Treatment for School Refusal Among Children and Adolescents: A Systematic Review and Meta-Analysis

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Abstract

Objective: School refusal is a psychosocial problem associated with adverse short- and long-term consequences for children and adolescents. The authors conducted a systematic review and meta-analysis to examine the effects of psychosocial treatments for children and adolescents with school refusal. **Method:** A comprehensive search process was used to find eligible randomized controlled trials and quasi-experimental studies assessing the effects of psychosocial treatments on anxiety or attendance outcomes. Data were quantitatively synthesized using meta-analytic methods. **Results:** Eight studies including 435 children and adolescents with school refusal were included in this review. Significant effects were found for attendance but not for anxiety. **Conclusions:** Evidence indicates that improvements in school attendance occur for children and adolescents with school refusal who receive psychosocial treatment. The lack of evidence of short-term effects on anxiety points to the need for long-term follow-up studies to determine whether increased attendance ultimately leads to reduced anxiety.

Keywords

school refusal, anxiety, absenteeism, treatment, cognitive behavior therapy

Introduction

School refusal is a psychosocial problem characterized by a child's or adolescent's difficulty attending school and, in many cases, substantial absence from school (Heyne & Sauter, 2013). A commonly used definition of school refusal includes (a) reluctance or refusal to attend school, often leading to prolonged absences, (b) staying at home during school hours with parents' knowledge rather than concealing the problem from parents, (c) experience of emotional distress at the prospect of attending school (e.g., somatic complaints, anxiety, and unhappiness), (d) absence of severe antisocial behavior, and (e) parental efforts to secure their child's attendance at school (Berg, 1997, 2002; Berg, Nichols, & Pritchard, 1969; Bools, Foster, Brown, & Berg, 1990). These criteria help differentiate school refusal from truancy (based on criteria [b], [c], and [d]) and school withdrawal (based on criterion [e]). The prevalence of school refusal is between 1% and 2% in the general population and between 5% and 15% in clinic-referred samples of youth (Egger, Costello, & Angold, 2003; Heyne & King, 2004).

The Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2013) does not classify school refusal as a disorder, but youth presenting with school refusal are often diagnosed with one or more internalizing disorders. Anxiety disorders are observed in approximately 50% of representative samples of clinic-referred youth exhibiting

school refusal (Baker & Wills, 1978; Bools et al., 1990; McShane, Walter, & Rey, 2001; Prabhuswamy, Srinath, Girimaji, & Seshadri, 2007; Walter et al., 2010). A broad range of anxiety disorders is observed in these young people, including separation anxiety disorder, specific phobias, social phobia, generalized anxiety disorder, and panic disorder with agoraphobia. Even when full-diagnostic criteria for a particular anxiety disorder are not met, children and adolescents with school refusal may be diagnosed with anxiety disorder not otherwise specified (Heyne et al., 2002; McShane et al., 2001) or may experience fear or anxiety related to school attendance at a level below the diagnostic threshold (Egger et al., 2003). Depression may also be observed among children and

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adolescents with school refusal, but it is not as prevalent as anxiety (Baker & Wills, 1978; Bools et al., 1990; Buitelaar, van Andel, Duyx, & van Strien, 1994; King, Ollendick, & Tonge, 1995; Walter et al., 2010; Wu et al., 2013).

School refusal is a complex problem that is multiply determined by a broad range of risk factors, which interact with each other and change over time (Thambirajah, Grandison, & De-Hayes, 2007). Several authors have summarized the risk factors identified in the school refusal literature, differentiating between individual factors (e.g., behavioral inhibition, fear of failure, low self-efficacy, and physical illness), family factors (e.g., separation and divorce, parent mental health problems, overprotective parenting style, and dysfunctional family interactions), school factors (e.g., bullying, physical education lessons, transition to secondary school, and structure of the school day), and community factors (e.g., increasing pressure to achieve academically, inconsistent professional advice, and inadequate support services; Heyne, 2006; Heyne & King, 2004; Thambirajah et al., 2007). These may operate as predisposing, precipitating, and/or perpetuating factors (Heyne, Sauter, Ollendick, Van Widenfelt, & Westenberg, 2014).

