

**Adolescent anxiety: The effectiveness of psychological interventions and the role of parental discourse style in the development of adolescent anxiety disorders.**

**Jessica Karalus**

**D. Clin.Psy. thesis (Volume 1), 2015  
University College London**

# **UCL Doctorate in Clinical Psychology**

## Thesis Declaration Form

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

Signature:

Name: Jessica Karalus

Date: 5<sup>th</sup> April 2016

## **Overview**

This thesis is concerned with anxiety disorders in adolescents: their treatment and development. Volume one consists of three parts:

Part one is a narrative literature review of studies examining psychological treatments designed, or developmentally adapted, exclusively for use with adolescents with anxiety disorders. Their effectiveness and the state of the evidence base are examined and directions and suggestions for future research are made.

Part two is an empirical paper investigating the role of parental discourse styles in the development of anxiety disorders in adolescents with both non-anxious and child comparison groups. The results are discussed in relation to developmental and clinical implications and recommendations made for future research.

Part three is a critical appraisal which discusses the methodological and conceptual issues associated with the parental discourse coding scheme and the narrative task used in the empirical paper. Limitations relating to the study sample, and the positive and negative aspects of using pre-collected data, are considered.

## Table of Contents

|   |     |
|---|-----|
| Acknowledgements .....  | 5   |
| Part One: Literature Review   |     |
| “The effectiveness of psychological therapies for anxiety disorders in adolescents:<br>A systematic review” ..... | 6   |
| Abstract .....  | 7   |
| Introduction .....  | 8   |
| Method .....  | 13  |
| Results .....   | 17  |
| Discussion.....   | 45  |
| References .....  | 51  |
| Part Two: Empirical Paper   |     |
| “Parental discourse style and adolescent anxiety: The role of anxiety disorder and<br>age.” .....                 | 65  |
| Abstract .....  | 66  |
| Introduction .....  | 67  |
| Method .....  | 74  |
| Results .....   | 86  |
| Discussion.....   | 94  |
| References .....  | 100 |
| Part Three: Critical appraisal  |     |
| Introduction .....  | 112 |
| Maternal Discourse Style Coding Scheme .....  | 112 |
| Parent-offspring discussion task .....  | 116 |
| Sampling issues .....   | 118 |
| Using pre-collected data from a randomised controlled trial .....   | 121 |
| Conclusion .....  | 123 |
| References .....  | 124 |
| Appendices .....  | 126 |

## List of Tables and Figures

### Part One:

|  |    |
|--|----|
| Figure 1: <i>PRISMA</i> diagram of studies included and excluded ..... | 16 |
| Table 1: Summary of design features .....                              | 21 |
| Table 2: Summary of interventions and key outcomes .....               | 23 |

### Part Two:

|  |    |
|--|----|
| Table 1: Characteristics .....   | 77 |
| Table 2: Codes from the Maternal Discourse Style Coding Scheme – Anxiety Version (MDSCS-A).....  | 84 |
| Table 3: Inter-rater reliability for discussion task coding .....                                | 85 |
| Table 4: Descriptive statistics for discourse styles during the discussion across groups .....   | 89 |
| Table 5: Bootstrapped Pearson’s Correlations between discourse styles .....                      | 90 |
| Table 6: Bootstrapped t-tests between anxious and non-anxious adolescents’ discourse style ..... | 92 |
| Figure 1: Anxiety disorder status x age group interaction for Attribution of Positiveness .....  | 93 |

## **Acknowledgements**

Firstly I would like to thank my supervisors Polly Waite, Stephen Butler and Cathy Creswell for their excellent guidance, knowledge, patience and support throughout this thesis. Your contributions have been invaluable and very much appreciated. Thanks also to all the families who kindly took part in the research.

My gratitude goes to my friends and colleagues from the Winnicott Research Unit and Berkshire Child Anxiety Clinic. You have been an unending source of advice, encouragement, humour, strength and friendship. Special thanks go to Jenny Draisey (for coding and statistics advice), Sarah Cook (for encouragement and practical support) and Rebecca O'Grady (for monthly cake deliveries).

Next, and very importantly, I must thank all my family for standing by, and putting up with, me throughout this long process. My daughter, Lissadell Breinholt, you have been my star and inspiration. Thank you for being so good. My dad, Jan Karalus, thank you for providing constant practical help and support.

Lastly, and above all else, this thesis is for my darling mum, Valerie Karalus (1939-2013). You taught me from day one and without you none of this would have been possible.

**PART ONE: Literature Review**

**The effectiveness of psychological therapies for anxiety disorders in  
adolescents: A systematic review**

## Abstract

**Aims:** To review the effectiveness, and current evidence base, for the psychological treatment of anxiety disorders in adolescents specifically and identify directions for future research.

**Method:** A systematic search, using PsycINFO and MEDLINE, was performed. Studies were included if participants were adolescents (aged 11 to 18 years) receiving psychological treatment for a clinically significant anxiety disorder and there was a comparison or control condition.

**Results:** 14 studies were reviewed and all trialled variants of cognitive behaviour therapy (CBT). The majority of studies examined treatments for social anxiety ( $n = 8$ ), followed by generalised anxiety ( $n = 4$ ) and panic disorder ( $n = 2$ ). Study samples were generally small. The findings provide preliminary evidence that CBT interventions for anxiety, designed specifically for use with adolescents, have good outcomes that are in line with those of previous meta-analyses (Bennet et al., 2013; Reynolds et al., 2012) and reviews (Kendall et al., 2015).

**Conclusions:** An emerging evidence base suggests the effectiveness of CBT interventions designed specifically for the treatment of anxiety disorders in adolescents. Further research is required with larger samples, longer follow-up periods and participants from more socioeconomically, and ethnically, diverse backgrounds. No studies of disorder specific interventions for generalised anxiety, specific phobias, separation anxiety or selective mutism in adolescents have been conducted and there is a lack of research into other types of psychological therapies.



## **Introduction**

### **Anxiety disorders in adolescents**

Anxiety disorders are common among adolescents with approximately 5% of British 12-15 year olds meeting diagnostic criteria for an anxiety disorder (Ford, Goodman & Meltzer, 2003). Their occurrence increases throughout adolescence (Copeland, Angold, Shanahan & Costello, 2014) with social anxiety disorder and panic disorder often presenting for the first time during this period (Masi, Favilla, Mucci & Millipiedi, 2000; Puleo, Conner, Benjamin et al, 2011).

The characteristics of anxiety disorders in adolescents differ from those occurring in children. Separation anxiety declines in adolescence while social anxiety increases (Cohen et al, 1993; Compton, Nelson & March, 2000; Copeland et al., 2014; Costello, Mustillo, Erkanli, Keeler & Angold, 2003; Esbjørn, Hoeyr, Dyrborg, Leth & Kendall, 2010; Kendall et al. 2010; Waite & Creswell, 2014). Panic disorder and agoraphobia (Costello et al., 2003; Ford, Goodman & Meltzer, 2003) and generalised anxiety disorder in girls (Copeland et al., 2014; Costello et al., 2003) also increase. There is less comorbidity of anxiety disorder (Kendall et al., 2010) but greater co-morbidity of mood disorders and difficulties with school attendance (Francis, Last & Strauss, 1997; Waite & Creswell, 2014) and increased clinician rated severity (Kendall et al., 2010; Waite & Creswell, 2014). These differences are relevant as greater clinical severity, increased age and the presence of social anxiety disorder have been associated with poorer treatment outcomes (Waite & Creswell, 2014) and school refusal as a potential barrier to treatment (Albano, 1996).

## **Psychological treatments for anxiety disorders in young people**

It is well established that CBT can effectively treat anxiety disorders in children and young people with moderate effects and remission rates of 59% (e.g. James, James, Cowdrey, Soler & Choke, 2013; James, Soler & Weatherall, 2005; Ishikawa, Okajima, Matsuoka & Sakano, 2007; Reynolds, Wilson, Austin & Hooper, 2012). CBT is the dominant psychological treatment for anxiety disorders in young people (Bennet et al., 2013; Reynolds et al., 2012) with a recent meta-analysis failing to find a significant effect for non-CBT interventions (Reynolds et al., 2013). There are a growing number of evidence based treatments for young people with anxiety disorders; delivered in a range of formats i.e. bibliotherapy, cCBT, individual and group interventions (Creswell, Waite & Cooper, 2014). The role of treatment delivery has been assessed with mixed results. A Cochrane review (James et al., 2013) found no difference in outcome for CBT delivered in individual versus group formats while a meta-analysis (Reynolds et al., 2013) found individual psychotherapy and disorder-specific treatments to be more effective than generic treatments and group psychotherapy. Parental involvement in treatment has also been evaluated with meta-analyses indicating no difference in outcome for interventions with or without parental involvement (James et al., 2013; Manassis et al., 2014; Reynolds et al., 2012).

## **Psychological treatments for anxiety disorders in adolescence**

Research indicates a range of moderately effective interventions for anxiety disorders in young people. However, how the evidence base relates to adolescents remains unclear. CBT interventions have frequently been designed for children below 14 years of age (e.g. Barrett, Dadds & Rapee, 1996) and a lack of research

with anxious adolescents has been identified (Kendall, Hedtke & Aschenbrand, 2013). Most studies and reviews have been conducted with child only or mixed child and adolescent samples without looking at age effects (e.g. Walkup et al., 2008; James et al., 2013). Effect sizes or remission rates based on a broad age range may conceal age related heterogeneity with developmental factors, and differences between children and adolescents, potentially being overlooked.

In addition to the differing clinical characteristics of adolescents and children, adolescence is a distinct developmental stage (Feldman & Elliott, 1990; Lerner & Steinberg, 2009) with typical, normative, differences that may impact on treatment outcomes (Sauter, Heyne & Westenberg, 2009). Neural and cognitive changes occur (Blakemore, 2008; Weil, 2013), risk taking and desire for autonomy increase (Reynolds, Magidson, Mayes & Lejeuz, 2010), peers gain greater importance (Furman & Buhrmester, 1992; Gifford-Smith & Brownell, 2003) and affect during conflict intensifies (Laursen, Coy & Collins, 1998). Consequently, whether treatment effects apply equally to children and adolescents has been questioned (Hudson, 2005, Kendall & Peterman, 2015; Bennet et al., 2013) with authors speculating that increased need for autonomy may lead to poor engagement and compliance (Bennett et al., 2013). The value of parental involvement, as peers gain greater importance, has also been queried (Barmish & Kendall, 2005) although a meta-analysis (Manassis et al., 2014) found no interaction between parental involvement in CBT and age.

### **Research to date**

Ginsburg et al. (2011), in the child/adolescent anxiety multimodal (CAMS) trial, found younger age to be a predictor of remission from anxiety disorders with

adolescents responding less well than children. A number of reviews and meta-analyses have also considered age effects in the treatment of anxiety disorders but with mixed results. Hudson (2005) reviewed the evidence for the efficacy of CBT for the treatment of anxiety disorders in children and adolescence and concluded that there was preliminary evidence that older children had poorer treatment outcomes. Reynolds et al. (2012) evaluated age as a moderator of CBT and found a large effect size for CBT with adolescents (aged 13yrs+) and a small to medium effect sizes for children (under 13 years). In contrast, Bennett et al. (2013), in an individual data meta-analysis of CBT age effects in child and adolescent anxiety, found no interaction between age and the benefits of CBT. Therefore, at present, the role of age as a moderator of treatment effects, and consequently the relative benefits of psychological treatments for adolescents and children, remains unclear. Firm conclusions about the role of treatment predictors in adolescence, such as modes of treatment delivery, disorder specific vs generic treatments and parental involvement, also cannot be reached as recent reviews (e.g. Reynolds et al., 2012; James et al., 2013) have not evaluated how age interacts with these factors.

Most recently, a narrative review by Kendall and Peterman (2015) examined the efficacy of CBT for adolescents with anxiety disorders with outcomes from 24 combined child and adolescent studies and nine adolescent only studies considered. They concluded that CBT for adolescents had moderate to large effects, was superior to comparison/control conditions and that current literature did not indicate differences in outcomes attributable to age. This review provides the most comprehensive summary, to date, of the adolescent literature but lacks the benefits of a systematic and documented search strategy.

Adolescents with anxiety have been identified as both an under researched group (Kendall & Ollendick, 2005) and commonly receiving inadequate treatment provision (Elkins, McHugh, Santucci & Barlow, 2011). To date, no systematic literature review has specifically reviewed and evaluated the evidence base for psychological treatments of anxiety disorders in adolescents. Such a review is therefore pertinent and timely particularly as, although still an under researched area, there has been a growth in adolescent studies (e.g. Wuthrich, Rapee, Cunningham, Lyneham, Hudson, & Schniering, 2012; Ingul, Aune & Nordahl, 2014) since previous systematic reviews (e.g. Bennett et al., 2013; Reynolds et al., 2012) were conducted.

### **Rationale and aims of the current review**

The current review provides a systematic narrative synthesis of the research into the psychological treatment of anxiety disorders in adolescence. It focuses on interventions designed, or developmentally adapted, exclusively for use with adolescents and trialled with adolescent samples. Due to the limited and emerging nature of this evidence base, studies of all psychological interventions with a control/comparison conditions, are included rather than being limited to CBT and high quality randomised controlled trials. The review is therefore broader and more inclusive than previous reviews (Bennet et al., 2013; James et al., 2012; Kendall & Peterman, 2015; Reynolds et al., 2012) whilst being adolescent specific. It differs from the recent Kendall & Peterman (2015) review in that it employs a systematic search strategy, includes studies of all psychological interventions rather than solely CBT, excludes studies with mixed child and adolescent samples and provides a detailed narrative review of all included studies.

The review aims to:

- 1) Examine the evidence for the effectiveness of a range of psychological treatments for anxiety disorders in adolescent, where possible based on remission rates.
- 2) Establish the state of the existing research base and identify areas for future research in this under-researched area.

Consideration will also be given to mode of treatment delivery (group, individual, bibliotherapy and cCBT), generic versus disorder specific anxiety interventions, and the role of parental involvement in relation to outcome.

## **Method**

### **Inclusion criteria**

Studies were included if they met the following criteria:

- Participants had a primary diagnosis of an anxiety disorder (with or without co-morbid conditions). All diagnostic categories relating to anxiety disorders according to DSM-5 and ICD 10 were included.
- Randomised allocation of participants into a minimum of one psychological treatment condition and one comparison or control condition.
- All participants in the study were aged between 11 and 18 years of age at start of treatment.
- Treatment interventions were specifically designed to reduce symptoms of the primary anxiety disorder.

- 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 were published in peer-reviewed journals and in full text, from January 1990 onwards.
- Studies were published in English. Non-English papers were documented but not included in the review due to lack of resources for translation.

### **Exclusion criteria**

- Studies of PTSD and OCD as the primary disorder were excluded as these are no-longer classified as anxiety disorders according to DSM-5.
- Studies of adolescents with medical conditions (e.g. diabetes, asthma).
- Studies of psychological interventions developed specifically for people with learning disabilities or autism spectrum disorders.
- Prevention studies.

### **Preliminary search strategy**

Studies to be included in the review were identified via a variety of methods. The main computer search was conducted between January 1990 and October 2014 and then a supplementary computer search between January 2014 and June 2015. The Web of Science and the NHS Healthcare databases which incorporates results from MEDLINE, Psychinfo and EMBASE were used.

Search terms were devised with reference to those used in the Reynolds et al. (2012), and James et al.'s (2013), meta-analyses. In order to cater for variations in search terms, including differences in English and American spellings, truncations

and wild cards were utilised. The following anxiety related key terms were used: anxiety, anxious, phobi\*, “school refusal”, panic, mute, mutism, Agoraphobi\*. These terms were crossed with key terms relating to psychological treatment: treatment, therapy, psychotherapy, CBT, behaviour/ behaviour therapy, IPT and attachment and with key terms to identify studies using adolescents: chid\* or adolescen\* or school\* or p?ediatri\* or young or youth\*. These searches were limited to titles only as a title and abstract search was unfeasible. To ensure that childhood specific disorders were detected when an age search term was not included in the title two second layer searches were conducted, using the terms separation anxiety and selective mute and selective mutism crossed with the treatment terms. Reference lists in relevant reviews and all included studies were scanned to identify further studies of interest. A cited reference search was conducted to identify any additional pertinent studies.

### **Study Selection**

The author screened titles and abstracts followed by full papers. Abstracts were read and compared against the protocol inclusion/exclusion criteria. Full text articles were retrieved for studies that met the inclusion criteria or when reviewing the abstract alone was insufficient to determine eligibility. These were screened and included if they met the criteria. See Figure 1 for a flow chart summarizing the identification and selection process, based on guidelines from PRISMA (Moher, Liberati, Tetzlaff & Altman, 2009).

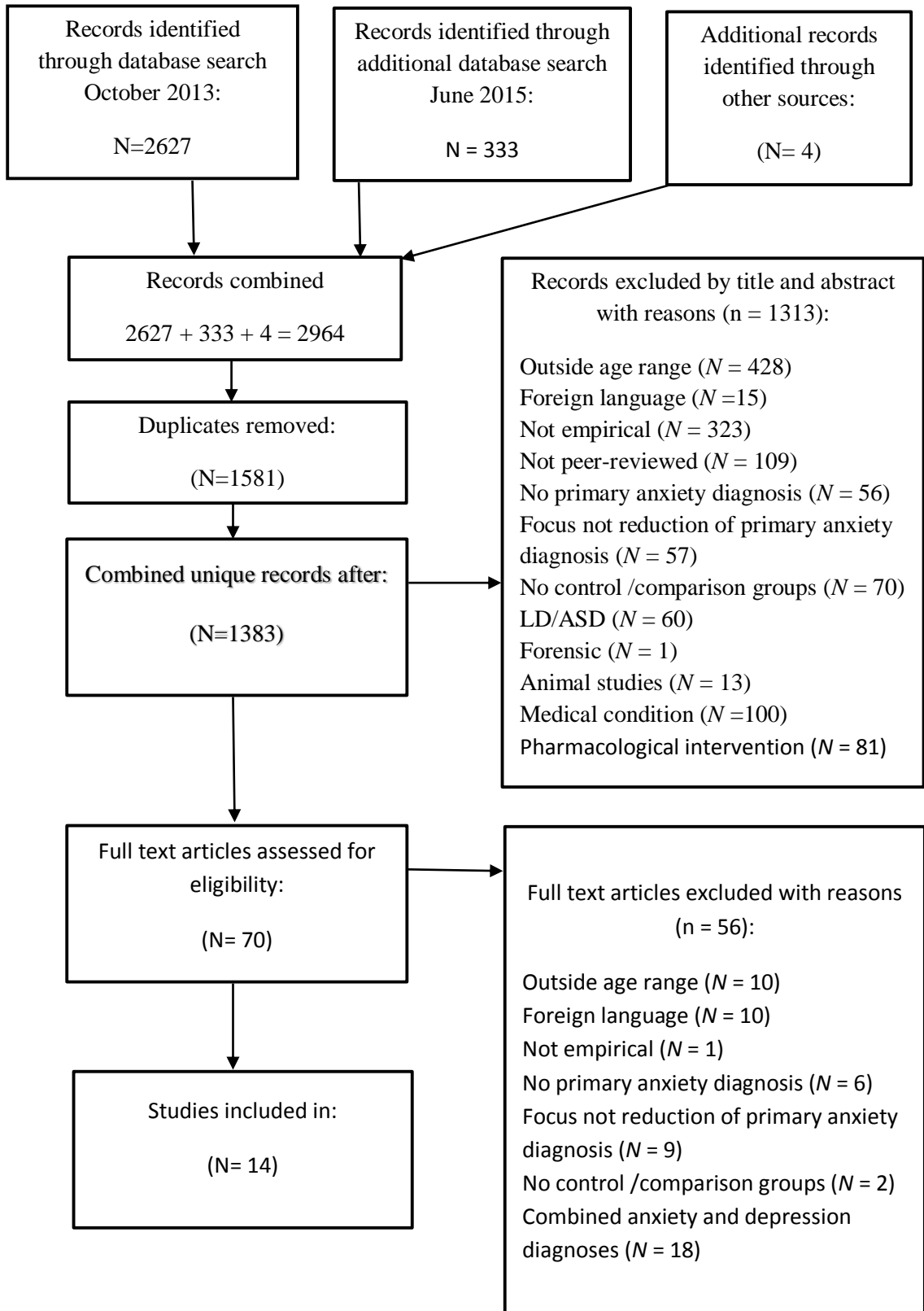
### **Quality Appraisal**

Included studies were appraised for methodological quality using a standard assessment criteria checklist (Kmet, Lee and Cook, 2004, Appendix C). This 14 item quality assessment tool was selected based on its internal validity and avoidance of bias errors in design. Each study was scored against the criterion and the summary



scores (total sum/total possible sum) converted to percentages with higher scores indicating higher quality.

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



## **Data Extraction**

Data on study characteristics and findings was independently extracted by the author and entered into an Excel database. The following information was extracted for each study: a) demographic information including ethnicity, socio-economic status, adolescent gender, adolescent age range and mean age. b) treatment trial information including study setting and design, number of participants, diagnostic tools, outcome measures, assessment time points, type of intervention, number of treatment sessions, method of data analysis, findings, remission rates and any ethical issues or sources of bias. c) Adolescent diagnostic 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 (e.g. anxiety, mood or behavioural disorders). The bibliographic software EndNote was used to organise references.

## **Results**

The database identified 2961 studies and a further four studies were identified through reference lists (see Figure 1). Fourteen studies met review inclusion criteria. The characteristics of the 14 included studies are summarised in Table 1.

### **Participant demographics**

Sample sizes ranged from 11 to 115 with three studies described as pilot studies, with treatment conditions consisting of six to 12 participants. Participants ranged in age from 11 to 18 years with a mean age of 15.2 years. One of the study samples was girls only whilst the rest were mixed sex with the majority of samples composed of more girls than boys. Eleven studies reported participant ethnicities of which nine studies used mixed ethnicities samples, one Caucasian only and another solely African American. Nine studies were conducted in the United States of

America, two in Australia and single studies in Norway, Ireland and Spain, respectively. Families' socioeconomic status was primarily relatively affluent.

Eight studies recruited participants from community samples, four used clinical samples and two combined community and clinical samples. Community and clinical samples did not appear to differ in pre-treatment clinical severity although variations in reported severity measures meant that direct comparisons for all studies could not be made. The majority of studies delivered interventions in clinic settings but four studies (García-López, Olivares, Turner, Beidel, Albano, & Sánchez-Meca, 2002; Ginsburg & Drake, 2002; Masia-Warner et al. 2005; Masia-Warner, Masia-Warner, Fisher, Shrout, Rathor & Klein, 2007) delivered interventions within schools.

In five studies children and adolescents with a variety of anxiety disorders (e.g. social anxiety disorder, specific phobias and generalized anxiety disorders) were recruited. Seven studies focused specifically on social anxiety disorder whilst two studies focused on panic disorder. The presence of comorbid anxiety, depression and/or externalizing disorders was common.

Most studies excluded adolescents with learning disabilities and, while four studies (Hayward, Varady, Albano, Thieneman, Henderson & Schatzberg, 2000; Ginsburg & Drake, 2002; Masia-Warner et al., 2005; 2007) did not report this exclusion criteria, there was no evidence of adolescents with learning disabilities participating. The use of other exclusion criteria varied, but having psychosis, severe depression/suicidal ideation, current medication for internalizing disorders, autistic spectrum disorder (ASD) and recent CBT were common reasons not to include young people in studies.

The quality appraisal tool (Kmet et al., 2004) indicated all included studies to be of good quality. Scores ranged from 73% to 100%, indicating good internal validity and study design, conduct and analyses that minimize the chance of errors and biases.

### **Psychological Interventions**

Despite the broad inclusion criteria, all 14 studies included in the review compared forms of CBT (individual, group or computerised) with CBT delivered in an alternate format and/or an active or passive control conditions. Four studies assessed interventions based on Social Effectiveness Training for Children and Adolescents (SET-C; Beidel, Turner & Morris, 2000, 2004) and one examined CBT combined with Attachment Based Family Therapy (ABFT; Siqueland, Rynn & Diamond, 2005). The review does not include any studies examining the use of non-CBT psychological interventions as the systematic search did not identify any studies where participants were within the specified age range and had clinically significant anxiety disorder diagnoses and in which the design included a comparison or control condition.

Of the 14 studies seven examined group CBT, five examined individual CBT and two studies compared group CBT with individual CBT. Two studies investigated the use of computerised cognitive-behavioural therapy (cCBT) with adolescent samples and eight of the studies included some form of parental involvement. None of the studies examined the contribution of parental involvement on outcomes. Two of the studies overlapped in terms of research group. Chase, Whitton & Pincus (2012) used the sample and data from Pincus, Ehrenreich May, Whitton, Mattis and Barlow (2010) and compared it with a comparison condition. Features of the interventions trialled, their comparison groups and treatment outcomes are summarised in Table 2.

## **Outcome measures**

The included studies all used a range of standardised questionnaire measures to assess anxiety status and co-morbid conditions e.g. mood disorders. All of the 14 studies used the ADIS Disorders Interview Schedule child version and seven studies also used the parent version (ADIS-C/P; Silverman & Albano, 1996). Studies varied in their use of the ADIS with some reporting the clinical severity rating (CSR) and others the interference rating (IR) or clinical global improvement. Measures most commonly administered to assess symptoms of child anxiety included the Social Phobia Anxiety Inventory (SPAI; Beidel, Turner & Morris, 1995) and Multidimensional Anxiety Scale for Children (MASC; March 1997) although a range of measures were used (see Table 1). Self-report measures of depression included the Beck Depression Inventory (BDI-II; Beck & Steer, 1993) and Children's Depression Inventory (CDI; Kovacs, 1992). Seven of the studies also used parent reported measures and one study also used behavioural measures. Several studies measured treatment satisfaction and therapeutic alliance.

## **Measures of remission**

The majority of studies measured recovery based on remission from primary anxiety disorder diagnosis. Two studies (Spence et al., 2011; Wuthrich, Rapee, Cunningham, Lyneham, Hudson & Schniering, 2012) also used remission from all anxiety diagnoses and one study (O'Brien et al., 2007) reported percentage reduction in number of anxiety disorders. Studies of interventions for panic disorder (Chase, Whitton & Pincus, 2012; Pincus, Ehrenreich May, Whitton, Mattis & Barlow, 2010) did not report remission from diagnosis.

**Table 1**  
*Summary of study features*

| <b>Author Date</b>                | <b>Primary anxiety disorder</b> | <b>Age range (years)</b> | <b>Sample Size (N)</b> | <b>% Female</b> | <b>Outcome measures</b>  | <b>Assessment points</b>  | <b>Blinding of assessors</b> | <b>Quality appraisal (total/maximum)</b> |
|-----------------------------------|---------------------------------|--------------------------|------------------------|-----------------|--|---|------------------------------|--|
| <b>Baer and Garland (2005)</b>    | Social anxiety disorder         | 13-18                    | 12                     | 58              | ADIS-IV C, SPAI, BDI-II  | Pre and post treatment plus post-waitlist for control group.  | Yes                          | 85% (22/26)                              |
| <b>Chase et al. (2012)</b>        | Panic disorder with Agoraphobia | 11-18                    | 51                     | 69              | ADIS -IV CP, MASC, CASI, CDI   | Pre and post treatment, 3 and 6 month follow-ups.   | Yes                          | 96% (23/24)                              |
| <b>García-Lopez et al. (2002)</b> | Social anxiety disorder         | 15-17                    | 59                     | 78              | ADIS-C, SPAI, SAS-A, PRCS, Inadaptation Scale, RSEI, Social Skills Scale for Adolescents | Pre and post treatment, 1 year follow-up.   | Yes                          | 92% (24/26)                              |
| <b>Ginsburg and Drake (2002)</b>  | Mixed anxiety disorders         | 14-17                    | 12                     | 84              | ADIS-IV C, SCARED, SAS-A, Satisfaction Questionnaire                                     | Pre and post treatment.   | No                           | 85% (22/26)                              |
| <b>Hayward et al. (2000)</b>      | Social anxiety disorder         | 14-17                    | 35                     | 100             | ADIS-IV CP, SPAI   | Pre and post treatment, 1 year follow-up.   | Yes                          | 88% (23/26)                              |
| <b>Herbert et al. (2009)</b>      | Social anxiety disorder         | 12-17                    | 73                     | 63              | ADIS -IV C, CGI-I, SPAI-C, SAS-C, RTQ  | Pre and post treatment and 6 month follow-up  | Yes                          | 92% (24/26)                              |
| <b>Ingul et al. (2014)</b>        | Social anxiety disorder         | 13-16                    | 57                     | 56              | ADIS - C, SPAI-C, The Social Thoughts and Beliefs Scale, SCARED, CDI, PedsQL             | Pre and post treatment and 12 month follow-up.  | Yes                          | 100% (26/26)                             |
| <b>Masia-Warner et al. (2005)</b> | Social anxiety disorder         | 13-17                    | 35                     | 74              | ADIS-IV CP, LSAS-CA, SPDSCF, CGAS, SPAI-C, SAS-A, SAS-AP, CDI                            | Pre and post treatment, 9 month follow-up for intervention group and post waitlist for control group. | Yes                          | 96% (25/26)                              |

|                                   |                                 |       |     |    |   |  |     |             |
|-----------------------------------|---------------------------------|-------|-----|----|---|--|-----|-------------|
| <b>Masia-Warner et al. (2007)</b> | Social anxiety disorder         | 14-16 | 36  | 83 | ADIS-IV CP, SPAI-C, SAS-A, SAS-AP, BDI-II, CGI-I, CGAS, Treatment Credibility Ratings, CPTR, Treatment satisfaction ratings | Pre and post treatment, 6 month follow-up                                    | Yes | 96% (25/26) |
| <b>O'Brien et al. (2007)</b>      | Mixed anxiety disorders         | 12-15 | 12  | 50 | ADIS -V C, CDI, RCMAS, CCL  | Pre and post treatment, 1 month follow-up.                                   | No  | 73% (19/26) |
| <b>Pincus et al. (2010)</b>       | Panic disorder with agoraphobia | 14-17 | 26  | 19 | ADIS IV C/P, MASC, CDI, CASI, POT-QA  | Pre and post treatment, 3 and 6 month follow-ups.                            | Yes | 89% (23/26) |
| <b>Siqueland et al. (2005)</b>    | Mixed anxiety disorders         | 12-17 | 11  | 73 | ADIS-IV C, HAM-A, HAM-D, BAI, BDI, CRPBI  | Pre and post treatment, 6-9 month follow-up.                                 | No  | 87% 20/26   |
| <b>Spence et al. (2011)</b>       | Mixed anxiety disorders         | 12-18 | 115 | 59 | ADIS-C/P, CGAS, SCAS-C/P, CBCL  | Pre and post-treatment, 6 and 12 month follow-ups for treatment groups only. | Yes | 96% (25/26) |
| <b>Wuthrich et al. (2012)</b>     | Mixed anxiety disorders         | 14-17 | 43  | 62 | ADIS-C/P (via telephone), SCAS-C/P, Emotional Problems subscale from SDQ-P, CATS, ALIS                                      | Pre and post-treatment, 3 month follow-up for treatment group only.          | Yes | 96% (25/26) |

