Title: Psychosocial Interventions for School Refusal Behavior with Primary and Secondary School Students: A Campbell Systematic Review and Meta-Analysis

Authors and Affiliations:

Brandy R. Maynard, Ph.D.
Saint Louis University
Bmaynar1@slu.edu

Kristen E. Brendel
Aurora University
kbrendel@aurora.edu

Jeffery J. Bulanda
Aurora University
jbulanda@aurora.edu

Aaron M. Thompson
University of Missouri
thompsonaa@missouri.edu

Terri D. Pigott
Loyola University Chicago
Tpigott@luc.edu
**Background / Context:**

School refusal behavior, affecting between 1% and 5% of school-age children, is a psychosocial problem for students characterized by severe emotional distress and anxiety at the prospect of going to school, leading to difficulties in attending school and, in some cases, significant absences from school (Burke & Silverman, 1987; Elliot, 1999; King, Ollendick, & Tonge, 1995; King, Tonge, Heyne, Pritchard, Rollings, Young, et al., 1998; Heyne, King, Tonge, & Cooper, 2001; Kahn, Nursten, & Carroll, 1981). Children who present with school refusal may meet criteria for multiple internalizing and externalizing behavior problems, including anxiety, depression, phobia, separation anxiety, aggression, temper tantrums, and non-compliance (Egger, Costello, & Angold, 2003; Heyne et al., 2001; Kearney, 2001). Children and parents experience significant adverse consequences from school refusal. A child may miss an excessive number of days of school, leading to poor academic performance and disruptions in social and extracurricular activities (King & Bernstein, 2001). School refusal may also negatively affect family and peer relationships (Berg & Nursten, 1996). Long-term problems in social adjustment may also occur, including psychiatric disturbance (Heyne et al., 2001).

The most commonly used interventions for school refusal behavior are shorter-term cognitive-behavioral therapy (CBT) or behavioral strategies designed to manage and reduce symptoms of anxiety/phobia (Fremont, 2003; King, Heyne & Ollendick, 2005). Other interventions have also been used to treat school refusal behavior, including family therapy, medication, and functionally based prescriptive treatment (Kearney, 1999); however, most prior reviews have focused on CBT and/or behavioral interventions. Prior reviews have found some support for CBT and behavioral interventions for reducing anxiety and/or improving attendance; however, the results of prior reviews have been mixed. Prior reviews have also been limited to published research, have not adequately assessed the quality of evidence, and have primarily employed either qualitative or vote-counting methods for synthesizing study outcomes. No prior meta-analysis of interventions targeting school refusal behavior has been located.

**Purpose / Objective / Research Question / Focus of Study:**
The purpose of this review was to evaluate the effectiveness of interventions designed to increase school attendance and decrease anxiety for students who exhibit school refusal behavior. The following research questions guided this study: 1) Do interventions targeting school refusal behavior improve attendance? and 2) Do interventions targeting school refusal behavior decrease anxiety?

**Setting:**
This review included interventions conducted in any setting that served primary or secondary school students with the exception of studies conducted in residential facilities, as these settings are highly controlled and not typical of regular school or community settings. This review included studies from any geographical context.

**Population / Participants / Subjects:**
The population for this review was all published and unpublished research studies meeting the following inclusion/exclusion criteria:
1. **Types of studies:** Randomized controlled trials (RCT) and quasi-experimental designs (QED) studies. In addition, studies must have used statistical controls or reported baseline data on outcomes regardless of study design.

2. **Types of participants:** This review included school-age youth – defined as attending kindergarten through 12th grade (or equivalent in countries with a different grade structure) – who met criteria for school refusal behavior. Because there is no consensus on what constitutes a “diagnosis” of school refusal behavior, this review included only studies in which participants had both an attendance problem and anxiety or a similar clinical symptom(s) related to stress, mood, or anxiety that affected their school attendance.

3. **Types of outcome measures:** To be included, a study must have assessed intervention effects on school attendance or anxiety. School attendance/absence could be self, parent, or teacher report or from school records. Child anxiety must have been measured using a standardized instrument.

4. **Timeframe of field trials:** Studies conducted or reported between 1980 and May 2013 were included in this review.

