Case Study 1: An Evidence-Based Practice Review Report

Theme: School (setting) based interventions for children with special educational needs (SEN)

How effective are school-based cognitive behavioural therapy-based programmes delivered by school practitioners at improving symptomology for children and young people with anxiety disorders compared to delivery by trained therapists?

Section 1: Summary

Anxiety disorders are among the most common mental health disorders experienced by children and young people (CYP) in the UK (Green et al.2005; Vizard et al., 2018). Despite effective and well researched treatments such as cognitive behavioural therapy (CBT) being available, there still exists a significant gap between diagnosis and treatment (Vizard et al., 2018). With rising waiting lists, schools are being looked at more and more as viable options for supporting CYP with anxiety disorders (Dunsmuir & Hardy, 2016). The question then arises as to whether school-based practitioners can effectively support CYP with anxiety disorders, and if such responsibility should be placed on them in the first place? This systematic review aims to evaluate and compare nine studies which delivered school-based cognitive behavioural therapy programmes to individuals with anxiety disorders. Four of these studies involved programmes delivered by school-based practitioners, and the other five involved programs delivered by facilitators either trained in CBT or trained to support anxiety disorders. A literature search using three online databases was conducted, and using Gough's (2007) framework, I undertook an in-depth analysis of

the nine studies, to evaluate the effectiveness of school-based CBT at reducing clinical anxiety symptomology. A meta-analysis was then conducted to further compare whether CBT delivered by school-based practitioners was more effective than CBT delivered by trained therapists. This review suggests that while CBT can be effective in reducing anxiety with effect sizes ranging from small to large, there was a lack of difference between treatment and control groups. Thus, while methodological evidence was mostly strong, more research is needed to determine whether school practitioners are better off delivering less time intensive treatments to support those with anxiety disorders.

Section 2: Introduction

Studies suggest that as many as 10-15% of 5-15 year olds in the UK have a clinically diagnosable mental health disorder, with anxiety disorders representing one of the most commonly diagnosed among children and young people (CYP) (Green et al., 2005; Vizard et al., 2018) . As well as having an earlier onset than other disorders, anxiety disorders have been shown to have impact on social functioning (De Lijster et al., 2017; Settipani & Kendall, 2013), educational achievement, and pose a risk for mental health difficulties later in life (Copeland et al., 2014). While treatments do exist, services are struggling to meet the demand (Reardon et al., 2020). Indeed, In the last 18 years the prevalence of anxiety disorders has risen by more than 50% (Vizard et al., 2018), and while the government and legislation has begun to recognise mental health as a priority (Dfe, 2015; 2017), given the rise in mental health difficulties among CYP, mental health services are struggling to cope (Williams, 2005). As a result, many CYP suffering with anxiety disorders are unable to receive treatment (Reardon et al., 2020).

Cognitive behaviour therapy (CBT) currently represents the most common treatment for children with anxiety disorders (James et al., 2020). Based on the pioneering work of Beck and his colleagues (Beck, 1976), CBT works on the basis that stress and challenges may be a result of persistent and maladaptive negative cognitions about the self, environment, and the future (Beck, 1964). These cognitions can give rise to negative thoughts which in turn affect the way we respond to a variety of situations. Beck (1964) proposed that if we work to alter these thoughts, this may improve how we respond to situations. Core principles of CBT involve psychoeducation around the disorder and cognitive restructuring strategies to help the individual identify and challenge negative automatic thoughts. This is then paired with gradually increased exposure to real life situations where thoughts around anxiety are tested and challenged. CBT represents one of the most widely researched interventions for anxiety disorders and for good reason. Research has demonstrated real benefits with ranges of studies reporting strong and enduring reductions in anxiety symptomology (James et al., 2020). However, despite research demonstrating its efficacy, recent studies suggest as little as 2% of children with anxiety disorders actually go on to receive CBT treatment (Reardon et al., 2020).

Given the prevalence of anxiety disorders in CYP rising and the difficulty accessing therapists with CYP experience, schools have begun to be looked at as a potential alternative provider of CBT services. In fact, researchers have suggested that schools may be a cost effective and more accessible means for young people to access treatments such as CBT (Dunsmuir & Hardy, 2016). Moreover, studies looking at CBT that has been adapted for schools, have begun to show promising results (James et al., 2020; McLoone et al., 2006).

Despite research demonstrating the efficacy of school-based CBT, most of these studies involve delivery by trained CBT therapists (James et al., 2020). Given increasing demand for services there still exists an issue where there just aren't enough CBT therapists and mental health professionals to go around. The likelihood of closing this gap between diagnosis and treatment is unlikely to occur through trained therapists being dispatched to each school. As a result, research has begun to turn to the utilisation of school practitioners. This makes sense given the fact that school practitioners such as counsellors, school nurses, emotional literacy support assistants, educational psychologists, and even teachers are the ones who are likely to be supporting those with disorders until they can receive formal treatment. The question then arises as to whether schools can adequately support CYP with anxiety disorders without the extensive training that therapists and clinical psychologists have?

To the author's knowledge there has not been a systematic review exploring the effectiveness of school practitioner delivered CBT programmes at school for children with anxiety disorders. As mental health cases rise, and the UK government recognises a need to focus on it, it will be important to build an understanding of what school practitioners can and should be doing to support CYP with anxiety disorders.

2.1 Review question

As this review sought to answer the question as to the efficacy of school-based cognitive behavioural therapy-based programmes when delivered by school practitioners, it was decided that it would be appropriate to compare this group of

deliverers to CBT clinicians. As such this review sought to explore two review questions.

Question (a): How effective is school based CBT for alleviating symptomology in children with anxiety disorders, when delivered by CBT clinicians?

Question (b): How effective is school based CBT for alleviating symptomology in children with anxiety disorders, when delivered by school practitioners?

Section 3: Critical review of the Evidence Base

3.1 Literature search

To answer these questions a systematic search of the literature was carried out using Web of science, ERIC, PsycINFO, Cochrane databases, Google scholar and ancestral searching. The search was conducted between 20th November -12th December. Table 1 presents these terms.

Table 1

Search terms used in Database				
Intervention		Participants	Context	Outcome
cbt		pupil	"School intervention"	Anxiety disorder*
"Cognitive therap*"	behav*[1]	children	School	GAD

“Cognitive behav* treatment*”	School-aged children	School based	“Generali?ed anxiety disorder*”
“Cognitive intervention*”	Adolesc*	Delivered by school staff	“Primary Anxiety disorder*”
	Student*	school NEAR/2 intervention	
	CYP		
	Youth		
	Young people		

Note 1: The asterisk (*) enables the inclusion of terms with varied suffixes, for example 'behav' would include behaviour, behavior, behavioural

Note 2: The ‘NEAR/2’ denotation enables the inclusion of terms two words distanced from the first word. Other forms of this used included Adj2.

Note 3: Quotation marks yield results for the exact phrase of concepts (e.g., “Cognitive behavioural therapy”)

As can be seen from Figure 1, the initial search found 485 studies, 108 were removed via Mendeley due to duplications, 377 were screened by the title and abstract. 34 studies were assessed using a full text screening, using the inclusion and exclusion criteria in table 2. This led to the final nine studies. The nine studies evaluated in this review are included in table 3. The list of excluded studies and reason for exclusion can be found in Appendix A.

