



# *Cognitive behavioural therapy for anxiety disorders in children and adolescents*

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## Cognitive behavioural therapy for anxiety disorders in children and adolescents

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### ABSTRACT

This is a protocol for a Cochrane Review (Intervention). The objectives are as follows:

- To carry out a meta-analysis of identified studies to determine whether CBT leads to remission of 1) the primary child/ adolescent anxiety disorder and 2) all anxiety diagnoses, and/or 3) a clinically significant reduction in anxiety symptoms in comparison with passive (waiting list) controls, active controls, treatment as usual, or medication.
- To determine the comparative efficacy of CBT alone, and the combination of CBT and medication, versus drug placebo.
- To determine whether post-treatment gains of CBT are maintained at longer-term follow-up.
- To describe the age range of participants included in CBT trials in order to determine the age of the youngest participants.
- To determine whether CBT for anxiety leads to a clinically significant reduction in depressive symptoms, and/or improvements in global functioning.
- To carry out subgroup analyses of different types of CBT according to 1) amount of therapist contact time; and 2) delivery format (child-focused individual, group, and with/without family involvement, and parent-delivered).
- To carry out a subgroup analysis of CBT for children and adolescents with ASD and for children and adolescents with intellectual impairments.

## **BACKGROUND**

Previous Cochrane Reviews (James 2005; James 2015) have shown that cognitive behavioural therapy (CBT), is effective in treating childhood anxiety disorders; however, questions remain regarding:

- the relative efficacy of CBT versus non-CBT treatments;
- the relative efficacy of CBT versus medication and the combination of CBT and medication versus placebo;
- remission of the primary anxiety diagnosis and the proportion of children and adolescents who are free of all anxiety diagnoses after treatment;
- the long-term effects of CBT;
- the age of the youngest participants in trials of CBT for child and adolescent anxiety disorders;
- benefits in relation to broader outcomes, including depressive symptoms and global functioning;
- outcomes according to the amount of therapist contact time;
- the efficacy of different delivery formats, including individual, group, with/without family involvement, and parent- delivered CBT.

### **Description of the condition**

Anxiety disorders are amongst the most common psychiatric disorders, occurring in 6.5% of all children and adolescents (Polanczyk 2015). One of the diagnostic challenges in children and adolescents involves distinguishing normal, developmentally appropriate worries, fears and shyness from anxiety disorders. Distinguishing features of pathological anxiety include severity, persistence and associated impairment. An understanding of the developmental patterns of various anxieties is also important. School-age children commonly have worries about injury and natural events, whereas older children and adolescents typically have worries

and fears related to school performance, social competence and health issues. The presentation of anxiety disorders varies with age. Young children can present with undifferentiated worries and fears and multiple somatic complaints - muscle tension, headaches or stomach aches - and sometimes angry outbursts. The latter may be misdiagnosed as oppositional defiant disorder, as the child tries to avoid anxiety-provoking situations. Separation anxiety disorders are more common in younger children, than adolescents; and difficulties with social anxiety are typically associated with greater disturbance in adolescence (Waite 2014). Anxiety disorders with an onset in childhood often persist into adolescence (Last 1996), and early adulthood (Last 1997), and yet they often remain untreated, with an average delay of 9 to 23 years before anxiety disorders are first treated (Wang 2005).

The *International Classification of Diseases* (ICD; WHO 1992), and *Diagnostic and Statistical Manual* (DSM; APA 2013), diagnostic systems distinguish various types of anxiety disorders, including generalised anxiety disorder, panic disorder, social anxiety disorder, separation anxiety disorder, agoraphobia, specific phobias, and selective mutism. These anxiety disorders are often associated with significant impairment in personal, social and academic functioning (Pine 2009). Comorbidities are common and include depression (Kovacs 1989), alcohol abuse (Kushner 1990), attention-deficit/hyperactivity disorder (ADHD), conduct disorder (Bittner 2007), suicidal behaviours and suicide (Hill 2011). Anxiety disorders in childhood and adolescence are also associated with adverse academic, health and social functioning in adulthood (Copeland 2014; Essau 2014). It is clear that anxiety disorders in this age group present serious ongoing health issues, and therefore, effective and readily accessible treatments are needed.

### **Description of the intervention**

Current treatments for anxiety disorders in this age group include behavioural therapy, particularly for specific phobias, CBT or medication, or a combination of some or all these. NICE guidelines are available for the treatment of social anxiety disorder and recommend CBT that is specifically focused on social anxiety (NICE 2013). Indications for psychological treatment versus medication for other anxiety disorders are awaited, although given the prevalence of these disorders, the age of onset and public views on the acceptability of psychological treatments, these are often preferred as first-line therapy (Brown 2007; Young 2006). CBT is a collaborative psychological treatment that can be delivered in various for-

mats, individually or in groups, and with varying levels of parent or family involvement.

One of the first manualised CBT programmes was Coping Cat (Kendall 1994), which consisted of psycho-education, modification of negative cognitions, exposure, social competence training, coping behaviour and self-reinforcement sessions. Others have followed, including the Cool Kids programme, the Coping Koala programme (Barrett 1996), Skills for Academic and Social Success (SASS) (Masia-Warner 2005), ACTION (Waters 2009), Intervention With Adolescents With Social Phobia (IAFS) (Sanchez-Garcia 2009), the TAPS (Warner 2011), and Building Confidence programme (Galla 2012). Alternative programmes involve providing direct support to parents alone, guiding them to implement CBT strategies with their child (Guided Parent-Delivered CBT (GPD-CBT) (Lyneham 2006; Thirlwall 2013; Waters 2009). Some programmes have also been specifically adapted for children with autism spectrum disorders (ASDs), including the Multimodal Anxiety and Social Skills Intervention (MASSI) programme (White 2013), TAFF (Schneider 2011), Behavioural Interventions for Anxiety in Children with Autism (BIACA) (Wood 2009), and Facing Your Fears (FYF) (Reaven 2012). CBT programmes have been modified in various ways to make them appropriate for children with ASD, such as by including social stories, social coaching, visual aids and structured worksheets (Ung 2015).

### **How the intervention might work**

CBT for anxiety disorders in children and adolescents typically involves helping the child to firstly recognize anxious feelings and

bodily or somatic reactions to anxiety, secondly, identify thoughts or cognitions in anxiety-provoking situations (e.g. unrealistic or negative attributions and expectations), thirdly, modify these anxiety-provoking cognitions or develop coping skills (e.g. test out predictions based on anxious thoughts, modify anxious self-talk into coping self-talk, problem solving skills, social skills, relaxation training), and finally, evaluate outcomes. A key CBT procedure is exposure (Silverman 1996), which typically involves testing out and 'facing' fears in a gradually increasing hierarchy. Behavioural training strategies such as modelling and role playing are often applied.

