Case Study 1: An Evidence-Based Practice Review Report

Title: "How effective is parent supported e-CBT in reducing anxiety in children and adolescents? A systematic review and meta-analysis"

1. Summary

While many studies have demonstrated positive outcomes when investigating parental participation in CBT, long waiting lists, geographic reasons and elements associated with anxiety can impede participation in treatment. This systematic literature review and meta-analysis investigates the effectiveness of parent supported internet-delivered CBT in reducing anxiety in children and young people. Parent supported internet delivered CBT consists of either parent and child sessions or only parent sessions. The main goal of the intervention is to educate parents about anxiety and teach them how to support their children through anxiety-provoking situations. The sessions are administered entirely over the internet with minimal therapist support.

Six studies are included in the review with an overall sample of 833 participants, aged between 3-18 of age presenting with anxiety. The quality of the studies was evaluated using Gough's Weight of Evidence (WoE) framework (2007) and applying the Kratochwill (2003) protocol for group design studies to evaluate methodological quality. The results of the systematic review revealed large between-group treatment effect sizes for three studies. The meta-analysis, performed with four studies, suggests that parent supported internet delivered CBT is effective at reducing anxiety symptoms

in children and adolescents (r = 0.44), compared to wait list controls. Finally, the methodological limitations of the studies and suggestions for future research are discussed.

2. Introduction

2.1 Psychological basis of Cognitive Behavioural Therapy

Cognitive Behaviour Therapy (CBT) developed by Beck (1964), emerged through the union of cognitive and behaviour theory. Through working with patients with depression, Dr Aaron Beck found out that his patients had automatic thoughts which fell into three categories: negative thoughts about themselves, their future and the world (Beck, 1976). CBT is based on the cognitive triad of thoughts, behaviour and feelings being interconnected: thoughts affect the way we act and feel, behaviour affects the way we think and feel, and emotions affect what we do and think (Beck, 1976). CBT helps patients to deal with their automatic thoughts by replacing them with more realistic ones and teaching them to respond in more positive ways. It is also necessary to note that CBT does not explain how the problem has been manifested, but its focuses on present symptoms.

CBT is one of the most evidenced psychological treatments with considerable research to support its effectiveness (Reynolds, Wilson, Austin, & Hooper, 2012) in treating anxiety in children and young people. The intervention usually includes psychoeducation, recognition of emotions and behavioural responses, cognitive restructuring, anxiety management strategies such as relaxation, supported with gradual exposure activities and homework exercises (Kendall & Hedtke, 2006). CBT can be delivered in groups or with individuals, with studies demonstrating that active parental participation in therapy can have positive benefits for children from 6 months to 3 years follow up (Walczak, Esbjørn, Breinholst, & Reinholdt-Dunne, 2017). Other

studies have found that CBT is more effective when both children and parents take part in therapy (Cobham, Dadds, Spence, & McDermott, 2010), and some studies have examined parent only CBT therapy for pre-school children (Smith, Flannery-Schroeder, Gorman, & Cook, 2014).

2.2 Parent participation in Internet delivered CBT (ICBT)

Even though many clinical trials have included parents in CBT for children and adolescents with anxiety showing positive results, there are still various issues that hinder participation in treatment. Internet-CBT (ICBT) was developed in response to address the barriers of participation and promote clinical effectiveness. Adding technology to the delivery of CBT, enables clients to access therapy from any geographical area that has internet access (Anderson, 2009; Gratzer & Khalid-Khan, 2016), making ICBT accessible to more populations.

There is a differentiation between ICBT programs and computer-assisted CBT. In ICBT, participants access the modules remotely (Gratzer & Khalid-Khan, 2016) by creating a personal account in a secure online platform (Hedman, Ljótsson, & Lindefors, 2014), and receive minimal online or telephone therapist support. In contrast, computer-assisted CBT incorporates a combination of sessions delivered remotely and sessions delivered in face-to-face meetings through computer software, or sessions delivered only with computer support in face-to-face meetings (Andersons, Jacobs, & Rothbaum, 2004).

Although best practice guidelines in the delivery of CBT through the internet have not been established, ICBT is based either on adaptations of traditional CBT manuals or on newly developed interventions tailored for online use (Anderson & Carbring, 2017; Spence et al., 2008; Morgan et al., 2015). A shared feature of the ICBT programs is

that they adhere to the same structure as in traditional CBT interventions (Anderson & Carbring, 2017). Likewise, the parent supported ICBT reflects the structure of the traditional intervention, and includes modules such as psychoeducation about anxiety, parent strategies for managing childhood anxiety, relaxation strategies, cognitive restructuring, supporting children with gradual exposure, maintenance, booster sessions and planning for the future (Morgan et al., 2015).

In ICBT the parents have a significant role in supporting their children with anxiety and their participation is varied. Some programs fully involve parents and offer the same amount of modules to both children and parents, whereas in other programs parents have minimal involvement and complete fewer modules compared to their children. Furthermore, the amount of time allocated by the therapists in supporting the clients is varied, with some therapists offering only weekly email support (Donovan, Spence, & March, 2012) and/or assistance through automatic emails (Donovan, & March, 2014; March et al., 2009; Spence et al., 2011) to encourage participation and completion of modules.

In addition, the type of support provided by the therapists is asynchronous or synchronous (Anderson & Titov, 2014; Donovan et al., 2012). In asynchronous contact, the therapists engage in delayed interaction with clients through emails and provide feedback on exercises and homework while synchronous contact refers to direct communication through an online chat or telephone.

Finally, even though there is not a consensus on the structure of parent supported ICBT, the main principle of the intervention is that the parents, children and young people are following the same treatment protocols as in face-to-face therapy, with the end goal of improving anxiety in children and adolescents and teaching parents to respond more effectively to their children's anxiety.

2.3 Rationale for the review

The last survey exploring children's and adolescent's mental health reported that 8.1% of children aged 5-19 years had an emotional disorder, and anxiety disorder was the most common with a figure of 7.2% compared to depressive disorders (Sadler et al., 2017). Anxiety disorders that have their onset in childhood often continue into adolescence Essau, Lewinsohn, & Lim, 2018), can have adverse effects on social and academic functioning (de Lijster et al., 2018) and predict other disorders such as substance abuse and depressive symptoms (Bittner et al., 2007). However, despite the negative consequences, many children and young people are unable to access psychological therapies. There is an increased demand on Child and Adolescent Mental Health Services (CAMHS) to provide psychological therapies to children and young people, with data indicating that 150 children per day were turned away from specialist services in the past two years (NSPCC, 2017) because the thresholds for treatment were not met. Moreover, poor emotional wellbeing, such as anxiety, was the most frequent reason for contacting Childline between 2017/18 (NSPCC, 2018).

In recent years, researchers have shown an increased interest in digital mental health interventions, with one meta-analysis suggesting that they have the potential to advance psychological treatment in children (Hollis et al., 2017). Given the importance of involving parents in their children's therapy, implementing internet-delivered

treatment has the potential to improve the accessibility for both parents and their children. Parents often have difficulties attending parental programmes because of job-related, geographic or health related issues which could be addressed by altering the mode of treatment delivery including utilising the internet (Moran, Ghate, & van der Merwe, 2004; Nixon, 2002).

With all the above considered, this review is of particular relevance to educational psychology practice for two reasons. First, educational psychologists have the responsibility of drawing on evidence-based practices that are effective, and one way to achieve this is through critically appraising research evidence to inform practice (HCPC, 2016). Thus, this review can provide evidence about the effectiveness of an intervention and can support decision making when signposting or offering parents and children therapeutic interventions. Second, educational psychologists need to accommodate their practice considering new models of delivery and the evolving context of practice (HCPC, 2016). Likewise, internet-delivered interventions allow educational psychologists to consider whether some populations are more likely to benefit from different methods of delivery.

Therefore, it is crucial to evaluate whether an alternative method of CBT delivered remotely and supported by parents will help to reduce anxiety symptoms in children and adolescents.

Review question:

How effective is parent supported internet-delivered CBT therapy in reducing anxiety symptoms in children and adolescents?

3. Critical Review of the Evidence Base

3.1 Systematic Literature Search

A literature search was implemented (18 to 19th of January 2019) using four electronic databases. The search terms for each database are described in Table one below.

Table 1

Search Terms for Identification of Studies

Science Direct	PsycINFO	Web of Science	PubMed
Internet-delivered and parent and CBT and child and anxiety	Internet-delivered and parent* and CBT or cognitive behaviour and therapy or intervention and child* and anxiety	Internet-delivered and parent* and CBT and child* and anxiety disorder	Internet-delivered and parent* and CBT and child* and anxiety

Note. CBT= Cognitive Behavioural Therapy

The search was adapted to generate articles published in English and in peer reviewed journals. A wildcard using an asterisk (*) was used in search terms to represent responses with more than one endings.

3.2 Selection of studies

The search outlined above generated 68 articles. In addition, seven studies were identified through ancestral search and therefore, 75 records were identified in total. Table three presents the studies included in the review and flowchart one illustrates the identification and screening process of the studies. Please refer to Appendix C (Table 8) and Appendix D (Table 9) for the mapping table and the table of excluded studies respectively.

