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Indicated Truancy Interventions: Effects on School Attendance among Chronic Truant Students

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Executive summary/Abstract

BACKGROUND

Truancy is a significant problem in the U.S. and in other countries around the world. Truancy has been linked to serious immediate and far-reaching consequences for youth, families, and schools and communities, leading researchers, practitioners, and policy makers to try to understand and to address the problem. Although numerous and significant steps have been taken at the local, state, and national levels to reduce truancy, the rates of truancy have at best remained stable or at worst been on the rise, depending on the indicator utilized to assess truancy rates.

The costs and impact of chronic truancy are significant, with both short- and long-term implications for the truant youth as well as for the family, school, and community. Although several narrative reviews and one meta-analysis of attendance and truancy interventions have attempted to summarize the extant research, there are a number of limitations to these reviews. It is imperative that we systematically synthesize and examine the evidence base to provide a comprehensive picture of interventions that are being utilized to intervene with chronic truants, to identify interventions that are effective and ineffective, and to identify gaps and areas in which more research needs to be conducted to better inform practice and policy.

OBJECTIVES

The main objective of this systematic review was to examine the effects of interventions on school attendance to inform policy, practice, and research. The questions guiding this study were:

- 1) Do truancy programs with a goal of increasing student attendance for truant youth affect school attendance behaviors of elementary and secondary students with chronic attendance problems?
- 2) Are there differences in the effects of school-based, clinic/community-based, and court-based programs?
- 3) Are some modalities (i.e., family, group, multimodal) more effective than others in increasing student attendance?

SEARCH STRATEGY

A systematic and comprehensive search process was employed to locate all possible studies between 1990 and 2009, with every effort made to include both published and unpublished studies to minimize publication bias. A wide range of electronic bibliographic databases and research registers was searched, websites of relevant research centers and groups were mined for possible reports, over 200 e-mails and letters were sent to programs listed in large databases of truancy programs compiled by the National Center for School Engagement and the National Dropout Prevention Center, and contact with researchers in the field of truancy and absenteeism was attempted. In addition, we examined reference lists of all previous reviews as well as citations in research reports for potential studies.

SELECTION CRITERIA

Studies eligible for this review were required to meet several eligibility criteria. Studies must have utilized a randomized, quasi-experimental, or single-group pre-posttest design with the aim of evaluating the effectiveness of interventions with a stated primary goal of increasing student attendance (or decreasing absenteeism) among chronic truant students. Studies must have measured an attendance outcome and reported sufficient data to calculate an effect size. Finally, studies must have been published between 1990 and 2009 in the United States, United Kingdom, Australia, or Canada.

DATA COLLECTION AND ANALYSIS

A total of 28 studies, reported in 26 reports, met final eligibility criteria and were included in this review and meta-analysis. Of the studies that were included, 5 utilized a randomized design (RCT), 11 utilized a quasi-experimental design (QED), and 12 utilized a single group pre-posttest design (SGPP). All eligible studies were coded using a structured coding instrument, with 20% of studies coded by a second coder.

Descriptive analysis was conducted to examine and describe data related to the characteristics of the included studies. Analysis of the mean effect size, the heterogeneity of effect sizes, and the relationship between effect size and methodological and substantive characteristics of the interventions was also conducted separately for the RCT/QED studies and the SGPP studies. The effect sizes were calculated using the standardized mean difference effect size statistic, correcting for small sample size using Hedges' *g* (Hedges, 1992). Assuming a mixed effects model, the analog to the ANOVA and bivariate meta-regression frameworks were used to examine potential moderating variables related to study, participant, and intervention characteristics.

RESULTS

The meta-analytic findings demonstrated a significant overall positive and moderate mean effect of interventions on attendance outcomes. The mean effect size for interventions examined in the included RCT studies was .57 and the mean effect size for the QED studies was .43. No significant differences were observed between the RCT and QED studies in the magnitude of the treatment effect ($Q_b = .28, p > .05$). The mean effect size of interventions examined using an SGPP design was .95. A moderate effect on attendance outcomes is encouraging; however, the overall mean effect size is masked by a large amount of heterogeneity, indicating significant variance in effect sizes between studies.

Moderator analyses found no significant differences in mean effects between studies on any moderating variable tested. No differences were found between school-, court-, or community-based programs or between different modalities of programs. The duration of the intervention also did not demonstrate any association with effect size.

Collaborative programs and multimodal interventions produced statistically similar effects on attendance as non-collaborative and single-modality programs, which runs counter to the prevailing beliefs and recommendations for best practices in truancy reduction found in the literature.

Other significant findings from this study relate to methodological shortcomings, the absence of important variables as well as gaps in the evidence base. These findings include the lack of inclusion of minority students and a lack of reporting and statistical analysis of demographic variables, particularly race/ethnicity and socioeconomic status (SES). Given that race and SES have been linked to absenteeism, the absence of this data was surprising. The majority of studies also lacked adequate descriptions of the interventions, making replication of the intervention difficult, and failed to measure and report long-term outcomes.

AUTHORS' CONCLUSIONS

Overall, the findings from this study suggest that chronic truant students benefit from interventions targeting attendance behaviors; thus it is important and worthwhile to intervene with chronic truant youth. Given the minimal differences in effects across program types and modalities, no one program type or modality stands out as being more effective than any other. Although no statistically significant differences in effects were found between types and modalities of interventions included in this review, there was a lack of available evidence to support the general belief (and popular “best-practice” recommendations) that collaborative and multimodal interventions are more effective than programs that are not collaborative and single modal interventions. Due to the small sample size and large heterogeneity between studies and within groups of

studies, caution must be used when interpreting and applying the findings from this meta-analysis.

Overall, the studies included in the review improved attendance by an average of 4.69 days, almost a full school week. However, although the interventions included in this study were, overall, found to be effective, the mean rates of absenteeism at posttest in most studies remained above acceptable levels. This finding indicates the need for additional work and research. Developing more effective interventions and policies as well as studying outcomes of interventions, particularly with vulnerable and at-risk populations, is crucial to combating absenteeism.

The gaps and deficiencies identified in this study also affirm the need for increasing and strengthening the evidence base on which current policies and practices rest. Although additional outcome research is necessary, more of the same is not sufficient. Significant improvements in the quality of truancy intervention research are required and identified gaps need to be addressed. Recommendations to improve the quality and fill gaps in truancy intervention research are discussed here. In addition, given the significant and pervasive deficiencies in the extant research, a critical analysis of the practices, assumptions, and sociopolitical contexts underlying truancy intervention research seems warranted.

1 Background

Truancy is a significant problem in the U.S. and in other countries around the world. It has been linked to serious immediate and far-reaching consequences for youth, families, and schools and communities, leading researchers, practitioners, and policy makers to try to understand and to address the problem. Despite significant efforts and millions of dollars spent by schools, communities, states, and the U.S. federal government to reduce truancy over the past 20 years, there is little evidence that any positive impact has been made on school attendance (Attwood & Croll, 2006; Davies & Lee, 2006). Between 1994 and 2005 in the U.S., the patterns of absenteeism remained relatively stable, while the number of truancy cases petitioned and handled in juvenile courts in the United States increased 69% between 1995 and 2004 (National Center for Education Statistics, 2006; Stahl, 2008).

Student absenteeism is also a major concern in Canada and the United Kingdom (UK) (Davies & Lee, 2006). The UK has implemented policies and provided guidance for education services throughout the country to combat absenteeism. In addition, the British government has invested significant resources to reduce absenteeism, spending over one billion pounds on related initiatives between 1997 and 2005 (Attwood & Croll, 2006). In addition, Canada ranked 5th out of the 43 industrialized nations in the Organisation for Economic Co-operation and Development study in terms of the proportion of truant high school students, with 26% of Canadian 15 year olds reporting having been late, skipping class or missing school in the two weeks prior to the survey (Willms, 2003).

Although truancy is a commonly recognized problem, there is a lack of consensus on how to define truancy (Kearney, 2003). Truancy is often used as a broad descriptor for students who are absent without their parents' knowledge (Kearney, 2008), but truancy also has local meaning depending on how it is defined by individual schools or court jurisdictions (Reid, 1999). Compulsory education laws vary by state, and the number of unexcused absences needed for a student to be considered truant varies across school districts, and even across different schools within the same district (Garcia-Gracia, 2008). Some schools consider a student truant after one unexcused absence, while other schools require a certain number of unexcused absences before a student is considered truant. This lack of consensus regarding when and whether a student is truant has posed challenges for obtaining accurate rates of truancy as well as for developing and evaluating interventions targeting truancy or attendance.

While the specific definition of truancy continues to be debated, a body of literature on the consequences of truancy has been accumulating over the past several decades from various fields, including social work, sociology, psychology, juvenile justice, nursing, and psychiatry. The extant research has demonstrated significant negative implications for the youth who do not attend school regularly as well as for families, schools, and communities. The negative outcomes associated with truancy include additional delinquency, poor school performance, school expulsion and dropout, substance use, and other risky and problematic behaviors (National Center for School Engagement, 2007; Petrides, Chamorro-Premuzic, Frederickson, & Furnham, 2005; Reid, 1999). The economic implications for students are also significant. Students who are chronically absent are more likely to perform poorly in school and more likely to drop out, which negatively impacts earning potential over their lifetimes (Attwood & Croll, 2006; Garry, 1996). The implications for schools whose students are not attending at a high rate include loss of funds and failure to meet performance requirements (Goldstein, Little, & Akin-Little, 2003). Significant costs to communities associated with truancy and absenteeism include higher rates of criminal activity, citizens not productively contributing to the community, and higher government spending for social services (Baker et al., 2001).

In addition to the consequences associated with truancy, a large body of literature has given extensive attention to describing possible causes and correlates of school absenteeism. Research indicates a number of factors that have demonstrated some causal or correlational relationship to truancy. These include individual, family, school, community, and contextual factors.

Individual risk factors predictive of truancy and absenteeism include lower academic self-concepts, lower self-esteem, less competent social relations, phobia, anxiety, personality traits, race/ethnicity, learning disabilities, substance use, and externalizing behaviors (Corville-Smith, Ryan, Adams, & Dalicandro, 1998; Lounsbury, Steel, Loveland, & Gibson, 2004; Malcolm, Wilson, Davidson, & Kirk, 2003; Romero & Lee, 2008; Sheppard, 2005; Southwell, 2006; Vaughn, Maynard, Salas-Wright, Perron, Abdon, under review).

Family factors, such as family conflict, poor or unhealthy family relationships, parental values and attitudes toward education, lack of cohesion, inconsistent and ineffective discipline, sanctioning of, or colluding in, school absences by parents, parent-child interactions, parental involvement in school, family poverty, and family structure have been implicated as causal or correlational factors associated with later truancy (Corville-Smith et al., 1998; Malcolm et al., 2003; McNeal, 1999; Romero & Lee, 2008).

School factors identified as causal or correlational to truancy include school culture, curriculum, poor teaching, negative school environment, interpersonal conflict or poor relationships with teachers, dissatisfaction with school, school disciplinary practices, and threats to physical safety such as bullying (Corville-Smith et al., 1998; Enomoto, 1994; Malcolm et al., 2003; Reid & Kendall, 1982).

Community/contextual factors have also been found to be associated with school absenteeism. These factors include race/ethnicity, socioeconomic status, employment and other opportunities in the community, neighborhood characteristics and level of organization, levels of social support, community norms, and community violence (Bowen, Bowen, & Ware, 2002; Lyon & Cotler, 2007; MacDonald & Marsh, 2007).

Truancy is increasingly being recognized as a complex and heterogeneous problem that can be influenced by a number of factors (Kearney, 2008; Kim & Streeter, 2006; Lauchlan, 2003). Researchers and practitioners have developed various strategies targeting a number of the risk factors that have been associated with absenteeism, resulting in diverse intervention strategies being implemented in various settings.

1.1 INTERVENTIONS TO INCREASE STUDENT ATTENDANCE OR REDUCE TRUANCY

The number of interventions designed to increase student attendance has been growing substantially. In the United States, several federal and community initiatives have been established to reduce absenteeism and truancy. The Office of Juvenile Justice and Delinquency Prevention (OJJDP) established the Model Programs Guide, a database of programs that have met OJJDP's methodological standards and have demonstrated effectiveness in impacting a number of different problems of concern by OJJDP. Sixteen truancy interventions are listed in the OJJDP Model Programs Guide. In addition, the National Center for School Engagement has registered 171 truancy programs in their database, 69 of which have self-identified as having had an external evaluation and 30 of which have completed final evaluations.

In addition to national initiatives intended to improve attendance, other initiatives have been implemented to reduce high school dropout. Although this review is concerned with truancy rather than school dropout, absenteeism is strongly associated with, and has been identified as a significant risk factor for, school dropout (Baker, 2001; Garry, 1996). As a result, many strategies utilized in dropout prevention programs focus on increasing student attendance; thus, there is some overlap between absenteeism and dropout interventions. The National Dropout Prevention Center, for example, lists 60 model programs for truancy reduction in their database. This review focuses on interventions intended to increase student attendance and will, therefore, likely include some studies of interventions that are identified as "dropout prevention" programs. However, not all dropout prevention programs have an identified goal of increasing student attendance or measure attendance; thus, while there is some overlap in the strategies commonly used to prevent both truancy and dropout, not all studies of dropout prevention programs will meet the criteria for this study.

Because truancy is a recognized problem among various disciplines—including education, psychology, social work, nursing, criminal justice, sociology, and others—the conceptualizations of the problem as well as the approaches used to intervene with school

absenteeism are diverse. Interventions targeting school attendance fall into several different categories, target a variety of different risk factors and levels, are implemented in different settings, and are delivered through a variety of modalities. Interventions generally target individual risk factors, such as school anxiety or phobia, low self-esteem, social skills, and medical conditions; family factors, such as communication and parental support, discipline and contingency management, parental involvement, and communication with the school; and school factors, such as school climate, attendance policies, relationships between teachers and students, and bullying. Some interventions target multiple risk factors across all three levels.

In addition to the variety of risk factors targeted, interventions also differ in terms of the settings in which the interventions are implemented. Interventions have been implemented in clinical and community agency settings, schools, courts, and police agencies. Interventions may be conducted as part of a collaborative effort between community agencies, schools, courts, and/or police agencies or by a single entity.