**Note** ADIS-IV CP = Anxiety Disorder Interview Schedule for DSM-IV, child and parent versions; SPAI = Social Phobia and Anxiety Inventory; BDI-II = Beck Depression Inventory II; MASC = Multidimensional Anxiety Scale for Children; CASI = Childhood Anxiety Sensitivity Index; CDI = Children's Depression Inventory; SCARED = Revised Screen for Child Anxiety Related Emotional Disorders; SAS-A = Social Anxiety Scale for Adolescents; SAS-AP = Social Anxiety Scale for Adolescents, parent version; RTQ = Reaction to Treatment Questionnaire; PedsQL = Pediatric Quality of life Inventory; LSAS-CA = Liebowitz Social Anxiety Scale for Children and Adolescents; SPDSCF = Social Phobic Disorders Severity and Change Form; CGI-I = Clinical Global Impression, parent and child rated; CGAS = Children's Global Assessment Scale (assessor-rated); CPTR = Child's perception of Therapeutic relationship; RCMAS = Revised Children's Manifest Anxiety Scale; CCL = Coopersmith Self-esteem Inventory; PRCS = personal Report of Confidence as Speaker; RSEI = Rosenberg Self-Esteem Inventory; POT-QA = Perceptions of Treatment Questionnaire, adolescent version; HAM-A = Hamilton Anxiety Rating Scale; HAM-D = Hamilton Depression Rating scale; BAI = Beck Anxiety Inventory; CRPBI = Children's Report of Parenting Behaviour Inventory; SCAS-C/P = Spence Children's Anxiety Scale, child and parent versions; CBCL = Child Behaviour Checklist; SDQ-P = Strengths and Difficulties Questionnaire, parent version; CATS = Children's Automatic Thoughts Scale; ALIS = Adolescent Life Interference Scale

**Table 2***Summary of interventions and key outcomes*

| <b>Author Date</b>               | <b>Target disorder, intervention and comparison groups</b>   | <b>Key outcomes</b>   | <b>Remission rates for primary disorder at post treatment</b> | <b>Remission rates for primary disorder at follow-up</b> |
|----------------------------------|--|---|---|--|
| <b>Baer and Garland (2005)</b>   | 1) CBT programme for adolescents with Social anxiety disorder. 12 weekly 90-minute group sessions using a modified version of the SET-C manual. Apart from a group information session, no parental involvement. 2) 3 month waitlist control.  | CBT had significantly better outcomes than waitlist controls at post-treatment on clinician rated impairment and self-reported anxiety symptoms.  | Group CBT = 36%<br>Controls = 0%                              | -  |
| <b>Chase et al. (2012)</b>       | 1) CBT Panic Control Treatment (PCT-A) for adolescents. 11 50-minute sessions delivered across 12 weeks. 2) Intensive PCT-A includes most features of PCT-A. 6 sessions across 8 days; 3 90-120 minutes psychoeducation/skills sessions, 2 6-7 hour exposure sessions. In both conditions parents provided with psychoeducation and attended end of some sessions. | Participants in both treatment conditions had significant and similar reductions in panic disorder severity and general anxiety symptoms with gains maintained at 3 and 6 month follow-ups. Participants receiving weekly PCT-A showed significant reductions in depressive symptoms and greater reduction in anxiety sensitivity than the Intensive PCT-A condition. | - <sup>a</sup>  | Benefits maintained at follow-up                         |
| <b>Ginsburg and Drake (2002)</b> | 1) School based CBT programme for mixed anxiety in African-American adolescents. 10 45-minute sessions. No Parental involvement. 2) Attention-Support Control condition, focused on discussing experiences related to fear and anxiety and peer support. 10 45 minute sessions.  | CBT group was significantly better than AS-Control group on percentage free of primary diagnosis at post-treatment assessment although both groups showed improvement. CSR's and self-reported levels of overall anxiety were significantly lower in the CBT group than the AS-Control.   | Group CBT = 75% AS<br>Control = 25%                           | -  |



|                                   |   |   |  |   |
|-----------------------------------|---|---|--|---|
| <b>Hayward et al. (2000)</b>      | 1) Group CBT for social anxiety disorder. 16 weekly 90-minute group sessions. Two psychoeducation sessions, six skills-building sessions, followed by six exposure sessions and a final session. There was no parental involvement. 2) No treatment control. 3) Non-anxious control   | Group CBT had significantly better outcomes than no treatment control at post-treatment based on ADIS-IV CP and SPAI scores.  | Group CBT = 45%<br>Control = 4%                      | Differences not maintained (at 12 months)                             |
| <b>Herbert et al. (2009)</b>      | Social anxiety disorder 1) Group CBT. 12 weekly 120-minute sessions. 2) Individual CBT. 12, weekly, 60 minute sessions with same content as Group CBT. 3) Psychoeducational supportive therapy (PST) involved discussion of factors related to social anxiety disorder. No specific advice or CBT strategies.   | All treatment conditions exhibited significant reductions in symptoms of social anxiety with no significant differences. CBT showed significantly more improvement than the PST on self and observer rated social skills. CBT had significantly higher recover rate at 6 month follow-up. | Group CBT = 29%<br>Individual CBT = 27%<br>PST = 16% | Group CBT = 54%<br>Individual CBT = 15%<br>PST = 19%<br>(at 6 months) |
| <b>Ingul et al. (2014)</b>        | Social anxiety disorder 1) Group CBT. Based on The C.A.T Project Manual with components of SET-C/A. 10 90-minute sessions 2) Individual CBT based on Clark and Wells (1995) manualised treatment for adult social anxiety. 12, 50-minute sessions 3) Attentional Placebo group. 10 90-minute sessions.  | Individual CBT showed significant reductions in symptoms, impairment and diagnostic criteria at post-treatment and 12 month follow-up. Group CBT showed significant benefits at 1 year follow-up but not post-treatment.  | -  | Group CBT = 53%<br>Individual CBT = 73% (at 12 months)                |
| <b>Masia-Warner et al. (2005)</b> | 1) School based group CBT for social anxiety disorder: Skills for Academic and Social Success (SASS). 12 40-minute group sessions, two individual 15-minute meetings, two booster session and four 90-minute social events. Parents received two 45-minute group sessions providing psychoeducation and strategies. Teacher involvement. 2) Waitlist control. | Group CBT condition had significantly lower ratings of social anxiety and avoidance and significantly increased social functioning compared to waitlist controls. The intervention also reduced the occurrence of comorbid diagnoses.   | SASS = 67%<br>Control = 6%                           | Benefits maintained (at 6-9 months)                                   |

|                                   |  |  |   |  |
|-----------------------------------|--|--|---|--|
| <b>Masia-Warner et al. (2007)</b> | 1) School based group CBT programme for social anxiety disorder (SASS, Masia-Warner et al., 2005).<br>2) Attention control group entitled Educational-Supportive Group Function (ESGF). Similar to SASS while avoiding components to reduce social anxiety.  | SASS condition had significantly lower ratings on severity ratings of social anxiety, self-reported social anxiety symptoms and overall functioning compared to the ESGF at post treatment.  | SASS = 59%<br>ESCG control = 0%                               | Benefits maintained (at 6 months)  |
| <b>O'Brien et al. (2007)</b>      | 1) Group CBT, for mixed anxiety, using 'Friends for Youth' programme (Barrett et al., 1996). 10 90-minute group weekly sessions. Booster session 1 month post treatment. Parents attend 3 sessions. 2) 10 week Treatment as Usual (TAU) control condition. Up to four clinician reviews to review progress, any medication and general supportive provided.  | CBT condition had significantly better outcomes than TAU controls. Group CBT participants significant improved on internalising behaviour, thought problems and attention difficulties based on parental reports and child rated symptoms of depression also reduced significantly to non-clinical levels. | Group CBT > Control <sup>b</sup>                              | -  |
| <b>García-López et al. (2002)</b> | Social anxiety disorder 1) Social Effectiveness Therapy for Adolescents –Spanish version (SET-Asv). 29 sessions (group and individual) over 17 weeks. 2) Cognitive Behavioural Group Therapy for Adolescents, (CBGT-A). 16 90-minute group sessions over 14 weeks. 3) The Therapy for Adolescents with Generalised Social phobia (IAFSG). 12 90-minute group sessions plus optional weekly counselling. 4) No treatment control. | Based on remission from diagnosis, SET-Asv performed significantly better than the control at follow-up. Based on a 75% reduction in feared situations there was a significant improvement between SET-ASV and IAFSG compared to the control condition at post-test and follow-up.                         | SET-Asv = 36%<br>IAFSG = 33%<br>CBGT-A = 53%<br>Control = 13% | SET-Asv = 57%<br>IAFSG = 47%<br>CBGT-A = 27%<br>Control = 7%<br>(at 12 months) |
| <b>Pincus et al. (2010)</b>       | 1) CBT Panic Control Treatment for Adolescents (PCT-A). 11 50-minute sessions over 12 weeks. Parents given 3 page handout, encouraged to ask questions, included in final 10 minutes of 4 sessions 2) 8-week self-monitoring waitlist control. 30 minute meeting with therapist every other week.  | PCT-A group showed a significant reduction in clinician-rated severity of panic disorder and self-reported anxiety, anxiety sensitivity, and depression in comparison to control group participants.   | PCT=A > Control <sup>c</sup>                                  | Benefits maintained (at 3 and 6 months)  |

|                                |  |  |   |   |
|--------------------------------|--|--|---|---|
| <b>Siqueland et al. (2005)</b> | Mixed anxiety. 1) CBT for Adolescents. 16 sessions. Parents met with therapist after sessions 2 and 8. 2) CBT -ABFT. 16 sessions. All elements of CBT condition plus Attachment Based Family Therapy (ABFT). Parents attended 2 session and variable additional sessions.  | CBT and CBT-ABFT treatment conditions exhibited significant reductions in anxiety (and depressive) symptoms with no significant differences between the conditions.  | Group BT = 67%<br>CBT-ABFT = 40%        | Group CBT = 100%<br>CBT-ABFT = 80%<br>(at 6 months)                                       |
| <b>Spence et al. (2011)</b>    | Mixed anxiety 1) 'BRAVE' online Computerised CBT. 10 60-minute sessions for adolescents and 5 60-minute sessions for parents. Each session followed by a therapist feedback email plus automated emails with task results. Booster sessions at 1 and 3 months 2) Clinic CBT with same number, length and content of sessions as cCBT, with relaxation CD and workbooks for adolescents and parents. 3) Wait-list controls. | cCBT and clinic CBT groups were both significantly better than wait-list on percentage free of primary diagnosis but did not differ from each other. Improvement continued in both treatment conditions on percentage free of primary diagnosis at 6 and 12 month follow-up. | cCBT = 37%<br>CBT = 33%<br>Control = 4% | cCBT = 62%<br>CBT = 58%<br>(at 6 months)<br><br>cCBT = 79%<br>CBT = 81%<br>(at 12 months) |
| <b>Wuthrich et al. (2012)</b>  | Mixed anxiety 1) Computerised CBT using 'Cool Teens', an 8-module CD-ROM. 8 brief phone calls made to the adolescent and 3 to the parents. Parents provided with handouts 2) Wait-list controls.   | cCBT had significantly greater reduction in number of diagnoses, severity of primary diagnosis and mean severity of all diagnoses compared to wait-list.   | cCBT = 41%<br>Controls = 0%             | cCBT = 26%  |

**Note** <sup>a</sup> Equal reduction in CSR's for PCT-A and Intensive PCT-A. Remission rates not reported

<sup>b</sup> 68% of group CBT had a reduction in overall number of anxiety diagnoses compared to 10% of control condition.

<sup>c</sup> PCT-A had significantly greater reduction on CRS' compared to controls.

## **Outcomes of interventions**

### ***Interventions for mixed anxiety disorders***

Five studies examined the treatment of mixed anxiety disorders: one study looked at individual CBT; Two studies focused on group CBT, and two examined cCBT. Four of the studies included some form of parental involvement.

***Individual CBT.*** Siqueland et al. (2005) conducted a study, with 11 participants aged 12 to 17 years, to compare CBT ( $n = 11$ ) with CBT plus Attachment Based Family Therapy (CT-ABFT;  $n = 5$ ). The 16 session CBT intervention used a developmentally modified version of a manual for children (Kendall, Kane, Howard & Siqueland, 1989). Parents met briefly with the therapist after two sessions. The 16 session CBT-ABFT intervention included all components of the CBT programme but incorporated ABFT which promotes different family interactions. There was greater parental involvement with discussions focusing on control, autonomy, family interactions and identifying parents' anxieties. Sessions consisted of parent/adolescent or individual parent or individual adolescent sessions depending on the individual case.

Participants in both treatment conditions exhibited significant reductions in anxiety (and depressive) symptoms based on clinical and self-reports with no significant differences between the interventions. 67% of adolescents receiving CBT were free from their primary anxiety diagnosis at post-treatment compared to 40% in the CBT-ABFT group with ongoing improvement (100% and 80% respectively) at six to nine month follow-up with no significant differences. Adolescents in both groups reported increased parental acceptance/warmth at post treatment with no differences between conditions. Regarding treatment acceptability, both CBT and

CBT-ABFT had good retention rates (CBT mean sessions = 14, CBT-ABFT mean sessions = 15 sessions) and qualitative feedback from parents and adolescents suggested that family work was considered the most important or satisfying part of treatment. The authors propose that these quantitative and qualitative findings conflict with the common view that adolescents and parents have a preference for individual sessions and that adolescents are difficult to retain in treatment.

The authors conclude that both CBT and CBT-ABFT appear to be effective interventions for anxious adolescents whilst highlighting that the sample size was small with insufficient power to detect group difference. A larger trial would help clarify whether there are significant differences between the interventions.

**Group CBT.** Two small scale studies of group CBT have been conducted. Ginsburg and Drake (2002) conducted a pilot study of group CBT with 12 African-American adolescents with mixed anxiety disorders aged 14 to 17 years. The school based intervention consisted of 10, weekly, 45-minute sessions. A group CBT manual (Ginsburg, Silverman & Kurtines, 1995; Silverman, Kurtines, Ginsberg, Weems, Lumpkin & Carmichael, 1999) was modified to be developmentally and culturally sensitive. Sessions included psycho-education, relaxation exercises, cognitive restructuring and exposure and keeping of daily CBT diaries. There was no parental involvement. Participants receiving group CBT ( $n = 6$ ) were compared to a 10-week attention-support (AS;  $n = 6$ ) control which avoided CBT strategies and focused on sharing and discussing experiences related to fear and anxiety and facilitating peer support.

Participants in the treatment group had better outcomes than the AS-Control at the post-treatment assessment with 75% of participants receiving /group CBT and

25% in the AS-control condition no longer met criteria for their primary anxiety diagnosis. Both groups evidenced lower ratings on clinician impairment ratings using the ADIS-IV, with participants receiving CBT showing the greatest improvement. In the group CBT condition, self-reported levels of overall anxiety were significantly lower at post treatment compared to AS-controls. However, the AS-controls showed decreases in self-reported social anxiety and clinician rated impairment, possibly reflecting the benefits of peer and social support and exposure to social situations. Treatment satisfaction was high in both conditions with no significant differences. Follow-up assessments were not completed and the authors highlight the need for further studies with African-American adolescents that include follow-up assessments and parent and teacher reports, to determine therapeutic gains.

O'Brien et al. (2007) conducted a study of a group CBT programme for mixed anxiety disorders with 12 adolescents aged 12 to 15 years. The Friends for Youth programme (Barrett et al., 1996), consisting of 10 weekly 90-minute group sessions, was used. The programme focused on psychoeducation followed by cognitive and behavioural skills to manage anxiety. A booster session at one month follow-up reviewed strategies. Parents attended three sessions focused on psychoeducation and management strategies. The intervention ( $n = 6$ ) was compared to a Treatment as Usual (TAU) control condition ( $n = 6$ ) that entailed a maximum of four clinician meetings to review progress and medication if appropriate and provide general support.

Participants in the treatment group had significantly better outcomes than TAU controls, at post-treatment, on clinician, parent and child rated measures. There was a 68% reduction in number of anxiety diagnoses in the treatment group, compared to 10% of the control group at post treatment. Participants experienced

significant improvements in internalising behaviour, thought problems and attention difficulties based on parental reports attention difficulties. Child rated symptoms of depression also reduced significantly to non-clinical levels. The treatment and control groups did not differ on child reported anxiety or self-esteem.

The authors reflected on the fact that the inclusion of participants on psychotropic medications, and permitting changes to medications to be made during the study, may have confounded the treatment results. As with many comparable studies the control condition was waitlist rather than an active condition.

These studies provide preliminary evidence that group CBT interventions for adolescents with mixed anxiety disorders are efficacious. However findings must be treated with caution due to the small sample sizes. Further research with larger samples and adequate follow-up periods is required.

***Computerised Cognitive Behaviour Therapy.*** To date two cCBT programmes for mixed anxiety disorders have been tested with adolescent samples. Spence et al. (2011) conducted a RCT trial to test 'BRAVE-Online' with a sample of 115 adolescents aged 12-18 years. Adolescents completed ten 60-minute sessions on a website and following each session received feedback, via email, from their therapist. Parents received five sessions, occurring in parallel to their offspring's, and both parents and adolescents completed two booster sessions at one and three months post treatment. Sessions focus on CBT strategies including psychoeducation, cognitive restructuring, problem solving, relaxation and graded exposure. The cCBT intervention ( $n = 44$ ) was compared to an equivalent clinic based intervention ( $n = 44$ ) and to a wait-list control ( $n = 27$ ).

Participants in the cCBT and clinic based conditions exhibited similar outcomes at the 12 week assessment, based on intention to treat analysis. 37% of cCBT participants and 32% of clinic based participants demonstrated remission from their primary anxiety diagnoses with significantly better outcomes than the wait-list control of which just 4% were in remission. Adolescents in both treatment conditions also exhibited improved overall functioning according to the Children's Global Assessment Scale (Shaffer et al., 1983). A similar improvement was not seen in the waitlist control. Treatment gains continued to increase with 79% of cCBT participants and 81% of clinic participants free from their primary anxiety diagnosis at 12 month follow-up. Remission rates from all anxiety diagnoses were also significantly better than the waitlist control with 18% of cCBT participants and 21% of clinic based participants demonstrating remission from all anxiety diagnoses at 12 week follow-up, increasing to 55% and 59% diagnosis free at 12 months. The authors speculated that response rates may have been lower than expected at the 12 week assessment as many families had not yet completed all the sessions. Adolescent and parent treatment credibility ratings for cCBT were high and equivalent to the clinic based intervention and they reported moderate to high satisfaction with the cCBT intervention. Parent satisfaction ratings were slightly higher for the clinic based CBT group.

The study had a number of strengths: it was the first randomised control trial to compare cCBT versus clinic based CBT in a specifically adolescent sample, assessors were blinded and fidelity checks were clearly documented. However, there were sampling limitations. Participants came from relatively affluent, well-educated, families. Furthermore only generalised anxiety, separation anxiety, social phobia and specific phobia were included in the study meaning that BRAVE-online has yet to be



tested with panic disorder and agoraphobia in adolescents. Lastly significantly fewer adolescents completed all sessions in the cCBT condition (57%) than in the clinic CBT condition (79%) at 12 month follow-up but potential explanations for this were not considered.

Wuthrich et al. (2012) also conducted a randomized control trial with 43 adolescent participants aged 14-17 comparing a cCBT intervention ( $n = 24$ ) with waitlist controls ( $n = 19$ ). The *Cool Teens* programme, specifically designed for adolescents, consisted of eight 30-minute sessions delivered via a CD-ROM plus eight brief telephone calls. Sessions taught CBT strategies for anxiety with an emphasis on cognitive restructuring and graded exposure. Parents were provided with brief hand-outs outlining the core treatment strategies and included in three therapist telephone calls. Adolescents could choose how much parental support they received. cCBT was compared to a 12-week wait-list control.

Based on mixed model analyses, cCBT participants had significantly better outcomes than wait-list controls at post-treatment and three month follow-up on number of diagnoses, severity of primary anxiety disorder and average severity across all disorders. There were also significant reductions in parent and adolescent questionnaire reports of anxiety, internalizing symptoms, automatic thoughts and life interference. Few barriers to treatment were found, user preference ratings indicated that the treatment was well suited to adolescents with anxiety and no major barriers were identified. At post treatment, remission rates were 41% from primary anxiety diagnosis and 23.5% from all anxiety diagnoses in the cCBT group compared to 0% of waitlist controls. At follow-up, remission rates dropped to more modest 26% from primary anxiety diagnosis and 20% from all anxiety diagnoses. Wuthrich et al. suggested that anxiety in adolescents may be more difficult to treat than in children

and noted that 50% of the participants had social anxiety, which may be additionally difficult to treat. The sample size was limited with participants coming from a relatively affluent population. Findings were consistent with those from the Brave-Online anxiety programme for adolescents (Spence et al., 2011). No data were reported on the mean number of intervention sessions completed by young people and the authors also suggest that a longer follow-up period would have been helpful.

These preliminary findings indicate that cCBT may be an effective intervention for adolescents with anxiety. Further research is needed with more diverse samples and comparisons between cCBT interventions have yet to be made.

### ***Interventions for social anxiety disorder***

Seven studies examined CBT for social anxiety disorder specifically in adolescents. The majority of the studies, five in total, were concerned with variants of group CBT. Two more recent studies also evaluated the use of individual CBT compared to group interventions. Four studies reported parental involvement, two reported no parental involvement and in four of the studies the presence or absence of parental involvement was not reported.

***Group CBT.*** Hayward et al. (2000) conducted the first study of group CBT for social anxiety disorder using cognitive behavioural group therapy-adolescents (CBGT-A, Albano & Barlow, 1996) with 35 female participants aged 14-17 years. Adolescents receiving CBGT-A ( $n = 12$ ) were compared to no-treatment controls ( $n = 23$ ). The intervention consisted of 16 weekly 90-minute group sessions with two psychoeducation sessions, six skills-building sessions (i.e. social skills, problem-solving, assertiveness and cognitive restructuring), followed by six exposure sessions

and a final session. There was no parental involvement. CBGT-A was compared with a no treatment control and a non-anxious control condition.

CBGT-A participants had better outcomes than wait-list controls at post-treatment. There was a significant reduction in participant's interference ratings (using the ADIS-IV CP) with scores reduced by almost 50%. Social anxiety scores were also significantly reduced in the treatment compared to the control conditions although symptoms were still elevated compared to non-anxious controls. 45% of the CBGT-A group no longer met the criteria for social anxiety disorder compared to 4% in the no treatment condition. However at one year follow-up differences in the incidence of social anxiety across the groups was not maintained. The authors looked at rates of depression and found lower incidence and relapse of major depression in the CBGT-A group compared to the no treatment control. Although these findings were not significant, the study was under powered and the authors suggest that treatment for social anxiety may reduce the risk of depressive relapse.

The study provides evidence of the short term benefits of CBGT-A for social anxiety and suggests treating social anxiety may potentially lower the risk of future major depression in female adolescents. The authors identify a need for research into treating social anxiety disorder and its impact on depression. The power and generalizability of the study is limited due to the small, and all female, sample.

Baer and Garland (2005) also conducted a community based pilot study with participants 13-18 years comparing group CBT for social anxiety ( $n = 6$ ) with waitlist controls ( $n = 6$ ). The intervention consisted of 12 weekly 90-minute group sessions, with six adolescents and 3 facilitators, based on a modified version of the Social Effectiveness Therapy for Children (SET-C) manual (Beidel, Turner &

Morris, 2004). The first session consisted of psycho-education while the remaining eleven sessions had a two part format with the first part of sessions focusing on CBT skills and the second on exposure tasks. There were weekly homework task based on the social skills training. Apart from a parent group session to provide information there was no parental involvement. The intervention was compared to a three month wait-list control.

Participants receiving group-CBT had significantly better outcomes than wait-list controls at post-treatment on both clinician rated impairment and self-reported anxiety symptoms. 36% of the treatment group, compared to 0% of the wait-list control no longer met criteria for social anxiety disorder immediately post-treatment, suggesting that cognitive behavioural group therapy is more effective than no treatment and is an effective treatment for some adolescents with social anxiety disorder. Although positive, the effect size was smaller than that reported using the SET-C Treatment (Beidel et al., 2000) with the authors suggesting that this may be due to the programme being designed to be lower-intensity than SET-C. The population also differed; consisting purely of adolescents with much higher comorbidity than Beidel et al.'s combined child and adolescent sample. The results are comparable with those of Hayward et al. (2000), in their study of adolescents with social phobia, where remission rates were 45%.

The authors reflect on the fact that, despite advertising in 50 schools, they received no community referrals and highlight that social anxiety remains under detected in community settings. As a pilot study the sample was small with limited power and, as with many comparable studies the control condition, was waitlist rather than an active condition. The inclusion of participants on psychotropic

medications, and permitting changes to medications to be made during the study, may also have confounded the treatment results.

García-López et al. (2002) conducted a study of three psychological treatments for social anxiety disorder in adolescents, with 59 participants aged 15-17 years. The interventions were: 1) Social Effectiveness Therapy for Adolescents – Spanish version (SET-*A<sub>sv</sub>*, Olivares, García-López, Beidel & Turner, 1998;  $n = 14$ ) consisting of 29 treatment sessions, both group and individual) over 17 weeks; 2) Cognitive Behavioural Group Therapy for Adolescents, (CBGT-A, Albano, Marten & Holt, 1991;  $n = 15$ ) with 16 90-minute group sessions over 1 weeks and 3) The Therapy for Adolescents with Generalised Social Phobia (IAFSG, Olivares & García-López, 1998;  $n = 15$ ) consisting of 12 90-minute group sessions on a weekly basis plus optional individual weekly counselling. There was also a no treatment control condition ( $n = 15$ ).

The authors looked at clinical effectiveness based on remission from a diagnosis of social anxiety disorder and the less strict criterion of a 75% reduction in number of feared social situations (both measured by the ADIS-IV). At post treatment and follow-up the respective remission rates from diagnosis were; 35.7% and 57.1% for SET-*A<sub>sv</sub>*, 33.3% and 46.7% for IAFSG, 53.35 and 26.7% for CBGT-A and 13.3% and 6.67% for the control condition. The only significant difference was between SET-*A<sub>sv</sub>* and the control condition at follow-up. However, based on the less strict criterion (a 75% reduction in feared situations) there was a significant improvement between SET-*A<sub>sv</sub>* and IAFSG compared to the control condition at post-test and follow-up. The authors also proposed that although there was not a significant difference between CBGT-A and the control, the substantial effect size ( $d = 1.01$ ) suggested clinical significance. García-López et al. concluded that, based on

clinical significance, all 3 interventions were more effective than receiving no treatment and that the increased benefits at follow-up suggested that gains may generalise. Study limitations include the fact that the control consisted of participants that had declined treatment with the authors highlighting that this may have contributed to the findings.

Two studies evaluated a school-based intervention for adolescents with social anxiety disorder. Masia-Warner et al. (2005) conducted a randomised control study of the Skills for Academic and Social Success (SASS) programme, a group CBT intervention for social anxiety disorder, with a sample of 35 participants (SASS,  $n = 18$ ; waitlist controls,  $n = 17$ ) aged 13-17 years. Participants completed 12 weekly 40-minute group sessions, two individual 15-minute meetings, two group booster sessions and four 90-minute social events with outgoing peers. Parents completed two 45-minute group sessions providing psychoeducation on, and strategies to help, social anxiety and teachers receive two 30 minute psychoeducational meetings and assisted with classroom exposure tasks. The programme was an extended version of the original SASS Programme (Masia et al., 1999), based on the SET-C treatment manual (Beidel et al., 2004). Sessions focused on realistic thinking, social skills training (e.g. conversational skills, establishing friendships and assertiveness). The intervention was compared to a wait-list control group.

At the post treatment assessment the group CBT condition had significantly lower ratings of social anxiety and avoidance and significantly increased social functioning compared to waitlist controls. 67% of the treatment group no longer met the criteria for social anxiety disorder, compared to 6% of the waitlist. The intervention also reduced the occurrence of comorbid diagnoses. Benefits in the treatment group were maintained at nine month follow-up. Treatment satisfaction

was high with teachers, parents and participants requesting that the programme continue in their school

The findings suggest that the SASS programme is a promising effective treatment for social anxiety disorder in adolescents and demonstrates the feasibility and acceptability of providing school based interventions for social anxiety.

Although a high quality study, a limitation is that waitlist controls did not complete the nine month follow-up assessments meaning that comparisons cannot be made or the longer term effects of SASS fully understood.

A second randomised control study (Masia-Warner et al., 2007), with a sample of 36 participants aged 14-16 years, compared the SASS programme ( $n = 19$ ) with an attention control condition named Educational-Supportive Group Function ( $n = 17$ ). Designed to be as similar as possible to SASS in terms of format and attention, this condition avoided components associated with reversing social anxiety (i.e. social skills training, cognitive restructuring and exposure). At post treatment the SASS condition, compared to the attentional control had significantly lower ratings on severity of social anxiety, self-reported social anxiety symptoms and overall functioning. Fifty nine percent of the treatment group no longer met the criteria for social anxiety disorder, compared to 0% of the ESGF condition. Self-reported depression was also significantly lower in participants who received SASS although they were low in both conditions. There were no significant differences on parent-reported improvement. Results were maintained at six month follow-up.

This was the first study of social anxiety, with an adolescent only sample, to include an active control condition and provides evidence, along with their earlier study (Masia-Warner et al., 2005), of the efficacy and feasibility of delivering group

CBT for social anxiety in schools. The authors note that despite SASS being shorter than some treatment programmes (e.g. SET-C) its efficacy is clear and they hypothesize that this may be due to the real-world school setting facilitating exposure and generalisation. A limitation of both these school based studies is that the follow-up periods were less than 12 months. Participants were also recruited from an urban area of New York and were largely Caucasian females, thereby restricting generalisability. The authors identify the need for further research with more diverse populations and also the need to evaluate the delivery of SASS by non-specialists i.e. school personnel.

Overall these studies indicate that group interventions for social anxiety disorder are more effective than no treatment and produce significant reductions in symptoms and recovery rates at post treatment assessments. Benefits appear to be maintained or increased at follow-ups, up to one year post-treatment, with the exception being the Hayward et al. (2000) study where longer term benefits are less clear. However, the studies are generally small and with limited power (e.g. Baer & Garland, 2005; Hayward et al., 2000).

***Group CBT versus Individual CBT.*** Herbert et al. (2009) conducted a randomised control trial evaluating individual CBT ( $n = 24$ ) versus group CBT ( $n = 23$ ) for social anxiety disorder in comparison to educational/supportive psychotherapy ( $n = 26$ ). Participants were adolescents aged 12-17 years. The three treatments each consisted of 12 weekly sessions. Group CBT consisted of 120-minute sessions based on Heimberg's protocol for social anxiety (Heimberg, 1991) and similar to CBGT-A (Albano, Marten, Holt, Heimberg & Barlow 1995) an adaptation of this. The individual CBT (I-CBT) condition followed the same format as the group condition and met for 60-minute sessions. Psychoeducational –



supportive therapy (PST) condition consisted of 120-minute sessions again based on Heimberg's protocols (Heimberg, Dodge, Hope, Kennedy, Zollo & Becker, 1990; Heimberg, Salzman, Holt & Blendall, 1993). Therapists provided support but did not offer advice, problem solving, skills training or exposure exercises.