Table 2

Inclusion and Exclusion Criteria

Study	Inclusion Criteria	Exclusion Criteria	Rationale
1. Methodology	Study employs a RCT with pre and post-intervention measures	Case experimental studies, single case designs, qualitative reviews, systematic reviews and meta-analyses. Studies with no pre and post-intervention measures	A randomised control trial design provide stronger evidence for the effectiveness of interventions
2. Intervention	Internet-delivered CBT where the intervention is delivered entirely remotely through internet	Any other therapeutic intervention, face to face CBT therapy, computer-assisted CBT therapy where the intervention incorporates a combination of sessions delivered remotely and sessions delivered in face-to-face meetings and supported from computer software, or sessions delivered only with computer support in face-to-face meetings	The review aims to explore the effectiveness of Internet-delivered CBT delivered remotely

Study	Inclusion Criteria	Exclusion Criteria	Rationale
3. Population	Children of 0-18 years with an anxiety diagnosis and their parents	The study does not involve children with anxiety No parental participation	The reviews is focusing on individuals up to the age of 18 with anxiety, and their parents
4. Outcomes	Measure of child anxiety	No child anxiety measure	The review question relates to anxiety
5. Language publication	Articles published in English	Articles published in any other language than English	The review author is unable to access resources for translation
6. Publication article	Studies were published in a peer-reviewed journal	The studies were not published in a peer review journal	To ensure the quality of research
7. Reported Data	Reports effect sizes or reports data (SD and M) that allow the calculation of effect sizes	Does not report effect sizes or does not allow the calculation of effect sizes	To enable assessment of the effectiveness of the intervention

Note. RCT= Randomised Controlled Trial, CBT=Cognitive Behaviour Therapy, SD=Standard Deviation, M=Mean

Table 3

References for the Studies included in the Review

References
1. Donovan, C. L., & March, S. (2014). Online CBT for preschool anxiety disorders: A randomised control trial. *Behaviour Research and Therapy, 58, 24–35.*
2. Morgan, A. J., Rapee, R. M., Salim, A., Goharpey, N., Tamir, E., McLellan, L. F., & Bayer, J. K. (2017). Internet-Delivered Parenting Program for Prevention and Early Intervention of Anxiety Problems in Young Children: Randomized Controlled Trial. *Journal of the American Academy of Child and Adolescent Psychiatry, 56 (5), 417- 425.*
3. March, S., Spence, S. H., Donovan, C. L. (2009). The Efficacy of an Internet-based CBT Intervention for Child Anxiety Disorders. *Journal of Paediatric Psychology, 34 (5), 474– 487.*
4. Vigerland, S., Ljótsson, B., Thulin, U., Öst, L. G., Andersson, G., & Serlachius, E. (2016). Internet-delivered cognitive behavioural therapy for children with anxiety disorders: A randomised controlled trial. *Behaviour Research and Therapy, 76, 47–56.*
5. Lenhard, F., Andersson, E., Mataix-Cols, D., Rück, C., Vigerland, S., Högström, J., Serlachius, E. (2017). Therapist-Guided, Internet-Delivered Cognitive-Behavioral Therapy for Adolescents with Obsessive-Compulsive Disorder: A Randomized Controlled Trial. *Journal of the American Academy of Child and Adolescent Psychiatry, 56 (1), 10 -19.*
6. Spence, S. H., Donovan, C. L., March, S., Gamble, A., Anderson, R. E., Prosser, S., Kenardy, J. (2011). A randomised controlled trial of online

versus clinic-based CBT for adolescent anxiety. *Journal of Consulting and Clinical Psychology, 79 (5), 629 – 642.*

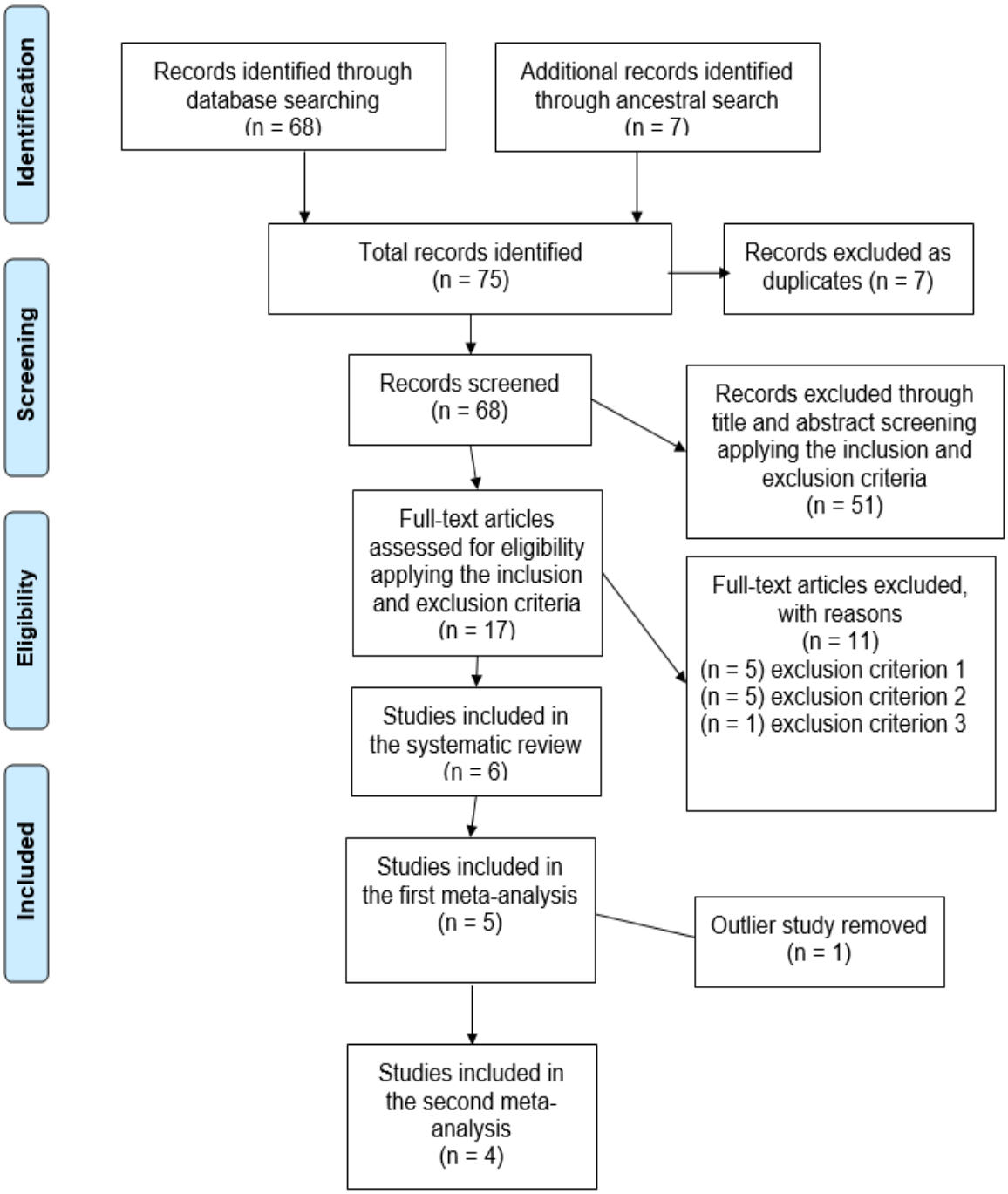


Figure 1. PRISMA Flow Diagram from Moher et al. (2009).

3.3 Weight of Evidence

To assess the studies included in this review, Gough's (2007) weight of evidence framework was applied which evaluates studies based on three criteria: methodological quality (WoE A), methodological relevance (WoE B) and relevance to the review question (WoE C). The weight of Evidence A was assessed using the Kratochwill (2003) coding protocol for group-based designs (see Appendix E). An example of a completed protocol with the rationale of the amendments to the protocol are included in Appendix A and B respectively. The weight of Evidence B was adapted based on the Kratochwill (2003) protocol and per the study methodological relevance (see Appendix F). The weight of Evidence C was determined by the review author using criteria relevant to the review question (see Appendix G). Table 4 presents the summary of Weight of Evidence judgments for each study and across all three criteria of evidence. It also provides the overall weighting of evidence D which is the average of WoE, A, B and C. A study received a high WoE D if a score of 2.5 and above was allocated. For a medium rating, a score of 1.5 to 2.4 was needed and for low, a score of equal to or less than 1.4 was required.

Table 4

Weight of Evidence Judgements across all studies

Research Study	**Methodological Quality (WoE A)**	**Methodological Relevance (WoE B)**	**Relevance to the review question (WoE C)**	**Overall weighting of evidence (WoE D)**
Donovan & March, (2014)	1.75	2	1.75	1.83 (medium)
March, Spence, & Donovan, (2009)	1.75	2	2	1.92 (medium)
Morgan et al. (2017	1.5	2	1.5	1.66 (medium)
Vigerland et al. (2016)	1.5	2	1.5	1.66 (medium)
Lenhard et al. (2017)	2.25	2	2.5	2.25 (medium)
Spence et al. (2011)	2.50	3	1.75	2.42 (medium)

Note. WoE = Weight of Evidence

3.4 Participants' characteristics

Across the six studies, there were 833 participants. Morgan et al. (2017) and Donovan and March (2014) aimed the intervention at preschool children aged 3-6 years. March et al. (2009) and Vigerland et al. (2016) included children aged 7-12 and 8-12 years respectively. Two studies (Lenhard et al., 2017; Spence et al., 2011) aimed the intervention at adolescents between 12 and 18 years.

All studies but one (Lenhard et al., 2017) included participants with a diagnosis of Obsessive-Compulsive Disorder. For three studies, social phobia was the primary diagnosis for the majority of the participants (Donovan, & March, 2014; March et al., 2004; Morgan et al., 2017). One study (Vigerland et al., 2016) reported separation anxiety as the most common primary diagnosis, and Spence et al. (2011) reported Generalised Anxiety Disorder as the most common primary diagnosis.

Five studies had more female participants compared to males, except Lenhard et al. (2017) who reported more males (n=37) compared to female participants (n=30). Overall, across all six studies, there were 445 female participants and 388 male participants. Five studies reported information about parental education and about socio-economic status. Donovan and March (2014) did not provide any information about parental education and socio-economic status. The sample in two studies (March et al., 2009; Spence et al., 2011) was highly educated and from moderate to high socioeconomic status in Australia. The sample used by both studies can raise concerns in terms of the ability to generalise the results to wider populations from different educational and socio-economic backgrounds. Morgan et al.'s (2017) study reported a well-balanced sample in terms of education and socio-economic distribution and Lenhard et al. (2017) provided information only with regards to the parental educational level with 49% of the total sample having a university-level education.

Finally, all six studies conducted a power calculation and were adequately powered. Four studies (Donovan, & March, 2014; Lenhard et al., 2017; Morgan et al., 2017; Spence et al., 2011) used 80% power to estimate the sample size. March et al. (2009) used a power of 95%, and one study (Vigerland et al., 2016) used a power of 50% reporting statistically significant results.

3.5 Study Design

Randomised control trials with an active comparison group received the highest WoEA. Five studies (Donovan, & March, 2014; Lenhard et al., 2017; March et al., 2009; Morgan et al., 2017; Vigerland et al., 2016) were indicated as randomised control trials with a wait-list comparison group and received a lower rating. Spence et al. (2011) employed a randomised control design with three groups (waiting list, internet CBT and clinic CBT) and received the highest rating. This is because using three condition groups, allow researchers to make inferences on whether both the intervention and active control group are significantly different from the delayed treatment.

