

Case Study 1: An Evidence-Based Practice Review Report

The effectiveness of Parent-Guided Cognitive Behavioural Therapy for school aged students with a diagnosis of anxiety: a systematic review

Summary

Anxiety disorders have become one of the most common mental health issues faced by children today (Cartwright-Hatton, McNicol, & Doubleday, 2006; Costello, Mustillo, Erkanli, Keeler & Angold, 2003). This systematic literature review examines the efficacy of a cost-effective intervention, in which parents are trained to become lay therapists to their own children, meaning the children do not have to be taken to a clinic, miss out on school time or other activities to attend therapy sessions (Creswell, Violato, Fairbanks, White, Parkinson, Abitabile, Leidi, & Cooper, 2017). The review consists of five studies that met the inclusion criteria and were each evaluated using Kratochwill's (2003) coding protocol and weight of evidence framework as proposed by Gough (2007) to ascertain a rigorous and systematic critique of the literature. The studies all focus on child related outcomes following a Cognitive Behavioural Therapy (CBT) oriented parent intervention. During the intervention the parents learnt skills that they would then implement with their children at home as lay therapists. The review found promising evidence for the effectiveness of parent-guided cognitive behavioural therapy to help reduce anxiety in school aged children. However, more robust research needs to be conducted in order to address the gaps in the literature as highlighted in this review.

Introduction

Childhood anxiety disorders

Childhood anxiety disorders have become some of the most prevalent and commonly occurring mental health disorders of our time (Costello, Egger, & Angold, 2005). They can pose significant barriers to a child's wellbeing and development, and in turn to the functioning of the whole family unit (Creswell & Cartwright-Hatton, 2007). Cognitive behavioural therapy has long been deemed the treatment of choice for the most commonly occurring anxiety disorders, with a number of Randomised Control Trial (RCT) studies backing its effectiveness in treating childhood anxiety (Cobham, Dadds, & Spence, 1998; Kendall, Flannery-Schroeder, Panicelli-Mindel, Southam-Gerow, Henin, & Warman, 1997). However, despite the fact that individual child CBT has been the treatment of choice, many children still meet diagnostic criteria post-treatment, or start re-experiencing the symptoms of anxiety after treatment termination (Rapee, Schniering, & Hudson, 2009). Many have highlighted the difficulties that arise when transporting CBT protocols tested out in research to clinical settings (Silverman, Kurtines, Ginsburg, Weems, Lumpkin, & Carmichael, 1999), leading some to consider the role of moderators, such as parents, and their ability to impact treatment results in clinical practice (Silverman & Kurtines, 1999). This builds on the knowledge that parents play a central role in the maintenance of anxiety for their children when they engage in avoidance strategies for them, and also the ability parents have in assisting their children in problem solving (Barrett, Dadds, & Rapee, 1996). Finally, the cost implications of therapist led individual CBT has been noted and the need for stepped care approaches identified (Williams &

Martinez, 2008), leading clinicians and researchers in the field to identify innovative ways to reach more children and improve treatment outcomes.

Psychological underpinnings

The role of parents in the treatment of their children's anxiety disorders has been varied; ranging from no involvement, to parents being in concurrent yet separate therapy, to them being involved through family CBT and finally to them being trained to be their own children's lay therapists (Manassis et al., 2014). In the majority of these scenarios, Cognitive Behavioural Therapy underpins the varying treatment protocols. CBT helps children with anxiety, firstly, by teaching them how to recognise what anxious feelings feel like somatically, then by making explicit the cognitions that come alongside anxiety-inducing situations and later by making a concrete plan to cope during moments of heightened anxiety. The final step revolves around evaluation and creating ways to maintain the new cognitions and behaviours (Barmish & Kendall, 2005). Many studies looking at the impact of incorporating parents into this therapeutic journey indicate that adding a parental angle to the child – therapist sessions brings with it a number of benefits, such as making the treatment more generalizable and ongoing past the point of session termination (Barrett, Rapee, Dadds & Ryan, 1996). One explanation for this revolves around the concept of transfer of control, and maintains that through including parents, the knowledge and expertise surrounding the skills and methods needed to reduce anxiety, transfer from the therapist to the parents and ultimately to the child (Silverman & Kurtines, 1999). It is also argued that since parents play a central part in the development and advancement of anxiety in their children, through a genetic predisposition, the environment,

transmitting cognitive biases that foster anxiety and parenting styles that promote overprotection and avoidance of feared stimuli (Ginsburg & Schlossberg, 2002), their inclusion in the therapy process is imperative. However, there have also been studies that do not support this notion since the added value of including parents was not found (Nauta, Scholing, Emmelkamp, & Minderaa, 2003; Reynolds, Wilson, Austin, & Hooper, 2012). In spite of these findings, researchers have started exploring the effectiveness of a parent only intervention model, built on the theory of transfer of control (Silverman & Kurtines, 1996). Studies in the late 1990s and early 2000s indicated promising results for this stand-alone, cost-effective, stepped care approach to treating child anxiety (Mendlowitz, Manassis, Bradley, Scapillato, Mieзитis, & Shaw, 1999; Thienemann, Moore, & Tompkins, 2006), however more robust RCTs were needed to examine its effectiveness.

Rationale and relevance

Undertaking a systematic review of the current literature in the field of parent-guided interventions for childhood anxiety leads to a greater understanding of the efficacy of this intervention. In light of the UK government's green paper on mental health (DH & DfE, 2017) educational psychologists will be taking a more active role in mental health provision in schools, and with the growing number of children experiencing anxiety, this will be one of the most common mental health issues present in schools (Cartwright-Hatton et al., 2006). This indicates the need for professionals to upskill and become familiar with interventions they can provide to students and their families targeting mental health needs. This review analyses an intervention that could be implemented by a CBT trained educational psychologist and could reach multiple families in

a school setting without disrupting the students' routine, making it cost-effective and wide reaching. Therefore, understanding the intervention's effectiveness is imperative, especially considering the growing focus on applying evidence-based practices in schools (DfE & DH, 2015).

Review question

'Is a parent-guided cognitive-behavioural therapy intervention effective at reducing symptoms of anxiety in school-aged children who have a diagnosis of anxiety?'

The review question specifically looks at studies evaluating parent-guided interventions where the child has no contact with the therapist and the parent becomes the agent of change for their child, taking the role of a lay therapist. Only studies employing an experimental randomised control design have been selected for this review. This review provides a critical review of the research, an analysis of the effect sizes of the studies included and finally a discussion including areas for future research.

Critical Review of the Evidence Base

Literature Search

To answer the review question, a systematic search of the literature was conducted on January 11th, 2019. Searches were conducted on Web of Science, Education Resources Information Center (ERIC), Medline and PsychINFO using the keywords outlined in Table 1. The main categories addressed were; parent-guided, study design, child and anxiety. This was due to the fact that the review question focussed on exploring the effectiveness of parent-guided CBT interventions where parents are working directly with their

school-aged children to minimise the symptoms of anxiety. Ancestry and citation searches were also conducted to ensure that all relevant studies were found, however only duplicates were found at this stage. The resulting 864 studies were screened, first via a title screen, followed by an abstract screen, and finally if further clarification was needed, the full text was reviewed. The criteria used to screen the studies is presented in Table 2, detailing the inclusion and exclusion criteria used for this review. Of the 19 studies that underwent a full text review, 14 did not meet the criteria, as detailed in Appendix A. The 5 studies that met the criteria were selected for analysis. Full references for the selected studies are detailed in Table 3. A flow diagram depicts the systematic search process undertaken in Figure 1.

Table 1

Search terms for Web of Science, ERIC, Medline & PsychINFO searches

Parent-guided		Design		Child		Anxiety
Family cbt OR family cognitive behavio?ral therapy OR FCBT OR PCBT OR parent guided CBT OR Parent guided cognitive behavio\$ral therap* OR parent training OR parent mediated therapy OR parent delivered therap* OR parent delivered treatment	AND	Random* comparative stud* OR RCT OR randomi?ed controlled trial* OR clinical trial* OR research adj3 design OR evaluat* adj3 stud* OR experiment* OR randomized	AND	Child* OR school age* OR primary school OR elementar y school OR youth	AND	Anxiet* OR anxious* OR panic OR anxiety disorder* OR Childhoo d anxiety

Note. The asterix indicates that any word that contains all letters before it will be included, for example, stud* would include study & studies. The \$/? Signs are used to include alternate spellings, for example behavio\$ral will include both the British 'behavioural' and American 'behavioral'. 'adj3' allows the search to bring up studies were the two words on either side appear within 3 words of each other.