CBT for anxiety disorders in children and adolescents has traditionally begun with six to

nine face-to-face sessions of anxiety management strategies (emotion identification, relaxation training, cognitive strategies), followed by exposure work (Barrett 1996; Kendall 2006). In one meta-analysis (Reaven 2012), this traditional format of anxiety management sessions followed by exposure was observed in 93% of studies. However, Ale 2015 found that treatment outcomes in CBT treatment trials for child and adolescent anxiety disorders were not related to the use of relaxation strategies or the timing of exposure work, and therefore suggested that relaxation training may not be an essential ingredient of CBT and it may not be necessary to delay exposure until after anxiety management sessions. Moreover, there is also some preliminary evidence that introducing exposure early in treatment, without any prior anxiety management sessions could improve outcomes while requiring fewer appointments (Whiteside 2015). Indeed, questions remain about the mechanism of change within CBT. Cognitive restructuring and exposure tasks have each been found to make substantial contributions to improvement in youth anxiety in line with CBT theory (Peris 2015). More time devoted to exposure has been linked to better outcomes, and greater time spent on more difficult exposure tasks predicted better outcomes (Peris 2017). Change in coping efficacy, but not anxious self-talk, has been found to mediate change in anxiety symptoms associated with CBT, medication (sertraline) and their combination, compared to placebo control (Kendall 2016). Furthermore, therapists' ratings of child compliance and mastery also predict better outcomes (Peris 2017). Cognitive development also plays an important role, and while targeting behavioural avoidance appears crucial for children and adolescents, treatment that addresses interpretation biases may be particularly beneficial for adolescents, but less so for younger children (Waite 2015).

CBT has been adapted to include family and parents in treatment sessions. The main aspects of CBT parent/family treatment guidelines involve firstly, modifying parents' beliefs about ways to help their anxious child and assisting parents to help their child overcome anxious and avoidant behaviours, and secondly, assisting parents to manage their own anxiety. The mechanisms of change remain unclear and are possibly bi-directional. One study found child-focused anxiety treatments, regardless of intervention condition, resulted in improvements in non-targeted parent symptoms and family functioning, particularly when children responded successfully to treatment (Keeton 2013). Another study found families with higher pre-treatment parental psychopathology showed more improvement in family functioning and caregiver strain, which in turn predicted greater youth anxiety reductions

with treatment (Schleider 2015).

It is generally assumed that CBT can be applied only after the child has reached a certain level of cognitive development. Kendall 1993 argued that the ability to measure a thought or belief against the notion of a rational standard and the ability to understand that a thought or belief can cause a person to behave and feel in a certain way were central to its proper use. The question arises: at what age does a child have the cognitive capacities to undertake these cognitive operations? One study (Hirshfeld-Becker 2010), reported positive effects in children younger than six years of age; however, it is not clear whether children younger than six years of age are able to use cognitive strategies included in traditional CBT protocols. In line with this, research suggests that young children may be more responsive to the behavioural than the cognitive elements of this approach (Essau 2004). With younger children, parental involvement appears particularly important. Recent work indicates that treatment of anxiety disorders in very young children may be effected by applying CBT principles through working directly with parents alone (Cartwright-Hatton 2011). Studies report positive outcomes for parent-only CBT for young children, but there are inconsistent findings in relation to whether child- parent delivery format is superior to parent-only or not (Monga 2015; Waters 2009).

### **Why it is important to do this review**

Anxiety disorders in children and adolescents represent a considerable source of morbidity and are associated with later adult psychopathology and greater economic burden than any other mental health disorder (Fineberg 2013). However, despite high prevalence and substantial morbidity, anxiety disorders in childhood and adolescence can be difficult to diagnose, and may be under recognised (NICE 2013) and, therefore, under-treated (Pine 2009). It is widely reported that only a minority of children and adolescents with mental health problems receive treatment (Green 2004; Merikangas 2011), with particularly low rates of treatment access for anxiety disorders compared to behavioural disorders (Merikangas 2011). Limited service provision represents a key barrier to treatment access (Reardon 2017), highlighting the importance of maximising the efficiency of treatment delivery to help ensure that effective treatment is more readily available to children and young people when they need it.



The evidence base for treatment of anxiety in children and adolescents is growing. Initial trials of CBT were positive (Barrett 1996; Kendall 1994; Kendall 1997), and further randomised controlled trials (RCTs) and reviews followed. Several reviews suggest that CBT for anxiety disorders in this age group is effective (Ale 2015; Crowe 2017; James 2015; Reynolds 2012; Silverman 2008), including an overview of systemic reviews (Bennett 2016). Overall there is a moderate response rate (e.g. 59%; James 2015); however, it has not been shown that CBT is superior to active controls or treatment as usual (Barrington 2005; James 2015; Southam-Gerow 2010). **The** effect sizes associated with CBT for childhood anxiety disorders do not differentiate it from attention placebo, although it is more effective than waiting list control (Ale 2015).

This review will replace previous Cochrane Reviews of CBT for anxiety disorders in children and adolescents (James 2005; James 2015). The current review is to be undertaken to provide comprehensive and up-to-date evidence on the efficacy of CBT in the treatment of anxiety disorders in children and adolescents, including remission of all anxiety diagnoses, as well as the primary anxiety diagnosis, with varying amounts of therapist contact time and differing delivery formats, including individual, group, with/without family/parent involvement, and parent-led. Further, this review will examine the efficacy of CBT relative to active treatments, such as educational support and treatment as usual. The question of the comparative efficacy of medication versus CBT and the combination of CBT and medication needs to be addressed. While it will not possible to determine the youngest age at which a child can benefit from CBT, this review will identify the age of the youngest participants in trials of CBT for child and adolescent anxiety disorders. Lastly, this review aims to assess whether treatment effects of CBT are maintained at long-term follow-up. It is recognised that children and adolescents with ASDs have high rates of anxiety disorders, particularly social anxiety disorder (Settipani 2012); however, a review of CBT for anxiety disorders in ASD (Ung 2015), which included two open studies in a meta-analysis of 14 studies, found CBT to be effective in high-functioning autism, and one recent RCT of CBT versus counselling found no difference in outcome (Murphy 2017). Furthermore, it is unclear how anxiety disorders are recognised or, indeed, treated in those with intellectual impairments, indicating a pressing need for work in this particular area. We will examine the efficacy of CBT in children and adolescents with ASD and those with intellectual impairments.

Since the last Cochrane Review (James 2015), there have been several developments in the delivery of CBT for anxiety disorders. These include briefer or shorter interventions (including guided parent-delivered approaches, where therapists work with parents alone to support them to apply CBT principles with their child). Recent evidence suggests that children as young as two years old may benefit from parent-delivered CBT (Cartwright-Hatton 2011).