3.6 Follow up assessments

Studies which conducted follow up assessments at multiple points with all the participants received the highest WoA rating. Five studies (Donovan, & March, 2014; Lenhard et al., 2017; March et al., 2009; Spence et al., 2011, Vigerland et al., 2016) conducted follow up assessments only with the intervention group. The reason for this is that the wait list control was unavailable. One study (Lenhard et al., 2017) noted that the participants on the waiting list had already completed the intervention at follow up and so comparison between the two groups was therefore impossible. Hence all of the

above studies received a low (1) WoA. However, only one study (Morgan et al., 2017) evaluated both groups at 24 weeks follow up with most of the participants included in the analysis. As a result, the study received a medium (2) WoE A for the follow-up assessment criterion. Finally, Spence et al. (2011) completed follow up assessments at two time points post-assessment only with the internet-based treatment and the clinic-based treatment conditions. The wait list control condition was not available at follow up, contributing to a low (1) WoA.

3.7 Measures

Donovan and March (2014) used the Anxiety Disorders Interview Schedule (ADIS) parent version (Silverman & Albano, 1996) to confirm anxiety diagnosis. The Children's Global Assessment Scale -CGAS (Shaffer et al., 1983) was also rated by the clinician to assess the child's level of functioning. The authors did not report the reliability of the ADIS while test-retest reliability of 0.85 was reported for the CGAS. This study therefore received a medium (2) WoE A rating. Morgan et al. (2017), used the parent reported Revised Preschool Anxiety Scale (Edwards, Rapee, Kennedy, & Spence, 2010) as a primary outcome for anxiety without reporting the reliability for this measure, and received a zero WoA for the measure criterion. March et al. (2009), conducted a feasibility trial and did not report on primary and secondary outcomes separately. Therefore, the review author evaluated their results collectively in terms of reliability. The study reported high interrater reliability for the Anxiety Disorders Interview Schedule (Silverman & Albano, 1996) of 1 for the primary diagnosis and an interrater reliability of 0.91 for the Children's Global Assessment Scale (Shaffer et al., 1983). The Spence Children's Anxiety Scale-Child and Parent version (Spence, 1998, 1999) were also used to measure child anxiety with an internal reliability of 0.89 for

the parent reported score and 0.92 for the child reported score. Internalising behaviour was measured using the Child Behaviour Checklist scale (Achenbach & Rescorla, 2001) and the Centre for Epidemiological Studies for Depression Scale (Radloff, 1977) was used to measure depression. However, the authors did not report the reliability outcomes for the above measures. Overall, March et al. (2009) received a medium (2) WoA for the measures criterion. Vigerland et al. (2016) used the Anxiety Disorder Interview Schedule child and parent version (Silverman & Albano, 1996) as a primary outcome. However, the authors did not report the reliability of the measures. This lead to receiving a zero WoA for the measure criterion. Lenhard et al. (2017) employed the Children's Yale-Brown Obsessive Compulsory Scale (Scahill et al., 1997) as the primary outcome measurement with reported interrater reliability of 0.91. The excellent reliability contributed to receiving a high (3) WoE A. Morgan et al. (2017), used the parent reported Revised Preschool Anxiety Scale (Edwards, Rapee, Kennedy, & Spence, 2010) as a primary outcome but did not report the reliability and received a zero WoE A for the measurement criterion. Finally, Spence et al. (2011) reported high reliability for both primary outcomes and received a higher WoA.

3.8 Intervention

Treatment protocols were based on modified versions of online or clinic CBT programs. The BRAVE-ONLINE programme (Spence et al., 2008) was used by three studies (Donovan, & March, 2014; March et al., 2009, Spence et al., 2011). Cool Little Kids (Bayer et al., 2011) was deployed by Morgan et al. (2017) and BiP OCD by Lenhard et al. (2017). One study (Vigerland et al., 2016) used an internet CBT programme which was developed for children with a specific phobia (Vigerland et al.,

2013). Table 5 illustrates the main information of the different interventions extracted from the six studies included in the review.

Table 5

Summary of the treatment protocols across studies

Study	Programme	Child modules	Parent content	Type of support
Donovan, & March, (2014)	BRAVE-ONLINE program (Spence et al., 2008) for primary school students	No child-modules	Six main modules and two booster modules Anxiety psychoeducation Parent strategies for managing childhood anxiety Relaxation strategies Development of an exposure hierarchy	15-30 minutes support towards developing the exposure hierarchy Weekly emails of encouragement and reinforcement
Morgan et al. (2017)	Cool Little Kids (Bayer et al., 2011)	No child-targeted modules	Eight modules Anxiety psychoeducation, graded exposure, contingency management, reducing overprotective behaviours, managing parents' fears and worries	On demand telephone support
March et al. (2009)	BRAVE-ONLINE program	Ten child modules	Seven modules Psychoeducation about fear and	15 min introductory call

Study	Programme	Child modules	Parent content	Type of support
	(Spence et al., 2008)	Anxiety management strategies, relaxation, cognitive restructuring, graded exposure, problem-solving strategies	anxiety, gradual exposure, coping strategies, reward system, problem-solving, maintenance	30 min phone call to support with the exposure Therapist support with homework Automated weekly emails to encourage completion of the sessions
Vigerland et al. (2016)	Intervention developed by the research group (Vigerland et al., 2016) for specific phobia	Four modules Psychoeducation about fear and anxiety, gradual exposure, coping strategies, maintenance	Five modules Psychoeducation about OCD, family accommodation, parental coping strategies, ERP	Telephone calls and online emails to support with exercises and problem solve
Lenhard et al. (2017)	BiP OCD (Lenhard et al. 2017)	12 modules ERP exercises, cognitive strategies, problem-solving and relapse prevention	Five main modules and two booster modules Psychoeducation about anxiety and parent strategies to support their children	Therapist contact through messages or telephone Average therapist contact: 17 minutes per week
Spence et al. (2011)	Brave for Teenagers-ONLINE (Spence et al., 2008)	Ten main and two booster modules Psychoeducation, relaxation, physiological responses to anxiety, cognitive restructuring, graded exposure, problem-solving	Five main and two booster modules Psychoeducation, relaxation, physiological responses to anxiety, cognitive restructuring, graded exposure, problem-solving	Therapist email after each session, automated computer generated emails to encourage session completion

Note. OCD = Obsessive-Compulsive Disorder, ERP = Exposure Response Prevention

3.9 Facilitators

One study used psychology graduates under the supervision of a registered Psychologist (Donovan & March, 2014) and received a low (1) WoB for the facilitator criterion. March et al. (2009) and Spence et al. (2011) did not specify the therapist's qualifications and thus received a zero WoB due to the inability to make judgements on the quality of therapist support. Two studies (Lenhard et al., 2017; Vigerland et al., 2016) received the higher (3) WoB for the facilitators, as they provided online support through qualified CBT therapists with experience. Finally, Morgan et al. (2017) employed a provisionally registered psychologist supervised by an experienced clinical psychologist and received a medium (2) WoB for the facilitator criterion.

3.10 Adherence to treatment

Adherence to treatment was evaluated based on the percentage of participants who completed the online CBT program at post-intervention. Participants across all six studies failed to complete all online sessions at post-treatment. For Vigerland et al. (2016), the review author was unable to make inferences about the percentage of participants who completed all online modules and therefore a zero WoE C was assigned for the study. In one study 13% of participants completed all 6 sessions (Donovan & March, 2014) while in a different study 27% of participants completed all 12 modules (Lehnard et al., 2017). Similarly, Morgan et al. (2017) reported that 24.9% of participants completed all modules. Finally, two studies reported a slightly more significant percentage with 60% of parents and 33% of children completing all main

modules (March et al., 2009) and 66% of parents and 39% of children completing all sessions at post-treatment.

3.11 Inclusion/Exclusion Criteria

Weight of Evidence C was also evaluated in terms of the rigidity of inclusion/exclusion criteria and the child's primary diagnosis. To receive a high rating for WoE C, studies excluded participants who received any other treatment or support during the research program. This is to ensure that the positive effects of the intervention can be attributed only to the intervention and not to factors unrelated to the study (Barker, Pistrang, & Elliott, 2017). Only three studies (Donovan, & March, 2014; March et al., 2009; Lenhard et al., 2017) received the highest (3) WoE C as they excluded participants receiving ongoing treatment and support. Spence et al. (2011) received a medium (2) WoE C as it was unclear whether participants were undergoing other treatment. Morgan et al. (2017) and Vigerland et al. (2016) received the lowest (1) WoE C, as both studies clearly included participants undergoing other treatment.

3.12 Primary diagnosis

A high WoE C was assigned to the studies that confirmed anxiety disorder based on both parent's and children's reports. Three studies (Lenhard et al., 2017; March et al., 2009; Spence et al., 2011) confirmed children's anxiety disorder based on both parent and children reported measures and received the highest (3) WoE C. In contrast, the remaining three studies (Donovan, & March, 2014; Morgan et al., 2017; Vigerland et al., 2016) made inferences about the child's diagnosis based only on parent-reported measures. Donovan and March (2014) and Morgan et al. (2017) aimed the intervention at children aged 3-6 years of age and therefore it could be argued that it

was not feasible to obtain the child's views about their symptoms due to limited self-reflection. However, observing the child could have helped to overcome the risk of including children with ASD where the comorbidity with anxiety is around 39.6% (Vasa & Mazurek, 2015).

3.13 Effect size calculations and findings

Effect sizes were reported to the outcomes relevant to this review, e.g. focusing on the measures reporting on clinician's, parent's and children's views. Only pre and post measures were reported due to missing follow up data for the waiting list control group from the majority of the studies. The effect sizes were extracted from five studies (Donovan & March, 2014; Lenhard et al., 2017, March et al., 2009; Spence et al., 2011; Vigerland et al., 2016). For Morgan et al. (2017) the Campbell Collaboration calculator was used to calculate the effect size (Cohen's d), using the mean and standard deviations reported at post assessment. Table 6 summarises the effect sizes across the six studies for the outcomes relevant to this review. Cohen's (1988) descriptors of effect sizes were used to categorise results as: small (0.2), medium (0.5) or large (0.8).