Truancy and attendance interventions can also be described and categorized by the level at which they are intervening. Universal interventions targeting attendance are applied to an entire population, usually to all students in a school. Selective interventions are designed to prevent the problem from developing, targeting students who may be at high risk for developing an attendance or truancy problem. Indicated interventions target students who have chronic attendance problems. Universal, selective, and indicated interventions are often very different types of interventions targeting different types of students.

Depending on the risk factor(s), the level being targeted, and the setting(s) in which the interventions are being carried out, programs intended to increase student attendance are delivered in a variety of modalities. These include, but are not limited to, individual therapy, parent training, family therapy, group therapy, monitoring and supervision, case management, incentives and rewards, fines and sanctions, prosecution, social-service referrals, tutoring, teacher training and development, school improvement strategies, school policy initiatives, hand-washing to prevent disease, asthma prevention strategies, and parent engagement strategies.

Despite the widespread attention to truancy and the increase in the number and variety of interventions available to prevent and reduce truancy and improve attendance, the issue remains a significant problem. The lack of consensus about definitions and conceptualizations of the problem as well as about intervention strategies for youths with problematic absenteeism has contributed to the disconnect between different groups of professionals studying truancy. While examining a problem from various perspectives can be productive, the study of truancy has remained disparate. A review of prior literature reviews of truancy intervention research will be examined in the following section to assess the state of what we know about effects of interventions on attendance.

1.2 PRIOR REVIEWS OF TRUANCY INTERVENTIONS

A search for previous reviews and meta-analyses of truancy and attendance interventions was undertaken. Six databases (ERIC, PsycInfo, Academic Search Premier, Dissertation Abstracts, Criminal Justice Periodicals, and Pegasus [Loyola University's Library Catalog]) were searched and 11 traditional narrative reviews, 1 systematic review, and 1 meta-analysis were identified.

Klima, Miller, and Nunlist (2009) conducted a meta-analysis of 22 experimental and quasi-experimental studies evaluating the effects of dropout and truancy interventions. Twenty-two studies were included in the meta-analysis. Because the meta-analysis was part of a larger investigation of Washington State truancy laws, the focus of the review was on programs that could be implemented by at least one system involved in the larger investigation (schools, courts or law enforcement) and thus excluded studies of programs carried out in social service, mental health, and other non-profit organizations. The authors also excluded elementary school programs, programs for populations at risk due to minority or socioeconomic status and delinquency, and behavior improvement programs for youth who exhibit disruptive behavior. In addition, the authors did not conduct moderator analyses to examine potential variation in effects for study, population, or intervention characteristics. The authors reported small positive impacts on dropping out, achievement and attendance/enrollment. For attendance and enrollment outcomes, the authors reported that alternative education programs, behavioral programs, and school-based mentoring programs were the modalities found to be most effective.

Sutphen, Ford, and Flaherty (2010) conducted a systematic review of the effects of truancy interventions. Their review included 16 studies of truancy intervention studies published in peer-reviewed journals between 1990 and 2007. The review included experimental, quasi-experimental, and single group pre-posttest studies and a broad range of intervention modalities, including universal, selective, and indicated programs. The authors presented the findings for each study, but did not quantitatively synthesize them or calculate effect sizes for the included studies. The authors essentially used a vote-counting method and reported whether the primary study authors found significant differences between the treatment and intervention groups. The authors of the review mention a paucity of truancy intervention research and a lack of consistency in definitions of truancy used by researchers. They identified individual interventions that demonstrated beneficial effects, including interventions using contingency management, group guidance, and parental notification as well as some community-based and collaborative interventions.

The remaining reviews identified in the search were traditional narrative reviews of the literature. They examined the causes, correlates, and diagnostic features of truancy, highlighted various treatment modalities, and cited published intervention studies to provide evidence of the effectiveness of various treatments. Much of the discussion of intervention in the narrative reviews covered a range of programs and settings, and provided descriptions of

the different types of interventions available. The reviews cited relatively few studies of interventions. In addition, the reviews were not systematic; they did not specify their search strategy or inclusion/exclusion criteria, and they included only published studies. The outcome studies that were cited in the reviews used various methodologies, including case studies, open clinical trials, and randomized and nonrandomized studies. The reported findings primarily favoured the intervention(s) discussed. Many of the narrative reviews focused on the same literature base, yielding considerable repetition.

All but one of the existing reviews utilized a narrative approach, presenting a description of programs or using a vote-counting method to categorize outcomes of programs as significantly positive, significantly negative, or of no significance. Conclusions regarding effective interventions were then made based on the number of studies that were found to demonstrate significant positive results. The vote-counting method, however, disregards sample size, thus leading to erroneous conclusions (Glass, McGaw, & Smith, 1981). Also, the vote-counting method relies on statistical significance and does not take into account measures of the strength of the study findings, thus also leading to misleading conclusions (Glass, McGaw, & Smith, 1981). Meta-analysis, on the other hand, represents key findings in terms of effect size rather than of statistical significance. Thus, meta-analysis provides information about the strength and importance of a relationship, the magnitude of the effects of the interventions, and the characteristics of effective interventions.

In addition to published reviews of interventions targeting school attendance and truancy, lists of “model” truancy reduction programs have been developed by the OJJDP, the National Center for School Engagement (NCSE), and the National Dropout Prevention Center (NDPC). The NDPC and OJJDP databases of model programs specify criteria for inclusion of programs in the database while the NCSE maintains a self-registry of programs requiring no minimum criteria to be met in order to be registered in the database. Thus, programs that are ineffective could be listed among those that have demonstrated effectiveness.

Although having lists of programs in various databases may be helpful at some level, merely listing programs with varying levels of evaluation and evidence of statistical significance can be misleading to those who are looking for programs to implement. A review and synthesis of these outcomes of interventions, using both published and unpublished evaluations of programs, is needed to summarize the extant research in this area, estimate the magnitude of the program impacts (effect size), and establish the evidence base for programs being disseminated through these guides and registries.

From the literature reviews and lists of “model” programs, there seem to be a number of diverse programs that have been evaluated, both published and unpublished, providing a substantial body of research available for assessing the efficacy of interventions to increase student attendance. Unfortunately this knowledge is disparate and confusing, and much appears to be unpublished, making it difficult for policy makers and practitioners to use

evidence of effectiveness to guide policy and practice. It is important to systematically and statistically synthesize the intervention research to provide a comprehensive picture of indicated interventions being utilized, to identify interventions that are effective, and to identify areas in which more research needs to be conducted to better inform practice and policy. This review will fill this gap in the literature with the ultimate goal of providing evidence-based guidelines to help guide policy makers and practitioners in helping students with chronic attendance problems improve their attendance.

1.3 BENEFITS OF THIS REVIEW

The proposed systematic review will improve upon prior work in several ways. First, this review will apply a systematic and transparent process for searching, retrieving, and coding studies. Utilizing a systematic method to conduct the review of outcome research limits bias and reduces chance effects, leading to more reliable results (Cooper, 1998). Explicit and transparent description of the review process also allows for the review to be replicated and expanded to include new studies or criteria.

Second, this review will attempt to include evaluations of interventions operating in a broader set of geographical contexts than those of previous reviews. The search will be inclusive of interventions being conducted and tested in the United States as well as in other countries with similar educational systems, which will allow us to potentially identify studies that have been missed in prior reviews.

Third, we will evaluate whether the research base is an adequate representation of programs currently in operation. Although we will not be systematically assessing all programs in operation, we will rely on summary reports by government and non-government entities to inventory strategies aimed at increasing student attendance. We will determine the extent to which there is credible evidence of the impacts of these particular strategies by comparing programs in operation and recommended intervention strategies with the studies included in this review. We will also explore differences in outcomes among clusters of programs defined by seemingly important programmatic features and assess the appropriateness of combining effect sizes for different types of programs.

Finally, we have not been able to locate a systematic review or meta-analysis of indicated interventions intended to increase school attendance with chronic truant students. Prior reviews have included universal, selective, and indicated interventions rather than focusing specifically at one level. Universal programs aimed at improving attendance school wide, and selective prevention efforts conducted with at-risk students, who may or may not have an attendance problem, are very different types of programs that target very different types of students than indicated interventions which intervene with students who have serious attendance problems. It seems that quantitatively synthesizing outcomes of universal and selective (Tier 1 and 2) interventions with indicated (Tier 3) interventions is not warranted due to the heterogeneity of the programs and the students targeted by those problems. The

programs are simply too diverse to be pooled. This review was prompted by the needs of a school that wanted to intervene with and improve attendance of those students who were chronic truants, those missing a significant number of days per year. For the purposes of this review, we address the question of what works for students with chronic attendance problems and, therefore, focus on systematically synthesizing results of studies testing indicated (i.e., Tier 3) interventions with chronic truant students.

2 Objectives

The main objective of this review was to examine the effects of indicated intervention programs on attendance outcomes of elementary and secondary school students who were identified as having chronic attendance problems.

The specific questions guiding this study were:

- 1) Do indicated programs with a goal of increasing student attendance affect school attendance behaviors of elementary and secondary students who have an identified attendance problem?
- 2) Are there differences in school-based, community-based, court-based, and police-based programs with regard to services provided and effects on student attendance?
- 3) Are some modalities (i.e., individual, family, group, multimodal) of interventions more effective than others at increasing student attendance?

3 Methodology

3.1 CRITERIA FOR STUDY INCLUSION

The following criteria were used to determine whether a study would be included in the review for purposes of estimating program effects:

Types of studies: Studies utilizing randomized (RCT) or quasi-experimental designs (QED) with a comparison group that received treatment as usual, no treatment or were wait-listed, or an alternative treatment were included in this review. Studies utilizing a single-group pre-posttest (SGPP) design were also included in this review; however, the results were analyzed separately.

Types of participants: To be included, students needed to be attending primary or secondary educational institutions and be truant or have an attendance problem. Because some researchers do not utilize the language of truancy, but rather use terms such as absenteeism, chronically absent, etc., a broader terminology was used to identify studies with eligible participants. The focus of this review is on interventions for chronically truant students; thus we were interested in identifying studies in which the participants had a significant attendance problem rather than being at risk in some other way. This review is also not focused on interventions generally trying to increase school-wide attendance rates, as these are different populations of students and typically different types of interventions. Participants who were identified as school refusers were excluded from this review; students exhibiting symptoms of school refusal behavior are different from truants or chronic absentee students in that their school absenteeism is a result of anxiety or distress.

Types of settings: The review included interventions conducted in any setting that serves primary or secondary school students. Studies conducted in residential facilities or psychiatric day programs were not included in the review because these settings are highly controlled.

Types of interventions: Interventions with a stated primary goal of increasing student attendance (or decreasing absenteeism or truancy) among primary or secondary school students who have been identified by the researchers as having chronic attendance problems were included in this review. Due to the differences between universal, selective, and indicated programs (or, Tier 1, 2, and 3 programs); the differences in the types and

characteristics of students that are targeted by indicated interventions versus universal and selective prevention programs; and the different practice and policy issues being addressed by this review (e.g., what works for chronic truant students), studies in this review will be limited to interventions specifically targeting truant students who were identified prior to the study as having an attendance problem that met a threshold determined by the study researcher.

Types of outcome measures: School attendance was the primary outcome of interest in this review. Studies must have included at least one quantifiable measure of school attendance or absence and provided adequate data to calculate an effect size. Other outcomes were coded (i.e., school performance, anxiety) during the coding process; however, there were too few studies measuring the same secondary outcomes to conduct any meaningful analysis.

Geographical context: Due to significant differences in educational and legal systems around the world, this review included only studies conducted in the United States, Canada, the United Kingdom, and Australia. Only English-language articles were included in the review.

Time frame of field trials: This review included studies that were published between 1990 and April 2009, even though the research itself might have been conducted prior to 1990. Increased attention to attendance problems and national initiatives to combat attendance problems and truancy began occurring in the 1990s in the U.S., which resulted in a large number of evaluation studies assessing the effectiveness of attendance interventions. Therefore, this review focused on the past twenty years to provide a comprehensive and contemporary view of attendance interventions.

3.2 SEARCH STRATEGY

A comprehensive search strategy was designed that sought to identify and all relevant studies, both published and unpublished, that met the inclusion criteria described above. Although this review is limited to indicated intervention programs serving students with an identified attendance problem, the search process was conducted to include universal and selective programs as well to identify studies that will be used in future reviews. Several sources were used to identify eligible studies, including:

3.2.1 Electronic Databases

A total of 18 databases were searched (see Table 3.1). Two librarians specializing in social work, criminal justice, and education as well as consultants through the Campbell Collaboration were consulted to determine the appropriate databases to search and keyword search terms to utilize. Three of the 18 databases (Canadian Research Index, CBCA Education, and FRANCIS) were searched by a librarian associated with the Campbell

Collaboration because those databases were not available through Loyola University Chicago's library system.

TABLE 3.1: ELECTRONIC DATABASES SEARCHED

Name of Database	
Academic Search Premier	Francis
CBCA Education	MEDLINE
Canadian Research Index	PsycInfo
Cochrane Controlled Trial Register	Questia
Criminal Justice Abstracts	Social Science Citation Index
Databases of Abstracts of Reviews of Effectiveness	Social Service Abstracts
Dissertation Abstracts	Social Work Abstracts
ERIC	Sociological Abstracts
Education Complete	WorldCat

Keyword searches within each database included combinations of keywords with appropriate wildcards grouped into four main categories:

- 1) Outcome: Attendance OR Absence

AND
- 2) Intervention: Evaluation OR Intervention OR Treatment OR Outcome OR Program

AND
- 3) Targeted behavior: Truancy OR School refusal OR Absence OR Attendance OR School phobia OR School anxiety OR Dropout OR Expulsion OR Suspension

AND
- 4) Targeted population: Students OR Schools

3.2.2 Internet and Website Searches

Websites of relevant government agencies, research centers, foundations, and professional associations were searched for published and unpublished studies. These sites included the U.S. Department of Education, the Office of Juvenile Justice and Delinquency Prevention (OJJDP), coloradofoundation.org, hfrp.org, truancyprevention.org, drgonline.com,

Colorado.edu/cspv/blueprints/, schoolengagement.org, dropoutprevention.org, ies.ed.gov/ncee/wwc/, and Google Scholar.

