were reported by study authors, the most frequent of which were age and gender. Symptom-specific variables were also commonly reported including comorbidity,

severity and type of anxiety diagnosis (based on the diagnostic interviews above). Other demographic variables, ethnicity and SES, were examined in several studies along with a therapist variable (experience). Two studies assessed duration of illness, whilst others examined child related variables in association with treatment outcome; these included IQ, threat related selective attention, behavioural inhibition (BI), genotype, posterior amplitudes and perfectionism. Environmental variables such as parental psychopathology and parenting behaviours were frequently assessed. Eight of the nineteen studies that examined parental psychopathology as a predictor of child treatment outcome used semi-structured interview tools to assist diagnosis. The Anxiety Disorders Interview Schedule for DSM-IV Lifetime Version (ADIS-IV-L; DiNardo, Brown and Barlow, 1994) was used in four studies (Bodden et al., 2008, Hudson et al., 2013a; Kendall et al 2008 and Podell and Kendall 2012). The Structured Clinical Interview for DSM-IV Axis I Disorders: research version (SCID; First, Spitzer, Gibbon and Williams, 1995) was used in three studies (Cooper et al., 2007; Creswell et al., 2008 and Hirshfeld-Becker et al., 2010), Legerstee et al (2008) used the Composite International Diagnostic Interview (CIDI; WHO, version 2.1) and Toren et al., 2000 used the Schedule for Affective Disorders and Schizophrenia-Lifetime version (SADS-L; Endicott and Spitzer, 1978).

Other studies relied on self-report measures to identify symptoms of anxiety and depression in parents. Six studies (Cobham et al., 1998; Cooper et al., 2008; Ginsburg et al, 2011; Settipani et al., 2013; Southam-Gerow et al 2001; Toren et al., 2000) used the State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970). The Brief Symptom Inventory (BSI; Derogatis, 1993) was used in four studies (Crawford and Mannassis, 2001; Ginsburg et al, 2011; Ginsburg et al 2012; Kley et al, 2012) as was the Depression, Anxiety, and Stress Scales (DASS;

Lovibond & Lovibond, 1995) (Barrett et al., 1996; Liber et al., 2008; Creswell et al., 2010; Hudson et al., 2013b) and the Beck Depression Inventory (BDI; Beck, Ward, Mendelsohn, Mock, & Erbaugh, 1961) (Crawford & Mannassis, 2001; Ginsburg et al., 2012; Southam-Gerow et al., 2001; Toren et al., 2000). Two studies (Rapee 2000; Southam-Gerow et al., 2001) used the Parenting Stress Index (The PSI; Abidin, 1995) and the Beck Anxiety Inventory (BAI; Beck & Steer, 1990) was used in one study (Rapee, 2000).

Results

The results of the identified studies are presented and summarised using narrative synthesis (Popay et al., 2006) which adopts a textual approach in synthesising the results to tell a story. Studies focusing on child demographic factors, child clinical characteristics, parent factors, other child characteristics and therapist factors as predictors of treatment outcome are each considered in turn. Findings for predictors examined in three or more studies will be reported in detail, as this was considered an adequate number of studies for cross-study synthesis. Predictors evaluated in fewer studies will only be briefly described.

Associations Between Child Demographic Factors and Treatment Outcome

Age. Twenty studies assessed the relationship between age and treatment outcome (see Table 2). Whilst the majority (85%) of these studies did not find a significant association with outcome, older-child age was found to be significantly related to worse treatment outcome at post treatment in three trials with high quality predictive analysis. In a study comparing child-focused and family-focused CBT, Bodden et al., (2008) split the sample into child and adolescent groups and found that younger children (8–12 years) improved (based on the presence of anxiety disorders) more from treatment than adolescents (13–17 years), but differences between age

groups were only significant at post treatment and not at the 3-month follow up. Similarly, in a sample aged between 7 and 15 years, Southam-Gerow et al., (2001) found that on completion of CBT treatment (Coping Cat), older-child age (in months) was associated with poorer treatment response (free from any anxiety disorder based on the ADIS–P) at post-treatment but not at 12 month follow up. The effect size for child age was medium at post-treatment (.47) and small at follow-up (.10). In a large multimodal trial involving 488 young people, Ginsburg et al., (2011) also found that after completing the Coping Cat /CAT project CBT treatment programme, older children (12-17 years) were less likely to enter remission (free from all targeted anxiety disorders as assessed by ADIS C/P and CGI-S score of 1 or 2) at post treatment than younger children (7–11). However, only post treatment findings were reported so it is not clear if these findings were maintained at follow-up.

The age ranges of samples varied enormously across studies (from 4-7 years to 8-18 years) and none of the seven studies that only included children up to the age of 13 years found any age related effects. Of the 13 studies that included adolescents, 23% found an association between age and poorer outcomes at post treatment only and age-related differences were no longer apparent at follow up. However, where adolescents were included in studies their numbers were often low so studies may have been underpowered to detect differences in treatment outcome for older children (Rapee et al., 2009).

Gender. Eighteen studies examined gender as a predictor of treatment outcome (see Table 2). Although the majority of studies (82%) produced non-significant results, three studies with predictor analyses of a moderate quality, did find that gender was a significant predictor of outcome.

In a study investigating genetic and demographic influences on CBT treatment outcome among 384 children recruited from six trials across two sites, Hudson et al. (2013a) found that female gender was significantly associated with poorer remission rates when controlling for other variables (e.g. severity and comorbidity). However, these findings were based on follow-up data only and there was some variation in follow-up time-points across participants. Conversely, Ost (2001) found that clinical rated improvement was higher among girls in response to a single-session treatment for specific phobias. However gender differences were only significant on one measure, which involved assessment of the child's behaviour whilst actually in the phobic situation (the Behavioural Approach Test; BAT). Ollendick et al., (2009) also found that female gender was a reliable predictor of improved treatment outcome for children with specific phobias who received the OST single-session phobia treatment, with significantly more girls (62%; N = 26) than boys (40%; N = 24) diagnosis-free six months after treatment. However, significant gender differences in diagnosis-free status were not found at the post-treatment assessment.

As with studies that investigated child age as a predictor of outcome, studies examining gender were not designed specifically for this so most had sample sizes which were underpowered to investigate differences in outcome between boys and girls. One exception to this was a study by Ginsburg et al., (2011), who despite having a large sample of 488 children, found that gender was not a significant predictor of remission status on either diagnostic or symptom measures at post treatment assessment. However, two of the three studies that did report gender differences only detected these at follow-up assessment and as Ginsburg et al., (2011) did not include follow-up data, it is possible any gender effects may not have

yet been apparent. It is also noteworthy that whilst Hudson et al., (2013a) found a negative effect on outcome for female gender in a CBT treatment for mixed anxiety disorders, two studies found that girls did better in a treatment designed specifically for specific phobias. It may be that gender effects are diagnostically-specific and as such, any effects are diluted when examined in treatments targeting generic anxiety disorders.

Ethnicity. Five studies examined ethnicity as a predictor of treatment outcome (see Table 2) and three (60%) of these studies produced non-significant results. Two studies with high and moderate quality predictor analyses respectively, found a significant relationship between ethnicity and treatment outcome. In a study involving 488 young people (78.9% Caucasian), Ginsburg et al., (2011) found that after completing 14 sessions of CBT, children from racial minorities (e.g. Black; Asian; American Indian; Pacific Islander or Hispanic) were significantly less likely to be free from their anxiety disorder diagnoses as compared to Caucasian children when assessed by the ADIS-C/P at post-treatment. Pina et al., (2003) investigated response to 10-12 sessions of exposure-based CBT and found that European/American youths (60%) and Hispanic/Latino youths (40%) made similar treatment gains on all outcomes except the child self-report measure (RCMAS), where there was a greater reduction in anxiety symptoms for the European/American youths. Both studies were limited in that most of the ethnic minorities included in the studies were generally acculturated so the extent to which study findings apply to other ethnic minority children and families is uncertain.

Other than Pina et al., (2003), all of the studies reporting on ethnicity as a predictor had a high percentage (70-89%) of Caucasian participants. In addition proficiency in speaking English or native language was frequently one of the

inclusion criteria for studies which increased the homogeneity of samples under investigation and restricted the generalisability of results.

Socio-economic status (SES). Seven studies examined SES as a predictor of treatment outcome (see Table 2). Four of these studies had predictor analyses of a moderate quality and three were of a high quality, however SES was not found to be a significant predictor in any of these studies.

Measurement of socio-economic status varied across studies with some just reporting whether participants were in high, middle or low groups with no additional details as to how these categories were determined, while other studies reported annual family income only, thus making comparison across studies difficult. In addition to the variability in measurement, participants in the included studies were from predominantly middle and upper middle class families. Samples may therefore have been too homogenous in terms of SES to find any significant effect.

In summary, there is little evidence to suggest that demographic factors reliably predict treatment outcome for childhood anxiety disorders. Although some studies have produced significant findings, methodological weaknesses such as small sample sizes and lack of consistency across measures or informants, limits the strength of the conclusions that can be drawn, thus highlighting the need for further work.

Table 2

Associations between child demographic factors and treatment outcome

Author/year	Age	Gender	Ethnicity	SES
Beidel et al., 2000	*Ns*	*Ns*	*Ns*	-
Berman et al., 2000	*Ns*	*Ns*	-	*Ns*
Bodden et al., 2008	* *O* ↓	-	-	-
Cooper et al., 2007	*Ns*	*Ns*	-	-
Crawley et al., 2013	*Ns*	-	-	*Ns*
Creswell et al., 2010	*Ns*	*Ns*	-	-
Festen et al., 2013	*Ns*	-	-	-
Ginsburg et al., 2011	***O* ↓	*Ns*	**	*Ns*
Hedtke et al., 2009	*Ns/Ex*	*Ns/Ex*	*Ns/Ex*	*Ns/Ex*
Hirshfeld-Becker et al., 2010	*Ns*	*Ns*	-	-
Hudson et al., 2013a	-	* *f* ↓	-	-
Hudson et al., 2013b	*Ns*	-	-	-
Kendall et al., 2008	*Ns*	*Ns*	-	-
Legerstee et al., 2009	*Ns*	*Ns*	-	*Ns*
Legerstee et al., 2010	-	** *f* ↓/ *Ex*	-	-
Manassis et al., 2002	-	*Ns*	-	-
Nauta et al., 2001	*Ns*	-	-	-
Nauta et al., 2003	*Ns*	*Ns*	-	-
Ollendick et al., 2009	*Ns*	* *f* ↑	-	*Ns*
Ost et al., 2001	*Ns*	* *f* ↑	-	-

Pina et al., 2003	-	-	**	-
Rapee, 2000	*Ns*	*Ns*	_	-
Shortt et al., 2001	-	*Ns*	_	-
Southam-Gerow et al., 2001	a *O* ↓	*Ns*	*Ns/Ex*	*Ns*
Spence et al., 2000	*Ns*	*Ns*	-	-
Tiwari et al., 2013	*Ns/Ex*	*Ns/Ex*	*Ns*	*Ns*
Tobon et al., 2011	*Ns*	-	-	-
Treadwell et al., 1995	-	*Ns*	*Ns*	-

Note: Characteristics: age: o older age group; gender: ƒ female. Effects: ↑ predictive of treatment success, ↓ predictive of treatment failure

**p < 0.05, **p < 0.01. a Factors predictive of treatment response according to DFA analysis. Ns non-significant; Ex excluded due to overlapping sample.*

Associations between Clinical Characteristics and Treatment Outcome

Baseline anxiety symptom severity. Twelve studies examined pre-treatment anxiety severity as a predictor of treatment outcome (see Table 3). Four (33%) of these studies produced non-significant results. However seven studies that investigated predictors of outcome for children and young people with heterogeneous anxiety and one study that looked at children with social anxiety disorder only, found that high levels of baseline anxiety symptom severity were associated with poorer treatment outcomes.

Two studies with predictor analyses of moderate quality, found that baseline anxiety severity predicted poorer treatment outcome based on child report only. In a study of exposure-based CBT for phobic and anxiety disorders in young people who were clinically referred, Berman et al., (2000) found that higher levels of child reported trait anxiety symptoms on the STAIC predicted less favourable treatment outcome (e.g. neither free from all targeted anxiety disorders nor dropping 4 points or more on an eight-point severity scale). Similarly, in a study comparing CBT to usual treatment in an inner city school (Ginsburg et al., 2012) found that children (volunteers recruited through school-based mental health clinics) who reported higher baseline anxiety symptom severity also reported higher anxiety symptom severity at post-treatment and one-month follow-up (as measured by the SCARED-C).

Contrary to the above findings, in a study with predictor analysis of high quality, Southam-Gerow et al., (2001) found that poor treatment response in a sample of parent-referred children was predicted by higher levels of child symptoms at pre-treatment, according to mother and teacher report. However no significant

associations were found with child-reported anxiety (based on the RCMAS) and treatment outcome.

Two studies with predictor analyses of moderate and high quality respectively, found that higher pre-treatment anxiety severity based on clinician ADIS CSR ratings, predicted poorer treatment outcome for clinically referred children. Hudson et al., (2013a) found that children who had higher pre-treatment anxiety severity (as determined by ADIS CSR ratings) were less likely to be free from their primary anxiety diagnosis at follow-up. Similarly, Festen et al., (2013) found that children's pre-treatment anxiety severity contributed significantly to the prediction of post treatment anxiety scores on the RCADS. Conversely, in a study with moderate predictor analysis, Tiwari et al., (2013) found no significant differences between treatment responders and non-responders with regard to severity (CSR) of pre-treatment principal diagnosis. However the small sample size in this study and resulting lack of power might account for the discrepant findings.

In a study with high quality predictor analysis, Ginsburg et al., (2011) also found that pre-treatment anxiety severity predicted worse treatment outcome in a large parent-referred community sample. Specifically, they found that higher anxiety as rated by the Clinical Global Impression Severity Scale (CGI-S) at pre-treatment significantly predicted reduced likelihood of remission (no longer meeting criteria for SAD, GAD or SAnxD) according to the ADIS C/P at post treatment. However these findings were not replicated in a study with moderate quality predictor analysis by Crawley et al., (2013) who examined a referred sample of 26 children and found that pre-treatment anxiety severity based on CGI-S scores did not predict outcome at post-treatment or follow-up. Once again, this lack of findings may be due to the study being underpowered to detect differences in severity and treatment outcome.

As children with a higher level of pre-treatment symptom severity need greater decreases in symptoms to reach a sub threshold level of symptoms, Liber et al., (2010) argued that treatment outcome should be evaluated in terms of both recovery (based on post treatment diagnostic status) and reliable change (based on changes in symptom levels from pre to post-treatment). In a study with predictor analyses of high quality, Liber et al., (2010) found that clinically-referred children with higher initial severity were less likely to have recovered (free of any anxiety disorder at post treatment) at post-treatment. However, higher levels of pre-treatment severity were also found to be predictive of greater treatment gains on measures of parent-reported internalising and externalising symptoms, and self-reported depressive symptoms. Similar findings were reported in another study with high quality predictor analyses by Kley et al., (2012), who examined a mixed sample of clinic referred and self-referred children and found that higher pre-treatment levels of social anxiety based on parent (CBCL-A) and child (SPAI-C) report, predicted greater reductions in social anxiety symptoms at post-treatment treatment. However, despite a larger decrease in symptom scores, young people with greater pre-treatment severity still had higher symptom scores at post-treatment compared to young people with lower pre-treatment severity.

Although a number of studies have found an association between higher levels of pre-treatment anxiety severity and reduced treatment outcome, the variation in tools used to measure severity, whether outcome is measured in terms of symptom change or diagnostic status, the lack of concordance across informants and the large numbers of studies that fail to report pre-treatment severity scores, renders making comparisons across studies very difficult.

Anxiety diagnosis. Twelve studies examined anxiety diagnosis as a predictor of treatment outcome (see Table 3). Six studies (50%) found a significant association between diagnosis and treatment outcome. Four of these studies found that children with social anxiety disorder (SAnxD) were less likely to be free of their diagnosis at post-treatment or follow-up than children with other anxiety disorders when treated with CBT treatment for mixed anxiety disorders (Coping Cat; Kendall and Hedtke, 2006). In a study with high quality predictor analysis that compared 166 children and young people aged between seven and 17 years with a primary diagnosis of SAnxD to children with a primary diagnosis of SAD or GAD, Crawley et al., (2008) found that young people with primary SAnxD primary were more likely to have retained their primary diagnosis at post-treatment. However when children with SAnxD and comorbid depressive disorder or dysthymia were removed from outcome analyses, differences between groups were no longer significant, which suggested the co-morbid mood disorders were accounting for the worse outcomes. Ginsburg et al., (2011) also found differential outcomes for young people with a primary diagnosis of SAnxD. In a large study high quality predictor analysis involving 488 children (aged seven to 17) with primary diagnoses of SAD, GAD or SAnxD, Ginsburg et al., (2011) found that young people with baseline SAnxD were significantly less likely to achieve remission (free from all targeted anxiety diagnoses) than those participants without SAnxD according to clinician ratings on the ADIS-C/P. However, young people with major depressive disorder were excluded from this study and the low numbers of other co-morbid mood disorders precluded the examination of SAnxD and co-morbid mood disorders separately.

In a study with predictor analysis of moderate quality, evaluating a brief (eight-session) version of CBT for anxiety disorders in 26 children aged six to 13,

Crawley et al., (2013) found a significant variation in CSR reductions in relation to diagnosis when assessed at one-year follow-up via telephone. Although no significant differences were found between diagnostic groups at post–treatment or two-month follow-up, young people with SAnxD as a primary diagnosis were less likely to show additional treatment gains at one-year follow-up when compared to children with SAD or GAD who showed continued improvement. Kerns et al., (2013) also found that children with social phobia evidenced reduced maintenance of long-term gains in a study with high quality predictor analysis. They found that children aged eight to 14 years at pre-treatment assessment with social anxiety symptoms or diagnoses were significantly less improved than youth without social anxiety (or symptoms) at 7.4-year follow-up. However, in contrast to Crawley et al., (2008), differential treatment outcomes were found for children with social anxiety symptoms or diagnosis regardless of whether co-occurring depressive disorders present.

Two studies with predictor analyses of high and moderate quality respectively, found other types of anxiety diagnosis to be a significant predictor of treatment outcome. Manassis et al., (2002) compared a 12-week, manual-based program of group or individual CBT, both with parental involvement for a sample of 78 children aged between eight and 12 years. They reported that symptom improvement was greater for children with a primary diagnosis of GAD than for children with phobic disorders (specific phobias, SAnxD and SAD) according to maternal report (MASC), but not according to other outcome measures. However, grouping all the children with phobic disorders together for analysis purposes precludes comparison with other studies that have found having a primary diagnosis of SAnxD to be predictive of treatment outcome.

Ost et al., (2001) investigated treatment outcome for children with primary diagnoses of specific phobias and found that having a diagnosis of animal phobia (dogs, snakes, spiders, birds, ants, snails and insects) was a predictor of better treatment outcome in a single session treatment compared to other specific phobia types as rated by the BAT only. Ost et al., (2001) attributed the superior outcomes for children with animal phobias to difficulties in obtaining equivalent levels of exposure for other types of phobia (e.g. enclosed spaces, blood, deep water, loud noises).

Of the studies that did not find diagnosis to be a significant predictor of outcome, only one reported details regarding type of primary diagnosis and treatment outcome. In a study with predictor analysis of moderate quality, Shortt et al., (2001) investigated the impact of diagnosis on outcome for group of 71 children aged six to 10 with a primary diagnosis of SAD, GAD or SAnxD who completed the FRIENDS CBT treatment programme. Although differences between the diagnostic groups at post treatment were not significant, a higher percentage of children with a primary diagnosis of GAD (71%) and SAD (73%) were diagnosis-free compared to only 56% of those with a primary diagnosis of SAnxD. It is possible therefore that at least some of the studies who did not find significant differences in outcome based on pre-treatment diagnosis failed to do so due to small sample sizes and a resulting lack of power.

Comorbidity. Twenty studies examined comorbidity as a predictor of treatment outcome (see Table 3) and six (30%) of these studies found an association between comorbidity and treatment outcome.

General comorbidity. Three out of the 20 studies examined general comorbidity as a predictor of treatment response but only one study (5%) produced

significant findings. In a study with a high quality predictor analysis, Liber et al., (2010) investigated the impact of comorbidity over and above the impact of symptom severity on treatment outcome for children with anxiety disorders. Children (aged 8-12 years) received the FRIENDS CBT treatment programme which was delivered in either group or individual format and involved 10 weekly sessions and four parent sessions. Comorbid diagnoses included additional anxiety disorders, ADHD, ODD, depression and dysthymia. The presence of any comorbid disorder and non-anxiety comorbid disorder at baseline were predictors of lower diagnostic recovery rates and higher levels of child-reported anxiety post-treatment.