Table 6

Effect sizes for Cohen's d and Pearson's Coefficient r at Pre-Post (between groups comparison)

Study	**Sample**	**Measure**	**Pre-post Cohen's d effect size (ICBT vs WLC)**	**Cohen's d Descriptor**	**WoE D**
Donovan, & March (2014)	N=52	CSR	0.92 (r = 0.42)	large	2.03 (medium)
		CBCL	0.85 (r = 0.39)	large	
		PAS-P	0.77 (r = 0.36)	medium	
Morgan et al. (2017)	N = 433	PAS-R	-0.2069 (r = -0.11)	small	1.66 (Medium)
		SDQ	-0.18 (r = -0.08)	small	
March et al. (2009)	N = 73	CSR	0.56 (r = 0.27)	medium	1.92 (Medium)
		SCAS-P	0.31 (r = 0.15)	small	
		CBCL	0.56 (r = 0.27)	medium	
Vigerland et al. (2016)	N = 93	CSR	1.66 (r = 0.64)	large	1.66 (Medium)
		SCAS-C	-0.01 (r = -0.00)	small	
		SCAS-P	0.45 (r = 0.22)	small	
Lenhard et al. (2017)	N = 67	CY-BOCS	0.69 (r = 0.37)	medium	2.25 (Medium)
		SCAS-C	0.27 (r = 0.13)	small	

Study	Sample	Measure	Pre-post Cohen's d effect size (ICBT vs WLC)	Cohen's d Descriptor	WoE D
		SCAS-P	0.67 (r = 0.32)	medium	
Spence et al.(2011)	N = 115	CSR	-1.45 (r = -0.58)	large	2.42 (Medium)
		SCAS-C	0.00 (r = 0.00)	no effect	
		SCAS-P	-0.22 (r = -0.10)	small	
		CBCL	-0.48 (r = -0.23)	small	

Note. CSR= Clinical Severity Rating, CGAS=Children's Global Assessment Scale, PAS-R=Revised Preschool Anxiety Scale, SDQ= Strengths and Difficulties Questionnaire, SCAS C/P=Spence Anxiety Scale Children/Parent, CY-BOCS=Children's Yale-Brown Obsessive Compulsory Scale, CBCL=Child Behaviour Checklist, YSR= Youth Self-Report, ICBT=Internet Cognitive Behavioural Therapy intervention, WLC=Waiting List Control, WoE D=Weight of Evidence D.

Three studies (Donovan & March, 2014; Spence et al., 2011; Vigerland et al., 2017) reported a large effect size and two studies (Lenhard et al., 2017; March et al., 2009) a medium effect size for the primary outcome of the anxiety diagnosis. Morgan et al. (2017) reported a small effect size for the primary outcome of the Revised Preschool Anxiety Scale completed by the parents. The studies that reported a large effect size provide supporting evidence for the positive effect of parent supported internet delivered CBT. Donovan & March (2014), showed that internet delivered CBT for pre-schoolers delivered by parents resulted in a significant improvement in the clinical severity of anxiety. However, the authors made inferences about the anxiety diagnosis solely based on parental reports, without collecting information from other sources. Spence et al., (2011) is the only study included in the review which employed a multiple

group design study leading to a higher methodological quality. The authors found a significant reduction of anxiety diagnosis at post assessment for the active conditions compared to wait list control group. These results were maintained for both groups at 6 and 12 months follow up. However, the study included parents with high socio-economic status, which raises questions about the generalizability of results. Vigerland et al., (2016) reported significant reductions in the clinical diagnosis of anxiety at post-treatment, but the researcher bias could have potentially affected the improvement. Finally, Lenhard et al's. (2017) study revealed a medium effect size but received a higher WoE D compared to Vigerland et al. (2016) and Donovan and March (2014). The authors (Lenhard et al., 2017) found a significant reduction for the symptoms of OCD as rated by the clinicians, young people and parents, with results maintained at 3 months follow-up.

3.14 Meta-analysis

A meta-analysis was conducted on the Meta - essentials package (Suurmond, van Rhee, & Hak 2017) applying a random-effects method. Five studies that used participants' diagnosis as a primary outcome rated by the clinician, were included in the meta-analysis. Spence et al. (2011) used a multiple group design study, and four studies (Donovan & March, 2014; Lenhard et al., 2017; March et al., 2009; Vigerland et al., 2016) used a two-group comparison study. To facilitate the comparison across all studies, the two relevant comparison groups (wait list and clinic delivered CBT) from Spence et al. (2011) were combined to create a single-pair wise comparison group (Higgins & Green, 2011). To combine the groups, the standard deviation for each group was calculated by applying the following equation:

$$SD = SE \times \sqrt{N}$$

Where SD= Standard Deviation multiplied by the square root of N=sample size (Higgins & Green, 2011). Next, the overall mean and total standard deviation was calculated for the combined groups by applying the formula indicated in table 7.

Table 7

Formula for combining groups extracted from Cochrane Collaboration handbook (Higgins & Green, 2011).

	Group 1 WCLC	**Group 2 CLIN**	**Combined groups**
Sample size	27	44	$N_1 + N_2$
Mean	5.50	4.8	$\frac{N_1M_1 + N_2M_2}{N_1 + N_2}$
SD	1.76	1.78	$\sqrt{\frac{(N_1 - 1)SD_1^2 + (N_2 - 1)SD_2^2 + \frac{N_1N_2}{N_1 + N_2}(M_1^2 + M_2^2 - 2M_1M_2)}{N_1 + N_2 - 1}}$

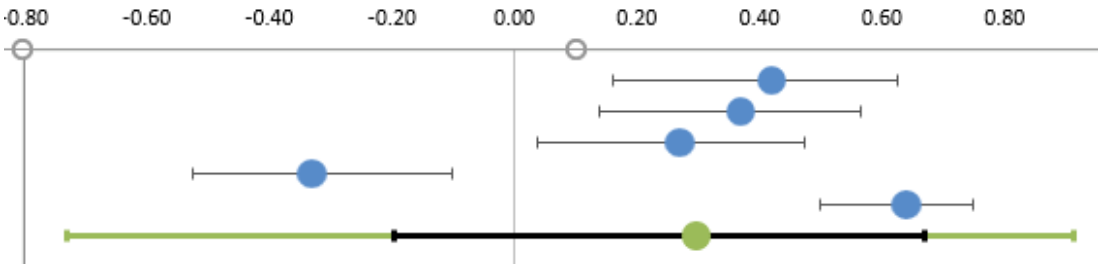
Note. WLC=Waiting list control, CLIN=Clinic intervention

The effect size between the internet-based group and the new group was calculated using the Campbell Collaboration calculator for means and standard deviations Cohen's d effect size. Finally, Cohen's d effect size was converted into Pearson correlation coefficient r to facilitate the meta-analysis on correlational data. The meta-

analysis revealed a small non-statistically significant combined effect (r= 0.30) for the primary outcome of the anxiety diagnosis (Figure 2 for forest plot).

Figure 2

Forest Plot of effect sizes at post treatment



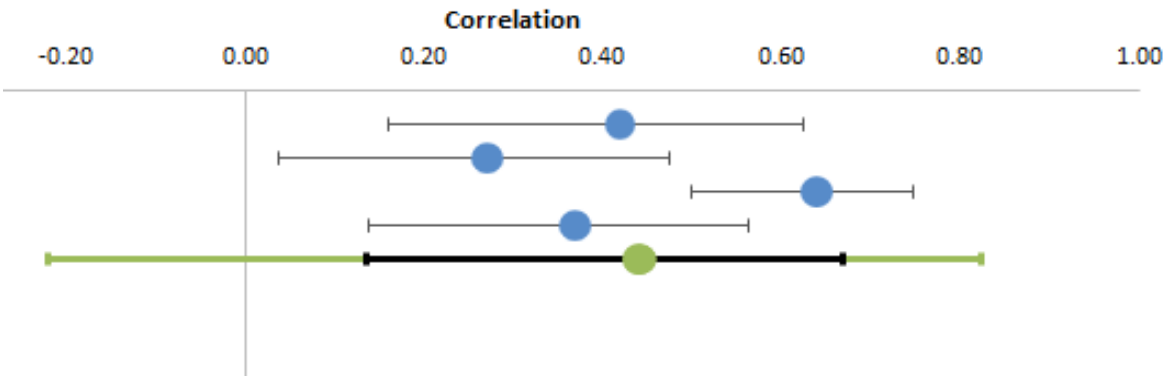
Donovan & March (2014)	0.42	(0.16, 0.63)	19.43%
March et al. (2009)	0.27	(0.04, 0.47)	20.10%
Vigerland et al. (2016)	0.64	(0.50, 0.75)	20.46%
Lenhard et al. (2017)	0.37	(0.14, 0.56)	19.95%
Spence et al. (2011)	-0.33	(-0.53, -0.10)	20.05%

As it can been seen in Figure 2, a small combined effect size of 0.30 was found (95%CI -0.19, 0.67) which was not statistically significant (z = 1.61, p = 0.091) and a high heterogeneity (I^2 = 91.37%).

A second meta-analysis was conducted removing the study of Spence et al. (2011), as its effect size appears to deviate from the other observations. The new meta-analysis (Figure 3 for forest plot) indicated a medium combined effect of 0.44 (95%CI 0.14, 0.67) which was statistically significant (z = 4.47, p = 0.000), and a substantial heterogeneity (I^2 = 71.15%) was observed.