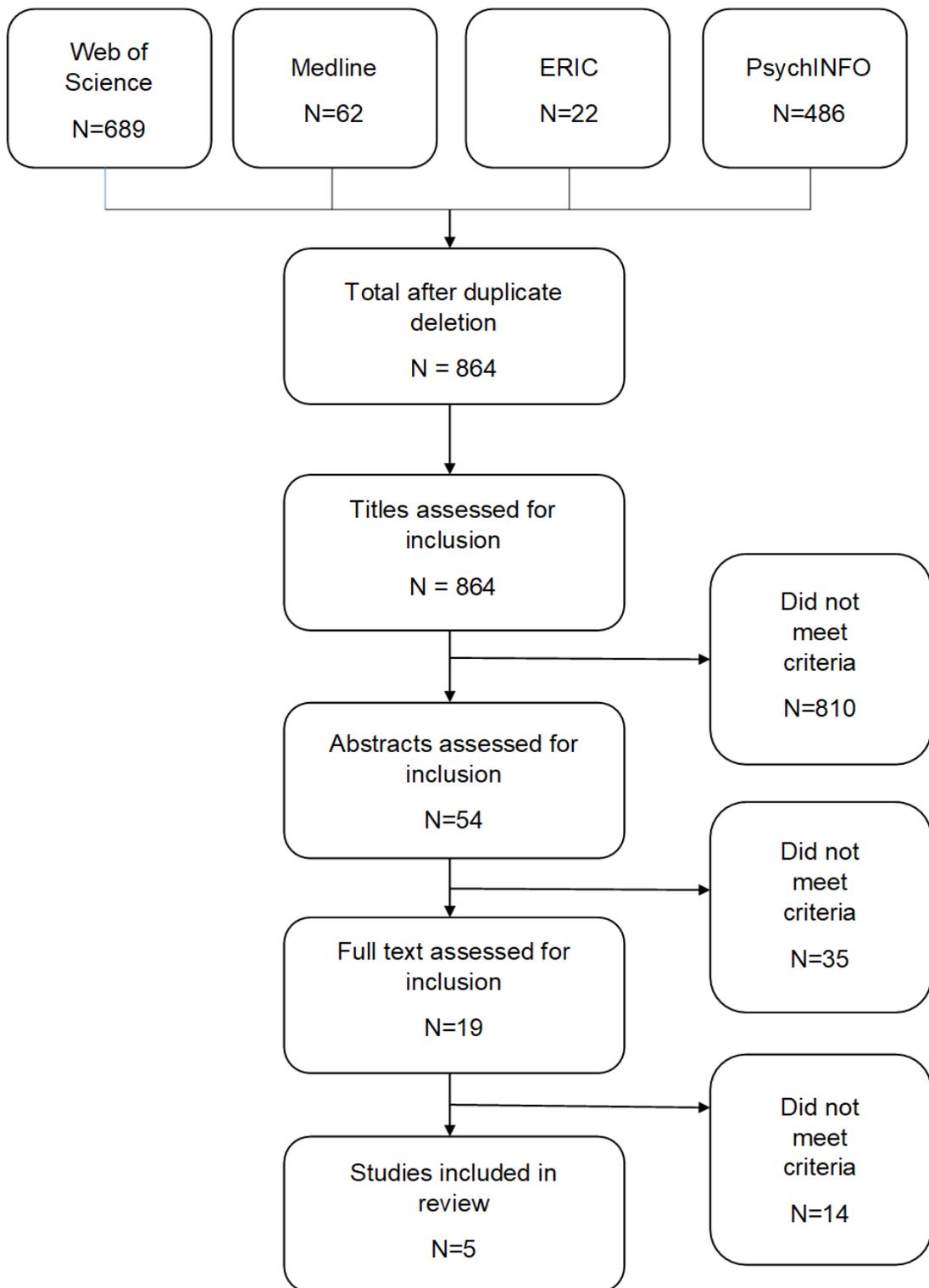


Figure 1: *Flow Chart depicting database search and screening process*

Table 2

Inclusion and Exclusion Criteria for current review

Study Feature	Inclusion Criteria	Exclusion Criteria	Rationale
1 Diagnosis	<p>(a) Children met the criteria for Anxiety disorder using the Diagnostic and Statistical Manual (DSM) IV/V</p> <p>(b) Studies that included children with the more typical anxiety disorders, such as generalised anxiety disorder, separation anxiety disorder, social phobia and agoraphobia.</p>	<p>(a) Children did not meet the criteria for Anxiety disorder or the Anxiety disorders Interview Schedule (ADIS) was not used as one of the measures to assess for high anxiety</p> <p>(b) Studies that only selected children meeting an Obsessive Compulsive Disorder (OCD) or Post Traumatic Stress Disorder (PTSD) diagnosis</p>	<p>(a) The review question focuses on the effectiveness of the intervention for children with clinical levels of anxiety, this does not include children who are likely to develop anxiety at a later point or have low level anxiety.</p> <p>(b) OCD, PTSD and phobias function differently to the more general anxiety disorders thus require different forms of treatment (Creswell & Cartwright-Hatton, 2007)</p>
2 Language	Study published in the English language	Published in a language other than English, and not currently available in the English language	Translation services are unavailable and thus only studies in English can be evaluated for this review

Study Feature	Inclusion Criteria	Exclusion Criteria	Rationale
3 Country of Study	Study conducted in an Organisation for Economic Co-operation and Development (OECD) country	Study conducted in a non-OECD country	OECD countries have similar principles and policies that impact on education and culture that could also be implicated in parenting behaviours. Therefore studies from non-OECD countries have been excluded in this review
4 Participants	<p>(a) School aged students from Reception to Year 11 (ages 4 – 16)</p> <p>(b) Children not undergoing concurrent psychological treatment</p> <p>(c) Children whose medication has been stable for at least 1 month before the start of the trial</p>	<p>(a) The study includes children younger than 4 and/or older than 16</p> <p>(b) Children concurrently undergoing additional psychological treatment</p> <p>(c) Children who have changes in medication/or medication dosages are not monitored during the study</p>	<p>(a) This review looks at interventions for school aged children</p> <p>(b) Concurrent treatment would confound the results observed</p> <p>(c) Unstable or unmonitored medication would confound the results observed</p>
5 Intervention	<p>The study includes an intervention that:</p> <p>(a) trains parents so that they engage in a parent delivered</p>	The study includes an intervention that:	<p>(a) This review is only focusing on parent-guided</p>

Study Feature	Inclusion Criteria	Exclusion Criteria	Rationale
	<p>intervention with their children that includes no therapist-child contact</p> <p>(b) is grounded in CBT principles</p> <p>(c) is being used to improve anxiety symptoms in the children whose parents are attending the sessions</p>	<p>(a) includes contact between the child and therapist (even if the parents are the primary implementers)</p> <p>(b) uses a treatment orientation that is not grounded in CBT, or is only partially informed by CBT</p> <p>(c) is being used to improve outcomes other than the child's anxiety symptoms, such as child/parent attachment, parent anxiety or parenting stress</p>	<p>interventions with no child-therapist contact</p> <p>(b) This review is only focusing on CBT oriented interventions</p> <p>(c) This review is only focusing on interventions</p>
6 Outcomes	One of the primary outcome measures the impact of the intervention on the child's anxiety	None of the primary outcomes look at the direct impact of the intervention on the child's anxiety	This review is looking at the effectiveness of a parent led intervention in lowering child anxiety
7 Type of Studies	(a) The study includes randomisation of participants to treatment and control settings	(a) The study employs a non-experimental design that has no control group or randomisation of participants to treatment and control settings	(a) Randomised control trials strive towards ensuring that the effects observed after an intervention aren't due to a bias within the participants

Study Feature	Inclusion Criteria	Exclusion Criteria	Rationale
	(b) The study uses original empirical data with participants being recruited for the purposes of this study	(b) The study uses historical data or non-primary empirical data (e.g. commentaries or reviews)	<p>and create a control condition to observe whether effects are due to treatment or random factors. Quasi-experimental and non-experimental designs are not as rigorous in their methodology and thus have been omitted.</p> <p>(b) Original empirical data is first hand data collected by the study's researchers. Using this data Using this type of data ensures that all the papers have unique datasets to eachother, reducing the potential of bias occurring from the same dataset being analysed in multiple papers.</p>
8 Type of Publications	Peer-reviewed journals published between 2000 and January 11 th 2019	Non-peer reviewed journals, dissertations and other grey literature	Other reviews have looked at similar literature from the 1990's – focusing only on research post-2000 adds value to the

Study Feature	Inclusion Criteria	Exclusion Criteria	Rationale
		and studies published prior to 2000 and after January 11 th 2019.	current literature in the area of parent-guided CBT for children with anxiety. Furthermore, peer reviewed journals ensure higher quality research than non-peer reviewed journals, as independent scholars would have screened it for quality control and validity prior to publication.

Table 3

The Final five studies included in the systematic review

Cobham, V.E., Filus, A. & Sanders, M.R. (2017). Working with parents to treat anxiety-disordered children: a proof of concept RCT evaluating Fear-less Triple P. *Behaviour Research and Therapy*, 95, 129-138.

Hiller, R.M., Apetroaia, A., Clarke, K., Hughes, Z., Orchard, F., Parkinson, M. & Creswell, C. (2016). The effect of targeting tolerance of children's negative emotions among anxious parents of children with anxiety disorders: a pilot randomised controlled trial. *Journal of Anxiety Disorders*, 42, 52-59.

Smith, A.M., Flannery-Shroeder, E.C., Gorman, K.S. & Cook, N. (2014). Parent cognitive-behavioral intervention for the treatment of childhood anxiety disorders: a pilot study. *Behavior Research and Therapy*, 61, 156-161.

Thirwall, 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, 436-444.

Waters, A.M., Ford, L.A., Wharton, T.A. & Cobham, V.E. (2009). Cognitive-behavioural therapy for young children with anxiety disorders: comparison of child + parent condition versus a parent only condition. *Behaviour Research and Therapy*, 47, 654-662.

