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 ri if such
ould be placed on them in the first place? This systematic review aims
d compare nine studies which delivered school-based cognitive
apy programmes to individuals with anxiety disorders. Four of these
programmes delivered by school-based practitioners, and the other
ograms delivered by facilitators either trained in CBT or trained to
disorders. A literature search using three online databases was
using Gough's (2007) framework, I undertook an in-depth analysis of

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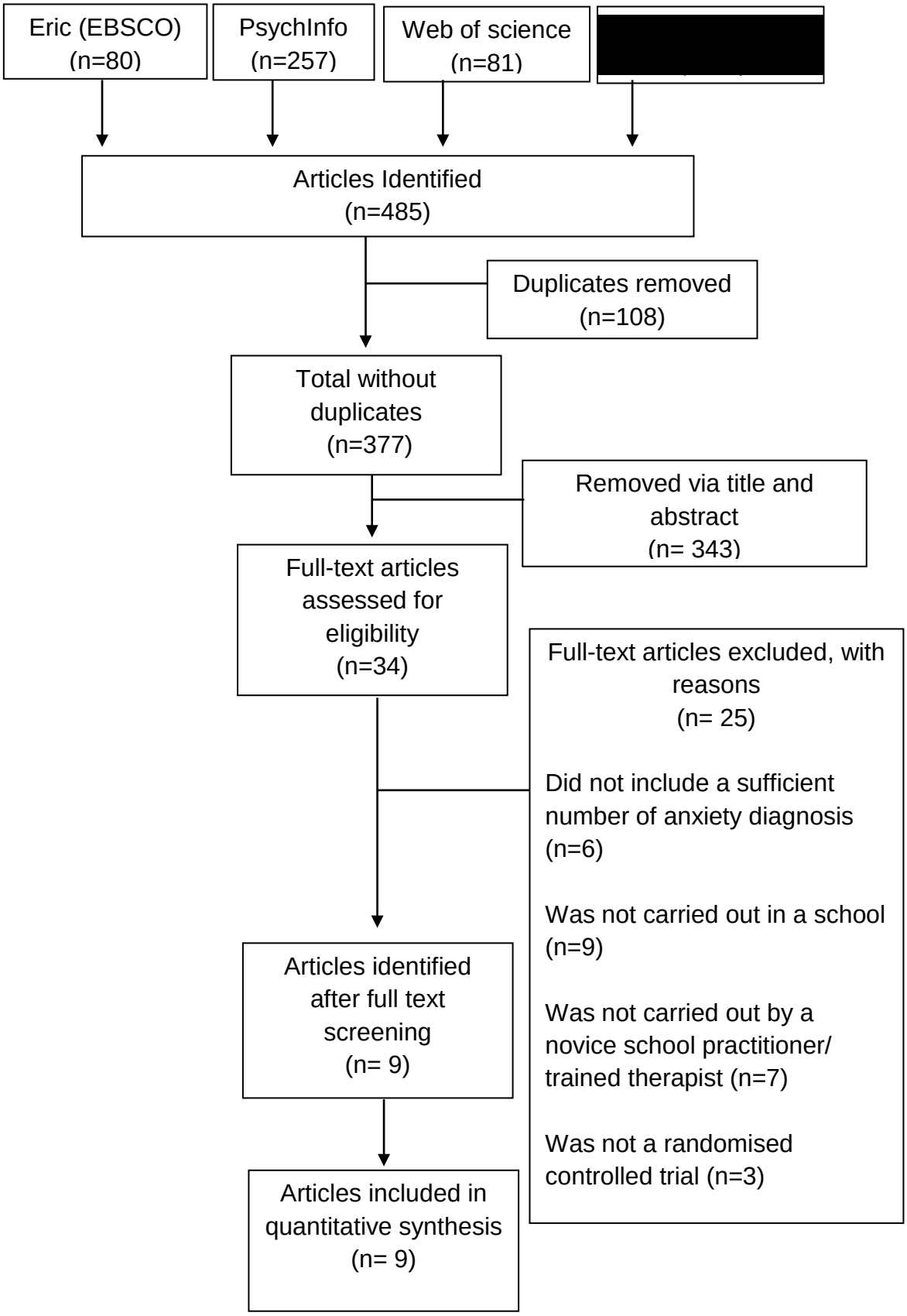
“Cognitive behav* treatment*”	School-aged children	School based	“Generali?ed anxiety disorder*”
“Cognitive intervention*”	Adolesc*	Delivered by school staff	“Primary Anxiety disorder*”
	Student*	school NEAR/2 intervention	
	CYP		
	Youth		
	Young people		

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

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



	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

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 resp12 -0 c (

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

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 fu(W)-32 (o)

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

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.