In the absence of treatment, most youth with school refusal continue to display problematic school attendance and emotional distress (King et al., 1998), leading to short- and longterm adverse consequences. Nonattendance has been shown to negatively affect learning and achievement and to place youth at risk for early school dropout (Carroll, 2010; Christle, Jolivette, & Nelson, 2007). In addition to being more at risk for education-related problems, youth with school refusal are more likely to display problems in social adjustment. For example, Berg, Butler, and Hall (1976) found that over one third of youth who were treated for school refusal 3 years earlier had no friends or very limited social contacts at follow-up. Valles and Oddy (1984) compared successfully and unsuccessfully treated youth with school refusal based on functioning at 7-year follow-up. Those who had not returned to school displayed a trend toward poorer social adjustment. Additional studies attest to the risk for ongoing mental health problems in late adolescence and adulthood (Berg & Jackson, 1985; Buitelaar et al., 1994; Flakierska-Praquin, Lindström, & Gillberg, 1997; McCune & Hynes, 2005). Family members are also affected by school refusal. Parents may experience distress, due to the crisis-like presentation of school refusal and the challenge of resolving the problem, and family conflict may arise (Heyne & Rollings, 2002; Kearney, 2001; Kearney & Bensaheb, 2006; McAnanly, 1986; Ollendick & King, 1990). School staff may incur stress displaced onto the school by family members and stress arising from their own uncertainty about management of the problem (McAnanly, 1986).

A contemporary perspective posits that treatment aims to reduce the young person's emotional distress and increase their school attendance in order to help them resume a normal developmental pathway (Heyne & Sauter, 2013). Over 30 years ago, scholars wondered whether reductions in young people's emotional distress helped increase school attendance or vice versa (Valles & Oddy, 1984). Contemporary theorizing echoes this

uncertainty. Heyne, Sauter, and Maynard (2015) suggested that school attendance and internalizing problems can act as mediators or outcomes depending on proposed relationships with other variables under discussion.

The psychosocial treatment of help children with school refusal has a long history. Blagg (1987) provided a detailed review of studies describing the psychodynamic approach, family therapy, and behavioral approaches. Behavioral and cognitive therapy (CT) approaches, however, have received the most attention in the literature. Behavioral approaches were based on classical conditioning, operant conditioning, social learning theory, or a combination. Behavioral interventions include exposure-based interventions, relaxation training, and/or social skills training with the student, and contingency management procedures with the parents and school staff. Exposure-based interventions stemming from the classical conditioning paradigm (e.g., imaginal and in vivo systematic desensitization and emotive imagery) are intended to reduce the young person's anxiety associated with school attendance and thereby make it easier to attend school. Relaxation training is intended to help the young person manage the stress that occurs in situations associated with school attendance (e.g., getting ready to go to school, giving a class talk, and being around other children at school). Relaxation may also be employed as an anxiety inhibitor during systematic desensitization. Social skills training addresses social-related difficulties that may be a cause, consequence, or correlate of school refusal. Contingency management draws on operant conditioning principles. Parents are helped to manage the antecedents and consequences of their child's behavior to increase desirable behaviors (e.g., use of coping skills and school attendance) and reduce undesirable behaviors thwarting school attendance (e.g., tantrums and excessive reassurance seeking). School staff are also encouraged to employ contingency management befitting the school setting.

The commencement of cognitive-behavioral therapy (CBT) for youth with school refusal is evidenced in the case reports of Mansdorf and Lukens (1987). They used self-instruction techniques to help children with school refusal employ coping self-statements guiding positive behavior. A cognitive restructuring process was used with parents to challenge distorted beliefs about their child's problem and about the management of school refusal. Currently, psychosocial treatments for children with school refusal typically incorporate both cognitive and behavioral interventions. There are five CBT manuals for treating youth with school refusal (Heyne & Rollings, 2002; Heyne, Sauter, & Van Hout, 2008; Kearney & Albano, 2000; Last, 1993; Tolin et al., 2009). They all involve individual treatment, some level of involvement with parents (as consultants or co-clients), consultation with school staff, and between-session tasks. Graded exposure to school attendance is commonly advocated. Most manuals incorporate psychoeducation, problem-solving training with the young person, and family work on communication and problem solving. CT interventions are often used, but there is variation in the type of CT interventions employed with children and adolescents with school refusal. Two of the five manuals explicitly refer to cognitive interventions with parents. The earliest CBT manual was standardized, with all cases receiving the same treatment (Last, 1993). The newer manuals advocate individualized treatment based on the main function(s) served by the young person's behavior and/or a broader case formulation including assessment of predisposing, precipitating, perpetuating, and protective factors (Heyne & Rollings, 2002; Heyne et al., 2008; Kearney & Albano, 2000; Tolin et al., 2009).

Educational-support therapy (ES) for youth with school refusal was developed by Last, Hansen, & Franco (1998) to control for the nonspecific effects of CBT in a randomized controlled trial (RCT). ES comprised educational presentations and supportive psychotherapy. It made use of handouts with questions for the participants to consider; a daily diary to record feared situations and associated thoughts, feelings, and responses; encouragement for the young person to talk about their fears; and instruction in identifying maladaptive thinking. There was no instruction or encouragement for the young person to confront feared situations and no instruction about how to modify maladaptive thinking. Another nondirective treatment for school refusal was reported by Sahel (1989). This treatment employed a Rogerian approach in a group therapy format, with trust games, discussion of experiences and feelings about school, and suggestions offered spontaneously by peers.