Weight of Evidence

In order to evaluate the quality of the selected studies the Weight of Evidence framework (Gough, 2007) was employed. This framework provides a systematic way to appraise the studies based on their quality in relation to methodology and how much they contribute to answering the research question. The framework is made up of three separate areas:

Weight of Evidence A (WoE A) focuses on a non-review specific judgement of the quality of the methodology employed in the study (Gough, 2007). For this review a modified version of the Kratochwill (2003) APA Task Force on Evidence Based Intervention in School Psychology for group-based designs

was used. The sections omitted and the rationale for the modifications are detailed in Appendix C, the criteria used and their subsequent ratings are presented in Appendix E, whilst a sample coding protocol can be found in Appendix D.

Weight of Evidence B (WoE B) consists of a review specific judgement on the relevance of the study design to answering the review question (Gough, 2007). The criteria selected and ratings are available in Appendix F, these were based on Petticrew and Roberts' (2003) typology of evidence criteria.

Weight of Evidence C (WoE C) relates to the relevance of the study's focus to the review question being asked (Gough, 2007). The criteria used for this section are detailed in Appendix G.

The three separate weights of evidence used were combined and then averaged to produce an overall weighting score (Weight of Evidence D) that indicates the extent to which each study adds value and weight to the evidence when answering the review question (Gough, 2007). Each weighting score ranged from 1-3, with a rating of ≤ 1.4 considered 'low', 1.5-2.4 considered 'medium' and ≥ 2.5 deemed 'high'. Table 4 details the weight of evidence scores for each of the five studies included in this review.

Table 4

Overall Weight of Evidence

Studies	WoE A	WoE B	WoE C	WoE D
Cobham et al. (2017)	Medium (2.4)	Medium (2)	Medium (2)	Medium (2.13)
Hiller et al. (2016)	Medium (1.6)	Medium (2)	Low (1)	Medium (1.53)
Smith et al. (2014)	Medium (1.8)	Medium (2)	Medium (2)	Medium (1.93)
Thirwall et al. (2013)	High (2.6)	High (3)	High (3)	High (2.86)
Waters et al. (2009)	Medium (1.6)	High (3)	High (3)	High (2.53)

*WoE D rating descriptors 'High' ≥ 2.5 , 'Medium' 1.5 – 2.4, 'Low' ≤ 1.4

Study Participants

The five studies in this review included 492 children and their parents, from the UK, USA, Australia and The Netherlands, with children's ages ranging from age 4 to age 14. The study participants were recruited from a variety of sources, including through a variety of schools and the media (Cobham et al., 2017), an anxiety clinic (Thirwall et al., 2013; Hiller et al., 2016) and community resources (Smith et al., 2014). Waters et al. (2009) did not report where participants were recruited from. All the studies reported the percentage of male to female students in both treatment and control conditions, which was relatively equal. However, reporting on other demographics, such as family income, ethnicity and parental marital status only featured in some studies, and were varying amongst the studies that reported on them.

Since this review focuses on children who have met the criteria of a primary diagnosis of anxiety, each of the studies detailed the breakdown of diagnoses the children in the sample met. The most common diagnoses were

generalised anxiety disorder (GAD) and separation anxiety disorder, whilst the least common was OCD with only 1 child meeting the diagnostic criteria (Cobham et al., 2017). Other anxiety diagnoses included social phobia, specific phobia, panic disorder, agoraphobia and social anxiety. Thirwall et al. (2013), Hiller et al. (2016), Smith et al. (2014) and Waters et al. (2009) excluded children who had comorbid developmental disorders, brain damage and symptoms of psychopathy. All the studies also excluded children who were accessing concurrent psychological treatment or whose pharmacological treatment had not been stable for at least a month before the study commenced. Hiller et al. (2016) also assessed parental anxiety and families were selected if parents met the anxiety threshold. Meeting diagnostic status for an anxiety disorder was one of the main criteria for WoE C, since this review focuses on interventions for children meeting the threshold for anxiety rather than only showing signs of anxiety.

Study Design

All the studies included were randomised control designs. Four of the studies had a waitlist control group, however Hiller et al. (2016) only had two treatment groups with the PCBT treatment being considered as the control group, which impacted its WoE B since effectiveness was difficult to identify through this design.

Thirwall et al. (2013) looked at two versions of the intervention, a full and brief treatment and also compared it to a wait-list group, whereas Waters et al. (2009) compared a parent only condition, to a parent-child condition, to a wait list control group. This led these studies to have a high WoE B since their research designs aligned strongly with the review question. Cobham et al.

(2017) and Smith et al. (2014) compared a parent guided CBT protocol to a waitlist control, both of which also had a follow up phase that looked at maintenance of treatment outcomes.

Every study included randomisation of participants to the control or treatment groups. However, differing from the other studies, Cobham et al. (2017) used a block randomisation procedure through a computer software that used block sizes of 4 with 6 different combinations between treatment and control. In all the studies, even though it was the parents who attended the intervention, it was the child that was randomised to the condition and then one or both of the parents attended the treatment allocated.

The majority of the studies included a follow up phase, where participants were re-assessed to measure maintenance of treatment outcomes. This is reflected in the ratings received on WoE A Follow-up. Only one study (Hiller et al., 2016) did not have a follow up phase and it received a 0 on that weighting section, leading to a low Weight of Evidence rating in this criteria. The attrition between pre and post intervention, and post and follow-up, is noted in the studies' WoE A, together with data regarding intent to intervene. The majority of the studies had missing data and this was explicitly identified by the researchers.

The differences highlighted above with regards to experimental design, especially the use of control groups, participant randomisation and follow-up, factor into the ratings given for WoE A Comparison Group/Follow up and WoE B.

Interventions

Parent-guided CBT for children with anxiety was the intervention of interest in this review, however each study used a slightly different format of the intervention. Cobham et al. (2017) used a group format where 5-7 families met with a therapist and engaged in the manualised Triple P Fearless parent intervention, which is a CBT oriented approach equipping parents to help their children reduce their anxiety. The group had 6 sessions lasting 90 minutes each with a trained therapist at a university clinic. Hiller et al. (2016) had two active treatment groups, both were parent-guided CBT interventions that ran over 8 sessions, having six 45-60 minute face to face sessions and two 15 minute phone sessions. Both treatment groups were given a self-help book and the treatment was manualised. The enhanced version included targeting the tolerance of children's negative emotions in conjunction to the standard PCBT protocol. In Smith et al. (2014) a 10 module individualised intervention was used, during which parents met with a therapist for a weekly hour long session and were assigned homework tasks to do with their child. Thirwall et al. (2013) used two formats of a PCBT intervention, a full vs. a brief. In both interventions parents were given a self-help book but the full treatment group received 5 hours and 20 minutes of parent-therapist time as opposed to 2 hours and 40 minutes in the brief intervention. Both conditions included a mixture of individual face to face sessions and telephone sessions. Finally, in Waters et al. (2009) the 'Take Action' program was used. For the parent-only condition the same content used in the child + parent condition was used, having the parents go through the child workbook at home between sessions. This intervention was completed over 10 weeks, using weekly one hour group format sessions. Differing from the rest of the studies, Waters et al. (2009) included a booster session 8 weeks after the completion of the 10 modules.

All of the studies followed similar protocols which included psychoeducation about anxiety, its nature, development and maintenance, the antecedents, behaviours and consequences of anxiety, and then helped parents build skills to help their children. More details regarding the intervention are given in Appendix B.

With regards to intervention fidelity each study took different measures to control for this. All studies provided supervision for the therapists engaging with the parents and differing amounts of training pre-intervention. Thirwall et al. (2013) and Cobham et al. (2017) received the highest fidelity rating on WoE A Intervention Fidelity. Both these studies included ongoing supervision for the intervention implementers together with formal training in the specific intervention being delivered. This meant that the outcome results reflect a uniform intervention amongst participants which helps us determine with more certainty that it was the intervention itself that led to the results and not individual differences in the intervention protocol. The rigour by which intervention fidelity was approached is reflected in WoE A Intervention Fidelity section.

Measures

The Anxiety Disorder Interview Schedule – Child/Parent version (ADIS C/P) was the most common measure used in these studies, being used by every study to assess the presence of an anxiety disorder as it maps onto the criteria in the DSM-IV. It was used as a baseline and as a post-intervention and follow up measure of child outcomes. The inter-reliability coefficient for the ADIS was reported by the majority of the studies and this impacted the score received on WoE A Measurement section. Cobham et al. (2017) and Smith et

al. (2014) used clinical severity rating to measure the severity of the anxiety as assessed by the clinician pre and post intervention. Smith et al. (2014) used the Multidimensional Anxiety Scale for Children (MASC-C) as a child measure of anxiety, whereas the other studies used the Spence. Children's Anxiety scale, child version, to include the child's experience of their own anxiety. Each of the studies spoke of the scales' reliability ratings, and this, together with the fact that they collected data from different sources, using different tools, reflected in their WoE A Measurement section. This review only considered child outcomes and thus measures looking into parent outcomes were not considered.

Outcomes and Effect Sizes

Every study that compared a parent guided CBT treatment intervention to a waitlist control group reported statistically significant results for the intervention group (see Mapping of the field Appendix B) and large effect sizes as detailed in Table 5. The only study to report a small effect size for the intervention was Hiller et al. (2016) since the study was comparing a PCBT intervention to an alternate form which included an add on component, which was only marginally better than the PCBT control. Due to the design it is impossible to extrapolate the effectiveness of the PCBT intervention since there is no waitlist control group to compare it to.