Figure 1: Flow chart of literature

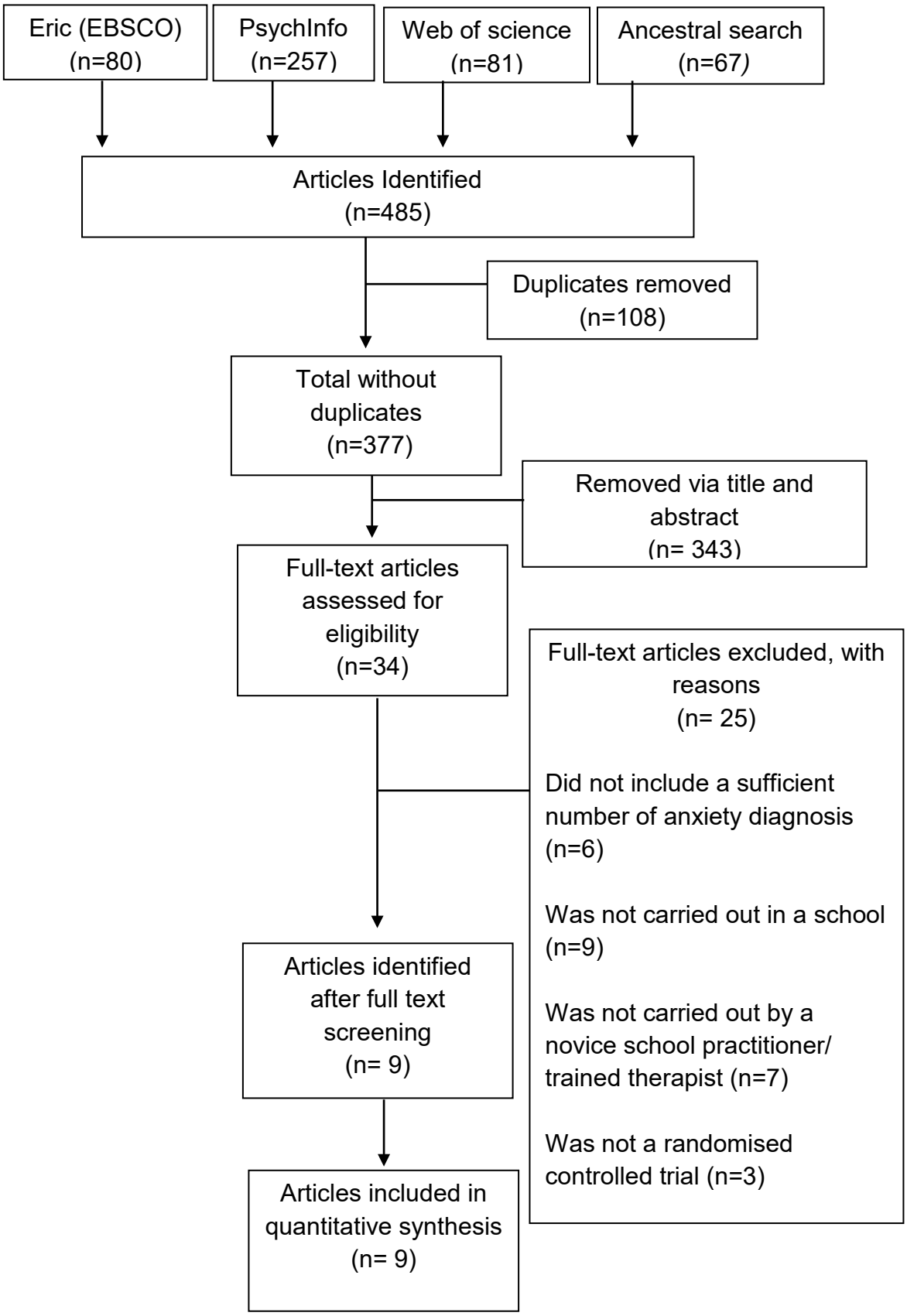


Table 2

Inclusion and Exclusion Criteria

	Inclusion criteria	**Exclusion criteria**	**Rationale**
1.Study Design	Randomised controlled trial	Reviews, meta-analyses, case studies, quasi-experimental designs, single-case experimental designs and qualitative studies.	To ensure the studies I had gave a higher level of confidence in the outcomes; as reflected in the hierarchy of evidence.
2. Participants	(P) Pupils aged 5-19	Pupils younger than 5 and older than 19	The focus of the review is on whether school-based CBT is still effective if delivered by school practitioners, and so can include all school aged children.
	Individuals who met the clinical diagnosis of anxiety disorders including (GAD, SAD). Identified through measures such as the IDAS-C/P.	Studies where individuals only demonstrated mild or elevated anxiety symptoms	The review wanted to see if school-based CBT is still effective when delivered by school practitioners on more severe cases of anxiety.
3.Type of setting	Intervention is delivered within	Intervention is carried out in clinical or	Schools are not only well placed to deliver interventions but are

	school setting (School-based).	university settings (Non-school based)	being given increasing responsibility to do so. The aim of this study is to see if see if CBT interventions carried out by school practitioners within school settings are effective.
4. Type of intervention	CBT-based programmes (Must either be built on aspects of CBT or be complete CBT)	Interventions not based on CBT principles	CBT is an approach commonly used in the treatment of anxiety disorders due to theories surrounding them being cognitive in nature. It has also been adapted for school use and is increasingly being used within schools to support pupils with anxiety disorders.
5.Treatment facilitator (Given the reviews two sub questions the treatment facilitator was split into two groups)	Group 1 CBT Clinician (Clinician with degree in clinical psychology and experience of delivering CBT or a qualified CBT therapist)	Clinician without a clinical psychology degree, a clinician with a clinical psychology degree without experience of CBT delivery or therapists not	This review aimed to compare whether CBT is as effective at reducing clinical anxiety severity, when delivered by a school practitioner compared to when delivered by a trained CBT clinician.

		trained in delivery of CBT.	
	Group 2 School based practitioner (School practitioners such as school psychologist, school counsellors, school nurses and school teacher, without training in the delivery of CBT or a further degree qualification in clinical psychology)	Non-school based practitioner (Practitioners with a clinical psychology degree or with a CBT training qualification)	Prevalence of anxiety disorders in UK pupils has increased, leading to services being overrun and wait times increasing. As a result, School based practitioners are being expected to support those pupils with severe anxiety symptoms.
6. Outcome measure	Reduction in anxiety symptomatology as measured by a quantitative scale (global assessment scale, GIS / ADIS-C/P)	Studies that did not measure anxiety symptoms quantitatively.	Inclusion of a valid and reliable quantitative measure allows for a more effective evaluation of whether CBT has been effective in reducing anxiety symptomology.

7.Language	Studies written in English	Studies not written in English	Studies which would need translation may lead to inaccurate interpretation and evaluation of studies.
8.Date	Studies undertaken post 1994	Studies before 1994	Both the DSM-IV and the ADIS-IV were developed in 1994 and 1996 respectively. Studies prior to this may have given a different and outdated definition and measure of anxiety disorders.

Note: GAD= Generalised anxiety disorder; SAD = Social anxiety disorder, ADIS-C/P = Anxiety Disorders Interview Schedule Child and Parent Version, ADIS-IV = Anxiety Disorders Interview Schedule Adult Version, DSM-IV= Diagnostic and Statistical Manual of Mental Disorders.

Table 3

Final studies included in Review
Bernstein, G. A., Layne, A. E., Egan, E. A., & Tennison, D. M. (2005). School-based interventions for anxious children. Journal of the American Academy of Child and Adolescent Psyhiatry, 44(11), 1118–1127. https://doi.org/10.1097/01.chi.0000177323.40005.a1
Ginsburg, G. S., Becker, K. D., Drazdowski, T. K., & Tein, J.-Y. (2012). Treating Anxiety Disorders in Inner City Schools: Results from a Pilot Randomized Controlled Trial Comparing CBT and Usual Care. Child & Youth Care Forum, 41(1), 1–19. https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,shib&db=eric&AN=EJ954498&site=ehost-live&scope=site&custid=s8454451
Ginsburg, G. S., & Drake, K. L. (2002). School-Based Treatment for Anxious African-American Adolescents: A Controlled Pilot Study. Journal of the American Academy of Child & Adolescent Psychiatry, 41(7), 768–775. https://doi.org/10.1097/00004583-200207000-00007
Ginsburg, G. S., Drake, K. L., Muggeo, M. A., Stewart, C. E., Pikulski, P. J., Zheng, D., & Harel, O. (2021). A pilot RCT of a school nurse delivered intervention to reduce student anxiety. Journal of Clinical Child & Adolescent Psychology, 50(2), 177–186. https://doi.org/10.1080/15374416.2019.1630833
Ginsburg, G. S., Pella, J. E., Pikulski, P. J., Tein, J.-Y., & Drake, K. L. (2020). School Based Treatment for Anxiety Research Study (STARS): A Randomized Controlled Effectiveness Trial. Grantee Submission, 48(3), 407–417. https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,shib&db=eric&AN=ED604273&site=ehost-live&scope=site&custid=s8454451

Masia-Warner, C., Klein, R. G., Dent, H. C., Fisher, P. H., Alvir, J., Albano, A. M., & Guardino, M. (2005). School-based intervention for adolescents with social anxiety disorder: results of a controlled study. Journal of Abnormal Child Psychology, 33(6), 707–722. https://doi.org/10.1007/S10802-005-7649-Z

Masia-Warner, C., Colognori, D., Brice, C., Herzig, K., Mufson, L., Lynch, C., Reiss, P. T., Petkova, E., Fox, J., Moceri, D. C., Ryan, J., & Klein, R. G. (2016). Can School Counselors Deliver Cognitive-Behavioral Treatment for Social Anxiety Effectively? A Randomized Controlled Trial. Journal of Child Psychology and Psychiatry, 57(11), 1229–1238. https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,shib&db=eric&AN=EJ1118687&site=ehost-live&scope=site&custid=s8454451

Masia-Warner, C., Fisher, P. H., Shrout, P. E., Rathor, S., Klein, R. G., Warner, C. M., Fisher, P. H., Shrout, P. E., Rathor, S., & Klein, R. G. (2007). Treating adolescents with social anxiety disorder in school: an attention control trial. Journal of Child Psychology and Psychiatry, 48(7), 676–686. https://doi.org/10.1111/j.1469-7610.2007.01737.x

Shortt, A. L., Barrett, P. M., & Fox, T. L. (2001). Evaluating the FRIENDS programme: a cognitive-behavioral group treatment for anxious children and their parents. Journal of Clinical Child Psychology, 30(4), 525–535. https://doi.org/10.1207/S15374424JCCP3004_09

3.2 Critical review of the studies

In order to evaluate the final studies, Gough's (2007) Weight of evidence (WoE) framework was used. A rating was given according to three main areas: Weight of Evidence A (WoE A) methodological quality, Weight of evidence B (WoE B)

methodological relevance and Weight of Evidence C (WoE C), topic relevance to the question.

As this review only looked at Randomised controlled trials (RCT), a modified version of the Kratochwill (2003) APA Task Force protocol was deemed most appropriate to use for WoE A. The modifications made to the protocol and their rationale are detailed in Appendix C. Based on Petticrew & Roberts (2003) typology of evidence criteria, WoE B and C were created for this current review to assess each study's efficacy in answering the review question. An average of these three weights was calculated to create an overall score (WoE D). A summary of the weight of evidence scores can be found in table 4. Given that this review considered two sub questions, the WoE C participant criteria is split into two sections to reflect this. WoE A and B remain unchanged by this. For further additional information regarding the weights of evidence see Appendix C.

Table 4

Combined weight of Evidence 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*)
Group 1: CBT clinician				
Bernsetin et al. (2005)	2.25	1.6	1.75	1.87 (Medium)
Ginsburg & Drake (2002)	1.24	2	1.75	1.63 (Low)
Masia-Warner et al. (2005)	1.75	2.7	2.75	2.4 (Medium)
Masia-Warner et al. (2007)	1.75	2.7	2.75	2.4 (Medium)
Shortt et al. (2001)	2	2.6	2.25	2.28 (Medium)
Group 2: School practitioner				
Ginsburg et al. (2012)	2.25	3	2.25	2.5 (High)
Ginsburg et al. (2020)	2.5	1.6	2.25	2.12 (Medium)

Ginsburg et al. (2021)	2.25	1.6	2	1.95 (Medium)
Masia-Warner et al. (2016)	2.5	3	2.75	2.75 (High)

*Calculated by taking the average score of the 3 categories. These were added together, and the total was divided by three.
Note 1: WoE D ratings receive a rating of low <1.65, medium if between 1.7 and 2.4, and high if ≥2.5

3.3 Participant characteristics

A total of 660 participants were included in this review with sample sizes ranging from 9 to 216. Participants ranged from 5-18 years old. All studies had clear descriptions of selection procedures with pupils being identified and screened using reliable and valid quantitative measures such as the Anxiety Disorders Interview Schedule for DSM-IV Child Version/ Parent and child version (ADIS-C/P) (Silverman and Albano, 1996). For further information on participant and study characteristics see the mapping table in appendix B.

3.4 Research design

All studies were RCTs. A summary of the included studies characteristics can be found in Appendix B. Apart from one (Ginsburg & Drake, 2002), all studies received a high rating for the research methodology facet in WoE A for detailed reporting of screening process, sampling methods, participant recruitment and characteristics.