**Intervention / Program / Practice:**
This review included all psychosocial intervention types. Because we were interested in psychosocial interventions that could be implemented by school or mental health professionals, we excluded solely pharmacological and medical interventions from this review. We did, however, decide post-hoc to include two studies that assessed effects of interventions in combination with a psychosocial intervention (both groups received the psychosocial intervention with the treatment group also receiving medication) and analyzed these studies separately as questions as to whether psychosocial interventions with or without medication is more effective is often asked.

**Research Design:**
Systematic review methodology, following the Campbell Collaboration procedures and guidelines (Campbell Collaboration, 2014), was used for all aspects of the search, retrieval, selection, and coding of published and unpublished studies meeting study inclusion criteria. Meta-analysis was used to quantitatively synthesize results across studies.

**Data Collection and Analysis:**

**Search Methods.** Electronic searches were conducted in 15 databases, 4 research registers, and internet searches for conference proceedings. Searches were conducted using the following keywords: (anxiety OR “school refus*” OR “school phobia”) AND (attendance OR absen*) AND (evaluation OR intervention OR treatment OR outcome OR program) AND (student* OR school* OR child* OR adolescent*). The full search strategy for each database is available from the authors. Reviews of reference lists of included studies and prior reviews and personal contact with authors of prior studies of school refusal behavior were also conducted to identify potential studies for this review.

**Study Selection and Data Extraction.** Titles and abstracts of the studies found through the search procedures were screened for relevance, and those that were obviously ineligible or irrelevant were screened out. Documents that were not obviously ineligible or irrelevant based on the abstract review were retrieved in full text for final eligibility screening. Two reviewers independently screened all full-text articles for inclusion. Studies that met eligibility criteria were
coded independently by two coders using a data-coding instrument developed by the first author. Two review authors also independently assessed the risk of bias in each study using the Cochrane Collaboration’s ‘Risk of Bias’ tool (Higgins, 2011). Coders met to review the coding agreement and any discrepancies were discussed and resolved by consensus.

**Statistical Procedures.**
We calculated the standardized-mean difference effect size statistic, correcting for small-sample bias using Hedges g (Hedges, 1981) for each outcome included in the review. To control for pre-test difference between the intervention and control conditions, we subtracted the pre-test effect size from the post-test effect size (Lipsey & Wilson, 2001). When an author used more than one measure of an outcome, an effect size was calculated for each measure and a mean ES was calculated so each study contributed only one effect size per study per outcome. Separate meta-analyses were performed using Comprehensive Meta-Analysis 2.0 (Borenstein, Hedges, Higgins, & Rothstein, 2005) to synthesize effects of psychosocial interventions for each outcome (i.e. anxiety and attendance) and to synthesize effects of medication + CBT against medication only. 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 and $I^2$ statistic. Several moderator and sensitivity analyses were planned, but due to the small number of studies included in this review and lack of heterogeneity across studies, we limited additional analyses performed.

**Findings / Results:**
Four studies examining effects of psychosocial interventions and two studies assessing comparative effects of psychosocial interventions with and without medication met inclusion criteria for this review (see Tables 1 and 2). Five of the included studies were published, randomized, controlled trials and one was an unpublished quasi-experimental design study. The majority of the interventions took place in a clinic setting with one intervention being provided in the school and home settings. All psychosocial intervention studies in this review assessed the effects of a variant of cognitive-behavioral therapy (CBT) compared to wait-list control (n=2) or alternative treatments (n=2). For studies assessing effects of medication, the same CBT intervention was applied across treatment and control groups with either Fluoxetine or imipramine against a placebo.

The mean effect at post-test on anxiety was $g = 0.06$ (95% CI [-0.63, 0.75], $p > .05$), demonstrating a very small nonsignificant effect. Effects on attendance were moderate and significant ($g = 0.43$ (95% CI [0.08, 0.78], $p < .05$). Heterogeneity was significant on anxiety outcomes, but not for attendance. Similar results were found for the medication + CBT studies with effects on anxiety being small and not significant ($g = -0.05$, 95% CI [-0.40, 0.31], $p > .05$) and effects on attendance being moderate, positive and statistically significant ($g = 0.61$ (95% CI [0.01, 1.21], $p < .05$). Studies were homogenous across outcomes for the medication + CBT studies.