The largest effects were seen in relation to children no longer meeting the criteria for their original diagnosis and no longer meeting any anxiety diagnosis post-intervention. This was seen in Cobham et al. (2017), Smith et al., (2014), Thirwall et al. (2013) and Waters et al. (2009), where children were significantly more likely to not meet diagnostic criteria following the PCBT

intervention compared to the waitlist control. Large effect sizes were observed in this regard across the four mentioned studies despite there being differences in the delivery of the interventions. However, it is important to note that effectiveness was in line with, but was not superior to the child + parent intervention in Waters et al. (2009). This is in line with what Nauta et al. (2003) reported in previous studies. It is worth noting that child outcomes as rated by the children themselves only showed effectiveness in Cobham et al. (2017) with a $d_{\text{corr}} = -1.02$, indicating a reduction in anxiety severity. In the same study there was a statistically significant difference in the mothers' ratings of their children's internalising behaviours ($d_{\text{corr}} = -0.56$), however no effects in the fathers' data. Information on effect sizes for statistically significant results is detailed in Table 5. The effect sizes in the Cobham et al. (2017) reported below are the ones stated by the authors of the original study. Smith et al. (2014) and Waters et al. (2009) reported effect sizes as n^2p , these were converted to Cohen's d using the effect size calculator provided by the Campbell Collaboration (Wilson, n.d.) in order to aid comparison of effect sizes across studies. The effect size reported for Hiller et al. (2016) was calculated using the means and standard deviations post intervention between groups outlined by the authors in the study, since the original authors did not report effect size. Thirwall et al. (2013) reported Risk Ratios which have been outlined in the table below in place of Cohen's d effect size.

Table 5

Effect Sizes and Descriptors for Statistically Significant Findings

Study	Measure	Comparison	Effect Size	Descriptor^a	WoE D
Cobham et al. (2017) N=63	ADIS C/P Primary Diagnosis	Fearless Intervention vs. Waitlist Control	d = 1.092 RR = 0.43	Large	Medium
	ADIS C/P Criteria for any anxiety diagnosis	Fearless Intervention vs. Waitlist Control	d = 1.13 RR = 0.56	Large	Medium
	Clinical severity ratings (CSR)	Fearless Intervention vs. Waitlist Control	d _{corr} = -2.94	Large	Medium
	Spence Children's Anxiety Scale (C)	Fearless Intervention vs. Waitlist Control	d _{corr} = 1.02	Large	Medium
Hiller et al. (2016) N=60	Anxiety Disorder Interview Schedule (ADIS)	TCNE Vs. Standard GPD-CBT	d = 0.09	Small	Medium
Smith et al. (2014) N=35	Anxiety Disorder Interview Schedule (ADIS)C	Parent Guided CBT Vs. Waitlist condition	d = 1.50	Large	Medium
	Clinician Generated Severity Ratings (CSRs from ADIS)	Parent Guided CBT Vs. Waitlist condition	d = 1.30	Large	Medium

Study	Measure	Comparison	Effect Size	Descriptor ^a	WoE D
Thirwall et al. (2013) N=194	ADIS - Recovery from primary diagnosis	Full PCBT vs. Waitlist Control	RR = 1.85		High
	ADIS – Recovery from all anxiety diagnoses	Full PCBT vs. Waitlist Control	RR = 3.13		High
	Clinical Global Impression – Improvement Scale	Full PCBT vs. Waitlist Control	RR = 2.64		High
	Clinical Global Impression – Improvement scale	Brief PCBT vs. Waitlist Control	RR = 1.89		High
Waters et al. (2009) N=80	ADIS C/P Anxiety diagnosis	Intervention Parent Only vs. Waitlist Control	d = 1.31	Large	High

^a d descriptors from Cohen (1988) >0.6 Large 0.5 – 0.3 Medium 0.2 – 0 Small / Risk Ratios (RR) 1 = no effect <1< effect identified, the extent of which relies on clinical significance (Andrade, 2015).

Conclusions and Recommendations

This review set out to answer whether or not parent – guided CBT interventions are effective in treating childhood anxiety in school aged children, without the children having contact with a therapist. All the studies included, which all received a Weight of Evidence rating of Medium or High, indicated that these interventions have a positive effect on the children’s

anxiety diagnoses and symptoms. However, most of the measures indicating a positive change were those answered by the clinicians or parents and not the children themselves. This seems to indicate a need to explore the factors that would impact the child's perspective of their anxiety and to measure the impact anxiety has on their life pre- and post- intervention. Though not the focus of this review the studies did consider the parent outcomes, and how the intervention impacted their perception of parenting and their reaction to their children's anxieties (Hiller et al., 2016, Smith et al., 2014).

Effect sizes for the interventions' effectiveness were large across the studies comparing an active treatment of PCBT with a waitlist control. This is encouraging since the studies spanned different countries and this may indicate that the intervention is applicable in different contexts. The Thirwall et al. (2013) study, which was a strong study that yielded the highest Weight of Evidence, indicated that the longer form of the intervention is superior to the shorter format, however the shorter format still showed promise, indicating that when time constraints arise a shorter format may be considered. This is a significant finding since it indicates that both formats can provide results, and was derived through a reliable research study. The review also sheds light on the potential of anxious parents still being change agents in their children's lives, and that parent-guided CBT intervention can be an effective treatment for their children despite their personal struggles with the same condition (Hiller et al., 2016). However, a higher powered RCT with a true control will have to be conducted to ascertain this, since the study was not as robust, and only obtained a medium Weight of Evidence

In light of this review it can therefore be concluded that the evidence indicates that parent-guided CBT interventions are an effective intervention at reducing children's anxiety diagnosis and severity of the condition as assessed by clinicians. Based on the quality of studies included in this review, in which the lowest rated study (Hiller et al., 2016) still garnered a medium weight of evidence, one can utilise or recommend this intervention based on well formulated and executed studies. However, the intervention's effectiveness as perceived by the children themselves and their parents is still tentative and more robust studies have to be conducted in order to ascertain their effectiveness in impacting quality of life and parent reported changes in internalising and externalising behaviours.

Areas for future research

The first area of future research revolves around generalisability with regards to participants. More research needs to be done in the younger, 4-7 year old, and older 14-16 year old, age groups, in order to recognise whether this intervention is effective for these age groups. Further research is also needed with regards to ethnicity and social economic class, to understand who this intervention works for and how applicable it is to practice in different areas, depending on the demographics of the area.

The majority of the studies did not recruit their sample from school settings, which would be the most likely source of referrals for educational psychologists. Thus, research focussing on providing the intervention for parents within their children's school would be more representative of the contexts educational psychologists would use it in. Another area for future research relates to the different forms of anxiety this intervention could be used

for and which diagnoses respond best to the treatment. Each one of these studies had a very heterogenic sample of anxiety diagnoses which makes it hard to distinguish whether the intervention impacts each type of anxiety diagnosis, or whether it is most suited to a certain form.

Finally, more work has to be undertaken to explore the impact of the intervention on the child's life as perceived by themselves. The studies showed poor outcomes on the Spence Children's anxiety scale (child version) and this may indicate that although they no longer met the diagnostic criteria, the qualitative impact on their life wasn't as robust.

When considering the increasing rates of childhood anxiety (Cartwright-Hatton et al., 2006), parent guided CBT interventions seem to offer a strong first line intervention, through upskilling the parents to help their children work through their anxiety. It has been shown to produce significant and large effects that are maintained through follow up. However, the research is still in its infancy, and larger, more diverse and better powered studies, especially at follow-up, are needed to ascertain the true value and effectiveness of the intervention.

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Appendix A

Table 1

List of excluded studies following full paper screening

Article	Exclusion criteria number(s)
Cartwright-Hatton, S., McNally, D., Field, A., Rust, S., Laskey, B., Dixon, C., Gallegher, B., Harrington, R., Miller, C., Pemberton, K., Symes, W., White, C., & Woodham, A. (2011). A new parenting-based group intervention for young anxious children: results of a randomized controlled trial. <i>Journal of the American Academy of Child & Adolescent Psychiatry</i> , 50, 242–251.	1a – Children did not meet clinical significance for an anxiety disorder
Creswell, C., Violato, M., Fairbands, H., White, E., Parkinson, M., Abitabile, G., Leidi, A. & Cooper, P.J. (2017). Clinical Outcomes and cost-effectiveness of brief guided parent-delivered cognitive behavioural therapy and solution-focused brief therapy for treatment of childhood anxiety disorders: a randomised controlled trial. <i>Lancet Psychiatry</i> , 4, 529-539.	1a – Children did not meet clinical significance for an anxiety disorder
Evans, R., Hill, C., O'Brien, D. & Creswell, C. (2018). Evaluation of a group format of clinician-guided, parent-delivered cognitive behavioural therapy for child anxiety in routine clinical practice: a pilot-implementation study. <i>Child and Adolescent Mental Health</i> , ISSN 1475-3588.	7a/b– There is no control group or alternate treatment group and retrospective data is used