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(eTc 0 Tw 1.67 0 Td3( )Tj0.004 Tc -0.004 c 1Tjr)17Td[(m)-3 (aC16

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;

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Subgroup analysis of the two groups revealed positive overall effects. As can be seen from 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%.

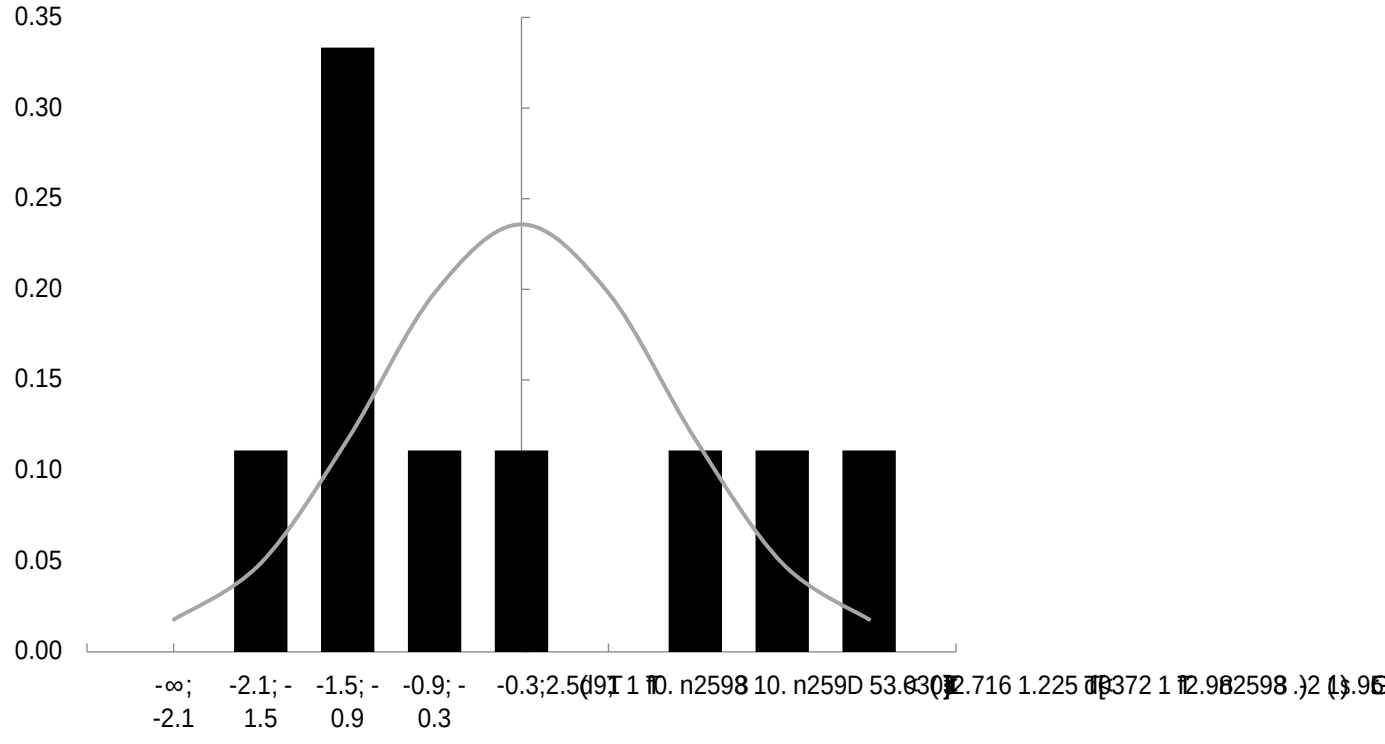
Publication bias

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 suiviolving school and

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 al7 ((27TJ0.0.5(n)7 (g)1g)-3 (t)-42 (er)7 (vcer)7 (t M)7 (as)4(e)10 c16)10 (p)9.9

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.