Participants in all three treatment conditions exhibited significant reductions in symptoms of social anxiety and functional impairment and significant improvement in social skills with no significant differences between the treatment conditions. This suggests that all three treatments effectively reduced symptoms and distress. However on behavioural measures the group CBT conditions showed significantly more improvement than the PST condition on self and observer rated social skills. At post treatment, in the CBT groups remission rates were similar with 29% of I-CBT participants and 27% of G-CBT participants no longer meeting the criteria for social anxiety disorder. The remission rate in PST was lower (16%) although this was not statistically significant. However at 6 month follow-up group-CBT had a significantly higher recover rate (54%) than Individual CBT (15%) or PST (19%). The results indicate that both group and individual CBT are associated with significant reductions in ratings of symptoms and impairment. A limitation of the study is the sample size which was small, particularly for comparing the CBT conditions, meaning that the results must be treated with caution. The lack of an untreated control group also means that firm conclusions regarding effects of treatment cannot be drawn.

Only one study (Ingul et al., 2014) examined the treatment of adolescent social anxiety disorder using a manual specifically designed for delivering individual therapy. Ingul et al. (2014) conducted a randomized controlled trial to compare three disorder-specific treatments for social anxiety with a sample of 57 adolescents aged

13-16 years. The Individual CBT condition ( $n = 21$ ) consisted of 12, 50-minute sessions based on a developmentally modified version of a manualised treatment for adult social anxiety (Clark and Wells, 1995). Group CBT ( $n = 20$ ) involved 10 90-minute sessions and was primarily based on The C.A.T Project Manual (Kendall, Hudson and Wells, 2000) with components of Social effectiveness Therapy for Children and Adolescents (Beidel, Turner and Morris, 1995). The Attentional Placebo group condition ( $n = 16$ ) consisted of 10-90 minute sessions. This condition excluded the active components of the CBT groups but included equivalent social exposure. Participants in this condition were assessed at pre and post treatment but not at the 12 month follow-up.

Participants in the individual CBT condition showed significant reductions in symptoms of social anxiety and functional impairment both at post treatment and 12 month follow-up. Group CBT evidenced no significant reductions at post treatment but at the 12 month follow-up showed significant reductions in both symptoms and impairment. At post treatment, the placebo control showed significant reduction in symptoms (they were not assessed at follow-up). The individual CBT condition showed significantly greater reductions in symptoms of social anxiety and impairment than the group CBT and Attentional Placebo conditions. At the 12 month follow-up, 73% of participants receiving individual CBT and 53% of participants receiving group CBT no longer had a diagnosis of social anxiety, with no significant difference. However ratings of impairment were significantly lower in the individual CBT condition. The authors conclude that the results overall, indicate that individual CBT had better outcomes than the group CBT and attentional placebo conditions with individual CBT demonstrating significantly greater effects on symptom reduction and functional impairment. They acknowledge that this may be due to the

format which is in line with adult studies on individual CBT (Mortberg, Clark, Sundin & Wistedt, 2007; Stangier, Heidenreich, Peitz, Lauterbach & Clark, 2003). However, they hypothesise that the results may be best explained by differences in the therapeutic models and that the results indicate the value of working on negative perceptual biases that are maintaining social anxiety adolescents.

This is the first RCT of individual CBT based on Clarks and Wells treatment for social anxiety with adolescents. Ingul et al. identify the need for more research to clarify whether individual CBT is as effective as group CBT. They also highlight the need to control for natural self-exposure in comparative studies as evidenced by results for the attentional placebo intervention.

### ***Interventions for panic disorder***

Two studies, with adolescent participants, compared individual CBT interventions for panic disorder against a comparison or control condition. Pincus et al. (2010) conducted the first randomized control trial examining the efficacy and feasibility of a cognitive behavioural interventions for adolescents with panic disorder. They compared Panic Control Treatment for Adolescents (PCT-A;  $n = 13$ ) with a waitlist control ( $n = 13$ ). Participants were aged 14 to 17 years. The PCT-A condition consisted of 11 sessions delivered across 12 weeks and focused on anxiety-related cognitions, hyperventilation and conditioned responses to bodily sensations. Parents were given a three page psychoeducation handout and were encouraged to ask questions and attend the end of four session. PCT-A was compared to an eight week self-monitoring control receiving a 20 minute meeting with a therapist every second week. PCT-A participants exhibited significant reductions in clinician rated severity with ratings for all participants in the subclinical range immediately post

treatment. Self-reported anxiety, anxiety-sensitivity and depression ratings also significantly reduced. Benefits were maintained at three and six month follow-ups with clinician rated severity continuing to improve up until the three month follow-up. Adolescent treatment and satisfaction ratings were high and qualitative reports from parents highlighted the benefits of parental involvement.

The results provides preliminary support for PCT-A as a treatment for panic disorder in adolescents that may also have sustained benefits on general anxiety symptoms, anxiety sensitivity and depression. The authors speculate that PCT-A develops skills, e.g. cognitive restructuring, that are generalised to anxiety and depressive symptoms. However, the study had limitations. The Caucasian, middle-class sample means that findings may not generalise to more diverse populations. Furthermore the small sample size meant that individual treatment components could not be assessed. They also noted that some families requested a short treatment programme and suggested that a more intensive treatment format might be more accessible to some families and expedite adolescents return to academic and social activities. The authors identified the need for further research in these areas.

In response, Chase et al. (2012) conducted a non-randomised comparison of intensive versus weekly PCT-A for panic disorder with agoraphobia in 51 adolescent participants aged 11-18 years. The Intensive PCT-A group ( $n = 25$ ) was compared against the sample originally used in the Pincus et al. (2010) study ( $n = 26$ ).

As outlined, the weekly PCT-A condition consisted of 11 weekly sessions (Pincus et al., 2010). The Intensive PCT-A included almost all components of the original PCT-A but was delivered in six sessions across eight days with 90-120 minutes psychoeducation and skills sessions on the first three days and six to seven

hour treatment sessions with exposure on days four and five. The adolescent then engaged in independent exposure tasks for two days followed by a final session to review progress, skills and relapse prevention. In both conditions parents were provided with psychoeducation about panic and appropriate responses and were involved in planning exposure tasks.

Participants in both treatment conditions exhibited significant and similar reductions in panic disorder severity and general anxiety symptoms with gains being maintained at three and 6 month follow-ups. However, participants in the intensive PCT-A condition did not demonstrate the same significant reduction in depressive symptoms and greater reduction in anxiety sensitivity that was present in weekly PCT-A participants. The authors suggest that this may be due to therapists in weekly PCT-A therapists having more time to identify participants' depressive symptoms and tailor the intervention accordingly and the intensive intervention providing less opportunity to address co-morbid conditions. Feasibility data was not collected in this study meaning that participant satisfaction with the different treatment formats could not be compared.

The findings suggest that Intensive PCT-A could be an efficacious treatment for panic disorder in adolescents. Its briefer format could be particularly relevant and acceptable as it quickly alleviates symptoms and addresses avoidance meaning disruption to adolescents' academic and social activities is minimised. The authors suggest that additional follow-up sessions could address comorbid symptoms and disorders.

These studies indicate that both weekly and intensive CBT for panic disorder, reduce symptoms to subclinical levels with benefits maintained over time. The

formats appear to have different advantages. Further randomised control trials, with a larger samples, to elucidate the efficacy of both PCT-A and Intensive PCT-A, and individual treatment components, are required.

### **Discussion**

This review aimed to examine the evidence for the effectiveness of a range of psychological treatments for anxiety disorders in adolescents while establishing the state of the existing research with adolescent only samples, and identify areas for future research. Fourteen trials met the inclusion criteria and all of these studied interventions based on cognitive-behavioural approaches. The number of studies is greater than that reported in recent reviews (Reynolds et al. 2012; Kendall & Peterman, 2015) reflecting the broader inclusion criteria and the growing evidence base. However, the relatively modest number highlights the lack of research with adolescents only with most trials to date being conducted with mixed child and adolescent samples.

The evidence suggests that interventions designed specifically for use with adolescents have good outcomes with reductions in anxiety symptoms evidenced via a range of measures including clinician diagnostic assessment, self and parent-report and some (Herbert et al., 2009) with behavioural measures. Studies indicate significant improvement from pre to post-treatment and greater benefits compared to controls. These findings are in line with meta-analyses (Bennett et al., 2013; Reynolds et al., 2012) and the recent review by Kendall & Peterman (2015).

Substantial remission rates were evident amongst both treatments for mixed anxiety disorders (e.g. Ginsburg & Drake, 2002; Siqueland et al., 2005) and some trials of social anxiety disorder (e.g. Masia-Warner et al., 2005; Masia-Warner et al.,

2007; Ingul et al., 2014). Remission rates were not reported in the panic disorder trials. However, some studies' post-treatment remission rates were markedly lower than the average 59% remission found with child and mixed samples ( James et al., 2013; James et al. 2005; Ishikawa, Okajima, Matsuoka & Sakano, 2007; Reynolds et al., 2012). Remission rates at post treatment ranged from 21% to 75% at post treatment with lower remission rates most often occurring in trials of social anxiety disorder (Baer & Garland, 2005; Hayward et al., 2000; Herbert et al., 2009; García-López et al., 2002). This finding is consistent with the view that social anxiety disorder is associated with poorer treatment outcomes (Kendall et al., 2010). Interestingly, higher remission rates (e.g. 67%) were found in the school based interventions for social anxiety (Masia-Warner et al., 2005; Masia-Warner et al., 2007). This may be attributable to the greater opportunity for exposure tasks in school based interventions. It may also reflect the characteristics of the self-referred community sample although, across the 14 included studies, community samples did not appear to be associated with higher remission rates or lower pre-treatment clinical severity.

Promisingly the majority of studies, including those for social anxiety disorder, indicated that benefits were maintained (Chase et al., 2012; Ingul et al., 2014; Masia-Warner et al., 2005, Masia-Warner et al., 2007; Pincus et al., 2010), or increased (Garcia-Lopez et al., 2002; Herbert et al., 2009; Siqueland et al., 2005; Spence et al., 2011) at follow-up although some studies found reduced benefits over time (Hayward et al., 2000; Wuthrich et al., 2012).

Outcomes for studies using individual and group therapy formats appear similar which is consistent with the reported marginal differences between group and individual formats with mixed child and adolescent samples (Ishikawa et al., 2007;

Kendall & Peterman, 2015). However, the limited amount of studies, particularly using individual treatment formats, mean conclusions cannot be reached. The conflicting findings of Herbert et al. (2009) and Ingul et al. (2014), regarding individual or group CBT for social anxiety disorder, demonstrate the need for further research in this area with the National Institute of Clinical Excellence (NICE) calling for an RCT comparing individual and group interventions for the treatment of social anxiety disorder in young people (NICE, Research Recommendations, 2013). With regards to computerised interventions, initial studies with cCBT suggest it has comparable results with individual and group therapy formats although, again, further however further confirmatory research is needed.

The degree of parental involvement varied across studies from no involvement to handouts and/or joining the end of sessions to psychoeducation sessions or weekly therapy. No notable differences in the efficacy of treatments with and without parental involvement were evident which is consistent with previous findings (Ishikawa et al. 2007; Manassis et al., 2014; Reynolds et al., 2012; Silverman, Pina & Viswesvaran, 2008). The varied types of parental involvement, combined with the fact that some papers did not report its presence or absence, makes comparisons difficult.

The review confirms that the majority of studies with exclusively adolescent samples examine interventions for social anxiety disorder with seven studies meeting the inclusion criteria, reflecting the fact that social anxiety disorder is common, and frequently emerges, during adolescence (Compton et al., 2000; Esbjørn et al., 2010; Kendall et al., 2010). Five studies examined interventions for mixed anxiety disorders while only two studies of interventions for panic disorder were identified as meeting the review inclusion criteria. No studies of psychological interventions



specifically for selective mutism, GAD, specific phobias or separation anxiety were identified with adolescent only samples and control or comparison conditions. The lack of studies for selective mutism is in keeping with reviews of studies using mixed child and adolescent samples (Reynolds, Bennett, Kendall, 2015) and highlights the lack of research in this area while the absence of separation anxiety reflects the reduced occurrence of this disorder during adolescence (Kendall et al., 2010; Waite & Creswell, 2014). Although two studies trialled cCBT, no studies of bibliotherapy with adolescent only samples were identified. To date all trials of bibliotherapy for childhood anxiety disorders have been conducted with parents of mixed child and adolescent samples up to the age of 14 years (e.g. Cobham, 2012; Lyneham & Rapee, 2006; Rapee, Abbott & Lyneham, 2006; Thirlwall, Cooper, Karalus, Voyse, Willetts & Creswell, 2013). With regards to diversity, only one study has looked at culturally modifying an intervention for use with an ethnic minority group (Ginsburg & Drake, 2002).

The majority of studies were conducted with small sample sizes, with three of the studies described as pilots. Consequently many of the studies lack power. Furthermore, although some studies included active controls (Ginsberg & Drake, 2002; Herbert et al., 2009; Ingul et al., 2014, Masia-Warner et al., 2005 & 2007) the majority used waitlist controls or no control condition. The lack of power and absence of active controls conditions mean that firm conclusions regarding treatment effects cannot yet be made. The majority of studies were also conducted with relatively affluent and ethnically homogenous (predominantly Caucasian) samples. Further research is therefore needed with more socioeconomically and ethnically diverse populations to enable greater generalisation of findings.

The reviewed studies highlight the importance of follow-up assessments to determine whether treatment benefits are maintained, or increase, once the intervention has been completed. However none of the studies included follow-up periods beyond 12 months post-treatment indicating a lack of, and need for, longer term follow-up studies of interventions for adolescents with anxiety disorders.

### **Strengths & Limitations**

A strength of this review is its specific focus on psychological interventions designed for, and trialled exclusively with, adolescents. There is a lack of research in this area and, to date, no systematic review and synthesis of this literature had been conducted. However, defining the age range for the period of adolescence can be challenging and, while the age parameters were consistent with the majority of studies, some studies were excluded as they included participants outside the age range. The first of these recent studies (Reuland & Teachman, 2014) looked at Interpretation Bias Modification and its inclusion would have broadened the reviewed interventions beyond variants of CBT. The second (Tillfors et al., 2011) examined cCBT specifically for social anxiety disorder.

The review benefits from focusing specifically on anxiety and excluding studies addressing internalizing disorders more generally e.g. mood disorders, meaning that any outcomes cannot be attributed to the treatment of depression. This is a strength of the review however it is important to recognise that concurrent anxiety and depression are common in adolescents (Strauss, Lease, Last & Francis, 1988; Waite & Creswell, 2014). A similar systematic review of interventions for adolescents with anxiety and depression therefore seems pertinent. A review of interventions specifically for adolescents with depression also seems pertinent.

The review's inclusion criteria meant that preventative studies with adolescents with subclinical anxiety symptoms (e.g. Aydin, Tekinsav & Sorias, 2010; Hunt, Andrews, Crino, Erskine & Sakashita, 2009; Sportel, Hullu, de Jong & Nauta, 2013), predictor studies (e.g. Legerstee et al., 2008) and studies looking at treatment trajectories, (e.g. Gallo, Cooper-Vince, Hardway, Pincus & Comer, 2013) were excluded. A future review synthesizing all these studies is warranted. The reviews focus on interventions designed specifically for use with adolescents meant that trials with mixed child and adolescents samples, that included sub-analysis of adolescent outcomes (e.g. child /adolescent anxiety multimodal study, Compton et al, 2010) were not included. Broadening the reviews focus to include these studies is a consideration for publication. Lastly, the review included studies with participants aged between 11 to 18 years and excluded those outside this age range. There is debate regarding how best to define adolescence, as reflected in the varied parameters used in past reviews (Bennet et al., 2013; Kendall & Peterman, 2015; Reynolds et al., 2012). However, the World Health Organisation (WHO, 1986) defines adolescence as occurring between 10 to 19 years and this review might have benefited from using this broader, and established, definition.

## **Conclusions**

An emerging body of research into adolescent specific CBT protocols for mixed anxiety, social anxiety and panic disorders indicate interventions to have good outcomes with benefits that are maintained or increased, at 12 month follow-up. Study samples have generally been small and trials with larger and more diverse samples with long term follow-ups are needed to confirm, and enable, generalisation of findings and determine the longevity of effects. The need to establish the relative effectiveness of groups versus individual treatment for social anxiety is particularly

pertinent as is further development and trialling of interventions for panic disorder and other anxiety disorders. At present no studies have researched adolescent specific protocols for generalised anxiety disorder, specific phobias, separation anxiety or selective mutism. Lastly, as with child and adult populations the majority of research has examined CBT. The inclusion of other psychological therapies in future trials would enhance the evidence base.

## References

- Albano, A. M. (1996). Treatment of social anxiety in adolescents. *Cognitive and Behavioral Practice, 2*(2), 271-298.
- Albano, A. M., & Barlow, D. H. (1996). Breaking the vicious cycle: Cognitive-behavioral group treatment for socially anxious youth. In Hibbs, E.D. & PS Jensen, P.S. (Ed.), *Psychosocial treatments for child and adolescent anxiety disorders: empirically based strategies for clinical practice* (pp. 43-62. Washington D.C.: American Psychological Association.
- Albano, A. M., Marten, P. A., Holt, C. S. (1991). *Therapist's manual for cognitive-behavioural group therapy for adolescent social phobia*. Unpublished manuscript.
- Albano, A. M., Marten, P. A., Holt, C. S., Heimberg, R. G., & Barlow, D. H. (1995). Cognitive-Behavioral Group Treatment for Social Phobia in Adolescents A Preliminary Study. *The Journal of nervous and mental disease, 183*(10), 649-656.
- Aydin, A., Tekinsav-Sütçü, S., & Sorias, O. (2010). Evaluation of the effectiveness of a cognitive-behavioral therapy program for alleviating the symptoms of social anxiety in adolescents. *Turkish Journal of Psychiatry, 21*(1).
- Baer, S., & Garland, E. J. (2005). Pilot study of community-based cognitive behavioral group therapy for adolescents with social phobia. *Journal of the American Academy of Child & Adolescent Psychiatry, 44*(3), 258-264.
- Barrett, P. M., Dadds, M. R., & Rapee, R. M. (1996). Family treatment of childhood anxiety: a controlled trial. *Journal of Consulting and Clinical Psychology, 64*(2), 333-342.

- Barmish, A. J., & Kendall, P. C. (2005). Should parents be co-clients in cognitive-behavioral therapy for anxious youth? *Journal of Clinical Child and Adolescent Psychology, 34*(3), 569-581.
- Beck, A. T., Steer, R. A., & Brown, G. K. (1996). Manual for the beck depression inventory-II. San Antonio, Tx; Psychological Corporation.
- Beidel, D. C., Turner, S. M., & Morris, T. L. (1995). A new inventory to assess childhood social anxiety and phobia: The Social Phobia and Anxiety Inventory for Children. *Psychological Assessment, 7*(1), 73-79.
- Beidel, D. C., Turner, S. M., & Morris, T. L. (2000). Behavioral treatment of childhood social phobia. *Journal of Consulting and Clinical Psychology, 68*(6), 1072-1080.
- Beidel, D. C., Turner, S. M., & Morris, T. L. (2004). Social Effectiveness Therapy for Children and Adolescents (SET-C). Multi-Health Systems. Inc. Ontario: Toronto.
- Bennett, K., Manassis, K., Walter, S. D., Cheung, A., Wilansky-Traynor, P., Diaz-Granados, N., ... & Wood, J. J. (2013). Cognitive behavioral therapy age effects in child and adolescent anxiety: An individual patient data metaanalysis. *Depression and Anxiety, 30*(9), 829-841.
- Blakemore, S. J. (2008). Development of the social brain during adolescence. *The Quarterly Journal of Experimental Psychology, 61*(1), 40-49.
- Chase, R. M., Whitton, S. W., & Pincus, D. B. (2012). Treatment of Adolescent Panic Disorder: A Nonrandomized Comparison of Intensive versus Weekly CBT. *Child & Family Behavior Therapy, 34*(4), 305-323.

- Cobham, V. E. (2012). Do anxiety-disordered children need to come into the clinic for efficacious treatment? *Journal of Consulting and Clinical Psychology*, *80*(3), 465-476.
- Cohen, P., Cohen, J., Kasen, S., Velez, C. N., Hartmark, C., Johnson, J., ... & Streuning, E. L. (1993). An epidemiological study of disorders in late childhood and adolescence. Age-and Gender-Specific Prevalence. *Journal of Child Psychology and Psychiatry*, *34*(6), 851-867.
- Compton, S. N., Nelson, A. H., & March, J. S. (2000). Social phobia and separation anxiety symptoms in community and clinical samples of children and adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry*, *39*(8), 1040-1046.
- Compton, S. N., Walkup, J. T., Albano, A. M., Piacentini, J. C., Birmaher, B., Sherrill, J. T., ... & March, J. S. (2010). Child/adolescent anxiety multimodal study (CAMS): Rationale, design, and methods. *Child and Adolescent Psychiatry and Mental Health*, *4*(1), 1.
- Copeland, W. E., Angold, A., Shanahan, L., & Costello, E. J. (2014). Longitudinal patterns of anxiety from childhood to adulthood: the Great Smoky Mountains Study. *Journal of the American Academy of Child & Adolescent Psychiatry*, *53*(1), 21-33.
- Costello, E. J., Mustillo, S., Erkanli, A., Keeler, G., & Angold, A. (2003). Prevalence and development of psychiatric disorders in childhood and adolescence. *Archives of General Psychiatry*, *60*(8), 837-844.
- Creswell, C., Waite, P., & Cooper, P. J. (2014). Assessment and management of anxiety disorders in children and adolescents. *Archives of Disease in Childhood*, *99*(7), 674-678.

- Elkins, R. M., McHugh, R. K., Santucci, L. C., & Barlow, D. H. (2011). Improving the transportability of CBT for internalizing disorders in children. *Clinical Child and Family Psychology Review, 14*(2), 161-173.
- Esbjörn, B. H., Hoeyer, M., Dyrborg, J., Leth, I., & Kendall, P. C. (2010). Prevalence and co-morbidity among anxiety disorders in a national cohort of psychiatrically referred children and adolescents. *Journal of Anxiety Disorders, 24*(8), 866-872.
- Feldman, S. S., & Elliott, G. R. (1990). *At the threshold: The developing adolescent*. Harvard University Press.
- Ford, T., Goodman, R., & Meltzer, H. (2003). The British child and adolescent mental health survey 1999: the prevalence of DSM-IV disorders. *Journal of the American Academy of Child & Adolescent Psychiatry, 42*(10), 1203-1211.
- Francis, G., Last, C. G., & Strauss, C. C. (1987). Expression of separation anxiety disorder: The roles of age and gender. *Child Psychiatry and Human Development, 18*(2), 82-89.
- Furman, W. & Buhrmester, D. (1992). Age and sex differences in perceptions of networks of personal relationships. *Child Development, 63*(1), 103-115.
- Gallo, K. P., Cooper-Vince, C. E., Hardway, C. L., Pincus, D. B., & Comer, J. S. (2014). Trajectories of change across outcomes in intensive treatment for adolescent panic disorder and agoraphobia. *Journal of Clinical Child & Adolescent Psychology, 43*(5), 742-750.
- García-López, L. J., Olivares, J., Turner, S. M., Beidel, D. C., Albano, A. M., & Sánchez-Meca, J. (2002). Results at long-term among three psychological treatments for adolescents with generalized social phobia (II): Clinical significance and effect size. *Psicología Conductual, 10*(2), 371-388.



- Gifford-Smith, M. E., & Brownell, C. A. (2003). Childhood peer relationships: Social acceptance, friendships, and peer networks. *Journal of School Psychology, 41*(4), 235-284.
- Ginsburg, G. S., & Drake, K. L. (2002). School-based treatment for anxious African-American adolescents: A controlled pilot study. *Journal of the American Academy of Child & Adolescent Psychiatry, 41*(7), 768-775.
- Ginsburg, G. S., Kendall, P. C., Sakolsky, D., Compton, S. N., Piacentini, J., Albano, A. M., ... & March, J. (2011). Remission after acute treatment in children and adolescents with anxiety disorders: findings from the CAMS. *Journal of Consulting and Clinical Psychology, 79*(6), 806.
- Ginsburg, G. S., Silverman, W. K., & Kurtines, W. M. (1995). Cognitive-behavioral group therapy. *Clinical handbook of anxiety disorders in children and adolescents, 521-549*.
- Hayward, C., Varady, S., Albano, A. M., Thienemann, M., Henderson, L., & Schatzberg, A. F. (2000). Cognitive-behavioral group therapy for social phobia in female adolescents: Results of a pilot study. *Journal of the American Academy of Child & Adolescent Psychiatry, 39*(6), 721-726.
- Heimberg, R.G. (1991). Cognitive-behavioural group therapy for social phobia: a treatment manual. Unpublished manuscript, The University at Albany, State University of New York.
- Heimberg, R. G., Dodge, C. S., Hope, D. A., Kennedy, C. R., Zollo, L. J., & Becker, R. E. (1990). Cognitive behavioral group treatment for social phobia: Comparison with a credible placebo control. *Cognitive Therapy and Research, 14*(1), 1-23.

- Heimberg, R. G., Salzman, D. G., Holt, C. S., & Blendell, K. A. (1993). Cognitive-behavioral group treatment for social phobia: Effectiveness at five-year followup. *Cognitive therapy and Research*, 17(4), 325-339.
- Herbert, J. D., Gaudiano, B. A., Rheingold, A. A., Moitra, E., Myers, V. H., Dalrymple, K. L., & Brandsma, L. L. (2009). Cognitive behavior therapy for generalized social anxiety disorder in adolescents: A randomized controlled trial. *Journal of Anxiety Disorders*, 23(2), 167-177
- Hudson, J. L. (2005). Efficacy of cognitive—behavioural therapy for children and adolescents with anxiety disorders. *Behaviour Change*, 22(02), 55-70.
- Hunt, C., Andrews, G., Sakashita, C., Crino, R., & Erskine, A. (2009). Randomized controlled trial of an early intervention programme for adolescent anxiety disorders. *Australian and New Zealand Journal of Psychiatry*, 43(4), 300-304.
- Ingul, J. M., Aune, T., & Nordahl, H. M. (2014). A randomized controlled trial of individual cognitive therapy, group cognitive behaviour therapy and attentional placebo for adolescent social phobia. *Psychotherapy and Psychosomatics*, 83(1), 54-61.
- Ishikawa, S. I., Okajima, I., Matsuoka, H., & Sakano, Y. (2007). Cognitive behavioural therapy for anxiety disorders in children and adolescents: A meta-analysis. *Child and Adolescent Mental Health*, 12(4), 164-172.
- James, A. C., James, G., Cowdrey, F. A., Soler, A., & Choke, A. (2013). Cognitive behavioural therapy for anxiety disorders in children and adolescents. *Cochrane Database Syst Rev*, 6.
- James, A. A., Soler, A., & Weatherall, R. R. (2005). Cognitive behavioural therapy for anxiety disorders in children and adolescents. *The Cochrane Library*.

- Kendall, P. C., Compton, S. N., Walkup, J. T., Birmaher, B., Albano, A. M., Sherrill, J., ... & Piacentini, J. (2010). Clinical characteristics of anxiety disordered youth. *Journal of Anxiety Disorders*, 24(3), 360-365.
- Kendall, P.C., Hedtke, K.A., Aschenbrand, S.G., 2013. Anxiety Disorders. In: Wolfe, D.A., Mash, E.J. (Eds.), Behavioral and Emotional Disorders in Adolescents: Nature, Assessment and Treatment. The Guilford Press, New York, USA.
- Kendall, P. C., Kane, M., Howard, B., & Siqueland, L. (1989). Cognitive-behavioral therapy for anxious children: treatment manual.
- Kendall, P. C., & Ollendick, T. H. (2005). Setting the research and practice agenda for anxiety in children and adolescence: A topic comes of age. *Cognitive and Behavioral Practice*, 11(1), 65-74.
- Kendall, P. C., & Peterman, J. S. (2015). CBT for adolescents with anxiety: Mature yet still developing. *American Journal of Psychiatry*, 172(6), 519-530.
- Kmet, L., Lee, R. C., & Cook, L. S. (2004). Alberta Heritage Foundation for Medical research (AHFMR), et al. *Systematic review of the social, ethical, and legal dimensions of genetic cancer risk assessment*.
- Kovacs, M. (1992). *Children's Depression Inventory Short Form*. North Tonawanda, NY: Multi-Health Systems.
- Laursen, B., Coy, K. C., & Collins, W. A. (1998). Reconsidering Changes in Parent-Child Conflict across Adolescence: A Meta-Analysis. *Child Development*, 69(3), 817-832.
- Legerstee, J. S., Huizink, A. C., Van Gastel, W., Liber, J. M., Treffers, P. D. A., Verhulst, F. C. & Utens, E. M. W. J. (2008). Maternal anxiety predicts favourable treatment outcomes in anxiety-disordered adolescents. *Acta Psychiatrica Scandinavica*, 117, 289-298.

- Lerner, R. M., & Steinberg, L. (2009). *Handbook of Adolescent Psychology, Individual Bases of Adolescent Development* (Vol. 1). John Wiley & Sons.
- Lyneham, H. J., & Rapee, R. M. (2006). Evaluation of therapist-supported parent-implemented CBT for anxiety disorders in rural children. *Behaviour research and therapy, 44*(9), 1287-1300.
- Manassis, K., Lee, T. C., Bennett, K., Zhao, X. Y., Mendlowitz, S., Duda, S., ... & Wood, J. J. (2014). Types of parental involvement in CBT with anxious youth: A preliminary meta-analysis. *Journal of Consulting and Clinical Psychology, 82*(6), 1163.
- March, J. S., Parker, J. D., Sullivan, K., Stallings, P., & Conners, C. K. (1997). The Multidimensional Anxiety Scale for Children (MASC): factor structure, reliability, and validity. *Journal of the American Academy of Child & Adolescent Psychiatry, 36*(4), 554-565.
- Masi, G., Favilla, L., Mucci, M., & Millepiedi, S. (2000). Panic disorder in clinically referred children and adolescents. *Child Psychiatry and Human Development, 31*(2), 139-151.
- Masia, C., Beidel, D. C., Albano, A. M., Rapee, R. M., Turner, S. M., Morris, T. L., & Klein, R. G. (1999). Skills for academic and social success. Available from Carrie Masia Warner, PhD, New York University School of Medicine, Child Study Center, 215.
- Masia-Warner, C., Klein, R. G., Dent, H. C., Fisher, P. H., Alvir, J., Albano, A. M., & Guardino, M. (2005). School-based intervention for adolescents with social anxiety disorder: Results of a controlled study. *Journal of Abnormal Child Psychology, 33*(6), 707-722.