3.2.3 Personal Contacts

Personal contacts with research centers, organizations, and researchers who do work in the fields of truancy, school refusal, and school absenteeism were contacted. An e-mail query of researchers and experts in the field was attempted in an effort to uncover additional published or unpublished studies relevant to the review. In addition, efforts were made to contact all truancy and attendance programs listed on the National Dropout Prevention Center (NDPC) and National Center for School Engagement (NCSE) websites as well as programs listed in Reimer and Dimock's (2005) booklet. Contact was attempted via e-mail inquiry to the contact person listed for the program. If no response was received from the e-mail inquiry or the e-mail came back as undeliverable, a letter was mailed to the contact person.

A total of 260 programs were listed with NDPC, NCSE, and Reimer and Dimock's booklet; however, several programs were listed in more than one source. E-mails or letters were sent to all of the programs listed in these sources, with the following results. Of the 60 programs listed in NDPC's register, 10 programs responded. Of the 10 respondents, six indicated that they did not have any reports or evaluations of their program and four sent reports via e-mail or mail. Of the four reports received, one did not measure attendance, two were not indicated programs, and one was not an actual study but rather a two-page report providing information about students referred to the program and a simple tally of students whose attendance improved right after the program.

The National Center for School Engagement provided an Excel spreadsheet of 177 programs listed in their registry that included contact information. All of the programs were contacted via e-mail and letters. No response was received from 82 of the programs, information from two was obtained from another source, and 29 e-mails came back as undeliverable. Of the 22 programs that did respond, 11 stated that they had not conducted a formal study of the program, seven sent reports that were not useable because they were either descriptive year-end reports or did not measure attendance as an outcome, and two were secondary programs. The two remaining reports passed the full text-screening stage and were coded; however, both of these reports were evaluations that had been identified through another source.

3.2.4 Reference Lists

Reference lists of prior reviews and related meta-analyses were reviewed for relevant studies. In addition, the references of the retrieved primary studies were examined for studies potentially relevant for the review. Reference lists of prior reviews and retrieved primary studies yielded 11 studies that were retrieved and screened for eligibility.

3.3 RETRIEVAL, SCREENING, AND SELECTION OF STUDIES

Titles and abstracts of the studies found through the search procedures were screened for relevance by the first author, and those that were obviously ineligible or irrelevant were screened out. For example, studies that were deemed inappropriate at the title/abstract review stage were those that did not involve the target population (e.g., they involved college students or adults), did not involve an intervention, or were theoretical in nature. If there was any question as to the appropriateness of the study at this stage, the full text document was obtained and screened. Documents that were not obviously ineligible or irrelevant based on the abstract review were retrieved in full text for final eligibility screening through Loyola University Chicago Library and Interlibrary Loan. All full text articles retrieved were assigned an identification number; the source and bibliographic information for each retrieved document were entered into the Search Documentation Log, an Excel spreadsheet.

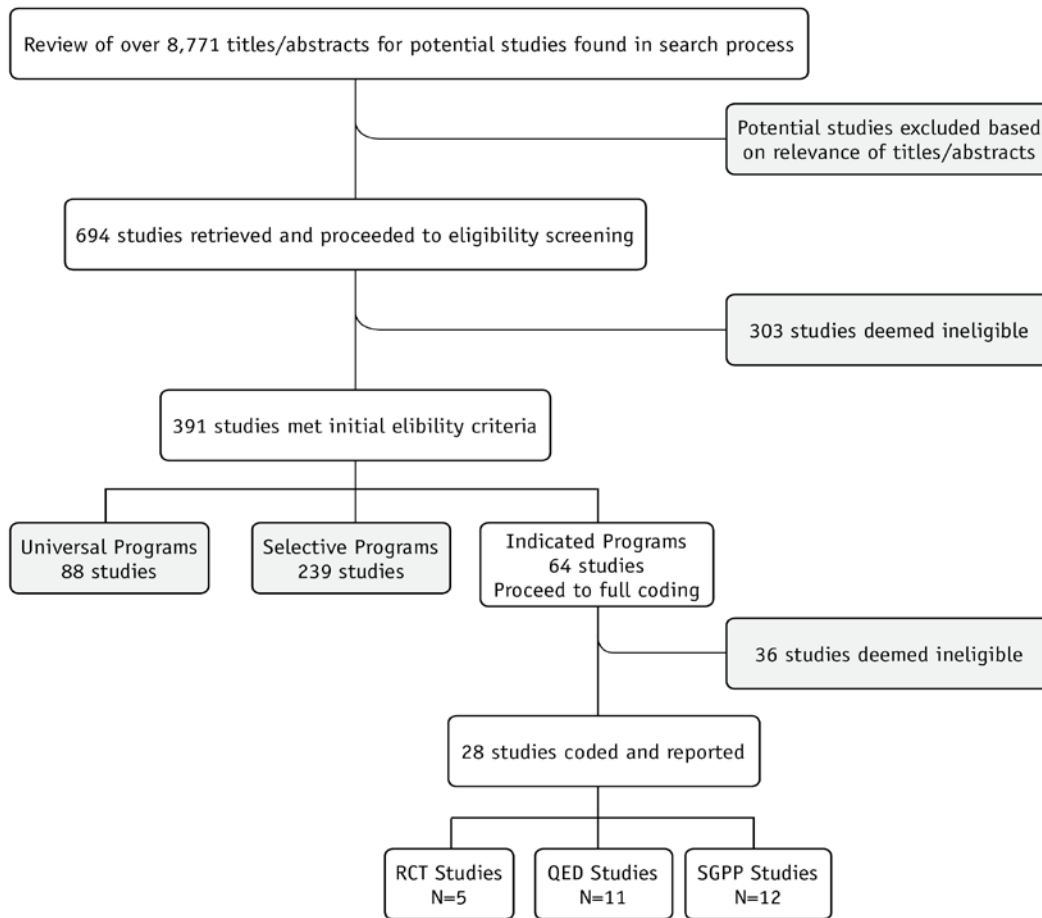
Once the full text copies of the studies were retrieved and documented in Excel, each study was screened for eligibility by the first author. The basic information needed to determine whether the study met the inclusion criteria was coded on the screening instrument and entered into the Search Documentation. Also at this time, interventions were coded into one of three categories: 1) universal programs targeting the whole school or the general population of students; 2) selective programs targeting students who were “at risk” but who may or may not have had an identified attendance problem; or, 3) indicated programs targeting students who had an identified attendance problem.

3.4 RESULTS OF SEARCH AND SELECTION PROCESS

The search yielded over 8,700 “hits.” After review of titles and abstracts, a total of 694 studies were retrieved for screening, with 391 of them meeting basic criteria as an attendance intervention. Those 391 studies were then categorized into type of intervention: 88 studies were categorized as universal interventions, 239 studies were categorized as selective interventions, and 64 studies were categorized as indicated interventions. Of the 64 indicated intervention studies, 5 RCT, 11 QED, and 12 SGPP studies met inclusion criteria for this review. Studies were excluded at this stage due to authors not providing sufficient information to calculate effect sizes or because the studies were evaluating interventions targeting school refusal or school phobia. See Figure 3.1 for the flow chart detailing the search and selection process.

A list of included studies and excluded studies with reasons for exclusion can be found in Tables 8.1 and 8.2 located in the Appendix.

Figure 3.1: Study Search and Selection Process Flow Chart



3.5 DATA MANAGEMENT AND EXTRACTION

Studies of indicated programs that met the eligibility criteria were coded using a data-coding instrument developed by the first author. The coding instrument used for this review was comprised of five sections: 1) source descriptors and study context; 2) sample descriptors; 3) intervention descriptors; 4) research methods and quality descriptors; and, 5) effect size data.

All study coding was done on a hard copy of the coding form and entered into Excel. Data needed for the meta-analysis were entered into Comprehensive Meta-Analysis (version 2.0; Borenstein, Hedges, Higgins & Rothstein, 2005). All coding was completed by the first author. A random sample of 20% of the studies was coded by the third author or a trained research assistant. There was less than 10% discrepancy between coders in critical fields (data related to effect size and study design and quality). If there had been more than 10% discrepancy between coders, the remaining 80% of the studies would have been coded by a second coder and all discrepancies resolved.

3.6 STATISTICAL PROCEDURES

Statistical analysis was designed to produce descriptive information on the characteristics of the studies included, the effect size of each intervention on attendance outcomes, the grand mean effect size, the heterogeneity of effect sizes around the mean, and the relationship between effect sizes and methodological qualities as well as substantive characteristics of the samples and interventions.

The intervention outcome of interest for this review is attendance, which was reported as a continuous variable in all studies. Attendance was measured and reported in terms of mean number of days attended or absent, mean number of classes absent, or mean percentage of days attended or absent. Effect sizes were calculated in Comprehensive Meta-Analysis (CMA) version 2.0 (Borenstein, Hedges, Higgins, & Rothstein, 2005). The standardized mean difference effect size statistic was utilized for the RCT/QED studies, employing Hedges' g to correct for small sample size bias (Hedges, 1981). The mean change effect size statistic was calculated for the SGPP studies. In cases where the authors did not report the means and standard deviations needed to calculate an effect size, but did report the results of a t -test or one-way analysis of variance (ANOVA), the effect size was calculated in CMA by inputting the means, sample sizes, and t -value, or in the case of an F-ratio, the sample sizes and square root of the F-ratio. In cases where reported data did not allow for the calculation of effect sizes, and it was not possible to estimate the effect sizes with values from t -tests or ANOVAs, the study was excluded. Of the 36 studies that went to full coding, eight studies were excluded due to authors not reporting adequate data to calculate effect sizes.

Due to the inherent differences between single within group study designs and between group study designs, as well as the differences in how mean change effect sizes and mean difference effect sizes are interpreted, the RCT/QED studies were analysed and reported separately from the SGPP studies.

To maintain statistical independence of data, only one effect size was computed for each subject sample. In cases of studies with more than one treatment group, the group that was deemed most relevant was included in the meta-analysis. In cases of studies with more than one comparison group, the comparison group that received the least amount of intervention was utilized. For studies that reported attendance/absence in more than one way (i.e., reported average attendance by full day absent and total number of classes missed), the outcome that was most similar to the other studies included in the review was utilized.

A test of homogeneity (Q -test) was conducted to compare the observed variance in the distribution of effect sizes to what would be expected from sampling error. The Q statistic is distributed as a chi-square with $k-1$ degrees of freedom (k = the number of effect sizes) (Hedges & Olkin, 1985). A significant Q rejects the null hypothesis, indicating that the variability in effect sizes between studies is greater than what would be expected by sampling error alone.

Moderator analysis was warranted due to the heterogeneity of effect sizes between studies being larger than expected from sampling error alone (details in the Results section). Random effects models were used for all analyses. The analog to the Analysis of Variance was employed to test the association between categorical independent variables and variability in the effect sizes. Bivariate meta-regression was employed to test the association between continuous variables and variability in the effect sizes. The independent variables tested for moderating effects were: study design, publication type, attrition, grade level, type of intervention, treatment duration, modality of treatment, student grade, race, and chronicity of absenteeism at baseline.

Publication bias was also assessed in this review. Publication bias can occur as a result of decisions on the part of authors as well as editors to publish studies that demonstrate a significant effect and to not publish studies when findings may be insignificant, or run counter to the hypothesis or conventional wisdom (Cooper, 1998). Including only published studies in a meta-analysis could likely introduce an upward bias into the effect sizes (Lipsey & Wilson, 2001). Therefore, it is recommended that meta-analysis include both published and unpublished studies to minimize this bias (Cooper, 1998; Lipsey & Wilson, 2001). This review made every attempt to include both published and unpublished reports to minimize the occurrence of publication bias. In addition, publication bias was assessed by constructing a scatter plot of the effect size by sample size, called a funnel plot.

4 Results

4.1 DESCRIPTIVE ANALYSIS

The search strategy identified 16 eligible randomized controlled trials (RCTs) and quasi-experimental design (QED) studies, which were reported in 15 individual reports (Johnson & Syropoulos, 1996, reported two independent samples in one report). Five of the studies were RCTs and 11 were QED studies. An additional 12 eligible single group pre-posttest (SGPP) studies, which were reported in 11 individual reports (Finlay, 2006, reported two independent samples in one report), were also identified. As indicated previously, the results for the SGPP studies will be presented separately from the between group (RCT/QED) studies.

Table 4.1 summarizes the characteristics of the included studies, which were published between 1990 and 2009. Eleven (69%) of the RCT/QED studies and one of the SGPP studies were dated between 1990 and 1999, with the remaining produced between 2000 and 2009. Although one would anticipate more rigorous designs used in the more recent decade, the RCT/QED design appeared to be more prevalent in the prior decade, whereas SGPP designs were more prevalent in the 2000s. Despite efforts to search for studies conducted in a broad geographical area—including the United Kingdom, Australia, and Canada—all of the included RCT/QED studies and all but one SGPP study were conducted in the United States. The comparison condition for the majority (88%) of the RCT/QED studies was either treatment as usual, no treatment, or a waitlist. Two of the studies compared the treatment condition to a comparison group which received another intervention.

Researchers and practitioners from social work, psychology, education, criminal justice, and nursing authored the studies included in this synthesis. It is worth noting that there were some instances in which the same author or group of authors published more than one study included in this review. Of the RCT/QED studies, two were authored by Hess (1990a & 1990b) and two by Johnson and Syropoulos (1996). Of the SGPP studies, four (three reports of four independent samples) were produced by the National Center for School Engagement (NCSE). These studies were evaluations of various truancy reduction programs funded by the Office of Juvenile Justice and Delinquency Prevention (NCSE 2005; NCSE, 2006a; NCSE, 2006b).