Given that the review question aims to seek out the efficacy of CBT on children with clinical anxiety severity, studies were given a higher rating on WoE C if all pupils in the study had a diagnosis against a reliable criterion. In four studies 100% of the participants had a diagnosis of a primary anxiety disorder (Barrett & Fox 2001; Ginsburg & Drake, 2002; Masia-Warner et al 2005; Masia-Warner et al 2007; Shortt et al., 2001), earning a high rating for this facet. Bernstein and collegues (2005) received a low rating for diagnosis in WoE C, as 75% participants had a primary diagnosis of anxiety. This may have led to an over inflation of the benefits of results if pupils with mild anxiety were being treated. The remaining studies received a medium rating for having over 90% participants with a diagnosis.

Six studies used an active control group allowing for better comparison and deduction as to whether CBT is truly effective and therefore received higher ratings for WoE B. (Ginsburg & Drake, 2002; Ginsburg et al, 2012; Ginsburg et al, 2020; Ginsburg et al, 2021; Masia-Warner et al, 2007; Masia-Warner et al, 2016). Bernstein (2005) used a no treatment control group, reflected in their low rating in WoE B.

Two studies undertook random assignment of participants at school level (Bernstein et al., 2005; Ginsburg et al., 2020) and at clinician level (Ginsburg et al., 2021), receiving low ratings for this WoE B. The rest of the studies conducted randomisation at pupil level and reported this with the use of ratios, randomisation websites and randomisation tables. Doing so allowed for control of school characteristics and is reflected in their higher WoE B ratings.

3.5 Intervention

While all studies varied significantly in terms of the type of programme; all interventions included core CBT components, such as psychoeducation, exposure, rewards, cognitive restructuring, and problem solving. For a more detailed look at interventions see the 'mapping the field' table in Appendix B.

Masia-Warner et al. (2016) received the highest rating on implementation fidelity for inclusion of training, supervision, and materials. This is reflected in their high WoE A rating. Masia-Warner et al. (2007) and Masia-Warner et al. (2005) both received low ratings for this facet of WoE A, as they lacked detail in reporting of implementation of the SASS intervention. The rest of the studies received a moderate rating for noting manuals and supervision but lacked extra contextual details such as location of treatment within the school.

Of the studies evaluated for use of a trained therapist in WoE C, two studies reported delivery by an experienced CBT therapist (Masia-Warner et al., 2005; Bernstein et al., 2005), receiving high ratings for this facet of WoE C. One study reported delivery by clinical psychologists with training experience not specified, reflected in a lower WoE C score (Masia-Warner et al., 2007). The remaining two studies involved clinical psychology graduates trained in CBT reflected in their lower WoE C scores for this facet (Ginsburg & Drake, 2002; Shortt et al., 2001). Of the studies evaluated for use of a school practitioner without CBT experience, only Masia-Warner et al. (2016) received a high rating for this facet of WoE C. As the practitioners in the other three studies had a mixture of backgrounds this made it difficult to ascertain what level of CBT understanding and knowledge they had. As the aim of the study was to compare school

practitioners to CBT therapists, not knowing the level of CBT knowledge confounds the results and therefore led to lower WoE C scores.

3.6 Outcome measures

All studies used multiple standardised measures to assess potential changes in anxiety symptoms experienced by participants, lending to higher WoE A research methodology ratings. Of these studies Ginsburg et al. (2020) reported reliability and validity for all outcome measures reflected in a high score in the measurement WoE A. In contrast Masia-Warner et al. (2005) and Bernstein et al. (2005) didn't report any reliability and validity measurements reflected in lower scores for WoE A.

To control for potential bias researchers may have when evaluating outcome measures, use of independent evaluators blind to conditions was used in six of the studies. Ginsburg and Drake (2002) was the only study not using independent evaluators. This may have led to potential influence of researcher bias, which is reflected in their lower WoE B score.

3.7 Findings and effect sizes

For this review Effect sizes were calculated as standardised mean differences (Cohens d) using 95% confidence intervals (CI). The size of the effect was determined using Cohen's (1988) thresholds; small (d = 0.2), medium (d = 0.5), and large (d = 0.8). For studies not reporting effect sizes the Campbell collaboration calculator was used to calculate a Cohens d value (Ginsburg & Drake, 2002). For studies reporting eta squared (Shortt et al., 2001) and odds ratios (Masia-Warner et al., 2016) values were converted to Cohens d using the psychometrica website, these are reported below.

Table 5

Effect sizes across studies

Study	Number of participants	Outcome measure	Effect size reported by the author	Effect sizes that were adjusted to cohens d (Between group interaction)	Effect size descriptor	Study quality rating (WoE D)
Group 1: CBT clinician						
Bernstein et al. (2005)	61	ADIS-CSR	0.58		Moderate	1.85 (Medium)
Ginsburg & Drake (2002)	12	ADIS-CSR	2.70*	1.2229*	Large	1.75 (Medium)
Masia-Warner et al. (2005)	42	ADIS-PC Severity	2.4**		Large	2.28 (Medium)
Masia-Warner et al. (2007)	36	SAD-CSR	1.9*		Large	2.28 (Medium)
Shortt et al. (2001)	71	SAD-CSR	0.46**	1.84593**	Large	2.26 (Medium)
Group 2: School practitioner						
Ginsburg et al. (2012)	32	ADIS-C/P CSR	0.10		Small	2.61 (High)
Ginsburg et al. (2020)	216	CGI-S	0.2	0.4082	Small	2.43 (Medium)
Ginsburg et al. (2021)	54	CGI-S	0.29	0.29	Small	2.08 (Medium)
Masia-Warner et al. (2016)	138	SAD-CSR	0.69**	0.69**	Moderate	2.7 (High)

Note 1: CSR= Clinical severity rating. ADIS-CIR/PC = Clinician's impairment Rating on the Anxiety Disorders Interview Schedule for DSM-IV Child Version/ Parent and child version (Silverman and Albano, 1996). CGI-I = Clinical global impression-improvement (Guy, 1976). CGI-S = Clinical global impression-severity (Guy, 1976); CAIS-C/P – Child Anxiety Impact Scale (Langley et al. 2004); SPDSCF= Social Phobic Disorders severity and change form (Liebowitz et al. 1992); CGAS=Children's global assessment scale (Shaffer et al. 1983); SPS=Social Phobia Severity; SAD=Social anxiety disorder

Note 2: Effect sizes reported and not adjusted were reported in Cohen's d. Those not reported in Cohen's d are included in addition to their adjusted value. Significance (*p<.05, **p<.01)

As can be seen from table 5, five studies reported a significant decrease in anxiety in the intervention group compared to controls. Three of these studies involving the SASS treatment (Masia-Warner et al., 2005, 2007; Masia-Warner et al., 2016) reported a significant reduction in social anxiety severity. All three reported maintained effects at follow up, lending to stronger WoE C as this further supports the overall effectiveness of treatment. Masia-Warner et al., (2016) was the only study where CBT was delivered by school practitioners (school counsellors) that reported significant results, as well as being the only study to score high on WoE D. Overall this lends some weight to the potential effectiveness of school counsellors in delivering CBT to reduce clinical anxiety severity. Shortt et al. (2001) also found significant reductions in clinical levels of anxiety compared to the control group. Effect sizes reported were large as well as maintained at a 12 month follow up contributing to a medium WoE C. Given the studies medium WoE D, this lends weight to impact of CBT treatment by clinical psychologists.

Ginsburg and Drake (2002) also reported large and significant effect sizes as well as having an overall medium WoE D suggesting effectiveness of CBT when delivered by clinical psychology graduates. It's worth noting that the study sample was small (N=12) and was only made of African American females with no follow up measures. While results of this study should be interpreted with caution as generalisability cannot be assumed, it does highlight the effectiveness of CBT when delivered by professionals for a group that are generally underrepresented in anxiety disorder literature.

The remaining studies showed small and non-significant reductions of anxiety when compared to controls. Given that three of these four studies (Ginsburg et al., 2012;

Ginsburg et al., 2020; Ginsburg et al., 2021) involved delivery of CBT by school based practitioners, it may suggest that CBT is best utilised by trained therapists.

3.8 Meta-analysis

A meta-analysis using the meta-essentials package was conducted applying a random-effects method (Suurmond et al., 2017). To give an accurate comparison as to the efficacy of studies, the analysis looked at the clinical severity ratings for anxiety within each study. The type of assessment measures are noted in table 5.

To assess heterogeneity of the effect sizes, both a Q and I^2 statistic were formulated. A significant Q value rejects the assumption of homogeneity indicating heterogeneity between the studies.

A subgroup analysis and random mixed effect moderator analyses were also conducted using the 'type of intervention facilitator" to compare the efficacy of CBT treatments delivered by school practitioners and those delivered by CBT clinicians.

Results

As can be seen from figure 2, the meta-analysis revealed a significant and large treatment effect for CBT on clinical anxiety severity (d=1.06, 95%CI [0.43,1.7]).

Tests for heterogeneity

Results revealed a significant heterogeneity in effect size across all 9 studies Q=365.12, I^2=97.81% (Higgins, 2003).

Subgroup analysis

Subgroup analysis of the two groups revealed positive overall effects. As can be seen from figure 3 both groups confidence intervals are positive. Analysis also revealed a larger combined effect size when CBT was delivered by an CBT clinician (d=1.6), compared to when CBT was delivered by a school practitioner (d=0.47).