Briefer or shorter interventions refer not only to the number of sessions but the total duration of treatment. Due to the critical need for increased access to CBT for children with anxiety disorders, there are now a number of studies reporting successful treatment of anxiety disorders with shorter treatment protocols.

Previous Cochrane Reviews (James 2005; James 2015) used a cut off of nine sessions of CBT, based on the practice and thinking at the time.

CBT interventions delivered online or via digital devices (e.g. computerised CBT) have also been developed and are reviewed elsewhere (e.g. Pennant 2015). This review will therefore focus on face-to-face delivery models that include direct contact with either the child or parent alone, or the child and parent together.

A further development is the issue of the reporting of remission of all anxiety diagnoses, as well as the primary anxiety diagnosis (Warwick 2016). Given the high level of comorbid anxiety disorders this is an important issue, but previously surprisingly overlooked. Indeed, focusing solely on recovery from the primary anxiety diagnosis means that children with comorbid anxiety disorders that are present following treatment are often still classed as recovered.

## **OBJECTIVES**

- To carry out a meta-analysis of identified studies to determine whether CBT leads to remission of 1) the primary child/adolescent anxiety disorder and 2) all anxiety diagnoses, and/or 3) a clinically significant reduction in anxiety symptoms in comparison with passive (waiting list) controls, active controls, treatment as usual, or medication.
- To determine the comparative efficacy of CBT alone, and the combination of CBT and medication, versus drug placebo.

- To determine whether post-treatment gains of CBT are maintained at longer-term follow-up.
- To describe the age range of participants included in CBT trials in order to determine the age of the youngest participants.
- To determine whether CBT for anxiety leads to a clinically significant reduction in depressive symptoms, and/or improvements in global functioning.
- To carry out subgroup analyses of different types of CBT according to 1) amount of therapist contact time; and 2) delivery format (child-focused individual, group, and with/without family involvement, and parent-delivered).
- To carry out a subgroup analysis of CBT for children and adolescents with ASD and for children and adolescents with intellectual impairments.

## **METHODS**

### **Criteria for considering studies for this review**

#### **Types of studies**

We will include RCTs, cross-over trials and cluster-randomised trials of manualised and modular CBT, involving direct contact with the child alone, the parent alone, or the child and the parent together, with comparators (waiting list, active controls, treatment as usual, medication or drug placebo). We will examine follow-up studies of these RCTs.

#### **Types of participants**

#### **Participant characteristics**

Children and adolescents younger than 19 years.

## **Diagnosis**

We will include participants meeting diagnostic criteria of the DSM (DSM III, III-R, IV, IV-TR, 5) (APA 1980; APA 1987; APA 1994; APA 2000; APA 2013), or of ICD 9 and ICD10 (WHO 1978; WHO 1992), for an anxiety disorder. Disorders classified as anxiety disorders vary across different versions of the DSM, and we will include participants meeting diagnostic criteria for one or more of the following disorders: generalised anxiety disorder or over-anxious disorder, separation anxiety disorder, social phobia or social anxiety disorder, panic disorder, agoraphobia, simple or specific phobias, or selective mutism.

## **Comorbidity**

We will include all comorbidities allowable for anxiety disorders under the rules of DSM or ICD, such as ASD, intellectual impairment, depressive disorders, and physical disorders.

## **Settings**

We will include all settings, such as research settings (i.e. university outpatient clinics, inpatient services, community clinics, and schools).

## **Exclusion criteria**

We will exclude studies that only include participants with post- traumatic stress disorder or obsessive compulsive disorder, or both, as they are covered by separate Cochrane Reviews (Gillies 2016; O'Kearney 2006) and are no longer classified as 'anxiety disorders' in the DSM5 (APA 2013).

## **Types of interventions**

### **Experimental intervention**

The intervention must be manualised CBT, or modular CBT, alone or in combination with medication and we require a documented, written protocol stating the specific treatment at each stage, provided by trained therapists under regular supervision. Since the last review (James 2015), where the number of sessions was arbitrarily fixed at nine, there are now

several studies indicating that shorter treatment, in terms of number of sessions or duration of sessions, or both, may be effective. We have therefore not included a minimum number of sessions or duration of sessions as a requirement.

CBT has to be administered according to standard principles as a psychological model of treatment involving helping the child to recognise anxious feelings and somatic reactions to anxiety; identify cognitions in anxiety-provoking situations; modify these anxiety-provoking cognitions, and respond to behavioural training strategies with exposure in vivo or by imagination, often in a gradual, hierarchical manner.

CBT can be delivered to children (child-focused) or to parents alone (parent-delivered). In child-focused CBT, the child has direct face-to-face contact with a therapist. Child-focused CBT can be delivered individually, in a group format or with family or parental involvement. The latter spans a range of direct involvement, such as (rarely), the whole family and (more usually), the parents for some conjoint or separate sessions. CBT with family/parental involvement may include providing psycho-education for parents or teaching parents to be co-therapists. Parent-delivered CBT only involves direct face-to-face contact with parents and provides support for parents to help them to implement CBT strategies in their child's day-to-day life. Parent-delivered CBT can be delivered individually or in a group format. We will not include CBT interventions delivered online or via digital devices (e.g. computerised CBT).

The control groups are to be waiting list or active non-CBT treatment, or medication for the treatment of anxiety (e.g. selective serotonin-reuptake inhibitors (SSRIs)), or drug placebo. The comparison of CBT against waiting list yields a baseline or estimate of CBT versus no treatment, whereas comparison of alternative active therapies and medication against CBT allows one to demonstrate any added effect or not of CBT over other active therapies and medication.

Where CBT is delivered in combination with medication for the treatment of anxiety, the control group is to be drug placebo.

Where studies include medication for the treatment of anxiety (in combination with CBT or alone), no concurrent medication for the treatment of anxiety is to be administered

naturalistically. Where studies do not include medication for the treatment of anxiety, any medications administered naturalistically need to be stable before and during the study.

### **Comparator interventions**

- Waiting list and no treatment for anxiety during that period
- Psychological treatment that did not include CBT elements, or attention only (e.g. support but with no elements of CBT)
- Treatment as usual
- Medication for the treatment of anxiety
- Drug placebo

### **Types of outcome measures**

#### **Primary outcomes**

We will include studies that meet the above inclusion criteria regardless of whether they report on the following outcomes.

- Remission: the absence of the primary diagnosis of an anxiety disorder post-treatment, made by reliable and valid structured interviews for DSM or ICD child and adolescent anxiety disorders, including:
  - Anxiety Disorder Interview Schedule for Children - Child and Parent (ADIS-C/P) (Silverman 1987)
  - Anxiety Disorder Interview Schedule for Children - Child (ADIS-C) (Silverman 1987)
  - Anxiety Disorder Interview Schedule for Children - Parent (ADIS-P) (Silverman 1987)
  - Diagnostic Interview Schedule for Children, Adolescents and Parents (DISCAP) (Holland 1995)

The diagnostic interviews must be carried out independently of the treatment team.