TABLE 4.1: CHARACTERISTICS OF INCLUDED STUDIES

Characteristic	RCT/QED N (%)	SGPP N (%)	Characteristic	RCT/QED N (%)	SGPP N (%)
Publication Year			Country		
1990–1999	11 (69%)	1 (8%)	United States	16 (100%)	11 (92%)
2000–2009	5 (31%)	11 (92%)	United Kingdom	0 (0%)	1 (8%)
Publication Type			Author Profession		
Journal	4 (25%)	3 (25%)	Social Work	3 (19%)	2 (17%)
Dissertation or Thesis	10 (63%)	3 (25%)	Psychology	3 (19%)	1 (8%)
Other Report	2 (12%)	6 (50%)	Education	7 (44%)	3 (25%)
Sample Size			Nursing		
1–29	2 (13%)	7 (58%)	Criminal Justice	0 (0%)	1 (8%)
30–59	5 (31%)	3 (25%)	Unknown	2 (13%)	5 (42%)
60–99	4 (25%)	0 (0%)	Comparison Group Condition		
100–199	2 (13%)	1 (8%)	Nothing or Treatment As Usual	14 (88%)	N/A
200+	3 (19%)	1 (8%)	Alternative Intervention	2 (13%)	N/A
Author Involvement with Intervention					
Yes	5 (31%)	4 (33%)			
No	7 (44%)	8 (66%)			
Unsure	4 (25%)	0 (0%)			

Of the 16 RCT/QED studies included in this meta-analysis, 25% (n=4) were published in peer-reviewed journals, while the majority of studies (75%) were found in the grey literature. The unpublished studies included 10 dissertations, theses, or Master’s research papers and two reports by a school district. Of the 12 SGPP studies, three (25%) were published in peer-reviewed journals, while the majority (75%) were found in the grey literature. Three of these were dissertations or theses, and the remaining six were government or NCSE reports.

Sample sizes of the included studies were fairly small. The mean sample size of the included RCT/QED studies was 54 (range 5–193; SD 65.4), and 61 (range 4–376; SD 103.4) for the included SGPP studies. Just less than half of the RCT/QED studies (n=7) had sample sizes of less than 60 participants, while 10 (83%) of the SGPP studies had samples of less than 60. Although attrition was not a problem in the majority of the RCT/QED studies (88%), 58% of the SGPP studies experienced attrition of greater than 20%; in one study, attrition was not possible to calculate as the authors did not provide the sample size at pre-test. Several studies reported challenges with obtaining or retaining larger samples even though they had

originally planned for more participants. Some of the challenges cited by authors included: 1) problems locating and connecting with students and parents to enroll them in the study due to the high mobility of the families; 2) difficulties obtaining current residency and contact information from the school system; 3) disengagement and lack of trust in the school system that contributed to families' reluctance to be contacted or to give consent for participation in the study; 4) challenges in obtaining complete attendance records for students leaving the school system; and, 5) participant dropout from treatment or control conditions.

Attendance was measured as a continuous variable in all studies, and attendance data were obtained from an official school record or verified against an official record. Authors varied in the ways they operationalized attendance or absence and in how they reported attendance outcomes. In terms of authors' operationalization of absences, some authors measured only unexcused absences, some utilized both unexcused and excused absences, and some factored in tardies or partial days absent while others utilized only full days absent. Some authors were not transparent about what they were including in their reported absence rates. In terms of the formats authors used to report absences, some authors reported attendance rather than absences and did so in terms of mean number or mean percentage of days. All authors used the same method for measuring and reporting attendance/absence for their treatment and comparison groups. Two authors reported attendance data in two different ways, of which only one form of data from each study was utilized to calculate the effect size.

Although attendance is the outcome of interest in this synthesis and the only outcome for which effect sizes were calculated, it is interesting to note other outcomes authors measured. Table 4.2 lists the frequencies of other outcomes that were measured in the studies included in this meta-analysis.

TABLE 4.2: OTHER OUTCOMES MEASURED

Outcome	RCT/QED N (%)	SGPP N (%)	Outcome	RCT/QED N (%)	SGPP N (%)
Grades or GPA	7 (44%)	2 (17%)	# of Failing Courses	1 (6%)	0 (0%)
Behavior	3 (19%)	1 (8%)	Academic Performance (other)	1 (6%)	0 (0%)
Achievement	3 (19%)	1 (8%)	Department of Health/Human Services Referrals	1 (6%)	0 (0%)
Attitude Toward School	2 (13%)	1 (8%)	Court Referrals	1 (6%)	0 (0%)
Self-Esteem	2 (13%)	1 (8%)	Teacher Perceptions	1 (6%)	1 (8%)
Attachment	0 (0%)	1 (8%)	Self-Perception	1 (6%)	0 (0%)
Family Functioning	0 (0%)	1 (8%)	None	3 (19%)	4 (33%)

Outcome	RCT/QED N (%)	SGPP N (%)	Outcome	RCT/QED N (%)	SGPP N (%)
Disciplinary Referrals	1 (6%)	1 (8%)			

Note: Categories are not mutually exclusive.

4.1.1 Participant Characteristics

A total of 1725 students participated in the treatment and comparison groups in the RCT/QED studies, and 728 students participated in the SGPP studies. Of those participating in the RCT/QED studies, 902 students received the treatment condition, and 823 received the comparison condition. Table 4.3 summarizes the characteristics of the participants of the included studies.

TABLE 4.3: PARTICIPANT CHARACTERISTICS

Characteristics	RCT/QED N (%)	SGPP N (%)	Characteristics	RCT/QED N (%)	SGPP N (%)
Mean Age	13.73 (n=8)	10.25 (n=2)	Predominant Race by Study		
Grade Level			Caucasian	5 (31%)	2 (17%)
Elementary	2 (13%)	5 (42%)	African American	3 (19%)	2 (17%)
Middle School	5 (31%)	1 (8%)	Hispanic	3 (19%)	0 (0%)
High School	5 (31%)	0 (0%)	Not Given	5 (31%)	8 (67%)
Mixed Grades	3 (19%)	3 (25%)	Socioeconomic Status		
Not Given	1 (6%)	3 (25%)	Low	3 (19%)	1 (8%)
Pre-Test Mean Rates of Absenteeism by Study			Working Class	1 (6%)	0 (0%)
<10%	1 (6%)	1 (8%)	Mixed	1 (6%)	0 (0%)
11%–20%	1 (6%)	5 (42%)	Not Given	11 (69%)	11 (92%)
21%–30%	3 (19%)	2 (17%)			
31%–40%	3 (19%)	1 (8%)			
41%+	4 (25%)	1 (8%)			
Not Given	4 (25%)	2 (17%)			

Note: Reported for treatment group only.

The mean age of participants in the eight RCT/QED studies that provided data on age was 13.73. For the two SGPP studies that reported age, the mean age was 10.25. All of the studies reported the grade level (or grade range) of participants in addition to or rather than reporting age. The majority of the participants in the RCT/QED studies were in middle school (31%) or high school (31%), with elementary students being the target of the intervention in two (13%) of the studies. The remaining studies included a mixture of grade

levels (n=3) or did not report grade levels (n=1). In the SGPP studies, elementary students were the target of the interventions in five (42%) of the studies, middle schoolers in one study (8%), and a mixture of grades in three studies (25%). Three of the SGPP studies did not report the grade levels of the participants.

Information about race/ethnicity and socioeconomic status of the participants was lacking in many studies. The race of the participants was not given in five (31%) of the RCT/QED studies and in eight (67%) of the SGPP studies. Of the RCT/QED studies that did provide participants' racial or ethnic background, Caucasian was the predominant group in five (31%) of the studies, African American in three (19%), and Hispanic in three (19%). Of the SGPP studies, Caucasian was the predominant group in two (17%) of the studies, African American in two (17%), and Hispanic in 0 (0%). The socioeconomic status (SES) of the participants was not given in 11 (69%) of the RCT/QED studies and in 11 (92%) of the SGPP studies.

4.1.1.1 Rates of Absenteeism

Participants in the included RCT/QED studies had high rates of absenteeism at baseline. In 69% of the studies, the treatment groups had a mean rate of absenteeism of 31% or more days absent. The RCT and QED studies had a higher percentage of participants with high rates of absenteeism than the single group pre-posttest studies. It should be noted that the percentage of days students were absent at baseline was not given by the authors in all studies. For studies that did not report baseline attendance rates, the first author of this review calculated baseline attendance rates with the data given by the authors for descriptive purposes. If the actual percentage of days absent was not given in the study, the percentage of days absent was estimated by taking the mean number of days absent given by the study author, dividing that by the number of days attendance was measured at pre-test, and multiplying by 100. If authors did not give the exact number of days or weeks for which they measured baseline attendance, the number of possible days was also estimated from information given by the study authors. The assumptions used to calculate the number of days over which baseline attendance was measured were: 20 school days per month, 90 school days per semester, and 180 school days per school year. Four (25%) of the RCT/QED studies and two (17%) of the SGPP studies did not provide enough data to calculate baseline mean attendance rates.

4.1.2 Intervention Characteristics

The interventions in this review represent a broad range of types, modalities, providers, and settings (see Table 4.4). Because this review examined indicated interventions for truant students who have identified attendance problems, all interventions in this review targeted the student and/or parent, rather than a more universal or selective prevention effort aimed at communities or schools. Although some RCT/QED studies utilized more than one treatment group compared to the same control group, only one treatment group was selected for inclusion in the analysis due to the importance of maintaining data independence when

analysing effect sizes. Therefore, only the intervention to which the selected treatment group was exposed will be included in the description of intervention characteristics.

4.1.2.1 Types of Programs

In the literature, interventions and programs are often characterized as court-based, school-based, or community-based. Because all of the interventions included in this review could be categorized in this way, each intervention was placed into one of the following three categories: 1) school-based interventions; 2) court-based interventions; and 3) community-based interventions. The number of interventions in each of the three categories is presented in Table 4.4. In defining interventions in terms of school, court, or community-based programs, the treatment setting was a significant determinant in the categorization scheme, but not the only determinant. Due to some interventions being conducted in more than one setting or in nontraditional settings, the primary organization responsible for the program and the providers implementing the intervention were also used in determining the category. When the court or court personnel had a major role in the intervention from the outset (as opposed to being the last step in the intervention process), regardless of location, the intervention was categorized as a court-based intervention.

TABLE 4.4: INTERVENTION CHARACTERISTICS

Characteristics	RCT/QED Studies	SGPP Studies	Characteristics	RCT/QED Studies	SGPP Studies
	N (%)	N (%)		N (%)	N (%)
Program Types			Providers*		
School-Based	12 (75%)	5 (42%)	Social Worker	5 (31%)	1 (8%)
Court-Based	3 (19%)	7 (58%)	Psychologist	3 (19%)	0 (0%)
Community-Based	1 (6%)	0 (0%)	Counselor/Therapist (unspecified)	2 (13%)	0 (0%)
			Counselor, School	1 (6%)	1 (8%)
Settings			Teacher/School Staff	10 (63%)	4 (33%)
School	11 (69%)	4 (33%)	Court Staff	1 (6%)	6 (50%)
Court	1 (6%)	1 (8%)	Peers	1 (6%)	0 (0%)
Clinic/Agency	0 (0%)	0 (0%)	Multiple Providers	7 (44%)	5 (42%)
Multi/Varied	4 (25%)	5 (42%)	Treatment Duration (N=13)		
Unable to Determine	0 (0%)	2 (17%)	One Event	1 (6%)	4 (33%)
			1–4 weeks	0 (0%)	0 (0%)
Collaborative			5–9 weeks	3 (19%)	2 (17%)
Yes	3 (19%)	6 (50%)	10–18 weeks	6 (38%)	3 (25%)

Characteristics	RCT/QED Studies	SGPP Studies	Characteristics	RCT/QED Studies	SGPP Studies
No	13 (81%)	4 (33%)	19+ weeks	3 (19%)	1 (8%)
Unable to Determine	0 (0%)	2 (17%)	Unknown	3 (19%)	2 (17%)

Note: *Categories not mutually exclusive.

The majority of interventions evaluated in the RCT/QED studies were school-based programs (75%), with court-based programs comprising 19% (n=3) and community-based programs comprising 6% (n=1). The majority of interventions evaluated in the single group pre-posttest studies were court-based programs (58%), with 42% being school-based programs. There were no community-based programs evaluated in the SGPP studies.

4.1.2.2 Intervention Components and Focal Modality of Intervention

We found a diversity of interventions evaluated in the studies included in this review. In addition to the diversity of interventions, several interventions were comprised of multiple components provided by multiple providers. The coding protocol for the meta-analysis included numerous items to capture the various components of interventions. Because there were several components that were not found in the included studies that had been anticipated and several that were found that were not included in the coding protocol, all studies were reread and descriptive information about the components was extracted. From the qualitative analysis of the program components found in the included studies, a revised list of intervention components was developed. Table 4.5 provides a summary of the intervention components utilized in the included studies. Because several studies used more than one component, the categories are not mutually exclusive. Programs were then categorized by the focal modality of the intervention: group, family, mentoring, alternative education, and contracting.

TABLE 4.5: COMPONENTS OF INTERVENTIONS

Component	RCT QED	SGPP	Component	RCT QED	SGPP
Student Targeted Interventions			Parent/Family Targeted Interventions		
Counseling, Social Work, Other Therapeutic Intervention	5 (31%)	5 (42%)	Family Therapy	2 (13%)	1 (8%)
CBT—Individual	0 (0%)	0 (0%)	Educational Group Meetings	1 (6%)	2 (17%)
CBT—Group	1 (6%)	0 (0%)	Interdisciplinary Team Meetings/Conferences	1 (6%)	3 (25%)
Group Therapy (non-CBT)	4 (25%)	2 (17%)	Criminal Prosecution	0 (0%)	2 (17%)
Individual therapy (non-CBT)	1 (6%)	3 (25%)	Referrals for Services	1 (6%)	2 (17%)
Behavioral Interventions	4 (25%)	3 (25%)	Parenting Skills/Training	1 (6%)	2 (17%)

Component	RCT QED	SGPP	Component	RCT QED	SGPP
(contracting, incentives/rewards)					
Mentoring	3 (19%)	3 (25%)			
Court Proceedings	1 (6%)	5 (42%)			
Pharmacotherapy	0 (0%)	0 (0%)			
Individualized Plans	1 (6%)	2 (17%)			
Student Health Center Services	1 (6%)	0 (0%)			
Alternative Education Programs	3 (19%)	0 (0%)			
Positive Behavioral Supports (PBS)	1 (6%)	0 (0%)			
Case Management	1 (6%)	5 (42%)			
Peer Support	2 (13%)	0 (0%)			

Note: Categories are not mutually exclusive.

4.1.2.3 Setting

The majority of interventions evaluated in RCT/QED studies were conducted in a single setting, but four (25%) were conducted in multiple settings for all participants or the setting varied depending on the participant's and/or family's needs and preferences. Of those that were conducted in a single setting, the majority of the interventions (69%) were conducted in the school, and one was conducted in the courthouse. The interventions in the SGPP studies occurred in multiple settings in five (42%) of the studies, in the school in four (33%) of the studies, and in the court in one (8%) of the studies. The setting in two of the studies was not able to be determined due to lack of information in the report. The majority of the SGPP studies (50%) were also conducted in the school setting, with one conducted at the court and one conducted at an agency.