Various medications have been trialed in studies of youth with school refusal, including tricyclic antidepressants (Berney et al., 1981; Bernstein, Garfinkel, & Borchardt, 1990; Bernstein, Borchardt, et al., 2000; Gittelman-Klein & Klein, 1971), benzodiazepines (Bernstein, Garfinkel, et al., 1990), and selective serotonin reuptake inhibitors (Wu et al., 2013). In all of these trials, medications were combined with psychosocial treatments.

Numerous reviews have focused on the etiology, prevalence, assessment, and treatment of school refusal, and a number of these have focused specifically on treatment outcomes. Prior reviews that were aimed at synthesizing results of treatment outcome studies primarily employed either qualitative (narrative) or vote-counting synthesis methods, which disregard sample size, rely on statistical significance reported in reviewed studies, and do not take into account measures of the strength of the study findings, thus possibly leading to erroneous conclusions (Glass, McGaw, & Smith, 1981). Two relevant reviews were more systematic in their methods than the others: one on effects of treatment for school refusal (Pina, Zerr, Gonzales, & Ortiz, 2009) and another on effects of psychosocial treatments for anxiety disorders in youth, which included youth with school refusal (Silverman, Pina, & Viswesvaran, 2008). All prior reviews were limited to published research. Taken together, the past reviews provide some guidance for the treatment of school refusal, but they do not systematically or quantitatively address the questions of whether and which interventions are effective for decreasing anxiety and increasing school attendance. Reviews and meta-analyses limited to the effects of treatment for youth with anxiety disorders have questionable relevance for school refusal, because

the presentation and treatment of school refusal are not synonymous with the presentation and treatment of anxiety disorders in general (Heyne et al., 2015).

The purpose of the current review is to inform practice by systematically and quantitatively evaluating the effectiveness of psychosocial treatments for children and adolescents with school refusal. The primary research questions guiding the current study are: (1) Do psychosocial treatments for children and adolescents with school refusal reduce anxiety? and (2) Do psychosocial treatments for children and adolescents with school refusal increase attendance?

Method

We used systematic review and meta-analytic methods to synthesize effects of treatment for children and adolescents with school refusal. The protocol and data extraction form are published elsewhere (see Maynard, Brendel, Bulanda, & Pigott, 2013).

Study Eligibility Criteria

Published or unpublished studies conducted or reported between January 1980 and November 2013 were eligible for this review if they examined the effects of psychosocial treatment for school refusal on anxiety or attendance among primary or secondary school-age youth. Studies must have used a pre-post RCT or quasi-experimental design (QED) and used statistical controls or reported baseline data on outcomes. The operationalization of school refusal varies somewhat from one study to the next, but two key criteria reflected in Berg and colleagues' definition were required: (1) absence from school and (2) emotional distress, in this case in the form of anxiety (Berg, 1997, 2002; Berg et al., 1969; Bools et al., 1990). Child anxiety must have been measured using a standardized instrument (child, parent, or clinician report). School attendance/absence could be assessed by youth, parent, or teacher report or from school records. It was anticipated that most studies would report outcomes at posttest, thus posttest outcomes were the primary focus of this review. If studies reported follow-up data, this was noted. Because we were interested in treatments that could be implemented by school or mental health professionals, we excluded pharmacological treatments and interventions delivered in inpatient or residential settings. We did, however, decide post hoc to include two studies that assessed effects of medication in combination with a psychosocial treatment and we analyzed these studies separately.

Search Strategy

Various sources were used to identify eligible published and unpublished studies between 1980 and November 2013. Sources included 15 electronic databases, research registries, conference proceedings, reference lists of prior reviews and included studies, the first author's database of studies conducted for a prior review of indicated truancy treatments, and

contact with experts (see Maynard et al., 2015 for the full search strategy including specific search terms and limiters used in each database).

Study Selection and Data Extraction

Titles and abstracts were screened for relevance by two authors, with the exception of the Australian Education Index, the British Education Index, Canadian Business & Current Affairs (CBCA) Education, and Social Policy and Practice. These four databases were searched by a specialist contracted to conduct searches in those databases and were then reviewed by one author. Documents that were not obviously ineligible or irrelevant based on the title and abstract were retrieved in full text and screened independently by two authors. Two authors then independently coded all studies that met eligibility criteria. Discrepancies between coders were discussed and resolved through consensus at all stages of the search and coding process.