Article	Exclusion criteria number(s)
Lebowitz, E.R., Omer, H., Hermes, H. & Scahill, L. (2014). Parent Training for Childhood Anxiety Disorders: The SPACE Program. <i>Cognitive and Behavioral Practice</i> , 21, 256-469.	5b – the intervention is not rooted in CBT principles
McKinnon, A., Keers, R., Coleman, J.R.I., Lester, K.J., Roberts, S., Arendt, K., Bogels, S., Cooper, P., Creswell, C., Hartman, C.A., Fjermestad, K.W., In-Albon, T., Lavalley, K., Lyneham, H.J., Smith, P., Meiser-Stedman, R., Nauta, M.H., Rapee, R.M., Rey, Y., Schneider, N., Silverman, W.K., Thastum, M., Thirlwall, K., Wergeland, G.J., Eley, T.C. & Hudson, J.L. (2018). The impact of treatment delivery format on response to cognitive behaviour therapy for preadolescent children with anxiety disorders. <i>Journal of Child Psychology and Psychiatry</i> , 59(7), 763-772.	7a/b – Retrospective pooled data is used – it is not an experimental design
Mendlowitz, S.L., Manassis, K., Bradley, S., Scapillato, D., Mieziitis, S., & Shaw, B.F. (1999) Cognitive-behavioral group treatments in childhood anxiety disorders: the role of parental involvement. <i>Journal of the American Academy for Child and Adolescent Psychiatry</i> , 38(10), 1223–9.	8 – Study was conducted pre-2000
Monga, S., Rosenbloom, B. N., Tanha, A., Owens, M., & Young, A. (2015). Comparison of child-parent and parent-only cognitive-behavioral therapy programs for anxious children aged 5 to 7 years: Short- and long-term outcomes. <i>Journal of the American Academy of Child and Adolescent Psychiatry</i> , 54(2), 138-146.	7a – The participants were not randomised to the condition
Rudy, B.M., Zavrou, S., Johnco, C., Storch, E.A. & Lewin, A.B. (2017). Parent-led exposure therapy: a pilot study of a brief behavioral treatment for anxiety in young children. <i>Journal of Child and Family Studies</i> , 26, 2475-2484.	5a/b – There is contact between the child and therapist and the

Article	Exclusion criteria number(s)
Salari, E., Shahrivar, Z., Mahmoudi-Gharaei, J., Shirazi, E. & Sepasi, M. (2018). Parent-only group cognitive behavioral intervention for children with anxiety disorders: a control group study. <i>Journal of the Canadian Academy of Child and Adolescent Psychiatry</i> , 27(2), 130–136.	treatment aligns to behaviourist principles more than CBT 3 – The study was conducted in Iran
Simon, E., Bogels, S.M. & Voncken, J.M. (2011). Efficacy of child-focused and parent-focused interventions in a child anxiety prevention study. <i>Journal of Clinical Child & Adolescent Psychology</i> , 40(2), 204-219.	1a/7b – Children did not meet DSM-IV criteria and the data had been used by a previous study
Thienemann, M., Moore, P., & Tompkins, K. (2006). A parent-only group intervention for children with anxiety disorders: pilot study. <i>Journal of the American Academy of Child & Adolescent Psychiatry</i> , 45, 37–46.	4b/c – Children were allowed to be in concurrent treatment and medication was not controlled for being stable for a month prior to study

Article	Exclusion criteria number(s)
Thirlwall, K., Cooper, P. & Creswell, C. (2017) Guided parent delivered cognitive behavioural therapy for childhood anxiety: predictors of treatment response. <i>Journal of Anxiety Disorders</i> , 45, 43-48.	6 – Study’s focus is not child outcomes but the predictors of the outcomes
van der Sluis, C. M., van der Bruggen, C. O., Brechman-Toussaint, M. L., Thissen, M. A., & Bögels, S. M. (2012). Parent-directed cognitive behavioral therapy for young anxious children: A pilot study. <i>Behavior Therapy</i> , 43(3), 583-592.	7a – The study did not have a control
Whiteside, S.P.H, Ale, C.M., Young, B., Dammann, J.E., Tiede, M.S. & Biggs, B.K. (2015). The feasibility of improving CBT for childhood anxiety disorders through a dismantling study. <i>Behaviour Research and Therapy</i> , 73, 87-89.	5a – Child attended some of the sessions

Appendix B

Table 1

Mapping the field

Author	Country	Sample	Diagnosis	Design	Intervention type	Primary Outcomes & Findings
Cobham et al. (2017)	Australia	Parents of children aged 7-14years N = 61 N = 33 Treatment N = 30 Waitlist Control Follow up N = 31 Treatment N = 29 Waitlist Control	Meets diagnostic criteria for a primary anxiety disorder DSM IV (GAD, Social phobia, Separation anxiety, specific phobia or OCD) Children excluded if they were getting alternate treatment.	RCT with a 3/6/12 month follow up for the intervention group The control group was a Waitlist control. 6 therapists delivered the interventions each of which received weekly supervision from the first	Triple P Fearless Parent intervention – CBT oriented parent intervention for anxiety reduction in children. 6 group sessions lasting 90 minutes each were conducted in groups of 5-7 families.	Based on diagnosis of primary anxiety disorder measured via the ADIS – IV C/P, children in the treatment group were 57% less likely to meet the criteria compared to the WL group RR = 0.43, 95%, CO 0.259-0.709, p<0.01 Based on diagnostic status measured via the ADIS – IV C/P children in the treatment condition were 44% less likely to meet the criteria for an anxiety diagnosis post treatment when compared to the WL group RR= 0.56, 95% CI 0.47 – 0.82, p<0.0001 Clinician severity ratings (CSR) for primary diagnosis showed a statistically significant decrease in severity ratings between the treatment and WL condition t(57) = -4.67, p<0.001 d _{cor} = -2.94

Author	Country	Sample	Diagnosis	Design	Intervention type	Primary Outcomes & Findings
				author of the study.		<p>Child Behaviour Checklists (CBCL) filled out by the mothers showed a statistically significant difference between the treatment and control group, with the treatment group showing significantly less internalizing problems $t(57) = 2.21$, $p < 0.05$, $d_{corr} = -0.56$</p> <p>This was not seen in the fathers' data</p> <p>Spence Children's Anxiety Scale child measures indicated that there was a statistically significant difference between treatment and control groups on anxiety severity as rated by the children $t(57) = -2.72$, $p < 0.05$, $d_{corr} = -1.02$</p>
Hiller et al. (2016)	UK	Parents of children aged 7-12 years N = 60 N = 32 TCNE N = 28	Child meets diagnostic criteria for a primary anxiety disorder DSM IV (separation anxiety, social phobia, specific phobia, panic disorder,	RCT with no follow up 2 conditions – Standard treatment vs. enhanced version without a no treatment control	Tolerance of Children's Negative Emotions TCNE (GPD-CBT + parent tolerance component) Vs. GPD-CBT	<p>Both treatment types were found to be effective to reduce child anxiety based on the ADIS</p> <p>TCNE condition - 55% of children no longer met diagnostic criteria ($P < 0.0001$)</p> <p>GPD-CBT condition - 61% of children no longer met diagnostic criteria ($P < 0.0001$)</p>

Author	Country	Sample	Diagnosis	Design	Intervention type	Primary Outcomes & Findings
		GPD-CBT (control) [Parents assessed as having high Anxiety using the ADIS adult version]	agoraphobia and GAD Children excluded if they had a significant mental or physical impairment, had medication changes in the last month or if their parent's anxiety was severe enough to warrant immediate treatment	Treatment was given by Trained therapist in University clinic + regular supervision	Comparing standard parent guided CBT treatment to an enhanced version including tolerance of negative emotions Both conditions were Manualised and a self-help book was given 8 sessions split into 6 face to face 45-60mins sessions + 2 telephone sessions lasting 15 minutes (Weekly or fortnightly)	When comparing the conditions there was not a statistically significant difference between the two for child anxiety improvement TCNE vs. GPD-CBT (P = 0.72) Reduction in child anxiety effect size on the ADIS CS TCNE vs GPD – CBT d= 0.0932 CI = -0.4143 - 0.6007
		TCNE 87.5% White British GPD-CBT 85.7% White British				

Author	Country	Sample	Diagnosis	Design	Intervention type	Primary Outcomes & Findings
Smith et al. (2014)	USA	Parents of children aged 7-13 years PCBT n = 18 Waitlist n = 13 In treatment condition children 11 male 7 female Ethnicity: 1 Hispanic 17 Non-Hispanic Annual household income varied	Child meets diagnostic criteria for a primary anxiety disorder (Separation Anxiety Disorder, Social Anxiety Disorder, Specific phobia, GAD) Children excluded if they had a comorbid pervasive developmental disorder, a Traumatic Brain Injury (TBI), brain damage, symptoms of psychopathy, if were in concurrent treatment for	RCT with 3 month follow up Random assigned to Parent Guided CBT or wait list control Treatment was delivered by Doctoral psychology trainees (n=8) who had gone through intensive CBT training + had weekly supervision	10 module individualised intervention – psychoeducation about anxiety, strategies to respond well, and CBT skills Each module consisted of one weekly one hour session + parent/child tasks assigned	Significant Time X group interactions were found with child anxiety disorders decreasing $F(1,28) = 15.40, p < .01, d = 1.5$ And for clinician severity scores generated through the ADIS $F(1, 28) = 12.01 p < .01 d = 1.30$ However no significant differences were found on Child rated Anxiety (MASC – C – Multidimensional Anxiety Scale for Children) At the follow up point there was a further, yet non-significant improvement for number of anxiety diagnosis ($p=0.7$), and a significant improvement in clinician severity scores ($p < .05$)