Conversely, in another study with high quality predictor analysis, Kendall et al., (2001) found equal treatment gains for young people with anxiety disorders with or without different types of comorbid conditions. In this study, 173 clinically anxious children (aged 8–13 years), were treated with the Coping Cat CBT programme over 16–20 individual, weekly sessions. Treatment outcome did not differ significantly between children with only one anxiety disorder, children with comorbid anxiety disorders and children with comorbid externalising disorders (Rapee 2003). However, research has shown that children with comorbid disorders often enter treatment with more severe levels of anxiety than children without comorbidity and although change rates are similar, children with additional disorders are required to make greater gains in order to reach a non-clinical level of symptoms (Rapee, 2012). Therefore in studies involving treatment of a shorter duration, children with comorbidities are more likely to remain impaired at the end of treatment. As the treatment programme in the Kendall et al., (2001) study involved up to double the number of sessions that were provided to children in the Liber et al., (2010) study, this could account for the discrepant findings.

Internalising comorbidity and treatment outcome. Eight of the 20 studies examined internalizing comorbidity as a predictor of treatment outcome and four (20%) of these studies found that comorbid internalizing disorders were predictive of poor treatment outcome. In a study with high quality predictor analysis, Ginsburg et al., (2011) found that 44% of the sample met criteria for additional internalizing disorders at pre-treatment. The presence of a comorbid internalizing disorder was associated with a reduced likelihood of achieving remission in Week 12 as assessed by the ADIS, but was not statistically associated with the CGI-S or CGI-I remission status. However, comorbid anxiety and mood disorders were examined together and only small numbers had mood disorders as having a diagnosis of current major depressive disorder was one of the study exclusion criteria.

Three studies found that having a comorbid mood disorder (depression or dysthymia) was a significant predictor of poorer treatment outcome. One study had predictor analyses of moderate quality and two studies had predictor analyses of high quality. Berman et al., (2000) found that young people with a comorbid diagnosis of depression were less likely to be treatment successes (free from all targeted anxiety disorders or to have dropped four points or more on an eight point severity scale) in an exposure-based cognitive-behavioural treatment trial for 106 children aged 6 -17 years. However findings were only tentative due to the small numbers of young people with a diagnosis of depression. Young people who were categorised as treatment failures also had significantly higher self-ratings of depression (CDI scores) at pre-treatment than young people categorised as treatment successes. Self-reported trait anxiety (STAIC-T) was also related to poorer outcomes. O'Neil and Kendall (2012) also found that higher levels of child self-reported depressive symptoms (as rated by the CDI) predicted significantly less reduction in the CSR

score of their principal anxiety disorder from pre- to post treatment. However, none of the other depression measures (e.g. parents and teacher report) predicted treatment outcome. Similarly, Crawley et al., (2008) found that young people (aged 7-17) with a diagnosis of SAnxD and comorbid dysthymia or major depressive disorder were significantly less likely to be free from their primary anxiety diagnosis at post-treatment than young people with SAnxD and no comorbid mood disorder. In keeping with the findings by Berman et al., (2000) and O'Neil and Kendall (2012), Crawley et al., (2008) also found that young people who reported more depressive symptoms on the CDI had poorer treatment outcomes, whilst parent and teacher ratings of child mood was not predictive of treatment outcome.

The lack of significant findings in the other four studies (Creswell et al., 2010; Kley et al., 2013; Shortt et al., 200; Tobon et al., 2011) could be explained by the younger ages of the samples (aged 5-13), as children with comorbid depression often are older than children with only anxiety disorders (Kendall et al., 2001). Depression symptom measures also varied across studies but where used, CDI scores appeared to reliably predict an association between young people's self-reported depressive symptoms and treatment outcome, in studies that included older adolescents. Finally, several studies excluded young people with a diagnosis of depression and to be included in this review, participants were required to have primary diagnosis of an anxiety disorder. Therefore, numbers of children with co-morbid mood disorders were often too low to detect any differences between groups in terms of treatment outcome.

Externalising comorbidity and treatment outcome. Nine of the 20 studies examined comorbidity with externalising disorders (see Table 3). Of these, only one

study (5%) found a significant result when comparing treatment outcome of children with anxiety disorders with or without externalizing comorbidity.

All of the studies that investigated externalising comorbidity as a predictor of outcome had very few children with ADHD or ODD within their samples and only one study (Hudson et al., 2013a) found that comorbid externalising disorders significantly predicted poorer treatment outcome. Rapee et al., (2003) also found some evidence that children with comorbidities showed some deterioration at the 12 month follow-up according to parent report on the CBCL while the non-comorbid children continued to improve. However, the sample size at follow-up was very small so these findings were only tentative. Finally, although Rapee et al., (2012) concluded that the existence of comorbid externalizing disorders did not significantly predict treatment outcome among a sample of 750 children, outcomes were not as good for children with comorbid disorders when compared to children without comorbidities.

In summary, the strongest evidence for child clinical characteristics as predictors of treatment outcome was found for higher levels of pre-treatment severity, having a diagnosis of SAnxD and the presence of comorbid mood disorders or depressive symptoms. However, methodological differences across studies including variations in exclusion criteria, methods of assessment and whether outcome measurement was based on symptom change or diagnostic status limits the conclusions that can be drawn.

Associations between Parental Factors and Treatment Outcome

Parental psychopathology. Nineteen of the studies examined parental psychopathology as a predictor of treatment outcome (see Table 3) and of these, 15

(79%) studies found a significant association between parent psychopathology and child treatment outcome.

Self-report measures. Eleven studies used parent self-report questionnaires to determine the presence or absence of parental psychopathology.

Maternal psychopathology. Two of these studies with moderate and high quality predictor analysis respectively, found an association between maternal psychopathology and child treatment outcome. Berman et al., (2000) found that based on maternal self-report, higher global severity ratings on the SCL-90, higher levels of depression (using the BDI) and higher levels of fear (using the Fear Questionnaire) had a significant negative impact on young people's diagnosis and severity of symptoms, post-treatment. However, the association between parental psychopathology and treatment outcome was significant for younger children but not for adolescents. Southam-Gerow et al., (2001) reported that higher levels of maternal self-reported depressive symptoms were associated with a less favourable treatment response in a sample of 135 anxious children aged between seven to 15 years.

Paternal psychopathology. Three studies with high and moderate quality predictor analyses, found an association between paternal psychopathology and treatment outcome. Liber et al., (2008) investigated the relationship between paternal and maternal anxiety and depression for CBT outcome in clinic-referred children (aged 8–12) and found that higher levels of paternal anxiety and depressive symptoms predicted treatment failure in anxious children, according to parent report only. Similarly, Crawford and Manassis (2001) found paternal somatisation to be predictive of less favourable treatment outcomes in a sample of 61 referred children (aged 8-12) with an anxiety disorder. Once again there was a low correspondence between raters of child anxiety and significant findings were found for child-rated

anxiety only. Rapee (2000) also found that higher symptom levels of paternal anxiety but not maternal anxiety predicted worse treatment outcome at the post-treatment and at one year follow-up for children aged seven to 16 years.

General parental psychopathology. Two studies with high and moderate quality predictor analyses respectively, found parent psychopathology to be predictive of CBT treatment outcome according to clinician ratings of child anxiety. Cobham et al., (1998) divided parents into high and low anxiety groups based on their self-report on the STAI (trait version). Where both the child and at least one parent was rated as highly anxious, significantly less children were diagnosis free following treatment compared to children for whom neither parent was rated as highly anxious. Creswell et al., (2010) also reported a significant relationship between the clinician rated CGI–I score at post treatment and parental anxiety as assessed by the DASS.

However, four studies with moderate and high quality predictor analyses respectfully, found no significant association between parental psychopathology and child treatment outcome. In a sample of 384 children (aged 6-13), Hudson et al., (2013a) found no relationship between self-reported parent psychopathology on the DASS and the absence or presence of the child's primary anxiety disorder at follow-up. Similarly, in a study comparing school based CBT to usual care Ginsburg et al., (2012) found that parental psychopathology measured by self-report using the BSI failed to predict treatment outcome for a sample of 32 children aged seven to 17 years. Ginsburg et al., (2011) also found that parental psychopathology as measured by the BSI Global scale and STAI total score did not significantly predict week 12 remission status on the ADIS-C/P, the CGI-I, or the CGI-S in a sample of 488 young people (aged 7–17 years). Finally, Kley et al., (2012) investigated parental

psychopathology as a predictor of treatment outcome for young people (aged 8–13 years) with social anxiety disorder. No significant association was found between parent self-reported symptoms on a German version of the BSI and children's self-reported social anxiety changes on the SPAI-C. However, the authors noted that levels of parental psychopathology were low in this study thus leaving the possibility of a floor effect.

Diagnostic interviews and parental psychopathology. Eight studies used diagnostic interviews to determine the presence or absence of parental psychopathology. Three of these studies used the ADIS to diagnose parental psychopathology. Bodden et al., (2008) found that both individual CBT and Family CBT were less effective when a parent had an anxiety disorder. Younger children (8–12 years) were particularly negatively affected, based on child self-report anxiety symptom scores, if one or both parents had an anxiety disorder, whereas older children (13–17 years) improved regardless of parental anxiety levels. Hudson et al. (2013b) also found that where one or both parents met criteria for an anxiety disorder, children were less likely to be diagnosis free when compared to children with non-anxious parents at post-treatment and six-month follow-up. Similarly, Kendall et al., (2008) investigated the impact of maternal and paternal anxiety on child outcome separately and found that maternal anxiety disorder militated against optimal treatment outcomes for the child regardless of treatment group, but these findings were only significant at one-year follow-up.

Three studies used the SCID to diagnose parental psychopathology. Cooper et al., (2007) found that children of mothers with an anxiety disorder responded less well to treatment than children of mothers with no anxiety disorder. However, there was some diagnostic specificity in this in that children of mothers with GAD did as

well in treatment as children whose mothers had no anxiety, whereas children of mothers with social phobia did poorly. In a small sample of 22 children, Creswell et al., (2008) also found that where their mothers had a current anxiety disorder, only 25% of children (aged 6–12) were diagnosis free following treatment, compared to 60% of children whose mothers did not have a current anxiety disorder, according to both parent report and clinician ratings. Conversely, Hirshfeld-Becker et al., (2010) found no association between the presence of a lifetime or current parental anxiety disorder and child treatment outcome in a sample of 64 children (aged 4–7) who received CBT treatment.

Interestingly, two studies with high quality predictor analyses found increased treatment gains for children of mothers with a current or lifetime anxiety disorder. Toren et al., (2000) found that children (aged 6-13 years) who had a mother with an anxiety disorder (diagnosed using the structured clinical interview SADS-L) showed statistically greater reductions in their anxiety, as measured by the RCMAS, than children who did not have a clinically anxious mother. Legerstee et al., (2008) also found that the presence of a maternal lifetime anxiety disorder as assessed by the CIDI predicted favourable treatment outcomes, but only for adolescents. Whilst no significant associations were found between maternal and paternal anxiety or mood disorders and treatment outcome for younger children, maternal lifetime anxiety disorders were positively associated with the likelihood of being free of any anxiety disorder at post-treatment for adolescents (60% vs. 22%). The authors proposed that the parent-training sessions included in the treatment programme may have contributed to these findings by enhancing parent–adolescent communication and helping anxious mothers to be more autonomy granting and encouraging of independence in their adolescents. It is also possible that the type of

child and/ or parent diagnoses influenced the relationship between maternal anxiety and child treatment outcome, although this was not examined specifically.

In summary, whilst the majority of studies concluded that the presence of parental psychopathology had a negative impact on child treatment outcome, some evidence indicated that this association is stronger for younger children than for adolescents. Also studies that included both parents and evaluated mothers and fathers influences separately, found that fathers made a significant contribution to the prediction of child treatment outcome. However, differences in methods of assessing parental psychopathology (e.g. self-report questionnaire vs. diagnostic interview) and variation in numbers of parents with a clinical level of psychopathology makes comparison across studies difficult. Future research should therefore endeavour to use both diagnostic and self-report symptom measures in assessment of parental psychopathology in order to both capture subclinical symptoms and permit further investigation of the independent effects of different diagnoses (both parent and child) and their influence on child treatment outcome.

Parenting behaviours. Six studies examined parenting behaviours a predictor of treatment outcome (see Table 3) and all (100%) of them produced significant findings. Two studies utilising observational methodology with moderate quality predictor analyses found that certain parenting behaviours were significantly associated with worse treatment outcomes. Creswell et al., (2008) found that higher levels of maternal non-verbal expressions of fear and over-involvement during children's completion of a speech task were associated with poorer treatment response. Specifically, maternal over-involvement was found to be associated with less favourable clinician's ratings of child treatment outcome and maternal non-verbal expressions of fear was associated with poorer child treatment outcome, both

in terms of clinician ratings and parental report. Silk et al., (2013) investigated the relationship between parental encouragement of bravery during an anxiety provoking and potentially avoidable naturalistic speech task and child treatment outcome. Parents were asked to help the child decide whether or not to participate in the second optional speech and this discussion was also videotaped. Higher rates of maternal encouragement to complete the task (regardless of actual decision outcome) predicted a better treatment response at post-treatment using the CGI-I.

Four studies using questionnaire methods to assess parenting behaviour also found a significant association with child treatment outcome. The first of these studies had moderate quality predictor analysis and the other three had high quality predictor analyses. Crawford and Manassis (2001) found that pre-treatment child ratings of family dysfunction and parental frustration significantly predicted poorer treatment outcome based on clinician ratings. Mother and father reports of family dysfunction also predicted reduced mother-rated child improvement. Festen et al., (2013) investigated the predictive value of paternal and maternal emotional warmth, rejection, overprotection in children aged 8-18 years and found that lower maternal emotional warmth as perceived by the child (rated on the EMBU) before treatment was related to less favourable treatment outcome (accounting for 29% of the variance in anxiety at follow-up). Maternal overprotection and rejection and all ratings of paternal parenting style were unrelated to treatment outcome. Liber et al., (2008) also used child ratings on the EMBU to examine these maternal and paternal behaviours in sample aged eight to 12 years. However, contrary to the findings by Festen et al., (2013) a higher level of maternal emotional warmth and higher levels of paternal rejection were associated with a less favourable treatment outcome as measured by parent report (CBCL-int) and clinician ratings (ADIS C/P) respectively. However,

treatment outcome based on child-reported anxiety symptoms was not predicted by any of the parenting or parental variables. The authors suggested that the unexpected finding that high levels of child reported maternal emotional warmth are associated with poorer outcomes could reflect mothers who are extremely reassuring, being perceived by the child as emotionally warm. However, the authors did not account for pre-treatment anxiety severity and it is therefore possible that mothers of children with more severe levels of anxiety were more reassuring in response to their child's level of need. Lastly, Settipanni et al., (2013) found that children who showed the most reductions in their anxiety from pre- to post-treatment based on maternal report, were those with lower family affective involvement and lower levels of family behaviour control (based on maternal report) at pre-treatment. However both of these findings were only approaching significance and so should be interpreted with caution.

In summary, there is some tentative evidence to suggest that specific parent behaviours (i.e. maternal warmth and encouragement, paternal rejection and parental over-involvement) are predictive of child treatment outcome. However, several studies relied on child and parent report only to measure the parenting variables under investigation and these measures are vulnerable to reporting biases (i.e. level of child/parent anxiety might influence response to these measures and perception of their own/parents behaviours). Future studies should therefore include both observational and questionnaire measures to achieve a more reliable assessment of parenting behaviour.

Table 3

Associations between clinical and parent characteristics and treatment outcome

Author/year	Baseline anxiety symptom severity	Anxiety diagnosis	Comorbidity	Parent Psychopathology	Parent behaviour
Barratt et al., 1996	-	*Ns*	-	-	-
Beidel et al., 2000	-	-	*Ns*	-	-
Berman et al., 2000	* *trait* ↓	*Ns*	** *M* ↓	** *Ma* ↓	-
Bodden et al., 2008	-	-	-	* *P* ↓	-
Cobham et al., 1998	-	*Ns*	-	* *P* ↓	-
Cooper et al., 2007	-	-	*Ns*	* *Ma* ↓	-
Crawford & Manassis., 2007	-	-	-	*** *Pa* ↓	****Pf* ↓
Crawley et al., 2008		* *SAnxD* ↓	* *M* ↓	-	-
Crawley et al., 2013	*Ns*	* *SAnxD* ↓	-	-	-
Creswell et al., 2008	-	-	-	* *Ma* ↓	* *OI F* ↓
Creswell et al., 2010	*Ns*	-	*Ns*	* *P* ↓	-
Festen et al., 2013	** ↓	-	-	-	** *W (low)* ↓
Ginsburg et al., 2011	*** ↓	* *SAnxD* ↓	* I ↓	*Ns*	-
Ginsburg et al., 2012	* ↓	-	-	*Ns*	-
Hedtke et al., 2009	*Ns/Ex*	*Ns/Ex*	*Ns*	-	-
Hirshfeld-Becker et al., 2010	-	-	-	*Ns*	-
Hudson et al., 2013a	* ↓	-	* *M E* ↓/*Ex*	*Ns*	-
Hudson et al., 2013b	-	-	-	* *P* ↓	-
Hughes & Kendall., 2007	*Ns/Ex*	-	-	-	-

Kendall et al., 1997	-	-	*Ns/Ex*	-	-
Kendall et al., 2001	-	-	*Ns*	-	-
Kendall et al., 2008	-	-	-	** *Ma* ↓	-
Kerns et al., 2013	-	* *SAnxD* ↓	-	-	-
Kley et al., 2012	** ↓	-	*Ns*	*Ns*	-
Legerstee et al., 2008	-	-	-	* *Ma* ↑	-
Legerstee et al., 2009	*Ns/Ex*	-	-	-	-
Legerstee et al., 2010	-	*Ns*	-	-	-
Liber et al., 2008	-	-	-	**Pa* ↓	**W Pr (high)* ↓
Liber et al., 2010	* ↓	-	* *G* ↓	-	-
Manassis et al., 2002	-	* *GAD* ↑	*Ns*	-	-
Nauta et al., 2001	*Ns*	-	-	-	-
Nauta et al., 2003	-	-	-	-	-
Ollendick et al., 2010	-	-	*Ns*	-	-
O'Neil & Kendall, 2012	-	-	* *M* ↓	-	-
Ost et al., 2001	-	* *SPa* ↑	*Ns*	-	-
Podell & Kendall, 2011	-	-	-	*Ns/Ex*	-
Rapee, 2000	-	-	*Ns*	** *Pa* ↓	-
Rapee, 2003	-	-	*Ns*	-	-
Rapee, 2012	-	-	*Ns*	-	-
Settipani et al., 2013	-	-	-	* *Ma* ↓*/Ex*	**AI BC (low)* ↑
Shortt et al., 2001	-	*Ns*	*Ns*	-	-
Silk et al., 2013	-	-	-	-	**E (high)* ↑
Southam-Gerow et al., 2001	a ↓	-	a M ↓ */Ex*	a *Ma* ↓	-

Tiwari et al., 2013	*Ns*	*Ns*	-	-	-
Tobon et al., 2011	-	-	*Ns*	-	-
Toren et al., 2000	-	-	-	** *Ma* ↑	-

Note: Trait = trait anxiety. Diagnosis: SAnxD= social anxiety disorder; GAD = generalised anxiety disorder; SPa = specific phobia of animals. Comorbidity: GI= general comorbidity; M= mood disorder; I = internalising disorder; E = externalising disorder. Parental psychopathology: Ma = maternal, Pa =n paternal; P= parents generally. Parental behaviour: Pf = parental frustration; OI = over-involvement; F= non-verbal expression of fear; W = warmth; Pr = paternal rejection; AI = affective involvement; BC = behavioural control; E= encouragement. Effects: ↑ predictive of treatment success, ↓ predictive of treatment failure.