Assessment of Risk of Bias

The conclusions one can draw from a review of the effects of treatments depend on the validity of results of included studies. A review based on studies with low-internal validity, or a group of studies that vary in terms of internal validity, may result in biased estimates of effects and misinterpretation of the findings. Therefore, it is critical to assess all included studies for threats to internal validity. To examine the risk of bias of included studies, two review authors independently rated each included study using the Cochrane collaboration's tool for assessing risk of bias (Higgins, Altman, & Sterne, 2011). The risk of bias tool addresses five categories of bias (i.e., selection bias, performance bias, detection bias, attrition bias, and reporting bias) assessed using a domain-based evaluation tool in which assessment of risk is made separately for each domain in each included study. Selection bias is assessed by examining the method used to generate allocation sequence and the method used to conceal allocation. Performance bias (the extent to which groups are systematically treated differently from one another apart from the intervention) and detection bias (systematic differences in the way participants are assessed) are other sources of bias that can threaten internal validity. In the risk of bias tool, we rated the extent of risk based on whether participants and personnel were blinded to group assignment. We also assessed attrition bias, missing data resulting from participants dropping out of the study or other systematic reasons for missing or excluded data, and reporting bias, when authors selectively report outcomes. All studies included in the review were rated on each domain as low, high, or unclear risk of bias. Coders reviewed these ratings, and discrepancies were discussed and resolved by consensus.

Statistical Analysis

Data related to effect size and variables needed for moderator and sensitivity analyses were entered into Comprehensive

Meta-Analysis (CMA) version 2.0 (Borenstein, Hedges, Higgins, & Rothstein, 2005). We used the standardized-mean difference effect size statistic, correcting for small-sample bias using Hedges' g (Pigott, 2012). All authors of included studies reported one measure of attendance; however, some authors reported more than one measure of anxiety. When more than one measure of anxiety was reported, an effect size was calculated for each measure and a mean effect size was calculated, so each study contributed only one effect size per study for that outcome. To control for pretest differences between the treatment and comparison conditions, we used adjusted means (adjusted for pretest scores on the relevant outcome) and the unadjusted standard deviations (SDs) reported in two studies (Heyne et al., 2002; King et al., 1998). For all other studies that did not report adjusted means, we calculated both the pretest effect size and the posttest effect size separately in CMA as described earlier. We then subtracted the pretest effect size from the posttest effect size and then input the difference between the mean effects in CMA as the effect size for the relevant study. Because the authors did not report the pre-post correlations, we elected to use the variance of the posttest effect size calculated in CMA.

Two meta-analyses were performed to synthesize studies assessing effects of psychosocial treatments—one for anxiety outcomes and one for attendance outcomes. Another set of meta-analyses was performed for the studies assessing the effects of medication in combination with psychotherapy—one for anxiety outcomes and another for attendance outcomes. A weighted mean effect was calculated by weighting each study by the inverse of its variance using random effects statistical models. We assessed statistical heterogeneity using the Q-test, I^2 statistic, and τ^2 .

Sensitivity and moderator analyses were planned. Due to the lack of heterogeneity across most sets of studies and the small number of studies meeting inclusion criteria, we limited additional analyses performed to two sensitivity analyses and two moderator analyses. The first sensitivity analysis examined whether and how the selection of Richardson's "reframing with positive connotation" as the treatment group (as opposed to "systematic desensitization") impacted the mean effect (Richardson, 1992). The second examined how the inclusion of the Blagg and Yule (1984) study affected the grand mean effect size, given that this study had much larger effects on attendance than the other psychosocial treatment studies. We ran the meta-analysis with the Blagg and Yule study omitted and compared the mean effects with and without that study. For the first moderator analysis, we examined study design (RCT vs. QED) as moderator variable with the psychosocial treatment studies. The second moderator analysis addressed publication status. To minimize publication bias, we made every attempt to include both published and unpublished reports. Ultimately, two unpublished dissertations were included in the review. Because there were fewer than 10 studies in this review, the use of funnel plots and other statistical techniques to assess publication bias was not warranted (Card, 2011); therefore, we examined publication status as a potential moderator.

Results

Eight studies met eligibility criteria for this review (see Table 1). Six studies examined effects of psychosocial treatments and two studies examined the relative effects of a psychosocial treatment with and without medication. Figure 1 presents the flow chart of the study selection process. A list of excluded studies and reasons for exclusion is available in Maynard et al. (2015).