Author	Country	Sample	Diagnosis	Design	Intervention type	Primary Outcomes & Findings
		between \$55000 to \$300000	anxiety or if their pharmacological treatment had been changed in the last month			
Thirwall et al. (2013)	UK	Parents of children aged 7-12 years Full PCBT N = 64 Brief PCBT N = 61 Waitlist N = 69 In full treatment condition children: 86% White ethnicity	Child meets diagnostic criteria for primary anxiety disorder (DSM IV) (GAD, Social phobia, Separation anxiety disorder, panic disorder, agoraphobia) Children excluded if they had a significant physical or intellectual disability (including ASD),	RCT with 2 treatment conditions (Full and Brief) and a wait list control. The study had a 6 month follow up for the 2 treatment conditions Treatment was delivered by 19 therapists with varying level of experience who were trained and	Both interventions were guided parent-delivered CBT and parents were given a self-help book <i>Full treatment</i> consisted of 8 weekly sessions including 4 one hour face to face sessions and four 20 minute telephone sessions (5 hours 20 minutes of therapist-parent time)	Recovery from diagnostic status: Full treatment worked better than WL for recovery from primary diagnosis – 85% more likely to not meet primary diagnosis than WL. (RR =1.85, 95% CI 1.14 – 2.99, P=0.013) Recovery from all anxiety diagnosis: Full treatment was 3 times more likely to recovered from all ADIS anxiety diagnosis than WL (RR = 3.13, 95% CI 1.40-7.01 P=0.006) In both cases the brief form of the treatment did not produce significant results. On the Clinical Global Impression – Improvement Scale – the full treatment

Author	Country	Sample	Diagnosis	Design	Intervention type	Primary Outcomes & Findings
		53% Male vs 46% Female	if the child or parent was on psychotropic medication that was not stable for at least a month, and if the parent had a significant intellectual impairment.	supervised by a clinical psychologist	<i>Brief treatment</i> consisted of fortnightly sessions over 8 weeks including 2 one hour face to face sessions and two 20 minutes telephone sessions (2 hours 40 minutes therapist – parent time)	<p>was 2.6 more likely to produce ‘much’ or ‘very much’ improved than the WL (RR = 2.64, 95% CL 1.70 – 4.11, P<0.0001). For the brief condition, 54% of participants were ‘much’ or ‘very much’ improved which was a smaller but still significant number RR = 1.89, 95% CI 1.16 – 3.09, P=0.011)</p> <p>Maintenance at 6 months – 76% of full treatment and 71% of brief treatment no longer met diagnosis for primary disorder (with one participant failing to maintain improvement)</p> <p>61% of full treatment and 45% of brief treatment children who had not improved at post treatment showed improvement at 6 months.</p> <p>There were no significant changes in child report of anxiety or behavioural problems.</p>
Waters et al. (2009)	Australia	Parents of children aged	Child met diagnostic criteria for either phobia, social	RCT with 2 different treatment groups and a	‘Take ACTION’ program – A CBT program for	84% of parent only children no longer met diagnostic criteria for their primary

Author	Country	Sample	Diagnosis	Design	Intervention type	Primary Outcomes & Findings
		4-8 years N = 31 Parent + Child treatment N = 38 Parent only treatment N = 11 Waitlist condition 96% of completers were Australian (remaining were from New Zealand and USA)	phobia, GAD and/or separation anxiety disorder. Children excluded if: they had an externalising disorder, had a pervasive developmental disorder, had brain damage or psychosis, or were currently in concurrent treatment (pharmacologic al or psychological)	wait list control – with pre-and post- measures followed up with a follow up at 6 and 12 months. Treatment was delivered by 5 CBT trained psychologist Follow ups were conducted by clinical psychology graduate students who were blind to the children's diagnostic	children 4-18 years old Parent + Child condition consisted of 10 one hour sessions on a weekly basis in group format Parent only condition had the exact same content – with the parents working through the child workbook at home between sessions – 10 one hour sessions on a weekly basis in group format + Both conditions got booster sessions after 8 weeks of the end	diagnosis Vs. 74% in parent –child condition vs. 17% in Waitlist condition Parent condition was statistically significantly better than waitlist $\chi^2 = (1, N=36) = 14.34. p<.001, d = 1.31$, however there was no statistically significant difference between the two active conditions Based on the Clinical Severity ratings from the ADIS-C-IV-C/P there was a statistically significant change between pre and post scores on both active conditions at the $p<.001$ level but not in the wait list group ($p=.01$) At 6 months follow up stage 100% of the Parent only condition were principal diagnosis free but this was not statistically significantly different from the Parent/Child Group No statistically significant changes were observed on the Child Behaviour checklist measure (CBCL) that looked at externalising behaviours

Author	Country	Sample	Diagnosis	Design	Intervention type	Primary Outcomes & Findings
				status and treatment condition	of the initial sessions to problem-solve and review progress.	

Terminology Key	
GAD	Generalised Anxiety Disorder
OCD	Obsessive Compulsive Disorder
CBT	Cognitive Behavioural Therapy
RCT	Randomised Control Trial
ADIS	Anxiety Diagnostic Interview Schedule
DSM	Diagnostic and Statistical Manual

TCNE	Tolerance of Children's Negative Emotions
GPD-CBT	Guided Parent Delivered – Cognitive Behavioural Therapy
PCBT	Parent Guided Cognitive Behavioural Therapy

Appendix C

The coding protocol from the APA Task Force Coding Protocol by Kratochwill (2003) has been used in this review. Table 1 details the amendments to the protocol, together with the reasons for such modifications.

Table 1

Amendments made to the Kratochwill (2003) Coding Protocol

Section heading	Section removed/modified	Rationale
I. General Characteristics	B7 : Coding	Only used for qualitative research
	B8 : Interactive Process Followed	Only used for qualitative research
II. Key features for Coding Studies and Rating Level of Evidence/Support	Section C	This information is being reported in the Mapping the Field table - Primary outcomes are being discussed in the paper and secondary outcomes are not relevant to the review question
	Section D3 – Subjective Evaluation	Since the intervention is undertaken by the parents in order to impact their children, the participants in the study are not the target population – hence the category was changed to indicate that subjective behaviour change was evaluated by the parents ‘the participants’ who were in direct contact with their child – who in this case the intervention outcomes were targeted towards.

Section heading	Section removed/modified	Rationale
	Section D4: Social Comparison	This has been removed since the goal of the research question is whether the intervention is effective at lowering anxiety for the target children and not how these would compare to non-anxious peers.
	Section E: Identifiable components	The interventions selected in these studies were manualised approaches and components are not separate.
	Section G: Replication	There were no replications done in any of the studies included in this review
	Section H: Site of Implementation	This information is not relevant to the review question and does not impact on the methodology of the studies being included in this review.
III. Other Descriptive or Supplemental Criteria to Consider	Section A2: Participant characteristics specified for treatment and control	<p>This information is being reported in the Mapping the field table and discussed in the review</p> <p>Since all the papers selected for this review have randomised samples, the treatment and control groups do not vary based on human decision.</p>
	Section A4: Receptivity	This information is reported in the review and was not assessed to impact quality of methodology.

Section heading	Section removed/modified	Rationale
	Section A5.3 : Generalization across persons	This was removed since the focus of the study did not make it relevant
	Section B: Length of Intervention	This was removed since it is being reported in the Mapping the field section of the review
	Section C: Intensity/Dosage of Intervention	This was removed since it is being reported in Mapping the field.
	Section D. Dosage Response	Only one study looked at dosage difference, however this wasn't relevant to the review question
	Section E: Program Implementer	This was removed as it is specified in other sections of the review
	Section H. Cost Analysis Data	Not reported and unnecessary for the purpose of reviewing methodological quality.
	Section J. Feasibility	This was not reported by the studies and has been deemed unnecessary for appraising methodological soundness

Appendix D: Coding Protocols for Weight of Evidence A

Adapted from the Procedural Manual of the Task Force on Evidence-Based Interventions in School Psychology, American Psychology Association, Kratochwill, T.R. (2003)]

Coding Protocol

Date: 05/02/2019

Full Study Reference in proper format: PAPER 1

Cobham, V.E., Filus, A. & Sanders, M.R. (2017). Working with parents to treat anxiety-disordered children: a proof of concept RCT evaluating Fear-less Triple P. *Behaviour Research and Therapy*, 95, 129-138.