- Masia Warner, C., Fisher, P. H., Shrout, P. E., Rathor, S., & Klein, R. G. (2007). Treating adolescents with social anxiety disorder in school: An attention control trial. *Journal of Child Psychology and Psychiatry*, 48(7), 676-686.
- Moher, D., Liberati, A., Tetzlaff, J. & Altman, D. G. (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Med* 6. doi: 10.1371/journal.pmed.1000097
- Mörtberg, E., Clark, D. M., Sundin, Ö., & Åberg Wistedt, A. (2007). Intensive group cognitive treatment and individual cognitive therapy vs. treatment as usual in social phobia: a randomized controlled trial. *Acta Psychiatrica Scandinavica*, 115(2), 142-154.
- O'Brien, F., Olden, N., Migone, M., Dooley, B., Atkins, L., Ganter, K., & Bates, A. (2007). Group cognitive behavioural therapy for children with anxiety disorder—an evaluation of the ‘Friends for Youth’ programme. *Irish Journal of Psychological Medicine*, 24(01), 5-12.
- Olivares, J. & García-López, L.J. (1998). *Therapy for Adolescents with Generalized Social Phobia: A new cognitive-behavioral treatment protocol for social phobia in adolescence [Intervención en Adolescentes con Fobia Social Generalizada: Un programa de tratamiento cognitivo-conductual para adolescentes con un trastorno de ansiedad social]*. Unpublished manuscript.
- Olivares, J., García-López, L. J., Beidel, D. C., Turner, S.M., (1998). *Social effectiveness therapy for adolescents- Spanish version*. Unpublished manuscript.
- Olivares, J., García-López, L. J., Beidel, D. C., Turner, S. M., Albano, A. M., & Hidalgo, M. D. (2002). Results at long-term among three psychological

- treatments for adolescents with generalized social phobia (I): Statistical significance. *Psicología Conductual*, 10(1), 147-166.
- Olivares, J., García-López, L. J., Beidel, D. C., Turner, S. M., Albano, A. M., & Hidalgo, M. D. (2002). Results at long-term among three psychological treatments for adolescents with generalized social phobia (I): Statistical significance. *Psicología Conductual*, 10(1), 147-166.
- Pincus, D. B., Ehrenreich May, J. E., Whitton, S. W., Mattis, S. G., & Barlow, D. H. (2010). Cognitive-behavioral treatment of panic disorder in adolescence. *Journal of Clinical Child & Adolescent Psychology*, 39(5), 638-649.
- Puleo, C. M., Conner, B. T., Benjamin, C. L., & Kendall, P. C. (2011). CBT for childhood anxiety and substance use at 7.4-year follow-up: a reassessment controlling for known predictors. *Journal of Anxiety Disorders*, 25(5), 690-696.
- Rapee, R. M., Abbott, M. J., & Lyneham, H. J. (2006). Bibliotherapy for children with anxiety disorders using written materials for parents: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, 74(3), 436-444.
- Reuland, M. M., & Teachman, B. A. (2014). Interpretation bias modification for youth and their parents: A novel treatment for early adolescent social anxiety. *Journal of Anxiety Disorders*, 28(8), 851-864.
- Reynolds, E. K., Magidson, J. F., Mayes, L. C., & Lejuez, C. W. (2010). Risk-taking behaviors across the transition from adolescence to young adulthood. *Young Adult Mental Health*, 40-63.

- Reynolds, S., Wilson, C., Austin, J., & Hooper, L. (2012). Effects of psychotherapy for anxiety in children and adolescents: A meta-analytic review. *Clinical Psychology Review, 32*(4), 251-262.
- Sauter, F. M., Heyne, D., & Westenberg, P. M. (2009). Cognitive behavior therapy for anxious adolescents: Developmental influences on treatment design and delivery. *Clinical Child and Family Psychology Review, 12*(4), 310-335.
- Silverman, W. K. & Albano, A. M. (1996) *The Anxiety Disorders Interview Schedule for DSM-IV: child and parent versions*. San Antonio, TX: Psychological Corporation.
- Silverman, W. K., Kurtines, W. M., Ginsburg, G. S., Weems, C. F., Lumpkin, P. W., & Carmichael, D. H. (1999). Treating anxiety disorders in children with group cognitive-behavioral therapy: A randomized clinical trial. *Journal of Consulting and Clinical Psychology, 67*(6), 995 -1003.
- Silverman, W. K., Pina, A. A., & Viswesvaran, C. (2008). Evidence-based psychosocial treatments for phobic and anxiety disorders in children and adolescents. *Journal of Clinical Child & Adolescent Psychology, 37*(1), 105-130.
- Siqueland, L., Rynn, M., & Diamond, G. S. (2005). Cognitive behavioral and attachment based family therapy for anxious adolescents: Phase I and II studies. *Journal of Anxiety Disorders, 19*(4), 361-381.
- Spence, S. H., Donovan, C. L., March, S., Gamble, A., Anderson, R. E., Prosser, S., & Kenardy, J. (2011). A randomized controlled trial of online versus clinic-based CBT for adolescent anxiety. *Journal of Consulting and Clinical Psychology, 79*(5), 629.

- Sportel, B. E., de Hullu, E., de Jong, P. J., & Nauta, M. H. (2013). Cognitive bias modification versus CBT in reducing adolescent social anxiety: a randomized controlled trial.
- Stangier, U., Heidenreich, T., Peitz, M., Lauterbach, W., & Clark, D. M. (2003). Cognitive therapy for social phobia: individual versus group treatment. *Behaviour Research and Therapy*, *41*(9), 991-1007.
- Strauss, C. C., Lease, C. A., Last, C. G., & Francis, G. (1988). Overanxious disorder: An examination of developmental differences. *Journal of Abnormal Child Psychology*, *16*(4), 433-443.
- Thirlwall, K., Cooper, P. J., Karalus, J., Voysey, M., Willetts, L., & Creswell, C. (2013). Treatment of child anxiety disorders via guided parent-delivered cognitive-behavioural therapy: randomised controlled trial. *The British Journal of Psychiatry*, *203*(6), 436-444.
- Tillfors, M., Andersson, G., Ekselius, L., Furmark, T., Lewenhaupt, S., Karlsson, A., & Carlbring, P. (2011). A randomized trial of internet-delivered treatment for social anxiety disorder in high school students. *Cognitive Behaviour Therapy*, *40*(2), 147-157.
- Waite, P., & Creswell, C. (2014). Children and adolescents referred for treatment of anxiety disorders: Differences in clinical characteristics. *Journal of Affective Disorders*, *167*, 326-332.
- Walkup, J. T., Albano, A. M., Piacentini, J., Birmaher, B., Compton, S. N., Sherrill, J. T., ... & Kendall, P. C. (2008). Cognitive behavioral therapy, sertraline, or a combination in childhood anxiety. *New England Journal of Medicine*, *359*(26), 2753-2766.



- Weil, L. G., Fleming, S. M., Dumontheil, I., Kilford, E. J., Weil, R. S., Rees, G., ... & Blakemore, S. J. (2013). The development of metacognitive ability in adolescence. *Consciousness and Cognition*, 22(1), 264-271.
- Wuthrich, V. M., Rapee, R. M., Cunningham, M. J., Lyneham, H. J., Hudson, J. L., & Schniering, C. A. (2012). A randomized controlled trial of the Cool Teens CD-ROM computerized program for adolescent anxiety. *Journal of the American Academy of Child & Adolescent Psychiatry*, 51(3), 261-270.

**PART TWO: Empirical Paper**

**Parental discourse style and adolescent anxiety: The role of anxiety disorder  
and age**

## **Abstract**

**Aim:** Parental discourse may be a mechanism via which anxiogenic cognitions are transmitted from parent to offspring. No study had explored the relationship between parent-offspring narratives and anxiety in adolescents. This study assessed the relationship between parent-offspring narratives and adolescent anxiety by examining how parental discourse may vary as a function of adolescents' anxiety status. The second aim was to examine how parental discourse may vary as a function of age and anxiety status.

**Method:** Participants were 112 parent/offspring dyads that were split into four groups: parents and anxious adolescents, parents and non-anxious adolescents, parents and anxious children and parents and non-anxious children. Each dyad discussed a worrying experience and these narratives were examined using the Maternal Discourse Style Coding Scheme – Anxiety Version (MDSCS-A).

**Results:** There were no significant effects of age or anxiety status on parental discourse style. A significant interaction of age and anxiety status was found for parental positive attribution. Irrespective of adolescent anxiety status, parents engaged in similar levels of positive attribution, while parents of children with anxiety disorders engaged in significantly more positive attributions than parents of children without anxiety disorders.

**Conclusion:** Parental discourse style did not vary as a function of anxiety in either adolescents or children or as a function of age. Parents of children with an anxiety disorder engaged in more encouraging discourse styles while a similar effect was not found in parents of adolescents. Further research is needed to confirm these findings.

## **Introduction**

### **Prevalence and impact of anxiety disorders in children and adolescents**

Childhood anxiety disorders are common (e.g. Essau & Gabbiden, 2013), persist into adolescence and adulthood, and are associated with future mental health difficulties including anxiety disorders in adulthood, depression, and behaviour disorders (e.g. Bittner, Egger, Erklani, Costello, Foley & Angold, 2007). Children and adolescents who experience anxiety disorders are more likely than non-anxious children to be impaired in later life in terms of social, educational, and occupational functioning (e.g. Woodward & Fergusson, 2001). Anxiety disorders are particularly prevalent in adolescents with approximately 5% of 12-15 year olds in Britain meeting diagnostic criteria for an anxiety disorder (Ford, Goodman & Meltzer, 2003). Furthermore, anxiety symptoms are more severe and co-morbid mood disorders and issues with school attendance more common in adolescents than children (Waite & Creswell, 2014). Despite the prevalence and harm associated with anxiety disorders in adolescence, adolescents with difficulties in this area have been identified as an under researched group (Kendall, Hedtke & Aschenbrand, 2013).

### **Anxiety within families**

Anxiety disorders aggregate in families (e.g. Hettema, Neale & Kendler, 2001) and are more common among children of anxious versus non-anxious parents (e.g. McClure, Brennan, Hammen & Le Brocque, 2001; Spence, Najman, Bor, O'Callaghan & Williams, 2002) and parents of anxious versus non-anxious children (e.g. Cooper, Fearn, Willetts, Seabrook & Parkinson, 2006). Most research has focused on the association between maternal and child anxiety although a limited studies have specifically assessed paternal anxiety (McClure et al., 2001; Cooper et al., 2006). A meta-analysis indicates this association be more pronounced between

mothers, compared to fathers, and their offspring (Connell & Goodman, 2002). To date the role of primary caregiving, as a potential moderator in this association, has not been explored.

There are a number of ways that anxiety may be transmitted from parents to offspring, with identified risk factors for the development of childhood anxiety disorders including genetic (e.g. Hetttema et al., 2001), temperamental (e.g. Biederman, Rosenbaum, Boldinc, Herot et al, 2001), and environmental factors (e.g. Ehringer, Rhee, Young, Corley & Hewitt, 2006). However, environmental factors account for the majority of the risk-related variance (Hetttema et al., 2001).

### **Parenting behaviour**

Theoretical models (e.g. Creswell, Murray, Stacey & Cooper, 2011; Hudson & Rapee, 2004) emphasise the role of parenting factors; incorporating genetics, parental anxiety and/or depression, adverse life events and parenting behaviours. Although the aetiology and maintenance of anxiety is understood to be multifactorial, a growing body of evidence indicates parental behaviour to be an important contributory factor (McLeod, Wood, Weisz, 2007; Rapee, Schniering & Hudson, 2009, Waite, Whittington & Creswell, 2014).

Parental behaviours of over-control, rejection or lack of warmth are understood to promote anxiety in children and young people, particularly within the context of elevated trait anxiety (Wood, McLeod, Sigman, Hwang & Chu, 2003). Over-control, characterised by over-involvement where parents take over tasks that their offspring is independently capable of (McLeod et al., 2007; Rapee, 1997; Rothbaum & Weisz, 1994; Wood, 2006), is proposed to negatively impact on the young person's self-efficacy (Chorpita & Barlow, 1998; Rapee, 1997; Wood, 2006). Conversely, encouraging the young person to be autonomous, is proposed to increase

their sense of mastery resulting in reduced anxiety (Chorpita & Barlow, 1998). Rejection, characterised by parental hostility or criticism towards the young person or little warmth, involvement or emotional support (McLeod et al., 2007), may reduce the young person's ability to regulate their emotions thereby increasing their sensitivity to anxiety (Chorpita & Barlow, 1998; McLeod et al., 2007). Meta-analyses indicate an association between parental control and child anxiety with a medium sized effect (McLeod et al., 2007; van der Bruggen, Stams & Bögels, 2008) and a small association between parental rejection/lack of warmth and child anxiety (McLeod et al., 2007). These studies have generally included children and young people from a wide age range and therefore caution must be taken when applying their findings to adolescents. However, a recent systematic review (Waite et al., 2014) focusing on parental behaviours and adolescent anxiety provides evidence for a consistent significant association between perceived parental control and adolescent anxiety and, less consistently, with rejecting parental behaviours and lack of warmth or support with adolescent anxiety. Two prospective studies also suggest a bidirectional relationship between adolescent anxiety symptoms and controlling parental behaviour (Van Zalk & Kerr, 2012; Wijsbroek, Hale, Raaijmakers Meeus 2011).

‘Anxious rearing’ behaviours, i.e. modelling and/or reinforcing anxious behaviours are also hypothesised to reinforce child anxiety (Rachman, 1977) and research indicates that parental expression of anxiety encourages children to develop anxious thoughts and behaviours (Askew & Field, 2007; de Rosnay, Cooper, Tsigaras, & Murray, 2006; Gerull & Rapee, 2002; Waters, Zimmer-Gembeck & Farrell, 2012). Again, research has primarily been conducted with younger children or across a wide range of ages. To date, only two studies have explored the

associations between parental behaviours and anxiety separately for adolescents and children. Research with children with and without anxiety, found an age effect (age groups were 7-9, 10-11 and 12-13 years) for maternal involvement, with significantly less maternal help occurring during cognitive tasks as children got older (Hudson & Rapee, 2001). The effect of age was not significant for parental negativity, and neither were the age and anxiety interactions for maternal involvement or negativity. In contrast, an observational study (Waite & Creswell, 2015) with anxious and non-anxious children and adolescents (aged 7-10 years and 13 -16 years) found parents of adolescents exhibited significantly less expressed anxiety and intrusive and warm behaviours than parents of children. A significant interaction between anxiety disorder status and age was also found; parents of adolescents with anxiety exhibited less warm and more intrusive behaviours than parents of adolescents without anxiety. In contrast this effect was not found in parents of children. This emerging evidence base indicates potential differences in the way parents of anxious adolescents and parents of anxious children interact with their offspring.

### **Parental discourse**

In addition to studies of parenting behaviour, a developing body of research has focused on the role of information transfer via parental discourse, within the context of parent-child narratives. Research with anxious and non-anxious samples indicates that parent-child conversations, especially the way in which narratives are constructed about the child's experience, may be an important route by which parents' anxious expectations and cognitions are transferred to their children so as to initiate or reinforce child anxiety (Barrett, Rapee, Dadds & Ryan, 1996; Chorpita, Albano and Barlow, 1996; Field, Lawson & Banerjee., 2008; Muris, van Zwol, Huijding & Mayer, 2010; Murray et al., 2014; Percy, 2011; Suveg, Sood, Barmish,

Tiwari, Hudson & Kendall, 2008; Suveg, Zeman, Flannery-Schroeder & Cassano, 2005). Research with non-clinical populations indicates that discourse style during mother-child narratives plays a significant role in the development of young children's emotional understanding i.e. with discourse about emotions and their meaning predicting children's use of evaluative emotion language and emotional understanding (e.g. Denham, Zoller & Couchard, 1994; Dunn, Bretherton & Munn., 1987; Fivush, Haden & Reese, 2006; Taumoepeau & Ruffman, 2008; Van Bergen, Salmon, Dadds & Allen 2009; Wang & Fivush, 2005).

Studies examining how information is communicated from mother to offspring during conversations, indicate that when parents verbally provide their offspring with information that is influenced by their own unhelpful and negative cognitions and expectations, this may establish and strengthen their offspring's cognitive biases towards threat, inability to cope, and avoidant behaviours during an anxiety provoking task. Barrett et al. (1996) interviewed children with and without anxiety disorders (aged 7-14 years), about ambiguous scenarios with a view to assessing child threat perception and maternal expectations. Two of these scenarios were chosen for family discussion following which the children were asked what they would do if they were in the situations discussed. After the discussions, anxious children's avoidant plans of actions increased whereas non-clinical children's avoidant plans reduced, and this reflected their mother's verbally expressed expectations. Similarly, Chorpita et al. (1996) asked a small sample of 12 children (aged 9-13 years) to interpret and generate plans of action for ambiguous scenarios. Children and parents then discussed the situations together, and afterwards the children again interpreted the scenarios and generated plans of action. Consistent with Barrett et al.'s (1996) findings, changes in children's anxious responding, in



terms of threat interpretation and avoidant plans were positively related to the extent of anxious discourse by parents during the discussion task. Similar results have also been found in studies examining parental discourse among mothers of anxious children during conversation. Suveg et al. (2005; 2008) asked 28 anxious and 28 non-anxious children (aged 8-12 years), and their mothers, to engage in a discussion about a time when the child experienced worry, sadness or anger. Mothers of anxious children used significantly fewer words relating to positive emotions and discouraged their child's discussion of emotion more than mothers of non-anxious children. Suveg et al. (2008) also found that mothers of the anxious children used significantly more words relating to negative emotions than mothers of children without anxiety. A study by Percy (2011) also demonstrated that, during conversations about anxious experiences, mothers of anxious children endorsed more avoidant plans of action than mothers of non-anxious children.

### **Summary**

Research with both clinically anxious and community samples indicates that parent-child discourse may be an important mechanism via which anxiogenic cognitions are transmitted from parent to offspring with more attribution of threat, promotion of avoidance and less positivity occurring between parents and anxious offspring. However, research has occurred with children and young people of broad age ranges up to 12 or 13 years of age. Only two studies have included participants aged up to 14 years (Barrett et al, 1996) and 15 years (Moore et al., 2004) with the average participant ages in these studies being 9.6 years and 10.7 years respectively. To date, no study has explored the relationship between parent-offspring narratives and anxiety in an exclusively adolescent sample or examined how narratives between

parents and adolescents compare with narratives between parents and anxious children.

Such research is pertinent as adolescence is a period when the parental role changes from childhood (Furman & Buhrmester, 1992), issues of control and autonomy are negotiated (Paikoff & Brooks-Gunn, 1991) and a central parental task is commonly believed to be to promote autonomy in the adolescent (Hill & Holmbeck, 1986; McElhaney, Allen, Stephenson & Hare, 2009). Equally, despite these transitions and the traditional view of adolescence as a time of discord with parents, normative research suggests that most adolescents maintain warm, positive relationships with their parents and develop autonomy without breaking parental bonds (Grotevant & Copper, 1986, Hill & Holmbeck, 1986). As discussed, emerging evidence indicates differences in the way parents of anxious adolescents and parents of anxious children behave towards their offspring (McLeod et al., 2007; Waite et al., 2014, Waite & Creswell., 2015) and therefore similar differences might be expected to present in their discourse. Indeed, factors such as the typical parental focus on promoting autonomy and independence and the importance of academic achievements during adolescence may influence the degree to which parents engage in discussion of potential threat.

### **Research aims**

This study compares four groups of parent/offspring dyads: parents and adolescents with an anxiety disorder (Group 1), parents and adolescents without an anxiety disorder (Group 2), parents and children with an anxiety disorder (Group 3) and parents and children without an anxiety disorder (Group 4). The principal aim is to explore the relationship between parental discourse style and adolescent anxiety by examining how parental discourse may vary as a function of offspring's anxiety

status (anxious adolescent versus non-anxious adolescent). The second, and more exploratory aim, is to examine how differences in parental discourse according to anxiety status may vary as a function of age (anxious and non-anxious adolescent versus anxious and non-anxious child) and is guided by the emerging evidence that parents of anxious adolescents may engage in more negativity and less warm and supportive behaviour than parents of anxious children.

## **Hypotheses**

*Hypothesis 1:* Parents of adolescents with an anxiety disorder, compared to parents of adolescents without an anxiety disorder, will engage in more anxiogenic style (attribution of threat, vulnerability and/or promotion of avoidance) and less encouragement (attribution of security, positiveness and/or endeavour) in their discourse (Group 1 versus Group 2).

*Hypothesis 2:* These differences in discourse style (greater levels of anxiogenic style and lower levels of encouraging style in off-spring with anxiety disorders) will be greater between the parents of adolescents with, and without, an anxiety disorder than between parents of children with, or without, an anxiety disorder (Groups 1, 2, 3 and 4).

## **Method**

### **Ethics**

Ethical approval for the study was given by the Berkshire Research Ethics Committee (12/LO/0119) and the University of Reading Research Ethics Committee (12/25) as part of a larger RCT ethics application. Participants were fully informed of privacy and confidentiality and their right to withdraw from the study at any time

(see Appendix C). Informed consent and assent were provided by all participants (parents and offspring) before participating in the study.

## **Participants**

### *Adolescents and children with anxiety disorders*

Adolescents and children with anxiety disorders were referred from a range of sources including General Practitioners, Primary Mental Health Workers, Local Child and Adolescent Mental Health Services (CAMHS), Educational Psychologists and School Nurses for an anxiety disorder assessment. To be accepted as participants all adolescents and children needed to have a primary diagnosis of an anxiety disorder identified according to the Anxiety Disorders Interview Schedule (ADIS-C/P: Silverman & Albano, 1996). Adolescents and children were excluded from participating if they had a learning disability, autistic spectrum disorder, psychosis, substance dependency, conduct disorder or there was risk of self-harm. Current psychotropic medication or psychological interventions for anxiety were also grounds for exclusion. Parents were excluded if their English language skills were not sufficient to meet the study demands or if they had a significant intellectual impairment. Two adolescents were unable to participate in the study due to risk of self-harm and three further adolescents were excluded as they were prescribed psychotropic medication.

Twenty eight adolescents, aged 13-16 years and diagnosed with an anxiety disorder, were recruited along with their primary caregiving parent. Twenty eight children aged between 7-10 years and diagnosed with an anxiety disorder who had participated in an identical assessment with their mothers as part of a larger randomised control trial were then selected. The children were matched to the

adolescent group according to their primary anxiety diagnosis, comorbid depression or dysthymia, conduct disorders, ethnicity, gender and socio-economic status. See Table 1 for participant demographics. The adolescent groups included fathers as well as mothers. However fathers were a small minority and differences in parental gender was not significant between the four participant groups.

Groups were closely matched on primary anxiety disorder diagnosis and did not significantly differ on this variable. Participants primary anxiety disorders were: social anxiety disorder (adolescents:  $n = 7$ , 25%, children;  $n = 8$ , 28.6%), generalised anxiety disorder (adolescents:  $n = 6$ , 21.4%; children:  $n = 7$ , 25%), specific phobia (adolescents:  $n = 9$ , 32.2%; children:  $n = 8$ , 25%), panic disorder with, or without, agoraphobia (adolescents:  $n = 5$ , 17.9%; Children:  $n = 4$ , 17.8%), and agoraphobia without panic (adolescents:  $n = 1$ , 3.6%; Children:  $n = 2$  (7.1%).

There was no significant difference between the clinical groups in the mean clinical severity rating for their primary anxiety disorder (adolescents: mean = 5.54 ( $SD = .96$ ); children: mean = 5.29 ( $SD = .81$ )). However, the adolescents experienced significantly fewer co-morbid anxiety disorders than the children (adolescents: 0.81 ( $SD = 0.15$ ); Children: mean = 1.60 ( $SD = 0.30$ );  $t(54) = -2.43$ ,  $p = .02$ ). The groups were matched for co-morbid depression, co-morbid dysthymia and co-morbid oppositional defiant disorder.

There were no significant difference, between the anxious adolescent and anxious child groups, on self-reported and parental measures of anxiety symptoms (Spence Child Anxiety Scale – Child and Parent versions (SCAS-C/P); Spence, 1998) (SCAS-C:  $t(54) = .53$ ,  $p = .60$ ; SCAS-P:  $t(54) = -1.12$ ,  $p = .27$ ) and a self-report measure of low mood (Short Mood and Feelings questionnaire – Child version (SMFQ – C); Angold et al., 1995) (SMFQ-C:  $t(53) = 0.28$ ,  $p = .27$ ). See Table 1.

**TABLE 1***Participant characteristics*

|  | <b>Anxious adolescents (<i>n</i> = 28)</b> | <b>Non-anxious adolescents (<i>n</i> = 28)</b> | <b>Anxious children (<i>n</i> = 28)</b> | <b>Non-anxious children (<i>n</i> = 28)</b> | <b>Statistics</b>               |
|--|--|--|---|---|---------------------------------|
| <b>Gender (boys: girls)</b>                              | 12:16                                      | 15:13  | 13:15                                   | 18:10                                       | $\chi^2(3) = 3.04, p = .39$     |
| <b>Age in years adolescents (mean, <i>SD</i>, range)</b> | 14.86 (1.18)<br>13-16                      | 14.57 (1.17)<br>13-16                          | –<br>–                                  | –<br>–                                      | $t(54) = .340, p = .74$         |
| <b>Age in years children (mean, <i>SD</i>, range)</b>    | –<br>–                                     | –<br>–   | 9.00 (.903)<br>7-10                     | 8.79 (.83)<br>8-10                          | $t(54) = .902, p = .36$         |
| <b>Ethnicity (% White British)</b>                       | 92.9%                                      | 92.9%  | 96.4%                                   | 88.5%                                       | $\chi^2(3) = 15.03, p = .74$    |
| <b>Family SES (% “higher” or “professional”)</b>         | 64.3                                       | 96.4%  | 75%                                     | 72%   | $\chi^2(3) = 8.96, p = .03^*$   |
| <b>Parent gender (% female)</b>                          | 92.9%                                      | 89.3%  | 100%                                    | 100%  | $\chi^2(3) = 5.08, p = .16$     |
| <b>DASS21 total (mean, <i>SD</i>)</b>                    | 28.00 (23.59)                              | 15.7 (8.00)                                    | 23.00 (16.75)                           | 20.00 (11.81)                               | $F(3,106) = 2.12, p = .10$      |
| <b>SCAS-C total (mean, <i>SD</i>)</b>                    | 39.12 <sup>a</sup> (18.25)                 | 12.21 <sup>a</sup> (5.58)                      | 36.46 (19.38) <sup>b</sup>              | 26.65 (11.09) <sup>b</sup>                  | $F(3, 105) = 20.51, p < .001^*$ |
| <b>SCAS-P total (mean, <i>SD</i>)</b>                    | 31.75 <sup>a</sup> (18.25)                 | 7.10 <sup>a</sup> (3.05)                       | 38.50 (14.99) <sup>b</sup>              | 13.64 (5.37) <sup>b</sup>                   | $F(3, 108) = 46.99, p < .001^*$ |
| <b>SMFQ-C total (mean, <i>SD</i>)</b>                    | 7.11 (5.77) <sup>a</sup>                   | 2.23 (2.44) <sup>a</sup>                       | 6.71 (4.67)                             | 4.69 (3.12)                                 | $F(3, 105) = 7.65, p < .001^*$  |

*Note:* When data was missing, this was less than 10% of the dataset. Superscript letters refer to pairwise comparisons (conducted for anxious adolescents versus non-anxious adolescents, anxious adolescents versus anxious children, anxious adolescents versus non-anxious children and anxious children versus non-anxious children); means with shared subscripts within rows are significantly different at  $p < .05$ .

SES = Socioeconomic status; DASS21 = Depression and Anxiety Stress Scale; SCAS-C/P = Spence Children’s Anxiety Scale Child and Parent Versions; SMFQ-C = Short Mood and Feelings Questionnaire Child version.

### *Adolescents and children without anxiety disorders*

Twenty eight adolescents, aged 13-16 and free from anxiety disorders, were recruited with their primary care-giving parent. Twenty eight children, aged 7-10 years and free from anxiety disorders, were also chosen from a larger randomised control trial and matched as closely as possible on demographic variables to the clinically anxious groups. Adolescents and children without anxiety disorders were recruited via adverts in newsletters at local schools and youth groups. The participants were offered a gift voucher to compensate them for their time. To be accepted on to the study adolescents and children needed to score within the non-clinical range on the SCAS-P/C and the SMFQ-C. Parents and off-spring provided informed consent/assent. Consistent with the adolescents and children with anxiety disorders, adolescents and children without anxiety disorders were ineligible if they, or their parent, had a significant intellectual impairment or did not speak or comprehend English at the level required to complete the study procedures or if they were taking psychotropic medication or receiving psychological interventions. As reported in Table 1, there were no significant differences between the two adolescent groups and two child groups in terms of age, ethnicity, parent gender or parental psychological wellbeing (as measured by the DASS-21). However, they differed on socio-economic status with significantly more of the parents of adolescents without anxiety disorders having a higher socioeconomic status compared to the other conditions. As anticipated, the adolescents with anxiety disorders had significantly higher scores than adolescents without anxiety disorders on measures of anxiety (SCAS-C:  $t(54) = 7.73, p = <.001$ ; SCAS-P:  $t(54) = 8.52, p = <.001$ ) and depression (SMFQ-C:  $t(53) = 4.04, p = <.001$ ). Consistent with this, the children with anxiety disorders had significantly higher scores on measures of anxiety symptoms than the

children without anxiety disorders (SCAS-P:  $t(54) = 7.46, p = <.001$ ; SCAS- C:  $t(52) = 2.26, p = .03$ ). Children with anxiety disorders reported more symptoms of low mood than the children without anxiety disorders, however the difference was not significant (SMFQ-C:  $t(52) = 1.86, p = .06$ ).

## **Procedure**

The adolescents and children with anxiety disorders, along with their parents, completed a clinical assessment and standardized questionnaires. The assessments were conducted by assistant psychologists or trainee clinical psychologists. The adolescents and children without anxiety disorders, who responded to the advertisements, were emailed consent/assent forms, participant information sheets and the SCAS-C/P and SMFQ-C to complete and return to the researcher. They were then telephoned by a researcher (a clinical psychologist) to explain the study in more detail and, where inclusion criteria were met and participation agreed, to arrange a research assessment.

A further research assessment took place before the anxious adolescents and children commenced treatment and involved the participants performing a number of anxiety-provoking parent-offspring interaction tasks including the discussion task about a worrying time that is used in this study. The assessment took place in a University laboratory equipped with wall mounted video cameras and the procedure was administered by trained research assistants, who all received supervision and monitoring. Observational video data of the parent-offspring discussion task was transcribed by psychology undergraduates. The transcribed data was then coded by the researcher (JK), who was blind to participant group.