Characteristics of Included Studies

Table 2 summarizes the characteristics across included studies. Six studies used a randomized design and two studies used a QED. In all, 435 school-refusing youth from Australia, the United States, Canada, England, Kuwait, and China were participants in the eight studies. Of these, 204 received the treatment condition and 195 received the comparison condition included in the meta-analysis, and 36 youth were in additional comparison conditions not included in the meta-analysis. The average age of participants was 11.9 years (SD = 1.70). Participants in the psychosocial only treatment studies were younger in age (M = 11.3, SD = 1.54) than participants in the CBT with medication studies (M = 13.7, SD = 0.35), and one of the psychosocial only studies had excluded adolescents and one of the medication studies had excluded children (Bernstein, Borchardt, et al., 2000; Sahel, 1989).

With the exception of Sahel (1989), the studies included in this review assessed the effects of a variant of CBT. CBT treatments were conducted with the child alone, with minimal involvement of the parents, or with significant involvement of parents and teachers (parent–teacher training). Treatments were relatively brief, ranging from 4–12 sessions. For those studies that assessed effects of medication, the same CBT treatment was applied across treatment and control groups within each study; however, the authors tested different medications. More specifically, fluoxetine was tested against no medication (Wu et al., 2013), and imipramine was tested against a placebo (Bernstein, Borchardt, et al., 2000).

Posttest measurement in the vast majority of the studies was conducted at the end of treatment or within 2–3 weeks following treatment. Few studies measured treatment effects at a follow-up time point. King et al. (1998) conducted follow-up assessment at approximately 12 weeks posttreatment with the treatment group only because the wait-list control group was offered treatment following posttest. Heyne et al. (2002) measured attendance and anxiety outcomes for the treatment and comparison groups at approximately 4.5 months posttreatment.

Risk of Bias

Several risks of bias were present in most studies (see Figure 2). Performance and detection biases (resulting from inadequate blinding of participants and assessors to conditions) were likely present in most studies and could upwardly bias the mean effects. In addition, available information about random

sequence generation and allocation concealment was insufficient to assess the risk of selection bias in most studies. Two studies reported nonrandom allocation to condition. While most studies in this review reportedly used random assignment procedures, it was not possible to assess risks of selection bias, as the authors did not report randomization procedures.

Effects of Treatments

Anxiety. Four of the included psychosocial studies and both of the CBT with medication studies assessed effects on anxiety. Results indicated that the overall mean effect of the psychosocial studies at posttest was not significantly different from zero (g=0.06, 95%) confidence interval [CI] = [-0.63, 0.75], p=0.86). The precision of the point estimate should be interpreted with caution, as there was significant heterogeneity between the studies (Q=11.13, p=0.01; P=0

Attendance. All six psychosocial treatment studies and both medication studies assessed effects on attendance. The mean effect size at posttest of the six psychosocial studies was g=0.54 (95% CI = [0.22, 0.86], p=.00), demonstrating a positive and significant effect. Results of the Q-test were not significant (Q=8.82, p=.12), and values for I^2 (43.32) and τ^2 (.06) indicate a small amount of heterogeneity. The mean effect sizes and CIs for the six psychosocial treatment studies are shown in the forest plot in Figure 4. For the two studies examining effects of CBT with medication versus CBT with placebo or CBT only, the overall mean effect was g=0.61 (95% CI = [0.01, 1.21], p=.046), favoring the medication + CBT condition. Results of the Q-test were not significant (Q=1.93, p=.17) and values for I^2 (48.23%) and τ^2 (.09) indicate a small amount of heterogeneity.

Sensitivity and Moderator Analyses

For the two sensitivity analyses performed—examining the choice of the group used as the treatment group for the Richardson (1992) study and removing the Blagg and Yule (1984) study from the analysis—the magnitude of the effect size was substantially unchanged (Maynard et al., 2015). For the moderator analyses, no differences between RCT and QED designs or between published and unpublished studies on mean effects of psychosocial treatments on attendance outcomes were observed. With regard to the anxiety outcome, there was only one unpublished study with data on anxiety, and this was also the only QED. Thus, publication status and study design were confounded. The mean effect on anxiety was significantly

Table 1. Summary of Included Studies.