Figure 3

Forest plot of the four studies



Donovan & March (2014)	(0.42, 0.16)	0.63	22.70%
March et al. (2009)	(0.27, 0.04	0.47	25.42%
Vigerland et al. (2016)	(0.64, 0.50)	0.75	27.11%
Lenhard et al. (2017)	(0.37, 0.14)	0.56	24.77%

4. Conclusions and Recommendations

4.1 Conclusions

The current systematic review and meta-analysis assessed the effectiveness of parent supported internet delivered CBT therapy in children and young people aged 3-18 years. Even though the systematic review indicated promising results, the methodological quality of the studies needs to be considered when interpreting the findings. All studies under review received a medium overall WoE D. Three studies found a large effect size and two a medium effect size. Donovan and March (2014),

reported a significant large treatment effect size for the Clinical Severity Rating (CSR) scale of anxiety. However, they evaluated a primary school online intervention with pre-schoolers without making any significant adaptations to the program. Therefore, more research is needed to make inferences about the program effectiveness with pre-schoolers and their parents (Donovan & March, 2014). A second study found a large effect size for the primary diagnosis of anxiety (Vigerland et al., 2017), yet the study authors did not follow an allocation treatment procedure and the assessors were aware of the group allocation. Thus, the selection bias might have affected the results. Spence et al. (2011) reported a large effect size for the internet condition indicating a decrease in the CSR compared to the waiting list control. However, the study authors did not indicate whether they excluded participants who were receiving ongoing psychological therapy which might have contributed to their improvement. Moreover, in all studies the participants failed to complete all the online modules and it would be important to take this into consideration when making inferences about the effectiveness of the intervention.

The meta-analysis performed with the four studies revealed a positive medium effective size in favour of the internet delivered CBT supported by the parents (r= 0.44). This shows promising results for the intervention compared to wait list control for reducing anxiety in children and adolescents. However, the heterogeneity was substantial ($I^2 = 71.15\%$).

4.2 Limitations of the review

One major drawback is the age range of the selected sample. Specifically, as Rapee, Schniering and Hudson, (2009) have stated, parental participation in CBT can be affected by the child's age and as one study has revealed adolescents might benefit

less form parental support (Rappe et al., 2009; Barret, 1996). In all studies under review, parents received parental psychoeducation about anxiety and supported their children during gradual exposure. However, the level of support varied between studies. Two studies were entirely parent-led, one study was parent-led with children receiving only four modules (Vigerland et al., 2017), and two studies were parent supported (Lenhard et al., 2017; Spence et al., 2011) with adolescents receiving more modules. Second, both meta-analyses indicated an important heterogeneity across studies. One way to address heterogeneity is by conducting a moderator analysis which was not the aim of this review. Clinical factors could have accounted for the heterogeneity, e.g. level of parental support, participants' age and the number of completed modules (Higgins & Green, 2011).

4.3 Recommendations about future research

Follow up data were not reported as part of this review as in four studies the researchers did not compare the wait-list with the internet group. This is because the wait list control had already received the intervention at the time of follow up comparison. Given the findings of this study, there is an essential need for rigorous randomised trials that employ two active treatments or a multiple group design, to investigate further the long term effectiveness of internet-delivered CBT therapy supported by parents. Moreover, even though employing a waiting list control design is regarded as ethical approach to conducting randomised controlled trials because all participants receive treatment (Cunningham, Kypri, & Cambridge, 2013), yet it cannot entirely mitigate ethical risks. It can be unethical to delay treatment in cases when participants suffer from mental health issues that need prompt treatment. Based on this argument, one way to mitigate the risk of delaying the treatment to participants

could be the inclusion of pre-screening measures assessing the severity of symptoms. Four studies (Donovan, & March, 2014; Lenhard et al., 2017; Vigerland et al., 2016; Spence et al., 2011) excluded participants with a comorbid psychiatric disorder, where the intervention could be inappropriate and perhaps delaying the treatment could have caused more harm than benefits.

Also, internet-delivered CBT should be examined with more diverse populations as research evidence suggests that socio-economic disadvantage is a risk factor for anxiety (Sadler et al., 2017; Shanahan et al., 2008)**.**

It would also be essential to evaluate the cost-effectiveness of parent participation in internet-delivered CBT therapy. This might help to address the issue of accessibility to psychological therapies for children, young people and their families which is of paramount importance in the current climate of the high prevalence of mental health issues and long waiting lists for treatment. Educational Psychologists (EPs) could have an active role in evaluating parental interventions to support children and young people's mental health, in light of the Mental Health green paper (DfE & DfH; 2017) which proposed more research to support families with vulnerable young children was needed.

Finally, even though parent participation in internet delivered CBT provides promising evidence, EPs should be clear that there are some methodological limitations such as: the number of completed modules and amount of parental support, which will need to be taken into account when decision making regarding intervention and effectiveness.

References

Achenbach, T. M. (1991). *Manual for the child behaviour checklist 4-18 and 1991 profile.* Burlington, VT: Department of Psychiatry: University of Vermont.

Anderson, P., Jacobs, C., & Rothbaum, B. O. (2004). Computer-supported cognitive behavioral treatment of anxiety disorders. *Journal of Clinical Psychology, 60* (3), 253-267.

Andersson, G., Carlbring, P., Berger, T., Almlöv, J., Cuijpers, P. (2009). What makes Internet therapy work? *Cognitive Behavioural Therapy 38 (1), 55-60.*

Andersson G., & Titov, N. (2014). Advantages and limitations of Internet-based interventions for common mental disorders. *World Psychiatry, 13 (1), 4-11.*

Andersson, G., Carlbring, P., & Hadjistavropoulos, H. D. (2017). Chapter 21—Internet-based cognitive behavior therapy. In S. G. Hofmann & G. J. G. Asmundson (Eds.). *The science of cognitive behavioural therapy* (pp. 531–549). San Diego, CA: Academic Press.

Barker, C., Pistrang, N., & Elliott, R. (2017). *Research methods in clinical psychology: An introduction for students and practitioners*. Chichester, UK: Wiley – Blackwell.

Barrett P. M, Dadds, M. R, & Rapee, R. M. (1996). Family treatment of childhood anxiety: a controlled trial. *Journal of Consulting and Clinical Psychology, 64* (2), 333-342.

Bayer, J. K., Rapee, R. M., Hiscock, H., Ukoumunne, O. C., Mihalopoulos, C., Clifford, S., & Wake, M. (2011). The Cool Little Kids randomised controlled trial: Population-level early prevention for anxiety disorders. *Bio Medical Central Public Health*, *11 (11), 2-9.*

Beck, J. S. (1964).*Cognitive Therapy: Basics and Beyond.* New York: Guildford Press.

Beck, A. T. (1976). *Cognitive Therapy and the Emotional Disorders.* New York: Penguin.

Bittner A, Egger H. L, Erkanli A, Costello E. J, Foley D. L, & Angold A. (2007). What do childhood anxiety disorders predict? *Journal of Child Psychology and Psychiatry. 48 (12), 1174-1183.*

Cobham, V. E, Dadds, M.R, Spence, S. H, & McDermott, B. J. (2010). Parental anxiety in the treatment of childhood anxiety: A different story three years later. *Clinical Child and Adolescent Psychology. 39 (3), 410 - 420.*

Cook, T. D., & Cambell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings.* Chicago: Rand-McNally.

Cunningham, J. A., Kypri, K., & McCambridge, J. (2013). Exploratory randomized controlled trial evaluating the impact of a waiting list control design. *BMC Medical Research Methodology, 13 (1) 150-151.*

De Lijster, J. M., Dieleman, G. C., Utens, E. M. W. J., Dierckx, B., Wierenga, M., Verhulst, F. C., & Legerstee, J. S. (2018). Social and academic functioning in adolescents with anxiety disorders: A systematic review. *Journal of Affective Disorders,* 230, *108-117.*

Department of Health and Department for Education (2017). *Transforming children and Young People's Mental Health Provision: a Green Paper. DfH and DfE.*

Donovan, C., Spence, S., & March, S. (2013). Using new technologies to deliver cognitive behaviour therapy with children and adolescents. In P. Graham & S. Reynolds (Eds.), *Cognitive Behaviour Therapy for Children and Families* (Cambridge Child and Adolescent Psychiatry, pp. 351-370). Cambridge: Cambridge University Press.

Donovan, C. L., & March, S. (2014). Online CBT for preschool anxiety disorders: A randomised control trial. *Behaviour Research and Therapy, 58, 24–35.*

Edwards, S. L., Rapee, R. M., Kennedy, S. J., & Spence, S. H. (2010). The assessment of anxiety symptoms in preschool-aged children: the Revised Preschool Anxiety Scale. *Journal of Clinical Child and Adolescent Psychology, 39 (3), 400-409.*

Essau, C. A., Lewinsohn, P. M. & Lim, J. X. (2018). Incidence, recurrence and comorbidity of anxiety disorders in four major developmental stages. *Journal of Affective Disorders, 228 (1), 248-253.*

Gellatly, J., Bower, P., Hennessy, S., Richards, D., Gilbody, S., & Lovell, K. (2007). What makes self-help interventions effective in the management of depressive symptoms? Meta-analysis and meta-regression. *Psychological Medicine, 37 (9) 1217–1228.*

Gough, D. (2007). Weight of evidence: A framework for the appraisal of the quality and relevance of evidence. *Research Papers in Education, 22 (2) 213-228.*

Gratzer, D., & Khalid-Khan, F. (2016). Internet-delivered cognitive behavioural therapy in the treatment of psychiatric illness. *Canadian Medical Association Journal, 188* (4), 263-272.

Health & Care Professions Council (2016). Standards of Conduct, Performance and Ethics. HCPC: London. Available at www.hcpc-uk.org

Hedman, E., Ljotsson, B., Lindefors, N. (2012) Cognitive behaviour therapy via the Internet: a systematic review of applications, clinical efficacy and cost effectiveness. *Expert Review Pharmacoeconomic Outcomes Research, 12 (6) 745-764.*

Higgins, J.P.T, & Green, S. (2011). *Cochrane Handbook for Systematic Reviews of Interventions.* Cochrane Collaboration. Retrieved from www.handbook.cochrane.org.

Hollis, C., Falconer, C. J., Martin, J. L., Whittington, C., Stockton, S., Glazebrook, C., & Davies, E., B. (2017). Annual Research Review: Digital health interventions for children and young people with mental health problems – a systematic and meta-review. *Journal of Child Psychology and Psychiatry and Allied Disciplines. Blackwell Publishing.*

Kendall, P. C, & Hedtke, K. A. (2006). *Cognitive-Behavioural Therapy for Anxious Children: Therapist Manual.* Ardmore, PA: Workbook Publications.

Kratochwill, T., Fuchs, L., Abidin, D., Hughes, J., Batch, G., Keith, T., & Strein, W. (2003). *Task Force on Evidence-Based Interventions in School Psychology.* Procedural and Coding Manual.