4.1.2.4 Service Delivery: Providers and Collaborations

As anticipated, a number of disciplines were involved in the provision of services to the students and/or families. If there was more than one provider from a different discipline, the category of "multiple providers" was utilized. Multiple providers from different disciplines provided some or all of the intervention components in seven (44%) of the RCT/QED studies and five (42%) of the SGPP studies. Social workers, psychologists, and counselors provided at least part of the services in 63% of the interventions studied, while school personnel provided services in 66% of the interventions evaluated in the RCT/QED studies. Court staff (n=1) and peers (n=1) also provided at least part of the intervention in the RCT/QED studies. Of the SGPP studies, the interventions were more likely to be provided by court staff (50%) and/or school staff (41%). Social workers provided at least part of the intervention in one study.

Partly indicated by the multiple settings and providers in the above discussion, a number of programs either identified themselves as collaborative programs or the descriptions of the interventions suggested that a collaborative relationship was evident. For the purposes of this review, an intervention was considered collaborative if it (a) described itself as a collaborative program and involved two or more distinct organizations or personnel from two or more organizations, or (b) the development or implementation of the program involved two or more distinct organizations or personnel from two or more distinct organizations in the management and/or provision of services. Programs in which the only relationship between entities was that of making or receiving referrals or providing data were not considered collaborative. Of the 16 interventions evaluated in the QED/RCT studies, three (19%) met the criteria of a collaborative intervention. Six (50%) of the 12 interventions in the SGPP studies met the criteria of a collaborative intervention.

4.1.2.5 Duration of Treatment

The duration of treatment was coded in both hours and weeks of intervention. Because many studies did not provide enough detail regarding the number of hours participants were engaged in the intervention, number of weeks was used as the measurement for duration of treatment in this review. The majority of interventions evaluated in the RCT/QED studies were on-going, with one intervention being a single event that occurred in one day. The duration of treatment for the interventions evaluated in the RCT/QED studies ranged from 1 to 72 weeks, with a mean of 18.8 weeks (n= 13). The duration of treatment was not able to be determined in three of the studies. In the SGPP studies, four interventions were one-time events, six ranged in duration from 6 to 27 weeks (mean= 14.5 weeks), and the duration of two was unknown due to lack of information. The level and intensity of interventions is not necessarily reflected in the duration, as the frequency of contacts over the duration of treatment varied between the interventions; also, many studies did not provide enough information about frequency of contact to rate program intensity.

In addition to the interventions being comprised of multiple components, multiple recipients were often targeted by the interventions. Parents were either targeted as a primary recipient of the intervention or were involved as a recipient along with the students in eight (50%) of the RCT/QED studies, whereas the student was the primary target of the intervention in the remaining studies. Of the SGPP studies, the parent was involved to some extent as a recipient in nine (75%) of the interventions. One study, in which parents were criminally prosecuted for their child's truancy, did not target students at all (Becerra, 2001). The level of parental involvement in the interventions varied tremendously, ranging from programs in which parents were included in informational meetings while the students were the primary targets of the intervention to parents receiving the same amount of or more services than the students.

4.2 MEAN EFFECTS ON ATTENDANCE OUTCOMES: RCT/QED STUDIES

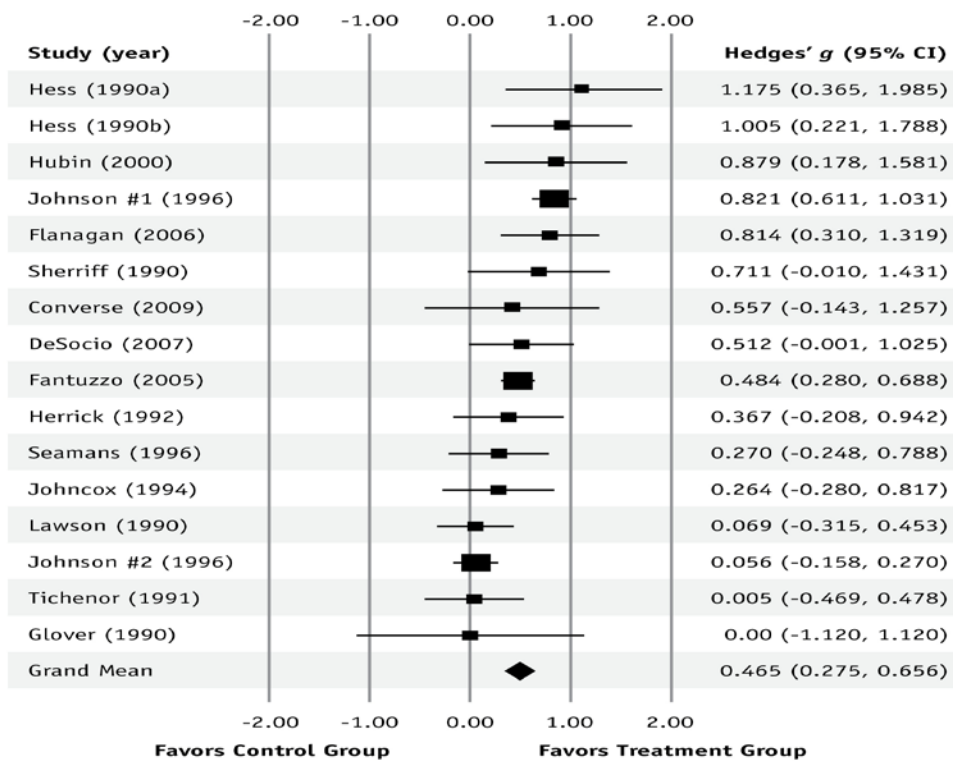
The overall mean effect size for attendance outcomes from the 16 independent samples reported in the 15 RCT/QED studies, assuming a random effects model, is .46 (95% CI .30, .62 $p < .05$), demonstrating an overall positive and statistically significant effect of interventions on attendance outcomes (see Table 4.6). The estimate of the random-effects variance component was 0.044 and differed significantly from zero ($Q = 43.04, p < .05$). Table 8.3 (see Appendix) provides a summary of the characteristics and mean effect sizes for each of the included RCT/QED studies. The mean effect size and confidence intervals for each study are also shown in the forest plot in Figure 4.1 below.

TABLE 4.6: MEAN EFFECT SIZE AND HETEROGENEITY STATISTICS FOR INCLUDED RCT/QED STUDIES

	Hedges' <i>g</i>	95% CI	<i>k</i>	<i>Q</i>	<i>I</i> ²	<i>Tau</i> ²
Attendance Outcomes	.46	.30, .62	16	43.04*	65.13	.044

* $p < .05$

Figure 4.1: Forest Plot of Mean Effects of RCT/QED Studies



4.2.1 Analysis of Homogeneity

The result of the statistical test for homogeneity was statistically significant ($Q=43.04$, $p < .05$), indicating that variability in effect sizes between studies was larger than expected from sampling error. The test of homogeneity indicates whether the between-study variance is significantly different from zero. Although the grand mean effect size provides evidence that the attendance interventions were, on average, moderately effective, the highly heterogeneous nature of the distribution suggests large differential effects across studies.

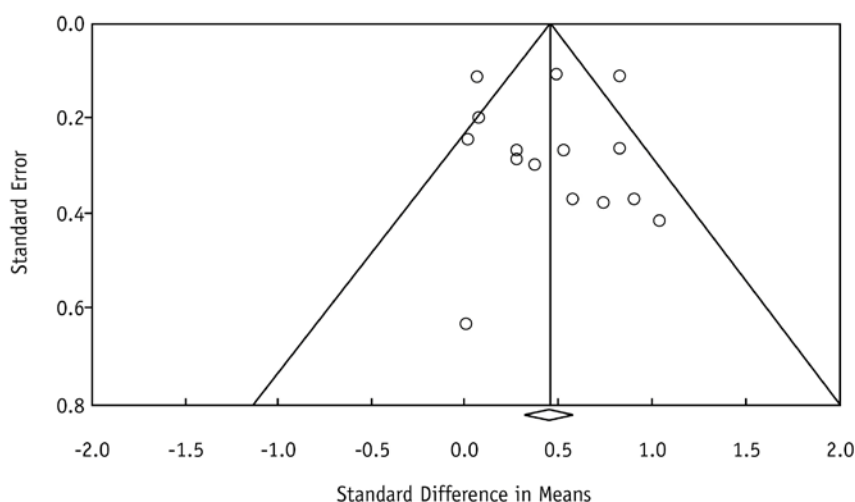
Because the studies disagreed on the magnitude of effect, our next step was to further examine the reasons for this variability. The between-study differences in effects may be a result of factors associated with the study methodology or with participant or intervention characteristics. To explore the variability between studies and examine independent variables that may be contributing to the heterogeneity, moderator analyses were performed.

4.2.2 Analysis of Publication Bias

Because of potential publication bias, special efforts were made to search for and retrieve unpublished reports, resulting in 65% of the RCT/QED studies in this meta-analysis being unpublished dissertations, theses, or reports. Due to the large number of unpublished studies as well as several small studies included in this meta-analysis, publication bias was likely mitigated. However, to formally assess the potential for publication bias, a funnel plot depicting the effect size (Hedges' g) plotted against the study standard errors was examined.

The funnel plot, as shown in Figure 4.2, is reasonably symmetric, indicating that publication bias does not appear to be a source of bias in this review.

Figure 4.2: Funnel Plot of Included RCT/QED Studies



4.3 ANALYSIS OF MODERATOR EFFECTS: RCT/QED STUDIES

Study, participant, and intervention characteristics were tested in the moderator analyses. Given the small number of studies in this review, we did not conduct any multivariate meta-regression models. The majority of moderator variables tested were categorical variables; therefore, moderator analysis for the categorical variables was performed using the analog to the Analysis of Variance framework in which effect sizes were weighted by the inverse of the variance of the effect size estimate. Continuous moderators were examined with bivariate meta-regression models. Random effects models were used in all analyses. After conducting the weighted meta-regression using SPSS using the inverse of each effect size's random effects variance estimate as weights, each standard error estimate was corrected by dividing it by the square root of the model's mean squared error value (Konstantopoulos & Hedges, 2009). The correction to the standard errors is necessary when conducting weighted regression using SPSS software. The regression coefficient was then divided by the corrected standard error to provide a test of the coefficient's statistical significance. In addition, the treatment effect estimates were pooled within levels of each variable (for example, effect sizes for published studies were pooled separately from those for unpublished studies). The pooling was conducted assuming a random-effects model. In the random-effects model, the common variance component across studies estimated above (and equal to 0.044) was used. These pooled estimates also appear in Table 4.7.

TABLE 4.7: MODERATOR ANALYSIS RESULTS FOR CATEGORICAL FACTORS

Factor	Q_b	K	Mean ES	95% CI
Study Characteristics				
<i>Publication Status</i>	2.08			
Published		5	.38	.21, .56
Unpublished		11	.55	.38, .72
<i>Study Design</i>	.28			
Random Assignment		5	.57	.17, .96
Non-random (QED)		11	.43	.28, .59
Participant Characteristics				
<i>Race</i>	.43			
Caucasian		4	.39	-.10, .88
African American		3	.45	-.062, .96
Hispanic		3	.55	.23, .87
<i>Grade</i>	1.59			
Elementary		2	.16	-.16, .48
Middle School		5	.53	.07, .99
High School		5	.53	.28, .78
Mixed Grades		4	.46	.23, .68
Intervention Characteristics				
<i>Program Type</i>	.33			
School-Based		12	.47	.26, .68
Court-Based		3	.49	.20, .79
Community-Based		1	.27	-.25, .79
<i>Focal Modality</i>	.76			
Group		5	.60	.13, 1.07
Family		4	.46	.23, .68
Mentoring		3	.28	0, .56
Alternative Ed.		3	.50	.05, .94
Contracting		1	.37	-.21, .94
<i>Collaborative</i>	.06			
Yes		3	.49	.30, .67
No		13	.46	.22, .70

<i>Multiple Modalities</i>	1.36		
Yes	9	.54	.31, .78
No	7	.31	.08, .53

Three of the factors tested as moderators were measured and reported as continuous variables in the included studies: treatment duration (# of weeks), baseline attendance rates (mean % of participants' absences at baseline), and attrition (%). Moderator analysis for these factors was conducted using a bivariate meta-regression framework. Table 4.8 presents the results of the meta-regression for these factors.

TABLE 4.8: BIVARIATE META-REGRESSION RESULTS FOR CONTINUOUS FACTORS

Variable	k	b	SE	95% CI
Treatment Duration	13	-.002	.007	-.02, .01
Baseline Attendance Rates	11	.013	.008	0, .03
Attrition Rates	16	.002	.005	-.01, .01

Note: Some studies were not included in analyses due to not reporting sufficient data to code for the variable, thus $n < 16$ for some analyses.

None of the moderators demonstrated a significant relationship with treatment effect. In other words, none of the Q -between values estimated in the mixed-effects weighted ANOVA were significant nor were any of the predictors in the meta-regression statistically significant. Although there were no significant differences in effects between studies on the moderator variables examined, some interesting findings are evident from the analyses.

4.3.1 Relationship of Study Characteristics to Effect Size

Variables tested for moderating effects related to study characteristics included publication status, study design, and rates of attrition. Of the study characteristics tested, none of the variables demonstrated a relationship to effect size. No significant differences in effects were associated with study design ($Q_b = .10, p > .05$). The inclusion of the weaker design (QED studies) did not appear to have upwardly biased the results, thus validating our decision to include QED studies in the analysis. If anything, the QED studies may have downwardly biased the overall mean, though the differences were not significant. Separating the QED studies from the studies that utilized randomization, or excluding them all together, would have served no purpose since they yielded essentially the same results (Glass et al., 1981). Although many reviews find that published studies report larger effects than unpublished studies, there were no statistically significant differences between published and unpublished studies in this review ($Q_b = 2.08, p > .05$). In fact, the unpublished studies had a slightly higher mean effect than the published studies. Rates of attrition were also not associated with magnitude of effect ($t(9) = .38$). It should be noted that publication status and study design were highly correlated with each other (see correlation matrix presented as Table 8.4 in the Appendix). Studies that utilized random assignment were more likely to have been published. Published studies and studies utilizing randomized design were also correlated with studies in which interventions were tested with participants in middle school. Confounded moderators tend to introduce ambiguity in interpreting the results of univariate

moderator analyses like those reported here. However, that none of the moderators exhibited a significant relationship with effect size magnitude gives us somewhat more confidence in our interpretations.