- We will determine acceptability by the numbers of participants who were lost to the post-treatment assessment.

## **Secondary outcomes**

- Remission: defined as the absence of all diagnoses of an anxiety disorder post-treatment, made by reliable and valid structured interviews for DSM or ICD child and adolescent anxiety disorders.
- Adverse events: we will determine adverse events outcomes by the number and type of reported adverse events during the trial from randomisation to post-treatment assessment (e.g. deterioration in anxiety symptoms, deterioration in global functioning, rates of self-harm, suicide attempts).
- Reduction in anxiety symptoms post-treatment: to be measured using psychometrically robust measures of anxiety symptoms (Myers 2002), that yield symptom scores on continuous scales, such as:
  - Screen for Child Anxiety Related Emotional Disorders (SCARED) (Birmaher1999);
  - Spence Children's Anxiety Scale (SCAS) (Spence1997);
  - Revised Children's Anxiety and Depression Scale (RCADS) - Anxiety Scale (Chorpita 2000);
  - Revised Children's Manifest Anxiety Scale (RCMAS) (Reynolds 1985);
  - Multidimensional Anxiety Scale for Children (MASC) (March 1997);
  - Child Behaviour Checklist (CBCL) - Internalising scale (Achenbach 1991);
  - State-Trait Anxiety Inventory for Children (STAI-C) (Spielberger 1973);
  - Social Phobia and Anxiety Inventory for Children (SPAI-C) (Beidel 1995).
  - Social Anxiety Scale for Adolescents (SAS-A) (La Greca 1998).

These scales are self-reported or are completed by a parent or guardian or an independent rater. Multiple reporters are often used, but the reliability of each reporter is likely to vary

with the child's age (Evans 2017). We will therefore determine reduction in anxiety symptoms separately for 1) self-reported and 2) parent-reported or independent rater, or both. Often multiple measures are also reported, and we will include the most validated, best recognised, or most frequently used measures in the analysis.

A crucial issue is how well these measures discriminate between clinical and non-clinical levels of anxiety. We will prioritise symptom measures that are closely aligned with diagnostic categories, with strong discriminant validity (e.g. RCADS, SCAS, SCARED).

- Reduction in depressive symptoms post-treatment: to be measured using psychometrically robust measures of depressive symptoms that yield symptom scores on continuous scales, such as:

- Children's Depression Inventory (Kovacs 1989);
- Beck Depression Inventory (Beck 1996);
- Revised Children's Anxiety and Depression Scale (RCADS) - Depression Scale (Chorpita 2000);
- Mood and Feelings Questionnaire (Angold 1995).

These measures may be self-reported, or completed by a parent or independent rater, or both. If multiple depressive symptom measures/reporters are used, we will include the most validated, best recognised or most frequently used measures in the analysis.

- Improvement in global functioning post-treatment: to be measured using psychometrically robust measures of global functioning that yield symptom scores on continuous scales, such as:

- Children's Global Assessment Scale (CGAS) (Shaffer 1983).

These measures may be self-reported or completed by a parent or independent rater, or both. If multiple global functioning measures/reporters are used, we will include the most validated, best recognised or most frequently used measures in the analysis.



- Remission defined by the absence of the primary anxiety disorder diagnosis at a series of long-term follow-up time points

( $\leq$  6 months post-treatment,  $>$  6 months post-treatment and  $\leq$

12 months post-treatment, and  $>$  12 months post-treatment).

- Remission defined as the absence of all diagnoses of an anxiety disorder at a series of long-term follow-up time points ( $\leq$  6 months post-treatment,  $>$  6 months post-treatment and  $\leq$  12 months post-treatment, and  $>$ 12 months post-treatment).

- Reduction in anxiety symptoms at a series of long-term follow-up time points ( $\leq$  6 months post-treatment,  $>$  6 months post-treatment and  $\leq$  12 months post-treatment, and  $>$  12 months post-treatment).

### **Search methods for identification of studies**

For the previous published version of this review, we identified eligible studies (RCTs) of CBT for anxiety disorders in children and adolescents from the Cochrane Common Mental Disorders Controlled Trials Register (CCMDCTR; most recent search, 1 May 2012; Appendix 1).

### **Electronic searches**

For this update we will run searches on the following databases using relevant keywords, subject headings (controlled vocabularies) and search syntax, appropriate to each resource:

- CCMDCTR (May 2012 to June 2016; Appendix 1);
- Cochrane Central Register of Controlled Trials (CENTRAL; current year and issue).
- Ovid MEDLINE (2012 onwards; Appendix 2);
- Ovid Embase (2012 onwards);

- Ovid PsycINFO (2012 onwards)

There will be no restriction on language or publication status applied to the searches.

We will also search the international trials registries (including ClinicalTrials.gov and the WHO International Clinical Trials Registry Platform (ICTRP)) to identify additional ongoing and un- published studies.

### **Searching other resources**

#### **Grey literature**

We will search the grey literature for dissertations and theses:

- Electronic Theses Online Service (EThOS) - British Library [ethos.bl.uk/Home.do](http://ethos.bl.uk/Home.do)
- DART - Europe e-theses Portal [www.dart-europe.eu/basic-search.php](http://www.dart-europe.eu/basic-search.php)
- Networked Digital Library of Theses and Dissertations (NDLTD) [search.ndltd.org/](http://search.ndltd.org/)
- PQDT Open - open access dissertations and theses  
[pqdtopen.proquest.com/search.html](http://pqdtopen.proquest.com/search.html)
- Proquest Dissertations & Theses Global [search.proquest.com/pqdtglobal/dissertations/](http://search.proquest.com/pqdtglobal/dissertations/)

#### **Reference lists**

We will check the reference lists of all included studies and relevant systematic reviews to identify additional studies missed from the original electronic searches (for example unpublished or in-press citations).

## **Correspondence**

We will contact study authors and subject experts for information on unpublished or ongoing studies, or to request additional data.

## **Data collection and analysis**

### **Selection of studies**

Two review authors (AJ, TR), will independently screen titles and abstracts for inclusion of all the potential studies we identify as a result of the search and code them as 'retrieve' (eligible or potentially eligible/unclear) or 'do not retrieve'. We will retrieve the full-text study reports/publications, and two review authors (AJ, TR), will independently screen the full texts to identify studies for inclusion, and identify and record reasons for exclusion of the ineligible studies. We will resolve any disagreement through discussion or, if required, we will consult a third person (GJ, CC). We will identify and exclude duplicate records and we will collate multiple reports that relate to the same study so that each study rather than each report is the unit of interest in the review. We will record the selection process in sufficient detail to complete a PRISMA flow diagram (Moher 2015), and 'Characteristics of excluded studies' table.