March, S., Spence, S. H., Donovan, C. L. (2009). The Efficacy of an Internet-based CBT Intervention for Child Anxiety Disorders. *Journal of Paediatric Psychology, 34 (5), 474– 487.*

Moran, P., Ghate, D., & van der Merwe, A. (2004). What Works in Parenting Support? *London: Department for Education and Skills*.

Morgan A. J., Rapee R. M., Tamir E., Coharpey, N., Salim, A., McLellan, L.F. (2015). Preventing anxiety problems in children with Cool Little Kids Online: study protocol for a randomised controlled trial. *Trials, 16 (5) 507 – 424.*

Moher, D, Liberati A., Tetzlaff, J., & Altman, D. G. (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *The PRISMA Group. PLoS Medical 6 (7)*.

Nixon, R. (2002). Treatment of behaviour problems in pre-schoolers: A review of parent training programs. *Clinical Psychology Review 22, 525-546.*

NSPCC (2018). The Courage to Talk. *Childline annual review 2017/18*. Retrieved from https://learning.nspcc.org.uk/research-resources/childline-annual-review/

Pine, D., Cohen, P., & Gurley, D. (1998). The risk for early adulthood anxiety and depressive disorders in adolescents with anxiety and depressive disorders. *Archives General Psychiatry, 55, 56 - 64.*

Pine, D. S., & Klein, R. G. (2008). Anxiety disorders. In M. Rutter, D. Bishop, D. Pine, S. Scott, J. Stevenson, E. Taylor, A. Thapar (Eds.), *Rutter's child and adolescent psychiatry* (5th edition, pp. 628–648). London: Blackwell.

Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1 (3), 385–401.*

Rapee, R. M, Schniering, C. A, & Hudson, J. L. (2009). Anxiety disorders during childhood and adolescence: origins and treatment. *Annual Review Clinical Psychology, 5, 311- 41.*

Reynolds, S., Wilson, C., Austin, J., & Hooper, L. (2012). Effects of psychotherapy for anxiety in children and adolescents: a meta-analytic review. *Clinical Psychology Review. 32 (4) 251 - 62.*

Sadler, K., Vizard, T., Ford, T., Goodman, A., Goodman, R., & Mcmanus, S. (2017). *Mental Health of Children and Young People in England: Trends and characteristics.* NHS Digital.

Scahill, L., Riddle, M.A., McSwiggin-Hardin, M., Ort, S.I., King, R. A, Goodman, W.K., Cicchetti, D., & Leckman, J.F. (1997). Children's Yale – Brown Obsessive Compulsive Scale: reliability and validity. Journal of the American Academy of Child and Adolescent Psychiatry 36 (6), 844– 852.

Shaffer, D., Gould, M. S., Brasic, J., Ambrosini, P., Fisher, P., Bird, H. & Aluwahlia, S. (1983). A children's global assessment scale (CGAS). *Archives of General Psychiatry, 40 (11), 1228-31.*

Silverman, W. K., & Albano, A. M. (1996). *The anxiety disorders interview schedule for DSM-IV: Child and parent versions.* San Antonio, TX: The Psychological Corporation.

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

Spence, S. H. (1998). A measure of anxiety symptoms among children. *Behaviour Research and Therapy, 36 (5), 545–566.*

Spence, S. H. (1999). *Spence children's anxiety scale* (parent version). Brisbane: University of Queensland.

Spence, S. H., Donovan, C. L., March, S., Gamble, A., Anderson, R., Prosser, S., Kenardy, J. (2008). Online CBT in the treatment of child and adolescent anxiety disorders: Issues in the development of BRAVE-ONLINE and two case illustrations. *Behavioural and Cognitive Psychotherapy, 36* (4), 411-430.

Spence, S. H., Donovan, C. L., March, S., Gamble, A., Anderson, R. E., Prosser, S., Kenardy, J. (2011). A randomised controlled trial of online versus clinic-based CBT for adolescent anxiety. *Journal of Consulting and Clinical Psychology, 79 (5), 629 – 642.*

Suurmond, R., van Rhee, H., & Hak T. (2017). Introduction, comparison and validation of *Meta-Essentials*: A free and simple tool for meta-analysis. *Research Synthesis Methods,* 8 (4), 537-553.

Vasa R. A., & Mazurek M. O. (2015). An update on anxiety in youth with autism spectrum disorders. *Current Opinion in Psychiatry, 28 (2), 83–90.*

Vigerland, S., Thulin, U., Ljótsson, B., Svirsky, L., Öst, L. G., Lindefors, N., & Serlachius, E. (2013). Internet-Delivered CBT for Children with Specific Phobia: A Pilot Study. *Cognitive Behaviour Therapy, 42 (4), 303 - 314.*

Walczak, M., Esbjørn, B.H., Breinholst, S., & Reinholdt-Dunne M. L. (2017). Parental Involvement in Cognitive Behavior Therapy for Children with Anxiety Disorders: 3-Year Follow-Up. *Child Psychiatry Human Development 48, 1573-3327.*

Appendix A – Coding Protocol

Coding Protocol: Group-Based Design Procedural and Coding Manual

Domain: School- and community-based intervention programs for social and:

Behavioural problems

Academic intervention programs

X Family and parent intervention programs

School- wide and classroom-based programs

Comprehensive and coordinated school health services

Name of Coder(s): Date: 20/1/2019

Full Study Reference in APA format: Donovan, C. L., & March, S. (2014). Online CBT for preschool anxiety disorders: A randomised control trial. *Behaviour Research and Therapy*, *58*, 24–35.

Intervention Name (description from study): Investigation of efficacy of an internet based, therapy assisted and parent focused CBT program from pre-schoolers with anxiety

Type of Publication:

Book

Monograph

X Journal article

Book chapter

I. General Characteristics

A. General Design Characteristics

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

A1.1 **X** Completely randomized design

A1.2 Randomized block design (between-subjects variation)

A1.3 Randomized block design (within-subjects variation)

A1.4 Randomized hierarchical design

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

A3.1 Very low (little basis)

A3.2 Low (guess)

A3.3 Moderate (weak inference)

A3.4 High (strong inference)

A3.5 **X** Very high (explicitly stated)

A3.6 N/A

A3.7 Unknown/unable to code

B. Type of Program (select one)

C1. □ Universal prevention program

C2. □ Selective prevention program

C3. □ Targeted prevention program

C4. **X** Intervention/Treatment

C5. Unknown

D. Stage of the Program (select one)

D1. □ Model/demonstration programs

D2. **X** Early stage programs

D3. □ Established/institutionalized programs

D4. □ Unknown

E. Concurrent or Historical Intervention Exposure (select one)

E1. Current exposure

E2. Prior exposure

E3. **X** Unknown

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

(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.

A1.1 **X** Yes

A1.2 □ No

A1.3 □ Unknown/unable to code

A2. Multi-method (select one of the following)

A2.1 Yes

A2.2 **X** No

A2.3 □N/A

A2.4 □Unknown/unable to code

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

A3.1 **X** Yes

A3.2 □ No

A3.3 □ N/A

A3.4 □ Unknown/unable to code

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

A5.1 □ Yes validated with specific target group

A5.2 □ In part, validated for general population only

A5.3 □ No

A5.4 **X** Unknown/unable to code

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

B. Comparison Group

B1. Type of Comparison Group (select one of the following)

B1.1 Typical contact

B1.2 Typical contact (other) specify:

B1.3 □ Attention placebo

B1.4 □ Intervention elements placebo

B1.5 □ Alternative intervention

B1.6 □ Pharmacotherapy B1.1

B1.7 □ No intervention

B1.8 **X** Wait list/delayed intervention

B1.9 □ Minimal contact

B1.10 □ Unable to identify comparison group

Rating for Comparison Group (select 0, 1, 2, or 3): 2

Evidence of low attrition:

At 6-month follow-up: 73.9% completed the assessments and

56.5% completed the questionnaire assessments.

Evidence of Random assignment

B2. Overall confidence rating in judgment of type of comparison group (select one of the following)

B2.1 Very low (little basis)

B2.2 Low (guess)

B2.3 Moderate (weak inference)

B2.4 High (strong inference)

B2.5 **X** Very high (explicitly stated)

B2.6 Unknown/Unable to code

B3. Counterbalancing of Change Agents (answer B3.1 to B3.3)

B3.1 By change agent

B3.2 **X** Statistical

B3.3. Other

B4. Group Equivalence Established (select one of the following)

B4.1 **X** Random assignment

B4.2 Posthoc matched set

B4.3 Statistical matching B4.4 Post hoc test for group equivalence

B5. Equivalent Mortality (answer B5.1 through B5.3)

B5.1 Low Attrition (less than 20% for Post)

B5.2 **X** Low Attrition (less than 30% for follow-up)

B5.3 Intent to intervene analysis carried out Findings:

D. Educational/Clinical Significance Outcome

Outcome Variables:	**Pretest**	**Posttest**	**Follow up**
D1. Categorical Diagnosis Data.	Diagnostic information regarding inclusion into the study presented: Yes	Positive change in diagnostic criteria from pre to posttest: Yes	Positive change in diagnostic criteria from posttest to follow up: Yes
D2. Outcome Assessed via continuous Variables.		Positive change in percentage of participants showing clinical improvement from pre to posttest: Yes	Positive change in percentage of participants showing clinical improvement from posttest to follow up: Yes
D3. Subjective Evaluation: The importance of behavior change is evaluated by individuals in direct contact with the participant.	Importance of behavior change is evaluated: Yes	Importance of behavior change from pre to posttest is evaluated positively by individuals in direct contact with the participant: Unknown	Importance of behavior change from posttest to follow up is evaluated positively by individuals in direct contact with the participant: Unknown
D4. Social Comparison: Behaviour of participant at pre, post, and follow up is	Participant's behaviour is compared to normative data	Participant's behaviour has improved from pre to posttest when	Participant's behavior has improved from posttest to follow up

compared to normative data (e.g., a typical peer).	No	compared to normative data: No	when compared to normative data: Yes No