## **Measures**

### ***Diagnoses***

Adolescents' and children's diagnoses were assigned based on the Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent version (ADIS-C/P; Silverman & Albano, 1996). The ADIS-C/P is a semi-structured interview designed to assess DSM-V anxiety disorders, mood disorders and behavioural disorders and has good psychometric properties (Silverman & Rabian, 2001). Where adolescents and 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 either the adolescent/child or parent report, and the higher CSR of the two was taken. The primary diagnosis was assigned to the disorder with the highest CSR. To ensure reliability, assessors reviewed and double coded their first 20 ADIS-C/P assessments with a panel led by a consultant clinical psychologist. Following this reliability was assessed. Assessors were needed to attain reliability at a kappa/intraclass correlation of .85. Once this level of reliability had been reached, assessors were required to review one in six interviews with the consensus team to ensure their reliability was maintained. The assessment team achieved inter-rater reliability that ranged from good to excellent (child-report, mean =.98 (range .91 – 1.00) and parent report, mean =.98 (range .96-1.00).

### ***Symptoms***

*The Spence Children's Anxiety Scale (SCAS-C/P; Spence, 1998)* was used to assess the adolescent/child and parent-reported symptoms of anxiety. This measure consists of 38 items with each scored on a 4-point Likert scale (0 = 1 to 4 = always 4). The SCAS-c also has six positive filler items to reduce biased negative

responses. Validated for use with adolescents and children aged from 6-18 years, both child and parent versions have good reliability, as well as discriminant and convergent validity (Nauta, Scholing, Rapee, Abbott, Spence & Waters, 2004; Spence, Barrett, & Turner, 2003). The SCAS –C/P had excellent internal consistency (SCAS-C  $\alpha = .91$ ; SCAS-P  $\alpha = .94$ ).

*The Short Mood and Feelings Questionnaire (SMFQ-C; Angold et al., 1995)* is used to assess symptoms of low mood in children and adolescents. This measure consists of 13 items with each item scored on a 3-point Likert scale (0 = ‘not true’ to 2 = ‘always true’). A ‘total low mood’ score can be obtained by summing all of the scores. Validated with children and adolescents aged 6-17 years, this measure has good internal reliability and discriminant validity (Angold, Costello, Messer, Pickles, Winder & Silver, 1995) and good test-retest reliability over a one week period ( $r = .75$ ) (Costello, Benjamin, Angold, & Silver, 1991). The SMFQ-C had good internal consistency (SMFQ-C  $\alpha = .86$ ).

*Depression Anxiety Stress Scale – Short Version (DASS21, Lovibond & Lovibond, 1995)* was used to assess the psychological wellbeing of parents with a view to identifying any between group differences. Three seven item self-report measures assess parental depression, anxiety and stress. The items are scored on a 4-point Likert scale (1 = ‘did not apply to me at all’ to 4 = ‘applied to me very much or most of the time’). A total score, obtained by combining the individual item scores, is used as a measure of parental psychopathology. The DASS-21 has good psychometric properties and good internal consistency subscales (Antony, Bieling, Cox, Enns & Swinson, 1998). This was also found in the current study ( $\alpha = 0.82$  for the anxiety scale,  $\alpha = 0.92$  for the depression scale,  $\alpha = 0.85$  for the stress scale and  $\alpha = .93$  for the overall scale).

## Parental discourse style

An acute anxiety discussion task (Murray et al., 2014; Percy, 2011) was administered to the participants to provide an observational measure of parental discourse style. This task required the parent/offspring dyads to have an open discussion about the offspring's most worrying time/experience. The purpose of this task was to enable observation of parental discourse style during discussion of a worrying time. The parent/offspring dyads were allowed to choose whether they would prefer to sit at the sofa or the table within the laboratory and were provided with these instructions:

*“We would like you and [offspring’s name] to spend the next few minutes talking about the most worrying time that [offspring’s name] can remember. It would be very helpful if you could think of something that [offspring’s name] would rate as 6 or above on the Feelings Thermometer (offspring is presented with the Feelings Thermometer) (see Appendix C) which ranges from 0 to 8, 0 = not worrying, 8 = very worrying). Please take one minute to agree on the time that you will talk about. You are free to talk about anything that you like other than your visit here today. I’m going to leave the room, but once you have decided what you’re going to talk about please let me know by waving at the camera, and then when I enter, please tell me the rating you’ve given. After that I’ll leave you for up to another 6 minutes to talk about the most worrying time that you can remember. When the time is up, I will knock on the door and come back in. If I can see you have definitely finished before the time is up I’ll come in a bit earlier.”*

The parent/offspring dyads discussed their chosen topic for a maximum of six minutes, with no minimum time limit. The research assistant stopped filming and re-

entered the room when the parent/offspring dyads had clearly finished talking or six minutes had elapsed.

*Maternal Discourse Style Coding Scheme – Anxiety Version (MDSCS-A; Murray et al, 2014)* was used to rate verbatim transcripts of the parent-offspring discussions produced from the video recordings. This scheme consists of three ‘anxiogenic’ codes (Attribution of Vulnerability, Attribution of Threat and Promotion of Avoidance), three ‘encouraging’ codes (Attribution of Security, Attribution of Positivity and Promotion of Endeavour), two functional codes (Promotion of Reflective Evaluation – Negative Focus and Promotion of Reflective Evaluation – Positive Focus) and a subsidiary code (Off-Task Utterance). For this study, the anxiogenic, encouraging codes and subsidiary code were utilised. The functional codes Promotion of Reflective Evaluation was not included as these codes did not relate to the study hypotheses and also rarely occurred. A brief definition and example of each code can be found in Table 2, while the full MDSCS-A coding scheme can be found in Appendix C.

Prior to coding the study discourses, the researcher received training in the coding scheme from a trained coder. The researcher segmented and coded a number of training transcripts which were then compared with the ratings of a second independent coder. Attributed codes were also discussed with a trained coder who provided feedback and advice. The researcher was required to obtain 80% agreement across at least 25 sample transcripts of parent/offspring discourse until the required level of reliability was obtained on all of the coding dimensions based on percentage agreement and K. See Table 3 for a summary of the inter-rater reliability scores.

**Table 2**

*Codes from the Maternal Discourse Style Coding Scheme – Anxiety Version (MDSCS-A)*

|                                     | <b>Definition</b>  | <b>Examples</b>   |
|-------------------------------------|--|---|
| <b><u>Anxiogenic codes</u></b>      |  |   |
| <b>Attribution of Threat</b>        | The parent refers to a situation (e.g. travelling on a train) or a specific aspect of a situation (e.g. a person, an animal, an object, or an action) as being threatening, intimidating, frightening etc.                       | <i>The dog could have bitten you”<br/>“Do you think aeroplanes are dangerous?”</i>  |
| <b>Attribution of Vulnerability</b> | The parent emphasises the child’s negative emotions or makes reference to the child being vulnerable or inept.   | <i>“I think you were scared”<br/>“Do you think you were worried?”</i>               |
| <b>Promotion of Avoidance</b>       | The parent refers to the child adopting avoidant behaviour in the context of an anxiety provoking situation.   | <i>“You should have just run away”<br/>“Would you walk away?”</i>                   |
| <b><u>Encouraging codes</u></b>     |  |   |
| <b>Attribution of Security</b>      | The parent refers to a situation (e.g. travelling on a train) or a specific aspect of a situation (e.g. a person, an animal, an object, or an action) in a positive way, e.g. as being fun, exciting, friendly, interesting etc. | <i>“The dog was very friendly”<br/>“Do you think aeroplanes are safe?”</i>          |
| <b>Attribution of Positiveness</b>  | The parent emphasises the child’s positive emotions or makes reference to the child being assured or competent   | <i>“I think that you were happy”<br/>“Do you think you would have lots of fun?”</i> |
| <b>Promotion of Endeavour</b>       | The parent refers to the child adopting proactive behaviour in the context of an anxiety provoking situation.  | <i>“You should have stroked the dog”<br/>“Would you join in?”</i>                   |
| <b><u>Subsidiary code</u></b>       |  |   |
| <b>Off Task Utterance</b>           | Any utterance not related to the task coded as ‘off-task utterance’.   | <i>“Please sit on the chair properly”</i>   |

**Table 3***Inter-rater reliability for discussion task coding*

|                                     | <b>% Agreement</b> | <b>Kappa (k)</b> |
|-------------------------------------|--------------------|------------------|
| <b>Attribution of Threat</b>        | 0.99               | 0.84             |
| <b>Attribution of Vulnerability</b> | 0.98               | 0.89             |
| <b>Promotion of Avoidance</b>       | 0.99               | 0.91             |
| <b>Attribution of Security</b>      | 0.99               | 0.90             |
| <b>Attribution of Positiveness</b>  | 0.97               | 0.92             |
| <b>Promotion of Endeavour</b>       | 0.99               | 0.80             |
| <b>Off Task Utterance</b>           | 0.97               | 0.92             |
| <b>Overall</b>                      | 0.99               | 0.89             |

**Sample size and power**

This study addressed novel hypotheses and there were no studies with a comparative population, from which to obtain an effect size. Furthermore the proposed study utilized pre-collected data and thus had a predetermined sample size of 28 subjects in each of the 4 experimental groups, with no opportunity to collect additional data.

Power calculations were performed using G-Power. Based on the power calculation for an independent t-test, this sample size provided sufficient power to detect a large effect size ( $d = 0.8$ ; Cohen, 1977) with 80% power with alphas at .05. The power calculation for ANOVA indicated that the sample size provided sufficient power to detect a large effect size ( $f = 0.4$ ; Cohen, 1977) with 95% power with alphas at .05.

## **Results**

### **Analytic procedure**

Data analyses were conducted in SPSS Version 22 using a stepped approach. First, data was tested for normality, skew, kurtosis and outliers. Second, preliminary analyses were conducted to identify any differences between the four experimental groups on demographic, variables, diagnostic variables and symptom measures. Third, data reduction was conducted by transforming frequency data for the discourse codes into a percentage of total on-task parental utterances and examining whether discourse codes should be combined. Fourth, Hypothesis 1 was tested using t-tests, and Hypothesis 2 was tested using ANOVA, for each of the discourse codes. Last, sensitivity analyses were run to check for the influence of the significant group differences on SES, SMFQ-C and the potential impact of parent gender.

### **Tests for Normality**

Histograms indicated that the SCAS-C, SMFQ-C and DASS21 were all normally distributed. The SCAS-P was not normally distributed but responded favourably to a square root transformation. This data was used for descriptive purposes only.

Histograms also indicated that the majority of the continuous discourse code data was positively skewed and was not normally distributed. Only Attribution of Vulnerability was normally distributed. Attempts to transform the data were unfavourable and therefore all analyses of discourse data were run parametrically with 1,000 bootstrap samples.

### **Tests for group comparability**

One-way ANOVAs and Chi-square tests were conducted to evaluate differences between the four groups, on demographics, diagnoses and symptoms of psychopathology (see Table 1). This was done to assess for any potential confounding variables. As reported, results indicated that the non-anxious adolescent group differed on SES from the other three groups and the anxiety disorder and non-anxious groups differed on symptoms of low mood. It was decided that these differences would be controlled for in the main analyses.

### **Discourse data reduction**

The MDSCS-A codes both mother and child-initiated utterances. However, not enough child-initiated utterances occurred to enable meaningful analyses and consequently, only discourse data reflecting parent-initiated utterances was analysed. Adopting an approach utilised by Murray et al (2014) to limit the influence of the variability in duration of conversation between parents and their offspring, frequency data for the six discourse codes was transformed into percentages of total on-task maternal utterances, thereby controlling for differences in the quantity of parental discourse.

Descriptive statistics (mean, *SD*) for the discourse styles across the groups can be seen in Table 4.

### **Inter item correlations**

Associations between discourse variables were examined using a bootstrapped Pearson's Correlation to determine whether there was a statistical case for combining certain codes to form composite variables. As shown in Table 5 there were significant negative correlations between Attribution of Positiveness and



Attribution of Threat and Promotion of Endeavour and Attribution of Vulnerability and a significant positive correlation between Attribution of Positiveness and Promotion of Endeavour. However all discourse styles were retained as independent as no large effects were detected (all  $r$  values  $< .50$ ; Cohen, 1992).

### **Hypothesis testing**

To address Hypotheses 1, six independent t-tests were performed (one for each of the six independent discourse variables). For each t-test, participant group (anxious adolescents vs non anxious adolescents) was entered as the independent variable and one of the anxiogenic discourse variables (Attribution of Threat, Attribution of Vulnerability, Promotion of Avoidance) or encouraging discourse styles (Attribution of Security, Attribution of Positiveness and Promotion of Endeavour ) as the dependant variable.

To address Hypothesis 2, six two way ANOVAs were performed (one for each of the six independent discourse variables). For each ANOVA, anxiety status (anxiety disorder or non-anxious), age (adolescent or child), and the interaction between them, were entered as independent variables. To analyse parental discourse style during the task one of the anxiogenic discourse styles; Attribution of Threat, Attribution of Vulnerability, Promotion of Avoidance or encouraging discourse styles; Attribution of Security, Attribution of Positiveness and Promotion of Endeavour was entered as a dependent variable in each ANOVA.

Preliminary checks were conducted, on bootstrapped data, to ensure that the assumptions of normality and homogeneity of variance were met.

**TABLE 4***Descriptive statistics for discourse styles during the discussion across groups*

|  | <b>Anxious adolescents<br/>(n = 28)</b> | <b>Non-anxious adolescents<br/>(n = 28)</b> | <b>Anxious children<br/>(n = 28)</b> | <b>Non-anxious children<br/>(n = 28)</b> |
|--|---|---|--------------------------------------|--|
| <b>Attribution of Threat<br/>(Mean, SD)</b>            | 6.37 (5.85)                             | 4.81 (4.83)                                 | 5.62 (5.77)                          | 7.17 (5.86)                              |
| <b>Attribution of<br/>Vulnerability<br/>(Mean, SD)</b> | 13.37 (8.04)                            | 12.85 (6.43)                                | 12.00 (6.39)                         | 10.61 (6.18)                             |
| <b>Promotion of Avoidance<br/>(Mean, SD)</b>           | 2.84 (3.45)                             | 1.40 (2.75)                                 | 1.55 (2.40)                          | 1.12 (2.51)                              |
| <b>Attribution of Security<br/>(Mean, SD)</b>          | 3.44 (3.59)                             | 3.69 (3.83)                                 | 4.42 (4.98)                          | 5.71 (5.82)                              |
| <b>Attribution of<br/>Positiveness (Mean, SD)</b>      | 5.29 (4.06)                             | 5.78(5.91)                                  | 6.84 (6.55)                          | 3.49 (3.45)                              |
| <b>Promotion of Endeavour<br/>(Mean, SD)</b>           | 4.09 (4.44)                             | 3.80 (5.10)                                 | 3.80 (4.14)                          | 1.34 (1.95)                              |

**Table 5***Bootstrapped Pearson's Correlations between discourse styles*

|                                     | <b>Attribution of Threat</b> | <b>Attribution of Vulnerability</b> | <b>Promotion of Avoidance</b> | <b>Attribution of Security</b> | <b>Attribution of Positiveness</b> | <b>Promotion of Endeavour</b> |
|-------------------------------------|------------------------------|-------------------------------------|-------------------------------|--------------------------------|------------------------------------|-------------------------------|
| <b>Attribution of Threat</b>        | -                            |                                     |                               |                                |                                    |                               |
| <b>Attribution of Vulnerability</b> | -.188                        | -                                   |                               |                                |                                    |                               |
| <b>Promotion of Avoidance</b>       | -.144                        | -.023                               | -                             |                                |                                    |                               |
| <b>Attribution of Security</b>      | -.003                        | -.104                               | -.075                         | -                              |                                    |                               |
| <b>Attribution of Positiveness</b>  | -.316**                      | .009                                | -.011                         | -.041                          | -                                  |                               |
| <b>Promotion of Endeavour</b>       | -.121                        | -.207*                              | -.077                         | .042                           | .323**                             | -                             |

\* p&lt;.05, \*\* p&lt;.01,

Effect sizes for t-tests were calculated using Cohen's  $d$  with .02, .05 and .08 indicating small, medium and large effects (Cohen, 1988). Omega squared ( $\omega^2$ ) was used to calculate effect sizes for analysis of variance with .01, .06, and .14 indicating small, medium and large effects (Kirk,1996).

**Hypothesis 1.** The findings from the independent t-tests were not consistent with the first hypothesis that predicted that parents of adolescents with an anxiety disorder would engage in more anxiogenic style (attribution of threat, vulnerability and/or promotion of avoidance) and less encouragement (attribution of security, positiveness and/or endeavour) in their discourse than parents of adolescents without anxiety disorders. As shown in Table 6 the t-tests for each of the parental discourse styles were all non-significant. These findings demonstrate that, contrary to Hypothesis 1, there were no significant differences between the discourse of parents of adolescents with and without anxiety disorders.

**Hypothesis 2.** The ANOVA findings were not consistent with the second hypothesis that the predicted differences in discourse styles, i.e. greater levels of anxiogenic discourse styles and lower levels of encouraging discourse styles in offspring with anxiety disorders compared to offspring without anxiety disorders, would be more pronounced between the adolescent groups than the child groups. The anxiety disorder x age group interaction was not significant for five of the discourse variables: Attribution of Threat ( $F [1,108] = 2.17, p = .14, \omega^2 = .02$ ); Attribution of Vulnerability ( $F [1,108] = 0.11, p = .74, \omega^2 = .01$ ); Promotion of Avoidance ( $F [1,108] = 0.81, p = .35, \omega^2 = .00$ ); Attribution of Security ( $F [1,108] = 0.36, p = .55, \omega^2 = .01$ ); and Promotion of Endeavour ( $F [1,108] = 1.99, p = .16, \omega^2 = .01$ ).

**Table 6***Bootstrapped t-tests between anxious and non-anxious adolescents' discourse styles*

|  | <b>Anxious adolescents (n=28)</b> | <b>Non-anxious adolescents (n=28)</b> | <b>Statistics</b>  |
|--|-----------------------------------|---------------------------------------|--|
| <b>Attribution of Threat (Mean, SD)</b>        | 6.37 (5.85)                       | 4.81 (4.83)                           | $t(54) = 1.09$ ,<br>$p = .28$ ,<br>95% CI [-3.40, 4.48]<br>$d = .29$     |
| <b>Attribution of Vulnerability (Mean, SD)</b> | 13.39 (8.04)                      | 12.85 (6.59)                          | $t(54) = .27$ ,<br>$p = .79$ ,<br>95% CI [-3.40, 4.48],<br>$d = .07$     |
| <b>Promotion of Avoidance (Mean, SD)</b>       | 2.84 (3.45)                       | 1.41 (2.75)                           | $t(54) = 1.72$ ,<br>$p = .09$ ,<br>95% CI [-.25, 3.11],<br>$d = .49$     |
| <b>Attribution of Security (Mean, SD)</b>      | 3.45 (3.59)                       | 3.69 (3.83)                           | $t(54) = -.24$ , $p = .81$ ,<br>95% CI [-2.23, 1.75],<br>$d = -.06$      |
| <b>Attribution of Positiveness (Mean, SD)</b>  | 5.23(4.06)                        | 5.78 (5.91)                           | $t(54) = -.36$ ,<br>$p = .72$ ,<br>95% CI [-3.21 to 2.23],<br>$d = -.11$ |
| <b>Promotion of Endeavour (Mean, SD)</b>       | 4.09 (4.44)                       | 3.80 (5.10)                           | $t(54) = .22$ ,<br>$p = .83$ ,<br>95% CI [-2.28, 2.84],<br>$d = .06$     |

Furthermore, although there was one significant interaction this was not in the direction predicted by Hypothesis 2. The anxiety disorder x age group interaction was significant for Attribution of Positiveness ( $F [3,108] = 3.87$ ,  $p = .05$ , omega squared = .02) with a Bonferroni adjustment to the alpha level. Figure 1, depicts how parents of children with an anxiety disorder exhibited significantly more Attribution

of Positiveness in their discourse than parents of children without an anxiety disorder ( $t(54) = .33$ , 95% CI: 0.58 to 6.29,  $p = .02$ ,  $d = .64$ ), whereas a similar relationship was not found for parents of adolescents ( $t(54) = .49$ , 95% CI:-3.22 to 2.24 ,  $p = .72$ ,  $d = 0.10$ ) with a Bonferroni adjustment. This finding indicates a greater difference in the use of this encouraging discourse style between offspring with, and without, anxiety disorders in the child groups but not the adolescent groups.

**Figure 1** Anxiety disorder status x age group interaction for Attribution of Positive

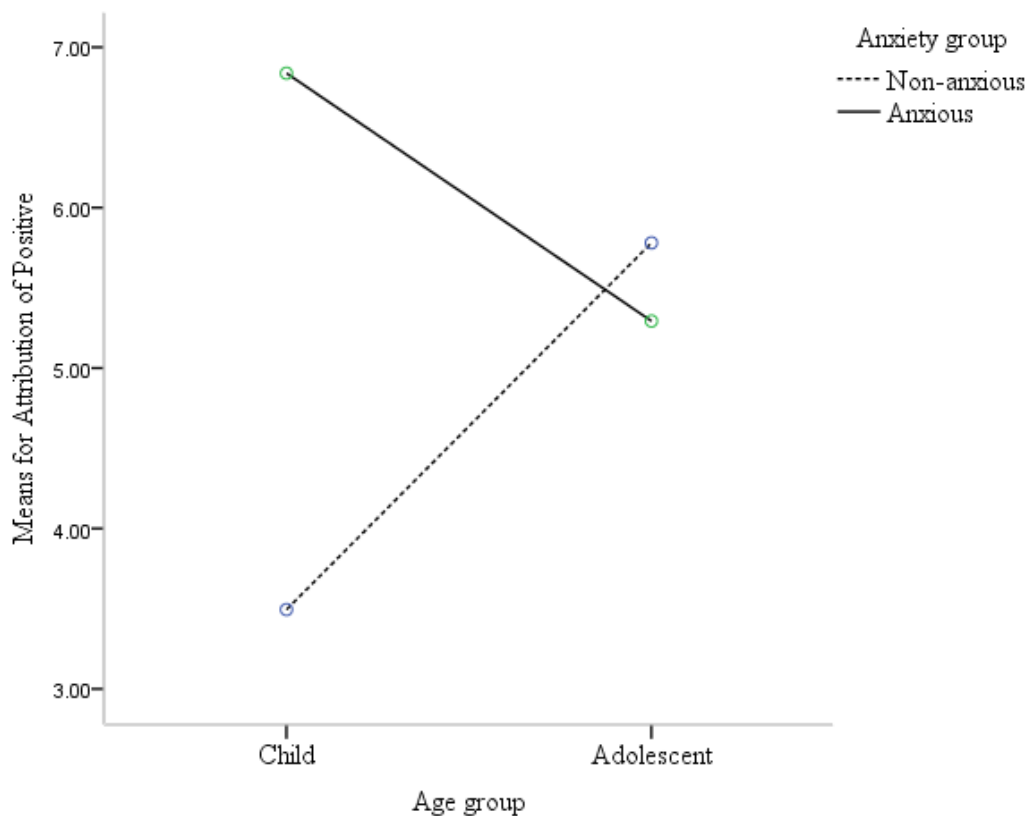


Figure 1. Anxiety disorder status x age group interaction for Attribution of Positiveness. This figure illustrates the interaction effect of anxiety disorder status (with versus without, an anxiety disorder) and age (child versus adolescent) for the parental discourse style Attribution of Positiveness.

Due to the group differences on SES and SMFQ-C sensitivity analyses were performed using ANCOVA, assessing each discourse style with SES and SMFQ-C as covariates. The results were the same and therefore analyses are reported without the covariates SES and SMFQ-C. Lastly, as five fathers participated in the study and therefore, as an additional sensitivity check, the analyses were run both with and without these participants. As the results did not significantly differ, the analyses utilizing all participants were reported.

## **Discussion**

Research implicates parental discourse styles i.e. Attribution of Threat, Vulnerability and Promotion of Avoidance, as well as the role of encouraging discourse styles, in the development and maintenance of anxiety disorders in young people (Barrett et al., 1996; Chorpita et al., 1996; Field et al., 2008; Muris et al., 2010; Moore et al., 2005; Murray et al., 2014; Percy, 2011; Suveg et al., 2008; Suveg et al., 2005). However to date participants have been children aged up to 13 years of age with only two studies including a minority of participants aged up to 14 years (Barrett et al., 1996) and 15 years (Moore et al., 2005). In this study the discourse styles of parents of adolescents with anxiety disorders, during a narrative task about a worrying time, were examined and compared with parents of adolescents without anxiety. Comparisons were also made between their discourse and the discourse of parents with children with and without anxiety disorders.

Contrary to the study's first hypothesis, and in contrast to previous studies that have examined discourse in parents of children (Barrett et al. 1996; Chorpita et al., 1996, Murray et al., 2014 Percy, 2011; Suveg et al., 2005; Suveg et al., 2008); no significant differences were found in the discourse of parents of adolescents with, and without, anxiety disorders for either anxiogenic discourse styles or encouraging

discourse styles. Notably, and again unlike past studies (Barrett et al. 1996; Chorpita et al., 1996; Percy, 2011; Suveg et al., 2005; Suveg et al., 2008), there were also no significant differences between the discourse of parents of children with, and without, anxiety disorders. This may be attributable, at least in part, to the use of different methodologies in the majority of these studies (Barrett et al. 1996; Chorpita et al., 1996; Suveg et al., 2005; 2008). This lack of an effect of anxiety on parental discourse style is in line with Waite et al.'s (2015) study of parenting behaviours that found no differences between parental behaviours with adolescents and children based on anxiety status alone.

Contrary to the second hypothesis, differences in the anxiogenic and encouraging discourse styles of parents of offspring with and without anxiety were not significantly more pronounced in the adolescent groups than the child groups. This provides preliminary evidence that parental discourse styles, including the hypothesized increase in anxiogenic, and decrease in encouraging, discourse styles, do not become more pronounced during adolescence despite the increased severity of anxiety disorders in adolescents (Waite & Creswell, 2014). No significant interactions between offspring age (adolescent vs child) and anxiety status (anxious vs non-anxious) were found for any of the anxiogenic discourse styles (Attribution of Threat, Vulnerability and Promotion of Avoidance) or for two of the three encouraging discourse styles (Attributions of Security and Promotion of Endeavour). These findings provide preliminary evidence that parental discourse with adolescent offspring may not differ from parental discourse with child offspring, as measured by the MDSCS-A, regardless of their anxiety status.

A significant interaction was found between offspring age and anxiety status for Attribution of Positiveness; the encouraging/ warm discourse style concerned



with parents emphasizing positive emotions and making reference to their offspring being assured, competent. Specifically, parents of children with anxiety disorders showed significantly higher levels of Attribution of Positiveness than parents of children without anxiety disorders, albeit with a small effect size, while the relationship between this discourse style and anxiety status was not present in the parents of adolescents. As shown in Figure 1, the parental use of Attribution of Positiveness with adolescent offspring differed little between adolescents according to anxiety status, with the discourse style occurring only marginally less frequently in adolescents with, rather than without, an anxiety disorder. This contrasted with the child groups, where the parents of children with anxiety disorders engaged in significantly more of the discourse style Attribution of Positiveness than parents of children without anxiety disorders. These findings differ from previous studies using child samples, that have found significantly fewer references to positive emotions in parental discourse with anxious compared to non-anxious children (Suveg et al., 2005 and 2008). They also contrast with existing literature on parental behaviour (McLeod et al., 2007; Waite et al, 2014; Waite & Creswell, 2015) that shows that parents of adolescents with anxiety disorders engage in significantly less warm behaviour than parents of non-anxious adolescents.

One potential explanation for the pattern of findings seen here could be that parents of children with anxiety disorders actively seek to boost their child's sense of confidence and self-efficacy by attributing positive qualities and coping abilities to the child when discussing anxiety provoking events with a view to decreasing their anxiety. Parents of children without anxiety disorders may not experience the same need to emphasise, or exaggerate, their child's positive qualities, as their child may be perceived to be coping well. The finding that a similar effect was not observed in

the adolescent groups, may be due to adolescence being a more advanced developmental stage during which offspring may have (or perceive themselves or be perceived by their parents to have) acquired greater skills and coping abilities than children. To speculate, it's possible that if parents of adolescents with anxiety disorders used Attribution of Positiveness, to the same extent as parents of anxious children, this might be perceived by the adolescent to be patronizing. By adolescence, offspring with anxiety disorders may also have more insight into the nature of their anxiety, its impact and their level of coping compared to non-anxious peers and therefore be less receptive to 'encouraging' parental discourse that emphasises, or potentially exaggerates, positive qualities. Additionally, or alternatively, the lower level of Attribution of Positiveness in the parents of adolescents with anxiety disorders could reflect a bidirectional effect of anxiety whereby over time parents of offspring with anxiety disorders perceive them more negatively, at least within the context of an anxiety provoking event.

### **Strengths and limitations**

The study used a clinical sample, with the full range of anxiety disorders and co-morbid mood disorders, from a clinical service for young people with anxiety and depression, meaning findings should be generalizable to anxious adolescents and children presenting to clinical services. The reasonable sample size and use of observational methods add to the study's robustness. However, the sample size only provided sufficient power to detect large effects meaning that small to moderate effects may have remained undetected. Future research with a larger sample is therefore needed to clarify the robustness of these findings. Anxiety disorders were also examined as a homogenous group and disorder specific examination of associations between parental discourse and offspring anxiety status

could not be made as the sample size was insufficient. It therefore remains unclear whether results could vary between anxiety disorders and whether differences exist between adolescents and children according to specific anxiety disorders.

The study categorised ages as either childhood or adolescence. As discussed by Waite et al. (2014), in reality changes related to age are unlikely to present in this manner and future studies with narrower age bands are called for. Age might benefit from being measured continuously. Participants were also mainly White British, of high socio-economic status and the majority of parents were mothers. More research, with greater demographic diversity, that assesses the roles of parental gender, anxiety status and other moderating factors such as offspring gender are therefore required. The discourse coding scheme used in the study, the MDSCS-A, was designed for use with children (Murray et al., 2014) and this was the first time it had been used with participants aged 13 years plus. It is therefore possible that the scheme does not capture aspects of anxiety-relevant discourse that is specific to parents and their adolescent offspring. Lastly, the researcher's coding of the transcripts was not monitored, via a second rater, meaning that a drift in coding reliability could have occurred that may have influenced findings.

### **Clinical implications**

When considering the potential clinical implications for the treatment of adolescent anxiety disorders, one must bear in mind the study's limitations (see section below). However, these findings provide preliminary evidence that treatments to target parental discourse style, either anxiogenic or encouraging, could be unwarranted. Additionally, the finding that parents of children with anxiety disorders engage in more encouraging discourse than parents of children without anxiety disorders is in line with findings (Waite & Creswell, 2015) that parents of

children with anxiety disorders are already interacting in the manner recommended in family oriented interventions, i.e. by exhibiting warmth and encouragement and their suggestion that this helps explain why family treatments that include a focus on changing parental behaviours do not always enhance treatment outcomes for children with anxiety disorders (Reynolds, Wilson, Austin & Hooper, 2012).