Figure 2

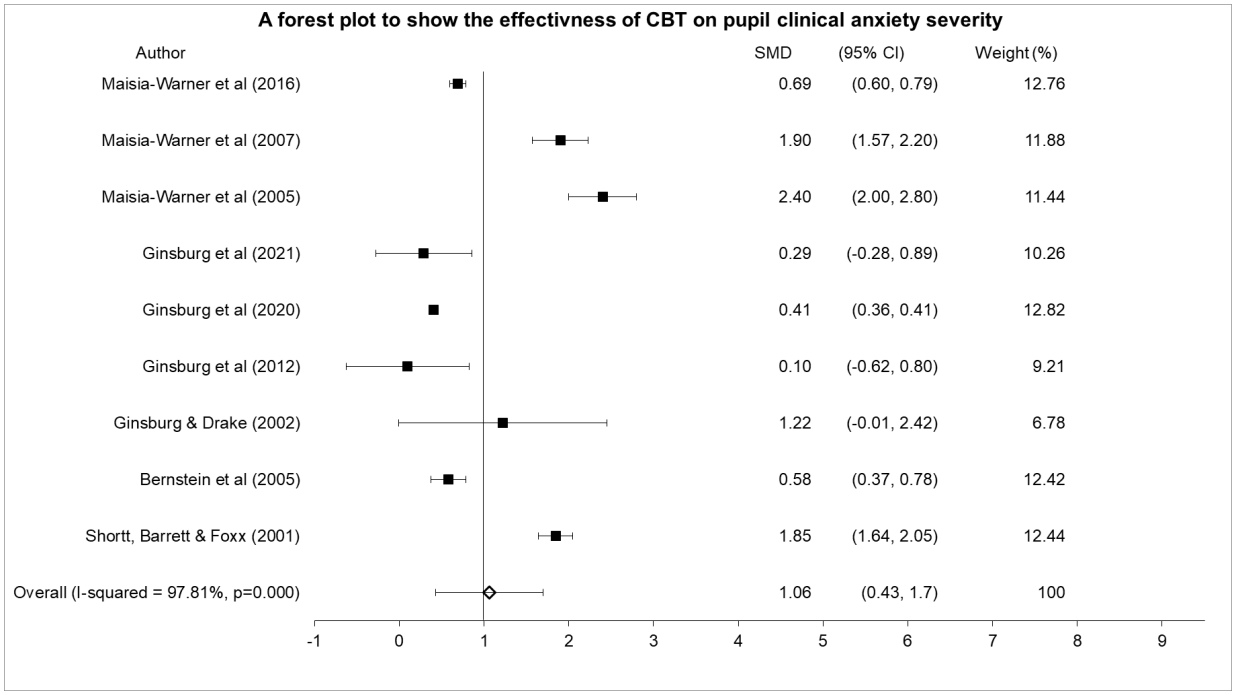
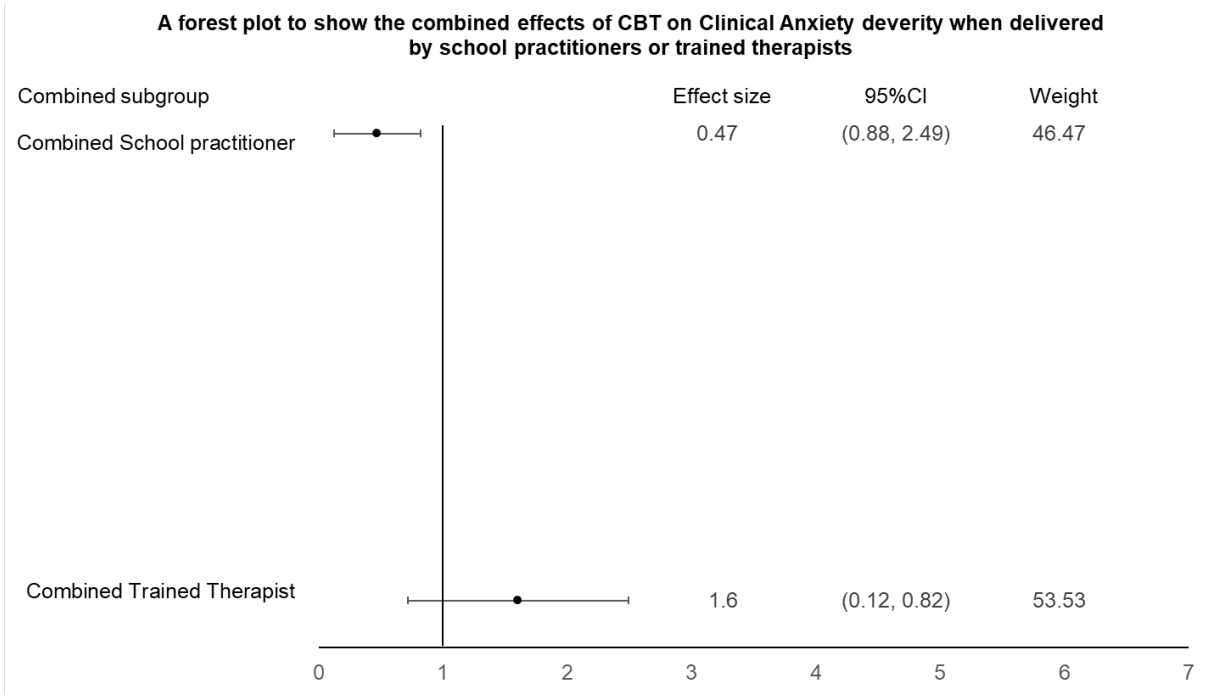


Figure 3



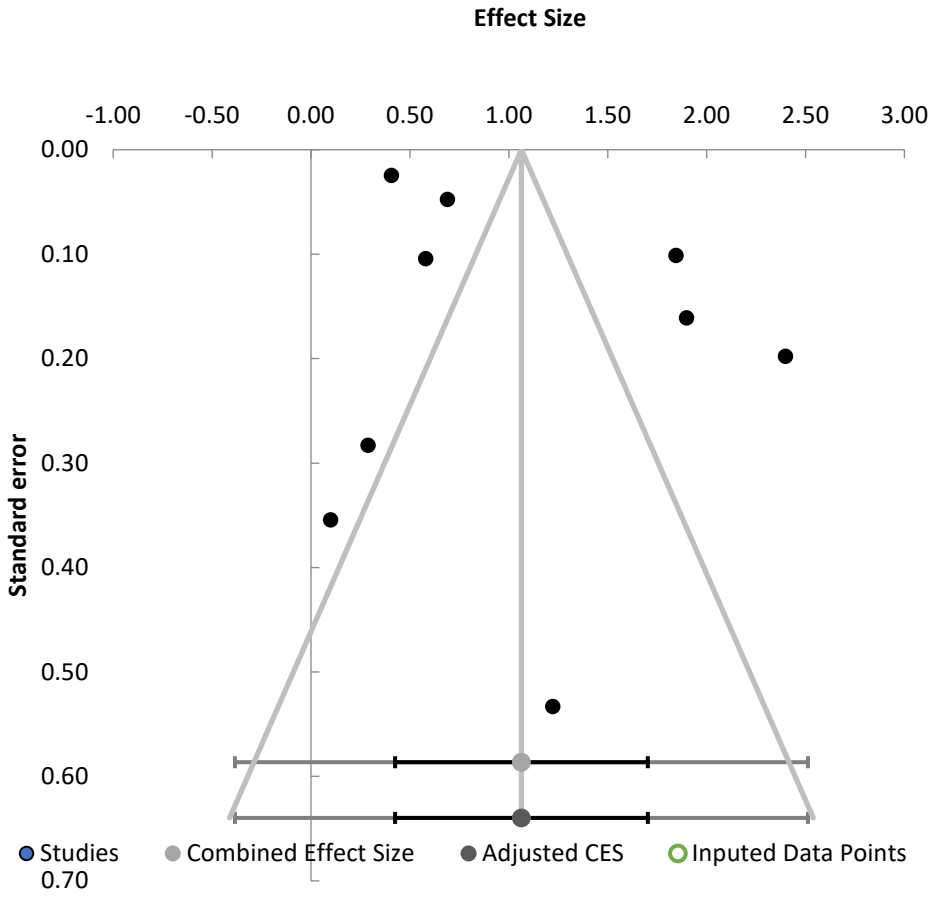
Moderator analysis

Results indicated that the facilitator emerged as a significant moderator of the overall effect size. B=-1.19, 95%CI [-1.87, -0.57] P<0.0005, as well as the heterogeneity of studies R^2 =57.94%.

Publication bias

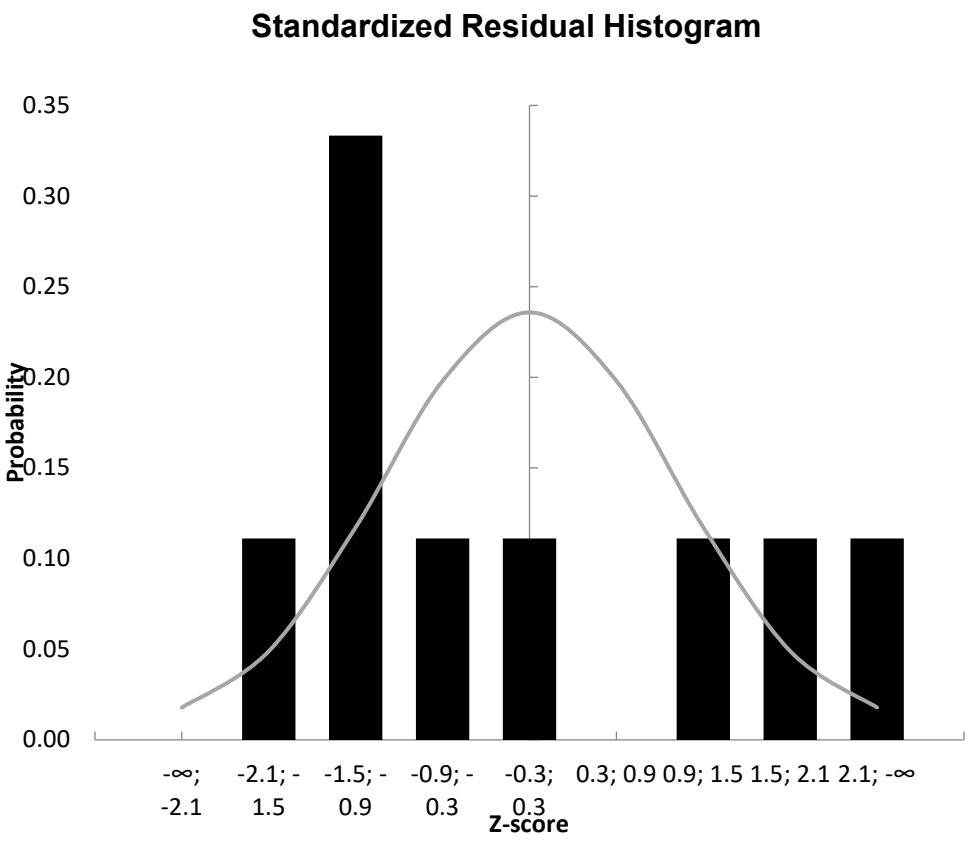
As can be seen from figure 4 visual inspection suggests asymmetry within the results and thus publication bias. For a more objective measure Eggers regression intercept was calculated, which did however demonstrate non-significance (p=0.789) indicating no evidence of publication bias.

Figure 4



Further analysis revealed that discrepancy in these results may be due to the bimodal nature of the effect sizes (See figure 5). Given that Eggers regression intercept is a parametric heterogeneity test and based on assumptions of normality, we may not be able to trust this test. While visual demonstration shows a majority of studies lying outside the 95% confidence intervals; given the small number of studies, the significant heterogeneity, and the effect of moderator on heterogeneity, it is difficult to suggest whether what we see from figure 4 is publication bias or resulting from these other factors.