Author (Year)	Intervention	Comparison Condition	Ν	Study Design	Outcomes Measured
Bernstein et al. (2000)	Imipramine + 8, 45- to 50-minute CBT sessions primarily with the adolescent and a parent joined each session for 10–15 minutes	Placebo + 8, 45- to 50-minute CBT primarily with the adolescent and a parent joined each session for 10–15 minutes	63	RCT	Attendance and anxiety
Blagg & Yule (1984)	Behavioral treatment approach (BTA) involving (1) a detailed clarification of the child's problems; (2) realistic discussion of child, parental, and teacher worries; (3) contingency plans to ensure maintenance, 4) in vivo flooding; (5) follow-up. Actively involves parents, child, and school personnel. Mean total treatment time = 2.53 weeks	Home tuition and psychotherapy (HT)—children remained home and received home tuition/home tutoring and also psychotherapy every 2 weeks at a child guidance clinic. Mean treatment time = 72.1 weeks	50	QED	Attendance
Heyne et al. (2002)	8, 50-Minute individual youth CBT sessions + 8, 50-minute parent/ teacher training sessions over an approximate 4-week-period	8, 50-Minute individual child CBT sessions over an approximate 4-week-period	41	RCT	Attendance and anxiety
King et al. (1998)	6, 50-Minute individual youth CBT and 5, 50-minute parent/teacher training sessions over 4 weeks	Waiting list control group	34	RCT	Attendance and anxiety
Last et al. (1998)	Individual CBT—60-minute sessions once weekly for 12 weeks— comprised of two main components: graduated in vivo exposure and coping self-statement training. Unspecified amount of contact with parents	Educational-support therapy—60- minute weekly sessions for 12 weeks—combination of educational presentations and supportive psychotherapy	41	RCT	Attendance and anxiety
Richardson (1992)	Reframing with positive connotation (4 sessions + telephone contact) and at least one parent took part in the counseling session	Systematic desensitization (4 sessions + telephone contact) and at least one parent took part in the counseling session	19	QED	Attendance and anxiety
Sahel (1989)	Group counseling using nondirective Rogerian model—45 minutes twice weekly sessions for 7 weeks (total 14 sessions). Parents not involved in treatment	"Control group"—the authors did not report that the control group received an alternative intervention	76	RCT	Attendance
Wu et al. (2013)	Fluoxetine + 12, 45- to 50-minute CBT sessions and parent involvement (amount not specified)	$\label{eq:Placebo} Placebo + 12,45 to 50 minute CBT and parent involvement (amount not specified)$	75	RCT	Attendance and anxiety

Note. CBT = cognitive-behavioral therapy; RCT = randomized controlled trial; <math>QED = quasi-experimental design.

larger in the RCT studies compared to the one unpublished QED study (Maynard et al., 2015).

Discussion and Application to Practice

This review evaluated the effects of six psychosocial treatments and two medication plus psychosocial treatments for school refusal. All but one of the psychosocial treatments was a CBT intervention. The results of this review thus provide tentative support for CBT for the treatment of children and adolescents with school refusal, at least for the improvement of school attendance. School attendance is certainly not the only outcome of interest in studies of treatment for school refusal, but researchers customarily regard it as a primary outcome measure. Working toward an early increase in the young

person's attendance is a recurring theme in behavioral, CBT, psychodynamic, and family-focused treatment approaches (Heyne & Sauter, 2013). An early increase in attendance prevents anxiety being reinforced through avoidance (Hersen, 1971), reduces access to enjoyable experiences outside of school, which could maintain refusal to attend school (King & Ollendick, 1989), and wards off impairment in academic and social functioning (Want, 1983).

The mean effect found for school attendance can be regarded as a robust finding. Prior narrative reviews have described positive effects of cognitive and/or behavioral treatments for school refusal (Elliott, 1999; King & Bernstein, 2001; King, Tonge, Heyne, & Ollendick, 2000), but the current review represents a rigorous extension of existing work. A more systematic and comprehensive search process

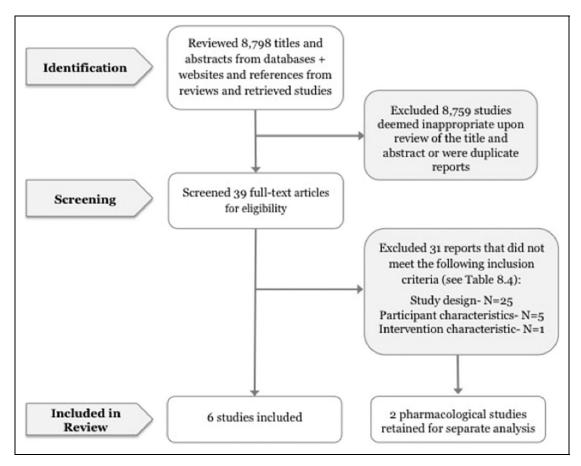


Figure 1. Study selection flow chart.

Table 2. Characteristics of Included Studies.