4.3.2 Relationship of Participant Characteristics to Effect Size

Variables related to participant characteristics for which moderator analyses had been planned a priori included baseline rates of absenteeism, grade, race/ethnicity, and socioeconomic status (SES). It is worth noting that only 10 studies reported adequate information on race or ethnic background and only four reported adequate information on the SES of the participants in the studies. Although race/ethnicity and socioeconomic status are both strongly correlated with absenteeism, authors did not regularly report data on the racial make-up or socioeconomic status of study participants. Due to an insufficient number of studies reporting SES, moderator analysis could not be performed for this variable. For the 10 studies that did report race/ethnicity, no significant differences in mean effects were observed between studies comprised of samples with different racial/ethnic compositions.

Upon visual inspection, treatment effects for studies that included students with lower baseline absenteeism appeared to be smaller than studies that included students with higher rates of baseline absenteeism; however, no significant differences were observed ($t(9) = 1.59$, $p > .05$).

No significant differences were observed in mean effects between grade levels ($Q_b = 1.59$, $p > .05$); however, only two studies were conducted with elementary students. In addition, 30% of the included studies were conducted with students across various grade levels. In studies that did include participants across grade levels, authors did not provide subgroup analysis by grade level to assess differential effects by grade. It should also be noted that grade level was highly correlated with both treatment modality and treatment duration. Studies involving high school participants were more likely to be alternative education programs and be longer in duration, middle school programs tended to use a group modality, and elementary programs tended to use behavioral contracting. Studies with participants from mixed-grade levels tended to be school- or court-based, employ family modalities, and be collaborative programs.

4.3.3 Relationship of Intervention Characteristics to Effect Size

Variables related to intervention characteristics examined for moderating effects included program type (school-, court-, or community-based); focal modality (group, family, mentoring, alternative education, and behavioral contracting); duration of treatment (number of weeks); collaborative interventions (yes/no); and multimodal interventions (yes/no). No significant differences in mean effects were found on any of the intervention characteristics tested.

Court-based, school-based, and community-based programs all demonstrated similar effects on attendance outcomes ($Q_b = .33$, $p > .05$). Interventions did not demonstrate statistically

significant differences between the types of modality utilized ($Q_b = .76, p > .05$); however, mentoring, contracting, and alternative education interventions demonstrated effects that were not statistically different from zero within each of those groups. Similarly, no significant differences in effects were found between programs that utilized a single modality versus those that utilized two or more modalities ($Q_b = 1.35, p > .05$). Collaborative interventions did not demonstrate significantly larger effects than non-collaborative interventions ($Q_b = .06, p > .05$). The length of treatment also did not demonstrate a relationship to magnitude of effect ($t(11) = -.26, p > .05$) in the meta-regression. Shorter-term interventions produced statistically similar effects to longer-term interventions.

It should be noted that, due to the small number of studies in this review, most of the categories within the variables tested included a small number of studies, and in a few cases, only one study. For example, there was only one study of behavioral contracting. Due to the few number of studies and thus low statistical power, we may not have been able to detect moderator effects that may indeed be present. In addition, some intervention characteristics were highly correlated with each other as well as with participant and study characteristics. For example, collaborative programs were more likely to be school based, to be conducted with middle schoolers, and to have family as the focal modality of the intervention.

4.4 ANALYSIS OF SINGLE-GROUP PRE-POSTTEST STUDIES

One of the main objectives of this review was to find and include the largest number of studies possible that examined the effects of targeted interventions to increase attendance and decrease absenteeism. Although there are a number of inherent limitations to single-group pre-posttest (SGPP) studies, the purpose of searching for and including SGPP studies was to provide a fuller picture of strategies that are being utilized in the field and to determine if the experimental and quasi-experimental research adequately represents the range of programs currently in operation. In addition, finding a number of SGPP studies that demonstrate promising results with certain interventions could provide a basis for recommending further research.

Although we saw value in including single-group pre-posttest studies in the synthesis, we chose to analyze them separately from the RCT/QED studies for several reasons. First, there are inherent limitations and issues related to internal validity present in single-group pre-posttest studies. In addition, our own analysis demonstrated a significant difference in mean effect size between SGPP studies and comparison-group studies.

4.4.1 Mean Effects of Single-Group Pre-Posttest Studies

Eleven single-group pre-posttest studies reporting on 12 independent samples met eligibility criteria for inclusion in the review. The overall mean effect size for attendance outcomes in the single-group pre-posttest studies, assuming a random effects model, was .95 (95% CI .67, 1.27, $p < .05$), demonstrating an overall positive, significant, and large effect of interventions

on attendance outcomes. The estimate of random effects variance component was .382 and differed significantly from zero ($Q=95.19, p < .05$). Table 8.5 in the Appendix presents a summary of the SGPP studies included in the review.

Because the test of homogeneity was statistically significant, indicating that variability between studies was larger than expected on the basis of sampling error alone, our next step was to further examine the reasons for this variability as we did for the RCT/QED studies. To explore the variability between studies and examine independent variables that may be contributing to the heterogeneity, moderator analyses using the analog to the Analysis of Variance was conducted for categorical variables and bivariate meta-regression for continuous variables similar to the moderator analyses performed for the RCT/QED studies. A random effects model with a common variance component was assumed for all moderator analyses (Raudenbush, 2009).

4.4.2 Moderator Analysis: SGPP Studies

Our examination of study, participant, and intervention characteristics associated with magnitude of effect is summarized in Tables 4.9 and 4.10. As with the RCT/QED studies, no variables were significant predictors of treatment effect.

4.4.3 Relationship of Study Characteristics to Effect Size

Variables tested for moderating effects related to study characteristics included publication status, study design, and rates of attrition. Of the study characteristics tested, none of the variables demonstrated a relationship to effect size. Although many reviews find published studies to report higher effects than unpublished studies, there were no statistically significant differences between published and unpublished studies in this analysis ($Q_b = .001, p > .05$). In fact, the mean effect sizes for published and unpublished studies were nearly identical. Rates of attrition were also not associated with magnitude of effect in the meta-regression ($t(6) = -.83$). It should be noted that publication status was highly correlated with grade level, family modality, and treatment duration (see correlation matrix presented as Table 8.6 in the Appendix).

TABLE 4.9: MODERATOR ANALYSIS OF CATEGORICAL VARIABLES—SGPP STUDIES

Factor	I^2	K	Mean ES	95% CI
Study Characteristics				
<i>Publication Status</i>	.00			
Published		3	.97	.18, 1.75
Not Published		9	.96	.49, 1.42
Participant Characteristics				
<i>Race</i>	3.01			
Caucasian		2	.34	.24, .44
African American		2	.61	.41, .81
Hispanic		0	n/a	n/a
<i>Grade</i>	.69			
Elementary		5	.85	.36, 1.34
Middle School		1	1.50	1.00, 1.99
High School		0	n/a	n/a
Mixed Grades		6	.97	.32, 1.63
Intervention Characteristics				
<i>Program Type</i>	.05			
School-Based		5	.90	.36, 1.44
Court-Based		7	1.00	.45, 1.56
Community-Based		0	n/a	n/a
<i>Focal Modality</i>	7.65			
Group		2	1.31	.78, 1.84
Family		6	.83	.45, 1.21
Mentoring		1	.17	-.43, .77
Alternative Ed.		1	.33	-.34, .99
Contracting		2	1.83	.55, 3.10
<i>Collaborative</i>	.68			
Yes		6	.79	.46, 1.13
No		6	1.15	.45, 1.84
<i>Multiple Modalities</i>	1.96			
Yes		8	.77	.45, 1.10
No		4	1.36	.47, 2.26

4.4.4 Relationship of Participant Characteristics to Effect Size

Variables related to participant characteristics for which moderator analyses had been planned a priori included baseline rates of absenteeism, grade, race, and socioeconomic status (SES). It is worth noting that only four studies reported adequate information on race, and only one reported adequate information on the SES of the participants in the studies. Although race and socioeconomic status are two variables that have been strongly correlated with absenteeism, authors did not regularly report data related to the racial makeup or socioeconomic status of study participants. Moderator analysis found no significant differences in mean effects based on the primary race/ethnicity of the included studies' samples. Due to an insufficient number of studies reporting SES, moderator analysis could not be performed for this variable.

Moderator analysis found no significant differences between studies on any of the student characteristic variables tested. Students' rates of absenteeism at baseline were not associated with differences in mean effects in the meta-regression ($t(8) = -.73, p > .05$). No significant differences were observed in mean effects between grade levels ($Q_b = .69, p > .05$); however, only one study was conducted with middle school students, and none were conducted with only high school students. The majority of the studies (50%) were conducted with mixed grades. In studies that did include participants across grade levels, authors did not provide subgroup analysis by grade level to assess differential effects by grade. It should also be noted that grade level was highly correlated with program type and modality. Programs involving mixed grades were more likely to be court-based, use a family modality, and be collaborative.

TABLE 4.10: MODERATOR ANALYSIS OF CONTINUOUS VARIABLES—SGPP STUDIES

Variable	k	b	SE	95% CI
Treatment Duration	7	-.01	.022	-.05, .03
Baseline Attendance Rates	9	-.022	.003	-.03, .02
Attrition Rates	8	-.011	.014	-.04, .02

Note: Some studies were not included in analyses due to not reporting sufficient data to code for the variable; thus $n < 12$ for some analyses.

4.4.5 Relationship of Intervention Characteristics to Effect Size

Variables related to intervention characteristics examined for moderating effects included program type (school-, court-, or community-based); focal modality (group, family, mentoring, alternative education, and contracting); duration of treatment (number of weeks); collaborative interventions (yes/no); and multimodal interventions (yes/no). No significant differences in mean effects were found for any of the intervention characteristics tested. No significant differences in effects were found between programs that utilized a

single modality versus those that utilized two or more modalities ($Q_b = 1.96, p > .05$). Collaborative interventions did not demonstrate significantly larger effects than non-collaborative interventions ($Q_b = .68, p > .05$). The length of treatment also did not demonstrate a relationship to magnitude of effect ($t(11) = -.47, p > .05$) in the meta-regression. Shorter-term interventions produced statistically similar effects to longer-term interventions. In addition, the mentoring and alternative education interventions demonstrated effects that were not statistically different from zero.

Most of the categories within the variables tested included only a small number of studies, and in a few cases, only one study or no studies. For example, there were no high school studies and only one each of mentoring and alternative education. Due to the few number of studies and thus low statistical power, we may not have been able to detect moderator effects that may indeed be present. In addition, some intervention characteristics were highly correlated with each other as well as with participant and study characteristics. For example, studies involving mixed grades were more likely to be court based and use a family modality, and less likely to be school based and use a group modality.

4.5 CLINICAL SIGNIFICANCE

The overall effect size of attendance interventions examined in the between group studies was .46. We can translate this into terms that are more intuitively comprehensible by converting it back into number of days of school attendance that the treatment group gained as a result of receiving treatment. We selected all of the studies that measured and reported the mean and standard deviation of number of absences, which was the most common method used to report and measure attendance rates in the included RCT and QED studies. We then pooled the control group means and standard deviations for those studies into a grand mean and standard deviation using the procedures described by Lipsey and Wilson (2001). We then multiplied the effect size by the pooled standard deviation of the control group to calculate the number of days difference in attendance the .46 effect size represents. Following the above stated procedure, the .46 effect size for number of days absent translates into 4.69 days. That is, we can expect students who received an attendance intervention to improve attendance by 4.69 days.

Although improving attendance by 4.69 days, almost a full week, is important and most would agree is practically significant, the attendance rates reported at posttest in the majority of the included studies continued to remain above 10%, (see Table 4.11). Although students who received an intervention did better than their control-group peers (or at posttest compared to pretest in SGPP studies) on average, students' attendance did not improve to the point that they were achieving acceptable levels of attendance (if we assume attending school 90% of days or more is acceptable).

TABLE 4.11: POSTTEST MEAN RATES OF ABSENTEEISM

RCT/QED Studies			SGPP Studies		
% of Days Absent	N	%	% of Days Absent	N	%
<10%	1	10	<10%	7	58
11%–20%	7	40	11%–20%	4	33
21%–30%	3	20	21%–30%	0	0
31%–40%	1	10	31%–40%	1	10
41%+	3	20	41%+	0	0

Note: One RCT/QED study did not provide data in a way that enabled the % of posttest absences to be calculated. Several studies did not provide the exact number of school days for which they measured posttest absence/attendance, so assumptions were made in calculating the posttest absence rates. It was assumed that there are 180 days in a school year, 90 days in a school semester, 45 days in a marking period, and 5 days in a school week.

5 Conclusions

5.1 SUMMARY OF MAIN EFFECTS

The literature on truancy is voluminous and disparate. Absenteeism research is spread across multiple disciplines, and much has focused on causes and consequences rather than on the effectiveness of interventions. This makes it challenging to know what, if anything, works to impact truancy. It also prevents practitioners and policy makers from using evidence to make decisions.

As indicated by the relatively few studies located in the search process, there is limited evidence on the effectiveness of truancy interventions aimed at increasing attendance for chronic truant students. The number and types of interventions currently in operation throughout the United States and other countries contrasts sharply with the number and types of interventions for which there are reasonably rigorous evaluations. It seems reasonable to conclude that the studies in this review do not adequately represent the outcomes of programs currently in existence and therefore cannot be generalized to the population of programs in operation.

Although there are relatively few studies in this meta-analysis compared to the number of programs currently in existence, these studies represent the best empirical evidence currently available for indicated truancy intervention outcomes. A meta-analysis of the currently available research provides a starting point for understanding the effects of such interventions on attendance outcomes for chronically truant students. Meta-analysis also provides a more transparent and valid analysis strategy than the alternative means of narrative reviews and vote-counting methods (Valentine, Pigott, & Rothstein, 2010). In addition, it provides a means to more systematically uncover gaps in the knowledge base (Lipsey & Wilson, 2001).