Figure 5



Section 4: Conclusions and recommendations

The objective of this systematic review and meta-analysis was to evaluate the effectiveness of school-based CBT programmes when delivered by school practitioners in reducing clinical levels of anxiety. To do this, studies using school practitioners as the facilitators were compared to those using CBT clinicians.

Of the five studies involving a CBT clinician, all received a medium WoE D score and four demonstrated a significant reduction in anxiety severity compared to controls. Of the four studies involving school practitioners two received the only high WoE D ratings (Ginsburg et al., 2012; Masia-Warner et al., 2016), with the rest receiving medium WoE D scores. Only one of these studies demonstrated a significant reduction in anxiety severity compared to controls (Masia-Warner et al., 2016). Further analysis through a meta-analysis revealed that while both groups had positive combined effect sizes, the CBT therapist group had a much larger combined effect size (d=1.6).

Taken together this review seems to suggest two things. Firstly, it demonstrates emerging evidence of the benefit that school-based CBT can have on CYP with clinical levels of anxiety. A major concern in school-based CBT literature is how transferable will a clinical treatment be within schools given the different developmental stages of children, reduction in time due to fitting in with classes, and general increased difficulties of treatment being accessible to CYP. However, results from the review and meta-analysis suggest some promising evidence that when CBT is adapted for school-use it can still be effective at reducing clinical levels of anxiety.

Secondly, given that only one of the four studies involving CBT being delivered by school practitioners found a significant difference in treatment to control, this review does question whether CBT is as effective when delivered by school practitioners. It is however worth noting that all four of these studies found a significant reduction in clinical anxiety symptomology within both treatment and control groups. Given the fact that these control groups consisted of nonspecific counselling (Masia-Warner et al., 2016), supportive therapy (Ginsburg et al., 2020; Ginsburg et al., 2012), and teaching relaxation skills (Ginsburg et al., 2021), this does call into question the justification for having school practitioners trained in CBT, when reductions in anxiety are just as significant when more accessible interventions which require less training are utilised. This therefore suggests that while CBT may not be best delivered by school practitioners, CYP anxiety disorder can still be significantly supported enough to the point of remission through support by school practitioners.

Despite demonstrating some potentially promising evidence, these results must be interpreted with caution. Firstly, this review only included nine studies which involved four, where CBT was delivered by a school practitioner. While this is just a reflection of the lack of current research on this topic, it does not detract from making it difficult to draw concrete conclusions as to the efficacy of school-practitioner-delivered CBT on pupils with anxiety disorders. The effect of such a small sample of studies is also reflected in the significant heterogeneity reported ($Q=365.12$, $I^2=97.81\%$) within these studies, scores which were still maintained at subgroup level for both CBT clinician ($Q=115.59$, $I^2=96.54\%$), and school practitioner groups ($Q=29$, $I^2=89.66\%$). While this looks to have been potentially explained by the moderator variable as demonstrated by the moderator analysis, it must be highlighted that these studies differ significantly

in terms of intervention, delivery, and participant population. For example, all studies by Masia-Warner and colleagues (2005; 2007;2016) delivered the SASS intervention. In addition to the core CBT elements, this treatment has parent and teacher training aspects as well as four real world exposure events. Two other studies looked at modular CBT which involves tailoring CBT modules to each individual child (Ginsburg et al., 2020; Ginsburg et al., 2012). Moreover the studies by Ginsburg and Drake (2002) and Ginsburg et al. (2012) only looked at African-American populations, with one of these studies also being a pilot. Given how small the review is and the clear diversity between studies, it is difficult to conclude whether results are due to the facilitator, the specific intervention, the population, or a mix of all three. What this also highlights is that this review has not considered the mechanisms through which the effects in studies might be explained by. Indeed, with all the school practitioner studies, while no differences between treatment and control were found, there were significant within group differences. This might suggest that other factors such as the client patient relationship or the type of intervention are playing a role in mediating the reduction in anxiety.

Despite this, this review does not suggest that CBT is ineffective when delivered by school practitioners. In fact, the promising within group results suggest otherwise. However, given the similar reductions in anxiety found in control groups, future research could consider looking into the effectiveness of alternative treatments in reducing clinical levels of anxiety symptomology when delivered by school practitioners. These may be more feasible to implement in a real-world context compared to CBT, and this preliminary evidence suggests they may be just as effective as CBT. Future research may also want to consider looking at the impact that other

practitioners such as emotional literacy support assistances, pastoral workers, learning support assistants, and teaching assistants can have on these populations. These types of school practitioners are being utilised more and more when working with students who are struggling, and so represent an interesting direction for future research to consider.

Finally, as omitted from this review, future research should consider the mechanisms through which treatment delivered by school practitioners can be effective. Given the impact of SASS as a treatment and the results from Masia-Warner et al (2016), future research may want to consider factors such as parent and teacher involvement or the increased opportunity to practice new skills taken from treatments. Doing so could translate into support and guidance for schools to better support pupils with clinical levels of anxiety.

Section 5: References and Appendices

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5.2 Appendices

Appendix A

Doctorate in Educational and Child Psychology

List of excluded studies

Study	Reason for exclusion
Arendt, K., Thastum, M., & Hougaard, E. (2016). Efficacy of a Danish version of the Cool Kids program: a randomized wait-list controlled trial. Acta Psychiatrica Scandinavica, 133(2), 109–121. https://doi.org/10.1111/ACPS.12448	5
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Appendix B

Table 6

A summary of included studies

Author & Country	Sample (Age, gender, demographic)	Study design	Screening procedure and presenting difficulty	Therapeutic method	Deliverers and background	Outcomes
Group 1: CBT clinicians						
Bernstein et al. (2005) USA	61 Pupils (Intervention group 17) 7-11 years old	Randomised controlled trial	Recruited through elementary schools. Screened using the (ADIS-C/P).	FRIENDS cognitive behavioural program.	Primary therapists trained in CBT. Each group had a co-therapist who were graduate students from doctoral level psychology programs.	Child-report, and parent-report and clinician severity rating of measures of child anxiety

40 females 21 males 59 white 1 Hispanic 1 Asian	Pupils identified were those who met diagnosis of SAD, GAD and/or SP or features of one of these anxiety disorders.	9 weekly 60 minute sessions. Delivered in groups of 8-10 children. Parents involved in first 10 minutes and last 10 minutes Booster sessions were conducted at 1	demonstrated significantly greater improvement in the Child plus parent CBT group compared to the control group. The child cbt group alone not did not show significant improvements when compared to the control

		and 3 month follow up.	group for all measures.

Author & Country	Sample (Age, gender)	Study design	Presenting difficulty and screening procedure	Therapeutic method	Deliverers and background	Outcomes
Ginsburg & Drake (2002) USA	12 Pupils (Intervention group 6) 14-17 years 10 females 2 males. 100% African American	Pilot Randomized controlled trial	Recruited through schools. Screened using ADIS-IV-C. Pupils identified were those who met the DSM-IV diagnosis for a primary anxiety disorder.	Modified version of the group CBT manual of Silverman and colleagues. 10 weekly, 45 minute sessions. Adapted for use with African American population.	Advanced graduate psychology students trained in CBT.	Result demonstrated that pupils in the CBT intervention group showed greater improvement on the ADIS-C impairment ratings. The results also reported greater reductions in

				overall ratings on the SCARED self-report measure In the CBT intervention group compared to controls.

Author & Country	Sample (Age, gender)	Study design	Presenting difficulty and screening procedure	Therapeutic method	Deliverers and background	Outcomes
Masia-Warner et al. (2005) USA	42 Pupils (Intervention group 21) 13-17 years old 74% Female 26% Male 82% Caucasian	Randomised controlled trial	Pupils were recruited through their school and screened using the ADIS-C/P. Pupils identified were those who met the DSM-IV diagnostic criteria for social	Skills for Social and Academic Success. Group based CBT designed to treat adolescent social anxiety disorders.	CBT interveners. Co-led by behaviourally trained clinical psychologist and a clinical psychology graduate student.	67% of treated subjects, compared to 6% of wait-list participants, no longer met criteria for social phobia following treatment according to DSM-IV criteria.

	8.6% African American 2.9% Asian American 2.9% Latin American 2.9% other	phobia, social anxiety disorder or generalized subtype. 40% pupils had comorbidity. 42% Comorbidity	12 weekly, 40 minute group sessions. Two brief individual meetings and four weekend social events. Parents and teachers attend two group sessions emphasizing	Intervention group demonstrated significantly greater reductions in social anxiety (ADIS-PC), social phobia (SPDSCF) and improved overall functioning (CGAS) compared to controls.

	psychoeducation regarding social anxiety and methods to manage social anxiety and minimize avoidance.

Author & Country	Sample (Age, gender)	Study design	Presenting difficulty and screening procedure	Therapeutic method	Deliverers and background	Outcomes
Masia-Warner et al. (2007) USA	36 Pupils (Intervention group 19) Age 14-16 72% Female 28% Male	Randomised controlled trial	Pupils were recruited through their school and screened using the ADIS-P/C. Pupils identified were those who had a DSM-IV primary diagnosis of	Skills for Social and Academic Success. Group based CBT designed to treat adolescent social anxiety disorders.	CBT interveners. Clinical psychologist and a clinical psychology graduate student.	Results found that social anxiety severity ratings were significantly lower in the SASS group compared to the control ($p<0.001$). This continued at follow up.

	72.2% Caucasian 5.6% African American 16.7% Hispanic 5.6% other	social anxiety disorder. 42% comorbidity	12 weekly, 40 minute group sessions. Two brief individual meetings and four weekend social events. Parents and teachers attend two group sessions emphasizing	In treatment completers, social phobia severity ratings at follow-up were significantly lower for SASS than ESGF. 10 of the 17 (58.8%) in the treatment group no longer met criteria for social

		psychoeducation regarding social anxiety and methods to manage social anxiety and minimize avoidance.	anxiety disorder compared to 0% in the control. No significant differences in parent reported clinical improvement were found between groups. A significant difference in adolescent reported clinical

	improvement was found between groups.

Author & Country	Sample (Age, gender)	Study design	Presenting difficulty and screening procedure	Therapeutic method	Deliverers and background	Outcomes
Shortt et al. (2001) Australia	71 Pupils (Intervention group 54) 6-10 years old 42 Female 29 Male 92% Australian 7% European	Randomised controlled trial	Pupils were recruited through school and screened using the ADIS-C/P. Pupils identified were those who met the DSM-IV diagnostic	FRIENDS cognitive behavioural program. Family and peer group intervention. 10 weekly 50-60-minute sessions.	CBT interveners. Two clinical masters trained doctoral candidates.	According to DISCAP report intervention group 69% diagnosis free compared to 6% control (P<0.001). Clinicians' severity ratings demonstrated a

1% Asian	criteria for SAD, GAD or SOP. 72% Comorbidity	Delivered in groups of 5-13 children. Parents involved in first 10 minutes and last 10 minutes. Booster sessions conducted at 1 and 3 month follow up.	statistically significant reduction in the intervention group compared to the control.