**p < 0.05, **p < 0.01, *** p < 0.001. a Factors predictive of treatment response according to DFA analysis. Ns non-significant; Ex excluded due to overlapping sample.*

Other Child, Clinical and Therapist Characteristics Associated with Treatment Outcome

Pre-treatment predictors evaluated in fewer than three studies and found to be significantly associated with treatment outcome (see Table 4) were attentional bias (improved treatment outcome for attention *towards* threat; Waters et al., 2012, *away* from threat; Legerstee et al., 2009), neurological factors (worse outcome predicted by greater P1 amplitudes which reflect attention and/ or arousal processes; Hum et al., 2013), genotype (marker rs6330 in Nerve Growth Factor gene; Hudson et al., 2013), behavioural inhibition (high BI predicted worse outcomes; Hirshfeld-Becker et al., 2010); Self-Oriented Perfectionism (excessively high standards directed towards the self, predicted poorer treatment outcomes; Mitchell et al., 2013), duration of anxiety symptoms (longer symptom duration predicted poorer outcomes; Nauta et al., 2003) and therapist experience (higher levels of therapist experience predicted *improved* treatment outcome, more anxiety-specific experience predicted *worse* outcomes; Podell et al., 2013). Pre-treatment characteristics found not to be significantly associated with outcome were child temperament (trait of negative affect; Festen et al., 2013); IQ (Legerstee et al., 2009) and therapist prior clinical experience (Thirlwall et al., 2013).

In summary, whilst the small numbers of studies investigating other child, clinical and therapist characteristics as predictors of treatment outcome are too small to draw any conclusions, they provide some useful information regarding promising ideas for future research and therapist and child temperament variables in particular, warrant further attention.

Table 4

Associations between other clinical, child and therapist characteristics and treatment outcome

Author/year	Predictor	Findings
Festen et al., 2013	Child temperament (trait of negative affect)	Ns
Hirshfeld-Becker et al., 2010	Behavioural Inhibition	*(high) ↓
Hudson et al., 2013a	Genotype (NGF rs6330)	* ↓
Hum et al., 2013	Cortical activation	* (greater P1 amplitudes) ↓
Legerstee et al., 2009	Selective attention; IQ	** (*away* from threat) ↑; Ns
Manassis et al., 2013	Selective attention	Ns
Mitchell et al., 2013	Perfectionism	** (high standards directed towards the self) ↓
Nauta et al., 2001	Duration of symptoms	Ns
Nauta et al., 2003	Duration of symptoms	*** (longer) ↓
Podell et al., 2013	Therapist experience	* (more experience) ↑*(more anxiety specific experience)* ↓
Thirlwall et al., 2013	Therapist experience	Ns
Waters et al., 2012	Selective attention	*(*attention towards threat*) ↑

Note: Effects: ↑ predictive of treatment success, ↓ predictive of treatment failure. *$p < 0.05$, **$p < 0.01$,* **$p < 0.00$; *Ns* non-significant.

Discussion

This review synthesised research findings on pre-treatment demographic, clinical and parent characteristics as predictors of treatment outcome during psychological treatment for child and adolescent anxiety disorders. Predictors evaluated in three or more studies were considered sufficiently well-studied to permit research synthesis. Overall, existing studies of pre-treatment characteristics as predictors of treatment outcome have produced mixed results.

The majority of studies examining the predictive value of demographic variables produced non-significant findings, although older age, gender and ethnicity were found to be associated with treatment outcome in a few studies. Clinical characteristics including higher levels of pre-treatment anxiety severity, having a diagnosis of SAnxD and the presence of comorbid mood disorders or depressive symptoms were more frequently found to be associated with worse treatment outcomes; however findings were inconsistent across studies. The most consistent evidence was found for the predictive value of parent variables and two-thirds of studies that investigated parental psychopathology as a predictor concluded that it had a negative impact on treatment outcome, particularly for younger children. There was also tentative evidence to suggest that specific parent behaviours such as maternal warmth and encouragement, paternal rejection and parental over-involvement are predictive of child treatment outcome.

In contrast to the childhood externalising disorders literature (Lavigne et al., 2010), there has been little evidence to suggest that demographic factors reliably predict treatment outcome in other syntheses of child and adolescent internalising disorder studies (i.e. anxiety and depression, Nilsen et al., 2013; mood disorders, Emslie, Mayes, Laptook & Batt, 2003). Similar negative findings for demographic

variables have also been produced in reviews of the adult internalising literature (i.e. social anxiety disorder; Eskildsen, Hougaard & Rosenberg, 2010). Conversely, a negative impact of high pre-treatment severity on treatment outcome has been a consistent finding across similar treatment literature reviews in both the child and adult internalising disorder literature (Emslie et al., 2003; Hamilton & Dobson, 2002; Hudson, 2005). One explanation for higher severity being associated with negative treatment outcomes is that people with more severe symptomology are required to make greater treatment gains before reaching subclinical thresholds (Liber et al., 2010). It is important to note however, that some studies have reported that higher pre-treatment severity is associated with greater improvement (symptom change rate) across the course of treatment although these results may be influenced by regression to the mean and symptoms still remain higher at post-treatment than those of people with lower rates of baseline severity (Kley et al., 2012). These findings suggest that it is important for studies to make clear distinctions between response and recovery when reporting treatment outcomes and future studies would do well to provide measures of both symptom change and diagnostic status at post treatment assessments.

Having a primary diagnosis of SAnxD was associated with worse outcomes in 25% of studies that examined diagnosis as a predictor. One explanation for the lack of consistency in study findings might be that SAnxD only serves as a predictor of outcome in conjunction with other pre-treatment variables such as older child age, severity or a co-morbid mood disorder. Indeed, Kendall et al., (2010) reported that adolescents in the large CAM study were not only significantly more likely to have a primary diagnosis of SAnxD than children, but they also had significantly higher SAnxD severity (according to ADIS CSR scores) than child participants. In a review

of the adult SAnxD literature (Eskilsden et al., 2010) the presence of comorbid major depressive disorder or depressive symptoms prior to therapy were associated with poorer treatment outcomes, however in the child and adolescent literature few studies have had large enough samples or adequate numbers of young people with comorbid mood disorders to permit exploration of their impact on outcomes for individual diagnoses (Kendall et al., 2012). Other than Ollendick et al., (2010), the studies that examined diagnosis as a predictor in this review utilised generic CBT treatments, however findings of a recent meta-analysis revealed medium to large effect sizes for disorder specific CBT treatments whereas effect sizes for generic anxiety treatment were only moderate (Reynolds, Wilson, Austin & Hooper, 2012). It is therefore possible that outcomes would be better for young people with SAnxD, where social withdrawal and isolation can limit opportunities to develop social skills (Garber & Weersing, 2010), if they were treated with disorder specific treatments, such as those designed to address social skill deficits (Beidel et al., 2000).

There was some evidence to suggest that comorbid mood disorders have a negative impact on treatment outcomes, whilst general and externalising comorbidities do not. It should be noted however, that as anxiety was required to be the primary disorder in studies for inclusion in this review; study samples only included young people with less severe comorbidities (Kendall et al., 2012). Further examination of the predictive effect of comorbidities on anxiety treatment outcome in community samples is therefore warranted as rates of comorbidity are likely to be higher and results would be more ecologically valid (Kendall et al., 2012). In the current review, due to low numbers, comorbid externalising disorders were often combined in analyses, however in a review of the impact of disruptive behaviour disorders on CBT treatment for child anxiety, PTSD and OCD, Halldorsdottir and

Ollendick (2013) concluded that an ADHD diagnosis and/or symptoms predicted poorer treatment outcomes. The authors also suggested that grouping ADHD with other behaviour disorders obscures the negative impact of ADHD on treatment outcomes (Halldorsdottir & Ollendick, 2013). It is also feasible that the predictive effect of comorbidity on treatment outcomes is differentially affected by the specific type of anxiety disorder diagnosis. The current practice of combining anxiety disorders and comorbid disorders may therefore be producing misleading results with regards to treatment outcomes and as such, this is an important area for future research (Garber & Weersing, 2010).

Having an anxious or depressed parent was found to be associated with poorer child treatment outcomes in a majority of studies, although this relationship was weaker for adolescents. It is therefore possible that developmental factors moderate the influence of parental psychopathology on treatment outcome but this will require further examination in well-designed studies with adequate numbers of adolescents in their samples. It is noteworthy that most studies investigating parental anxiety as a predictor of child treatment outcome have focused on the presence or absence of an anxiety disorder or symptoms, rather than considering the influence that specific types of parental anxiety diagnoses might have on how well a young person does in therapy. Whether the diagnostic specificity of parental disorders have an impact on treatment outcomes is worthy of further investigation, particularly in light of findings by Cooper et al., (2008) that children of mother's with SAnxD did less well in treatment than children of mother's with GAD. Although parental psychopathology has frequently been associated with treatment outcome, the mechanism through which this relationship might operate is largely unknown (Creswell et al., 2012). It has been suggested that it is not parental psychopathology

per se that impacts on treatment outcome but rather particular parental characteristics which overlap with parental psychopathology and influence treatment outcome via more complex pathways (Kendall et al., 2012). To this end, specific parental behaviours have been researched and found to be predictive of child treatment outcome, but replication is required to strengthen these findings.

Methodological Limitations

There were several methodological limitations in the included studies that may have contributed to the inconsistent findings. Firstly, most of the studies were not originally designed to examine predictor variables and as such they often lacked adequate levels of statistical power which increased the likelihood of potential significant findings going undetected (Steketee & Chambless, 1992). It has been suggested that sample sizes of $N \geq 200$ are required to achieve acceptable power for predictor and outcome correlation analyses (Hair, 2010), but only four studies in this review had samples this large and few studies reported any a priori power analysis. Secondly, rather than selecting predictors based on an hypothesis driven approach, researchers often engaged in multiple testing of predictors simply because the data were available (Steketee & Chambless, 1992). Thirdly, not only did the huge variation in outcome measurement tools and the lack of agreement amongst informants make study synthesis very difficult but pre- and post-treatment outcome measures are vulnerable to being influenced by regression to the mean due to measurement errors and not all studies considered this when interpreting their findings (Liber et al., 2008). Future research would benefit from studies designed specifically to investigate predictors and the selection of these predictors should be based on theoretical rationales. Furthermore, a priori power analyses should be conducted to ensure that studies have adequate power to not only permit the

examination of predictor variables but also for testing interaction effects (Brookes, Whitely & Egger, 2004). Few studies to date have been sufficiently powered to examine the potential interactive effects of different predictors; however this will be an important area for future research as it is likely that rather than operating in isolation, predictor variables interact with each other to influence treatment outcomes (Steketee & Chambless, 1992). Some studies in this review enlarged their samples by co-operatively working with other research centres and pooling their samples across sites. This might be a useful practice for future research in order to increase statistical power and enhance the likelihood of detecting predictors (Steketee & Chambless, 1992). The synthesis of future treatment outcome research would also benefit from researchers reaching an agreement on the use of particular standardised measures for predictor and outcome variables. Future studies should also report effect sizes, or the relevant information for calculating them, as this is essential for assessing the practical significance of results.

Clinical Implications

The majority of studies in this review treated adolescents with the same manualised treatment that was originally developed for use with younger children. Whilst adolescents showed comparable benefits to younger children in most studies, it is possible that modifications made to CBT protocols by experienced trial therapists accounted for these findings and as such, similar results may not be obtained in community settings where therapists may have less opportunity for CBT training (Bennett et al., 2013). Clinicians will therefore need to be aware of these treatment limitations when working with anxious adolescents and endeavour to take developmental factors into account when delivering interventions.

The findings that young people with severe levels of anxiety, SAnxD and/or comorbid mood disorders are less likely to benefit from standard CBT treatments suggests that they may require specially tailored interventions which are longer or more intensive with additional modules aimed at addressing specific areas of difficulty (e.g. depressed mood, social skills deficits). Clinicians could contribute to the evidence base in this area by using a formulation driven approach to modify interventions and then publishing their findings (both successes and failures) in case studies.

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PART TWO: Empirical Paper

Predicting attrition in guided parent-delivered cognitive behavioural therapy for anxious children

Abstract

Aims: Cognitive-behavioural therapy (CBT) delivered via parents is an effective treatment for child anxiety disorders. Treatment attrition is a problem for mental health services, in terms of effectiveness and cost. Understanding more about factors associated with treatment drop-out may therefore offer a means to increase retention and optimise outcomes. This study explored the association between pre-treatment parental characteristics and attrition in a guided self-help CBT intervention for parents of anxious children.

Method: Participants were parents of 62 children aged 7-12 years who commenced treatment at a specialist anxiety clinic as part of a larger randomized controlled trial. Prior to treatment, parents and children completed three anxiety provoking tasks. Parents' expectations were assessed before each task and observational video data was collected and coded for parent-child interactions. Cognitive and behavioural characteristics of parents who dropped out during treatment (N=31) were compared with a matched sample of parents who completed treatment.

Results: Parental psychopathology, parental cognitions and parental behaviours were not found to be predictive of treatment drop out. Child anxiety symptom severity was found to predict attrition and a relationship was found between increased treatment drop-out and comorbidity of child externalising / mood disorders and parental non-completion of further education.

Conclusion: Clinical child characteristics and parental education were associated with treatment drop-out. Clinical implications of the findings are discussed and recommendations made for increasing retention in low-intensity, parent-led treatments for childhood anxiety disorders.

Introduction

Anxiety is one of the most common psychological disorders of childhood and is associated with poor outcomes if left untreated (Cartwright-Hatton, McNicol & Doubleday, 2006). Prevalence studies indicate that 10–15% of young children experience internalising problems (Egger & Angold, 2006). These problems can result in significant impairment in many areas of a child's functioning including academic achievement, friendships, family relationships and self-image (Drake & Ginsburg, 2012). Furthermore, anxiety disorders are chronic and have been linked to the development of other conditions, such as depression (Kovacs, Gatsonis, Paulauskas & Richards, 1989) and substance misuse (Lehman, Brown & Barlow, 1998). The high prevalence of anxiety disorders and associated risk of developing additional mental health problems highlights the need for cost effective, accessible treatments.

Evidence-based treatments for childhood anxiety disorders have been developed (Fisher, Masia-Warner & Klein, 2004; Kendall, 1990); however, attrition from therapy is a significant problem for mental health services both in terms of effectiveness and cost. Nonetheless, to date little attention been given to identifying factors associated with treatment drop out for childhood anxiety disorders (Kendall & Sugarman, 1997).

The strongest evidence for treatment efficacy in anxious children has been provided for cognitive behaviour therapy (CBT) programmes (James, James**,** Cowdrey, Soler & Choke, 2013; Reynolds, Wilson, Austin & Hooper, 2012). However, CBT treatment is expensive and there is a shortage of trained therapists, so only a minority of children who need help currently receive appropriate treatment (Creswell, Hentges, Parkinson, Sheffield, Willetts & Cooper, 2010).

Improving Access to Psychological Therapies (IAPT) was introduced by the Department of Health in 2007 in order to improve accessibility to evidence–based treatments for adults with anxiety and depression. IAPT utilises a stepped care model which is recommended by NICE (2005) for emotional disorders as it constitutes a potentially efficient and cost effective means of delivering treatment (NICE, 2011). The stepped care approach involves providing the least intensive intervention appropriate for a person first and reserving more intensive treatment for those who do not benefit from these (Bower & Gilbody, 2005).

The IAPT programme is currently being extended to children and young people with mental health problems (Children and Young People's IAPT; CYP IAPT). The aim of CYP IAPT is to increase the availability of evidence-based treatments within existing Child and Adolescent Mental Health Services (CAMHS) using a collaborative framework whereby young people are involved in making choices about both their own care and the design of services as a whole. In order to fulfill CYP IAPT's objective and ensure that young people are able to choose treatments that are most compatible with their needs and preferences, the development of a range of flexible and accessible low-intensity interventions is paramount.

One way of enhancing treatment acceptability for children and adolescents is to offer alternate modes of treatment delivery. For example interventions that are conducted solely with parents can be advantageous for young people as they minimise disruption to their daily routines (e.g. attendance at school). In the field of child anxiety research, several studies have produced good outcomes when delivering CBT treatment via parents (Cartwright-Hatton, McNally & White, 2005; Mendlowitz, Manassis, Bradley, Scapillato, Miezitis & Shaw, 1999; Thienemann,

Moore & Tompkins, 2006). There is also a growing body of evidence suggesting that low-intensity CBT interventions for child anxiety (e.g. bibliotherapy) can be effective when delivered by parents with therapist guidance (Rapee, Abbott & Lyneham, 2006).

The 'Overcoming' treatment programme is a brief guided self-help CBT treatment that was developed in response to the need for an evidence-based, efficient system of delivering CBT for child anxiety disorders and lends itself well to a stepped care approach. Families participating in the 'Overcoming' programme are sent a self-help book (Overcoming your child's fears and worries; Creswell and Willetts, 2007) and parents are asked to read specific chapters prior to receiving support from trained clinicians. Support is provided via a combination of face-to-face and telephone sessions that aim to assist parents in implementing the CBT techniques described in the book.

An initial feasibility study conducted in primary care with 52 children aged between five and 12 years found that after parents completed the 'Overcoming' treatment programme, 61 % of children no longer met the criteria for their primary anxiety disorder diagnosis and 76% were rated as 'much'/'very much' improved on the clinician rated Clinical Global Impression–Improvement (CGI–I) scale (Creswell et al., 2010). Similar results were achieved in a randomised controlled trial (RCT) which compared a full version of the 'Overcoming' treatment programme (weekly therapist guidance) with a less intense, brief form of the treatment (fortnightly therapist guidance) delivered via non-anxious parents (Thirlwall, Karalus, Willetts, Cooper & Creswell, 2013). In this study, 194 children presenting with a current anxiety disorder (whose primary carer did not have a current DSM-IV anxiety disorder) were randomised to receive full guided parent-delivered CBT (four face-to-

face and four telephone sessions) or brief guided parent-delivered CBT (two face-to-face and two telephone sessions), or a 3 month wait-list control group. At post treatment, 50% of children from the full guided parent-delivered CBT condition were found to have recovered from their primary diagnosis, compared to 39% in the brief guided CBT group and 25% of those on the wait-list. Overall improvement in child anxiety was also assessed using the CGI-I and 76% of those in the full guided CBT condition were rated as 'much' or 'very much' improved, compared with 54% in the brief guided CBT condition and 25% in the wait-list condition (Thirlwall et al., 2013). Furthermore, treatment gains continued and over 70% of children were free of their primary diagnosis at 6-month follow-up (Thirlwall et al., 2013).

Treatment Drop Outs

Although positive outcomes have been demonstrated for children with anxiety disorders on completion of a low-intensity guided self-help treatment delivered via parents, the factors associated with dropout from treatment are largely unknown. Furthermore, the number of families who terminate parent delivered child anxiety treatment prematurely varies considerably across studies (e.g. 38% in Lyneham & Rapee, 2006; 23% in Thirlwall et al., 2013; 17% in Creswell et al., 2010). Not only have those dropping out of treatment been reported to have poorer outcomes than treatment completers, but 21-46% of those who drop out, receive treatment in another setting within the following year (Salmoiraghi & Sambhi, 2010). Thus, the stepped care approach breaks down if lots of families drop out and utilise further treatment options, so understanding more about factors that predict attrition is hugely important. In addition, attrition compromises outcome research, as it limits the inferences that can be drawn about treatment efficacy and limits the generalisability of findings (Nock & Ferriter, 2005). An understanding of factors that

are associated with treatment drop out in general and for low intensity treatments in particular, is clearly required.

Actively engaging families in mental health services can be problematic and studies of children with externalising difficulties have suggested numerous factors (e.g. ethnic minority status, low socio-economic status, severity of child disorder and parental psychopathology) that may be implicated in premature drop out, however, results are inconsistent (Ingoldsby, 2010).

A "barriers to treatment model" has been developed in an attempt to describe factors leading to treatment attrition in child therapy. It suggests that a range of obstacles including how relevant parents perceive the treatment to be, therapist support and logistical difficulties (e.g. accessing transport), may interfere with parent's engagement in treatment (Kazdin, Holland & Crowley, 1997). It also posits that family variables, such as parental stress and psychopathology, may influence parental perceptions of barriers, which then predicts attrition (Nock & Ferriter, 2005).

High levels of parental stress (Fernandez & Eyberg, 2009) and maternal depressive symptoms (Furey & Basili, 1988; Werba, Eyberg, Boggs & Algina, 2006) have been implicated in treatment drop out in treatments involving parents of children with externalising disorders and similar findings have been produced in treatment studies involving parents of children with anxiety disorders. Specifically, in a study comparing the efficacy of a group cognitive-behavioural treatment (GCBT) delivered to parents of young anxious children with GCBT delivered to children and parents, Waters, Ford Wharton and Cobham, (2009) found that parents who dropped out of treatment had higher levels of depression, anxiety and stress compared to parents who completed treatment. Similarly, in a low-intensity CBT

intervention for child anxiety delivered by parents, Lyneham and Rapee (2006) found that mothers who dropped out of treatment had higher scores on a measure of stress, depression and anxiety symptoms at pre-treatment than mothers who completed treatment.