Rating for Educational/Clinical Significance (select 0, 1, 2, or 3): 2

I. Follow Up Assessment

Timing of follow up assessment: specify___6 months_____

Number of participants included in the follow up assessment: 30

Consistency of assessment method used: same methods of analysis were used_____

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

III. Other Descriptive or Supplemental Criteria to Consider

A. External Validity Indicators

A1. Sampling procedures described in detail yes

Specify rationale for selection: ___anxiety diagnosis

Specify rationale for sample size: __power analysis was conducted

A1.1Inclusion/exclusion criteria specified yes

A1.2 Inclusion/exclusion criteria similar to school practice no

A1.3 Specified criteria related to concern yes

A3. Details are provided regarding variables that:

A3.1 Have differential relevance for intended outcomes yes

Specify: _____demographics_____

A3.2 Have relevance to inclusion criteria yes

Specify: _____anxiety diagnosis_____

A4. Receptivity/acceptance by target participant population (treatment group)

Participants from Treatment Group	**Results (What person reported to have gained from participation in program)**	**General Rating Participants**
Child	**Unknown**	Participants reported benefiting overall from the intervention Participants reported not benefiting overall from the intervention
Parent	**Very satisfied with the online program at 12 weeks**	Participants reported benefiting overall from the intervention Participants reported not benefiting overall from the intervention

A5. Generalization of Effects:

A5.1 Generalization over time

A5.1.1 Evidence is provided regarding the sustainability of outcomes after intervention is **terminated no**

A5.1.2 Procedures for maintaining outcomes are specified **no**

A5.2 Generalization across settings

A5.2.1 Evidence is provided regarding the extent to which outcomes are manifested in contexts that are different from the intervention context **no**

A5.2.2 Documentation of efforts to ensure application of intervention to other settings **yes**

No

A5.2.3 Impact on implementers or context is sustained **yes or no**

E. Program Implementer

E8. Other

E9. Unknown/insufficient information provided

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

Unknown

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

H. Cost Analysis Data (select G1 or G2)

H1. **Unknown/insufficient information provided**

H2. Information provided (if information is provided, answer H2.1)

H2.1 Estimated Cost of Implementation:_____

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

I1. Simple orientation given to change agents

I2. Training workshops conducted

# of Workshops provided _____ Average length of training _____

Who conducted training (select all that apply)

I2.1 Project Director

I2.2 Graduate/project assistants

2.3 Other (please specify):

I2.3 Unknown

I3. Ongoing technical support

I4.Program materials obtained

I5. Special Facilities

I6. Other (specify):

J. Feasibility

J1. Level of difficulty in training intervention agents (select one of the following)

J1.1 High

J1.2 Moderate

J1.3 Low

J1.4 Unknown

J2. Cost to train intervention agents (specify if known): _____

J3. Rating of cost to train intervention agents (select one of the following)

J3.1 High

J3.2 Moderate

J3.3 Low

J3.4 Unknown

Summary of Evidence for Group-Based Design Studies

Indicator	Overall Evidence Rating NNR = No numerical rating or 0 - 3	Description of Evidence Strong Promising Weak No/limited evidence or Descriptive ratings
Measurement	**2**	**promising**
Comparison Group	**2**	**promising**
Follow up assessment	**1**	**weak**
Clinical significance	**2**	**promising**

Appendix B-Items removed from the Kratochwill (2003) coding protocol

The following table outlines the sections removed from the coding protocol, along with the reasons for removal.

Table 10

Items removed from the Coding Protocol

Section Removed	**Rationale**
B. (B1-B6) Statistical Treatment/Data Analysis	Statistical analysis was cover on the mapping the field table
B7. Coding and B8. Interactive process	The studies included does not report on qualitative data
C. Primary/Secondary Outcomes are statistically significant	Covered on the mapping the field table
E. Identifiable components	No identifiable components reported
F. Implementation fidelity	This is covered in WoEC
G. Replication	Not the aim of this review
A2. Participants characteristics	Specified on the mapping the field table
D. Dosage response	Not applicable to the selected studies
III. Other Descriptive or Supplemental Criteria to Consider	
B. Length of intervention	Covered on the mapping the field table
C .Intensity/dosage of Intervention	Not applicable to the selected studies
E. Program Implementer	Information is covered on the intervention table

Appendix C-Mapping the Field

Table 8

How effective is parent supported Internet-delivered CBT intervention in reducing anxiety in children and young people?

Author and study location	**Study design**	**Participants Demographics and sample size**	**Primary Anxiety outcome measure**	**Intervention and facilitators**	**Other outcomes measures of interest (relevant to the study)**	**Follow up- in months**	**Statistical results**
Donovan, & March, (2014) Australia	RCT- online intervention or WLC	Sample: 52 children and their parents Age range: 3 to 6 years (M=4.08)	Anxiety Disorders Interview Schedule for DSM-IV: Parent version (ADIS-P) with a clinical severity rating	Intervention: BRAVE-ONLINE program for children Sessions: 6 parent sessions plus 2 booster sessions Therapists**:** Psychology graduates under the supervision from a	Parent-reported pre-school anxiety scale (PAS) The Child Behavioural Checklist-Internalising scale	6 months	Post-treatment: 39.1% of the intervention group free from their diagnosis at post – treatment No significant differences between the two groups

Author and study location	Study design	Participants Demographics and sample size	Primary Anxiety outcome measure	Intervention and facilitators	Other outcomes measures of interest (relevant to the study)	Follow up- in months	Statistical results
				registered psychologist.			on the children free from anxiety diagnosis: χ^2 (1, N=50)=.995, p=.318
Morgan et al. (2017) Australia	RCT -online intervention or WLC	Sample: 433 children and their parents Age range: 3 to 6 years (M = 4.8)	Revised Pre-school Anxiety Scale (PAS-R) Online Assessment of Preschool Anxiety (OAPA)	Intervention: Cool Little Kids-parenting program Sessions: Eight parent modules Therapists: Provisionally registered Psychologist supervised by a clinical psychologist	Strengths and Difficulties questionnaire (SDQ)-internalising scales	6 months	Post-treatment: Statistically significant improvement in anxiety for the intervention group compared to the intervention group (d=0.38)

Author and study location	Study design	Participants Demographics and sample size	Primary Anxiety outcome measure	Intervention and facilitators	Other outcomes measures of interest (relevant to the study)	Follow up- in months	Statistical results
March et al. (2009) Australia	RCT-internet based intervention or waiting list control condition	Sample: N=73 children and their parents Age range: 7–12 years (M=9.45)	Child and Parent Interview of the Anxiety Disorders Interview Schedule for Children with a clinical severity rating	Intervention: Modified version of the BRAVE-for Children-ONLINE. Sessions: 10 child and 6 parent sessions. Two booster sessions Therapists: No information about therapist qualifications.	Spence Children's Anxiety Scale-Child or Parent version (SCAS-C/P) The Child Behavioural Checklist - Internalising scale	6 months	Post-treatment: 30% of the intervention group free from their diagnosis at post – treatment. No statistically significant difference from the control group, F (1, 57) = 8.58, p=.005

Author and study location	Study design	Participants Demographics and sample size	Primary Anxiety outcome measure	Intervention and facilitators	Other outcomes measures of interest (relevant to the study)	Follow up- in months	Statistical results
Vigerland et al. (2016) Sweden	RCT-internet intervention or waitlist control condition	Sample: 93 children and their parents Age range: 8-12 years (M= 10.1)	The Swedish translation of the Anxiety Disorders Interview Schedule child and parent version with a clinical severity rating	Intervention: Developed by the research group for specific phobia Sessions: Seven parent and four child sessions. Therapists: Psychologist or a CBT therapist	The Children's Global Assessment Scale- CGAS Spence Children's Anxiety Scale-Child or Parent version (SCAS-C/P)	3 months	Post-treatment: 20% of children in the intervention group were free from their anxiety diagnosis. No statistically significant difference with the control group, (χ^2 (1)=3.60,p=0.058)
Lenhard et al. (2017) Sweden	RCT-Internet intervention or WLC	Sample size: 67 adolescents and their parents Age range: 12-17 years (M=14.6)	Children Yale-Brown Obsessive Compulsive Scale (CY-BOCS)	Intervention: BiP OCD Internet CBT program Sessions: 12 child and 5 parent sessions	The Children's Obsessional Compulsive Inventory-Revised (ChOCI-R)	3 months	Post treatment: significantly lower groups on the primary outcome for

Author and study location	Study design	Participants Demographics and sample size	Primary Anxiety outcome measure	Intervention and facilitators	Other outcomes measures of interest (relevant to the study)	Follow up- in months	Statistical results
				Therapists: CBT trained psychologists working at CAMHS.	Spence Children's Anxiety Scale – child and parent version (SCAS-C/P).		the intervention group compared to the control group (B= -2.52, z= -3.03, p=.002).
Spence et al. (2011) Australia	RCT-Internet intervention or Clinic intervention or WLC	Sample: 115 adolescents with their parents Age range: 12 to 18 years (M=13.98)	Anxiety Disorders Interview Schedule for DSM-IV: Parent version The Children's Global Assessment Scale- CGAS	Intervention: BRAVE for Teenagers-ONLINE Sessions: Ten adolescents sessions and five parent sessions Therapists: BRAVE trainer	Spence Children's Anxiety Scale – child and parent version (SCAS-C/P). The Child Behavioural Checklist-Internalising scale. Youth Self Report-YSR	6 and 12 months	Post treatment: Significant difference between conditions for the primary diagnosis, F (2, 113. 14)=15.58, p=0.01

Note. WLC=Waiting List Control, RCT=Randomised Controlled Trial, M=Mean

Appendix D-Excluded studies

Table 9

List of Excluded Studies at full review

Excluded Studies	Exclusion Criterion
Cardamone-Breen, M. C., Jorm, A. F., Lawrence, K. A., Rapee, R. M., Mackinnon, A. J., Yap, M. B. H. (2018). A single-session, web-based parenting intervention to prevent adolescent depression and anxiety disorders: Randomized controlled trial. *Journal of Medical Internet Research, 20 (4).*	2. Study does not evaluate CBT therapy.
Storch, E. A., Salloum, A., King, M. A., Crawford, E. A., Andel, R., McBride, N. M., Lewin, A. B. (2015). A Randomised controlled trial in community mental health centres of computer-assisted cognitive behavioural therapy versus treatment as usual for children with anxiety. *Depression and Anxiety, 32(11), 843–852.*	2. All visits were held in the therapist's office due to issues with access to the internet.
Stallard, P., Richardson, T., Velleman, S., Attwood, M. (2011). Computerised CBT (Think, Feel, and Do) for depression and anxiety in children and adolescents: Outcomes and feedback from a pilot randomised controlled trial. *Behavioural and Cognitive Psychotherapy, 39(3), 273-284.*	3. Does not include parents as participants.
Khanna, M. & Kendall, P., (2010). Computer-assisted cognitive behavioural therapy for child anxiety: Results of a randomised clinical trial. *Journal of Consulting and Clinical Psychology, 78 (5), 737-745*	2. Computer-assisted CBT.
Aspvall, K., Andrén, P., Lenhard, F., Andersson, E., Mataix-Cols, D., Serlachius, E. (2018). Internet-delivered cognitive behavioural therapy for young children	1.