Group 2: School practitioner						
Ginsburg et al. (2012) USA	32 Pupils (Intervention group 17) 7-17 years. 63% female 37% Male 84% African American	Pilot randomized control trial	Recruited through school based mental health clinic. Screened using the ADIS-C/P. Pupils identified were those who had a minimum score of 4, confirming a diagnosis of a	Modular Cognitive Behavioural Therapy (M-CBT). 12 weekly, 30-45-minute sessions. Delivered in an individual format. M-CBT allows facilitators to	School-based intervener. School-based therapists. Background included: Social work (63.6%), Counselling (18.2%), Psychology (9.1%), Art therapy (9.1%)	Results showed children's anxiety levels significantly reduced overtime for both groups, as measured by the ADIS-C/P CSR. 26.7% no longer met diagnosis. 50% significant improvement in global functioning. No

	primary anxiety disorder. Disorders included Generalised anxiety, social anxiety, separation anxiety and specific phobia. 63% comorbidity	pick from a range of modules and choose which they feel are most appropriate for that individual child.	significant differences between treatments on any measures. 1 month follow up results showed significant reductions on the SDQ for the CBT group p=0.4. No significant differences

| | | |

Author & Country	Sample (Age, gender)	Study design	Presenting difficulty and screening procedure	Therapeutic method	Deliverers and background	Outcomes
Ginsburg et al. (2020) USA	216 Pupils (Intervention group 148). 6-18 years. 48% female 52% male 63% Non Hispanic white 28.7% other	Randomized Controlled Effectiveness Trial	Recruited via referrals from clinicians, school staff and parents. Screened using the ADIS-C/P. Pupils identified were those who met the DSM-IV	Modular Cognitive Behavioural Therapy (M-CBT). 9 Weekly, 20-25-minute sessions M-CBT allows facilitators to	School based interveners. School based practitioners (Social workers (37%) counsellors (5%), school psychologists (48%), and others (10%))	Youth in both treatment groups showed levels of clinical and functional improvement across several outcome measures. 34% in CBT condition no longer met criteria for any

	criteria for a primary anxiety disorder. Disorders included SAD, SOP, GAD, SP and NOS.	pick from a range of modules and choose which they feel are most appropriate for that individual child.	study entry anxiety disorder. Youth in intervention showed significant reductions in anxiety severity and improvements in global functioning post treatment.	

					No significant differences between treatments, with the exception of parent reported SCARED at post treatment. M-CBT students had significantly lower SCARED scores than control (p=0.5).

Author & Country	Sample (Age, gender)	Study design	Presenting difficulty and screening procedure	Therapeutic method	Deliverers and background	Outcomes
Ginsburg et al. (2021) USA	54 Pupils (Intervention group 20) 5-12 years old. 68.5% female 31.5% male 16% Hispanic 84.9% White	Pilot randomised controlled trial	Recruited through school nurse/teachers/ flyers. Pupils were screened using the ADIS-C/P. 80% met diagnosis for	Child Anxiety Learning Modules (CALM). CALM is an intervention aimed at anxiety which was developed and adapted for use	School nurses	Youth in both groups showed significant reductions in anxiety and related symptoms as measured by the Clinical global impression-severity (CGI-S) and

	primary anxiety disorder.	by school nurses.	improvement (CGI-I) scales.
	Disorders included Generalised anxiety, social anxiety, separation anxiety, specific phobia, panic disorder, separation anxiety.	8 weekly, 20-25-minute sessions.	Both groups showed improvements in functioning via the Children's Somatization Inventory, Children's Automatic Thoughts Scale, and Behavioural Avoidance measures.

				No significant difference between groups. Longitudinal analysis showed children in both groups showed statistically significant and positive changes after 3 month follow up (Children's Somatization

				Inventory, Children's Automatic Thoughts Scale, and Behavioural Avoidance).

Author & Country	Sample (Age, gender)	Study design	Presenting difficulty and screening procedure	Therapeutic method	Deliverers and background	Outcomes
Masia-Warner et al. (2016) USA	138 Pupils (Intervention group 46) 14-17 years. 68% Female 32% Male 72% White	Randomized control trial	Pupils were recruited through school and screened using the ADIS-P/C. Pupils identified were those who had a minimum score of 4, confirming a	Skills for Social and Academic Success. Group based CBT designed to treat adolescent social anxiety disorders.	School-based interveners. Masters level school counsellors.	Intervention group had significantly superior effect on SAD severity than the control ($p=0.002$) measured by ADIS-P/C. This continued at 5 month follow up $p<0.001$, $d=.93$

	diagnosis of a primary anxiety disorder. All pupils met the diagnosis criteria for Social Anxiety Disorder. 42% comorbidity	12 weekly, 40 minute group sessions. Two brief individual meetings and four weekend social events. Parents and teachers attend two group sessions emphasizing	Significantly more treatment participants were considered treatment responders as per the CG—I ratings compared to control p<0. 001.This continued at follow up p<0.001.

	psychoeducation regarding social anxiety and methods to manage social anxiety and minimize avoidance.	Intervention group showed higher remission rates (22%) compared to control (7%). This continued at follow up.

Appendix C

Weight of Evidence

Weight of evidence A (WoE A): Methodological quality

The Kratochwill (2003) coding protocol was used to assess the methodological quality of the included studies. Each study was given a rating according to the following criteria. Appendix D outlines amendments made to the protocol along with rationale for their removal.

Table 7

WoE A Criteria

	Strong evidence (3)	Promising Evidence (2)	Weak evidence (1)
Research Methodology	• Detailed reporting of research design, sampling method, measures, participant description	• Reporting of all elements (research design, sampling method, measures, participant description) but lacks detail	• Missing elements of design, sampling method and participant description.

WoE A Criteria			
	Strong Evidence (3)	Promising evidence (2)	Weak evidence (1)
	• Clear links between concepts and data collection methods • Data integrated from multiple sources	• Clear links between concepts and data collection methods • Data integrated from multiple sources	• Clear links between concepts and data collection methods •
Measurement	• A reliability coefficient of at least 0.85 for all outcome measures • Validity noted for all measures • Data should be collected using multiple methods	• Reliability should be at least 0.70 for most of the outcome measures • Validity noted for most measures • Data should be collected using multiple methods or	• Reliability should be at least 0.70 for 50% of measures

WoE A Criteria			
	Strong Evidence (3)	Promising evidence (2)	Weak evidence (1)
	• Data should be obtained from various resources (if appropriate)	• compiled from various resources (if appropriate)	
External validity indicator	• Detailed description of all participants characteristics, beyond gender and demographic • Recruitment and screening detailed • Rationale for sample provided	• Some description of participants (gender, demographic) • Recruitment and screening detailed • Clear exclusion/inclusion criteria	• Minimal description of participants • Recruitment and screening reported but not in detail • Clear exclusion/inclusion criteria • Minimal description of some but not all contextual

WoE A Criteria			
	Strong evidence (3)	Promising Evidence (2)	Weak Evidence (1)
	• Clear exclusion/inclusion criteria • Complete and detailed description of context in which intervention occurs	• Some detailed description of context in which intervention occurs	components in which intervention occurs
Implementation fidelity	• Information provided to facilitators involves written materials providing detailed account of procedures for intervention/ formal training	• Information provided to facilitators involves written materials providing broad overview of procedures for intervention/ training	• No mention of manual or training • Lacks information about the intervention • No reporting of adaptations.

WoE A Criteria

	Strong evidence (3)	Promising Evidence (2)	Weak Evidence (1)
	• session reported detailing procedures • Information regarding session number, length, location is provided • Adaptations of the intervention reported in detail.	• session reported detailing broad procedures • Some information about the intervention • Minimal reporting of adaptions to intervention	

Table 8

Overall WoE A scores for studies included in this review

Study	Research Methodology	Measurement	External validity indicators	Implementation fidelity	Overall WoE A*
Group 1: CBT clinicians					
Bernstein et al. (2005)	3	0	2	2	1.75 Medium
Ginsburg & Drake (2002)	1	1	1	2	1.24 Low
Masia-Warner et al. (2005)	3	0	3	1	1.75 Medium
Masia-Warner et al. (2007)	3	1	2	1	1.75 Medium
Shortt et al. (2001)	2	2	2	2	2 Medium
Group 2: School practitioner					
Ginsburg et al. (2012)	3	2	2	2	2.25 Medium
Ginsburg et al. (2020)	3	3	2	2	2.5 High
Ginsburg et al. (2021)	3	1	3	2	2.25 Medium

Masia-Warner et al. (2016)	3	1	3	3	2.5 High

*Calculated by taking the average score of the 4 categories. These were added together, and the total was divided by four.

Note 1: WoE A ratings receive a rating of low <1.6, medium if between 1.6 and 2.4, and high if ≥2.5

Table 9

Sections of Kratochwill (2003) protocol that were excluded

Section heading	Section removed	Rationale
I. General Study Characteristics	Section A: General Study Characteristics	Discussed in detail in review.
	Section B: General Design Characteristics	All studies are randomised controlled trials. Further evaluation of randomisation is included in WoE B.
	Section C: Data Analysis	This was excluded as it is not relevant for this review.
	Section D: Type of Program	This was excluded as all studies within this review are 'intervention' programs.

Table 9

Sections of Kratochwill (2003) protocol that were excluded

Section heading	Section removed	Rationale
	Section E: Stage of Program	This was excluded as it is not relevant for this review.
	Section F: Concurrent or Historical Intervention Exposure	This was excluded as it is not relevant for this review.
II. Key Features of Coding for studies and Rating Level of Evidence/Support	Section A1: Characteristics of the data collector	Not relevant for the purpose of this review.
	Section A2: Characteristics of Participants	Not relevant for the purpose of this review.
	Section B.6: Cultural appropriateness of the Measures	Not relevant for the purpose of this review.
	Section C: Comparison group	This is discussed in other areas of the review

Table 9

Sections of Kratochwill (2003) protocol that were excluded

Section heading	Section removed	Rationale
	Section D: Primary/Secondary outcomes are statistically significant	This is excluded as it will be discussed in detail within the study.
	Section E: Cultural significance	This is excluded as it is it not relevant to the purpose of this review question.
	Section F: Educational/clinical significance.	This is excluded as it is discussed in detail within this review.
	Section G1.5: Recruitment procedures congruent with target cultural group. Researcher used culturally appropriate ways/methods to contact, recruit, inform, and maintain participation.	This is excluded as it is it not relevant to the purpose of this review question.