A comprehensive search for published and unpublished studies to include in this review yielded only five RCT studies and 11 QED studies that met inclusion criteria. Given that there is an abundance of literature documenting the causes, correlates, and negative impacts of truancy and absenteeism, and a general consensus that truancy is a serious issue, uncovering only 16 studies of outcomes of indicated interventions with truant students utilizing experimental or quasi-experimental methodologies is a concern. A number of interventions and programs have been recommended by experts, identified as effective or model programs,

or listed in databases of national centers, which lend an air of credibility to these interventions. Despite this, the relatively small number of studies that met inclusion criteria indicates that there is scant evidence on the effectiveness of current programs in existence.

Overall, interventions included in this review were found to demonstrate a significant though moderate, positive effect on attendance outcomes. While the mean effects of the interventions were moderate and significant, it is important to note that the heterogeneity of effect sizes was also significant, indicating that different studies point to somewhat different conclusions. Additionally, none of the moderators tested explained the heterogeneity observed. Given the small number of studies, we may not have had adequate statistical power to detect moderating effects of the variables tested. Furthermore, there may have been other moderating variables that either weren't tested in this study or measured in the primary reports, such as implementation fidelity, whether the intervention was theoretically informed/ designed, etc. which could account for the differences in effects between studies. Because of the relatively small number of studies and the significant heterogeneity, caution must be used when interpreting and applying the overall mean effect size.

Court-based, school-based, and community-based interventions produced similar effects on attendance behaviors. The substantial similarity in mean effects across settings suggests that, when choosing how to implement an intervention, one may choose from various settings and types of programs (school-, court- or community-based). Given this finding, it seems reasonable for communities to select the setting and primary responsible organization based on ease of implementation, who has the most resources, or who is most invested in the program or outcomes. As there was significant heterogeneity within the groups of studies and few studies in some of the categories, it is important to note that there likely were not sufficient means to detect differences between interventions when there may, in fact, be real differences.

The focal modality utilized within the interventions—whether comprised primarily of a group, family, mentoring, or alternative education program or a contracting-only component(s)—also produced statistically similar effects on attendance outcomes. Thus, there is no one modality that can be recommended over others. It is important to note that the within-group mean effects for the mentoring, alternative education, and contracting modalities were not statistically significantly different from zero in the RCT/QED studies. Due to the small sample size and the heterogeneity between studies, however, there likely was not sufficient power to detect group differences, especially since some groups only contained one or two studies within the group.

A key finding of this review and meta-analysis was the lack of available evidence to support the general belief that collaborative and multimodal interventions are more effective than simple, non-collaborative interventions. Although there is widespread support for, and many claims of greater effectiveness of, multimodal and/or collaborative programs (Bell, Rosen, & Dynlacht, 1994; Kearney, 2008a; Kim & Streeter, 2006; Teasley, 2004; U.S. Department of

Education, 1996), we did not find differences in mean effects between studies that utilized simple or non-collaborative interventions and those that were complex or collaborative. Although complex programs may have more intrinsic value and may be able to target several risk factors, potentially increasing their likelihood of success, implementation issues may reduce the potential effects of more complex programs. Single-modality interventions may be easier to implement and, therefore, more likely to be successful. More studies are needed to examine the effects of various interventions, including differential effects of different types of interventions in different settings that may account for why some collaborative interventions are successful while others are not.

Another important finding is the lack of overall clinical significance of interventions examined in the included studies. Although the effects of truancy interventions were positive and moderate, the clinical significance of the interventions was not found to be as clinically meaningful. If the goal of interventions is to improve student attendance to acceptable levels (90% or above), it appears that the majority of interventions are falling short. Therefore, even though students who receive an intervention do significantly better, as a whole, in their attendance than their control-group peers, many are still not achieving acceptable levels of attendance following the intervention.

The overall lack of reporting on, and statistical analysis of, demographic variables, particularly race/ethnicity and socioeconomic status, was another surprising finding. Given that race and SES have been linked to absenteeism, the absence of the racial/ethnic and SES description of the participants was startling. In addition, the authors did not commonly utilize racial/ethnic or SES variables to compare treatment and comparison groups for equivalence nor look at possible differential effects of outcomes related to race or SES, both of which we would argue are imperative in research on outcomes of attendance interventions.

5.2 IMPLICATIONS FOR PRACTICE AND POLICY

Due to the relatively small number of studies included in this synthesis, and the heterogeneous nature of the included studies, we believe that it is premature to recommend for or against the use of any of the interventions included in this analysis. That being said, these studies do represent the best empirical evidence currently available for outcomes of indicated programs targeting students with attendance problems. We believe that the findings from this review can provide some evidence and guidance, as well as some caution, for those who are concerned about, and trying to take action and develop policy to improve, attendance of truant students.

Overall, the findings from this study suggest that truant students benefit from interventions targeting attendance behaviors; thus it is important and worthwhile to intervene with truant youth. Interventions that were implemented for only a couple of hours in duration and those implemented over the course of the school year produced

substantially similar effects; thus it does not appear, at least in the short term, that the length of time for which the student receives the intervention either enhances or limits the effect on attendance. Because most studies did not assess outcomes beyond posttest, it is not known if, or for how long, the effects are sustained, or if longer-term interventions produce better outcomes over time.

The current literature espouses the use of collaborative and multimodal interventions. Interventions in this meta-analysis that were considered to be collaborative or multi-modal produced mean effects that were substantially similar to those of simple interventions or those implemented by a single entity. This is encouraging in that it suggests that interventions may not need to be highly complex or involve multiple organizations or providers to have an impact on attendance outcomes. The evidence suggests that those who do not have significant resources or the time required to develop complex, collaborative programs can, nonetheless, make a difference and help truant students improve their attendance.

Although the interventions included in this study were, overall, found to improve attendance, the mean rates of absenteeism at posttest in most studies remained above acceptable levels. This finding indicates the need for additional work in developing more effective interventions and policies as well as in studying outcomes of interventions, particularly with vulnerable and at-risk populations.

The findings of this review have highlighted the lack of rigorous evidence to support many of the suggestions and recommendations being made by authors or program implementers. It seems that claims of success or effectiveness described in the literature and media are based on anecdotal evidence, or at best poorly executed evaluation studies, rather than on rigorous outcome research. Given this finding, it is important for practitioners and policy makers to be good consumers of evidence, rather than relying on anecdotal claims. Taking a “buyer beware” approach and being able to critically evaluate claims of effectiveness and research will be important to practitioners and policy makers who want to implement interventions that are based on rigorous evaluation and evidence.

In addition to becoming good consumers of evidence, it is also very important for practitioners to be producers of evidence. There are many interventions throughout various countries that may be effective, but we cannot build the evidence base around what works to impact absenteeism if those interventions are not rigorously evaluated, reported, and disseminated. Those in the field doing the work of intervening with youth and families are well positioned to contribute to the evidence base, especially if they can carefully and thoroughly report what they are actually doing in their programs and use rigorous research design methods to examine outcomes.

5.3 IMPLICATIONS FOR RESEARCH

Despite the increased pressure for evidence-based practice and policy and the serious and widespread problem of truancy, there continues to be a paucity of research in the area of interventions to improve school attendance for chronic truant youth. Given the relatively small number of studies retrieved that met criteria for inclusion in this review, and the wide variety of interventions included in this review, it is obvious that there is a need for additional research in this area.

Although more research is needed, more of the same will not suffice. The studies included in this synthesis were plagued with methodological shortcomings, and a number of gaps in the evidence base were identified. Recommendations to improve the quality and fill gaps in the research are discussed below.

5.3.1 Recommendations to Improve Study Quality

5.3.1.1 Utilize rigorous designs to test intervention effects.

Only 16 studies utilizing a comparison group design were found that met criteria for this review. Because of the inherent limitations to single group pre-posttest design studies, it is recommended that future research evaluating outcomes of interventions utilize a comparison group design, preferably with random assignment to limit other potential confounds. If a single group pre-posttest design is utilized, researchers should (a) not overstate their findings or make causal inferences; (b) discuss the limitations of the design; and (c) replicate their intervention and evaluate the outcomes utilizing a comparison group design.

5.3.1.2 Measure, report, and analyze demographic variables.

The lack of reporting of adequate sample descriptions limits a study's generalizability and replicability. In addition, such omissions limit the ability for sample variables to be further explored as potential moderators and limits our ability to examine differential effects between different groups, both in the original studies and in meta-analyses. It is important to not only understand which interventions are effective, but also to assess for whom they are effective. It is recommended that future research adequately describe the treatment and comparison groups, and that outcomes be reported by subgroups when possible. Minimally, the following are recommended to be included in the sample description and comparisons: age, grade, race, socioeconomic status, gender, special education status, and attendance/absence rates at baseline in terms of percentage of days attended or absent.

5.3.1.3 Adequately describe interventions.

There was an overall lack of adequate description of the interventions, precluding any attempts to replicate the intervention based on the information provided by the authors of

the studies. We recommend that future research include detailed descriptions of the interventions to allow for replication. Descriptions should include details of each of the components of the intervention; the duration of each of the components and, if applicable, the order of the components; who implemented each of the components, including the providers' education and credentials; the setting/location of each of the components; and the cost and funding of the intervention. In addition, it is also recommended that authors clearly state their involvement in the development or implementation of the intervention or the control condition.

5.3.1.4 Test effects of different components of multimodal interventions.

Because many of the interventions were comprised of multiple components, it is not only important for authors to adequately describe each of the components, but also for authors to evaluate the effects of various components that comprise the intervention. Although some studies did utilize a third treatment group that received only part of the intervention (e.g., Heyne et al., 2002), the majority of the studies did not attempt to evaluate specific components of the intervention. It is recommended that authors evaluate each of the components of the intervention, or at least those components that are hypothesized to be the most important.

5.3.1.5 Minimize attrition.

Keeping attrition to a minimum is important. For future research, it is recommended that authors take attrition into account when designing the study and develop plans to mitigate potential threats to participant dropout. For researchers who will be dependent upon receiving data from external entities, such as schools, it is important to ensure that adequate procedures are in place to maximize the completeness of the data that is obtained from the external organization. It is also recommended that authors clearly report the number of participants at the beginning and end of their studies, as well as the reasons for dropout/missing data. If there are participants who did not complete the program or dropped out from the research, a comparison between completers and non-completers should be provided and any statistically significant differences should be explained and taken into account.

5.3.1.6 Utilize/recruit larger samples.

Larger sample sizes are needed in future studies. When planning the study and determining sample size, researchers need to take into account potential challenges in gaining access and consent of parents and students, as well as anticipate mobility and dropout as the school year progresses. Researchers also need to take steps to ensure access to more complete student records and data. Relying on overburdened school or court systems to provide data may be asking a lot of those systems. Providing support or giving schools/courts additional resources for adequately providing data, in a way that is not burdensome to the school/court, will be important. When evaluating small programs where it might not be possible or feasible

to have a larger sample, replication would provide additional evidence that could be used. Also, conducting quasi-experimental studies in which control groups are recruited from different, but similar, schools could also help to provide larger samples.

5.3.1.7 Measure and report attendance in a transparent and consistent manner.

We also recommend that attendance be measured and reported in a consistent and clear way to allow for easier comparison across studies, as well as to allow for better transparency. It is recommended that future research (a) report either attendance or absences in terms of a percentage of days absent or present; (b) clearly specify the number of school days for which attendance was possible and the time period over which it was measured; and (c) measure both excused and unexcused absences as well as partial days absent and report these separately so that meaningful comparisons can be made across studies. In addition, it is recommended that authors present their findings in terms of clinical significance in addition to statistical significance.

5.3.1.8 Report data needed to calculate effect size.

Several studies did not meet eligibility criteria for inclusion in this review because they did not provide adequate data to calculate effect sizes. It is recommended that authors provide the sample size, means, and standard deviations for all outcomes measured, regardless of whether the results of other statistical tests were given or if the results were not statistically significant.

TABLE 5.1: SUMMARY OF METHODOLOGICAL SHORTCOMINGS AND RECOMMENDATIONS

Issue	Recommendation
Study Design	Utilize a comparison group design, preferably with random assignment.
Missing Demographic Data	Provide adequate descriptions of the sample including: age, grade, race, SES, gender, special education status, and % attendance at baseline.
Inadequate Descriptions of Intervention	Provide a detailed description of the intervention in such a way that the intervention could be replicated, including duration and intensity of sessions.
Attrition	Keep attrition to a minimum. Clearly report attrition and reasons for lost cases.
Sample Size	Keep sample size as large as feasible, taking into account issues of attrition, locating/enrolling participants, and student/family mobility.
Measuring Attendance	Measure excused and unexcused absences and report separately.
Reporting Attendance	Report attendance as a percentage of days attended or absent.
Long-Term Follow-Up	Measure and report attendance at time points following the intervention, preferably a semester, school year, and beyond if possible.
Reporting Data for Effect Sizes	Report the sample size, mean, and standard deviation for all outcomes measured, regardless of whether the results of statistical tests for that variable were significant.

5.3.2 Identified Gaps

In addition to the identified needs for more and better research on attendance intervention outcomes, additional gaps in the literature were identified. Recommendations to address those gaps are made below.

5.3.2.1 Studies of Interventions Targeting Elementary Grades

RCT/QED studies examining interventions with elementary students were lacking. Although several studies included students from a mixture of grade levels, some of which could have included elementary students, they did not provide data by subgroups based on grade level. There is some evidence that elementary, middle, and high school students may have different treatment needs; however, differential response to interventions has not been examined. Additional studies of interventions with elementary school students, and/or studies that provide subgroup data by grade level, are needed to fill this gap in the literature.

5.3.2.2 Ethnic Minority Participants

There was an overrepresentation of Caucasian students found in the studies included in this analysis. Additional studies are needed with students from various racial and ethnic

backgrounds to examine the applicability of interventions to different populations of students.

5.3.2.3 Court- and Community-/Agency-Based Interventions

School-based programs were found to be overrepresented by the studies included in this analysis. Additional studies examining court- and community-based programs are needed to examine the effectiveness of different types of programs in existence.