### **Summary and conclusion**

This study was the first to examine parental discourse styles with adolescent offspring, with a view to clarifying the role of discourse in parent-offspring transmission of anxiety during adolescence, and the first to compare parental discourse with adolescents and children. Contrary to expectations, parents of adolescents with anxiety disorders did not engage in more anxiogenic, and less encouraging, discourse than parents of adolescents without anxiety disorders and no other significant differences were found in their discourse styles. Furthermore, the hypothesized differences in the anxiogenic and encouraging discourse styles of parents of offspring with anxiety disorders compared to those without anxiety disorders, were not more pronounced in parents of adolescents compared to parents of children. There was an interaction effect between age and anxiety status for ‘Attribution of Positivity’ with parents of anxious children engaging in significantly more of this discourse style than parents of non-anxious children, whereas this was not seen among the parents of adolescents. Finally, and in contrast to previous research, no significant differences were found between the discourse of parents of children with, and without, anxiety disorders. These findings must be treated with caution due to the limited sample, associated restrictions on power and other study limitations and any consideration of the study’s clinical implications can only be tentative and speculative.

## References

- Angold, A., Costello, E. J., Messer, S. C., Pickles, A., Winder, F., & Silver, D. (1995). Development of a short questionnaire for use in epidemiological studies of depression in children and adolescents. *International Journal of Methods in Psychiatric Research*, *5*, 237-249
- Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W. and Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment*, *10*, 176-181.
- Askew, C., & Field, A. P. (2007). Vicarious learning and the development of fears in childhood. *Behaviour Research and Therapy*, *45*(11), 2616-2627.
- Barrett, P.N., Rapee, R.M. Dadds, M.M. & Ryan, S.M. (1996). Family enhancement of Cognitive Style in Anxious and Aggressive Children. *Journal of Abnormal Child Psychology*. *24* (2), 187-203.
- Beck, A.T. & Clarke, D.A. (1997). An information processing model of anxiety: Automatic and strategic processes. *Behaviour, Research and Therapy*, *35*, 49-58.
- Biederman, J., Hirshfeld-Becker, D. R., Rosenbaum, J. F., Hérot, C., Friedman, D., Snidman, N., Kagan, J. & Faraone, S. V. (2001). Further evidence of association between behavioral inhibition and social anxiety in children. *American Journal of Psychiatry*, *158*(10), 1673-1679.
- Bittner, A., Egger, H. L., Erkanli, A., Costello, J., Foley, D. L. & Angold, A. (2007). What do childhood anxiety disorders predict? *Journal of Child Psychology and Psychiatry*, *48*, 1174-1183.

- Costello, E. J., Benjamin, R., Angold, A., & Silver, D. (1991). Mood variability in adolescents: a study of depressed, nondepressed and comorbid patients. *Journal of Affective Disorders*, 23(4), 199-212.
- Chorpita, B. F., Albano, A. M. & Barlow, D. H. (1996). Cognitive processing in children: Relation to anxiety and family influences. *Journal of Clinical Child Psychology*, 25(2), 170-176.
- Chorpita, B. F., & Barlow, D. H. (1998). The development of anxiety: the role of control in the early environment. *Psychological Bulletin*, 124(1), 3-21.
- Clark, D.B., Smith, M.G., Neighbors, B.D., Skerlec, L.M. and Randall, J. (1994). Anxiety disorders in adolescence: Characteristics, prevalence, and comorbidities. *Clinical Psychology Review*, 14 (2) 113-137.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155-159. doi: 10.1037/0033-2909.112.1.155
- Connell, A. M., & Goodman, S. H. (2002). The association between psychopathology in fathers versus mothers and children's internalizing and externalizing behavior problems: a meta-analysis. *Psychological Bulletin*, 128 (5), 746.
- Cooper, P. J., Fearn, V., Willetts, L., Seabrook, H., and Parkinson, M. (2006). Affective disorder in the parents of a clinic sample of children with anxiety disorders. *Journal of Affective Disorder*, 93, 205-212.
- Costello, E.J., Mustillo, S., Erkanli, A., Keeler, G. and Angold, A. (2003). Prevalence and development of psychiatric disorders in childhood and adolescence. *Archives of General Psychiatry*, 60, 837-844.

- Creswell, C., Murray, L., Stacey, J., & Cooper, P. (2011). Parenting and child anxiety. *Anxiety disorders in children and adolescents*, 299-322.
- Denham, S. A., Zoller, D., & Couchoud, E. A. (1994). Socialization of preschoolers' emotion understanding. *Developmental Psychology*, 30(6), 928.
- De Rosnay, M., Cooper, P. J., Tsigaras, N., & Murray, L. (2006). Transmission of social anxiety from mother to infant: An experimental study using a social referencing paradigm. *Behaviour research and therapy*, 44(8), 1165-1175.
- Dunn, J., Bretherton, I., & Munn, P. (1987). Conversations about feeling states between mothers and their young children. *Developmental Psychology*, 23(1), 132.
- Ehringer, M. A., Rhee, S. H., Young, S., Corley, R., & Hewitt, J. K. (2006). Genetic and environmental contributions to common psychopathologies of childhood and adolescence: a study of twins and their siblings. *Journal of Abnormal Child Psychology*, 34(1), 1-17.
- Essau, C. A. (2008). Comorbidity of depressive disorders among adolescents in community and clinical settings. *Psychiatry Research*, 158(1), 35-42.
- Essau, C.A & Gabbidon, J. (2013) Epidemiology, comorbidity and mental health service utilization. In C.A. Essau, T.H. Ollendick (Eds) *The Wiley-Blackwell handbook of the treatment of childhood and adolescent anxiety* (1<sup>st</sup> ed., pp. 23-42) Chichester: Wiley-Blackwell.
- Field, A. P., Lawson, J., & Banerjee, R. (2008). The verbal threat information pathway to fear in children: the longitudinal effects on fear cognitions and the

immediate effects on avoidance behavior. *Journal of abnormal psychology*, 117(1), 214.

Fivush, R., Haden, C. A., & Reese, E. (2006). Elaborating on elaborations: Role of maternal reminiscing style in cognitive and socioemotional development. *Child Development*, 77(6), 1568-1588.

Ford, T., Goodman, R. and Meltzer, H. (2003). The British child and adolescent mental health survey 1999: The prevalence of DSM-IV disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, 42(10), 1203-1211.

Furman, W., & Buhrmester, D. (1992). Age and sex differences in perceptions of networks of personal relationships. *Child Development*, 63(1), 103-115.

Gerull, F. C., & Rapee, R. M. (2002). Mother knows best: effects of maternal modelling on the acquisition of fear and avoidance behaviour in toddlers. *Behaviour Research and Therapy*, 40(3), 279-287.

Grotevant, H. D., & Cooper, C. R. (1986). Individuation in family relationships. *Human Development*, 29(2), 82-100.

Hettema, J. M., Neale, M. C., & Kendler, K. S. (2001). A review and meta-analysis of the genetic epidemiology of anxiety disorders. *American Journal of Psychiatry*, 158(10), 1568-1578.

Hill, J. P., & Holmbeck, G. N. (1986). Attachment and autonomy during adolescence. *Annals of Child Development*, 3(45), 145-189.



- HMSO. (2005). *The national statistics socio-economic classification user manual*.  
Basingstoke: Palgrave MacMillan.
- Hudson, J. L., & Rapee, R. M. (2001). Parent–child interactions and anxiety disorders: An observational study. *Behaviour Research and Therapy*, 39(12), 1411-1427
- Kendall, P.C., Hedtke, K.A., Aschenbrand, S.G., 2013. Anxiety Disorders. In: Wolfe, D.A., Mash, E.J. (Eds.), *Behavioral and Emotional Disorders in Adolescents: Nature, Assessment and Treatment*. The Guilford Press, New York, USA.
- Kirk, R. E. (1996). Practical significance: A concept whose time has come. *Educational and Psychological Measurement*, 56(5), 746-759.
- Krohne, H. W., & Hock, M. (1991). Relationships between restrictive mother-child interactions and anxiety of the child. *Anxiety Research*, 4(2), 109-124.
- Lovibond, S. H. and Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales* (2nd ed.). Sydney: Psychology Foundation.
- Lyneham, H. J., Abbott, M. J., & Rapee, R. M. (2007). Interrater reliability of the anxiety disorders interview schedule for DSM-IV: Child and parent version. *Journal of the American Academy of Child and Adolescent Psychiatry*, 46(6), 731-736.
- McLeod, B. D., Wood, J. J., & Weisz, J. R. (2007). Examining the association between parenting and childhood anxiety: A meta-analysis. *Clinical Psychology Review*, 27(2), 155-172.
- McClure, E. B., Brennan, P. A., Hammen, C., & Le Brocque, R. M. (2001). Parental anxiety disorders, child anxiety disorders, and the perceived parent–child

- relationship in an Australian high-risk sample. *Journal of Abnormal Child Psychology*, 29(1), 1-10.
- McElhaney, K. B., Allen, J. P., Stephenson, J. C. and Hare, A. L. 2009. Attachment and autonomy during adolescence. *Handbook of Adolescent Psychology*. 1:II:11.
- Moore, P. S., Whaley, S. E., & Sigman, M. (2004). Interactions between mothers and children: impacts of maternal and child anxiety. *Journal of Abnormal Psychology*, 113(3), 471-476.
- Muris, P., van Zwol, L., Huijding, J., & Mayer, B. (2010). Mom told me scary things about this animal: Parents installing fear beliefs in their children via the verbal information pathway. *Behaviour Research and Therapy*, 48(4), 341-346.
- Murray, L., Creswell, C., & Cooper, P. J. (2009). The development of anxiety disorders in childhood: an integrative review. *Psychological Medicine*, 39(9), 1413-1423.
- Murray, L., Pella, J. E., De Pascalis, L. D., Arteche, A., Pass, L., Percy., R., Creswell, C., & Cooper, P. J. (2014). Socially anxious mothers' narratives to their children, and their relation to child representations and adjustment. *Development and Psychopathology*, 26(4(2)), 1531-1546.
- Nauta, M. H., Scholing, A., Rapee, R. M., Abbott, M., Spence, S. H., & Waters, A. (2004). A parent-report measure of children's anxiety: psychometric properties and comparison with child-report in a clinic and normal sample. *Behaviour Research and Therapy*, 42(7), 813-839.
- Paikoff, R. L., & Brooks-Gunn, J. (1991). Do parent-child relationships change during puberty? *Psychological Bulletin*, 110(1), 47.

- Pella, J. E. (2010). *The effect of social phobia on mothers' cognitions and narrative style: implications for the development of child psychopathology and for correcting distorted cognitions* (Doctoral Dissertation, The University of Reading).
- Percy, R. (2011). *The role of mother-child co-constructed narratives in the development and treatment of childhood anxiety disorders*. (Unpublished doctoral dissertation) University of Reading, Reading, United Kingdom.
- Rachman, S. (1977). The conditioning theory of fear acquisition: A critical examination. *Behaviour Research and Therapy*, 15, 375-387.
- Rapee, R. M. (1997). Potential role of childrearing practices in the development of anxiety and depression. *Clinical Psychology Review*, 17(1), 47-67.
- Rapee, R. M., Schniering, C. A., & Hudson, J. L. (2009). Anxiety disorders during childhood and adolescence: origins and treatment. *Annual Review of Clinical Psychology*, 5, 311-341.
- Reynolds, S., Wilson, C., Austin, J., & Hooper, L. (2012). Effects of psychotherapy for anxiety in children and adolescents: A meta-analytic review. *Clinical Psychology Review*, 32(4), 251-262.
- Rothbaum, F., & Weisz, J. R. (1994). Parental caregiving and child externalizing behavior in nonclinical samples: a meta-analysis. *Psychological Bulletin*, 116(1), 55-74.
- Schwabstone, M., Fallon, T., Briggs, M., & Crowther, B. (1994). Reliability of diagnostic reporting for children aged 6-11 years - A test-retest study of the diagnostic interview schedule for children - revised. *American Journal of Psychiatry*, 151(7), 1048-1054.

- Silverman, W. K., Albano, A. M., & Barlow, D. H. (1996). Manual for the ADIS-IV-C/P. New York: Psychological Corporation.
- Silverman, W. K., & Eisen, A. R. (1992). Age-differences in the reliability of parent and child reports of child anxious symptomatology using a structured interview. *Journal of the American Academy of Child and Adolescent Psychiatry, 31*(1), 117-124.
- Silverman, W. K., & Rabian, B. (1995). Test-retest reliability of the DSM-III-R childhood anxiety disorders symptoms using the anxiety disorders interview schedule for children. *Journal of Anxiety Disorders, 9*(2), 139-150.
- Spence, S. H. (1998). A measure of anxiety symptoms among children. *Behaviour, Research, and Therapy, 36*(5), 545 – 566.
- Spence, S. H., Barrett, P. M., & Turner, C. M. (2003). Psychometric properties of the Spence Children's Anxiety Scale with young adolescents. *Journal of Anxiety Disorders, 17*(6), 605-625.
- Spence, S. H., Najman, J. M., Bor, W., O'Callaghan, M. J., & Williams, G. M. (2002). Maternal anxiety and depression, poverty and marital relationship factors during early childhood as predictors of anxiety and depressive symptoms in adolescence. *Journal of Child Psychology and Psychiatry, 43*(4), 457-469.
- Suveg, C., Sood, E., Barmish, A., Tiwari, S., Hudson, J. L., & Kendall, P. C. (2008). "I'd rather not talk about it": Emotion parenting in families of children with an anxiety disorder. *Journal of Family Psychology, 22*(6), 875.

- Suveg, C., Zeman, J., Flannery-Schroeder, E., & Cassano, M. (2005). Emotion socialization in families of children with an anxiety disorder. *Journal of Abnormal Child Psychology*, *33*(2), 145-155.
- Taumoepeau, M., & Ruffman, T. (2008). Stepping stones to others' minds: Maternal talk relates to child mental state language and emotion understanding at 15, 24, and 33 months. *Child Development*, *79*(2), 284-302.
- Van Bergen, P. V., Salmon, K., Dadds, M. R., & Allen, J. (2009). The effects of mother training in emotion-rich, elaborative reminiscing on children's shared recall and emotion knowledge. *Journal of Cognition and Development*, *10*(3), 162-187.
- van der Bruggen, C. O., Stams, G. J. J. M., & Bögels, S. M. (2008). Research review: The relation between child and parent anxiety and parental control: a meta-analytic review. *Child Psychology and Psychiatry*, *49*(12), 1257-1269.
- Van Zalk, N. & Kerr, M. (2012). Shy adolescents' perceptions of parents' psychological control and maternal warmth: Examining bidirectional links. *MerrillPalmer Quarterly-Journal of Developmental Psychology*, *57*(4), 375-401.
- Waite, P.L. (2013). Presentation for EABCT Annual Congress, Morocco, September 2013.
- Waite, P., & Creswell, C. (2014). Children and adolescents referred for treatment of anxiety disorders: Differences in clinical characteristics. *Journal of Affective Disorders*, *167*, 326-332.

- Waite, P., & Creswell, C. (2015). Erratum to: Observing Interactions between Children and Adolescents and their Parents: The Effects of Anxiety Disorder and Age. *Journal of Abnormal Child Psychology*, 43(6), 1093-1093.
- Waite, P., Whittington, L. & Creswell, C. (2014). Parent Child Interactions and adolescent anxiety: a systematic review. *Psychopathology Review*, 1(1), 51-76.
- Wang, Q. & Fivush, R. (2005). Mother–child conversations of emotionally salient events: exploring the functions of emotional reminiscing in European-American and Chinese families. *Social Development*, 14(3), 473-495.
- Waters, A. M., Zimmer-Gembeck, M. J., & Farrell, L. J. (2012). The relationships of child and parent factors with children's anxiety symptoms: Parental anxious rearing as a mediator. *Journal of Anxiety Disorders*, 26(7), 737-745.
- Wijsbroek, S.A., Hale III, W.W., Raaijmakers, Q.A., & Meeus, W.H. (2011). The direction of effects between perceived parental behavioural control and psychological control and adolescents' self-reported GAD and SAD symptoms. *European Child & Adolescent Psychiatry*, 20(7), 361-371.
- Wood, J. J. (2006). Parental intrusiveness and children's separation anxiety in a clinical sample. *Child Psychiatry and Human Development*, 37(1), 73-87.
- Wood, J. J., McLeod, B. D., Sigman, M., Hwang, W. C., & Chu, B. C. (2003). Parenting and childhood anxiety: Theory, empirical findings, and future directions. *Journal of Child Psychology and Psychiatry*, 44(1), 134-151.
- Wood, J. J., Piacentini, J. C., Bergman, R. L., McCracken, J., & Barrios, V. (2002). Concurrent Validity of the Anxiety Disorders Section of the Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent Versions. *Journal of Clinical Child & Adolescent Psychology*, 31(3), 335-342.

Wood, J. J., McLeod, B. D., Sigman, M., Hwang, W. C., & Chu, B. C. (2003).

Parenting and childhood anxiety: Theory, empirical findings, and future directions. *Journal of Child Psychology and Psychiatry*, *44*(1), 134-151.

Wood, J. J., Piacentini, J. C., Bergman, R. L., McCracken, J., & Barrios, V. (2002).

Concurrent validity of the anxiety section of the Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent Versions. *Journal of Clinical Child & Adolescent Psychology*, *31*(3), 335-342.

Woodward, L. J., & Fergusson, D. M. (2001). Life course outcomes of young people

with anxiety disorders in adolescence. *Journal of the American Academy of Child & Adolescent Psychiatry*, *40*(9), 1086-1093.

## **PART THREE: Critical Appraisal**



## **Introduction**

This critical appraisal considers methodological and conceptual issues associated with the Maternal Discourse Style Coding Scheme for Anxiety (MDSCS-A, Murray et al., 2014) and the parent-offspring narrative task used in the empirical paper. Limitations relating to the study sample are also considered with a view to informing future research in the area. Lastly, the positive and negative aspects of ‘piggybacking’ on a larger randomised control trial (RCT), when completing research for a D.Clin.Psy. thesis, are explored.

### **Maternal Discourse Style Coding Scheme for Anxiety**

The discourse coding scheme used in this study, the MDSCS-A, was designed for use with children (Murray et al., 2014) and this was the first time it had been used with participants aged 13 years and over. It is therefore possible that the scheme does not capture aspects of anxiety-relevant discourse that is specific to parents and their adolescent offspring. When planning the study there were initial discussions regarding the benefits of reviewing and revising the coding scheme to reflect any aspects of parental anxiogenic and encouraging discourse, specific to adolescent offspring, that were not captured by the MDSCS-A. Due to the time consuming process of becoming reliable with the MDSCS-A, and coding the study sample, it became apparent that the development of an adapted coding scheme was beyond the scope of this D.Clin.Psy. research project. However, potential differences in the discourse of parents with adolescent offspring were observed and discussed in supervision with an experienced coder.

Firstly the language used between parents and their adolescent offspring appeared to include more complex sentence structures and abstract statements, than

those used by parents with child offspring. This is to be expected as typically adolescents are both linguistically and cognitively more advanced than children with increasing ability to engage in metacognitive processes (Berman, 2004; Weil et al., 2013). This difference in language meant that, at times, utterances were made that appeared to be anxiety related but did not meet the requirements of the existing codes. For example when a mother reflected on worrying about paying the mortgage she stated “nothing is insurmountable” and this was coded as Promotion of Endeavour (indirect). However she then continued “I think when things happen to you, I tend to think well that’s probably the worst it’ll get”. Within the context of the discussion this could be understood to be a reassuring/encouraging utterance by the mother. However, when applying the MDSCS-A this could potentially be coded as Attribution of Threat and was not captured by the encouraging discourse code Attribution of Security. A similar example was a discussion of exam stress and the parent’s response to the adolescent offspring’s statement “I just stopped caring about science exams. I was like, before physics I was like, ok I just don’t care”. The parent responds by stating “I think it gets to the point where you think you have done all you can do”. Again this statement is intended to be reassuring but based on the MDSCS-A cannot be coded as Attribution of Security and could potentially be coded as Promotion of Avoidance. The more complex language between parents and adolescents appeared to introduce a greater interpretive dimension whereby words interpreted directly could mean one thing but, within a certain context and presumed interpretation, could mean another. In these situations the adolescent would need to comprehend what the parent “means” rather than just interpreting the words. These situations present challenges both in terms of the coder correctly understanding what is meant and designing a coding scheme that is capable of capturing these subtleties.

Another potential issue noted was that, with some dyads, discussion about anger appeared within parent and adolescent offspring narratives about a worrying time, whereas this was not observed in narratives between parent and child offspring. For example the parent might refer to the adolescent as getting angry rather than fearful or upset, in response to anxiety provoking events. Anger is not included in the criteria for the code Attribution of Vulnerability and therefore this utterance went uncoded as anxiogenic discourse. This observation is consistent with adolescent research and literature. Research with 10-14 year olds suggests that reports of negative emotional states increase with age (Larson, Moneta, Richards and Wilson, 2002). Studies indicate that as adolescents critical and logical cognitive abilities develop they may be more likely to challenge parents' rules (Steinberg & Silk, 2002). Furthermore, although rates of parents/offspring conflict do not typically increase during adolescence (Steinberg, 2001), the emotional responses to such conflicts intensify up until middle adolescence (Laursen, Coy, & Collins, 1998). My informal observations, particularly within the context of this literature, suggest that a separate code to capture more oppositional responses to anxiety provoking situations might be warranted.

The MDSCS-A also works by identifying discourse codes as being either present or absent and does not discriminate between the degree that discourse codes are expressed. For example, "you were a little worried" and "You were completely terrified" are both utterances that would be coded as Attribution of Vulnerability, according to the MDSCS-A, and would not take into account the fact that the second utterance is clearly a more pronounced vulnerability attribution than the first. Consequently, in this study it was not possible to assess whether the intensity at which anxiogenic and encouraging discourse styles were expressed varied between

the parents of adolescents and children with and without anxiety disorders. This coding limitation is not specific to this study and, to date, no parent-offspring narrative, or information transfer literature, has assessed the degree that discourse styles are expressed and their impact on anxiety status. Future research, incorporating a measure of the intensity of expression, would stand to add considerably to research examining the potential role of parental discourse style and anxiety status in offspring.

A further limitation with this study, as well as other studies of parental discourse, is that no measure was taken of the extent to which parents and their offspring engaged in discussions about anxiety during daily life. A previously noted possibility (Percy, 2011), is that the more frequently parents engage in anxiety related discourse with their offspring the greater the impact of parental discourse style on offspring anxiety status may be. Further research is needed to establish the role of the frequency of anxiety related discussions in daily life on anxiety disorders in both children and adolescents. Such a component would have provided an interesting addition to the current study. It is also possible that the frequency of discussions about anxiety in daily life, regardless of parental discourse style may be related to offspring anxiety status. This would be consistent with previous research that mothers of children with anxiety disorders, compared to children without anxiety disorders, are more discouraging of their offspring's discussion of emotion (Suveg, Zeman, Flannery-Schroeder, & Cassano, 2005; Suveg, Sood, Barmish, Tiwari, Hudson, & Kendall, 2008). An alternative possibility could be that there is a significant interaction between parental discourse style and the frequency of anxiety discussions on offspring anxiety status. Future research examining the role of parental discourse, both with children and adolescents, would benefit from a measure

of discussion frequency to help examine these possibilities. However, obtaining a valid measure of this could present challenges.

### **Parent-offspring discussion task**

A strength of the experimental task was that parental discourse style was assessed within the context of a parent-offspring conversation about a real, past experience of the parent-offspring dyads. The task was conducted within a comfortable environment, without the visible presence of a researcher, thereby helping to maximise the task's ecological validity. However, the task was ultimately conducted within a laboratory setting. Certain limitations and expectations potentially occurred as a consequence of this which may mean the results are not generalizable to real world settings. Future studies might enhance ecological validity by conducting the discussion task within participants' home environments. The parental discourse that occurred during the narrative task may not be representative of parental discourse in real-world settings where the focus of discussions might involve current rather than past anxiety provoking events, where topics being discussed may evoke greater levels of fear and where there may be greater pressure to imminently reduce off-spring anxiety and/or resolve problems.

The fact that parental, and offspring, discourse style may have been influenced by the knowledge that they were being observed (Hawthorne effect, McCarney, Warner, Liffé, van Haselen, Griffin, Fisher, 2007; Barker, Pistrang & Elliott, 2002) must also be considered, as should the fact that reactivity to observation may increase with both age and sensitivity (Hartmann & Wood, 1990). Parents of off-spring both with and without anxiety disorders may have potentially altered their discourse style to meet anticipated norms of parenting behaviour e.g. to

present as a reassuring, encouraging and non-anxious parent. Some parents of offspring with anxiety disorders may also have felt a need to elicit and emphasise their child's anxiogenic presentation due to misplaced beliefs that the experimental task might be used to guide their child's treatment or determine whether they received it. Prior to commencing the D.Clin.Psy. I worked as an assistant psychologist conducting research assessments that included the parent-offspring narrative task. It was my observation that some parents of anxious offspring prompted and pushed their child to report their worries and fears and, if they did not elaborate, then the parent would emphasise to me that their child was anxious really. Furthermore at times parents would push their child to discuss a topic that related to their diagnosis e.g. a dog phobia and told the child that the task was to "help them". All parent-offspring dyads, regardless of anxiety status, may also have felt the need to elicit and talk at length about anxiety related issues with a view to complying with the task demands. Again, this is something that I observed as a research assistant and that was also clearly evident at times in transcripts for the current study. The assessment protocol sought to mitigate these types of interactions by: 1) explaining to the parent and offspring that receipt of treatment was not related to the research assessment, 2) stating that if they finished speaking before 5 minutes were up that the researcher would end the task early and 3) highlighting that they were not obliged to participate in the task and could ask to stop at any point. However, additional emphasis on this, including examples of these behaviours, might have helped limit their occurrence. Additionally, and related to the above issues, by using a discourse task about an anxiety provoking experience, an arena may have been created for making attributions of threat and/or vulnerability that may have led to the task being insensitive to differences in offspring anxiety status (Percy, 2011). To explore this,

further research would benefit from including a number of different discourse tasks based on positive, negative and neutral events.

A final issue relating to the task is that the adolescent and child groups may have differed in the types of events that they chose to discuss, which in turn may have influenced the parental discourse styles. For example, while coding the narratives I observed that adolescents frequently chose to discuss exam experiences with both parents and off-spring discussing proactive approaches to managing the exams (Promotion of Endeavour) whereas this topic occurred infrequently in the child groups. Future research, comparing parental discourse with adolescents and children, might therefore benefit from ensuring that similar topics are discussed although this might reduce the naturalistic nature, and ecological validity, of the task.

### **Sampling issues**

The study sample had certain limitations. Although the sample was a fair size (N= 112), it only provided sufficient power to detect large effects meaning that small to moderate effects may have remained undetected. This could potentially explain why no significant effects of anxiety or age (adolescent versus child) were found in this study and only a single interaction effect of anxiety status and age on the encouraging parental discourse style Attribution of Positivity. The sample size and nature were predetermined due to the data having been gathered as part of a larger RCT. This could be viewed as one of the negative, rather than the positive, aspects of ‘piggybacking’ on an RCT, although in reality the sample was far greater than I could have realistically recruited and tested, independently, within the available time. However, the size and demographics of the sample did mean that there are limits to the generalizability of the findings and that potential moderating factors such as

socioeconomic status, parental anxiety status, child and parent gender could not be explored or more detailed examinations made regarding age, and anxiety disorder specific, effects. These limitations and factors will now be considered.

### **Representativeness**

Participants were predominantly of White British families and of relatively high socio-economic status meaning that they were more affluent than both the general population and the population of families who usually present to mental health services. Furthermore, the parent-offspring dyads had agreed to participate in a trial of a new treatment approach, perhaps resulting in a sample of highly motivated and self-directed parents. These factors mean that the study results may not be representative of the broader population and research with more ethnically and socio-economically diverse samples is required before generalisations can be made. Lower socio-economic status has been associated with differences in parenting styles (Adams, 1998) and differences in parental discourse with parents of higher socio-economic status engaging in more conversations (Shonkoff & Phillips 2000) that are more responsive, qualitatively rich and more promoting of child speech (Hoff-Ginsberg & Tardif 1995, Hart & Risley, 1995). These findings, although not assessed within the context of child anxiety, suggest that socioeconomic status should be controlled for and examined when seeking to understand the role of parental discourse and the development and maintenance of anxiety disorders in young people.

### **Parental anxiety status**

Previous studies suggest that parental anxiety status moderates associations between parental discourse and anxiety disorder status in children. Moore, Whaley &



Sigman (2004) found that anxious mothers, independent of child anxiety status, engaged in more catastrophic language than non-anxious mothers and non-anxious mothers engaged in more catastrophic language if their child was anxious rather than non-anxious. Furthermore, Percy (2011) demonstrated that, during conversations about anxious experiences, anxious mothers of anxious children talked excessively about threat, non-anxious mothers of anxious children avoided talk about threat and, irrespective of their own anxiety status, mothers of anxious children made more avoidant plans of action than mothers of non-anxious children. In the current study it was not possible to examine the moderating role of parental anxiety disorder status as parental anxiety disorder status had not been assessed as part of the larger randomised controlled trial. Future research would therefore benefit from using samples of parents both with, and without, anxiety disorders with a view to establishing its' role in any associations between parental discourse and offspring anxiety disorder status and also whether this varied as a function of offspring age.

### **Parental and child gender**

Parental and child gender may also moderate the association between parental discourse and offspring anxiety status but this was not explored within the current study. Regarding parental gender, the sample used in this study consisted predominantly of mothers ( $n = 107$ ) but also included a small sample of fathers ( $n = 5$ ). As reported in the empirical paper, the analyses were performed both with and without the fathers, as a sensitivity check, and the same results were found. There are, of course, practical limitations to what can be included in any study. However, ideally the sample would have consisted either purely of mothers or have included an equal proportion of mothers and fathers, and in sufficient numbers, to allow the role of parental gender to be examined. Research indicates that fathers have a significant

role in childhood anxiety but that this may differ to that of mothers (Bogels & Phares, 2008). For example children appear to be more influenced by fathers' responses than mothers' responses when deciding whether a potential threat is dangerous and should be avoided (Chorpita, Albano and Barlow, 1996). Research also suggests that parental discourse is influenced by child gender with mothers making more frequent and varied references to emotions with their daughters compared to their sons (Adams, Kuebli, Boyle and Fivush, 1995; Fivush, Brotman, Buckner and Goodman, 2000) engaging in more elaboration (Reese and Fivush, 1993) and Fivush, Berlin, Sales, Mennuti, Wasburn and Cassidy, 2003) and more evaluation (Fivush et al, 2003). Therefore this is another potential focus for future studies.

### **Using pre-collected data from an RCT**

There were advantages and disadvantages to 'piggy backing' on a large RCT. The benefits of using pre-collected data, gathered as part of a well-designed study with expert researchers, were significant. Firstly, I was able to use a clinical sample that would otherwise have been very difficult to access independently. Secondly, and most importantly, I had access to an extensive database which meant that I did not have to negotiate participant recruitment and research assessments. As discussed, although the current study was underpowered, the sample was still far greater than I could have recruited and assessed independently within the parameters and time limits of the D.Clin.Psy. Thirdly, having worked as a research assistant within the department, I was already well acquainted with the research protocols and familiar with the databases. These factors meant that I could concentrate my time and energy on coding the narrative transcripts which proved a difficult and time consuming process. Firstly an extensive number of practice transcripts were scored, each taking

approximately 30 minutes, until a high level of reliability was achieved with a second experienced coder. Following this the transcripts for the empirical paper needed to be coded. Without the benefits of using pre-collected data it would not have been possible to complete this aspect of the research.