Dunsmuir, S., & Hardy, J. (2016). *Delivering Psychological Therapies in Schools and Communities*.

Ginsburg, G., Drake, K. L., Muggeo, M. A., Stewart, C. E., Pikulski, P. J., Zheng, D., &

Guy, W. B. R. R. (1976). Clinical global impression. *Assessment manual for Psychopharmacology*, 217-222.

James, A. C., Reardon, T., Soler, A., James, G., & Creswell, C. (2020). Cognitive behavioural therapy for anxiety disorders in children and adolescents. *The Cochrane Database of Systematic Reviews*, *2020*(11). https://doi.org/10.1002/14651858.CD013162.PUB2

Kratochwill, T. R., & Shernoff, E. S. (2003). Evidence-Based Practice: Promoting Evidence-Based Interventions in School Psychology. *School Psychology Quarterly*, *18*(4), 389–408. https://doi.org/10.1521/SCPQ.18.4.389.27000

Langley, A. K., Bergman, R. L., McCracken, J., & Piacentini, J. C. (2004). Impairment in childhood anxiety disorders: Preliminary examination of the child anxiety impact scale–parent version. *Journal of child and adolescent psychopharmacology*, *14*(1), 105-114.

Liebowitz, M. R., Schneier, F., Campeas, R., Hollander, E., Hatterer, J., Fyer, A., ... & Klein, D. F. (1992). Phenelzine vs atenolol in social phobia: a placebo-controlled comparison. *Archives of General Psychiatry*, *49*(4), 290-300.

Mattick, R. P., & Clarke, J. C. (1998). Development and validation of measures of social phobia scrutiny fear and social interaction anxiety. *Behaviour research and therapy*, *36*(4), 455-470.

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*

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-

https://doi.org/10.1136/JECH.57.7.527

Reardon, T., Harvey, K., & Creswell, C. (2020). Seeking and accessing professional support for child anxiety in a community sample. *European Child & Adolescent Psychiatry*, *29*(5), 649–664. https://doi.org/10.1007/s00787-019-01388-4

Shaffer, David, Madelyn S. Gould, James Brasic, Paul Ambrosini, Prudence Fisher, Hector Bird, and Satwant Aluwahlia. "A children's global assessment scale (CGAS)." *Archives of General psychiatry* 40, no. 11 (1983): 1228-1231.

Settipani, C. A., & Kendall, P. C. (2013). Social Functioning in Youth with Anxiety Disorders: Association with Anxiety Severity and Outcomes from Cognitive-Behavioral Therapy. *Child Psychiatry & Human Development*, *44*(1), 1–18. https://doi.org/10.1007/s10578-012-

5.2 Appendices

Appendix A

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
Bernstein, G. A., Bernat, D. H., Victor, A. M., & Layne, A. E. (2008). School-based interventions for anxious children: 3-, 6-, and 12-month follow-ups. Journal of the American academy of child and adolescent psychiatry, 47(9), 1039–1047. https://doi.org/10.1097/CHI.0b013e31817eecc0	3
Chiu, A. W. M. (2010). Modular Cognitive Behavioral Therapy for Youth	

Hunt, C., Andrews, G., Sakashita, C., Crino, R., & Erskine, A. (2009). Randomized controlled trial of an early intervention programme for adolescent anxiety disorders. The Australian and New Zealand Journal of Psychiatry, 43(4), 300–304. https://doi.org/10.1080/00048670902721152 2

Ingul, J. M., Aune, T., & Nordahl, H. M. (2014). A randomized controlled trial of individual cognitive therapy, group cognitive behaviour therapy and attentional placebo for adolescent social phobia. Psychotherapy and Psychosomatics, 83(1), 54–61. https://doi.org/10.1159/000354672 3