Table 9

Sections of Kratochwill (2003) protocol that were excluded

Section heading	Section removed	Rationale
	Section G2. Participant characteristics specified for treatment and control group	This is excluded as it is it not relevant to the purpose of this review question.
	Section H: Durability/ generalization of intervention and outcomes	This is excluded as it is discussed elsewhere in this review.
	Section I: Intervention Components	This is excluded as it is it not relevant to the purpose of this review question.
	Section J4.1: Characteristics of the Implementer	This is excluded as it is it not relevant to the purpose of this review question.
	J4.4 Documents the relationship between the	This is excluded as it is it not relevant to the

Table 9

Sections of Kratochwill (2003) protocol that were excluded

Section heading	Section removed	Rationale
	implementers and participants	purpose of this review question.
	J4.7 Dosage Response	This is excluded as it is it not relevant to the purpose of this review question.
	J4.8 Program Implementer	This is excluded as it is discussed elsewhere in this review.
	J4.9 Intervention Style	This is excluded as it is discussed elsewhere in this review.
	J4.10 Cost analysis data	This is excluded as it is it not relevant to the purpose of this review question.

Table 9

Sections of Kratochwill (2003) protocol that were excluded

Section heading	Section removed	Rationale
	J4.12.2 Cost to train intervention agents if known	This is excluded as it is it not relevant to the purpose of this review question.
	Section K: Replication	This is excluded as it is it not relevant to the purpose of this review question.
	Section L: Site of Implementation	This was excluded as all studies included in this review involved interventions conducted within schools, therefore is not relevant for this review question.

Weight of Evidence B (WoE B): Methodological Relevance

This section assesses how appropriate each study research design is for answering the current review question. For the purpose of this review, I have split up the question into two overarching questions:

Question (a): How effective is school based CBT for alleviating symptomology in children with anxiety disorders, when delivered by CBT clinicians?

Question (b): How effective is school based CBT for alleviating symptomology in children with anxiety disorders, when delivered by school practitioners?

The criteria and rational are presented below in tables 10 and 11 respectively. A summary of the WoE B scores is presented in table 12.

Table 10

Summary of WoE B criteria

WoE Dimension	WoE Rating	Criteria
Control group	High (3)	• Active control group (Usual care, alternative treatment)
	Medium (2)	• Attention control group (Control receives attention of some form)
	Low (1)	• Waitlist control group
Assignment of participants to groups	High (3)	• Randomised assignment of participants to intervention and control groups is documented in detail.

Table 10

Summary of WoE B criteria

WoE Dimension	WoE Rating	Criteria
Assignment of participants to groups	Medium (2)	• Randomised assignment of participants to intervention and control groups but lack of detail reported.
	Low (1)	• Randomisation at school/clinician level (Cluster randomisation)
Use of independent evaluator to assess symptom severity	High (3)	• Use of independent evaluator blind to groups to assess anxiety symptoms post intervention
	Medium (2)	• Use of independent evaluator not blind to the groups to assess symptom severity post intervention
	Low (1)	• No independent evaluator used to assess symptom severity post intervention

Table 11

Rationale for criteria used

Criteria	Rationale
Control group	As this review is looking at the effectiveness of interventions within randomised controlled trials, studies that make a clear comparison between treatment and control can make a more valid causal explanation as to the effectiveness of that

Table 11

Rationale for criteria used

Criteria	Rationale
	intervention. Moreover, the use of an active control group as opposed to a waitlist control is preferable. A well-designed control group not only increases reliability of the study but also improves its blinding, which further affects the study results
Random Assignment	This is a key factor in what contributes to randomised control trials being the 'Gold standard' of designs for measuring the effectiveness of an intervention (Petticrew & Roberts, 2003). Randomisation at pupil level is preferred as this eliminates likelihood of selection bias, allowing researchers to infer efficacy of the intervention more accurately.
Use of independent evaluator to assess symptom severity	Using an independent evaluator who is blind to conditions is likely to reduce chance of researcher bias and therefore lead to more valid measures of symptom severity. Moreover, without evaluators being blind to conditions, knowledge of subject assignment bias may be introduced due to

Table 11

Rationale for criteria used

Criteria	Rationale
	things such as extra attention given to the intervention group.

Table 12

A summary of the WoE B findings

Study	Control	Random Assignment	Independent evaluator	WoE B Overall*
Group 1: CBT clinician				
Bernstein et al (2005)	1	1	3	1.6 (Medium)
Ginsburg & Drake (2002)	2	3	1	2 (Medium)
Masia-Warner et al. (2005)	2	2	3	2.3 (High)
Masia-Warner et al. (2007)	2	2	3	2.3 (high)
Shortt et al. (2001)	2	3	3	2.6 (High)
Group 2: School practitioner				
Ginsburg et al. (2012)	3	3	3	3 (High)
Ginsburg et al. (2020)	3	1	2	2 (Medium)
Ginsburg et al. (2021)	3	1	2	1.6 (Medium)
Masia-Warner et al. (2016)	3	2	3	2.6 (High)

*Calculated by taking the average score of the 3 categories. These were added together, and the total was divided by three. Note 1: WoE A ratings receive a rating of low <1.6, medium if between 1.6 and 2.4, and high if ≥2.5

Weight of Evidence C (WoE C): Topic Relevance

This section assesses how relevant the focus of the included studies are to the current review question. Four criteria were developed. It was decided that the extent to which all participants in the study have been diagnosed with an anxiety disorder, the experience of the intervention facilitators, the detail and reporting of outcome measures and the inclusion of a follow up phase were significant indicators of relevance to this review question. As this review's question was split into two sub questions, the experience of intervention facilitators category has been split up into two groups to reflect this. WoE C criteria and rationale are provided in table 13 and 14. Table 15 provides a summary of the scores given for included studies.

Table 13

WoE C criteria and ratings

WoE Rating	WoE Rating	Criteria
Participant Diagnosis	High (3)	• All participants have a diagnosis of a primary anxiety disorder as measured against a reliable and valid measure, such as the DSM-IV/V or ADIS. • This is detailed clearly demonstrating how many participants have what disorder.
	Medium (2)	• Most (90%+) of participants have a diagnosis of a primary anxiety disorder as measured against a reliable and valid measure such as the DSM-IV/V or

Table 13

WoE C criteria and ratings

WoE Rating	WoE Rating	Criteria	
		ADIS.	
	Low (1)	• Below 90% Participants met diagnosis for a primary anxiety disorder.	
Experience of practitioner (Given the two sub review questions, there are two sets of evidence for this category)	High (3)	• School practitioners without extensive background in mental health and CBT (I.e., Teachers).	• Therapists with extensive training in CBT principles and delivery.
	Medium (2)	• School practitioners with some background in mental health but not CBT trained (School counsellors, school psychologists, social workers)	• Clinician with extensive clinical experience and knowledge of CBT

Table 13

WoE C criteria and ratings

WoE Rating	WoE Rating	Criteria
	Low (1)	• School practitioners with background in mental health and CBT training • Clinical graduates with experience delivering CBT.
Outcome Measure	High (3)	• Inclusion of pre and post measures of disorder symptomology against a clinical criterion reported for treatment and control.
Outcome Measure	High	• Effect sizes, confidence intervals and significance reported for all measures.
	Medium (2)	• Inclusion of pre and post measures of disorder symptomology against a clinical criterion reported for treatment and control. • Effect sizes, confidence intervals and significance reported for some but not all outcome measures
	Low (1)	• Included pre and post measures of Anxiety/Depressive symptomology via self-report measures
Follow up phase	High (3)	• Follow up phase looking at Anxiety clinical severity (+5 months)

Table 13

WoE C criteria and ratings

WoE Rating	WoE Rating	Criteria
	Medium (2)	• Follow up phase looking at Anxiety clinical severity (0-5 months)
	Low (1)	• No follow up phase

Table 14

Rationale for WoE C Criteria

Criteria	Rationale
Participant diagnosis	As the review aimed to consider the effectiveness of school-based practitioners delivering CBT interventions for children with a clinical level of anxiety, inclusion of participants without clinical levels of anxiety may lead to over inflation of the impact of interventions.

Table 14

Rationale for WoE C Criteria

Criteria	Rationale
Intervention facilitator experience	As the review question is considering whether school-based practitioners can be effective at delivering CBT through comparison of two sub groups; School practitioners and CBT clinicians, the interventions should either be delivered by school-based practitioners who do not have clinical psychology or CBT qualifications or by CBT clinicians with qualifications in clinical psychology or CBT, to give a clear comparison of impact of practitioner.
Outcome Measure	Given that the participants are those with anxiety disorders, studies that include outcome measures set against a clinical criterion are likely to demonstrate more valid intervention efficacy. Moreover, those that have reported effect sizes and confidence intervals allow a more

Table 14

Rationale for WoE C Criteria

Criteria	Rationale
	accurate and valid interpretation of results.
Follow up phase	A follow-up phase indicates whether the intervention maintains treatment gains over time after the intervention has ceased. Interventions with follow up phases are likely to give more valid evidence as to the efficacy of an intervention.

Table 15

Summary of WoE C Ratings

Study	Dimension criteria and scores				Mean score	Overall WoE C Weight*
	Participant diagnosis	Intervention facilitator experience	Outcome Measure	Follow up phase		
Group 1: CBT clinician						

Bernstein et al. (2005)	1	3	2	1	1.75	Medium
Ginsburg & Drake (2002)	3	1	2	1	1.75	Medium
Masia-Warner et al. (2005)	3	3	2	3	2.75	High
Masia-Warner et al. (2007)	3	2	3	3	2.75	High
Shortt et al. (2001)	3	1	2	3	2.25	Medium
Group 2: School practitioner						
Ginsburg et al. (2012)	2	2	3	2	2.25	Medium
Ginsburg et al. (2020)	2	2	3	3	2.25	Medium
Ginsburg et al. (2021)	2	2	2.	2	2	Medium
Masia-Warner et al. (2016)	2	3	3	3	2.75	High

*Calculated by taking the average score of the four categories. These were added together, and the total was divided by four.