Parents of children with emotional and behavioural difficulties often experience numerous daily stresses (Prinz & Miller, 1994) and if these stresses are perceived as being overwhelming or unmanageable (e.g. as a result of parents own mental health difficulties), parents may be less likely to see the relevance of treatment and drop out because of the competing demands on their time and attention (Nock & Kazdin, 2001).

Parental Cognitions

In addition to the constructs of parental stress and psychopathology, particular parental cognitions have been implicated in treatment attrition in the literature evaluating the effectiveness of intervention for childhood externalising problems. It has been proposed that parent's beliefs and attributions about their parenting behaviour and the behaviour of their children, are likely to influence how motivated they are to commence and persevere with treatment (Morrissey-Kane & Prinz, 1999). Specifically, Frankel and Simmons (1992) found that parental feelings of helplessness and negativity were associated with attrition in the initial phase of parent behavior training and parents with little confidence in their ability to effect child change were less likely to engage in treatment.

Results from child anxiety studies have shown that parents of anxious children make more negative predictions concerning their child's ability (e.g. competence and coping ability; Drake & Ginsburg, 2012) and regarding their own ability to influence their child's mood and behaviour (Wheatcroft & Creswell, 2007)

than parents of non-anxious children. Waters et al., (2009) also found that parents who did not complete group CBT treatment for their child's anxiety disorder rated themselves as less competent in terms of parenting self-efficacy at the outset of treatment, than treatment completers.

CBT treatments for child anxiety require parents to support their child to enhance coping cognitions and reduce avoidant behaviours, so a combination of low parental expectation for child improvement and low confidence in ability to effect change in child anxiety may result in reduced motivation and perseverance thus increasing the likelihood of treatment drop out (Morrissey-Kane & Prinz, 1999).

Parental behaviour

In studies of treatment attrition among parents of children with disruptive behaviour disorders, parent and child interactions have been shown to be strong predictors of treatment drop out (Werba et al., 2006). Specifically, mothers who made more negative statements and praised less were more likely to drop out of Parent-Child Interaction Therapy (Fernandez & Eyberg, 2009). It was proposed that attrition occurred as a result of parents struggling to adopt new ways of interacting with their child that may conflict with their current ways of responding toward their child (Werba et al., 2006).

Although, to our knowledge, parent behaviour has not been investigated in relation to attrition in the child anxiety literature, parenting behaviours have been implicated in both the aetiology and maintenance of child and adolescent anxiety disorders. For example, studies have found that parents of anxious children demonstrate a higher level of control over their child and are more intrusive in interactions with their child, compared to parents of non-anxious children (Hudson & Rapee, 2001).

Other parental behaviours such as reduced warmth, sensitivity and autonomy granting, have also been reliably associated with anxiety in children (Wood, McLeod, Sigman, Hwang, & Chu, 2003; Rapee, 2002). It is proposed that excessive regulation of behaviour and discouragement of independence by parents leads children to believe that world is dangerous and reduces their sense of competence and mastery.

Like most CBT programs for childhood anxiety disorders, the overcoming treatment model involves learning skills to address unhelpful thinking processes and bringing about behaviour change by promoting autonomy, reducing avoidance and facing up to fears in a gradual, positive way. Parents are encouraged to demonstrate confidence in their child, promote independence (rather than jumping in) and to show respect for the child's struggle (rather than criticising).

According to the "barriers to treatment model" (Kazdin et al., 1997) and models of attrition in the child externalising research, parents whose parenting style is characterised by high levels of behaviours which contribute to the maintenance of child anxiety (e.g. overprotection, criticism, intrusiveness and promotion of avoidance), may be more likely to drop out of guided self-help anxiety treatment due to additional factors that influence how relevant and manageable they perceive their child's treatment to be. Firstly, high levels of parental stress have been associated with increased negative parent-child interactions (Crawford & Mannassis, 2001), which may influence parental perceptions that being involved in their child's treatment is too demanding. Secondly, existing research suggests that parents with low self or parenting-efficacy are more likely to perceive treatments requiring parental involvement as being too arduous and unachievable, due to the effort

required to change existing parenting behaviours and associated expectations of failure (Mah & Johnston, 2008).

In summary, CBT delivered via parents has been shown to be effective for children who are diagnosed with anxiety disorders. However, attrition is a significant problem for mental health services and it is not yet clear which pre-treatment factors can reliably predict treatment drop out. Parental cognitions and parenting behaviours have consistently been shown to predict attrition in parent-focused treatment for child externalising disorders, however less is known about the association between treatment drop out and parental characteristics in relation to CBT for child anxiety when treatment is delivered via parents.

Given the high prevalence of child anxiety disorders and the risk for developing additional pathology, it is extremely important to identify the risk factors for attrition so that as many children as possible can receive appropriate help. Treatment dropouts represent a group who are motivated enough initially to seek help, so if families who are at risk for dropping out can be identified early, strategies can be added to the intervention in order to enhance engagement and increase their retention in treatment. The aim of this study is therefore to examine whether parental stress, anxiety and depressive symptomology, specific parental thinking styles (expectations about child competency and parental self-efficacy) and parenting practices (over involvement, promotion of avoidance, use of criticism and reduced warmth and encouragement) are associated with treatment drop out.

Hypotheses

1. Higher levels of parent reported stress, anxiety and depression symptoms will predict more frequent treatment drop out.

2. Higher parental expectations of negative emotion and poor performance in their child and parent's own reduced sense of control will predict more frequent treatment drop out.
3. Higher levels of parental intrusiveness, overprotection, promotion of avoidance and criticism and lower levels of warmth and encouragement will predict more frequent treatment drop out.

Method

Participants

Participants were 62 parents of children with a current anxiety disorder diagnosis (34 boys and 28 girls) who were offered treatment as part of a larger randomised controlled trial (RCT) at a specialist child anxiety clinic based in the University of Reading (Thirlwall et al, 2013). Families were recruited via referrals from local health and education services.

Families who terminated treatment sessions (at any time point after taking part in an assessment and consenting to treatment), were defined as "drop outs" and families who completed all treatment sessions were referred to as "completers". All drop outs with complete pre-treatment data were included (N = 31) and matched on age, gender and treatment group (full or brief, see intervention section below) to 31 completers selected from a larger pool of completers (N = 159), on the basis of order of recruitment to the trial.

Parents were included if their child was seven to 12 years of age and had a current primary anxiety disorder diagnosis of DSM-IV separation anxiety disorder, generalized anxiety disorder, social phobia, panic disorder/agoraphobia, specific phobia or anxiety disorder not otherwise specified (ADNOS). Study inclusion required participants not to engage in any other psychological intervention during the

study period and parents and children who were taking prescribed psychotropic medication must have been at a stable dose for at least one month with agreement to stay at that dose throughout the study.

Several studies have found an association between maternal anxiety and poor treatment outcomes for anxious children (Creswell, Willetts, Murray, Singhal & Cooper, 2008; Creswell et al., 2010; Hudson et al., 2013); as this was a low intensity treatment it was delivered to a group who had a relatively good prognosis, so families in which parents met diagnostic criteria for anxiety disorders were not included. Families were also excluded if the child or parent had a significant physical or intellectual impairment (including autistic spectrum disorders) or if parents had a severe co-morbid disorder such as major depressive disorder, psychosis or substance/alcohol dependence. In addition, children with a primary diagnosis of Obsessive Compulsive Disorder or Posttraumatic Stress Disorder were excluded.

Participant demographics. Children ranged in age from seven to 12 years (M = 10.05, SD = 1.43); 53 (86%) of the children were Caucasian, four (7%) were Pakistani and one (2%) child was in each of the following ethnic groups: Any other white background, White and Black Caribbean, Any other mixed background. Principal pre-treatment Axis I diagnoses are reported in Table 1a. Rates of co-morbidity were high with 24 (39%) children meeting criteria for at least one other non-anxiety diagnosis (see Table 1a). All primary carers had at least completed school education and 45 (73%) had completed further education. Thirty eight (61 %) parents were married, five (8%) were remarried, eight (13%) were divorced or separated, four (6%) lived with a partner, six (10%) were single, and one (2%) was widowed. Forty three families (73%) had at least one parent who was in higher

professional employment, ten (17%) of families were in other types of employment and six (10%) were unemployed (see Table 1b for parent demographics).

Table 1a

Participant demographics and self-report measures: Children

Demographic	Completers *N* (%)	Drop outs	Total	
Ethnicity				
White British[a]	28 (45)	27 (44)	55(89)	χ^2 (2) = 1.29, *p* = .52
Primary Anxiety Diagnosis				
Separation Anxiety	7 (23)	9 (29)	16 (26)	χ^2 (1) = 0.34, *p* = .56
Social Phobia	5 (16)	8 (26)	14 (23)	χ^2 (1) = 0.88, *p* = .35
Generalised Anxiety Disorder	8 (26)	8 (26)	16 (26)	χ^2 (1) = 0.00, *p* = 1.00
Specific Phobia	8 (26)	4 (13)	12 (19)	χ^2 (1) = 1.65, *p* = .20
PD and/or Agoraphobia[b]	2 (6)	2 (6)	4 (6)	
ADNOS[b]	1 (3)	0 (0)	1 (2)	
Comorbid (non-anxiety) diagnoses				
Depression	1 (3)	2 (6)	3 (5)	
Dysthymia	1 (3)	3 (10)	4 (6)	
Overall Mood	2 (6)	5 (16)	7 (11)	*p =.35*
ADHD	3 (10)	7 (23)	10 (16)	
ODD	4 (13)	7 (23)	11 (18)	
Overall Behaviour	7 (23)	14 (46)	21 (34)	*χ^2 (1) = 2.82, p = .09*
Overall Comorbidity	8 (26)	16 (52)	24 (39)	χ^2 (1) = 4.35, *p* = .03*
Primary Diagnosis CSR				*t* (60) = 1.47, *p* =.15
Moderate (4-5)	9 (29)	15 (48)	24 (39)	
Severe (6-7)	20 (65)	16 (52)	36 (58)	
Very Severe (8)[b]	2 (6)	0 (0)	2 (3)	
SCAS-C (Mean; SD)	31.50 (14.18)	47.13 (20.33)	39.44 (19.13)	*t* (59) = -3.47, *p* = .001**
SMFQ-C (Mean;SD)	6.23 (4.97)	7.55 (6.09)	6.89 (5.56)	*t* (60) = -0.94, *p* = .35

*Note: PD = Panic Disorder; ADNOS = anxiety disorder not otherwise specified; ADHD = Attention Deficit Hyperactivity Disorder; ODD = Oppositional Defiant Disorder; Ext = Externalising; SCAS = Spence Child Anxiety Scale, child report; SMFQ = Short Mood and Feelings Questionnaire; *p < 0.05, **p < 0.001*

[a] *Two cases missing data and therefore not included in analysis*

[b] *Too few cases and therefore not included in analysis*

Table 1b

Participant demographics and self-report measures: Parents

Demographic	Completers	Drop outs	Total	
Education (primary carer)				
Further education (*N*; %)[a]	25 (83)	18 (62)	43 (73)	χ^2 (1) = 4.39, *p* = .03*
Overall SES				
Higher professional (*N*; %)[a]	15 (50)	9 (31)	24 (39)	χ^2 (1) = 0.52, *p* = .47
Questionnaire Measures				
SDQ-P[b] (*M; SD*)	5.73 (3.40)	8.07 (4.23)	6.89 (3.98)	t (57) = -2.34, *p* =.02*
DASS-D (*M; SD*)	4.14 (4.44)	3.91 (4.69)	4.03 (4.50)	t (50) = .177, *p* = .86
DASS-A (*M; SD*)	2.14 (2.77)	3.04 (3.46)	2.54 (3.09)	t (50) = -1.02, *p* = .30
DASS-S (*M; SD*)	7.68 (4.38)	8.67 (6.23)	8.10 (5.24)	*t* (53) = -.69, *p* = .49
OP score (*M; SD*)	23.74 (8.57)	21.96 (9.42)	22.96 (8.91)	*t* (53) = .733, *p* = .47

*Note: SES = Socioeconomic status; SDQ = Strength and Difficulties Questionnaire, conduct and hyperactivity subscale, parent report; DASS = Depression Anxiety Stress Scale; OP score = Parental Overprotection Measure score; *p < 0.05*
[a] *Three cases missing data and therefore not included in analysis*
[b] *ADHD and Conduct Disorder subscales only*

Intervention. Participants who consented to treatment were randomised into either an eight session (Full) or four session (Brief) guided manualised self-help CBT treatment condition. Parents were provided with a self-help manual, 'Overcoming your child's fears and worries' (Creswell & Willetts, 2007) to read ahead of treatment sessions which corresponded closely with the manual content. Parents in the 'Full' condition received weekly therapist support in the form of four face-to-face sessions (4 x one hour), and four telephone sessions (4 x 20 minutes) over an eight week period while those in the 'Brief' condition received fortnightly therapist contact over eight weeks, comprising of two face-to-face sessions (2 x one hour) and two telephone sessions (2 x 20 minutes). Session content included psychoeducation about anxiety, identifying and challenging thoughts, behavioural experiments, addressing

parental responses and behaviour (e.g. modelling, praise, and rewards), graded exposure, problem solving and relapse prevention. Therapists encouraged parents to work through the self-help book, rehearsed key skills with parents prior to implementing them with their child, and helped parents to problem solve any difficulties that arose.

Therapists were qualified clinical psychologists, clinical psychology trainees, CBT diploma students, a trainee CBT therapist, a psychiatrist, assistant psychologists, psychology postgraduate students and a psychology graduate. Clinical psychologists who were experienced in using the approach provided training for therapists who received regular supervision throughout the course of treatment.

As most families (65%) who dropped out of treatment did so before Session three (see Table 2) and early session content was very similar for both full and brief treatment conditions, full and brief treatment dropouts were combined in order to produce a larger sample. Dropout rates for full and brief conditions were not significantly different.

Table 2

Stage of treatment completed when dropout occurred

	Treatment Intensity			
	Full		Brief	
Week	Stage of drop out	Drop outs	Stage of drop out*	Drop outs
0	Before treatment	1	Before treatment	2
1	Session 1	2	-	-
2	Session 2	3	Session 1	8
3	Session 3	5	-	-
4	Session 4	2	Session 2	4
5	Session 5	0	-	-
6	Session 6	2	Session 3	2
7	Session 7	-	-	-
8	Session 8	-	Session 4	-

** Brief treatment was delivered fortnightly over an 8 week period*

Ethics

Ethical approval for this study was obtained from the Berkshire Research Ethics Committee (07/H0505/157) and the University of Reading Research Ethics Committee (07/49) as part of the larger RCT ethics application. Participants were fully informed of privacy and confidentiality and their right to withdraw from the study at any time. Formal written consent was obtained from all participants and assent was obtained from children.

Procedure

Before treatment, as part of the assessment process, parents and their children completed three anxiety-provoking tasks related to social anxiety, performance anxiety and physical threat. The tasks were completed in a University laboratory that was equipped with wall mounted video cameras. Parental cognitions concerning expectations of their child's performance and expectations of their own feelings of anxiety and ability to influence their child's feelings and performance, were collected before each of the tasks using parental self-report on ten-point Likert scales. Observational video data collected from each of the tasks was coded for parent-child interactions in order to measure the following parental behaviours: negative behaviours (e.g. promotion of avoidance, over-protection, intrusiveness and criticism) positive behaviours (e.g. warmth and encouragement).

Measures

Structured diagnostic interviews with children and parents. Diagnostic interviews were conducted at initial assessment by trained graduate psychologists who were blind to treatment allocation. Child anxiety diagnoses were assigned based on the Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent version (ADIS-C/P; Silverman & Albano, 1996). The absence of parental anxiety disorder

was determined on the basis of the Anxiety Disorders Interview Schedule for DSM IV (ADIS-IV; Brown, DiNardo & Barlow, 2004). Where children met criteria for a diagnosis, a clinical severity rating (CSR) was assigned from four (moderate psychopathology) to eight (severe psychopathology). For the ADIS-C/P, overall diagnoses and CSRs were assigned if the child met diagnostic criteria on the basis of either child or parent report, and the higher CSR of the two was taken. The diagnosis with the highest CSR was classed as the primary diagnosis. Each assessor discussed their first 20 interviews with a consensus team led by an experienced diagnostician (Consultant Clinical Psychologist). After 20 ADIS assessments had been double coded by the consensus team, reliability was formally checked. Assessors were required to attain reliability at a kappa/intraclass correlation of .85. Once this level of reliability had been reached, assessors were required to discuss one in six interviews with the consensus team, in order to prevent rater drift. Overall inter-rater reliability for the assessor team was excellent (child-report diagnosis: kappa = .98; CSR: ICC = .98; parent-report diagnosis: kappa = .98; CSR: ICC = .97; parent self-report diagnosis: kappa = .97; CSR: ICC = .99).

Questionnaires. The following measures were also administered to parents at the initial assessment.

Parental Overprotection measure (OP). The OP (Parental Overprotection measure; Edwards, Rapee & Kennedy, 2008) measures self-reported day-to=day overprotective behaviour in parents. It was used as a self-report measure of parenting behaviour and scores were used to explore the hypotheses that parents who report more intrusive parenting behaviours and are less autonomy promoting are more likely to drop out of treatment. The OP is a 19-item questionnaire designed to assess parenting behaviours that restrict a child's exposure to perceived threat or harm, with

items mainly having a behavioural or situation specific focus, rather than more general attitudes and beliefs (e.g. “I would not allow my child to go out with family friends if I were not present” and “I accompany my child on all outings”). Parents are asked to rate the extent to which the item represents their typical response on a five-point scale ranging from zero (not at all) to four (very much). The OP measure has previously been found to have high internal consistency, strong test–re-test reliability and good construct and predictive validity (Clarke, Cooper & Creswell, 2013). For the current sample, the level of internal consistency was good (Cronbach's alpha = .79).

Depression Anxiety Stress Scale – Short Version (DASS21). The DASS21 (Lovibond & Lovibond, 1995) was administered to all participating parents. The short form of the DASS comprises three seven item self-report scales and was used to measure parental depression, anxiety and stress. On this measure, mothers endorse items (e.g. “I find it hard to wind down”, “I tend to suffer from dryness of the mouth”) according to the extent to which they experience each item. The responses range from zero (does not apply to me at all) to three (applies to me much or most of the time). A total score is derived by summing all of the individual item scores. Subscale scores can also be calculated and the stress and depression subscale scores were used to explore the hypotheses that higher levels of stress and depression symptoms will be associated with treatment dropout. The DASS21 has good psychometric properties and good internal consistency is reported for all three subscales of the DASS (Antony, Bieling, Cox, Enns & Swinson, 1998). Internal consistency based on data from the current sample was good (Cronbach's alpha = .76 for the stress subscale, .82 for the depression subscale and .59 for the anxiety subscale).

The Strengths and Difficulties Questionnaire (SDQ-p). The conduct and hyperactivity subscales of the SDQ-p (Goodman, 1997) were used to assess parent reported behavioural disturbance. The SDQ-p is also known to have good psychometric properties, and scores correlate highly with other well-known scales (Goodman, 1997). The conduct and hyperactivity subscales consist of 10 items describing certain behaviours (e.g. "Restless, overactive, cannot stay still for long") and parents are asked to rate each item from zero (not true) to two (certainly true), based on how things have been for their child over the last six months. For the current sample, the level of internal consistency for the combined conduct and hyperactivity subscales was acceptable (Cronbach's alpha = .69).

Spence Child Anxiety Scale (Child Report; SCAS-C). The SCAS-C (Spence, 1998) is a child report questionnaire that assesses anxiety symptoms in children. It contains 44 items (38 + six positive fillers) describing certain situations, (e.g. "I worry about things", "I am scared of the dark"), on which the child indicates how frequently they experience certain things using the scale zero (never) to three (always). Internal consistency was good (Cronbach's alpha = .88).