### **Data extraction and management**

We will use a data collection form to extract study characteristics and outcome data, which we will pilot on at least one study in the review. Two review authors (AJ, TR) will extract study characteristics and outcome data from included studies. We will extract the following study characteristics.

- Methods: study design, total duration of study, details of any 'run-in' period, number of study centres and location, study setting, withdrawals, and date of study

- Participants: number, mean age, age range, gender, severity of condition, diagnostic criteria, comorbid conditions, inclusion criteria, and exclusion criteria
- Interventions: intervention, comparison, concomitant medications, excluded medications, delivery format, therapist contact time, who delivers intervention
- Outcomes: primary and secondary outcomes specified and collected, and time points reported
- Notes: funding for study, and notable conflicts of interest of study authors

We will note in the ‘Characteristics of included studies’ table if outcome data were not reported in a usable way. We will resolve disagreements by consensus or by involving a third person (GJ, CC). One review author (AJ), will transfer data into the Review Manager 5 file (Review Manager 2014). We will double-check that data are entered correctly by comparing the data presented in the systematic review with the study reports. A second review author (TR), will spot-check study characteristics for accuracy against the study report.

### **Main comparisons**

- CBT compared with waiting list and no treatment controls
- CBT compared with other active treatments
- CBT compared with treatment as usual
- CBT compared with medication or placebo
- CBT and medication combination compared with placebo

### **Assessment of risk of bias in included studies**

Two review authors (AJ, TR), will independently assess risk of bias for each study using the criteria outlined in the Cochrane Handbook for Systematic Reviews of Interventions (Higgins

2017). We will resolve any disagreements by discussion or by involving another author (GJ, CC). We will assess the risk of bias according to the following domains.

- Random sequence generation
- Allocation concealment
- Blinding of participants and personnel
- Blinding of outcome assessment
- Incomplete outcome data
- Selective outcome reporting
- Other bias

We will judge each potential source of bias as high, low or unclear and provide a supporting quotation from the study report together with a justification for our judgment in the 'Risk of bias' table. We will summarise the risk of bias judgements across different studies for each of the domains listed.

We will identify selection bias by assessing the adequacy of the randomisation process in terms of the description of adequacy of sequence generation and the concealment of treatment group allocation. Given the nature of psychological interventions, blinding of either participants or personnel delivering the treatments will only be possible in those studies involving CBT versus active controls or treatment as usual; therefore, we will only be able to assess performance bias in those studies. We will assess detection bias by identifying whether study personnel carrying out outcome assessments were blinded to the treatment status of participants. We will assess attrition bias by determining whether studies provide a description of withdrawals and drop-outs.

We will not exclude studies from meta-analysis on the basis of the 'Risk of bias' assessment. We will conduct sensitivity analyses for the primary outcome, excluding trials with 'high' or 'unclear' risk of bias ratings for allocation concealment if appropriate. We will report the remainder of the 'Risk of bias' assessments for these trials, and include discussion of this assessment in the Results and Discussion sections.

## **Measures of treatment effect**

To assess post-treatment outcomes, we will use dichotomous data on remission of primary anxiety diagnosis and all anxiety diagnoses; and continuous data on anxiety symptoms, depressive symptoms and global functioning, with the use of standardised measures. We will use data from the assessment administered immediately after treatment (or where there are multiple time points, the assessment closest to the end of treatment) to assess post-treatment outcomes. We will also use these measures to assess the maintenance of treatment effects versus waiting list controls, active controls, medication, and drug placebo at a series of follow-up time points ( $\leq 6$  months post-treatment,  $> 6$  months post-treatment and  $\leq 12$  months post-treatment, and  $> 12$  months post-treatment). Where studies report follow-up data at multiple

time points within one category (e.g. 1-month and 3-month follow-up), we will use data from the longer follow-up period. To assess acceptability, we will use frequency data on the numbers of participants who were lost to post-treatment assessment. Adverse events will be determined by the number and type of adverse events during the trial, from randomisation to the post-treatment assessment.

Primary outcomes will include: remission of the primary anxiety diagnosis at the post-treatment assessment, and the number (and %) of participants lost to the post-treatment assessment (acceptability).

## **Dichotomous data**

We will analyse dichotomous data as odds ratios (OR) and 95% confidence intervals (CI).

## **Continuous data**

We will analyse continuous data as mean difference (MD) or standardised mean difference (SMD). We will enter data presented as a scale with a consistent direction of effect.

We will narratively describe skewed data reported as medians and interquartile ranges.

## **Unit of analysis issues**

### **Cluster-randomised trials**

We will include cluster-randomised controlled trials based in schools. Cluster-randomised trials may, in principle, be combined with individually randomised trials in the same meta-analysis (Deeks 2017). We do not anticipate that there would be many cluster-randomised trials; therefore, we will include identified cluster-randomised trials in the meta-analyses and sensitivity analyses that we plan to undertake to investigate the robustness of any conclusions that we draw. To correct the influence of any cluster trials, we will use an average intra-class correlation coefficient of 0.02 (Health Services Research Unit 2004).

The effective sample size of a single intervention group in a cluster-randomised trial is its original sample size divided by the 'design effect'. The design effect is  $1 + (M - 1) ICC$ , where  $M$  is the average cluster size and  $ICC$  is the intra-cluster correlation coefficient (Rao 1992). For dichotomous data, we will divide both the number of participants and the number experiencing the event by the same design effect. For continuous data, only the sample size will be reduced; we will not alter means and standard deviations.

### **Cross-over trials**

We do not anticipate that there will be many cross-over trials, and the data required to include a paired analysis in a meta-analysis is often not reported (Higgins 2011). We will therefore include any identified cross-over trials in the meta-analysis, but only include data from the first trial period (i.e. prior to the 'cross-over').

### **Studies with multiple treatment groups**

Where multiple trial arms are reported in a single trial, we will include only the relevant arms. Studies with more than two intervention arms can pose analytical problems in pair-wise meta-analysis. Where studies have two or more relevant active treatment arms to be compared against controls, we will manage data in this review as follows.

### **Continuous data**

We will divide the control group equally into two or more groups we will compare the means and SDs of these groups against the means and SDs of the two treatment arms.

### **Dichotomous data**

For trials with two or more active treatment arms and a control group, we will split participants in the control-arm group equally between the active treatment arms.

### **Dealing with missing data**

We will contact investigators or study sponsors in order to verify key study characteristics and obtain missing numerical outcome data where possible (e.g. when we identify a study as abstract only). We will document all correspondence with study authors and report which study authors responded in the full review.

### **Missing statistics**

In the first instance, we will attempt to contact the original researchers for any missing data. If the study only report standard errors (SEs), we will calculate standard deviations (SDs).