However, despite the benefits, there were disadvantages to using pre-collected data. Although familiar with the trial databases, I found that they were extensive and had been developed and extended since I had worked in the department. Identifying and locating all the relevant cases, ensuring all questionnaire data was present and merging different databases for the purpose of my research proved a challenging, confusing, and time consuming process. Other trainee clinical psychologists, using the data bases, reported similar difficulties. Additionally, some of the parent/offspring narratives could not be used as participants had been given incorrect task instructions, by an inexperienced research assistant, resulting in the task being performed incorrectly. These aspects of the research process highlighted the advantages of being fully involved with data collection, screening and organisation from the beginning and the costs of not having this control and input. On reflection, these issues were one of the most stressful aspects of the research process and taught me that, as a researcher, I prefer to be fully involved throughout the research process. A final consideration, when utilising pre-collected data, is that you not only inherit the data but also a whole way of viewing the phenomena to be researched that may guide the study design, methods, measures and subsequent interpretation of the findings.

## **Conclusion**

The study provided me with valuable experience of using observational data and an established coding scheme, as well as managing and conducting quantitative analyses with a large and, in part, pre-collected data set. A range of methodological and sampling issues were identified, most particularly regarding the suitability of the MDSCS-A for use with adolescents. These highlighted the importance of considering developmental transitions and maturation, when conducting research with young people, and indicated potential areas for future research. Most importantly, through conducting the research, I learned much about myself as a researcher, how I prefer to approach and perform research, which will inform my future research practice.

## References

- Barker, C., Pistrang, N. & Elliott, R. (2002). *Research methods in clinical psychology*. London: Wiley.
- Berman, R. (Ed.). (2004). *Language development across childhood and adolescence* (Vol. 3). John Benjamins Publishing.
- Chorpita, B. F., Albano, A. M., & Barlow, D. H. (1996). Cognitive processing in children: Relation to anxiety and family influences. *Journal of Clinical Child Psychology*, 25, 170–176.
- Goodman, E. (1999). The role of socioeconomic status gradients in explaining differences in U.S. adolescents' health. *American Journal of Public Health*, 89, 1522-1528.
- Hart, B., and Risley, T. R. (1995). Meaningful differences in the everyday experience of young American children. Baltimore: Brookes.
- Hartmann, D. P., & Wood, D. D. (1990). Observational methods. In *International handbook of behavior modification and therapy* (pp. 107-138). Springer US.
- Hoff-Ginsberg, E., and Tardif, T. (1995). Socioeconomic status and parenting. In M. H. Bornstein, (Ed.), *The handbook of parenting: Vol. 2. Biology and ecology of parenting* (pp. 161–188). Mahwah, NJ: Lawrence Erlbaum Associates.
- Hoffman, M. L. (1963).
- McCarney, R., Warner, J., Iliffe, S., van Haselen, R., Griffin, M., & Fisher, P. (2007). The Hawthorne Effect: a randomised, controlled trial. *BMC Medical Research Methodology*, 7(1), 30.
- Murray, L., Pella, J. E., De Pascalis, L., Arteche, A., Pass, L., Percy, R., ... & Cooper, P. J. (2014). Socially anxious mothers' narratives to their children and

their relation to child representations and adjustment. *Development and Psychopathology*, 26(4pt2), 1531-1546.

Shonkoff, J.P., & Phillips, D.A. (Eds.). (2000). In J.P. Shonkoff & D.A. Phillips (Eds.), (2000). *From neurons to neighborhoods: The science of early childhood development*. Washington, DC: National Academy Press. Chapter 2, "Rethinking nature and nurture." (pp. 39-56).

Spencer M. S., Kohn L. P., & Woods J. R. (2002). Labeling vs. early identification: The dilemma of mental health services under-utilization among low-income African American children. *African American Perspectives*, 8, 1–14.

Suveg, C., Sood, E., Barmish, A., Tiwari, S., Hudson, J. L., & Kendall, P. C. (2008). "I'd rather not talk about it": Emotion parenting in families of children with an anxiety disorder. *Journal of Family Psychology*, 22(6), 875-884.

Suveg, C., Zeman, J., Flannery-Schroeder, E., & Cassano, M. (2005). Emotion socialization in families of children with an anxiety disorder. *Journal of Abnormal Child Psychology*, 33(2), 145-155.

Weil, L. G., Fleming, S. M., Dumontheil, I., Kilford, E. J., Weil, R. S., Rees, G., ... & Blakemore, S. J. (2013). The development of metacognitive ability in adolescence. *Consciousness and Cognition*, 22(1), 264-271.

Weissman, M. M., Leckman, J. F., Merikangas, K. R., Gammon, G. D., & Prusoff, B. A. (1984). Depression and anxiety disorders in parents and children: Results from the Yale Family Study. *Archives of General Psychiatry*, 41, 845-852.

## **Appendices**

## Appendix A: Ethical Approval Documents



Berkshire Healthcare **NHS**  
NHS Foundation Trust

### Research and Development

4<sup>th</sup> Floor, Fitzwilliam House  
Skimped Hill Lane  
Bracknell  
RG12 1BQ

Dr Polly Waite  
School of Psychology & Clinical Language Sciences  
University of Reading  
Whiteknights  
Reading RG6 6AL  
12 March 2012

Our Ref: 2012/09

REC Ref: 12/LO/0119

Study title: An investigation of parent-child interactions in anxious adolescents and a pilot randomised controlled trial of an internet-based treatment

Start date: 1.4.2012

End date: 31.10.2014

Dear Dr Waite

#### Confirmation of Trust Management Approval

On behalf of Berkshire Healthcare NHS Foundation Trust, I am pleased to confirm Trust Management Approval for the above research on the basis described in the application, protocol and other supporting documents.

If there are any changes to the study protocol, the R&D Department must be informed immediately and supplied with any amended documentation as necessary, including confirmation that the amendments have been favourably reviewed by the Sponsor and the Ethics Committee.

If the end date changes from that shown above, then please inform BHFT R&D Manager. Trust approval will cease on the end date above and you will be requested to submit a final report. Please contact the R&D Manager to discuss and request any extension.

The R&D Department is required to monitor the progress of all research in the Trust under the Department of Health's Research Governance Framework. You will be contacted in due course with a request for reports of progress, and for a brief final report of research findings.

If you have any questions about the above, or you require any other assistance, then please contact the R&D Department.

I wish you every success with the study.

Yours sincerely

 Dr Justin Wilson  
Medical Director

The Community Health Services for Berkshire East and Berkshire West are part of Berkshire Healthcare NHS Foundation Trust as of 8<sup>th</sup> April 2011



**NRES Committee London - Brent**

Room 019, Level 7 Maternity Block  
Northwick Park Hospital  
Watford Road  
Harrow  
Middlesex  
HA1 3UJ

22 May 2012

Dr Polly Waite  
MRC Clinical Research Training Fellow  
University of Reading  
School of Psychology and Clinical  
Language Sciences, University of Reading,  
Whiteknights, Reading  
RG6 6AL

Dear Dr Waite

**Study title:** An investigation of parent-child interactions in anxious adolescents and a pilot randomised controlled trial of an internet-based treatment  
**REC reference:** 12/LO/0119  
**SSA reference:** 12/SC/0295

The REC gave a favourable ethical opinion to this study on 7 February 2012.

Notification(s) have been received from local assessor(s), following site-specific assessment. On behalf of the Committee, I am pleased to confirm the extension of the favourable opinion to the new site(s) and investigator(s) listed below:

| Research Site         | Principal Investigator / Local Collaborator |
|-----------------------|---|
| University of Reading | Dr Polly Waite                              |

The favourable opinion is subject to management permission or approval being obtained from the host organisation prior to the start of the study at the site concerned.

**Statement of compliance**

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

**12/LO/0119** Please quote this number on all correspondence

Dr Polly Waite  
School of Psychology and Clinical Language Sciences

11 May 2012

**Research Ethics Committee Project No. 12/25: An investigation of parent-child interactions in anxious adolescents and a pilot randomised controlled trial of an internet-based treatment**

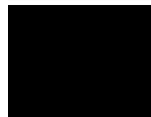
Dear Dr Waite

Thank you for your email providing amended documents in relation to the above project. I can confirm that the Chair is pleased to confirm a favourable ethical opinion on the basis of the submitted documentation.

Please note that the Committee will monitor the progress of projects to which it has given favourable ethical opinion approximately one year after such agreement, and then on a regular basis until its completion.

Please also find attached *Safety Note 59: Incident Reporting in Human Interventional Studies at the University of Reading*, should there be an incident arising from the conduct of this research.

Yours sincerely,



Nathan Helsby  
Planning Support Officer



cc: Dr John Wright (Chair)  
Professor Judi Ellis, Head of the School of Psychology and Clinical Language Sciences

## Appendix B: Information and consent sheets

Winnicott Research Unit  
Department of Psychology and Clinical Language Sciences  
University of Reading  
Harry Pitt Building  
Whiteknights Road  
Reading RG6 6AL

## INFORMATION ABOUT THE RESEARCH FOR PARENTS

### PART 1

#### What is the purpose of the study?

This study has a number of aims:

1. To help us better understand anxiety problems in adolescents; specifically how adolescents think about anxiety-provoking situations and how parents and adolescents interact with each other when the adolescent is anxious.
2. To test an internet-based treatment specifically designed for adolescents with anxiety problems.
3. To test whether providing additional sessions to parents improves treatment outcome for the adolescent.

#### Why have we been invited?

You and your son/daughter have been invited because they have been referred to the Berkshire Child Anxiety Clinic for treatment. Sixty adolescents referred to the clinic will take part in the study.

#### What happens if my son/daughter has been prescribed medication for their mood or behaviour?

One of the requirements of this study is that adolescents must either not be prescribed medication aimed at changing their mood or behaviour (e.g. anti-depressant medication or Ritalin) or, if they have been prescribed these types of medication, this must have been prescribed at a stable dose for at least 8 weeks prior to taking part in the study, with agreement to maintain that dose throughout the study. If your son/daughter is prescribed this kind of medication and it 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 your son/daughter's GP.

#### Do we have to take part?

It is up to you and your son/daughter to decide whether to join the study. In addition to this material, if you agree, we will set an appointment to go over this information sheet together. If you agree to take part, we will then ask you to sign a consent form. You are free to withdraw at any time, without giving any reason. This would not affect the standard of care or the treatment you and your son/daughter receive in any way.

London - Brent NRES Committee, REC Ref: 12/LO/0119  
Version 2 (date 22.02.12)

## INFORMATION ABOUT THE RESEARCH FOR ADOLESCENTS

Hi,

We are inviting you to take part in a study we are doing.

### Why is this project being done?

- 1 To help us better understand anxiety problems in teenagers and what happens with teenagers and their parents when they feel anxious
- 2 To test an internet treatment for anxiety in teenagers
- 3 To see if it helps you if your mum or dad have some sessions too



### Why have I been asked to take part?

You have been asked to take part because you have come to the Berkshire Child Anxiety Clinic for help with anxiety. Sixty teenagers referred to the clinic will also take part.

### Do I have to take part?



Whether or not you take part in this study is **completely up to you**. You do not have to do this. If you decide not to take part you will still get the usual help that we give young people. Also, if you decide to 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.

### What will happen to me if I take part in the project?

#### 1. Video-tape Assessment Session with your Mum or Dad:



two of these tasks.

We would like to ask you and your mum or dad (whoever spends most time with you) lots of questions about how you feel and what you do in different situations. We ask these questions before treatment in the clinic begins. We would also like to audio-record some of your answers 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

#### 2. Internet Treatment Sessions to help with anxiety:

All teenagers who take part will get help with their worries and fear - whether you do the video-tape assessment or not. Everyone will have 10 sessions over the internet and they will have someone from the clinic who keeps in touch over email and by telephone to see how they get on and help if they get stuck.



**Study Centre Address:**

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

**Clinical Research Team:**

**Clinical Director:** Dr Lucy Willetts

**Trials Manager:** Dr Rachel Gitau

**Study Assessors:** Sarah Cook; Amy Corcoran; Jenny Crosby; Ray Percy; Rebecca O'Grady;

**Trials Secretary:** Brendan Lawrence;

**Research Director:** Professor Peter Cooper

## 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).

Winnicott Research Unit  
Department of Psychology and Clinical Language Sciences  
University of Reading  
Harry Pitt Building  
Whiteknights Road  
Reading RG6 6AL

## CONSENT FORM

Title of Project: Parent-child interactions and the treatment of anxious adolescents  
Principal Investigator: Dr Polly Waite

*(Please initial each box)*

1. I confirm that I have read and understand the Information Sheet dated 22.02.12 (Version 2) 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 son/daughter's participation is voluntary and that we are free to withdraw at any time, without giving any reason, without our medical care or legal rights being affected.
3. I understand that relevant sections of the data collected during the study may be looked by at individuals from University of Reading, from regulatory authorities or from the NHS Trust, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records.
4. I agree to our GP being informed of my son/daughter's participation in the study as explained in the Information Sheet and will provide contact information for this purpose.
5. I agree for my son/daughter to be videotaped.
6. I agree for my son/daughter to take part in the above study.

The study was reviewed and given a favourable ethical opinion for conduct by the London - Brent National Research Ethics Service (NRES) Committee.

I have spoken to: \_\_\_\_\_ Your child's name: \_\_\_\_\_

Your Name: \_\_\_\_\_ Date: \_\_\_\_\_ Signature: \_\_\_\_\_

Name of Researcher: \_\_\_\_\_ Date: \_\_\_\_\_ Signature: \_\_\_\_\_



University of  
Reading

### ASSENT FORM FOR CHILDREN & ADOLESCENTS

(To be completed by the child or adolescent and his/her guardian)

#### Study of Anxiety in Children and Adolescents

Please circle all you agree with:

- Have you read (or had read to you) the information about this project? YES/ NO
- Has somebody 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/no questions
- 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 \_\_\_\_\_



Appendix C: Quality Appraisal Tool, Pre-task Anxiety Rating Scale and Maternal  
Discourse Style Coding Scheme (MDSCS-A)

## Standard Quality Assessment Tool

### *Manual for Quality Scoring of Quantitative Studies (Kmet, Lee & Cook, 2004)*

#### *Definitions and Instructions for Quality Assessment Scoring*

##### **How to calculate the summary score**

**Total sum** = (number of “yes” \* 2) + (number of “partials” \* 1)

**Total possible sum** = 28 – (number of “N/A” \* 2)

**Summary score:** total sum / total possible sum

##### **Quality assessment**

#### 1. *Question or objective sufficiently described?*

**Yes:** Is easily identified in the introductory section (or first paragraph of methods section). Specifies (where applicable, depending on study design) *all* of the following: purpose, subjects/target population, and the *specific* intervention(s) /association(s)/descriptive parameter(s) under investigation. A study purpose that only becomes apparent after studying other parts of the paper is *not* considered sufficiently described.

**Partial:** Vaguely/incompletely reported (e.g. “describe the effect of” or “examine the role of” or “assess opinion on many issues” or “explore the general attitudes”...); *or* some information has to be gathered from parts of the paper other than the introduction/background/objective section.

**No:** Question or objective is not reported, or is incomprehensible.

**N/A:** Should not be checked for this question.

#### 2. *Design evident and appropriate to answer study question? (If the study question is not given, infer from the conclusions).*

**Yes:** Design is easily identified and is appropriate to address the study question / objective.

**Partial:** Design and /or study question not clearly identified, but gross inappropriateness is not evident; *or* design is easily identified but only partially addresses the study question.

**No:** Design used does not answer study question (e.g., a comparison group is required to answer the study question, but none was used); *or* design cannot be identified.

**N/A:** Should not be checked for this question.

#### 3. *Method of subject selection (and comparison group selection, if applicable) or source of information/input variables (e.g., for decision analysis) is described and appropriate.*

**Yes:** Described and appropriate. Selection strategy *designed* (i.e., consider sampling

frame and strategy) to obtain an unbiased sample of the relevant target population or the entire target population of interest (e.g., consecutive patients for clinical trials, population-based random sample for case-control studies or surveys). Where applicable, inclusion/exclusion criteria are described and defined (e.g., “cancer” -- ICD code or equivalent should be provided). *Studies of volunteers*: methods and setting of recruitment reported. *Surveys*: sampling frame/ strategy clearly described and appropriate.

**Partial:** Selection methods (and inclusion/exclusion criteria, where applicable) are not completely described, but no obvious inappropriateness. Or selection strategy is not ideal (i.e., likely introduced bias) but did not likely seriously distort the results (e.g., telephone survey sampled from listed phone numbers only; hospital based case-control study identified all cases admitted during the study period, but recruited controls admitted during the day/evening only). Any study describing participants only as “volunteers” or “healthy volunteers”. *Surveys*: target population mentioned but sampling strategy unclear.

**No:** No information provided. Or obviously inappropriate selection procedures (e.g., inappropriate comparison group if intervention in women is compared to intervention in men). Or presence of selection bias which likely seriously distorted the results (e.g., obvious selection on “exposure” in a case-control study).

**N/A:** Descriptive case series/reports.

#### **4. Subject (and comparison group, if applicable) characteristics or input variables/information (e.g., for decision analyses) sufficiently described?**

**Yes:** Sufficient relevant baseline/demographic information clearly characterizing the participants is provided (or reference to previously published baseline data is provided). Where applicable, reproducible criteria used to describe/categorize the participants are clearly defined (e.g., ever-smokers, depression scores, systolic blood pressure > 140). If “healthy volunteers” are used, age and sex must be reported (at minimum). *Decision analyses*: baseline estimates for input variables are clearly specified.

**Partial:** Poorly defined criteria (e.g. “hypertension”, “healthy volunteers”, “smoking”). Or incomplete relevant baseline / demographic information (e.g., information on likely confounders not reported). *Decision analyses*: incomplete reporting of baseline estimates for input variables.

**No:** No baseline / demographic information provided. *Decision analyses*: baseline estimates of input variables not given.

**N/A:** Should not be checked for this question.

#### **5. If random allocation to treatment group was possible, is it described?**

**Yes:** True randomization done - requires a description of the method used (e.g., use of random numbers).

**Partial:** Randomization mentioned, but method is not (i.e. it may have been possible that randomization was not true).

**No:** Random allocation not mentioned although it would have been feasible and appropriate (and was possibly done).

**N/A:** Observational analytic studies. Uncontrolled experimental studies. Surveys. Descriptive case series / reports. Decision analyses.

**6. *If interventional and blinding of investigators to intervention was possible, is it reported?***

**Yes:** Blinding reported

**Partial:** Blinding reported but it is not clear who was blinded.

**No:** Blinding would have been possible (and was possibly done) but is not reported.

**N/A:** Observational analytic studies. Uncontrolled experimental studies. Surveys. Descriptive case series / reports. Decision analyses.

**7. *If interventional and blinding of subjects to intervention was possible, it reported?***

**Yes:** Blinding reported.

**Partial:** Blinding reported but it is not clear who was blinded.

**No:** Blinding would have been possible (and was possibly done) but is not reported.

**N/A:** Observational studies. Uncontrolled experimental studies. Surveys. Descriptive case series / reports.

**8. *Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? Means of assessment reported?***

**Yes:** Defined (or reference to complete definitions is provided) and measured according to reproducible, “objective” criteria (e.g., death, test completion – yes/no, clinical scores). Little or minimal potential for measurement / misclassification errors. *Surveys:* clear description (or reference to clear description) of questionnaire/interview content and response options. *Decision analyses:* sources of uncertainty are defined for all input variables.

**Partial:** Definition of measures leaves room for subjectivity, *or* not sure (i.e. not reported in detail, but probably acceptable). *Or* precise definition(s) are missing, but no evidence or problems in the paper that would lead one to assume major problems. *Or* instrument/mode of assessment(s) not reported. *Or* misclassification errors may have occurred, but they did not likely seriously distort the results (e.g., slight difficulty with recall of long-ago events; exposure is measured only at baseline in a long cohort study). *Surveys:* description of questionnaire/interview content incomplete; response options unclear. *Decision analyses:* sources of uncertainty are defined only for some input variables.

**No:** Measures not defined, or are inconsistent throughout the paper. *Or* measures employ only ill-defined, subjective assessments, e.g. “anxiety” or “pain.” *Or* obvious misclassification errors/measurement bias likely seriously distorted the results (e.g., a prospective cohort relies on self-reported outcomes among the “unexposed” but requires clinical assessment of the “exposed”). *Surveys:* no description of questionnaire/interview

content or response options. *Decision analyses*: sources of uncertainty are not defined for input variables.

N/A: Descriptive case series / reports.

### 9. *Sample size appropriate?*

**Yes:** Seems reasonable with respect to the outcome under study and the study design. When statistically significant results are achieved for major outcomes, appropriate sample size can usually be assumed, unless large standard errors ( $SE > \frac{1}{2}$  effect size) and/or problems with multiple testing are evident. *Decision analyses*: size of modeled cohort / number of iterations specified and justified.

**Partial:** Insufficient data to assess sample size (e.g., sample seems “small” and there is no mention of power/sample size/effect size of interest and/or variance estimates aren’t provided). *Or* some statistically significant results with standard errors  $> \frac{1}{2}$  effect size (i.e., imprecise results). *Or* some statistically significant results in the absence of variance estimates. *Decision analyses*: incomplete description or justification of size of modeled cohort / number of iterations.

**No:** Obviously inadequate (e.g., statistically non-significant results and standard errors  $> \frac{1}{2}$  effect size; or standard deviations  $>$  of effect size; or statistically non-significant results with no variance estimates and obviously inadequate sample size). *Decision analyses*: size of modeled cohort / number of iterations not specified.

N/A: Most surveys (except surveys comparing responses between groups or change over time). Descriptive case series / reports.

### 10. *Analysis described and appropriate?*

**Yes:** Analytic methods are described (e.g. “chi square”/ “t-tests”/“Kaplan-Meier with log rank tests”, etc.) and appropriate.

**Partial:** Analytic methods are not reported and have to be guessed at, but are probably appropriate. *Or* minor flaws or some tests appropriate, some not (e.g., parametric tests used, but unsure whether appropriate; control group exists but is not used for statistical analysis). *Or* multiple testing problems not addressed.

**No:** Analysis methods not described and cannot be determined. *Or* obviously inappropriate analysis methods (e.g., chi-square tests for continuous data, SE given where normality is highly unlikely, etc.). *Or* a study with a descriptive goal / objective is over-analyzed.

N/A: Descriptive case series / reports.

### 11. *Some estimate of variance (e.g., confidence intervals, standard errors) is reported for the main results/outcomes (i.e., those directly addressing the study question/objective upon which the conclusions are based)?*

**Yes:** Appropriate variances estimate(s) is/are provided (e.g., range, distribution, confidence intervals, etc.). *Decision analyses*: sensitivity analysis includes all variables in the model.

**Partial:** Undefined “+/-“ expressions. *Or* no specific data given, but insufficient power acknowledged as a problem. *Or* variance estimates not provided for all main results/outcomes. *Or* inappropriate variance estimates (e.g., a study examining change over time provides a variance around the parameter of interest at “time 1” or “time 2”, but does not provide an estimate of the variance around the difference). *Decision analyses:* sensitivity analysis is limited, including only some variables in the model.

**No:** No information regarding uncertainty of the estimates. *Decision analyses:* No sensitivity analysis.

**N/A:** Descriptive case series / reports. Descriptive surveys collecting information using open-ended questions.

## 12. *Controlled for confounding?*

**Yes:** Randomized study, with comparability of baseline characteristics reported (or non-comparability controlled for in the analysis). *Or* appropriate control at the design or analysis stage (e.g., matching, subgroup analysis, multivariate models, etc). *Decision analyses:* dependencies between variables fully accounted for (e.g., joint variables are considered).

**Partial:** Incomplete control of confounding. *Or* control of confounding reportedly done but not completely described. *Or* randomized study without report of comparability of baseline characteristics. *Or* confounding not considered, but not likely to have seriously distorted the results. *Decision analyses:* incomplete consideration of dependencies between variables.

**No:** Confounding not considered, and may have seriously distorted the results. *Decision analyses:* dependencies between variables not considered.

**N/A:** Cross-sectional surveys of a single group (i.e., surveys examining change over time or surveys comparing different groups should address the potential for confounding). Descriptive studies. Studies explicitly stating the analysis is strictly descriptive/exploratory in nature.

## 13. *Results reported in sufficient detail?*

**Yes:** Results include major outcomes and all mentioned secondary outcomes.

**Partial:** Quantitative results reported only for some outcomes. *Or* difficult to assess as study question/objective not fully described (and is not made clear in the methods section), but results seem appropriate.

**No:** Quantitative results are reported for a subsample only, or “n” changes continually across the denominator (e.g., reported proportions do not account for the entire study sample, but are reported only for those with complete data i.e., the category of “unknown” is not used where needed). *Or* results for some major or mentioned secondary outcomes are only qualitatively reported when quantitative reporting would have been possible (e.g., results include vague comments such as “more likely” without quantitative report of actual numbers).

**N/A:** Should not be checked for this question.

14. *Do the results support the conclusions?*

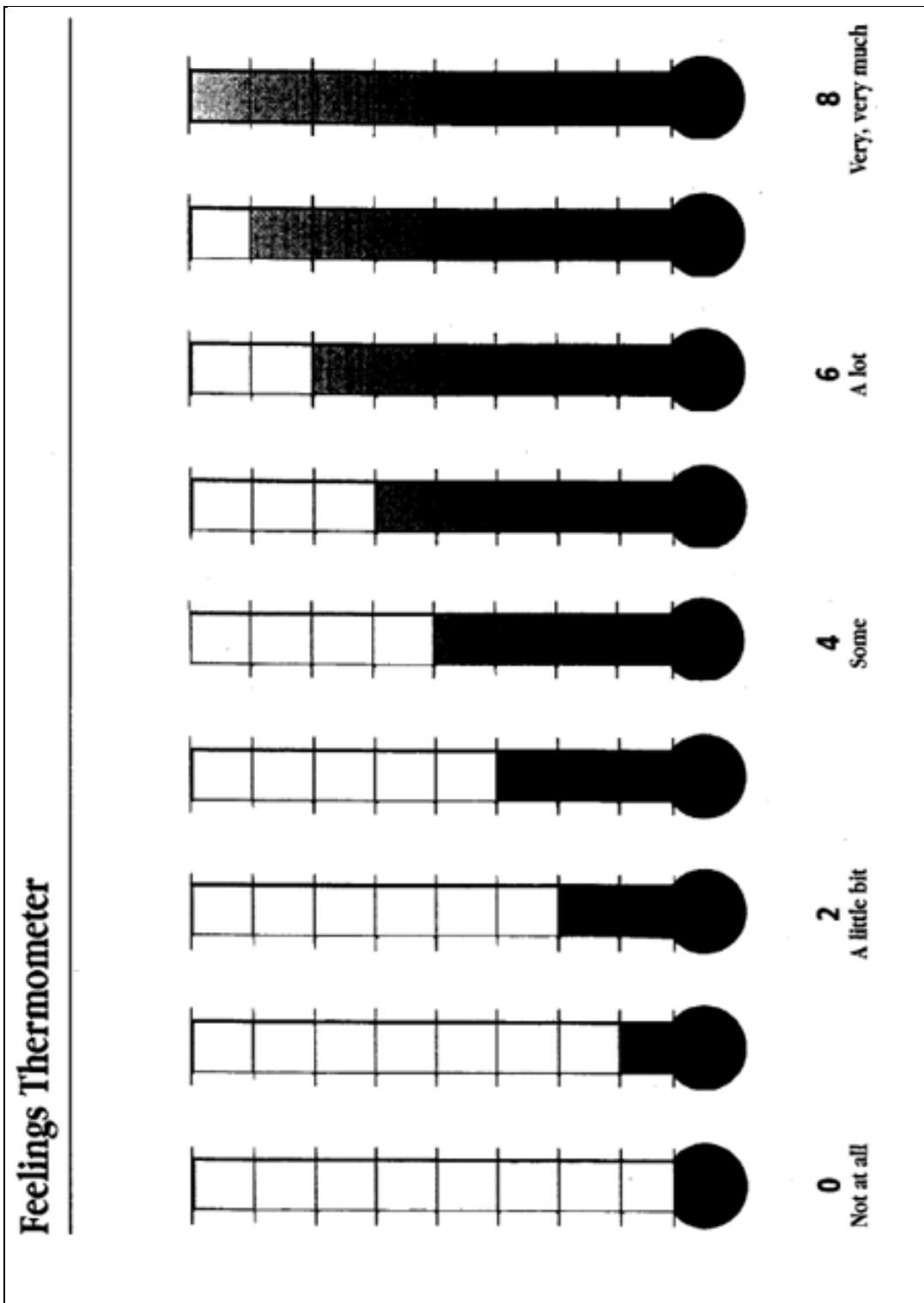
**Yes:** All the conclusions are supported by the data (even if analysis was inappropriate). Conclusions are based on all results relevant to the study question, negative as well as positive ones (e.g., they aren't based on the sole significant finding while ignoring the negative results). Part of the conclusions may expand beyond the results, if made *in addition to* rather than instead of those strictly supported by data, and if including indicators of their interpretative nature (e.g., "suggesting," "possibly").

**Partial:** Some of the major conclusions are supported by the data, some are not. *Or* speculative interpretations are not indicated as such. *Or* low (or unreported) response rates call into question the validity of generalizing the results to the target population of interest (i.e., the population defined by the sampling frame/strategy).

**No:** None or a very small minority of the major conclusions are supported by the data. *Or* negative findings clearly due to low power are reported as definitive evidence against the alternate hypothesis. *Or* conclusions are missing. *Or* extremely low response rates invalidate generalizing the results to the target population of interest (i.e. the population defined by the sampling frame/ strategy).

**N/A:** Should not be checked for this question.

Feelings Thermometer - Anxiety rating scale





---

# Maternal Discourse Style Coding Scheme

---

Anxiety Version

---

MDSCS-A: Winnicott Research  
Unit, University of Reading,  
Reading, UK

---

Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

**Contents**

|   |    |
|---|----|
| <b>General Coding Guidelines</b> .....                            | 2  |
| What to code? .....   | 2  |
| Defining whether an utterance is mother or child initiated .....  | 2  |
| <b>Utterance Segmentation Rules</b> .....                         | 3  |
| Section 1: General conventions .....                              | 3  |
| Section 2: Dealing with artefacts .....                           | 6  |
| <b>Utterance Defined Codes</b> .....                              | 8  |
| Attribution of Threat (AoT) .....                                 | 8  |
| Attribution of Vulnerability (AoV) .....                          | 10 |
| Promotion of Avoidance (PoA) .....                                | 14 |
| Attribution of Security (AoS) .....                               | 16 |
| Attribution of Positiveness (AoP) .....                           | 18 |
| Promotion of Endeavour (PoE) .....                                | 22 |
| Promotion of Reflective Evaluation – Negative Focus (PRE-N) ..... | 24 |
| Promotion of Reflective Evaluation – Positive Focus (PRE-P) ..... | 26 |

### General Coding Guidelines

#### What to code?

Only maternal utterances are coded. This does not completely rule out the role of child utterances as the source of initiation of each maternal utterance – i.e. mother or child - is taken into consideration.