Intervention name: Fear-less Triple P Parent led intervention

Study ID number: xACTRN12615000514505

Type of Publication:

- Book/Monograph
- Journal Article
- Book Chapter
- Other (specify):

Domain:

- School and community based intervention programs for social and behavioural problems
- Academic intervention programs
- Family and parent intervention programs
- School wide and classroom based programs
- Comprehensive and coordinated school health services

I. General Characteristics

A. General Design Characteristics

A1. Random assignment designs (if random assignment design, select one of the following)

- Completely randomized design
- Randomized block design (between participants, e.g., matched classrooms)
- Randomized block design (within participants)
- Randomized hierarchical design (nested treatments)

A2. Nonrandomized designs (if non-random assignment design, select one of the following)

- Nonrandomized design
- Nonrandomized block design (between participants)
- Nonrandomized block design (within participants)
- Nonrandomized hierarchical design
- Optional coding for Quasi-experimental designs

A3. Overall confidence of judgment on how participants were assigned (select one of the following)

- Very low (little basis)
- Low (guess)
- Moderate (weak inference)
- High (strong inference)
- Very high (explicitly stated)
- N/A
- Unknown/unable to code

B. Statistical Treatment/Data Analysis (answer B1 through B6)

- | | Yes | No |
|--------------------------------------|-------------------------------------|--------------------------|
| B1. Appropriate unit of analysis | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| B2. Familywise error rate controlled | <input type="checkbox"/> | <input type="checkbox"/> |
| B3. Sufficiently large N | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

The authors stated that the study was sufficiently powered based on their sample size as compared to previous studies in similar domains – power calculations were undertaken by the authors

B4. Total size of sample (start of study): 63

B5. Intervention group sample size: 33

B6. Control group sample size: 30

C. Type of Program

- Universal prevention program
- Selective prevention program
- Targeted prevention program
- Intervention/Treatment
- Unknown

D. Stage of Program (select one)

- Model/demonstration programs
- Early stage programs
- Established/institutionalized programs
- Unknown

E. Concurrent or Historical Intervention Exposure (select one)

- Current exposure
- Prior exposure
- Unknown

II. Key Features for Coding Studies and Rating Level of Evidence/Support

(Rating Scale: 3= Strong Evidence, 2=Promising Evidence, 1=Weak Evidence, 0=No Evidence)

A. Measurement (answer A1 through A4)

A1. Use of outcome measures that produce reliable scores for the majority of primary outcomes (select one of the following)

- Yes (0.88 Cronbach alpha)
- No
- Unknown/unable to code

A2 Multi-method (select one of the following)

- Yes
- No
- N/A
- Unknown/unable to code

A3 Multi-source (select one of the following.)

- Yes
- No
- N/A
- Unknown/unable to code

A4 Validity of measures reported (select one of the following)

- Yes validated with specific target group
- In part, validated for general population only
- No
- Unknown/unable to code

Rating for measurement (select 0, 1, 2 or 3) 3 2 1 0

B. Comparison Group

B1 Type of Comparison Group (Select one of the following)

- Typical contact
- Attention placebo
- Intervention element placebo
- Alternative intervention
- Pharmacotherapy
- No intervention
- Wait list/delayed intervention
- Minimal contact
- Unable to identify type of comparison

B2 Overall confidence of judgment on type of comparison group

- Very low (little basis)
- Low (guess)
- Moderate (weak inference)
- High (strong inference)
- Very high (explicitly stated)
- Unable to identify comparison group

B3 Counterbalancing of change agent

- By change agent
- Statistical (analyse includes a test for intervention)
- Other
- Not reported/None

B4 Group equivalence established (select one of the following)

- Random assignment
- Posthoc matched set
- Statistical matching
- Post hoc test for group equivalence

B5 Equivalent mortality

- Low attrition (less than 20 % for post)
- Low attrition (less than 30% for follow-up)
- Intent to intervene analysis carried out?

Overall rating for Comparison group (select 0, 1, 2 or 3) 3 2 1 0

D. Educational/Clinical Significance

Outcome Variables:	Pretest	Posttest	Follow up
D1. Categorical Diagnosis Data	Diagnostic information regarding inclusion into the study presented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Positive change in diagnostic criteria from pre to posttest: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Positive change in diagnostic criteria from posttest to follow up: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
D2. Outcome Assessed via continuous variables		Positive change in percentage of participants showing clinical improvement from pre to post test <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Positive change in percentage of participants showing clinical improvement from posttest to follow up <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
D3. Subjective Evaluation: The importance of behaviour change is evaluated by parents in direct contact with the child	Importance of behaviour change is evaluated <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown (Internalizing behaviours only)	Importance of behaviour change from pre to posttest is evaluated positively by the parents in direct contact with the target child <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Importance of behaviour change from posttest to follow up is evaluated positively by the parents in direct contact with the target child <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown

Overall rating for Educational/Clinical Significance 3 2 1 0

F. Implementation Fidelity

F1. Evidence of Acceptable Adherence

- F1.1 Ongoing supervision/consultation
- F1.2 Coding intervention sessions/lessons or procedures
- F1.3 Audio/video tape implementation
 - F1.3.1. Entire intervention
 - F1.3.2. Part of intervention

F2. Manualization (select all that apply)

- F2.1 Written material involving a detailed account of the exact procedure and the sequence they are to be used.
- F2.2 Formal training session that includes a detailed account of the exact procedures and the sequence in which they are to be used.
- F2.3 Written material involving an overview of broad principles and a description of the intervention phases.
- F2.4 Formal or informal training session involving an overview of broad principles and a description of the intervention phases.

F3. Adaptation procedures are specified yes no unknown

Rating for Implementation Fidelity (select 0, 1, 2 or 3): 3 2 1 0

I. Follow Up Assessment

- Timing of follow up assessment: specify 3/6/12 months
- Number of participants included in the follow up assessment: specify 29 / 26 / 25 participants
- Consistency of assessment method used: specify: used the same measures

Rating for Follow Up Assessment (select 0, 1, 2, or 3): 3 2 1 0

III. Other Descriptive or Supplemental Criteria to Consider

A. External Validity Indicators

A1. Sampling procedures described in detail Yes No

Specify rationale for selection: 25 families for each condition would be needed to detect expected differences, based on figures derived from a child CBT meta-analysis

Specify rationale for sample size: 90% power at 5% sig. level (2-tailed) would require 50 participants – this was increased to 62 to account for attrition

A1.1 Inclusion/exclusion criteria specified Yes No

A1.2 Inclusion/exclusion criteria similar to school practice Yes No
Children currently in other treatments excluded – these wouldn't necessarily be excluded in a school setting

A1.3 Specified criteria related to concern Yes No

A3. Details are provided regarding variables that:

A3.1 Have differential relevance for intended outcomes Yes No

Specify:

A3.2 Have relevance to inclusion criteria Yes No

Specify:

[This is not reported in the study](#)

A5. Generalization of Effects:

A5.1 Generalization over time

A5.1.1 Evidence is provided regarding the sustainability of outcomes after intervention is terminated Yes No

Specify: Follow up measures are reported at 3/6/12 months

A5.1.2 Procedures for maintaining outcomes are specified Yes No

Specify: _____

F. Characteristics of the Intervener

F1. Highly similar to target participants on key variables (e.g., race, gender, SES)

F2. Somewhat similar to target participants on key variables

F3. Different from target participants on key variables

[This is not reported in the study](#)

G. Intervention Style or Orientation (select all that apply)

- G1. Behavioral
- G2. Cognitive-behavioral
- G3. Experiential
- G4. Humanistic/interpersonal
- G5. Psychodynamic/insight oriented
- G6. other (specify): _____
- G7. Unknown/insufficient information provided

I. Training and Support Resources (select all that apply)

I1. Simple orientation given to change agents

I2. Training workshops conducted

of Workshops provided: Unspecified

Average length of training: Unspecified

Who conducted training (select all that apply)

I2.1 Project Director

I2.2 Graduate/project assistant

I2.3 Other (please specify):

I2.3 Unknown

I3. Ongoing technical support – through supervision

I4. Program materials obtained

I5. Special Facilities

I6. Other (specify):

Summary of Evidence

Indicator	Overall evidence rating 0-3	Description of evidence Strong Promising Weak No/limited evidence Or Descriptive ratings
General Characteristics		
Design		Strong
Type of programme		Intervention
Stage of programme		Part of an evidence based treatment – Triple P
Concurrent/ historical intervention exposure		It is unknown whether the families have undergone previous intervention. However they are not concurrently undergoing other psychological or medication treatment
Key features		
A: Measurement	3	Strong
B: Comparison group	2	Promising
D: Educational/Clinical Significance	3	Strong
F: Implementation Fidelity	2	Promising
I: Follow-up	2	Promising

APPENDIX E: Weight of Evidence A

Tables 1-5 below outline the criteria employed when analysing the weight of evidence using the modified Kratochwill (2003) Coding Protocol in relation to measures, comparison group, fidelity, clinical/educational significance and follow up.

The criteria used to distinguish between different weighting values have been derived from Kratochwill's (2003) coding protocol in the section outlining the Key Features for Coding Studies and Rating Level of Evidence/Support.