Pre-treatment challenge tasks. There were three challenge tasks: a social challenge, a performance challenge and a physical challenge task. Parents were present with their child throughout the tasks and were instructed to help their child in whatever way they felt was appropriate. In the social challenge task, children were asked to give a three minute presentation to a video-camera operated by a research assistant. Children were given a choice of topics to talk about ("My hobbies", "My ideal day", "My family", "My favourite holiday") and were told that they had five minutes to prepare, with their parents' support, before the research assistant would return and they would be asked to present their speech to the camera. Prior to the

child starting to speak, parents introduced their child and the title of the topic selected. For the performance challenge task, the "tangram" puzzles, children were asked to place geometric pieces together to form larger shapes that were outlined on a set of templates. Parents were given a sheet containing the tangram solutions. In accordance with Hudson and Rapee (2001), tangrams suitable for older children were presented, a five minute time limit was given and parents were told that the task was a test of their child's thinking ability. In the physical challenge task, children were presented with a black box with a hole in each of its four sides, covered by a black curtain. The box contained four fluffy or squidgy toys. Children were told that there were four "scary items" in the box and were invited to discuss with their parent what might be inside each hole before placing their hand in and removing the object.

Task expectations. Parental expectations regarding their own and their child's responses were assessed using rating scales before and after each task. Immediately after receiving the instructions for each task, mothers were taken to a separate room from their child and asked to rate the following: (a) how their child would feel about doing the task, (b) how well they thought their child would do the task, (c) how much they would be able to make a difference to their child's feelings about doing the task, (d) how much they would be able to make a difference to how well their child did the task, and (e) how much help their child would need to do the task. Ratings were made by assigning a number on a scale ranging from zero (not at all) to 10 (very, very much). Ratings for the three separate challenges were combined in order to look at overall responses over a range of situations.

Parental behaviours. Parental behaviours were rated on scales developed by Murray et al. (2012), which were adapted to be suitable for children aged 7-12 years and to the specific challenge tasks (Creswell, Apetroaia, Murray & Cooper, 2012).

Ratings were made for each minute of the parent-child interaction and as interactions varied in duration, mean scores were calculated for each task. Parental behaviours were rated on five-point scales, ranging from one (no behaviour present) to five (pervasive/strong behaviour), apart from promotion of avoidance which was rated on three points only. The behaviours were rated as follows:

Negative behaviours.

1. Promotion of avoidance: Actively encourages/supports child avoidance of task (e.g. saying 'you don't have to if you don't want to').
2. Overprotection: Initiates emotional and/or practical support that is not required (stroking/kissing/ offering unnecessary help while child manages independently).
3. Intrusiveness: Interferes, verbally or physically, cutting across child behaviour, attempts to take over and impose own agenda.
4. Criticism: Explicit critical comments to the child (e.g. you're cheating).

Positive behaviours.

1. Encouragement (autonomy promotion): Provides positive motivation to child to engage in the task, showing enthusiasm regarding both task and child capacity/efforts.
2. Warmth: Affectionate, expresses positive regard for child, both verbally and physically.

Videotapes of parent-child interactions were scored by a third year psychology doctoral student and graduate level research assistants. All scorers received training in coding videotapes of mother and child behaviours using the scales developed by Creswell et al. (2012). Prior to coding the study tapes, coders were required to obtain 80% agreement across 10 sample tapes of parent–child

interaction. Once coder ratings were in agreement with the second coder for the required amount of time, a further 10 tapes were coded and checked for reliability. This process was repeated until coders obtained the required level of reliability on all of the coding dimensions. Inter-rater reliability was assessed using intraclass correlations (ICCs). ICCs showed good agreement: Promotion of avoidance *M* = .88 (Range = .62 – 1.00 across tasks); Overprotection *M* = .97 (Range = .91 – 1.00); Intrusiveness *M* = .88 (Range = .68–.99); Criticism *M* = .88 (Range = .62 – 1.00); Encouragement *M* = .80 (Range = 62 – .95); Warmth *M* = .93 (Range = .69 – .95).

Analytic Procedure

Data analyses were conducted in SPSS version 22 using a stepped approach. First, data was tested for normality, skewness and outliers. Second, preliminary analyses were conducted to identify differences between drop outs and completers on demographic variables, diagnostic variables and symptom measures (see above). Third, data reduction was conducted by examining the measure of maternal pre-task expectations and the behavioural dimensions of parenting scale to see whether variables that related to theoretically similar dimensions could be combined (see above). Fourth, hypotheses were tested using binary logistic regression to identify to what extent the specified parental variables predicted drop out.

Results

Tests for Normality

Histograms indicated that the DASS21 stress subscale, the behavioural dimension of parental intrusiveness, and data concerning parental cognitions (expectations and evaluations regarding their own and their child's responses) were all normally distributed. However, data for the DASS21 anxiety and depression subscales and the behavioural dimensions of parental overprotection, promotion of

avoidance, criticism and the combined dimension of warmth and encouragement were not normally distributed (see Appendix G) and did not respond favourably to transformation.

These variables were therefore treated as predictors within binary logistic regression as normal distribution of the predictors is not a requirement (Field, 2005), with group as the dependant variable. This approach was adopted to test all hypotheses for consistency.

Preliminary Analyses

Chi-square (for categorical data) and *t* test (for continuous data) were used to explore differences between drop outs and completers. Where continuous variables were not normally distributed, nonparametric tests were run to ensure the findings were robust. As the findings were consistent, parametric tests results are given throughout for simplicity. Descriptive statistics for demographics and child self-report measures are shown in Table 1a. Analyses revealed no statistically significant differences between drop outs and completers on ethnicity ($\chi^2(1, N = 60) = .25$, $p = .62$), primary anxiety diagnosis (see Table 1a) or on clinical severity ratings (CSRs) of the primary diagnosis ($t(60) = 1.47$, $p = .15$) at baseline. Groups did differ however on child reported anxiety (SCAS-C; $t(59) = -3.47$, $p = .001$) and the number of children with non-anxiety comorbid disorders ($\chi^2(1, N = 62) = 4.35$, $p = .03$). More children in the dropout group (16 of 31; 52%) had additional non-anxiety co-morbid disorders than those in the completer group (8 of 31; 26%). The number of children with comorbid mood disorders was low in both groups so a Fishers Exact test was run. Although the pattern of results was consistent with a higher rate of comorbid mood disorders among the drop outs there was no significant difference found between groups ($p = .35$). When the frequency of comorbid behavioural disorders

was compared for drop-outs and completers, there was again about twice the rate of comorbid behavioural disorders among the drop-out group, although the difference was not statistically significant ($\chi^2(1, N = 62) = 2.82, p = .09$).

Descriptive statistics for demographics and parent self-report measures are shown in Table 1b. Analyses revealed statistically significant differences between drop outs and completers on the number of primary caregivers who had completed further education ($\chi^2(1, N = 59) = 4.39, p = .04$) and on the conduct and hyperactivity subscales of the SDQ-p ($t(57) = -2.34$, p =.02). More primary caregivers in the completer group had completed further education (25 of 30; 83%) compared to (17 of 29; 59%) dropouts. However, groups did not differ on socio-economic status ($\chi^2(1, N = 62) = .52, p = .59$) and on parent-reported overprotection (OP; $t(53) = .733, p = .47$).

Challenge Tasks: Data Reduction

Parent behaviour and expectation variables were combined where they related to theoretically similar dimensions and their intercorrelations indicated an association of above .60 (Creswell et al., 2012). This process was also informed by data reduction undertaken in previous research using these rating scales (Creswell et al., 2012). Thus, with regards to parental pre-task expectations, mothers' expectations of their control over their child's feelings and control over their child's performance correlated highly ($r(62) = .79, p < .01$), and so were combined for analyses. All other variables correlated at $r < .60$.

With regards to behavioural dimensions of parenting, the two dimensions of maternal warmth and encouragement, correlated highly ($r(62) = .73, p < .01$) and were therefore combined. All other variables were correlated at $r < .60$.

Hypothesis Testing

Hypothesis One: Higher levels of parent reported stress, anxiety and depression symptoms will predict more frequent treatment drop out.

To test Hypothesis One, binary logistic regression analyses were run to examine whether parent reported stress, anxiety and depression symptoms as rated on the DASS21 predicted treatment drop out. Data for the Depression and Anxiety subscales were missing for 10 cases (seven drop outs and three completers), so only 52 cases were included in the analyses. Data for the Stress subscale was missing for seven cases (all drop outs) so 55 cases were included in the analyses.

Drop out status was entered as the outcome variable and the 3 DASS21 stress, anxiety and depression subscale totals were entered as predictor variables in a single block using forced entry. Parent reported stress, anxiety and depression symptoms did not significantly predict more frequent treatment drop out ($\chi^2(3) = 2.02$, $p = .57$; stress: B = .03, *SE* = .07, Wald = .25, $p = .62$, *OR* =1.04, *CI* = .90-1.18; anxiety: *B* = .13, *SE* = .11, Wald = 1.25, $p = .26$, *OR* = 1.14, *CI* = .90-1.42; depression: *B* = -.08, *SE* = .09, Wald = .86, $p = .36$, *OR* =0.93, *CI*= 0.78-1.09). Therefore, Hypothesis One, which stated that higher levels of parent reported stress, anxiety and depression would predict treatment drop out, was not supported.

The three DASS subscales were checked for multicollinearity as this can impact on the reliability of the results (Field, 2005). The three subscales correlated at around *rs* =.50 (stress and anxiety, $rs(52) = .52$, $p < .01$; stress and depression, $rs(52) = .55$, $p < .01$; depression and anxiety, $rs(52) = .46$, $p < .01$), so logistic regressions were repeated excluding each of the variables in turn which confirmed that the original findings were robust.

Hypothesis Two: Higher parental expectations of child perceived threat and negative emotion and lower level of parental perceived control and expectations of their child's performance whilst interacting with their child during real life challenge tasks will predict more frequent treatment drop out.

To test Hypothesis Two, binary logistic regression analyses were run to examine whether parental expectations prior to their child's completion of a real life challenge task predicted treatment drop out. Data was missing for five cases (three completers and two drop outs) so after excluding these cases, 57 cases were included in the analyses.

Drop out status was entered as the outcome measure; and parent-rated expectations regarding how their child would feel about doing the task, how well they thought their child would do the task, how much they would be able to make a difference to their child's feelings about doing the task, how well their child did the task, and how much help their child would need to do the task, were entered as predictor variables in a single block using forced entry. Parental expectations did not significantly predict more frequent treatment drop out (see Table 3). Therefore, Hypothesis Two was not supported; parents who dropped out of treatment did not significantly differ in their expectations of how their child would manage in the face of challenge and how much they'd be able to support their child than parents who completed treatment. Logistic regressions were also repeated excluding each of the variables in turn which confirmed that the original findings were robust.

Table 3

Parental cognitions as predictors of treatment drop out

	***B* (*SE*)**	**Wald**	***OR***	**95% *CI* for *OR***
Constant	-1.40 (2.36)	.35	.25	
Child feelings	.03 (.05)	.36	1.03	-.94 - 1.14
Child performance	-.17 (.09)	.04	.98	.83 - 1.16
Parent control	.001 (.02)	.002	1.00	.97 - 1.03
Child help	.07 (.08)	1.60	1.10	.95 -1.28

Abbreviation: OR= Odds Ratio, CI= Confidence Interval
Note: Model: $\chi^2(4) = 5.34$, $p = .25$, $R^2 = .12$ (Nagelkerke)

Hypothesis Three: Higher levels of parental intrusion, overprotection, promotion of avoidance and criticism, and lower levels of warmth and encouragement whilst interacting with their child during real life challenge tasks, will predict more frequent treatment drop out.

To test Hypothesis Three, binary logistic regression analyses were run to examine whether higher levels of negative parental behaviours and lower levels of positive parental behaviour during the completion of a real life challenge task predicted treatment drop out. Data was missing for six cases (three completers and three drop outs) so after excluding these cases, 56 cases were included in the analyses. Drop out status was entered as the outcome measure and ratings from coded parental behaviours were entered as predictor variables in a single block using forced entry. Negative parental behaviours did not significantly predict more frequent treatment drop out (see Table 4). Therefore Hypothesis Three was not supported; parents who dropped out of treatment did not significantly differ in their parenting behaviours when interacting with their child from than parents who

completed treatment. Logistic regressions were also repeated excluding each of the variables in turn which confirmed that the original findings were robust.

Table 4

Parental behaviours as predictors of treatment drop out

	B (SE)	**Wald**	***OR***	**95% *CI* for *OR***
Constant	-3.15 (4.14)	.58	.04	
Prom of avoidance	.27 (.81)	.11	1.31	.26 - 6.47
Overprotection	.02 (.77)	.001	1.02	.23 - 4.58
Intrusiveness	.22 (.20)	1.17	1.24	.84 - 1.83
Criticism	-.44 (.64)	.47	1.30	.19 - 2.26
Warmth/Encourage	.04 (.09)	.23	1.04	.88 - 1.24

Abbreviation: OR= Odds Ratio, CI= Confidence Interval, Prom=promotion
Note: Model: $\chi^2(5) = 2.46$, $p = .78$, $R^2 = .06$ (Nagelkerke)

Secondary Analyses

As child self-reported anxiety on the SCAS-C, level of parental education and presence of comorbid mood and behaviour diagnoses were associated with treatment drop out in the preliminary analyses, the extent to which they independently predicted drop was examined in a logistic regression. Data was missing for four cases (two completers and two drop outs) so after excluding these cases, 58 cases were included in the analyses. The overall model was significant, $\chi^2(3) = 15.90$, $p = .001$. While child self-reported anxiety significantly predicted more frequent treatment drop out (see Table 5), level of parent education and comorbid mood and behaviour diagnoses did not. Correlations between the SCAS-C, parent education and comorbidity variables were all below $r = .2$ so multicollinearity was not an issue.

Table 5

Parental education, child comorbidity and anxiety severity predicting treatment drop out

	B (SE)	**Wald**	***OR***	**95% *CI* for *OR***
Constant	-1.72 (.90)	3.70*	.18	
Parent education	-1.14 (0.69)	2.74	.32	.08 – 1.23
Comorbidity	.80 (0.64)	1.54	2.22	.63 – 7.81
SCAS-c	.05 (.02)	6.59**	1.05	1.01 - 1.09

**p < .05, ** p < .01. Abbreviation: OR= Odds Ratio, CI= Confidence Interval*
Note: Model: $\chi^2(3) = 15.90$, p = .001, R^2 =.32 (Nagelkerke)

Discussion

Previous research on attrition in treatment for childhood anxiety disorders has been very limited. The aim of this study was to identify predictors of treatment dropout from a guided self-help CBT treatment for anxious children which was delivered solely via parents. Specifically, the present study examined the predictive value of parental psychopathology, cognitions and parenting behaviour on treatment attrition.

The results of the current study failed to support the first hypothesis that higher levels of parent reported stress, anxiety and depression symptoms would predict more frequent treatment drop out. These findings contradict those of Lyneham and Rapee (2006) who found that mothers who completed guided self-help CBT delivered via parents had significantly lower scores on a measure of depression, stress and anxiety (DASS) than those parents who did not complete treatment. However, due to study inclusion criteria, none of the parents participating in the current study fulfilled criteria for an anxiety disorder diagnosis, therefore floor

effects arising from low rates of parental psychopathology cannot be ruled out. Further research is needed to examine the predictive value of parental psychopathology on treatment dropout in an unrestricted sample of parents.

The second and third hypotheses were preliminary and exploratory. Parental cognitions and parenting behaviours were chosen as potential predictors of treatment attrition both because of their association with childhood anxiety in aetiology and maintenance research and because of evidence suggesting their role in treatment attrition for child externalising disorders (Morrissey-Kane & Prinz, 1999; Werba et al., 2006). However, no differences were found between completers and drop outs with regards to parental expectations of their child experiencing negative emotions when faced with potentially anxiety-provoking situations, or poor performance in their child or parent's expectations concerning their own sense of control prior to the completion of three challenging tasks with their child. There were also no differences in observed parental intrusiveness, overprotection, promotion of avoidance, criticism, warmth or encouragement. Therefore, the second and third hypotheses that parental cognitions and behaviours would predict more frequent treatment drop out, were not supported. The present findings add support for Kendall and Sugarman's (1997) suggestion that predictors of attrition may be "diagnostically specific". Although parent cognitions and parenting behaviour have been associated with attrition in treatment involving parents of children with externalising disorders (Kazdin, 1990; Prinz & Miller, 1994), the findings from the current study suggest that these parental predictors of attrition may not be so important in treatment involving parents of children with anxiety disorders. However, it is also possible that the relatively low power in the current study accounted for the non-significant findings.

Research is still very limited in this area and further examination of the differences among completers and dropouts in child anxiety research is required.

Whilst the main hypotheses were not supported, significant differences were found between dropouts and completers for specific pre-treatment child characteristics. Children whose parents dropped out of treatment had significantly higher levels of self-reported anxiety symptoms at initial assessment than children whose parents completed treatment. This finding is comparable to results obtained by Rapee, Abbott and Lyneham (2006), who also found that higher ratings of child reported anxiety symptoms were associated with increased rates of attrition in a study comparing parent delivered bibliotherapy with group treatment. It should be noted, however, that these results contradict findings from other studies (e.g. Kendall & Sugarman, 1997) where children with higher levels of anxious symptomatology were found to be *less* likely to drop out of individual child CBT treatment. It is possible that children with a greater severity of anxiety symptoms present more of a challenge to parents adopting the role of a therapist, as these children are likely to exhibit greater distress and require more encouragement when facing their fears than children with less severe presentations. Anxiety severity has also been associated with poor treatment response in CBT treatment studies (Southam-Gerow, Kendall, & Weersing, 2001) so perhaps parents of more severely anxious children become frustrated and drop out of treatment prematurely due to the absence of early treatment gains (Pina, Silverman, Weems, Kurtines & Goldman, 2003). It may however be the case that low intensity treatments, where parents receive relatively less support to implement strategies and manage potentially challenging child responses, are best suited to parents of children with less severe levels of anxiety but further research is necessary to evaluate this hypothesis.

The present study also found significantly higher rates of treatment drop out amongst parents of children assigned with comorbid mood and externalising disorder diagnoses at pre-treatment. These findings correspond with results from other child anxiety disorders research, where higher rates of oppositional defiant disorder and CBCL externalizing scores (Hirshfeld-Becker et al., 2010) and a greater number of baseline comorbid diagnoses (Kendall, Hudson, Gosch, Flannery-Schroeder, & Suveg, 2008; Rapee et al., 2006) have been associated with increased treatment attrition. One explanation for these results might be that the presence of additional child non-anxiety disorders undermines parent's attempts to implement the CBT treatment strategies, as children may be less motivated (mood disorders) and more challenging (externalising disorders) than children without these additional comorbidities. Indeed, Rapee et al., (2006) found that parents reported "difficulty implementing the skills" and child resistance as reasons for discontinuing with a parent implemented bibliotherapy programme (Lyneham & Rapee, 2006). Therefore, according to the "barriers to treatment model" (Kazdin et al., 1997), parents of children with higher rates of severity and/or comorbidity may have been more likely to drop out of the current study due to behavioural characteristics of the child influencing parent's perception of the treatment as being too difficult and demanding to incorporate into their daily lives. It is also possible that the co-morbidities need to be targeted by different treatment practices (e.g. parenting strategies), in order for the anxiety-specific practices to have their effect. However, further exploration of the mechanisms through which child anxiety severity and non-anxiety comorbidity influences parent's decision to terminate treatment is warranted.

Preliminary analyses also revealed that parents who dropped out of treatment in the present study were significantly less likely to have completed further education

than parents who completed treatment. When initially entered into a regression model with comorbidity, parent education was found to be a significant predictor of treatment dropout. However when higher ratings of child self-reported anxiety symptoms was added to the model, parent education was no longer significant. It is likely that this finding was accounted for by the reduction in power due to the addition of more predictors to the model, as the effect size (odds ratios) remained largely unchanged (*OR* 3.53 – 3.12). The examination of parent education in relation to attrition has largely been neglected in the child anxiety literature but the results of the current study are consistent with findings from adult bibliotherapy studies (Scogin, Jamison & Gochneaur, 1989) where treatment dropouts were found to have completed significantly less education than completers. Lower maternal education has also been associated with treatment attrition in other child populations (Campbell, Baker & Bratton, 2000; Luk et al., 2001). Although the educational level of parents in the present study was high compared to the general population, reading the treatment book may still have been daunting for some parents and thus influenced their decision to drop out of treatment due to the perception that treatment was too difficult for them to implement. Further exploration of why parents with lower levels of education tend to terminate prematurely is needed.

Limitations

Some study limitations should be noted. Firstly, the present study was comprised of predominantly white British families of high socio-economic status and all participating parents were non-anxious and had as a minimum completed secondary school education. Therefore, generalisability may be limited to this population and as such, future research should consider using a more ethnically and socially diverse community sample. It should also be noted that all included parents

were mothers due to the low number of primary caregiving fathers attending the clinic. In light of findings that suggest fathers play a unique role in the development of child anxiety (Bögels & Phares, 2008); it will be important in future research to consider the specific role that paternal factors may play in predicting treatment attrition.