### **Missing participants**

We will undertake intention-to-treat (ITT) analyses. For the analysis of dichotomous data, we will assume that all non-completers in the CBT group are treatment failures and non-completers in the control group are treatment successes, thereby yielding the most conservative treatment estimate. We will not perform last observation carried forward (LOCF) analysis for symptoms, as we will not have access to raw data.

### **Assessment of heterogeneity**

We will assess clinical heterogeneity by comparing differences in the distribution of important participant factors between studies (e.g. age, gender, specific diagnosis, duration and severity of disorder, associated comorbidities). We will assess methodological heterogeneity by comparing trial factors (randomisation, concealment, blinding of outcome assessment, losses to follow-up). We will use the Chi<sup>2</sup> test (Deeks 2017), and the I<sup>2</sup> statistic



(Higgins 2003), to assess heterogeneity. We will set significance at  $P < 0.1$ . The Cochrane Handbook for Systematic Reviews of Interventions (Deeks 2017) recommends using a range for the I<sup>2</sup> statistic and a guide to interpretation. For this review, if we find either moderate heterogeneity (I<sup>2</sup> statistic in the range of 30% to 60%) or substantial heterogeneity (I<sup>2</sup> statistic in the range of 60% to 90%), we will use subgroup and sensitivity analyses, with meta-regression analyses (STATA 2012).

### **Assessment of reporting biases**

Where a minimum number of 10 studies are included, we will investigate publication bias using funnel plots (Sterne 2017), and we will subject any asymmetry found to statistical investigation using Egger's test (STATA 2012).

### **Data synthesis**

We will undertake meta-analyses only where this is meaningful, that is, if the treatments, participants and the underlying clinical question are similar enough for pooling to make sense. We will undertake ITT and completer analyses.

We will carry out separate analyses to identify whether post-treatment, CBT is more effective than waiting list control and other active treatments, with subgroups of active controls and treatment as usual; and medication; and drug placebo; and also to identify whether CBT in combination with medication is more effective than drug placebo.

We will use follow-up data for each comparison to assess maintenance of treatment gains. If it is meaningful to do so, we will pool data separately for each follow-up time point ( $\leq 6$  months post-treatment,  $> 6$  months post-treatment and  $\leq 12$  months post-treatment, and  $> 12$  months post-treatment). Where studies report follow-up data at multiple time points within one category (e.g. 9-month and 12-month follow-up), we will include data from the longer follow-up period.

### **Dichotomous data**

The review will use ORs and 95% CIs based on the random-effects model, with pooling of data via the inverse variance method of weighting. We will set significance at  $P < 0.05$ .

Where available, we will use combined data from an interview with the child or adolescent

and the parent; otherwise we will use data from one interview (child/adolescent or parent interview). We will calculate the number needed to treat for an additional beneficial outcome (NNTB) with 95% CIs (STATA 2012). We will calculate a summary statistic of all those responding to treatment as a percentage of the total number of participants for each comparison.

### **Continuous data**

We will conduct analysis of continuous data, based on the random-effects model, with pooling of data via the inverse variance method of weighting. We will use the SMD to pool continuous data, measured in different ways across studies but conceptually the same (i.e. measuring anxiety or depressive symptoms or global functioning). For continuous data measuring anxiety symptoms, we will pool child/adolescent report and parental/clinician reports separately. Where both endpoint and change data are available for the same outcome, we will present the endpoint. We will set significance at  $P < 0.05$ .

### **Tables and figures**

We will enter data into Review Manager 5 (Review Manager 2014), and present them graphically, so that the area to the left of the line of no effect indicates a favourable outcome for CBT. We will use tables to display characteristics of the studies included. We will present excluded studies in a table with reasons for exclusion. We will summarise the risk of bias in the included studies in a Figure, and will include a PRISMA flow chart (Moher 2015).

### **Subgroup analysis and investigation of heterogeneity**

The critical need to improve access to treatment for child anxiety disorders means that it is particularly important to explore the efficacy of approaches that may help maximise treatment efficiency, including alternative delivery formats and briefer interventions that involve less therapist contact time than traditional approaches. As outlined above, there are also unanswered questions in relation to the benefits of CBT for children and adolescents with ASD and intellectual impairments. We will therefore explore the efficacy of different delivery formats, the efficacy of briefer and shorter interventions, and examine treatment effects among children and adolescents with ASD and those with intellectual impairment

using subgroup analyses. Specifically, we will undertake subgroup analyses to examine differences between:

- different delivery formats, including child-focused (individual, group, and family/parental involvement) and parent- delivered;
- interventions with varying amount of therapist contact time (< 6 hours, 6 to 10 hours, 10 to 20 hours, > 20 hours);
- children and adolescents with and without ASDs;
- children and adolescents with and without intellectual impairments.

We will assess statistical heterogeneity for all analyses and between groups with the Chi2 test and the I2 statistic and we will set significance at  $P < 0.1$ .

### **Sensitivity analysis**

Sensitivity analysis is the study of how the uncertainty in the out- put of an analysis can be apportioned to different sources of uncertainty in its inputs. Sensitivity analyses can, therefore, be carried out to test the robustness of decisions made in the review process. We will carry out sensitivity analyses where there is evidence of the following:

- significant heterogeneity: we will inspect forest plots and examine each study in turn to determine the source of any significant heterogeneity;
- selection bias: we will exclude those studies judged to be at high risk of selection bias from the main analysis;
- allocation concealment: we will exclude from the main analysis those studies judged to be at high risk of bias for allocation concealment.

We will undertake all of the above sensitivity analyses for the ITT and the completer analyses.

### **GRADE and 'Summary of findings' table**

We will create a ‘Summary of findings’ table including the following primary outcomes:

- remission of primary anxiety diagnosis post-treatment;
- acceptability in terms of drop-outs from randomisation to the post-treatment assessment;

and the following secondary outcomes:

- remission of all anxiety diagnoses post-treatment;
- adverse events from randomisation to the post-treatment assessment;
- reduction in anxiety symptoms (self-reported and parent-reported) post-treatment;
- reduction in depressive symptoms post-treatment;
- improvement in global functioning post-treatment.

We will use the five GRADE considerations (study limitations, consistency of effect, imprecision, indirectness and publication bias) to assess the quality of a body of evidence as it relates to the studies that contribute data to the meta-analyses for the pre-specified primary and secondary outcomes. Two review authors (AJ, TR), will independently assess risk of bias, and in case of disagreement will seek consensus between four review authors (AJ, TR, GJ, CC). We will use the methods and recommendations described in Section 8.5 (Higgins 2017), and Chapter 12 (Schünemann 2017), of the Cochrane Handbook for Systematic Reviews of Interventions, and using GRADEpro software (GRADEpro GDT 2015). We will justify all decisions to downgrade or upgrade the quality of studies using footnotes and make comments to aid the reader’s understanding of the review where necessary. We will consider whether there is any additional outcome information that we were unable to incorporate into the meta-analyses, note this in the comments and state if it supports or contradicts the information from the meta-analyses.