Table 6 Outlines the Average WoE A score ranges

Table 7 represents WoE A for each of the studies included in this review

Table 1

Criteria for Measurement

Weighting	Criteria
High (3)	<ul style="list-style-type: none">• Reliability $\geq .85$ (for all primary outcome measures)• Multiple measurement sources used• Multiple measurement methods used
Medium (2)	<ul style="list-style-type: none">• Reliability $\geq .7$ (for at least 75% of primary outcome measures)• Multiple measurement sources OR Multiple measurement methods used
Low (1)	<ul style="list-style-type: none">• Reliability $\geq .5$ (for at least 50% of primary outcome measures)• One source or one method of data is used
No Evidence (0)	<ul style="list-style-type: none">• There is not enough data to rate this study on measurement

Table 2

Criteria for Comparison Group

Weighting	Criteria
High (3)	<ul style="list-style-type: none"> • An active control group was used (e.g. alternate treatment or attention placebo) • There is group equivalence by random assignment • Equivalent attrition/mortality between treatment and control groups at post and follow-up • Change agents have been counterbalanced
Medium (2)	<ul style="list-style-type: none"> • A 'no intervention' control group was used (e.g. Waitlist or no intervention) • At least 2 of the following are present: Equivalent groups OR counterbalancing of change agents OR equivalent mortality with low attrition • In the case of inequivalent mortality rates between the conditions – then no significant difference must be reported between the groups
Low (1)	<ul style="list-style-type: none"> • A control group is used • At least 1 of the following: Equivalent grouping OR equivalent mortality with low attrition OR counterbalancing of change agents. • In the case of inequivalent mortality rates between the conditions – then no significant difference must be reported between the groups
No Evidence (0)	<ul style="list-style-type: none"> • No indication that group equivalence has been considered or met

Table 3

Criteria for Educational/Clinical Significance

Weighting	Criteria
High (3)	<ul style="list-style-type: none"> • Evidence of support seen in all 3 criteria evaluated during the post-test or follow up phases for most of the participants
Medium (2)	<ul style="list-style-type: none"> • Evidence of support seen in 2 out of the 3 criteria evaluated during the post-test or follow up phases for most of the participants
Low (1)	<ul style="list-style-type: none"> • Evidence of support seen in 1 out of the 3 criteria evaluated during the post-test or follow up phases for most of the participants.
No Evidence (0)	<ul style="list-style-type: none"> • None of the criteria met

Table 4

Criteria for Intervention Fidelity

Weighting	Criteria
High (3)	<ul style="list-style-type: none"> • Evidence that strict adherence was followed • At least 2 of the following are present: ongoing supervision for the implementers, coding sessions or recordings used together with the use of a manual (written material detailing precise steps OR formal training with precise details given for implementation) • For interventions given in lesson format, the information should be given to the implementers on a session by session basis • If adaptation occurs detailed descriptions must be given
Medium (2)	<ul style="list-style-type: none"> • Evidence that acceptable adherence was followed • At least 1 of the following are present: use of a manual (written materials giving a broad description of the intervention OR formal or informal training giving a broad overview of the intervention)
Low (1)	<ul style="list-style-type: none"> • Evidence that acceptable adherence was followed • At least one of the following: one of the above described criteria OR use of a manual
No Evidence (0)	<ul style="list-style-type: none"> • No evidence that indicates implementation fidelity

Table 5

Criteria for Follow up assessment

Weighting	Criteria
High (3)	<ul style="list-style-type: none"> • Follow-up assessments conducted out over multiple intervals, with all the original participants and using similar measures to analyse the data for all primary and secondary outcomes
Medium (2)	<ul style="list-style-type: none"> • Follow-up assessments conducted at least once, with the majority of the original participants and using similar measures to analyse primary and secondary outcomes
Low (1)	<ul style="list-style-type: none"> • Follow-up assessments conducted at least once with only some of the original participants
No Evidence (0)	<ul style="list-style-type: none"> • There were no follow-up measures

Table 6

Average WoE A score ranges

Overall Quality	Average Score
High	≥ 2.5
Medium	1.5 – 2.4
Low	≤ 1.4

Table 7

WoE A overall weighting scores for study

Study	Measure	Comparison Group	Educational Clinical Significance	Fidelity	Follow up	Overall WoE A
Cobham et al. (2017)	3	2	2	3	2	2.4
Hiller et al. (2016)	3	2	2	2	0	1.8
Smith et al. (2014)	3	2	2	1	1	1.8
Thirwall et al. (2013)	3	3	3	3	1	2.6
Waters et al. (2009)	2	2	2	1	1	1.6

Appendix F: Weight of evidence B (WoE B): Methodological relevance to the review question

WoE B is a score given in relation to a study’s research design as related to the review question being asked (Gough, 2007). The criteria is derived from evidence hierarchies (Guyatt et al., 2008) that state which research designs are superior to others, and evidence typologies that give suggestions as to which designs are more appropriate for certain studies (Petticrew & Roberts, 2003). Since this is a review of intervention effectiveness Randomized control trials are deemed to be best suited to answer the question, and the WoE B criteria selected mirror this.

Below are the criteria for the studies in this review, each study must meet every part of a section to receive that rating:

Table 1
WoE B Criteria and Weighting table

Weighting	Criteria
High (3)	<ul style="list-style-type: none"> • There is an active control group • Participants are randomly assigned to treatment and control groups through a stringent procedure that is detailed in the study • Pre-, Post- and follow up scores are reported for both the treatment and control groups for the primary outcome measure • The measures used to test effectiveness are very clearly described, giving both reliability and validity information for the primary measures being used <p>(To get this rating a study must meet 3 out of the 4 criteria)</p>
Medium (2)	<ul style="list-style-type: none"> • There is a control group using a waitlist condition • Participants are randomly assigned to the treatment and control groups • Pre- and Post- scores are reported for both the treatment and control groups for the primary outcome measure but no follow-up is conducted • The measures used to test effectiveness are described, giving either reliability OR validity information of the primary measures being used <p>(To get this rating a study must meet 3 out of the 4 criteria)</p>
Low (1)	<ul style="list-style-type: none"> • There is a control group without details given • Participants are not randomly assigned to the treatment and control groups • Pre- and Post- scores are reported • The measures used to test effectiveness are reported <p>(To get this rating a study must meet 3 out of the 4 criteria)</p>

Table 2

Rationale for the criteria used

Criteria	Rationale
Use of control group	Since this review is looking at effectiveness of a particular intervention, studies that have a control group allow for a comparison to be made between what would occur in the absence of the intervention, an active control group is superior to a wait list control group
Random assignment	This is a key tenant of a randomized control trial, which is considered to be a high quality design to measure effectiveness of an intervention (Petticrew & Roberts, 2003)
Reporting of results	The reporting of pre-, post-, and multiple follow-up points for the primary measures
Description of measures	The use of highly reliable and valid measures adds credibility to the research, in that it is measuring what it is stating it is trying to measure and doing so reliably

Table 3

Weight of Evidence B

Study	Overall WoE B
Cobham et al. (2017)	2
Hiller et al. (2016)	2
Smith et al. (2014)	2
Thirwall et al. (2013)	3
Waters et al. (2009)	3

Table 4

Qualitative descriptors of WoE ratings

Overall Quality	Average Score
High	≥ 2.5
Medium	1.5 – 2.4
Low	≤ 1.4

Appendix G

Weight of Evidence C (WoE C)

WoE C is a review question specific weighting, that evaluates a study based on the focus of the review (Gough, 2007)

Table 1

WoE C Criteria and Weighting Table

Weighting	Criteria
High (3)	<ul style="list-style-type: none">• The study specifically looks at the effectiveness of the intervention to bring change to the child's level of anxiety• Children met the DSM IV/V criteria for a primary anxiety disorder• The study has a follow up phase that looks at maintenance of treatment effects• Child Anxiety is the primary focus and outcome measure of the study• Child behaviour measures are used to look at impact of anxiety on behaviour and parent views of behaviour change is measured• A highly structured parent guided CBT intervention is used• The intervention is described which will allow for replication <p>(To meet this weighting a study must satisfy 6 out of the 7 criteria)</p>
Medium (2)	<ul style="list-style-type: none">• The study specifically looks at the effectiveness of the intervention to bring change to the child's level of anxiety• Children meet the DSM IV/V criteria for a primary anxiety disorder• The study has a follow up phase that looks at maintenance of treatment effects• Child Anxiety is the primary focus and outcome measure of the study• Child behaviour measures are used to look at impact of anxiety on behaviour and parent views of behaviour change is measuredA highly structured parent guided CBT intervention is used• The intervention is described which will allow for replication

(To meet this weighting a study must satisfy 4 out of the 7 criteria)

Low (1)

- The study specifically looks at the effectiveness of the intervention to bring change to the child's level of anxiety
- Children meet the DSM IV/V criteria for a primary anxiety disorder
- The study has a follow up phase that looks at maintenance of treatment effects
- Child Anxiety is the primary focus and outcome measure of the study
- Child behaviour measures are used to look at impact of anxiety on behaviour and parent views of behaviour change is measured
- A highly structured parent guided CBT intervention is used
- The intervention is described which will allow for replication

(To meet this weighting a study must satisfy 2 out of the 7 criteria)

No evidence (0)

- There is no evidence that the study meets any of the criteria with regards to the focus of the review
-

Table 2

Rationale for WoE C Criteria

Criteria	Rationale
Focus on study effectiveness	This is the main focus of the review and studies are specifically designed to look at the effectiveness of the intervention align with the review question
Diagnosis	The review seeks to answer whether this intervention is effective for children who have a clinical level of anxiety
Follow-up phase	A follow-up phase indicates whether the intervention maintains treatment gains over time after the intervention has ceased
Primary focus on anxiety	This review is concerned with anxiety and the treatment the condition

Criteria	Rationale
CBT intervention	This review is specifically interested in the effectiveness of a CBT based intervention
Intervention description	A detailed description of the intervention assists replication

Table 3

Weight of Evidence C

Study	WoE C
Cobham et al. (2017)	2
Hiller et al. (2016)	1
Smith et al. (2014)	2
Thirwall et al. (2013)	3
Waters et al. (2009)	3

Table 4

Qualitative descriptors of WoE ratings

Overall Quality	Average Score
High	≥ 2.5
Medium	1.5 – 2.4
Low	≤ 1.4