Secondly, only pre-treatment predictors of attrition were considered in this study. There are however other factors such as treatment process variables which may have influenced parent's decisions to discontinue treatment. Specifically, the strength of the therapeutic alliance early in treatment has distinguished treatment dropouts from completers in adult populations (Piper et al., 1999). Research in other child treatment contexts has also found that dropping out of treatment was associated with lower parent-therapist alliances (Hawley & Weisz, 2005; Kazdin, Whitley & Marciano, 2006). Further research looking at associations between therapeutic alliance and attrition in guided self-help CBT treatment for parents of anxious children is therefore warranted.

Third, parent's self-reported reasons for dropping out of treatment were not assessed in the present study. This information would have furthered our understanding as to which other factors influence a family's decision to discontinue treatment. Whilst dropouts are often considered problematic in treatment and research settings, the reasons for dropping are not always attributable to treatment failure (Ogrodniczuk, Joyce, & Piper, 2005). For example, parents may also drop out of treatment because their child's symptoms have improved and they no longer feel that treatment is necessary (Kendall et al., 2008) or as a result of other life circumstances (e.g. pregnancy, serious family illness or bereavement). Future

research would benefit from attempting to contact non-completers to enquire about their reasons for dropping out.

Lastly, the combination of the full and brief treatment conditions precluded the examination of possible interaction effects between the treatment condition and factors found to be significantly associated with attrition in the current study (child anxiety severity, comorbidity and parental education).

Clinical Implications

The findings of this study suggest that parents of children with more severe anxiety symptoms and comorbid mood and externalising disorders are at increased risk of treatment dropout. This information could assist clinicians in determining which families are most at risk for premature termination and enable them to tailor treatments accordingly to meet the individual needs of the family. Treatment programmes for children with more complex presentations could be enhanced by adopting a modular approach to treatment (Chorpita, 2007) whereby modules aimed at the specific comorbid disorder (i.e. depression; disruptive behaviour) can be added to the standard treatment protocol where required. The level of therapist contact could also be adjusted to provide additional support to parents who are likely to experience problems with child resistance and oppositional behaviour. Rapee et al., (2006) reported that bibliotherapy appeared to be most successful where children had "highly motivated, psychologically minded parents", so finding ways to promote these characteristics in parents, maybe through the use of motivational interviewing techniques and additional psychoeducation sessions prior to commencing treatment, may be beneficial. Alternatively, it might be more appropriate to offer parents an alternative treatment in these circumstances.

The results also suggest that the educational level of parents is associated with treatment dropout. Some parent's may have difficulty with, or simply not like reading and as such, accessing the 'Overcoming your child's fears and worries' book may render treatment inaccessible or too much of a chore. Therefore, clinicians might want to consider creative ways to make interventions more accessible to parents that are reluctant or unable to read, perhaps by translating materials into audio, video or computer-based formats.

Conclusion

This study was the first to assess the association between parent factors and drop-out in guided manualised self-help CBT for anxious children in which treatment was delivered solely to parents. Contrary to expectations, parental psychopathology, parental cognitions and parenting behaviour did not predict treatment drop-out. However, child anxiety symptom severity was identified as a predictor of attrition and comorbid mood and externalising disorders in the child and lower levels of parent education were associated with treatment dropout. The findings have implications for increasing retention in low-intensity, parent-led treatments for childhood anxiety disorders.

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PART THREE: Critical Appraisal

Introduction

This critical appraisal firstly provides a context for the development of this study and a reflection on what attracted me to conducting the research. It then considers the advantages and disadvantages of using pre-existing data and the methodological issues associated with the use of observational methods to measure parent-child interactions. Finally, it discusses limitations in the current methods of outcome measurement used in child anxiety disorder treatment research.

Background context

My interest in childhood anxiety disorders dates back to my Undergraduate degree when I completed my dissertation in a specialist child anxiety clinic at the University of Reading. I was later employed as a research assistant at the clinic to work on the large MRC funded RCT (Overcoming treatment trial) from which the data used in my empirical study originated. Over the four years that I worked on the treatment trial I undertook a variety of assessment and treatment roles. At the start of the trial I conducted both initial and post-treatment diagnostic assessments with children and parents to confirm the presence (or absence) of anxiety and comorbid disorders. I also completed laboratory based research assessments which involved collecting video and questionnaire data regarding parent-child interactions during anxiety provoking tasks. Later on, I completed a post-graduate diploma in evidence based psychological therapies and joined the team of therapists who delivered the 'Overcoming' treatment to parents. Being involved in a large treatment trial from the very beginning provided me with insight into the enormous amount of work that is involved in bringing together the clinical and research components of such a large scale study and it was a great experience to be involved with problem solving initial teething problems (e.g. issues with participant recruitment) and designing materials

for use in the initial and research assessments. It was an obvious choice for me to conduct the research for my empirical paper at the anxiety clinic due to my long standing interest in child anxiety and my positive experience of working there as part of a friendly and experienced team. The topic of treatment attrition was of particular interest to me as I discovered first-hand how hard the research team had to work in order to keep families engaged and how disappointing and frustrating it could be, both from a clinical and research perspective, when families decided not to continue with treatment. Having worked in a Child and Adolescent Mental Health Service (CAMHS) prior to my research post, I was very aware that staff resources are already overstretched and as such there is not the time or flexibility that is available in a research setting to chase up families that are at risk from dropping out of treatment. Therefore, this research was an opportunity to investigate factors that might be associated with treatment attrition with a view to informing possible modifications to treatment that might help to increase treatment retention when the 'Overcoming' treatment programme is transported to clinical settings.

Using pre-collected data: limitations and benefits

Using data that had already been collected for my empirical paper had both advantages and disadvantages. One disadvantage was that the data in the original study was collected primarily for the purpose of evaluating treatment efficacy and this limited the variables available to be examined in relation to predictors of treatment drop out. For example it would have been useful to have utilised more specific measures of parental stress such as the Parental Stress Index (The PSI; Abidin, 1995) rather than relying solely on the stress subscale from the Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995), where many of the questions overlapped with those of the depression and anxiety subscales. It would

also have been helpful to have used a questionnaire measure or had a brief telephone interview with parents who dropped out of treatment, to enquire about their individual reasons for deciding to discontinue with treatment. Furthermore, as discussed previously in part one (the literature review), conducting prediction research as an addendum to the main study questions for which data collection was originally designed can result in methodological weaknesses such as a lack of power and increased likelihood of statistical error. Nevertheless, despite these limitations, there were considerable advantages to using pre-existing data that had been collected as part of a well-designed trial with lead researchers who are experts in the field of child anxiety. Firstly, I had the privilege of accessing a large database of participant data that would have been impossible to collect single-handedly and would have otherwise been beyond the scope of what was possible within the limited time frame available for completing a doctoral thesis. Secondly, having been involved with the original treatment trial from the outset I was already very familiar with both the trial databases and the research and treatment protocols which meant I was immediately able to focus my attention to the research tasks at hand rather than having to spend time orientating myself to the trial or the data. Finally, as I did not have to undertake data collection I was able to be involved with coding the video clips of parent-child interactions that were gathered during the three research tasks. Although I had been involved with running the research assessments I had not previously had the chance to familiarise myself with the coding scheme and I found that it really helped to further my understanding of quantitative observational methods. The coding process involved scoring a number of 'practice tapes' until a high level of reliability with a second established coder was reached on all of the behavioural dimensions for each separate task. I soon came to understand why the use of observational methods is

considered by some to be costly and time consuming process as establishing reliability can take a considerable amount of time. I initially tried to allocate a set amount of time for coding each week so that I could continue with other parts of the thesis; however I quickly found that it was more productive to set aside a block of time to concentrate purely on coding so that I could completely absorb myself in the process. Due to my previous involvement with data collection I took great care to ensure that I only coded videotapes for families that I had not assessed at any time point during the trial, in order to avoid any bias.

Methodological issues in the direct observation of parent–child interaction

The observational methods used to assess parent–child interactions during the three anxiety provoking tasks discussed in the empirical paper, had several advantages over self-report measures of parenting behaviours, which can be vulnerable to response biases such as social desirability (Ginsburg, Grover, Cord & Ialongo, N., 2006). Firstly, the use of observation provided the opportunity to witness reciprocal interactions between parents and their children as they occurred during the tasks which offers a richer picture of the parent-child relationship than that afforded by parent or child descriptions of their interaction patterns. Secondly, as observations can be recorded video footage of the research tasks provided a permanent record of parent-child interactions that were available to be systematically coded and analysed at a later date, thus increasing objectivity and reducing the possibility of observer bias. Lastly, the use of observation complemented the pre and post task expectations and evaluations questionnaire data that was collected from parents and children within each task and this enhanced the overall quality of evidence collected during the research assessment.

There are however some methodological issues regarding the use of observational measures and in child-anxiety studies more generally, variation in the type of parent–child interaction task, the instructions given to parents, coding procedures, and operational definitions of parenting behaviours makes cross-study generalisation difficult and limits the conclusions that can be drawn (Gardner, 2000). In addition, studies have generally only invited the primary caregiver to take part in parent-child interaction tasks which means that maternal parenting has been the focus of most study evaluations to date and the contribution of fathers or both parents together has been overlooked. Future research should address this gap in the literature as it has been suggested that the parenting behaviours of mothers and fathers may be uniquely associated with childhood anxiety (e.g. Liber et al, (2008). There are also some validity and reliability issues associated with the use of observational measures which need to be taken into account when interpreting study findings. Whilst observational data appears to have higher face-validity than that of questionnaire data, observations made of parent-child interactions during structured tasks in laboratory settings may not be representative of the typical family interactions that occur in more naturalistic everyday settings and as such the findings produced may lack ecological validity (Bögels & Brechman-Toussaint, 2006). In addition, where questionnaires and observation have been incorporated in the same design little correlation has been found between observed and self-reported data. This suggests that there may be a problem with content validity as the different assessment methods appear to be tapping into different constructs (Greco & Morris, 2002; in Bögels & Brechman-Toussaint, 2006). Further research is therefore required in the field of child anxiety to gain a better understanding of how to best operationalise and measure parenting constructs. Observational findings can also be

affected by reactivity of measurement as people often behave quite differently when they know they are being observed (Barker, Pistrang & Elliott, 2002). Furthermore, there have been suggestions that observer reactivity is not consistent across samples and factors such as older child age and having a sensitive or anxious temperament may increase reactivity to being observed (Hartmann & Wood, 1990). Future research should therefore make every effort to minimise the impact of observer reactivity and take account of the aforementioned limitations when interpreting findings. Researchers on the 'Overcoming' treatment trial attempted to reduce reactivity effects by asking each parent and child dyad to play a familiar game together ('Connect Four') at the start of the research assessment to help them settle in and habituate to the laboratory environment and the CCTV style video cameras used for recording the tasks were mounted unobtrusively in the corners of the room. Nevertheless, as parents often expressed concern during initial trial assessments that they were in some way responsible for their child's difficulties, it is possible that these feelings and beliefs influenced parental behaviours during the research assessment tasks despite researcher's best efforts; especially if parents believed that their parenting skills were being evaluated. Finally, due to resource constraints and a desire to avoid over-burdening participants, observational data is often only collected during one session of observation. This is potentially problematic as factors such as lack of sleep or being on school holidays can result in day-to-day variability in behaviour and as such observational findings may only provide a limited snapshot of a parent and child's behavioural repertoire as opposed to stable estimates of the behaviours of interest (Gardner, 2000). The extent of this problem in child anxiety research trials is not yet clear however, as most researchers are not able to repeat their observations within the time frame necessary to provide evidence of test–retest

reliability (Bögels & Brechman-Toussaint, 2006). Naturalistic observations where families are filmed interacting in their own homes and stresses and conflicts are more likely to occur, would be one way to explore how closely the behaviours elicited by stressful laboratory tasks correspond with those that occur during every day parent-child interactions. Observations conducted on successive occasions in the home setting could also provide useful information about the impact other factors may have on the parent-child relationship such as the presence of siblings and the quality of the parent's own relationship. The use of more objective questionnaire measures of parenting behaviour would also be beneficial to compliment information gathered during observations. Whilst traditional parenting questionnaires such as the '*Egna Minnen Beträffande Uppfostran'* (EMBU-C; Castro, Toro, Van der Ende, & Arrindell, 1993) that require participants to respond to value judgment-based statements (e.g. ''Does your father/mother show you that he/she loves you?'' and ''Does your father/mother blame you for everything?') are vulnerable to response biases, questionnaires that ask for the frequency of events to be rated over a set period of time (e.g. the number of times over the last week that the parent laid with the child on the child's bed at night; Wood et al., 2006) provide a more objective way of obtaining information regarding specific parenting behaviours.

Overall, it appears that there are some significant limitations that need to be taken into account when using observational methods to assess parent-child interactions. The tasks used in observational studies can lack ecological validity and problems with observer reactivity may lead to participants behaving atypically in the laboratory setting. There is also a lack of evidence of test-retest reliability and parent-child behaviours that are demonstrated during one observation may not be

representative of their everyday interactional style. Behaviours of interest may also be missed if they are not frequently occurring.

Nevertheless, there are also advantages to using observational methods and studies using this approach to assess parent-child interactions have produced some informative findings concerning associations between parenting behaviours and child anxiety (e.g. Murray et al., 2012; Creswell, Apetroaia, Murray & Cooper, 2013). Careful consideration is therefore required to find ways to address the methodological weaknesses associated with current observational methods and increase the robustness of study findings.

Issues with outcome measurement in child anxiety treatment trials

Issues with child anxiety treatment outcome measurement emerged as a significant problem in the literature review (part one of the thesis) and as such the findings in the empirical paper should be interpreted in light of the following limitations.

Outcome in treatment trials of child anxiety is usually assessed across multiple informants using a range of measures including diagnostic status, clinician ratings, child self-report and parent report (Rapee, Schniering & Hudson, (2009). Variation in the types of measures used to assess treatment outcome makes the comparison of results across studies very difficult and as yet no consensus has been reached as to which measures or which informant's ratings should be given most credence (Rapee et al., 2009).

Structured diagnostic interview tools such as the Anxiety Disorders Interview Schedule - Child and Parent Versions (ADIS-C/P; Silverman and Albano, 1996) are frequently used at initial assessment to establish diagnoses, however not all studies repeat diagnostic assessments at post-treatment and follow-up. Whilst clinician inter-

rater reliability on the ADIS C/P has been found to be good (Rapee, Barrett, Dadds, & Evans, 1994), agreement between parent and child reports can be variable (Campbell & Rapee, 1996). Structured diagnostic interviews are also costly as they need to be administered by trained clinicians and they take several hours to complete which can be tiring for participants. Self-report measures of child anxiety are frequently used alongside diagnostic interviews at pre-treatment assessments and some studies also rely on them as the primary outcome measure (e.g. Kley, Heinrichs, Bender & Tuschen-Caffier, 2012). Whilst self-report measures have several advantages that include being relatively inexpensive and quick and easy to administer, they have been criticised for failing to distinguish anxious from non-anxious children or to discriminate between different anxiety disorders (e.g. Perrin & Last, 1992). As such studies would do well to utilise both diagnostic interviews and standardised symptom measures when assessing treatment outcomes.

As parents are usually responsible for referring the child for treatment, parental report of child anxiety is often used as the primary source of information, especially where child and parent reports do not correspond. Some researchers have argued however that where reliable and valid outcome measures are used, young people themselves should be considered best placed to report on their own internal experiences and as such the child's own account of their anxiety symptoms should be given most weight (Reynolds, Wilson, Austin and Hooper, 2012). Although on the one hand this argument makes a lot of sense as it can be hard for other people to accurately gauge how anxious another person is feeling, concerns have been raised about the lack of concordance between child self-report and other indicators of treatment change, especially for younger children (Campbell & Rapee, 1996). For example, several studies have found that not only are younger children (under 12

years) more likely to demonstrate poor test-retest reliability on structured diagnostic interviews (Schniering, Hudson & Rapee, 2000) but they also have an increased tendency to report more anxiety symptoms at initial assessments than they do during subsequent interviews (Campbell & Rapee, 1996). Furthermore, similar reductions in children's self-reported anxiety over time have been reported by children who completed treatment and those on the wait-list (Rapee et al., 2009). These findings have been attributed by some authors to powerful expectancy and social desirability influences on children's reports at the post-treatment assessment (e.g. Dadds, Perrin & Yule, 1998). There is also evidence that some young people under-report their anxiety symptoms in certain situations and it is thought this might be associated with cognitive level and thus again more likely to be a problem in younger children (Campbell, Rapee & Spence, 2001). Indeed, age and cognitive level have been shown to account for 53% of the variance in lie scale scores on the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1979; Campbell & Rapee, 1996). The incorporation of lie scales into other child-anxiety self-report measures might therefore be one way to gauge the accuracy of the child's self-reports of anxiety and if for example the child endorses four or more Lie scale items (the younger children's mean Lie score in Pina, Silverman, Saavedra & Weems, 2001), this may indicate that greater consideration should be given to an alternative rater of the child's anxiety (Rapee et al., 2009).

Whilst younger children's reports of their anxiety symptoms have been found to lack of reliability, it is nevertheless vital that the child's own views regarding their anxiety symptoms are sought and not considered less important than other views. Future research is therefore needed to clarify children's understanding of self-report

measures so that developmentally appropriate materials, which are sensitive to children's cognitive and verbal capabilities, can be designed accordingly.

Several studies including the 'Overcoming' trial have also utilised teacher ratings of child anxiety symptoms at pre- and post-treatment assessment, however, like parent and child ratings, teacher ratings generally show poor correspondence to other informants' ratings (Achenbach, McConaughy & Howell, 1987). It has also been argued that teachers are less helpful for assessing internalising problems, such as anxiety, than they are for externalising problems (Loeber, Green, & Lahey, 1990). Obtaining teacher ratings can also be difficult when children enter secondary school as they have multiple teachers; so determining which teacher is best placed to complete the forms is not always apparent (Campbell & Rapee, 1996). The development of more objective measures of child anxiety that assess the frequency of observable behaviours specific to particular types of child and adolescent anxiety disorders, rather than asking about more abstract internal concepts, might therefore be one way to improve the utility of self-report measures and increase consensus amongst child, parent and teacher reports.

Conclusion

There are several methodical limitations that need to be taken into account when using observational methods to assess parent-child interactions. Observations can however be a useful way of supplementing other sources of information about parent and child behaviour, such as parent and child self-report measures. Conducting naturalistic observations in more than one setting could be one way to overcome difficulties with ecological validity and observer reactivity when exploring parent child-interactions in relation to child anxiety research.

There appears to be advantages and disadvantages to most methods of assessing treatment outcome in child and adolescent anxiety disorders. Structured interviews, while showing moderate to high inter-rater reliability, are costly and time consuming to deliver and informant reports can be variable. Self-report measures, while being cheap and easy to administer have problems with discriminant validity. Therefore, future research should aim to collect both a diagnostic and a symptom measure of treatment outcome where possible. The evidence regarding which informant report should be given most weight is also mixed and until more developmentally appropriate and/or objective measures are developed, studies will need to continue collecting information from multiple sources and using clinical judgment to determine which informants report should be given the greatest consideration.