**Risk of Bias:** The studies included in this review were comprised of mostly randomized trials, with two quasi-experimental studies. None of the studies provided a description of the method of random allocation and only one study blinded participants and outcome assessors, thus the studies in this review were assessed as high risk for performance and detection biases.
Most of the included studies assessed effects on only the completers, which may result in an overstatement of treatment effects. Unfortunately, there were too few studies to conduct sensitivity analyses to provide a systematic evaluation of the impacts of quality indicators or risk of bias. See Figures 2 and 3 for summary of bias within and across included studies.

Conclusions:

The current evidence provides tentative support for cognitive behavioral interventions in the treatment of school refusal behavior, but there is an overall lack of sufficient evidence to draw firm conclusions of the efficacy of CBT as the treatment of choice for school refusal behavior. The present review found relatively few rigorous studies of interventions for school refusal behavior. All studies that did meet inclusion criteria assessed effects of a variant of cognitive behavioral therapy, thus there appears to be a lack of rigorous evidence of other types of interventions for school refusal behavior. The mixed findings of effects on anxiety and attendance are quite interesting and appear to be somewhat counterintuitive. Anxiety is often viewed as the cause of the attendance problems exhibited by school refusers, thus one would expect that interventions targeting school refusal would improve anxiety, which would then lead to improved school attendance. The results here, however, demonstrate a more immediate and significant difference in improvement of attendance and no significant difference between treatment and control groups on anxiety outcomes. The mechanisms of the specific interventions, however, point to a reasonable explanation for these mixed results, particularly at post-test. As described by Last et al. (1998) and Heyne (personal communication, 2014), the increased exposure to school, which is a key component to some of the interventions in this review, may result in more immediate improvement in attendance. However, the increased exposure to school could, at least in the short term, result in an increase in anxiety. A decrease in anxiety may follow from a child’s continued attendance at school; however, only Heyne et al. examined outcomes of both attendance and anxiety at a follow-up time period and thus we could not examine longer-term effects of school refusal interventions.

Several risks of bias were found in most studies included in this review, indicating a need for better-controlled studies. Moreover, independent replications of the manualized interventions examined in this review are needed, as are longer-term evaluations of effects of interventions. Assessing long-term effects could provide additional answers and insights regarding the mixed findings of the effects of interventions on attendance and anxiety. Future studies should also consider other types of interventions for rigorous evaluation. While the functional treatment of school refusal behavior has been identified by experts in this area as a promising approach (Kearney & Silverman, 1990; 1999), this intervention lacks rigorous evaluation. Furthermore, future studies could benefit from larger sample sizes and attention to mitigating potential biases to improve statistical power and causal inference.

The current review is limited to mainly published research, and while efforts were made to search the gray literature, only one unpublished study is included in this review. This study is also limited by the small number of studies included in this review and thus low statistical power and limits to the analytic techniques that could be employed.
Appendices

Appendix A. References

References to Included Studies


Additional References


### Appendix B. Tables and Figures

#### Table 1: Characteristics of Included Studies

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N (%)</th>
<th>Characteristic</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Publication Year</strong></td>
<td></td>
<td><strong>Country</strong></td>
<td></td>
</tr>
<tr>
<td>1990-1999</td>
<td>3 (38)</td>
<td>Canada</td>
<td>1 (13)</td>
</tr>
<tr>
<td>2010-2014</td>
<td>1 (13)</td>
<td>England</td>
<td>1 (13)</td>
</tr>
<tr>
<td><strong>Study Design</strong></td>
<td></td>
<td><strong>Kuwait</strong></td>
<td>1 (13)</td>
</tr>
<tr>
<td>RCT</td>
<td>6 (75)</td>
<td>United States</td>
<td>2 (25)</td>
</tr>
<tr>
<td>QED</td>
<td>2 (25)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Publication Type</strong></td>
<td></td>
<td><strong>Treatment (Psychosocial Interventions only)</strong></td>
<td></td>
</tr>
<tr>
<td>Journal</td>
<td>6 (75)</td>
<td>CBT w/ parent training</td>
<td>2 (33)</td>
</tr>
<tr>
<td>Dissertation or Thesis</td>
<td>2 (25)</td>
<td>Individual CBT</td>
<td>2 (33)</td>
</tr>
<tr>
<td><strong>Sample Size</strong></td>
<td></td>
<td>Behavioral with child/parent/teacher</td>
<td></td>
</tr>
<tr>
<td>1-29</td>
<td>1 (13)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-59</td>
<td>3 (38)</td>
<td>Alternate treatment</td>
<td>4 (67)</td>
</tr>
<tr>
<td>60-99</td>
<td>4 (50)</td>
<td>Wait list/nothing</td>
<td>2 (33)</td>
</tr>
<tr>
<td><strong>Setting</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinic</td>
<td>5 (63)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School/home</td>
<td>2 (25)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>1 (13)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 2: Summary of Included Studies