## **A C K N O W L E D G E M E N T S**

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### **Disclaimer**

The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR, or the Department of Health and Social Care.

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\* Indicates the major publication for the study

## **A P P E N D I C E S**

### **Appendix1. Cochrane Common Mental Disorders Controlled Trials Register (CCMDCTR)**

#### **Cochrane Common Mental Disorders Controlled Trials Register (CCMDCTR)**

Cochrane Common Mental Disorders (CCMD) maintains two archived clinical trials registers at its editorial base in York, UK: a references register and a studies-based register. The CCMDCTR-References Register contains over 40,000 reports of RCTs in depression, anxiety and neurosis. Approximately 50% of these references have been tagged to individual, coded trials. The coded trials are held in the CCMDCTR-Studies Register and records are linked between the two registers through the use of unique Study ID tags. Coding of trials is based on the EU-Psi coding manual, using a controlled vocabulary; ( please contact the CCMD Information Specialists for further details). Reports of trials for inclusion in the Group's registers are collated from routine ( weekly), generic searches of MEDLINE ( 1950 to 2016), Embase ( 1974 to 2016) and PsycINFO ( 1967 to 2016); quarterly searches of the Cochrane Central Register of Controlled Trials ( CENTRAL) and review-specific searches of additional databases. Reports of trials are also sourced from international trial registers via the World Health Organization's trials portal ( the International Clinical Trials Registry Platform ( ICTRP)), pharmaceutical companies, the hand searching of key journals, conference proceedings and other (non-Cochrane) systematic reviews and meta-analyses.

Details of CCMD's generic search strategies (used to identify RCTs) can be found on the Group's website, ( [cmd.cochrane.org/ specialised-register](http://cmd.cochrane.org/specialised-register)), with an example of the core MEDLINE search (used to inform the register) listed below. The Group's Specialised Register has fallen out of date with the Editorial Group's move from Bristol to York in the summer of 2016.

**Core search strategy used to inform the Cochrane Common Mental Disorders Group's Specialised Register: OVID MEDLINE (to June 2016)**

A weekly search alert based on condition + RCT filter only

1. [MeSH Headings]:

eating disorders/ or anorexia nervosa/ or binge-eating disorder/ or bulimia nervosa/ or female athlete triad syndrome/ or pica/ or hyperphagia/ or bulimia/ or self-injurious behavior/ or self mutilation/ or suicide/ or suicidal ideation/ or suicide, attempted/ or mood disorders/ or affective disorders, psychotic/ or bipolar disorder/ or cyclothymic disorder/ or depressive disorder/ or depression, postpartum/ or depressive disorder, major/ or depressive disorder, treatment-resistant/ or dysthymic disorder/ or seasonal affective disorder/ or neurotic disorders/ or depression/ or adjustment disorders/ or antidepressive agents/ or anxiety disorders/ or agoraphobia/ or neurocirculatory asthenia/ or obsessive-compulsive disorder/ or obsessive hoarding/ or panic disorder/ or phobic disorders/ or stress disorders, traumatic/ or combat disorders/ or stress disorders, post-traumatic/ or stress disorders, traumatic, acute/ or anxiety/ or anxiety, castration/ or koro/ or anxiety, separation/ or panic/ or antidepressive agents/ or somatoform disorders/ or body dysmorphic disorders/ or conversion disorder/ or hypochondriasis/ or neurasthenia/ or hysteria/ or munchausen syndrome by proxy/ or munchausen syndrome/ or fatigue syndrome, chronic/ or obsessive behavior/ or compulsive behavior/ or behavior, addictive/ or impulse control disorders/ or firesetting behavior/ or gambling/ or trichotillomania/ or stress, psychological/ or burnout, professional/ or sexual dysfunctions, psychological/ or vaginismus/ or Anhedonia/ or Affective Symptoms/ or \*Mental Disorders/

2. [Title/ Author Keywords]:

(eating disorder\* or anorexia nervosa or bulimi\* or binge eat\* or (self adj (injur\* or mutilat\*)) or suicide\* or suicidal or parasuicid\* or mood disorder\* or affective disorder\* or bipolar i or bipolar ii or (bipolar and (affective or disorder\*)) or mania or manic or cyclothymic\* or depression or depressive or dysthymi\* or neurotic or neurosis or adjustment disorder\* or antidepress\* or anxiety disorder\* or agoraphobia or obsess\* or compulsi\* or panic or phobi\* or ptsd or posttrauma\* or post trauma\* or combat or somatoform or somati# ation or medical\* unexplained or body dysmorphi\* or conversion disorder or hypochondria\* or neurastheni\* or hysteria or munchausen or chronic fatigue\* or gambling or trichotillomania or vaginismus or anhedoni\* or affective symptoms or mental disorder\* or mental health).ti,kf.

3. [RCT filter]:

(controlled clinical trial.pt. or randomized controlled trial.pt. or (randomi#ed or randomi#ation).ab,ti. or randomly.ab. or (random\* adj3 (administ\* or allocat\* or assign\* or class\* or control\* or determine\* or divide\* or distribut\* or expose\* or fashion or number\* or place\* or recruit\* or substitut\* or treat\*)).ab. or placebo\*.ab,ti. or drug therapy.fs. or trial.ab,ti. or groups.ab. or (control\* adj3 (trial\* or study or studies)).ab,ti. or ((singl\* or doubl\* or tripl\* or trebl\*) adj3 (blind\* or mask\* or dummy\*)).mp. or clinical trial, phase ii/ or clinical trial, phase iii/ or clinical trial, phase iv/ or randomized controlled trial/ or pragmatic clinical trial/ or (quasi adj (experimental or random\*)).ti,ab. or ((waitlist\* or wait\* list\* or treatment as usual or TAU) adj3 (control or group)).ab.)

4. (1 and 2 and 3)

Records are screened for reports of RCTs within the scope of the Cochrane Common Mental Disorders Group. Secondary reports of RCTs are tagged to the appropriate study record.

Similar weekly search alerts are also conducted on OVID Embase and PsycINFO, using relevant subject headings (controlled vocabularies) and search syntax, appropriate to each resource.