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Appendices

Appendix A: Quality Evaluation

Paper	Sample size for predictor analyses	<5 predictors tested	Evidence that results were not biased by omission of missing data	A priori hypothesis of anticipated predictor effect	Continuous predictors retained as continuous variables in predictive model	Study quality (0-1)
Barrett et al., 1996	0.5	1	0	0	0	0.3
Beidel et al., 2000	0.5	1	1	0	0	0.5
Berman et al., 2000	1	1	0	1	0	0.6
Bodden et al., 2008	1	1	1	1	0	0.8
Cobham et al., 1998	0.5	1	1	1	0	0.7
Cooper et al., 2008	0.5	1	0	1	n.a.	0.63
Crawford & Manassis, 2001	0.5	1	0	1	1	0.7
Crawley et al., 2008	1	1	n.a.	1	1	1
Crawley et al., 2013	0	1	1	0	1	0.6
Creswell et al., 2010	0.5	1	1	1	1	0.9
Creswell et al., 2008	0	1	n.a.	1	1	0.75
Festen et al., 2013	1	1	1	1	1	1
Ginsburg et al., 2011	1	1	1	0	1	0.8
Ginsburg et al., 2012	0	1	1	0	1	0.6
Hedtke et al., 2009	0.5	1	0	0	1	0.5
Hirshfeld-Becker et al., 2010	0.5	1	1	0	1	0.7
Hudson et al., 2013a	1	0	0	1	1	0.6
Hudson et al., 2013b	1	1	1	1	n.a.	1
Hughes & Kendall, 2007	1	1	0	0	1	0.6
Hum et al., 2013	0	1	1	1	0	0.6
Kendall et al., 2001	1	1	n.a.	1	n.a.	1
Kendall et al., 1997	1	1	1	0	0	0.6
Kendall et al., 2008	1	1	1	1	0	0.8
Kerns et al., 2013	0.5	1	1	1	n.a	0.88
Kley et al., 2012	0.5	1	1	1	1	0.9
Legerstee et al., 2008	1	1	1	1	1	1
Legerstee et al., 2009	1	1	0	1	1	0.8
Legerstee et al., 2010	0.5	1	0	1	1	0.7
Liber et al., 2008	1	1	1	1	1	1

Liber et al., 2010	1	1	1	1	1	1
Manassis et al., 2013	0.5	1	n.a.	1	1	0.88
Manassis et al., 2002	0.5	1	n.a.	1	n.a.	0.83
Mitchell et al., 2013	0.5	1	1	1	1	0.9
Nauta et al., 2001	0	1	n.a.	0	1	0.5
Nauta et al., 2003	0.5	1	1	0	0	0.5
Ollendick et al., 2009	1	1	1	0	0	0.6
Ollendick et al., 2010	1	1	n.a.	1	n.a.	1
O'Neil & Kendall, 2012	0.5	1	1	1	n.a.	0.88
Ost et al., 2001	0.5	1	n.a.	1	0	0.63
Pina et al., 2003	1	1	1	0	n.a.	0.75
Podell et al., 2013	1	1	n.a.	1	1	1
Podell & Kendall, 2011	0.5	1	n.a.	1	1	0.88
Rapee, 2003	1	1	0	1	n.a.	0.75
Rapee, 2000	0.5	1	1	1	1	0.9
Rapee et al., 2012	1	1	1	1	1	1
Settipani et al., 2013	1	1	1	1	1	1
Shortt et al., 2001	0.5	1	1	0	n.a.	0.63
Silk et al., 2013	0.5	1	0	1	1	0.7
Southam-Gerow et al., 2001	1	1	1	1	1	1
Spence et al., 2006	0.5	1	1	0	0	0.5
Thirlwall et al.,2013	0.5	1	1	1	n.a.	0.88
Tiwari et al., 2013	0.5	1	n.a.	0	1	0.63
Tobon et al., 2011	0.5	1	1	1	0	0.7
Toren et al., 2000	0	1	n.a.	1	1	0.75
Treadwell et al., 1995	1	1	n.a.	1	n.a.	1
Waters et al., 2012	0.5	1	0	1	1	0.7

0 = analysis does not meet quality criterion, 0.5 = sample size between 30-100, 1= analysis meets quality criterion
n.a. = quality criterion does not apply to analysis
Where a study conducted multiple predictor-outcome analyses of differing quality (e.g. different sample sizes in each), the quality score for the highest quality analysis was reported for that study.

Appendix B: Overlapping Samples

Study	Year	No	Silverman et al, 1999 x2	Kendall et al., 1994	Kendall et al., 1997	Kendall et al., 2008	Rapee et al, 2006 & Hudson et al, 2009	Legerstee et al, 2008	Liber et al., 2008
Berman et al,	2000	106	Ethnicity						
Ginsburg et al.	2011	488							
Hedtke et al,	2009	87				Gender Age, Diagnosis Severity, Comorbidity, Ethnicity			
Hudson et al	2013	384					Comorbidity		
Hughes & Kendall	2007	138		Severity	Severity				
Kendall et al	2001	173			Comorbidity				
Kendall et al	2008	161				Age, Gender, Parental Psychopathology			
Legerstee et al,	2008	178						Parental Psychopathology	
Legerstee et al,	2009	131						Gender, age, SES, IQ, Severity, Selective Attention	
Legerstee et al,	2010	91						Gender, IQ, Diagnosis, Selective attention	
Liber et al	2008	124							Parent behaviour, Parental Psychopathology
Liber et al	2010	124							Comorbidity and Severity
O'Neil & Kendall	2012	72				Comorbidity			
Pina et al,	2003	131	Ethnicity						
Podell & Kendall	2011	45				Parental Psychopathology			
Podell et al	2013	279							
Rapee et al.,	2012	750					Comorbidity		
Settipanni et al	2013	111				Maternal & paternal psychopathology			
Southam-Gerow et al	2001	135 (15% new cases)		Gender, age, ethnicity, severity	comorbidity, severity				
Tiwari et al	2013	61				age, gender, SES, ethnicity, diagnosis, severity			
Treadwell et al	1995	81		Gender, age, ethnicity					

Appendix C: Information and consent sheets

Berkshire Research Ethics reference number: 07/H0505/156- 157-176
University of Reading Ethics reference number: 07/48-49-50
Version 1.5 (6.2.08)

Berkshire Healthcare NHS
NHS Foundation Trust

Study Centre Address:
School of Psychology, University of Reading , Whiteknights, PO Box 238 , Reading RG6 6AL

Clinical Research Team:

Clinical Director: Dr Lucy Willetts (Tel: 0118 378 6297); l.e.willetts@reading.ac.uk
Trials Manager: Dr Rachel Gitau (Tel: 0118 378 4682); r.gitau@reading.ac.uk
Study Assessors: Sarah Cook; s.e.cook@reading.ac.uk. Amy Corcoran; a.corcoran@reading.ac.uk. Jenny Crosby; j.crosby@reading.ac.uk. Ray Percy; r.s.percy@reading.ac.uk. Rebecca O'Grady; r.r.ogrady@reading.ac.uk
Trials Secretary: Brendan Lawrence; b.lawrence@reading.ac.uk
Research Director: Professor Peter Cooper (Tel: 0118 378 6617); p.j.cooper@reading.ac.uk

INFORMATION SHEET FOR PARENT/GUARDIAN

Study of the Treatment of Anxiety in Children

You and your child are being invited to take part in a research study we are doing in Berkshire Healthcare NHS Foundation Trust and the University of Reading. Before you decide whether to take part it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Do discuss this matter with others if you wish.

There is a standard talking treatment for anxious children (called 'cognitive behaviour therapy'). Studies have shown that this treatment is very helpful to lots of children. However this treatment is often not readily available within the health service as it is costly and involves highly trained staff. We have developed a brief form of this treatment that parents can use with their children, with the support of a psychologist. This 'guided self-help' approach to treatment has been found to be very helpful for a range of other types of difficulties that children experience.

Over a period of 30 months we are inviting all parents, who are not themselves anxious, who bring their children for help with anxiety and their children to participate in our study. It is entirely up to you and your child to decide whether to take part or not. If you do decide to participate, you will be given this Information Sheet (and your child will also be given one) and you will be asked to sign a consent form (a copy of which you will be given to keep). We will inform your GP that you are helping us, and we will keep in touch with your GP about your child's progress in the normal way. If you are happy, we would also like to contact your child's teacher to request information about how your child is getting on at school at the beginning and end of the study. A copy of the letter and questionnaires we would send to your child's teacher if you agree is attached. You will be free to withdraw from the study at any time without having to give any reason. If

you or your child decide not to participate, or you or your child decide to participate and then have a change of mind, this will not affect the standard of care your child will receive.

The study involves both assessment and treatment.

1 Assessment

The study involves our team making a detailed enquiry of how you are and how your child is (especially as regards problems with anxiety) before treatment begins, at the end of the course of treatment, and then six months after treatment ends. These enquiries will involve your completing some questionnaires and you and your child being asked a standard set of questions. The responses you and your child give will be treated as entirely confidential. In fact, they will be coded and entered into a computer file with anonymity completely preserved (there will be no names in the file).

2. Treatment

Two thirds of the families in the study will be offered treatment immediately. The other third will be placed on a waiting list for three months and then receive treatment if it is still needed (as studies have shown that some children recover without treatment). All children in the study will receive treatment within a shorter time period than is typically the case in local and national child and adolescent mental health services. To make sure that the groups receiving the treatment immediately or after a short wait are comparable to begin with, who goes in each group is decided randomly.

The treatment involves parent(s) meeting with a Psychologist face-to-face and having telephone appointments. Half of the parents will have 8 appointments, (four face-to-face and four telephone appointments). The other half will have four appointments (two face-to-face and two over the telephone). To make sure that the groups receiving four or eight appointments are comparable to begin with, who goes in each group is decided randomly. Parents will also be provided with a book entitled 'Overcoming your child's fears and worries'. The psychologist will help you to use the book to help your child to learn to manage his/her anxiety problems.

If the assessments show that your child has not experienced a clear reduction in anxiety following treatment, we will offer you and your child further treatment within our clinic; or if other problems emerge we will discuss this with your local child and adolescent mental health team.

In order for us to be sure that all the different forms of treatment are being delivered by the study therapists in the same way, we ask mothers and children if we can make tape recordings of the therapy sessions. Also, to understand exactly how your child reacts to stress, and your own response to this, on two occasions we will ask if we can make a

short video-tape and record your own and your child's heart rate whilst we do this. Specific permission will be sought to make these recordings. The audio and video tapes will be heard and seen only by members of the research team; and they will be destroyed at the end of the research study.

Medication

One of the requirements of this trial is that participants (parents and children) must either not be prescribed medication aimed at changing their mood or behaviour (e.g. anti-depressant medication or Ritalin) or this must have been prescribed at a stable dose for at least one month prior to joining the trial, with agreement to maintain that dose throughout the study. If medication does need to be changed whilst you are taking part, you would have to withdraw from the study (however we would not withdraw treatment). If you have any concerns regarding this requirement please do not hesitate to discuss this with us and/or your general practitioner.

To summarise, if you and your child decide to take part in this study, you will be helped to work with your child to manage his/her anxiety problems. This will either begin immediately or after a three-month wait. We will ask you and your child standard questions to find out how you both are before treatment begins and on two subsequent occasions. All information collected in this study is treated as confidential and nothing will be divulged to any other party (the exception being, if we learn that you or your child is at risk of harm). Our intention is to publish the results of this study in a medical journal. When we do this, no personal information will be given and the findings will be reported as anonymous summary statistics. If we quote anything that has been said by participants in the study, these will be anonymous and will not be traceable to a particular individual. If you would like a report of the findings of our study, we will be happy to provide it.

We anticipate that the children and parents who participate in this study will benefit considerably. However, there will be a review assessment of each mother and child at the final assessment, and if further treatment is judged to be necessary, we will ensure that this is provided.

This study was given a favourable ethical opinion for conduct by both the University of Reading Research Ethics Committee and the Berkshire Research Ethics Committee. Everyone working on this study has been through the formal Criminal Records Bureau Disclosure process and has been approved by the School of Psychology of the University of Reading to work with children.

If you have any questions or concerns about this study, now or at any time in the future, please do ask one of us.

Yours sincerely

Lucy Willetts	Dr Sue Cruddace	Professor Peter Cooper
Clinical Director	Trial Manager	Research Director

Berkshire Research Ethics reference number: 07/H0505/156- 157-176
University of Reading Ethics reference number: 07/48-49-50
Version 1.6 (12.08.08)

Berkshire Healthcare NHS
NHS Foundation Trust

Study Centre Address:
School of Psychology, University of Reading , Whiteknights, PO Box 238 , Reading RG6 6AL

Clinical Research Team:

Clinical Director: Dr Lucy Willetts (Tel: 0118 378 6297); l.e.willetts@reading.ac.uk
Trials Manager: Dr Rachel Gitau (Tel: 0118 378 4682); r.gitau@reading.ac.uk
Study Assessors: Sarah Cook; s.e.cook@reading.ac.uk. Amy Corcoran; a.corcoran@reading.ac.uk. Jenny Crosby; j.crosby@reading.ac.uk. Ray Percy; r.s.percy@reading.ac.uk. Sarah Shaw; sxs07ses@reading.ac.uk.
Trials Secretary: Brendan Lawrence; b.lawrence@reading.ac.uk
Research Director: Professor Peter Cooper (Tel: 0118 378 6617); p.j.cooper@reading.ac.uk

Patient identification number for this trial:

PARENT CONSENT FORM

Overcoming your Child's Fears and Worries

	Please initial box to show agreement.
1. I confirm that I have read and understand the information sheet dated 6.2.08 (version 1.5) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2. I understand that my and my child's participation is voluntary and that we are free to withdraw at any time, without giving a reason, without my medical care or legal rights being affected.	
3. I understand that any relevant section of our medical notes and data collected during the study, may be looked at by responsible individuals from The University of Reading or the NHS Trust, where it is relevant to our taking part in this research. I give permission for these individuals to have access to my records.	
4. I agree to our GP(s) being informed of this study	
5. I agree to my child's teacher being informed of their participation in this treatment study, and being contacted to provide information.	
6. I agree to audio and video-recordings being made during the course of the study. I understand that the audio and video tapes will be heard and seen only by members of the research team; and they will be destroyed at the end of the research study.	
7. I agree to anonymised quotations being used in research reports.	
8. I agree to take part in this study.	

Berkshire Research Ethics reference number: 07/H0505/156- 157-176
University of Reading Ethics reference number: 07/48-49-50
Version 1.6 (12.08.08)

Name of child: _____

Name of parent/guardian: _____

Parent/guardian signature: _____

Date: _____

Name of person taking consent: _____

Date: _____

Signature: _____

When completed, 1 for parent; 1 for researcher site file; 1 (original) in medical notes

Berkshire Healthcare NHS
NHS Foundation Trust

Study Centre Address:
School of Psychology, University of Reading , Whiteknights, PO Box 238 , Reading RG6 6AL

Clinical Research Team:

Clinical Director: Dr Lucy Willetts (Tel: 0118 378 6297); l.e.willetts@reading.ac.uk
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Study Assessors: Sarah Cook; s.e.cook@reading.ac.uk. Amy Corcoran; a.corcoran@reading.ac.uk. Jenny Crosby; j.crosby@reading.ac.uk. Ray Percy; r.s.percy@reading.ac.uk. Rebecca O'Grady; r.r.ogrady@reading.ac.uk .
Trials Secretary: Brendan Lawrence; b.lawrence@reading.ac.uk
Research Director: Professor Peter Cooper (Tel: 0118 378 6617); p.j.cooper@reading.ac.uk

INFORMATION SHEET FOR CHILDREN

Overcoming your Child's Fears and Worries

You have come to our clinic for help with some problems you have been having. At this clinic we help children with these problems and we are going to do everything we can to help you.

As well as giving you some help, we are inviting you and your mum or dad to take part in a study we are doing. This study is to help us find better ways of helping children. In the study we will do two things. First, we will be working with your mum or dad to help them to help you with your anxiety problems. We will either do this now or there will be a short wait before this starts.

Second, we will ask the children and their mums or dads lots of questions about how they are feeling. We ask these questions before treatment begins, and then again every few months. We also would like to tape record the treatment sessions (so that we can check that all the children are receiving the same sort of help) and make some video-tapes of you and your mum or dad doing some different activities together. If you don't mind we will also use a small machine which can tell us how much your heart is beating when you do these tasks.

We would like you to help us by taking part in our study. You do not have to do this. If you and your mum or dad don't want to take part, you will still receive the usual help that we give children. Also, if you do take part and then change your mind, this won't matter at all. You won't have to give us a reason, and we will still help you with your problems.

Everything you tell us in the clinic and anything you tell us as part of our study is treated as a secret; nobody other than us will ever know what you have told us. If we use anything you have said when we are telling people about our study, we will make sure nobody can tell who has said it. (The only time we would not be able to keep a secret is if you told us that you or someone else was at risk of real danger. In this situation we would have to speak to another adult - like your mum or your family doctor).

Before any research is allowed to happen, it has to be checked by a group of people called an Ethics Committee. They make sure that the research is OK to do. This study has been checked by the Reading University Committee and the Berkshire NHS Committee, and they were happy for it to go ahead.

If you have any questions about our study, either now or later, please do ask us. You have a right to know everything and we will be happy to tell you everything.

Yours sincerely,

Dr Lucy Willetts	Dr Sue Cruddace	Professor Peter Cooper
Clinical Director	Trial Manager	Research Director

Berkshire Research Ethics reference number: 07/H0505/156- 157-176
University of Reading Ethics reference number: 07/48-49-50
Version 1.3 (24.11.07)

Berkshire Healthcare NHS
NHS Foundation Trust

School of Psychology
University of Reading
Whiteknights
PO Box 238
Reading RG6 6AL
UK

CONSENT FORM FOR CHILDREN
(To be completed by the child and his/her guardian)

Overcoming your Child's Fears and Worries

Please circle all you agree with:

Have you read (or had read to you) the information about this project?	**YES/ NO**
Has somebody else explained this project to you?	**YES/ NO**
Do you understand what this project is about?	**YES/ NO**
Have you asked all the questions you want?	**YES/ NO**
Have you had your questions answered in a way you understand?	**YES/ NO**
Do you understand it's OK to stop taking part at any time?	**YES/ NO**
Are you happy to take part?	**YES/ NO**

If any answers are 'no' or you **don't** want to take part, **don't** sign your name!

If you **do** want to take part, please write your name and today's date
Your name _____
Date _____

Your parent or guardian must write his/her name here too if s/he is happy for you to do the project
Print name _____
Sign _____
Date _____

The person who explained this project to you needs to sign too:
Print name _____
Sign _____
Date _____

Berkshire Child Anxiety Clinic
University of Reading

Appendix D: Documents Granting Ethical Approval

NHS
National Research Ethics Service
Berkshire Research Ethics Committee
Building L27
University of Reading
London Road
Reading
RG1 5AQ

Telephone: 0118 918 0556
Facsimile: 0118 918 0559

10 December 2007

Professor Peter Cooper
Professor of Psychopathology
University of Reading
School of Psychology
University of Reading
Reading, Berkshire
RG6 6AL

Dear Professor Cooper

Full title of study: **Treatment of child anxiety: Predictors and Outcomes of Treatment. Addendum to REC applications: 07/H0505/156; 07/H0505/157**
REC reference number: **07/H0505/176**

Thank you for your letter of 03 December 2007, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

Ethical review of research sites

The favourable opinion applies to the research sites listed on the attached form.

Conditions of approval

The favourable opinion is given provided that you comply with the conditions set out in the attached document. You are advised to study the conditions carefully.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	*Version*	*Date*
Application	1	04 October 2007
Investigator CV		02 October 2007
Protocol	1.1	02 October 2007
Covering Letter		04 October 2007
Summary/Synopsis	1.1	02 October 2007

Letter from Sponsor		04 October 2007
Interview Schedules/Topic Guides	1	01 August 2007
Interview Schedules/Topic Guides	1.1	01 October 2007
Questionnaire: Non-validated - Demographic Information	1.1	01 October 2007
Questionnaire: Validated - DASS21T	1.1	01 October 2007
Questionnaire: Validated - Assess parental over-involvement	1.1	01 October 2007
Questionnaire: Validated - Assess anxious thinking styles	1.1	01 October 2007
Questionnaire: Validated - Ambiguous scenarios - parent self report	1.1	01 October 2007
Questionnaire: Validated - Ambiguous scenarios - parent report on child	1.1	01 October 2007
Questionnaire: Validated - Spence Children's Anxiety Scale	1.1	01 October 2007
Questionnaire: Validated - Spence Children's Anxiety Scale- Parent report	1.1	01 October 2007
Questionnaire: Validated - Mattick Social Phobia Scale	1.1	01 October 2007
Questionnaire: Validated - Mattick Social Interaction Assessment scale	1.1	01 October 2007
Questionnaire: Child-friendly EQ-5D measure of outcome - child report	1.1	01 October 2007
Questionnaire: Child-friendly EQ-5D measure of outcome - parent report	1.1	01 October 2007
Questionnaire: Health Utilities Index Mark 2	1.1	01 October 2007
Participant Information Sheet: For ref: 07/H0505/156 - Children	1.3	24 November 2007
Participant Information Sheet: For ref: 07/H0505/156 - Parent/Guardian	1.3	24 November 2007
Participant Information Sheet: Clinical Participants Mothers - Genetic Study	1.3	24 November 2007
Participant Information Sheet: Clinical Participants - Fathers	1.3	24 November 2007
Participant Information Sheet: Non-clinical Participants - Parents	1.3	24 November 2007
Participant Information Sheet: Non-clinical Participants - Head teacher	1.3	24 November 2007
Participant Information Sheet: For ref: 07/H0505/157 - Children	1.3	24 November 2007
Participant Information Sheet: For ref: 07/H0505/157 - Parent/Guardian	1.3	24 November 2007
Participant Information Sheet: Children's	1.3	24 November 2007
Participant Consent Form: Assent form for children	1.3	
Participant Consent Form: Non-clinical Participants	1.3	24 November 2007
Participant Consent Form: For ref: 07/H0505/157 Assent form children	1.3	24 November 2007
Participant Consent Form: For ref: 07/H0505/157	1.3	24 November 2007
Participant Consent Form: For ref: 07/H0505/156 Assent form children	1.3	
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Participant Consent Form: Clinical Participants - Fathers including DNA page	1.3	24 November 2007
Response to Request for Further Information		03 December 2007
Statement re: Insurance/ Indemnity		04 October 2007
Letter from funder		23 May 2007
Email re: funding		23 April 2007
Referee's reports		14 March 2007
Peer review - MRC Clinical Scientist Fellowship	2007/2008	

R&D approval

All researchers and research collaborators who will be participating in the research at NHS sites should apply for R&D approval from the relevant care organisation, if they have not yet done so.