Characteristic	N (%)	Characteristic	N (%)
Publication year 1997, SD = 8.		Country	
1980-1989	2 (25)	Australia	2 (25)
1990-1999	3 (38)	Canada	I (13)
2000-2009	2 (25)	China	I (I3)
2010-2014	I (13)	England	I (13)
Study design	` ,	Kuwait	I (13)
RĆT	6 (75)	United States	2 (25)
QED	2 (25)	Treatment (psychosocial treatments only)	` ,
Publication type		CBT with parent training	2 (33)
Journal	6 (75)	Individual CBT	2 (33)
dissertation or thesis	2 (25)	Behavioral with child/parent/ teacher	I (17)
Sample size		Rogerian group therapy	1 (17)
I_29	I (I3)	Comparison conditions (psychosocial treatments only)	()
30-59	2 (25)	Alternate treatment	4 (67)
60–80	5 (62)	Wait-list/not specified	2 (33)
Setting	()	Participant characteristics	(**)
Clinic	5 (63)	Mean age = 11.9 ($SD = 1.7$)	
School/home	2 (25)	Sex (≥50% male)	5 (63)
Unknown	I (I3)	Grade level—elementary	1 (12)
	(**)	Grade level—mixed grades	7 (88)

Note. CBT = cognitive-behavioral therapy; RCT = randomized controlled trial; QED = quasi-experimental design.

was undertaken than in prior reviews, and more rigorous inclusion criteria were used to improve the credibility of the review for causal inference. Only one of the prior reviews dedicated to treatment for school refusal used systematic search procedures (Pina et al., 2009), and no prior reviews have included unpublished studies. Moreover, none of the prior reviews dedicated to treatment for school refusal employed meta-analytic techniques to quantitatively synthesize the results of included studies. The use of metaanalytic methods offers a significant advantage over narrative or vote-counting synthesis methods. By pooling effect size estimates across studies, the results of underpowered studies can be combined, thus producing a synthesized effect estimate with considerably more statistical power to discover meaningful effects that may otherwise be missed in lowpowered individual studies (Card, 2011). This is pertinent to the field of school refusal because there are a relatively small number of studies and they employ small sample sizes. It is also noteworthy that four of the six psychosocial only treatment studies included in our review compared the effects of two treatments, and the authors of three of these studies reported improvement across both groups on either one outcome of interest to this review or on both outcomes of interest (Heyne et al., 2002; Last et al., 1998; Richardson, 1992). Furthermore, the comparison group in two of the six

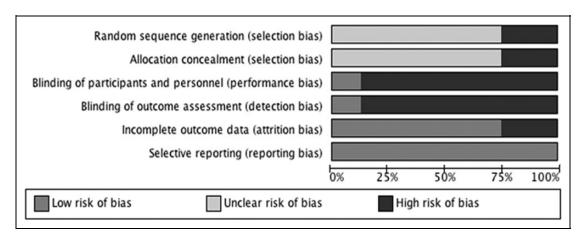


Figure 2. Risk of bias across included studies.

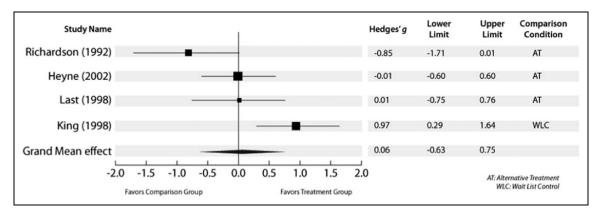


Figure 3. Effects of psychosocial treatments on anxiety.

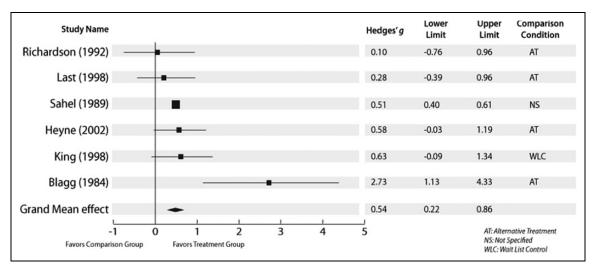


Figure 4. Effects of psychosocial treatments on attendance.

psychosocial only treatment studies provided a variant of a CBT treatment (Heyne et al., 2002; Richardson, 1992), which could lead to a downward bias in the overall mean effect.

While psychosocial treatment in the form of CBT may have some evidentiary support for attendance outcomes, it is premature to classify any specific form of CBT as empirically supported at this time for two main reasons. First, there was variability in the CBT treatments examined in this review. For example, the number of sessions with the young person varied between 4 and 12 sessions, and the amount of

contact with parents varied from no contact at all to as much contact with parents as with the young person. A central research question in the field of CBT for youth with anxiety is the optimal involvement of parents in treatment (Manassis et al., 2014), and this question is perhaps equally or more pertinent when providing treatment for school refusal in adolescence (Heyne & Sauter, 2013). Second, no study included in the current review was a replication study assessing the same manualized treatment by independent researchers. Replication studies are an often-cited requirement for classifying specific treatments as empirically supported (Chambless & Hollon, 1998; Flay et al., 2005). The Heyne et al. (2002), King et al. (1998), and Wu et al. (2013) studies all assessed the effects of CBT based on Heyne and Rollings' (2002) manual, but there was variation in the number of sessions and the duration of treatment, and the same research group conducted two of those studies.