Note 1: WoE C ratings receive a rating of low <1.7, medium if between 1.75 and 2.25, and high if ≥2.5

Weight of Evidence D (WoE D): Overall rating

The total weighting (WoE D) for each study is presented below. This takes scores from WoE A, B and C and averages them to give a total score. A summary of the scores is presented below:

Table 16

Combined weight of Evidence 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*)
Group 1: CBT clinician				
Bernsetin et al. (2005)	1.75	1.6	2.2	1.85 (Medium)
Ginsburg & Drake (2002)	1.24	2	2	1.75 (Medium)
Masia-Warner et al. (2005)	1.75	2.3	2.8	2.28 (Medium)
Masia-Warner et al. (2007)	1.75	2.3	2.8	2.28 (Medium)

Shortt et al. (2001)	2	2.6	2.2	2.26 (Medium)
Group 2: School practitioner				
Ginsburg et al. (2012)	2.25	3	2.6	2.61 (High)
Ginsburg et al. (2020)	2.5	2	2.8	2.43 (Medium)
Ginsburg et al. (2021)	2.25	1.6	2.4	2.08 (Medium)
Masia-Warner et al. (2016)	2.5	2.6	3	2.7 (High)

*Calculated by taking the average score of the 3 categories. These were added together, and the total was divided by three.
Note 1: WoE D ratings receive a rating of low <1.6, medium if between 1.6 and 2.4, and high if ≥2.5

Appendix D

[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

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

Name of Coder: Date:

Full Study Reference in proper format:

Bernstein, G. A., Layne, A. E., Egan, E. A., & Tennison, D. M. (2005). School-Based Interventions for Anxious Children. *Journal of the American Academy of Child and Adolescent Psychiatry,* *44*(11), 1118.https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,shib&db=eric&AN=EJ728035&site=ehost-live&scope=site&custid=s845445

Doctorate in Educational and Child Psychology

Intervention Name: FRIENDS CBT program

☐ Type of Publication:

☐ Book/Monograph

☐ Journal Article

☐ Book Chapter

☐ Other (specify):

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. Research Methodology (Answer A1 through A5)

A.2 Sample appropriate to research methods. Research methods guide sampling procedures.

☐ 3 Clear links established between research methods and sampling, and sampling is appropriate to the research methods.

☐ 2 Vague or no links established between research methods and sampling, but sampling is appropriate to the research methods

☐ 1 Links established between research method and sampling, but sampling is inappropriate to the research method.

☐ 0 No links are established and sampling is inappropriate to research methods.

A4. Operationalization. Specifying the link between key abstract constructs (variables) and data collection methods (operations).

☐3 Clear links established between constructs and methods, and all key constructs are clearly operationalized.

☐2 Some, but not all, key constructs are clearly operationalized.

☐1 Vague reference to link between constructs and methods.

☐0 No evidence that key constructs are operationalized.

A5. Integration of data from multiple sources, methods, and investigators

☐3 Used multiple sources, methods, and investigators.

☐2 Used two of the following: multiple sources, multiple methods, multiple investigators

☐1 Used one of the following: multiple sources, multiple methods, multiple investigators

☐0 No evidence of multiple sources, methods, or investigators

Overall Rating for Research methodology

3= Strong Evidence 2=Promising Evidence 1=Weak Evidence 0=No Evidence

B. Measurement (Estimating the quality of the measures used to establish effects)

B1 The use of the outcome measures produce reliable scores for the majority of the primary outcomes

☐ Yes

☐ No

☐ Unknown/unable to code

B2 Multi-method (at least two assessment methods used)

☐ Yes

☐ No

☐ N/A

☐ Unknown/unable to code

B3 Multi-source (at least two sources used self-reports, teachers etc.)

☐ Yes

☐ No

☐ N/A

☐ Unknown/unable to code

B4 Extent of Engagement--The researchers conduct data collection in a manner that guarantees sufficient scope and depth through prolonged engagement (data collection over a sufficient time period to ensure accuracy of representation) and persistent observation (progressively focused to ensure thorough understanding of consistency and variation), respectively.

☐ 3 Provided evidence for high level of engagement to ensure deep and accurate representation.

☐ 2 Provided evidence for some level of engagement to ensure deep and accurate representation.

☐ 1 Provided evidence of minimal level of engagement to ensure deep and accurate representation.

☐ 0 Provided no evidence for level of engagement to ensure deep and accurate representation.

B5 Validity of measures reported

☐ Yes validated with specific target group

☐ In part, validated for general population only

☐ No

☐ Unknown/unable to code

B7 Measures of key outcomes are linked to the conceptual model.

☐ 3 Clear links established between the conceptual model and key outcome indicators

☐ 2 Some, but not all, key outcomes are clearly linked to conceptual model.

☐ 1 Vague reference to links between key outcomes and conceptual model

☐ 0 No evidence that key outcomes are linked to conceptual model.

Overall Rating for measurement

3= Strong Evidence 2=Promising Evidence 1=Weak Evidence 0=No Evidence

G. External Validity Indicators

G1. Sampling Procedures

G1.1 Sampling procedures described in detail

☒ 1 Yes

☐ 0 No

G1.2 Rationale for sample selection specified

☐ 1 Yes

☒ 0 No

Specify:

G1.3 Rationale for sample size specified

☐ 1 Yes

☒ 0 No

Specify:

G1.4 Evidence provided that sample represents target population

☐ 1 Yes

☒ 0 No

G1.6 Inclusion/exclusion criteria specified

☒ 1 Yes

☐ 0 No

G1.7 Inclusion/exclusion criteria similar to school practice

Doctorate in Educational and Child Psychology

☒1 Yes

☐0 No

G1.8 Specified criteria related to concern

☒1 Yes

☐0 No

Overall Rating for sampling (2)

3= Strong Evidence 2=Promising Evidence 1=Weak Evidence 0=No Evidence

G3 Adequately reported characteristics of participants/sample. Adequate level of detail in description of participants

☒1 Yes

☐0 No

G4 Details are provided regarding variables that:

G4.1 Have differential relevance for intended outcomes

☐1 Yes

☒0 No

G4.2 Have relevance to inclusion criteria

☒1 Yes

☐0 No

G5 Transferability of the intervention.

☐ 3 Complete and detailed description of the context within which the intervention occurs

☐ 2 Detailed description of some but not all contextual components

☐ 1 Provides overview of contextual components but lack details

☐ 0 No description of context

G6 Participant perceptions of benefits of intervention

☐ 3 Provided evidence of perceived benefits from the intervention for all participant groups.☐ 2 Provided evidence of perceived benefits from the intervention for some participant groups.

☐ 1 Provided evidence that participants did not perceive benefits from the intervention

☐ 0 Did not investigate participants' perceptions of benefits.

Overall Rating for External Validity

3= Strong Evidence 2=Promising Evidence 1=Weak Evidence 0=No Evidence

J. Implementation Fidelity

J1. Evidence of Acceptable Adherence (answer J1.1 through J1.3)

☐ 1 Ongoing supervision/consultation

☐ 2 Coding intervention sessions/lessons or procedures

☐ 3 Audio/video tape implementation (select J1.3.1 or J1.3.2):

☐ 1 Entire intervention

☐ 2 Part of intervention

J2 Manualization (select all that apply)

☒ 1 Written material involving a detailed account of the exact procedures and the sequence in which they are to be used

☐ 2 Formal training session that includes a detailed account of the exact procedures and the sequence in which they are to be used

☐ 3 Written material involving an overview of broad principles and a description of the intervention phases

☒ 4 Formal or informal training session involving an overview of broad principles and a description of the intervention phases

J3 Adaptation procedures are specified (select one)

☒ Yes

☐ No

☐ Unknown

Rating for Implementation fidelity

3= Strong Evidence 2=Promising Evidence 1=Weak Evidence 0=No Evidence

J4. Implementation Context (Conditions of Implementation)

J4.2 Adaptations in Implementation

☒ 3 Detailed account of the implementation and adaptations to fit the context or target population

☐ 2 Detailed account of the implementation but not of the adaptations to fit the context or target population

☐ 1 Partial description of the implementation and/or the adaptations to fit the context or target population

☐ 0 Vague or no account of the implementation

J4.3 Relationship of Researcher to Intervention

☒ 3 Detailed description of the researcher's level of involvement and safeguards used to minimize the bias of the researcher.

☐ 2 Detailed description of the researcher's level of involvement, but minimal description of safeguards to minimize the bias of the researcher

☐ 1 Minimal description of the researcher's level of involvement and of safeguards to minimize the bias of the researcher.

☐ 1 No information provided

J4.5 Length of Intervention (select J4.5.1 or J4.5.2)

☐ 1 Unknown/insufficient information provided

☐ 2 Information provided (if information is provided, specify one of the following:)

- ☒ 2.1 weeks N=9
- ☐ 2.2 Months N
- ☐ 2.3 Years N
- ☐ 2.4 Other N

J4.6 Intensity/dosage of Intervention (select J4.6.1 or J4.6.2)

☐ 6.1 Unknown/insufficient information provided

☐ 6.2 Information provided (if information is provided, specify one of the following:)

☐ Length of intervention session N= 60 minutes

☐ Frequency of intervention session N= Weekly

J4.11 Training and Support Resources (select all that apply)

J4.11.1. ☐ Simple orientation given to change agents

J4.11.2. ☐ Training workshops conducted

# of Workshops provided Not specified

Average length of training Not specified

Who conducted training (select all that apply)

J4.11.2.1 ☐ Project Director

J4.11.2.2 ☐ Graduate/project assistants

J4.11.2.3 ☐ Other (please specify):

J4.11.2.3 ☐ Unknown

J4.11.3. ☐ Ongoing technical support

J4.11.4. ☐ Program materials obtained

J4.11.5. ☐ Special Facilities

J4.11.6. ☐ Other (specify):

J4.12 Feasibility

J4.12.1 Level of difficulty in training intervention agents (select one of the following)

☐ 1 High

☐ 3 Moderate

☐ 1 Low

☐ 0 Unknown

J4.12.3 Rating of cost to train intervention agents (select one of the following)

☐ 1 High

☐ 3 Moderate

☐ 1 Low

☐ 0 Unknown

J. Overall Rating for Implementation fidelity

3= Strong Evidence 2=Promising Evidence 1=Weak Evidence 0=No Evidence

Indicator	Overall Evidence Rating NNR= No numerical rating or 0-3	Description of Evidence Strong Promising Weak No/Limited evidence or Descriptive ratings
Key Features		
Research Methodology	3	Strong
Measurement	0	Limited

External Validity Indicators	2	Promising
Implementation Fidelity	2	Promising