R&D approval is required, whether or not the study is exempt from SSA. You should advise researchers and local collaborators accordingly.

Guidance on applying for R&D approval is available from http://www.rdforum.nhs.uk/rdform.htm.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Website > After Review

Here you will find links to the following

a) Providing feedback. You are invited to give your view of the service that you have received from the National Research Ethics Service on the application procedure. If you wish to make your views known please use the feedback form available on the website.
b) Progress Reports. Please refer to the attached Standard conditions of approval by Research Ethics Committees.
c) Safety Reports. Please refer to the attached Standard conditions of approval by Research Ethics Committees.
d) Amendments. Please refer to the attached Standard conditions of approval by Research Ethics Committees.
e) End of Study/Project. Please refer to the attached Standard conditions of approval by Research Ethics Committees.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nationalres.org.uk .

07/H0505/176	**Please quote this number on all correspondence**

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

Yours sincerely

[redacted]

Professor Nigel Wellman
Chair

Email: scsha.berksrec@nhs.net

Enclosures: *Standard approval conditions*
Site approval form

Copy to: Dr Mike Proven, University of Reading

N:\Letters\07 REC Numbers\07.H0505.171 - 180\07.H0505.172 - SL14 - 10.12.07.doc

SL38 Progress report reminder
Version 4.0, April 2009

NHS
National Research Ethics Service
Berkshire Research Ethics Committee

Building L27
University of Reading
London Road
Reading
RG1 5AQ

Tel: 0118 918 0550 / 0551
Fax: 0118 918 0559

26 November 2009

Professor Peter Cooper
Professor of Psychopathology
University of Reading
School of Psychology
University of Reading
Reading, Berkshire
RG6 6AL

Dear Professor Cooper

Full title of study: **Guided Self-help Treatment of Child Anxiety Disorder: A Randomised Controlled Trial**

REC reference number: **07/H0505/157**

The REC gave a favourable ethical opinion to this study on 16 November 2007.

It is a condition of approval by the Research Ethics Committee that the Chief Investigator should submit a progress report for the study 12 months after the date on which the favourable opinion was given, and then annually thereafter. To date, the Committee has not yet received the annual progress report for the study, which was due on 16 November 2009. It would be appreciated if you could complete and submit the report by no later than 26 December 2009.

Guidance on progress reports and a copy of the standard NRES progress report form is available at http://www.nres.npsa.nhs.uk/applications/after-ethical-review/progress-reports/

There is also guidance on declaring the end of the study at
http://www.nres.npsa.nhs.uk/applications/after-ethical-review/endofproject/
If the study has finished please just send a copy of the end of study: you do not need to send in a progress report aswell.

Failure to submit progress reports may lead to a suspension of the favourable ethical opinion for the study.

REC reference number: 07/H0505/157 **Please quote this number on all correspondence**

Yours sincerely

[redacted]

Ms Lavenda Lee
Assistant Co-ordinator
Email: scsha.berksrec@nhs.net

Copy to: Dr Mike Proven, University of Reading

N:\Letters\07 REC Numbers\07.H0505.151 - 160\07.H0505.157 - SL38 - Remind pro report - 26.11.09.doc

This Research Ethics Committee is an advisory committee to South Central Strategic Health Authority

The National Research Ethics Service (NRES) represents the NRES Directorate within the National Patient Safety Agency and Research Ethics Committees in England

University of Reading

Director of Quality Support
David Stannard BA

Academic Services Directorate
Whiteknights, PO Box 217
Reading RG6 6AH

phone +44 (0)118 378 6273
fax +44 (0)118 378 6248
email d.a.stannard@reading.ac.uk

Professor P.J.Cooper
School of Psychology and Clinical Language Sciences

24 January 2008

Dear Professor Cooper

Research Ethics Committee
Project 07/48: Treatment of Child Anxiety Disorder in the Context of Maternal Anxiety: A Randomised Controlled Trial

Project 07/49: Guided Self-help Treatment of Child Anxiety Disorder: A Randomised Controlled Trial

Project 07/50: Treatment of Child Anxiety: Predictors and Outcomes of Treatment

Thank you for your letter of 18 January 2008 regarding the above project, providing appropriately revised information. As indicated in my letter of 14 January 2008, the Chair is happy for the project to proceed.

Yours sincerely

[redacted]

D.A.Stannard
Director of Quality Support

cc Professor E.J.Cooke, School of Law
Dr J.A.Ellis, School of Psychology and Clinical Language Sciences
Ms V.Williams, School of Health and Social Care

1926-2006 80 years University of Reading

The Queen's Anniversary Prizes 2005

NHS
National Research Ethics Service
Berkshire Research Ethics Committee
Building L27
University of Reading
London Road
Reading
RG1 5AQ

Telephone: 0118 918 0556
Facsimile: 0118 918 0559

10 December 2007

Professor Peter Cooper
Professor of Psychopathology
University of Reading
School of Psychology
University of Reading
Reading, Berkshire
RG6 6AL

Dear Professor Cooper

Full title of study: **Treatment of child anxiety: Predictors and Outcomes of Treatment. Addendum to REC applications: 07/H0505/156; 07/H0505/157**

REC reference number: **07/H0505/176**

Thank you for your letter of 03 December 2007, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

Ethical review of research sites

The favourable opinion applies to the research sites listed on the attached form.

Conditions of approval

The favourable opinion is given provided that you comply with the conditions set out in the attached document. You are advised to study the conditions carefully.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

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Participant Consent Form: For ref: 07/H0505/157	1.3	24 November 2007
Participant Consent Form: For ref: 07/H0505/156 Assent form children	1.3	
Participant Consent Form: For ref: 07/H0505/156	1.3	
Participant Consent Form: Clinical Participants Mothers - Genetic Study	1.3	24 November 2007
Participant Consent Form: Clinical Participants - Fathers including DNA page	1.3	24 November 2007
Response to Request for Further Information		03 December 2007
Statement re: Insurance/ Indemnity		04 October 2007
Letter from funder		23 May 2007
Email re: funding		23 April 2007
Referee's reports		14 March 2007
Peer review - MRC Clinical Scientist Fellowship	2007/2008	

R&D approval

All researchers and research collaborators who will be participating in the research at NHS sites should apply for R&D approval from the relevant care organisation, if they have not yet done so.

R&D approval is required, whether or not the study is exempt from SSA. You should advise researchers and local collaborators accordingly.

Guidance on applying for R&D approval is available from http://www.rdforum.nhs.uk/rdform.htm.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Website > After Review

Here you will find links to the following

a) Providing feedback. You are invited to give your view of the service that you have received from the National Research Ethics Service on the application procedure. If you wish to make your views known please use the feedback form available on the website.
b) Progress Reports. Please refer to the attached Standard conditions of approval by Research Ethics Committees.
c) Safety Reports. Please refer to the attached Standard conditions of approval by Research Ethics Committees.
d) Amendments. Please refer to the attached Standard conditions of approval by Research Ethics Committees.
e) End of Study/Project. Please refer to the attached Standard conditions of approval by Research Ethics Committees.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nationalres.org.uk .

07/H0505/176	**Please quote this number on all correspondence**

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

Yours sincerely

[redacted]

Professor Nigel Wellman
Chair

Email: scsha.berksrec@nhs.net

Enclosures: *Standard approval conditions*
Site approval form

Copy to: Dr Mike Proven, University of Reading

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This Research Ethics Committee is an advisory committee to South Central Strategic Health Authority

The National Research Ethics Service (NRES) represents the NRES Directorate within the National Patient Safety Agency and Research Ethics Committees in England

Appendix E: Questionnaire measures

Participant number:
Assessment:
Date:

DASS21T: Parent Self-Report

Instructions: Please read each statement and put a mark in the circle which indicates how much the statement applies to you **generally**. There are no right or wrong answers. Do not spend too much time on any statement.

0 = Does not apply to me at all **1 = Applies to me to some degree or some of the time** **2 = Applies to me to a considerable degree or a good part of the time** **3 = Applies to me very much or most of the time**

	0	1	2	3
1. I find it hard to wind down	O	O	O	O
2. I tend to suffer from dryness of the mouth	O	O	O	O
3. I have periods when I can't seem to experience any positive feeling at all	O	O	O	O
4. I tend to experience breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)	O	O	O	O
5. I have periods when I find it difficult to work up the initiative to do things	O	O	O	O
6. I seem to over-react to situations	O	O	O	O
7. I have a tendency to experience trembling (eg, in the hands)	O	O	O	O
8. I feel that I use a lot of nervous energy	O	O	O	O
9. I am inclined to worry about situations in which I might panic and make a fool of myself	O	O	O	O
10. I feel that I have nothing to look forward to	O	O	O	O
11. I am prone to getting agitated	O	O	O	O
12. I have periods when I find it difficult to relax	O	O	O	O
13. I tend to feel down-hearted and blue	O	O	O	O
14. I am intolerant of anything that keeps me from getting on with what I am doing	O	O	O	O
15. There are times when I feel close to panic	O	O	O	O
16. I find it hard to become enthusiastic about anything	O	O	O	O
17. I am liable to feeling I'm not worth much as a person	O	O	O	O
18. I feel that I am rather touchy	O	O	O	O
19. There are times when I am aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)	O	O	O	O
20. I am prone to becoming scared without any good reason	O	O	O	O
21. I have a tendency to feel that life is meaningless	O	O	O	O

Participant number:
Assessment:
Date:

SDQ-P: Parent Report on Child

Instructions: For each item, please mark the box for **Not True, Somewhat True or Certainly True.** It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of your child's behaviour over the last six months or this school year.

Please give your answers on the basis of **how things have been for your child over the last 6 months.**	Not True	Somewhat True	Certainly True
	0	1	2
1. Considerate of other people's feelings	○	○	○
2. Restless, overactive, cannot stay still for long	○	○	○
3. Often complains of headaches, stomach-aches or sickness	○	○	○
4. Shares readily with other children (treats, toys, pencils etc)	○	○	○
5. Often has temper tantrums or hot tempers	○	○	○
6. Rather solitary, tends to play alone	○	○	○
7. Generally obedient, usually does what adults request	○	○	○
8. Many worries, often seems worried	○	○	○
9. Helpful if someone is hurt, upset or feeling ill	○	○	○
10. Constantly fidgeting or squirming	○	○	○
11. Has at least one good friend	○	○	○
12. Often fights with other children or bullies them	○	○	○
13. Often unhappy, down-hearted or tearful	○	○	○
14. Generally liked by other children	○	○	○
15. Easily distracted, concentration wanders	○	○	○
16. Nervous or clingy in new situations, easily loses confidence	○	○	○
17. Kind to younger children	○	○	○
18. Often lies or cheats	○	○	○
19. Picked on or bullied by other children	○	○	○
20. Often volunteers to help others (parents, teachers, other children)	○	○	○
21. Thinks things out before acting	○	○	○
22. Steal from home, school or elsewhere	○	○	○
23. Gets on better with adults than with other children	○	○	○
24. Many fears, easily scared	○	○	○
25. Sees tasks through to the end, good attention span	○	○	○

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SPENCE CHILDREN'S ANXIETY SCALE

Your Name: _____ **Date:** _____

PLEASE PUT A CIRCLE AROUND THE WORD THAT SHOWS HOW OFTEN EACH OF THESE THINGS HAPPEN TO YOU. THERE ARE NO RIGHT OR WRONG ANSWERS.

1.	I worry about things	Never	Sometimes	Often	Always
2.	I am scared of the dark	Never	Sometimes	Often	Always
3.	When I have a problem, I get a funny feeling in my stomach	Never	Sometimes	Often	Always
4.	I feel afraid	Never	Sometimes	Often	Always
5.	I would feel afraid of being on my own at home	Never	Sometimes	Often	Always
6.	I feel scared when I have to take a test	Never	Sometimes	Often	Always
7.	I feel afraid if I have to use public toilets or bathrooms	Never	Sometimes	Often	Always
8.	I worry about being away from my parents	Never	Sometimes	Often	Always
9.	I feel afraid that I will make a fool of myself in front of people	Never	Sometimes	Often	Always
10.	I worry that I will do badly at my school work	Never	Sometimes	Often	Always
11.	I am popular amongst other kids my own age	Never	Sometimes	Often	Always
12.	I worry that something awful will happen to someone in my family	Never	Sometimes	Often	Always
13.	I suddenly feel as if I can't breathe when there is no reason for this	Never	Sometimes	Often	Always
14.	I have to keep checking that I have done things right (like the switch is off, or the door is locked)	Never	Sometimes	Often	Always
15.	I feel scared if I have to sleep on my own	Never	Sometimes	Often	Always
16.	I have trouble going to school in the mornings because I feel nervous or afraid	Never	Sometimes	Often	Always
17.	I am good at sports	Never	Sometimes	Often	Always
18.	I am scared of dogs	Never	Sometimes	Often	Always
19.	I can't seem to get bad or silly thoughts out of my head	Never	Sometimes	Often	Always
20.	When I have a problem, my heart beats really fast	Never	Sometimes	Often	Always
21.	I suddenly start to tremble or shake when there is no reason for this	Never	Sometimes	Often	Always
22.	I worry that something bad will happen to me	Never	Sometimes	Often	Always
23.	I am scared of going to the doctors or dentists	Never	Sometimes	Often	Always
24.	When I have a problem, I feel shaky	Never	Sometimes	Often	Always
25.	I am scared of being in high places or lifts (elevators)	Never	Sometimes	Often	Always
26.	I am a good person	Never	Sometimes	Often	Always
27.	I have to think of special thoughts to stop bad things from happening (like numbers or words)	Never	Sometimes	Often	Always
28	I feel scared if I have to travel in the car, or on a Bus or a train	Never	Sometimes	Often	Always
29.	I worry what other people think of me	Never	Sometimes	Often	Always
30.	I am afraid of being in crowded places (like shopping centres, the movies, buses, busy playgrounds)	Never	Sometimes	Often	Always
31.	I feel happy	Never	Sometimes	Often	Always
32.	All of a sudden I feel really scared for no reason at all	Never	Sometimes	Often	Always
33.	I am scared of insects or spiders	Never	Sometimes	Often	Always
34.	I suddenly become dizzy or faint when there is no reason for this	Never	Sometimes	Often	Always
35.	I feel afraid if I have to talk in front of my class	Never	Sometimes	Often	Always
36.	My heart suddenly starts to beat too quickly for no reason	Never	Sometimes	Often	Always
37.	I worry that I will suddenly get a scared feeling when there is nothing to be afraid of	Never	Sometimes	Often	Always
38.	I like myself	Never	Sometimes	Often	Always
39.	I am afraid of being in small closed places, like tunnels or small rooms	Never	Sometimes	Often	Always
40.	I have to do some things over and over again (like washing my hands, cleaning or putting things in a certain order)	Never	Sometimes	Often	Always
41.	I get bothered by bad or silly thoughts or pictures in my mind	Never	Sometimes	Often	Always
42.	I have to do some things in just the right way to stop bad things happening	Never	Sometimes	Often	Always
43.	I am proud of my school work	Never	Sometimes	Often	Always
44.	I would feel scared if I had to stay away from home overnight	Never	Sometimes	Often	Always
45.	Is there something else that you are really afraid of?	YES	NO		
	Please write down what it is_____				
	_____				
	_____				
	How often are you afraid of this thing?	Never	Sometimes	Often	Always

Appendix F: Pre-task Rating Scale and Coding Scheme Examples

Participant I.D. Number:
Date:
Assessment:

Parent Pre Task Ratings – Tangram Task

Please answer some questions about what you think about the tangram task that your child is now going to do. Please circle **one number** for each item to show what you think. You don't need to think for too long before choosing a number – just give the number that first seems right to you. Thank you.

	Not at all										Very, Very much
1) How scared do you think **your child** will feel about doing this task?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
2) How anxious do you think **you** will feel when your child is doing the task?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
3) How much do you think **you** will be able to make a difference to how your child feels about doing this task?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
4) Do you think **your child** will do well at this task?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
5) How much do you think **you** will be able to make a difference to how well your child does this task?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
6) Do you think **your child** can do much about how this task goes? (How in control will your child be?)	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
7) Do you think **your child** will need much help to do this task?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
If you had to do this task:											
8) How scared would **you** feel?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
9) Do you think **you** could do this task well?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
10) Do you think **you** could do much about how this task goes? (How in control would you be?)	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

Coding Scheme Example

Maternal Dimensions -Warmth scale (1-5)

1. The mother is not verbally or physically warm throughout the interval. Her tone of voice is flat/monotone or criticising/ hostile. She may have one very brief episode of warmth (e.g. smiles briefly once) but this is overshadowed by constant flat tone and displays of a lack of affection/ disgust. She very rarely smiles.
2. The mother is warm in some small ways. She **may occasionally have a warm tone of voice** and **may express subtle non-verbal warmth** (e.g. smiling/laughing) **on 1-2 occasions**. She is unlikely to make a verbally warm statement or express verbal affection. She is unlikely to touch the child in a warm way if physical contact does occur. Alternatively, the mother may be moderately warm but have made one critical or hostile statement.
3. The mother is moderately warm. She **may maintain a warm tone throughout** but display brief or **limited signs of other warmth**. Alternatively, **she sometimes uses a warm tone of voice** and **sometimes shows other signs of warmth**, OR she may be a 4 on warmth but makes 1 non-warm/critical/hostile statement.
4. The mother is warm. **She may have a warm tone of voice throughout**, **and in addition shows *frequent* other warm behaviour** e.g. at least one warm statement, laughing with the child, smiling, eye contact. There may be brief moments where she lacks warmth, but she has an overall warm demeanour. Alternatively, she may be a 5 on warmth but make 1 non-warm/ critical/ hostile statement OR she may only sometimes use a warm tone of voice but shows lots of other signs of warmth (several warm statements).
5. The mother sets a general climate of warmth throughout the interval both verbally ***[praise and expressed affection]*** and nonverbally. She may make **verbally warm statements** and **she smiles and has a warm tone of voice** for the majority of the interval. **She may make frequent warm utterances of acknowledgement**. If she does touch the child, she does so in a very warm way, although physical touching of the child is not necessary for a score of 5. (N.B. A mother cannot score 5 for warmth if she has a flat/dull tone of voice.)

Appendix G: Tests of normality

	Completers ***z skewness/ Shapiro-Wilks***	**Drop outs** ***z skewness/ Shapiro-Wilks***
DASS anxiety	2.20, $p < .05/(29) = .743$, $p < .01$	4.67 $p < .001/(23) = .833$, $p < .001$
DASS depression	2.65, $p < .01/(29) = .825$, $p < .01$	2.24, $p < .01/(23) = .800$, $p < .001$
Parental overprotection	3.28 $p < .01/(31) = .674$, $p < .001$	5.23 $p < .001/(31) = .636$, $p < .001$
Parental criticism	3.27 $p < .01/(31) = .519$, $p < .01$	2.19 $p < .01/(31) = .571$, $p < .001$
Parental promotion of avoidance	5.99 $p < .001/(31) = .702$, $p < .01$	4.86 $p < .001/(31) = .694$, $p < .001$
Parental warmth and encouragement	0.71 $p > .01/(31) = .935$, $p > .05$	3.20 $p < .01/(31) = .890$, $p < .01$
CSR for primary anxiety diagnosis	0.34 $p > .01/(31) = .886$, $p < .01$	0.42 $p > .01/(31) = .854$, $p < .01$