Excluded Studies	Exclusion Criterion
with obsessive-compulsive disorder: development and initial evaluation of the BIP OCD Junior programme. *BJPsych Open, 4 (3), 106-112.*	Study does not report on a RCT
Spence, S. H., Holmes, J. M., March, S., Lipp, O. V. (2006). The feasibility and outcome of clinic plus internet delivery of cognitive-behaviour therapy for childhood anxiety. *Journal of Consulting and Clinical Psychology, 74(3), 614–621.*	2. The treatment group received clinic plus internet CBT intervention.
Stasiak, K., Merry, S. N., Frampton, C., Moor, S. (2018). Delivering solid treatments on shaky ground: a Feasibility study of online therapy for child anxiety in the aftermath of a natural disaster. *Psychotherapy Research*, *28*(4), 643–653.	1. Study does not report on a RCT.
Jolstedt, M., Ljótsson, B., Fredlander, S., Tedgård, T., Hallberg, A., Ekeljung, A., Vigerland, S. (2018). Implementation of internet-delivered CBT for children with anxiety disorders in a rural area: A feasibility trial. *Internet Interventions, 12, 121–129.*	1. Study does not report on a RCT.
Khanna, M. S., Kendall, P. C. (2010). Computer-assisted cognitive behavioural therapy for child anxiety: Results of a randomised clinical trial. *Journal of Consulting and Clinical Psychology, 78(5), 737–745.*	2. Computer assisted CBT.
Vigerland, S., Thulin, U., Ljótsson, B., Svirsky, L., Öst, L. G., Lindefors, N., Serlachius, E. (2013). Internet-Delivered CBT for Children with Specific Phobia: A Pilot Study. *Cognitive Behaviour Therapy, 42(4), 303–314.*	1. Study does not report on a RCT.
Lenhard, F., Vigerland, S., Andersson, E., Rück, C., Mataix-Cols, D., Thulin, U., Serlachius, E. (2014). Internet-delivered cognitive behaviour therapy for adolescents with obsessive-compulsive disorder: An open trial. *PLoS ONE, 9(6).*	1. Study does not report on a RCT.

Appendix E-Weight of Evidence A: Methodological Quality Criteria

Table 11

Summary of WoE A extracted from Kratochwill group-based intervention research design protocol

	Criteria		
	Strong Evidence (3)	**Medium Evidence (2)**	**Weak Evidence (1)**
Measurement	• A reliability coefficient of at least 0.85. • Data should be collected using multiple methods • Data should be obtained from various resources (if appropriate)	• Reliability should be at least.0.70 • Data should be collected using multiple methods or • Compiled from various resources (if appropriate)	A reliability coefficient of at least 0.50 for the primary outcome.
Comparison Group	At least one type of active comparison group must be used and evidence of all of the following:	No active comparison group and evidence of at least two of the following:	No active comparison group and evidence of at least one of the following:

	Criteria		
	Strong Evidence (3)	**Medium Evidence (2)**	**Weak Evidence (1)**
	• Random assignment of participants • Change agents were counterbalanced (if applicable) • Study meets criteria for equivalent mortality and low attrition at post and if appropriate at follow-up	• Change agents were counterbalanced (if applicable) • Random assignment of participants • Study meets criteria for equivalent mortality and low attrition at the post and if appropriate at follow up	• Change agents were counterbalanced (if applicable) • Random assignment of participants • Study meets criteria for equivalent mortality and low attrition at the post and if appropriate at the follow-up
Follow up assessment	• Follow up assessments over multiple intervals with all participants that were included in the original sample.	• Follow up assessments at least once, with the majority of participants included in the original sample	• Follow up assessments at least once, with some of the participants included in the original sample

	Criteria		
	Strong Evidence (3)	**Medium Evidence (2)**	**Weak Evidence (1)**
	• Similar methods were used to analyse data from primary or secondary outcomes.	• Similar methods were used to analyse data from primary or secondary outcomes.	
Clinical significance	Study must provide evidence of the clinical significance for at least 3 of 4 criteria: categorical diagnosis, outcomes assessed via continuous variables, subjective evaluation, and social comparison.	Study must provide evidence of the clinical significance for at least 2 of 4 criteria: categorical diagnosis, outcomes assessed via continuous variables, subjective evaluation, and social comparison.	Study must provide evidence of the clinical significance for at least 1 of 4 criteria: categorical diagnosis, outcomes assessed via continuous variables, subjective evaluation, and social comparison.

Table 12

Application of Weight of Evidence A across the studies

Study	Ratings				
	Measures	Comparison Group	Follow up assessment	Clinical Significance	Weight of Evidence A
Donovan, & March, (2014)	2	2	1	2	1.75 (Medium)
March et al. (2009)	2	2	1	2	1.75 (Medium)
Morgan et al. (2017)	0	2	2	2	1.5 (medium)
Vigerland et al.(2016)	0	2	1	3	1.5 (medium)
Lenhard et al. (2017)	3	2	1	3	2.25 (Medium)
Spence et al. (2011)	3	3	1	3	2.50 (High)

Note. Each study was assigned a rating of 0 (none), 1 (low), 2 (medium) or 3 (high). An average rating was taken for each study divided by 4 to provide a WoE A. For a study to receive a high overall WoE A, a score of 2.5 and above was required. For a medium rating a score of 1.5 to 2.4 and for low a score of equal to or less than 1.4 was required.

The overall weighting of evidence A is the average of Measures, Comparison Group, Follow up assessment and Clinical Significance ratings divided by four. A study received a high WoE A if a score of 2.5 and above was allocated. For a medium rating, a score of 1.5 to 2.4 and for low a score of equal to or less than 1.4 was required.

Appendix F- Weight of Evidence B- Methodological Relevance

Table 13

Methodological relevance Criteria

Criteria		
Strong Evidence (3)	**Medium Evidence (2)**	**Weak Evidence (1)**

• An active comparison group was used. • Complete randomisation to intervention or comparison groups.	• Cluster or block randomisation design. • A non-active comparison group was used e.g. waiting list control comparison group was used.	• No active comparison group. • No randomisation.

Table 14

Application of WoE B criteria across all studies

Study	Ratings
Donovan & March, (2014)	2

March et al. (2009)	2
Morgan et al. (2017)	2
Vigerland et al. (2016)	2
Lenhard et al. (2017)	2
Spence et al. (2011)	3

Note. Each study was assigned a rating of 1 (low), 2 (medium) or 3 (high).

Appendix G-Weight of Evidence C: Topic Relevance

Table 15

Summary of WoE C criteria determined by the review author with regards to the relevance of the review question

Indicator	Criteria

	Strong Evidence (3)	Medium Evidence (2)	Weak Evidence (1)
Facilitators	Interventions should be supported by individuals who have sufficient training and experience.	Trainee psychologists should support interventions under supervision.	Graduate psychologists should support interventions under supervision.
Adherence to treatment	70% of participants and above completed all sessions at post treatment.	69-39% of participants completed all sessions at post treatment.	38% of participants and below completed all sessions at post treatment
Inclusion & exclusion criteria	Participants were excluded if undergoing other treatment (and this was clearly stated)	It was unclear whether participants were undergoing other treatment	Studies clearly included participants undergoing other treatment therefore any treatment effects confounded
Primary diagnosis	The primary diagnosis was confirmed by a clinician based on the reports from parents and children or young people.	The primary diagnosis was confirmed by a clinician based on the reports from a parent only.	The primary diagnosis was not confirmed.

The rationale for WoE C relevance:

1. Interventions should be supported by therapists with training and knowledge of CBT or experience working with children with anxiety, to ensure the quality of support. A study, stressed the importance of providing support whether or not the treatment is implemented remotely (Gellatly et. al., 2007). Moreover, it is essential to provide support from experienced clinicians who can effectively identify possible adverse events which could potentially cause harm to participants.
2. The number of online modules completed by the parents could potentially predict the results at pre and post-intervention.
3. It is crucial to mitigate the risks of interfering events by ensuring that eligible participants are not receiving any other treatment or support during the research intervention. Interfering events are factors not associated with the experimental intervention which can impact the results of the study and causing a threat to validity (Cook & Cambell, 1979; Barker et al., 2017).
4. It is essential to assess and confirm the primary diagnosis through interviews with both parents and children. While sometimes interviewing children is not feasible due to the young age of the children, observing or interacting with the child can provide valuable information about diagnoses comorbid with anxiety which might need a different intervention.

Table 16

Application of Weight of Evidence C across the six studies

Study	Ratings				
	Facilitators	**Adherence to treatment**	**Inclusion and Exclusion Criteria**	**Primary diagnosis**	**Overall Weight of Evidence C**
Donovan & March (2014)	1	1	3	2	1.75 (medium)

Study	Ratings				
	Facilitators	**Adherence to treatment**	**Inclusion and Exclusion Criteria**	**Primary diagnosis**	**Overall Weight of Evidence C**
March et al. (2009)	0	2	3	3	2 (medium)
Morgan et al. (2017)	2	1	1	2	1.5 (medium)
Vigerland et al. (2016)	3	0	1	2	1.5 (medium)
Lenhard et al. (2017)	3	1	3	3	2.5 (high)
Spence et al. (2011)	0	2	2	3	1.7 5 (medium)

Each study was assigned a rating of 0 (none), 1 (low), 2 (medium) or 3 (high). An average rating was taken for each study divided by 4 to provide a WoE A. For a study to receive a high overall WoE C, a score of 2.5 and above was required. For a medium rating a score of 1.5 to 2.4 and for low a score of equal to or less than 1.