The other main outcome of interest in the current study was anxiety. No mean effect on anxiety was observed, which might seem counterintuitive at first glance. One might expect that improvements in school attendance would occur because of a decrease in anxiety. In fact, treatments often include behavioral interventions (e.g., relaxation training) and cognitive interventions (e.g., developing and using anxiety-reducing thoughts) in order to help youth with school refusal manage their anxiety and thus be better placed to increase their school attendance. One explanation for the lack of effects on anxiety might be found in the timing of the assessment of outcome measures. Although increased exposure to school (a key component in most treatments in this review) is associated with immediate improvement in attendance, it could result in an increase in anxiety in the short-term (posttreatment). In the discussion of Last's treatment outcome study, it was also argued that the emphasis in CBT on increasing school attendance may have heightened anxiety levels (Last et al., 1998). A longer term decrease in anxiety may follow from a young person's continued attendance at school. We were not able to examine longer term effects of school refusal treatments on both attendance and anxiety because only one study examined these outcomes at follow-up for both the treatment and comparison groups (Heyne et al., 2002). Results reported in that study indicate that youth maintained improvements in school attendance at 4.5month follow-up and they experienced significant decreases (between posttreatment and follow-up) in self-reported fear and anxiety. Based on this study alone, it would appear that anxiety could continue to decrease after school attendance has increased; however, more robust research on long-term effects of treatment for children and adolescents with school refusal is needed.

Even though the grand mean effect on anxiety was nonsignificant, it is possible that some youth in the reviewed studies were able to attend school more of the time because of a decrease in anxiety by the end of treatment. Future studies that incorporate mediation analyses on posttreatment and follow-up data can help determine which youth are able to increase school attendance *because* of a reduction in anxiety and which youth

are able to increase school attendance because of other factors or despite the presence of anxiety. Recent studies point to other factors that are potentially important in school refusal and its treatment. Ingul and Nordhal (2013) reported that among highly anxious youth, social factors such as having few close friends differentiated youth who were and were not attending school. Maric, Heyne, MacKinnon, van Widenfelt, and Westenberg (2013) reported that self-efficacy for coping with situations associated with school attendance mediated posttreatment increases in school attendance and decreases in fear about attending school. In a review of moderators and mediators of the outcome of treatment for school refusal, Heyne and colleagues (2015) noted a range of factors warranting research attention, including the young person's problem-solving skills, family functioning, and the quality of the student-teacher relationship. To understand the temporal precedence of changes in anxiety or other factors on the one hand, and changes in school attendance on the other hand, these variables should be measured at various points during treatment.

A strength of the current study lies in its systematic review and meta-analytic methods, which helps limit bias and error and increases transparency, yielding more reliable results and allowing for replication or later expansion by other researchers (Cooper, 1998). This strength notwithstanding, study results must be interpreted in the light of several limitations. Despite rigorous efforts to include unpublished studies in our review, only two unpublished studies met eligibility criteria. Thus, results of our review may be upwardly biased, due to publication and reporting biases. Performance and detection bias, stemming from inadequate blinding of participants and assessors to condition, can also upwardly bias mean effects. However, the positive and significant mean effect found in this study was for school attendance, which is a relatively objective measure of outcome (e.g., relative to self-reports of anxiety) and thus less susceptible to bias. This review and metaanalysis is also limited by the small number of studies included, and thus there were limits to the analytic techniques that could be employed (e.g., moderator analyses of level of parent involvement). Furthermore, only one study reported follow-up outcomes for both the treatment and comparison groups, thus there is insufficient evidence to indicate whether or not treatment effects sustain and whether anxiety was indeed reduced with continued exposure to school.

It is evident that there have been few rigorous trials of treatment for children and adolescents with school refusal. Study design and analytic methods have progressed over the past decade, with more rigorous designs being expected and intent-to-treat analysis becoming more common since the time that most studies in this review were conducted. Future research in this area will benefit from research designs that reduce bias and employ more sophisticated analytic techniques, independent replications of the manualized treatments examined in this review, and longer term evaluations of effects of treatments. Assessing long-term effects could provide additional insights as to the mixed findings of the effects of treatments on attendance and

anxiety. Future research will also benefit from larger samples sizes. Because school refusal is a complex phenomenon, larger samples will permit more sophisticated analyses to examine potential moderators and mediators of treatment outcomes, such as type of anxiety, age of youth, or other characteristics of the youth, family, school or treatment (Heyne et al., 2015). It is also evident from the current review that there are few studies examining the effects of treatments other than variants of CBT. Future studies should consider other types of treatments for rigorous evaluation, in comparison with currently available CBTs.

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