#### Blagg & Yule (1984)

<table>
<thead>
<tr>
<th>Method</th>
<th>Quasi-experimental design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publication type</td>
<td>Peer-reviewed journal article</td>
</tr>
<tr>
<td>Participants</td>
<td>N= 50 (tx group = 30; comparison group = 20; alternative tx group = 16)</td>
</tr>
<tr>
<td></td>
<td>Mean age: tx group = 12.95; comparison group = 14.28; alternative tx group = 13.52</td>
</tr>
<tr>
<td></td>
<td>Gender: 50.0% male</td>
</tr>
<tr>
<td></td>
<td>Race: Not reported</td>
</tr>
<tr>
<td>Intervention</td>
<td>Behavioural 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. Mean total treatment time = 2.53 weeks.</td>
</tr>
<tr>
<td>Comparison Condition</td>
<td>Home tuition and psychotherapy (HT)- Children remained home and received home tuition/home-tutoring and also psychotherapy every two weeks at a child guidance clinic. Mean treatment time = 72.1 weeks.</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Attendance = % half days present for the assessment period (2 weeks)</td>
</tr>
<tr>
<td></td>
<td>Anxiety = reported at post-test only and thus not included in the analysis. Authors measured whether separation anxiety was present or absent at follow-up.</td>
</tr>
<tr>
<td>Notes</td>
<td>Authors included a third group that received hospital in-patient treatment, but is not included in the meta-analysis to maintain data independence and because in-patient interventions were an exclusion criteria. Data to calculate attendance effect size at pretest was reported as time off school (number of weeks) and at follow-up as the proportion of students who were attending 0-80% of the time and 81-100% of the time. Effect size calculated for attendance outcomes by subtracting the pre-test ES from the post-test ES.</td>
</tr>
</tbody>
</table>

#### Heyne et al. (2002)

<table>
<thead>
<tr>
<th>Method</th>
<th>Randomized controlled trial (low total/differential attrition)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publication type</td>
<td>Peer-reviewed journal article</td>
</tr>
<tr>
<td>Participants</td>
<td>N= 61 (tx group = 20; comparison group = 21; alternative tx group = 20)</td>
</tr>
<tr>
<td></td>
<td>Mean age: 11.5 years</td>
</tr>
<tr>
<td></td>
<td>Gender: 54.1% male</td>
</tr>
<tr>
<td></td>
<td>Race: 91.8 % Australian born</td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
<td>8, 50 minute individual child CBT sessions + 8, 50 minute parent/teacher training sessions over an approximate 4 week period</td>
</tr>
<tr>
<td><strong>Comparison Condition</strong></td>
<td>8, 50 minute individual child CBT sessions over an approximate 4 week period</td>
</tr>
</tbody>
</table>
| **Outcomes** | Attendance = % half days present for the assessment period (2 weeks)  
Anxiety = mean of FT, FSSC-II total score, and RCMAS total score |
| **Notes** | Authors included a third group that received parent/teacher training only, but is not included in the meta-analysis to maintain data independence.  
Adjusted means and unadjusted SDs used to calculate ES for attendance outcome.  
Effect size calculated for anxiety outcome by subtracting the pre-test ES from the Post-test ES. |

**King et al. (1998)**

| **Methods** | Randomized controlled trial (no attrition) |
| **Publication type** | Peer-reviewed journal article |
| **Participants** | N = 34 (tx = 17; control = 17)  
Mean age: 11.03 years  
Gender: 53% male  
Race: NR |
| **Intervention** | 6, 50 minute individual child CBT and 5, 50 minute parent/teacher training sessions over 4 weeks |
| **Comparison condition** | Waiting list control group |
| **Outcomes** | Attendance = % of days present at school for the assessment period (2 weeks)  
Anxiety = mean of FT, FSSC-II total score, and RCMAS total score |
| **Notes** | Adjusted post-test means and unadjusted SDs used to calculate ES |