Kendall, P., Flannery-Schroeder, E., Panichelli-Mindel, S. M., Southam-Gerow, M., Henin, A., & Warman, M. (1997). Therapy for youths with anxiety disorders: a second randomized clinical trial. Journal of Consulting and Clinical Psychology, 65(3), 366–380. https://doi.org/10.1037//0022-006X.65.3.366 2

Kh 301.8 0B1TjEMC ET/hi(S)1 (.)12 (1TjEM&)1 (.8 467.60nxETEMC

62(1), 100–110. https://doi.org/10.1037//0022-006X.62.1.100

Kendall, P. C., Hudson, J. L., Gosch, E., Flannery-Schroeder, E., & Suveg, C. (2008). Cognitive-behavioral therapy for anxiety disordered youth: a randomized clinical trial evaluating child and family modalities. Journal of Consulting and Clinical Psychology, 76(2), 282–297. https://doi.org/10.1037/0022-006X.76.2.282

March, S., Spence, S. H., & Donovan, C. L. (2009). The efficacy of an internet-based cognitive-behavioral therapy intervention for child anxiety disorders. Journal of Pediatric Psychology, 34(5), 474–487. https://doi.org/10.1093/JPEPSY/JSN099

Muggeo, M. A., Stewart, C. E., Drake, K. L., & Ginsburg, G. S. (2017). A School Nurse-Delivered Intervention for Anxious Children: An Open --

parent-delivered cognitive–behavioural therapy: Randomised controlled trial. British Journal of Psychiatry, 203(6), 436–444. https://doi.org/10.1192/bjp.bp.113.126698

Tillfors, M., Andersson, G., Ekselius, L., Furmark, T., Lewenhaupt, S., Karlsson, A., & Carlbring, P. (2011). A randomized trial of Internet-delivered treatment for social anxiety disorder in high school students. Cognitive Behaviour Therapy, 40(2), 147–157. https://doi.org/10.1080/16506073.2011.555486 5

Wergeland, G. J. H., Fjermestad, K. W., Marin, C. E., Haugland, B. S. M., Bjaastad, J. F., Oeding, K., Bjelland, I., Silverman, W. K., Öst, L. G., Havik, O. E., & Heiervang, E. R. (2014). An effectiveness study of individual vs. group cognitive behavioral therapy for anxiety disorders in youth. Behaviour Research and Therapy, 57(1), 1–12. https://doi.org/10.1016/J.BRAT.2014.03.007 3

Wuthrich, V. M., Rapee, R. M., Cunningham, M. J., Lyneham, H. J., Hudson, J. L., & Schniering, C. A. (2012). A randomized controlled trial of the Cool Teens CD-ROM computerized program for adolescent anxiety. Journal of the American Academy of Child and Adolescent Psychiatry, 51(3), 261–270. https://doi.org/10.1016/J.JAAC.2011.12.002 3

Appendix B

Table 6

A summary of included studies

Author	&

			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. criteria fo		

	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. (CGAS)

	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.

		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

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 met diag800.32 99.12 0.4 functioning. No

primary anxiety

disorder.

Disorders

included

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	between CBT and control group.

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 in1

						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

				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 $p<0.001$, $d=.93$

	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,		

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

WoE A Criteria			
	Strong evidence (3)	Promising Evidence (2)	Weak Evidence (1)
	Clear exclusion/inclusion criteria Complete and detailed		

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

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	-4DC q70.92a7haiew.

Table 9

Sections

Table 9

Table 9

Sections of Kratochwill (2003) protocol that were excluded

Section heading	Section removed	PjETEMC /P <</MCI88:

Table 9

Sections of Kratochwill (2003) protocol that were excluded

Section heading	Section removed	Rationale

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 $\geq$2.5

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)	

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 diagnosis1)	

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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.

ores

s

Weight*

Measure phase

experience

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		

Appendix D

[Adapted from the Procedural Manual of the Task Force on Evidence-Based Interventions in School Psychology, American Psychology Association, Kratochwill,

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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

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.

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

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☒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

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 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

J4.6 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 NN12 125.88TRd.88TR Tc ah

External Validity Indicators	2	Promising
Implementation Fidelity	2	Promising