#### Defining whether an utterance is mother or child initiated

Examine dialogue content as far back as necessary to ascertain the source of initiation when assigning any utterance defined code. This is likely to entail going back several utterances prior to the index utterance. Maternal utterances related to content spontaneously introduced to the conversation by the mother should be coded as 'mother initiated'; conversely, maternal utterances related to content spontaneously introduced to the conversation by the child should be coded as 'child initiated'.

### Utterance Segmentation Rules

The conventions described below should be used to break-down extended passages of speech into codable units known as utterances. This process is referred to as 'segmentation'.

#### Section 1: General conventions

For each convention in this section an example of the correct segmentation procedure is given. Incorrect examples are also given where appropriate. For clarity, examples of valid and invalid utterances (i.e. correctly and incorrectly segmented speech) will be contained within vertical lines.

*Example:* |Utterances will be contained within vertical lines. |

The opening word of a passage of speech marks the start of the first utterance of that passage. The end of an utterance/start of a subsequent utterance is marked by the following, unless countermanded by rule 2A, 2B or 2C (see Section 2 below):

#### a) End-of-sentence punctuation

Full stops  
Exclamation marks  
Question marks

*Example:* |We went on a ride on a tractor. | It was fantastic! | How fast did it go? |

#### b) Natural pauses

Natural pauses will be represented by commas.

*Correct example:* |I took you to the dentist, | where you sat in a big chair. |

*Incorrect example:* |I took you to the dentist, where you sat in a big chair. |

#### c) New clauses not separated by commas

A sentence may contain several clauses that are not separated by commas but nevertheless represent separate utterances.

*Correct example:* |The big man | in the big red suit | and the big grey beard. |

*Incorrect example:* |The big man in the big red suit and the big grey beard. |

In the above correctly segmented example the second two clauses are in effect separated by the word 'and': | in the big red suit | and the big grey beard. |

In cases where the presence of the word 'and' is used to link intrinsically related entities it should not be viewed as a marker for identifying separate utterances:

*Correct example 1:* |You went with Mummy and Daddy. |

*Incorrect example 1:* |You went with Mummy | and Daddy. |

*Correct example 2:* |You went with Mummy and Daddy | and he was big and scary. |

*Incorrect example 2:* |You went with Mummy | and Daddy | and he was big | and scary. |

Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

In the above examples 'Mummy and Daddy' and 'big and scary' can be considered intrinsically related and have been segmented together accordingly. If example 2 was altered to read 'You went with Mummy and Daddy and he was big and was quite scary', then it would be segmented as follows:

*Correct example:* |You went with Mummy and Daddy| and he was big| and was quite scary|

Although the last two sentences presented above are almost identical, the inclusion of the words 'was quite' in the latter instance creates a new clause which is treated as a separate utterance.

When information is provided that is novel to the conversational turn it marks the end of the preceding utterance. See the italicised utterance in the example below.

*Correct example:* |Right, think about when we went to London| *with Marie and Charlotte*|

*d) Single-word confirmatory/negatory/incredulous remarks*

Single-word confirmatory/negatory/incredulous remarks are common in ordinary spoken language. Examples include:

|Yes.| (Confirmatory)  
|No.| (Negatory)  
|Really?!| (Incredulous)

Confirmatory, negatory and incredulous remarks occur in response to something said by a conversation partner, for example:

Mother: |You were sad, weren't you?|

Child: |I was sad.|

Mother: |Yes.| And you cried a lot.|

*e) Dealing with Lists*

When alternative answers to questions are provided in the form of a list, each option should be treated as a piece of self-contained information and segmented separately. See the example below. The same rule should be applied when segmenting alternative responses.

*Correct example:* |A few hours| or a few minutes?|

*Incorrect example:* |A few hour or a few minutes?|

*f) Dealing with Emotion References and Their Antecedents*

Emotions are frequently referred to in relation to an external antecedent within short passages of speech. Different segmenting rules should be applied depending on the way the association between the emotion and its antecedent is described. As a rule-of-thumb, if the antecedent is described in terms of a process or course of action it should be segmented separately from the emotion; if the antecedent is referred to using an isolated noun it should be segmented together with the antecedent.

Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

It is important to remember that emotion antecedent may be referred to before *or* after the emotion.

*Correct example 1:* |When it's getting onto planes| I get quite worried|

*Correct example 2:* |I'm worried about planes|

*Incorrect example:* |I'm worried| *about planes*|

*Correct example 3:* |are you anxious about landing?|

*Incorrect example:* |are you anxious| *about landing?*|

In the first correct example the sentence has been divided into two segments in-line with rule 1g, Example 1 (see below). In the second correct example almost identical information is provided about the emotion in relation to its antecedent; however, the lack of elaboration about the antecedent (see italicised utterance) means that it must be segmented together with the emotion reference. In the third correct example the antecedent is referred to using an isolated noun and has been segmented with the emotion. See section 'g' below for further explanation.

*g) Additional Clarification and Examples*

An utterance must constitute an 'idea' and/or a represent piece of self-contained information novel to the conversational turn.

In Example 1 below, the first correctly segmented utterance represents a self-contained piece of information, i.e. getting onto a plane; the second utterance constitutes an 'idea' and represents a piece of self-contained information, i.e. getting worried.

Example 1:

*Correct example:* |When it's getting onto planes| I get quite worried|

*Incorrect example:* |When it's getting onto planes I get quite worried|

In Example 2a, the correctly segmented italicised utterance does not constitute an 'idea' but does represent a piece of self-contained information. Conversely, the correctly segmented utterances in Example 2b do not represent pieces of self-contained information but do constitute 'ideas', i.e. firstly, that the child gets anxious when they go [on holiday]; secondly, that she is frightened; thirdly, her fear is in relation to missing the plane (refer back to rule 1f).

Example 2:

*Correct example a:*

[Do you think it was, erm. Right, think about when we went up to London] *with Marie and Charlotte* and you went on the train.]

*Correct example b:*

[So, you're basically saying then that the reason that you get so anxious when we go] is because mainly you're frightened| *about missing the plane?*|

### Section 2: Dealing with artefacts

Ordinary spoken language is frequently preceded by, or interjected with 'artefacts'. Typically, these artefacts take the form of cue-words/phrases, fill-words/phrases (including incomplete/non-words, i.e. mumbling), unnecessary and/or unintentional repetitions, and tag questions. The remainder of this section describes each of these artefacts in-turn. Similarly to Section 1, in each case an example of the correct segmenting procedure will be given. Incorrect examples will also be given where appropriate. For clarity, examples of valid and invalid utterances (i.e. correctly and incorrectly segmented speech) will be contained within vertical lines.

#### a) Cue words/phrases

A cue word/phrase is often present at the start of a sentence and acts as a precursor to the subsequent utterance. In isolation, these words/phrases hold no meaning. Consequently, they should be treated as part of the utterance they precede<sup>1</sup>. Examples of cue words/phrases include:

Right  
Okay  
Now then

Example in context:

*Correct example:* |Right then. How did you feel| when you had to go to the dentist?|

*Incorrect example:* |Right then.| How did you feel| when you had to go to the dentist?|

Note: This rule supersedes rule 1A in cases such as that shown in the above example.

#### b) Fill words/phrases

Fill words/phrases, including incomplete/non-words, are often present in ordinary spoken language. Similarly to cue words/phrases these words/phrases hold no meaning. Consequently, they should be treated as part of the utterance within which they occur. Examples of fill words/phrases include:

Erm  
Err  
Like  
Kind of

Examples in context:

*Correct example 1:* |Did you..., erm..., have fun at Granny's?|

*Incorrect example 1:* |Did you...,| erm...,| have fun at Granny's?|

*Correct example 2:* |You were..., err..., like..., kind of..., a bit scared. |

---

<sup>1</sup> Words appearing in isolation at the beginning of a sentence such as 'Look' or the child's name e.g. 'George' are qualitatively different from cue words/phrases, in that they serve the purpose of gaining the child's attention, but should be treated in the same way.

Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

*Incorrect example 2:* |You were...,| err...,| like...,| kind of...,| a bit scared. |

Note: This rule supersedes rule 1B in cases such as those shown in the above examples.

*c) Unnecessary and/or unintentional repetitions*

Similarly to fill words/phrases, unnecessary and/or unintentional repetitions are often present in ordinary spoken language. As they have no novel value they should be treated as part of the utterance within which they occur.

*Correct example:* |I think you were scared of the..., scared of the dog. |

*Incorrect example:* |I think you were scared of the...,| scared of the dog. |

Note: This rule supersedes rule 1B in cases such as that shown in the above example.

*d) Tag questions*

Tag questions frequently occur at the end of sentences but should not be treated as separate utterances. Instead, utterances which they follow should be regarded as statements. They may appear after commas or full stops. Examples of tag questions include:

Didn't you?

Wasn't it?

Yes?

No?

Examples in context:

*Correct example 1:* |You enjoyed it, didn't you?|

*Incorrect example 1:* |You enjoyed it,| didn't you?|

*Correct example 2:* |It was very scary. No?|

*Incorrect example 2:* |It was very scary. | No?|

Note: This rule supersedes rule 1A/1B in cases such as those shown in the above examples.



## Utterance Defined Codes

### Attribution of Threat (AoT)

The mother refers to a situation (e.g. travelling on a train) or a specific aspect of a situation (e.g. a person, an animal, an object, or an action) as being threatening, intimidating, frightening etc. Alternatively, the mother may emphasise volume/size or unfamiliarity/strangeness. On a more subtle level the mother may refer to her child being separated from her with an intrinsically negative undertone, e.g. with an emphasis on abandonment. The mother may make direct threat attributions including endorsements of threat attributions generated by her child, or make indirect threat attributions in the form of a question or by challenging non-threat attributions generated by her child. For indirect threat attributions tone of voice must be taken into account. It is essential that the mother evidences a querying tone of voice. If tone of voice is ambiguous it is justified to refer to adjacent maternal utterances to clarify meaning. If adjacent utterances do not give sound reason for a negative interpretation the utterance should be coded as Attribution of Security (see page 16).

Utterances may be coded as AoT irrespective of the temporal location of the situation or specific aspect being discussed. Neutral attributions, e.g. "boring", "rubbish", "no good" etc. should not be coded as AoT.

To aid identification of utterances fulfilling AoT criteria three sub-categories have been created:

#### *i) AoT (direct)*

##### **Example 1:**

Mother: |The dog could have bitten you.| (direct; statement)

##### **Example 2:**

Child: |I don't like dogs| because they can bite|

Mother: |I know!| (direct; endorsement)

##### **Example 3:**

Mother: |but the dog was very big| (direct; statement; emphasis on size)

#### *ii) AoT (indirect)*

##### **Example 1:**

Mother: |so, do you think aeroplanes are dangerous?| (indirect; question)

##### **Example 2:**

Child: |aeroplanes aren't actually dangerous|

Mother: |but sometimes they can be| (indirect; challenging non-threat attribution)

Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

*iii) AoT (separation)*

*Example 1:*

Mother: [I had to leave you all on your own] (direct; statement)

*Example 2:*

Mother: [so, what will you do when I leave you?] (indirect; question)

Notes: The mother may make direct or indirect separation threat attributions as described above. AoT (separation) should not be coded if separation is mentioned in the context of child competency, i.e. a relaxed or positive separation.

*Example:*

Mother: [when I left you] I think you were smiling and waving]

**Attribution of Vulnerability (AoV)**

The mother emphasises her child's negative emotions or makes reference to her child being vulnerable or inept. In addition, the mother may refer to her child as having a lack of control or being dependent upon her or another protective figure. In a similar manner the mother may make reference to others being vulnerable or inept, having a lack of control, or being dependent upon a protective figure. The mother may make direct vulnerability attributions including endorsements of vulnerability her child has attributed to himself/herself, or make indirect vulnerability attributions in the form of a question or by challenging positive emotions or competency her child has attributed to himself/herself. For indirect vulnerability attributions tone of voice must be taken into account. It is essential that the mother evidences a querying tone of voice. If tone of voice is ambiguous it is justified to refer to adjacent maternal utterances to clarify meaning. If adjacent utterances do not give sound reason for a negative interpretation the utterance should be coded as Attribution of Positiveness (see page 18).

Utterances may be coded as AoV irrespective of the temporal location of the situation or specific aspect being discussed. Neutral attributions, e.g. "bored", "disinterested" etc. should not be coded as AoV.

To aid identification of utterances fulfilling AoV criteria six sub-categories have been created:

*i) AoV (direct)*

*Example 1:*

Mother: |I think that you were scared| (direct; statement)

*Example 2:*

Mother: |you would be too frightened to stroke a dog| (direct; statement)

*Example 3:*

Child: |I was really frightened mum|

Mother: |yes, I think so too| (direct; endorsement)

*ii) AoV (indirect)*

*Example 1:*

Mother: |do you think that you would be nervous?| (indirect; question)

*Example 2:*

Mother: |would you be okay doing that?| (indirect; question)

*Example 3:*

Child: |I'd feel fine doing that|

Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

Mother: [really, you'd feel fine?] (indirect; challenging positiveness)

Note: The mother may make a positiveness attribution about herself or others which effectively serves as a reference point from which she can illustrate that her child is in some way inadequate or inferior. Utterances such as the one in the example below should not be coded as Attribution of Positiveness (see page 19) but instead treated as an indirect Attribution of Vulnerability.

*Example 4:*

Mother: [Your brother wasn't scared, so why were you?]

*iii) AoV (control)*

The mother refers to her child as having a lack of control either explicitly or through endorsing a lack of control belief her child has attributed to himself/herself. Alternatively, the mother indirectly attributes a lack of control by challenging control beliefs her child has attributed to himself/herself.

*Example 1:*

Mother: [you wouldn't be able to do anything about it] (direct; statement)

*Example 2:*

Child: [I wouldn't be able to anything at all]

Mother: [no, I know you wouldn't] (direct; endorsement)

*Example 3:*

Child: [I would just ask them what they're laughing about]

Mother: [could you really do that?] (indirect; challenging control belief)

Note: Control-related questions posed by the mother as shown in the example below should not be coded as AoV. Instead, these utterances should be coded as Promotion of Vulnerability Re-evaluation (see page 28). Regardless of tone of voice, questions of this type are viewed to encourage the child to think about what they could do in the face of anxiety rather than steer them towards thinking about their vulnerability.

*Example:*

Mother: [do you think that you would be able to do anything?]

*iv) AoV (dependency)*

The mother refers to her child as being dependent upon her or another protective figure (e.g. father, older brother, friend) explicitly, or through endorsing a dependency belief her child has attributed to himself/herself. Alternatively, the mother indirectly attributes dependency in the form of a question or by challenging non-dependent beliefs her child has attributed to himself/herself.

Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

**Example 1:**

Mother: [you would need me to help you] (direct; statement)

**Example 2:**

Child: [I would feel less scared if you and Dad were there]

Mother: [yes, I think so too] (direct; endorsement)

**Example 3:**

Mother: [would you feel better if I could stay with you?] (indirect; question)

**Example 4:**

Child: [I'd be happy to go without you next time]

Mother: [I don't think you would be] (indirect; challenging non-dependent belief)

v) *AoV (others)*

The mother attributes vulnerability to another person either explicitly or through endorsing vulnerability her child has attributed to another; or the mother attributes vulnerability to another person indirectly in the form of a question or by challenging competency her child has attributed to another; or the mother refers to another individual as having a lack of control or being dependent upon a protective figure.

**Example 1:**

Mother: [Your brother would be really scared!] (direct; statement)

**Example 2:**

Child: [the dog made Billy feel frightened]

Mother: [yes, that's right] (direct; endorsement)

**Example 3:**

Mother: [do you think that your brother would be okay doing that?] (indirect; question)

**Example 4:**

Child: [Billy wouldn't be frightened at all]

Mother: [I don't think that's true] (indirect; challenging child-attributed competency)

**Example 5:**

Mother: [your brother wouldn't be able to deal with that situation]

(direct; control statement)

Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

**Example 6:**

Mother: [Billy would feel better if his mum was with him]

(direct; dependency statement)

*vi) AoV (self)*

The mother attributes vulnerability to herself either explicitly or through endorsing vulnerability her child has attributed to her; or the mother attributes vulnerability to herself indirectly in the form of a question or by challenging competency her child has attributed to her; or, the mother refers to herself as having a lack of control or being dependent upon a protective figure. Refer to the above examples and adapt as necessary.

### Promotion of Avoidance (PoA)

The mother refers to her child adopting avoidant behaviour in the context of an anxiety provoking situation. The mother may make direct PoA statements including endorsements of avoidant behaviour referred to by her child, or make indirect PoA statements in the form of a question or by challenging non-avoidant behaviour referred to by her child. The mother may directly or indirectly advocate turning to an authority figure. In a similar manner the mother may make reference to others or herself adopting avoidant behaviour. For indirect PoA utterances tone of voice must be taken into account. It is essential that the mother evidences a querying tone of voice. If tone of voice is ambiguous it is justified to refer to adjacent maternal utterances to clarify meaning. If adjacent utterances do not give sound reason for a negative interpretation the utterance should be coded as Promotion of Endeavour (see page 22).

Utterances may be coded as PoA irrespective of the temporal location of the situation or specific aspect being discussed.

To aid identification of utterances fulfilling PoA criteria four sub-categories have been created:

#### *i) PoA (direct)*

The mother explicitly refers to her child adopting avoidant behaviour or endorses avoidant behaviour referred to by her child.

##### **Example 1:**

Mother: |you should've just ran away| (direct; statement)

##### **Example 2:**

Mother: |you just stood there and watched, didn't you?| (direct; statement)

##### **Example 3:**

Child: |I'm just not going to touch a dog again|

Mother: |that's a good idea| (direct; endorsement)

#### *ii) PoA (indirect)*

The mother indirectly refers to her child adopting avoidant behaviour either in the form of a question or by challenging non-avoidant behaviour referred to by her child.

##### **Example 1:**

Mother: |would you walk away?| (indirect; question)

##### **Example 2:**

Child: |I still tried to stroke the dog|

Mother: |do you think that was a good idea?| (indirect; challenging non-avoidant behaviour)

Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

*iii) PoA (others)*

The mother explicitly refers to another person adopting avoidant behaviour or endorses avoidant behaviour by others referred to by her child; or the mother indirectly refers to others adopting avoidant behaviour either in the form of a question or by challenging non-avoidant behaviour by others referred to by her child. Refer to the above examples and adapt as necessary.

*iv) PoA (self)*

The mother explicitly refers to herself adopting avoidant behaviour or endorses avoidant behaviour by herself referred to by her child; or the mother indirectly refers to herself adopting avoidant behaviour either in the form of a question or by challenging non-avoidant behaviour by herself referred to by her child. Refer to the above examples and adapt as necessary.



### Attribution of Security (AoS)

The mother refers to a situation (e.g. travelling on a train) or a specific aspect of a situation (e.g. a person, an animal, an object, or an action) in a positive way, e.g. as being fun, exciting, friendly, interesting etc. Alternatively, the mother may minimise volume/size or attempt to draw comparisons between the anxiety provoking situation under discussion and a more positive or more familiar non-anxiety provoking situation. On a more subtle level the mother may refer to her child being separated from her with an intrinsically positive undertone, e.g. with an emphasis on security. The mother may make direct security attributions including endorsements of security attributions generated by her child, or make indirect security attributions in the form of a question or by challenging threat attributions generated by her child. For indirect security attributions tone of voice must be taken into account. It is essential that the mother evidences a querying tone of voice. If tone of voice is ambiguous it is justified to refer to adjacent maternal utterances to clarify meaning. If adjacent utterances do not give sound reason for a positive interpretation the utterance should be coded as Attribution of Threat (see page 8).

Utterances may be coded as AoS irrespective of the temporal location of the situation or specific aspect being discussed. Neutral attributions, e.g. “boring”, “rubbish”, “no good” etc. should not be coded as AoS.

To aid identification of utterances fulfilling AoS criteria three sub-categories have been created:

#### *i) AoS (direct)*

##### *Example 1:*

Mother: |The dog was very friendly| (direct; statement)

##### *Example 2:*

Child: |I do like dogs| they're usually really friendly|

Mother: |That's right| (direct; endorsement)

##### *Example 3:*

Mother: |it was only a very small dog| (direct; minimisation statement)

#### *ii) AoS (indirect)*

##### *Example 1:*

Mother: |so, do you think aeroplanes are safe?| (indirect; question)

##### *Example 2:*

Child: |aeroplanes are really dangerous|

Mother: |no they're not!| (indirect; challenging threat attribution)

Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

*iii) AoS (separation security)*

*Example 1:*

Mother: [you were with all of your friends when I left] (direct; statement)

*Example 2:*

Mother: [were you laughing and waving when I left?] (indirect; question)

**Attribution of Positiveness (AoP)**

The mother emphasises her child's positive emotions or makes reference to her child being assured or competent. In addition, the mother may refer to her child as having control or being independent. In a similar manner the mother may make reference to herself or others being assured or competent, having control, or being independent. The mother may make direct positiveness attributions including endorsements of positiveness attributions generated by her child, or make indirect positiveness attributions in the form of a question or by challenging negative emotions or vulnerability her child has attributed to himself/herself/her/others. For indirect positiveness attributions tone of voice must be taken into account. It is essential that the mother evidences a querying tone of voice. If tone of voice is ambiguous it is justified to refer to adjacent maternal utterances to clarify meaning. If adjacent utterances do not give sound reason for a positive interpretation the utterance should be coded as Attribution of Vulnerability (see page 10).

Utterances may be coded as AoP irrespective of the temporal location of the situation or specific aspect being discussed. Neutral attributions, e.g. "bored", "disinterested" etc. should not be coded as AoP.

To aid identification of utterances fulfilling AoP criteria six sub-categories have been created:

*i) AoP (direct)*

**Example 1:**

Mother: |I think that you were happy| (direct; statement)

**Example 2:**

Mother: |you would feel fine if a dog came up to you| (direct; statement)

**Example 3:**

Child: |I was really excited mum|

Mother: |yes, I think so too| (direct; endorsement)

*ii) AoP (indirect)*

**Example 1:**

Mother: |do you think that you would have a lot of fun?| (indirect; question)

**Example 2:**

Mother: |did you enjoy going on the train?| (indirect; question)

**Example 3:**

Child: |I'd feel scared doing that|

Mother: |really, you'd feel scared?| (indirect; challenging vulnerability attribution)

Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

*iii) AoP (control)*

The mother refers to her child as having control either explicitly or through endorsing a control belief her child has attributed to himself/herself. Alternatively, the mother indirectly attributes control by challenging lack of control beliefs her child has attributed to himself/herself.

*Example 1:*

Mother: [you would be able to do something about it] (direct; statement)

*Example 2:*

Child: [I would be able do something]

Mother: [of course you would] (direct; endorsement)

*Example 3:*

Child: [I wouldn't be able to do anything]

Mother: [do you *really* think that?] (indirect; challenging lack of control belief)

*iv) AoP (autonomy)*

The mother refers to her child as being autonomous either explicitly, or through endorsing an autonomy belief her child has attributed to himself/herself. Alternatively, the mother indirectly attributes autonomy in the form of a question or by challenging dependency beliefs her child has attributed to himself/herself.

*Example 1:*

Mother: [you could do it on your own] (direct; statement)

*Example 2:*

Child: [I would feel fine on my own]

Mother: [yes, I think so too] (direct; endorsement)

*Example 3:*

Mother: [do you not think you'd be fine on your own?] (indirect; question)

*Example 4:*

Child: [I'd be scared without you]

Mother: [I don't think you would be] (indirect; challenging dependency belief)

*v) AoP (others)*

The mother attributes positiveness to another person either explicitly or through endorsing positiveness her child has attributed to another; or the mother attributes positiveness to another person indirectly in the form of a question or by challenging vulnerability her child

Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

has attributed to another; or the mother refers to another individual as having control or being autonomous.

**Example 1:**

Mother: |Your brother would really enjoy that!| (direct; statement)

**Example 2:**

Child: |Billy really likes dogs|

Mother: |yes, that's right| (direct; endorsement)

**Example 3:**

Mother: |wouldn't Billy just be okay in his won?| (indirect; question)

**Example 4:**

Child: |Billy would be really frightened|

Mother: |I don't think that's true| (indirect; challenging vulnerability attribution)

**Example 5:**

Mother: |your brother would tell the dog to sit| (direct; control statement)

**Example 6:**

Mother: |Billy would feel fine on his own| (direct; autonomy statement)

Note: Recall that the mother may make a positiveness attribution about herself or others which effectively serves as a reference point from which she can illustrate that her child is in some way inadequate or inferior. Utterances such as the one in the example below should not be coded as Attribution of Positiveness but instead treated as an indirect Attribution of Vulnerability (see page 11).

**Example**

Mother: |Your brother wasn't scared, so why were you?|

*vi) AoP (self)*

The mother attributes positiveness to herself either explicitly or through endorsing positiveness her child has attributed to her; or the mother attributes positiveness to herself indirectly in the form of a question or by challenging vulnerability her child has attributed to her; or the mother refers to herself as having control or being autonomous. Refer to the above examples and adapt as necessary.

Note: The mother may make positiveness attributions regarding herself or others which are embedded within a context that necessitates re-evaluation of their prima facie meaning.

Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

*Example:*

Mother: *[your brother wasn't scared at all]* so why were you scared?]

In the example above the italicised utterance would be coded as AoP if it appeared in isolation. However, the mother's subsequent utterance results in a comparison being drawn that implies inadequacy, and in so doing negates the otherwise positive characteristics of the italicised utterance. In such cases the italicised utterance should be treated as being inextricably linked to the ensuing utterance and not separately coded.

**Promotion of Endeavour (PoE)**

The mother refers to her child adopting proactive behaviour in the context of an anxiety provoking situation. In a similar manner the mother may make reference to herself or others adopting proactive behaviour. The mother may make direct PoE statements including endorsements of proactive behaviour referred to by her child, or make indirect PoE statements in the form of a question or by challenging avoidant behaviour referred to by her child. For indirect PoE utterances tone of voice must be taken into account. It is essential that the mother evidences a querying tone of voice. If tone of voice is ambiguous it is justified to refer to adjacent maternal utterances to clarify meaning. If adjacent utterances do not give sound reason for a negative interpretation the utterance should be coded as Promotion of Avoidance (see page x).

Utterances may be coded as PoE irrespective of the temporal location of the situation or specific aspect being discussed.

To aid identification of utterances fulfilling PoE criteria four sub-categories have been created:

*i) PoE (direct)*

The mother explicitly refers to her child adopting proactive behaviour or endorses proactive behaviour referred to by her child.

*Example 1:*

Mother: |you should've stroked the dog| (direct; statement)

*Example 2:*

Mother: |you walked over to join in, didn't you?| (direct; statement)

*Example 3:*

Child: |next time I'll stroke the dog|

Mother: |that's a good idea| (direct; endorsement)

*ii) PoE (indirect)*

The mother indirectly refers to her child adopting avoidant behaviour either in the form of a question or by challenging non-avoidant behaviour referred to by her child.

*Example 1:*

Mother: |would you join in?| (indirect; question)

*Example 2:*

Child: |I ran away from the dog|

Mother: |do you think that was the best idea?| (indirect; challenging avoidance)

*iii) PoE (others)*

The mother explicitly refers to another person adopting proactive behaviour or endorses proactive behaviour by others referred to by her child; or the mother indirectly refers to

Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

others adopting proactive behaviour either in the form of a question or by challenging avoidant behaviour by others referred to by her child. Refer to the above examples and adapt as necessary.

*iv) PoE (self)*

The mother explicitly refers to herself adopting proactive behaviour or endorses proactive behaviour by herself referred to by her child; or the mother indirectly refers to herself adopting proactive behaviour either in the form of a question or by challenging avoidant behaviour by herself referred to by her child. Refer to the above examples and adapt as necessary.



Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

**Promotion of Reflective Evaluation – Negative Focus (PRE-N)**

The mother encourages her child to reflect upon and/or evaluate a threat-, vulnerability- or avoidance-related cognition, sometimes (but not exclusively) with the intention of eliciting a less negative interpretation. The mother may achieve this by asking straightforward “what” or “why” questions related to her child’s negative cognitions. The “what” or “why” questions may be in relation to child-referent, self-referent, or other-referent negative cognitions.

Alternatively, the mother may question her child about the actual/likely occurrences or outcome of a given past/future situation in such a way that there are two conventional general responses but only one ‘correct’ answer: 1) response indicates maintenance of original negative interpretation (incorrect answer); 2) response indicates recognition of the existence of an alternative, less negative, interpretation (correct answer).

Note: The coder should be careful not to code simple challenges to negative cognitions as PRE-N. These should be dealt with in accordance with the guidelines specified in the AoS, AoP, and PoE sections above.

Below is an example of a threat-related “why” question. Here, the mother is encouraging her child to think about the basis of his/her threat cognition:

*Example 1:*

Mother: |why do you think dogs are dangerous?|

The mother and child in the following example are discussing a time when the child was feeling afraid about travelling on an aeroplane. The child has expressed that she felt particularly afraid when the plane was taking off because she was concerned that it would ascend vertically. The two maternal utterances highlighted in green illustrate the use of PTR:

*Example 2:*

Mother: |and it didn't go like that did it?|

Mother: (demonstrates plane ascending vertically with hand)

Mother: |What way did it go?|

Child: |It went|

Child: (demonstrates plane ascending conventionally with hand)

Mother: |Yeah, it does go.....,| that's a rocket that goes like that|

Mother: (demonstrates plane ascending vertically).

Mother: |And did anything happen to you when you went on the aeroplane?|

Child: |No|

Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

Both italicised utterances are clear examples of the mother encouraging her child to reappraise the level of threat that existed in the situation by asking strategically phrased questions to which there is only one correct answer, i.e. the questions are designed to elicit responses from the child which challenge her threat-laden thoughts. The utterance in bold type is not an example of PTR; the utterance does challenge the child's thoughts but does not overtly encourage her to generate an alternative interpretation.

Maternal Discourse Style Coding Scheme – Anxiety Version  
MDSCS-A

**Promotion of Reflective Evaluation – Positive Focus (PRE-P)**

The mother encourages her child to reflect upon and/or evaluate a security-, positiveness- or endeavour-related cognition, with the intention of initialising the elaboration of a positive interpretation. The mother may achieve this by asking straightforward “what” or “why” questions related to her child’s positive cognitions. The “what” or “why” questions may be in relation to child-referent, self-referent, or other-referent positive cognitions.

Note: The coder should be careful not to code simple challenges to positive cognitions as PRE-N. These should be dealt with in accordance with the guidelines specified in the AoT, AoV, and PoA sections above.

Example 1 illustrates a security-related “why” question. Here, the mother is encouraging her child to elaborate on his/her security cognition. Examples 2 and 3 illustrate positiveness- and endeavour-related promotions of reflective evaluation respectively:

**Example 1:**

Mother: |why do you think Grandma’s dog is safe?|

**Example 2:**

Mother: |why weren’t you scared the first time?|

**Example 3:**

Mother: |what made you get on the plane?|