**Last et al. (1998)**

| **Methods** | Randomized controlled trial (with high total/differential attrition) |
| **Publication type** | Peer-reviewed journal article |
| **Participants** | N= 41 (tx = 20; comparison = 21)  
Mean age: tx group = 11.67 years; comparison group = 12.40 years  
Gender: 33% male  
Race: 90% White |
| **Intervention** | Individual CBT- 60 minute sessions once weekly for 12 weeks- |
comprised of two main components: graduated in-vivo exposure and coping self-statement training

<table>
<thead>
<tr>
<th><strong>Comparison Condition</strong></th>
<th>Educational-Support Therapy- 60 minute weekly sessions for 12 weeks-combination of educational presentations and supportive psychotherapy</th>
</tr>
</thead>
</table>
| **Outcomes**             | Attendance = pre-test: % hours child attended school; post-test: # of participants that reached 95% attendance at posttest (converted to Hedges’ g)  
Anxiety = mean of FSSC-R (total score) and STAIC-M (total score) |
| **Notes**                | Effect size calculated by subtracting the pre-test ES from the Post-test ES for both outcomes |

**Richardson (1992)**

<table>
<thead>
<tr>
<th><strong>Methods</strong></th>
<th>Quasi-experimental design</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Publication type</strong></td>
<td>Unpublished dissertation</td>
</tr>
</tbody>
</table>
| **Participants**     | N= 19 (tx = 10, comparison = 9)  
Mean age: 10.6  
Gender: 68% male  
Race: NR |
| **Intervention**     | Reframing with Positive Connotation (4 sessions + telephone contact) |
| **Comparison Condition** | Systematic Desensitization (4 sessions + telephone contact) |
| **Outcomes**         | Attendance = % of school days attended  
Anxiety = RCMAS |
| **Notes**            | Effect size calculated by subtracting the pre-test ES from the Post-test ES for both outcomes |

**Sahel (1989)**

<table>
<thead>
<tr>
<th><strong>Methods</strong></th>
<th>Randomized controlled trial (low overall and differential attrition)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Publication type</strong></td>
<td>Doctoral dissertation</td>
</tr>
</tbody>
</table>
| **Participants**     | N= 76 (tx = 37; comparison = 39)  
Mean age: tx group = 8.7 years; comparison group = 9.0 years  
Gender: 39% male  
Nationality: 76% Kuwaiti |
| **Intervention**     | Group counseling using non-directive Rogerian model- 45 minutes twice weekly sessions for 7 weeks (total 14 sessions). |
| **Comparison Condition** | Did not specify what the control group received. |
### Bernstein et al. (2000)

**Methods**
- Randomized controlled trial

**Publication type**
- Peer reviewed journal article

**Participants**
- N = 63 (tx = 31; comparison = 32)
- Mean age:
  - Gender: 40% male
  - Race: 90.5% White

**Intervention**
- Imipramine + 8, 45-50 minute CBT with primarily the adolescent

**Comparison Condition**
- Placebo + 8, 45-50 minute CBT with primarily the adolescent

**Outcomes**
- Attendance = mean weekly attendance
- Anxiety = R-CMAS; ARC-R

**Notes**
- Effect size calculated by subtracting the pre-test ES from the Post-test ES for both outcomes

### Wu et al. (2013)

**Methods**
- Randomized controlled trial

**Publication type**
- Peer reviewed journal article

**Participants**
- N = 75 (tx = 39; comparison = 36)

**Intervention**
- Fluoxetine + 12, 45-50 minute CBT and PTT

**Comparison Condition**
- Placebo + 12, 45-50 minute CBT and PTT

**Outcomes**
- Attendance = mean absence from school (pre-test); rate of back to school (post-test)
- Anxiety = SAS

**Notes**
- Effect size calculated by subtracting the pre-test ES from the Post-test ES for both outcomes

Notes: RCMAS = Revised Children’s Manifest Anxiety Scale; ARC-R = Anxiety Rating for Children-Revised; SAS = Self-Rating Anxiety Scale
Reviewed 8,798 citations from all sources

Excluded 8,760 studies deemed as duplicates or inappropriate upon review of the title and abstract

Screened 38 full-text articles for eligibility

Excluded 30 studies that did not meet inclusion criteria

6 included studies

2 pharmacological studies retained

Figure 1: Study Selection Flow Chart
Figure 2: Risk of Bias Items by Study

Figure 3: Risk of Bias Across Included Studies