The CCMDCTR was search for the previously published version of this review using the following terms: CCMDCTR-Studies:

Condition = (anxiety or anxious or "phobic disorder\*" or "panic disorder\*" or "social phobia")

AND

Intervention = (behavior\* or behaviour\* or cognitive\*) AND

Age = (child\* or adolescent\* or unclear or "not stated")

CCMDCTR-References was searched using a more sensitive set of free-text terms to identify additional untagged/uncoded reports of RCTs:

(CBT or cognitive\* or behavior\* or behaviour\*) and (anxiety or anxious or \*phobi\* or

panic\*) and (child\* or adolesc\* or juvenil\* or school\* or pediatri\* or paediatri\* or teen\* or young or youth\*).

We will update the search of the CCMDCTR to June 2016.

## **Appendix 2. Update search (MEDLINE) (2012-2018)**

In addition to searching the CCMDCTR we will run searches on Ovid MEDLINE, Embase, PsycINFO and CENTRAL. The MEDLINE search is displayed below, we will map this across to the other databases, using relevant subject headings (controlled vocabularies) and search syntax, appropriate to each resource.

### **Ovid MEDLINE databases (1 January 2012 onwards)**

Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present

1. randomized controlled trial.pt.
2. controlled clinical trial.pt.
3. randomi#ed.ti,ab,kf.
4. (placebo or ((attention or active) adj control\*)).ti,ab,kf.
5. (RCT or "at random" or (random\* adj3 (administ\* or allocat\* or assign\* or class\* or control\* or determine\* or divide\* or division or distribut\* or expose\* or fashion or number\* or place\* or recruit\* or split or subsitut\* or treat\*))).ti,ab,kf.
6. trial.ti,ab,kf.
7. ((control\* or group\* or compar\*) adj5 (((care or treatment\*) adj2 (usual or standard or routine)) or TAU or CAU)).ab.
8. ((control\* or group\* or compar\*) adj5 (waitlist\* or wait\* list\* or waiting or WLC)).ab.
9. 9. or/1-8
10. ANXIETY DISORDERS/
11. \*ANXIETY/di, pc, px, th
12. AGORAPHOBIA/ or PANIC DISORDER/ or ANXIETY, SEPARATION/
13. PHOBIC DISORDERS/ or PHOBIA, SOCIAL
14. (agoraphobi\* or general#ed anxiety or GAD or separation anxiety or (social\* adj2 (anxi\*



- or fear\*) or phobi\* or mute? or mutism or school refusal).ti,ab,kf.
15. ((child\* or adolesc\* or p?ediatric\* or teen\* or young\* or youth or school) adj1 anxi\*).ti,ab,kf.
  16. anxiety.ab. /freq=3
  17. panic.mp.
  18. (anxiety adj5 (autism or autistic)).ti,ab,kf.
  19. (anxiety ).mp. and (child development disorders, pervasive/px or autism spectrum disorder/px or autistic disorder/px)
  20. 20. or/10-19
  21. ((anxi\* or phobi\* or panic) and (effectiveness or efficacy or evaluat\* or intervention or program\* or train\* or treat\* or prevent\* or therapy or psychotherapy or trial or study) and (child\* or adolesc\* or paediatric\* or pediatric\* or teen\* or young\* or youth)).ti.
  22. exp COGNITIVE THERAPY/
  23. PSYCHOTHERAPY, GROUP/
  24. FAMILY THERAPY/ or PSYCHODRAMA/ or ROLE PLAYING/ or SENSITIVITY TRAINING GROUPS/
  25. BIBLIOTHERAPY/
  26. "EARLY INTERVENTION (Education)"/
  27. (CBT or CBGT\* or iCBT or i-CBT or cCBT or c-CBT or bCBT or b-CBT).ab.
  28. ((cogniti\* or behavio\*) adj3 (intervention or therap\* or psychotherap\* or training or treatment or technique\* or restructur\* or defusion)).ti,ab,kf.
  29. (rational emotiv\* or (problem\* adj2 (focus\* or sol\*)) or psychoeducat\* or role play\* or schema\* or self-control\* or self con- trol\*).ti,ab,kf.
  30. (((psychotherap\* or therap\*) adj3 (commitment or acceptance)) or ((self\* or stress\*) adj3 (control or analysis or direct\* or esteem or help or instruct\* or manage\*))).ti,ab,kf.
  31. ((attribution\* or reattribution\*) adj3 (therap\* or psychotherap\*)).ti,ab,kf.
  32. (mindfulness\* or third wave or experiential or (behavio\* adj3 (activation or modification)) or (thought\* adj3 suppress\*) or rumi- nation).ti,ab,kf.
  33. ((anxiety adj1 manag\*) or confidence building or coping skills or exposure therapy or exposure task\* or psychoeducat\* or psycho- educat\* or relaxation or sensitivity training or self talk or (social adj2 (skill\* or effectiveness))).ti,ab,id,hw.
  34. ((controlling or overcoming) adj2 (anxiety or panic or phobi\* or agoraphobi\* or shyness)).ti,ab,kf.
  35. (Coping Cat or Cool Kids or Coping Koala or (Skills adj Academic adj Social Success)

- or SASS or (Intervention adj Adolescents adj Social Phobia) or IAFS or TAPS).ti,ab,kf.
36. (child\* adj2 (deliver\* or focus\*) adj2 (intervention\* or program\* or psychotherap\* or therap\* or train\* or treat\*)).ti,ab,kf.
37. ((parent\* or guardian\*) adj2 (deliver\* or focus\*) adj2 (intervention\* or program\* or psychotherap\* or therap\* or train\* or treat\*)).ti,ab,kf.
38. ((individually or group or conjoint or family) adj2 (intervention\* or program\* or psychotherap\* or therap\* or train\* or treat\*)).ti,ab,kf.
39. \*PSYCHOTHERAPY/mt, st, sn, tu [Methods, Standards, Statistics & Numerical Data, Therapeutic Use]
40. 40. or/22-39
41. ADOLESCENT/ or CHILD/ or CHILD, PRESCHOOL/
42. (child\* or adolesc\* or paediatr\* or pediater\*).hw,jn.
43. (child\* or boy\* or girl\* or kids or juvenil\* or minors or paediatric\* or pediatric\* or adolesc\* or preadolesc\* or pre-adolesc\* or pubert\* or pubescen\* or prepube\* or pre-pube\* or teen\* or (young adj (survivor\* or offender\* or minorit\*)) or youth\* or school\*).ti,kf.
44. (child\* or adolesc\* or paediatr\* or pediater\*).ab. /freq=3
45. 45. or/41-44
46. (9 and 20 and 40 and 45) or (9 and 21)
47. (2012\* or 2013\* or 2014\* or 2015\* or 2016\* or 2017\* or 2018\*).yr,dp,dt,ep,ez.
48. 46 and 47
49. ((OCD or obsessive compulsive or PTSD or posttraumatic stress disorder\* or post-traumatic stress disorder\*) not (anxi\* or phobi\* or agoraphobi\* or panic)).ti.
50. (48 not 49)

## **CONTRIBUTIONS OF AUTHORS**

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