5.3.2.4 Cost–Benefit Analysis and Implementation

Two additional gaps identified are related to program costs and implementation. Information related to program costs was missing in all but one study included in this review. Data or discussions related to program implementation was also very sparse or missing in most studies included in this review. Conducting analysis related to the cost/benefit of a program as well as to program implementation issues is important for both practice and policy. If one looks to evidence to make a decision regarding which intervention to implement, data on attendance outcomes are necessary but not sufficient. Cost and ease of implementation are also important factors for practitioners and policy makers to consider and weigh when making adoption decisions. Unfortunately, the extant research provides no outcome data on, or even much qualitative description of, cost and implementation issues to guide decision making. Providing effective services in an efficient manner is of utmost importance, especially in this poor economic climate. It is recommended for future research on outcomes of indicated intervention programs for attendance to include and analyze data related to program costs and implementation.

5.3.2.5 Measuring Longer-Term Outcomes of Attendance

An additional gap in the literature relates to long-term outcomes (attendance and other) of students who are truant. Very few studies reported outcomes at a follow-up time period. It is recommended that studies include a meaningful follow-up of at least a semester, and preferably a minimum of a school year, in order to examine whether, and at what magnitude, effects are sustained over time. Additional follow-ups over several years are also recommended to provide some evidence of whether or not truancy interventions can sustain attendance effects for longer durations post-treatment.

5.3.2.6 Measuring Other Key Variables

In addition to the need for long-term follow-ups on attendance outcomes, other outcomes are important to measure as well. Much of the truancy literature discusses the correlation of absenteeism with dropout and poor academic outcomes; however, very few studies in this synthesis measured dropout or academic outcomes at posttest or follow-up. Because students who drop out are more likely to have had attendance problems, the assumption is that if students were to improve their attendance, they would be less likely to drop out. It is

also assumed that if students are attending school regularly, they will do better in school. Although many attendance interventions are predicated on these assumptions, studies did not assess whether increasing attendance resulted in either decrease in dropout rates or improved academic performance. It would be important for studies assessing the impact of interventions on attendance, especially when the underlying assumption is that improved attendance will lead to decrease in dropouts and/or improved academic performance, that long-term follow-ups be done to assess the effectiveness of attendance interventions on dropout and academic performance.

TABLE 5.2: SUMMARY OF IDENTIFIED GAPS AND RECOMMENDATIONS

Issue	Recommendation
Lack of ethnic minority students	Additional studies are needed with students from various racial/ethnic backgrounds.
Lack of court- and community-based interventions	Additional studies are needed to evaluate outcomes of court-based programs and clinic/community-based programs.
Cost-benefit analysis	Data regarding the costs of the interventions and a cost-benefit analysis are needed in future studies.
Missing information re implementation	Description and analysis of implementation issues is needed in future studies.
Lack of consensus on definitions	Further research is needed to examine whether distinguishing students as school refusers as a distinct group is necessary.
Few studies assessing long-term outcomes	Studies need to examine longer-term outcomes related to attendance, dropout, and achievement.

5.4 SUMMARY

There are hundreds of truancy interventions in operation with a goal of increasing attendance, many of which have been described in the literature as positively impacting the students and communities they are serving. Unfortunately, rigorous research to support truancy interventions is either not being conducted or is not being disseminated in a way that can inform others. Either way, evidence is not being built in a way that can add to the evidence base of effects of truancy interventions to inform practice and policy. In this era of evidence-based practice, No Child Left Behind, and numerous other initiatives at the local, state, and federal levels in which substantial amounts of money and efforts have been invested, it is surprising that the quantity and quality of outcome research of truancy is in such a paltry state.

In order to move the field forward, the various disciplines engaged in truancy research need to take a critical look at the barriers affecting research and dissemination. The social,

political, and practical issues and barriers will need to be acknowledged, examined, and addressed if we hope to positively impact the attendance problem plaguing this country and others around the world.

Findings from this review affirm the need for a central repository of outcome research of intervention effectiveness on attendance outcomes. The current research is disparate and much is unpublished. There are likely numerous program evaluations that could contribute to the evidence base but were not able to be accessed for this meta-analysis. Although the National Center for School Engagement provides a database of truancy programs, these interventions are not required to demonstrate any level of evidence of effectiveness to be listed in the database. The National Dropout Prevention Center (NDPC) also lists model programs that they have rated based on level of evidence. Although they endorse some truancy intervention programs, the programs in the NDPC database primarily target dropout prevention. To begin to further develop and give access to an evidence base of interventions to reduce truancy, a central repository of effective, and just as importantly ineffective, interventions and the outcome research that supports them is needed. Having an entity that maintains a central repository and independently rates interventions according to transparent and rigorous standards, similar to Blueprints for Violence Prevention, would be helpful in both building the evidence base and providing access to those who want to utilize evidence for practice and policy.

6 Other Topics

6.1 ACKNOWLEDGEMENTS

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6.2 PLANS FOR UPDATING THE REVIEW

This review will be updated in 2014/2015.

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8 Appendix

8.1 INCLUDED STUDIES

Randomized Studies

- Converse, N., & Lignugaris/Kraft, B. (2009). Evaluation of a school-based mentoring program for at-risk middle school youth. *Remedial and Special Education, 30*, 33–46.
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Quasi-Experimental Studies

- Fantuzzo, J., Grim, S., & Hazan, H. (2005). Project Start: An evaluation of a community-wide school-based intervention to reduce truancy. *Psychology in the Schools, 4*(6), 657–667.
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- Seamans, C. L. (1996). Brief family systems intervention with inner-city truant youths. *Masters Abstracts International*, 35, 349. (UMI No. 1381227)
- Sherriff, I. H. (1990). A multi-disciplinary approach to the management of non-school attendance (Doctoral dissertation, University of Leicester, 1990). *Dissertation Abstracts International*, 52, 2415A.

Single Group Pre-Posttest Studies

- Baker, DeAnn (2000). Using groups to reduce elementary school absenteeism. *Social Work in Education*, 22(1), 46–53.
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- Plavcan, E. E. (2004). Using student engagement to improve school attendance. *Dissertation Abstracts International*, 65(03), 831A. (UMI No. 3127591)
- Raimondo, C. L. (2005). *Will a focused intervention for attendance issues at the middle school level increase the number of days that students are on time and in school?* Unpublished Master's research paper, Salem State College, Salem, MA.
- Rogers, L. J. (2000). *An attendance intervention for elementary students*. Unpublished Master's thesis, James Madison University, Harrisonburg, VA.

8.2 EXCLUDED STUDIES

Excluded RCT & QED Studies	Reason for Exclusion
Baden, N. K. (1990)	School phobia intervention study
Bazemore, G., Stinchcomb, J. B., & Leip, L. A. (2004)	Interval level data reported—would need to make too many assumptions to calculate ES
Bernstein, G. A., Borchardt, C. M., Perwien, A. R., Crosby, R. D., Kushner, M. G., Thuras, P. D., & Last, C. G. (2000)	School refusal interventions study
Brown, I., Berg, I, Hullin, R., & McGuire, R. (1990)	Could not calculate ES
Finlay, K. A., & Heilbrunn, J. Z. (2006)	Could not calculate ES
Grooters, L, & Faidley, B. (2002)	Could not calculate ES
Heyne, D., King, N. J., Tonge, B. J., Rollings, S., Young, D., Pritchard, M., & Ollendick, T. H. (2002)	School refusal intervention study
Jenifer, S. J. (1995)	Combined outcomes of three different programs into one analysis; programs were too different to combine
Kearney, C. A., & Silverman, W. K. (1999)	Control group received intervention before posttreatment attendance measured; unclear if control group received full course of alternative treatment at “end control”
King et al. (1998)	School refusal intervention study
King et al. (2001)	School refusal intervention study; could not calculate ES
Last, C. G., Hansen, C., & Franco, N. (1998)	School phobia intervention study; could not calculate ES
Page, R. C., & Chandler, J. (1994)	Could not calculate ES
Richardson, G. (1992)	School refusal intervention study
Rosenfeld, L. D. (2005)	No control group was used to evaluate outcome of intervention-correlational study.
Shoenfelt, E. L., & Huddleston, M. R. (2006)	Control group was nontruant students, thus comparing means for ES was not relevant for the purposes of this meta-analysis
Trice, A. D. (1990)	Could not calculate ES
Wright, K. J. (2000)	Could not calculate ES
Excluded SGPP Studies	Reason for Exclusion
American Prosecutors Research Institute. (n.d.)	Could not calculate ES
Carruthers et al. (1993)	Could not calculate ES
Cicchelli, T., & Baecher, R. E.	Could not calculate ES

(1995)	
Holbert, T., Wu, L., & Stark, M. (2002)	Could not calculate ES
Kaber, V. (2008)	Could not calculate ES
Kearney, C. A., & Silverman, W. K. (1990)	Could not calculate ES
King et al. (1999)	School refusal intervention study
Kreps, R. (1999)	Could not calculate ES
Lehr, C. A., Sinclair, M. F., Christenson, S. L. (2004)	Could not calculate ES
Matthews, A., & Swan, W. W. (1999).	Not a true pre-posttest study
Matzner et al. (1998)	Psychiatric day treatment program
McCluskey, C. P., Bynum, T. S., & Patchin, J. W. (2004)	Could not calculate ES
National Center for School Engagement (2006d)	Could not calculate ES
Project Success of Decatur & Macon County: Right Track Truancy Reduction Initiative Elementary Results 2002–2008	Could not calculate ES
Project Success of Decatur & Macon County: Right Track Truancy Reduction Initiative Middle School Results 2002–2008	Could not calculate ES
Sheverbush, R. L., & Sadowski, A. F. (1994)	Descriptive report; could not calculate ES
Van Ry, V. L., & King, D. L. (1998)	Could not calculate ES
White et al. (2001)	Could not calculate ES

8.3 SUMMARY OF INCLUDED RANDOMIZED AND QUASI-EXPERIMENTAL STUDIES

Author (year)	Program Name	Description/Components	QED/RCT	N	% Days Absent Pre	% Days Absent Post	Grade Level	Study Result	ES	95% CI Lower	95% CI Upper
Converse (2009)	School-based mentoring program	Mentoring by school staff/faculty—once per week over 18 weeks.	RCT	tx =16 c =15	9	7	2	ns	0.56	-0.14	1.26
DeSocio (2007)	Truancy intervention pilot project	Student enrollment in a school-based health center for comprehensive health services and recruitment of teachers from within the students' school to engage in mentored relationships.	RCT	tx =28 c =31	32	63	62	+	0.51	-0	1.03
Fantuzzo (2005)	Project Start	Truancy court—courtrooms within designated school buildings (rather than traditional courtroom); caseworkers from service organizations located in the truant's community present to promote family utilization of community services; referrals or direct services provided to families depending on their capacity of the caseworker.	QED	tx =189 c =189	23	13	4	+	0.48*	0.28	0.69
Flanagan (2006)	Going to Class Pays	Positive behavior support program—engaging in positive verbal interactions; utilizing attendance monitoring, positive parent interactions, and preferred reinforcements.	QED	tx =32 c =32	46	43	3	+	0.81*	0.31	1.32
Glover (1990)	Group intervention and peer support	Social worker facilitated nontruant students in providing peer support in the context of group counseling for truant students. The social worker counseled the parents of the students in this group. Group met once per week for 30 minutes over 15 weeks.	QED	tx =5 c =5	ng	15	2	ns	0.57	-1.12	1.12

Author (year)	Program Name	Description/Components	QED/ RCT	N	% Days Absent Pre Post		Grade Level	Study Result	ES	95% CI Lower Upper	
Herrick (1992)	Incentive program for improved school attendance	Tangible incentives and verbal praise to students, who met with social worker weekly to develop contract, receive incentive/praise.	QED	tx =49 c =15	25	13	1	ns	0.37	-0.21	0.94
Hess (1990a)	Contingency contracting and parent training	Contingency contracts were developed with students. Parents attended 3 weekly group parent-training sessions.	RCT	tx =12 c =15	49	23	2	+	1.05*	0.22	1.79
Hess (1990b)	Contingency contracting and group counseling	Contingency contracting—contracts developed with students and progress monitored daily. Group counselling—6 sessions over 10 weeks. Rational-emotive and theme-centered interactional approaches.	RCT	tx =13 c =13	37	18	2	+	1.18*	0.37	1.99
Hubin (2000)	Stop Truancy Project (SToP)	Information meeting held at courthouse. County attorney, social worker, and school rep discuss the legal, social, and educational ramifications of truancy, present on school and community resources.	QED	tx =15 c =8	ng	ng	4	+	0.88*	0.18	1.58
Johncox (1994)	School Success Project	Diversion conference with brief assessment, school attendance agreement signed by participants, referral for services (life management skills, in-home family counseling, psychological testing/evaluation). If further absences, re-staff and develop another plan, which may include court appearance.	QED	tx =45 c =17	27	20	4	ns	0.26	-0.29	0.817
Johnson (1996)-1	High School Intervention Centers	Students enrolled in 3 courses (language arts, mathematics, and group guidance); focused on individual needs of student in small group	QED	tx =193 c =184	ng	28	3	+	0.82*	0.61	1.03

Author (year)	Program Name	Description/Components	QED/ RCT	N	% Days Absent Pre	Post	Grade Level	Study Result	ES	95% CI Lower	Upper
	Program	settings; intensive goal-directed guidance mode was used to promote self-awareness skills and effective problem solving.									
Johnson (1996)-2	High School Intervention Centers Program	Same as above.	QED	tx=165 c=169	31	39	3	ns	0.06	-0.16	0.27
Lawson (1990)	Peer tutoring	Peer tutors worked with tutees in 16 sessions, 30 minutes each (2x/wk for 8 wks) covering preplanned topics/skills. The tutors (also truant) were trained by the PI, and biweekly meetings were scheduled with the tutees to address any problems.	QED	tx=60 c=45	ng	11	1	ns	0.07	-0.32	0.45
Seamans (1996)	Brief Family Systems Intervention	Six 1–1.5 hr family therapy sessions over eight weeks.	QED	tx=34 c=24	46	28	4		0.27	-0.25	0.79
Sherriff (1990)	School-based special education program	16 weekly lessons in the Project Y classroom. Alternative classroom setting. Involves community work, personal and social development, work experience, and recreation.	QED	tx=14 c=16	58	68	3	+	0.71	-0.01	1.43
Tichenor (1991)	Making It in Middle School	Met with counselors as a group; positive reinforcement, problem solving.	RCT	tx=32 c=35	15	14	2	ns	0.01	-0.47	0.478

Notes: * $p < .05$; Grade level: 1= elementary, 2= middle school, 3= high school, 4= mixed grades
 Study results reported by author: + = author reported significant differences between groups; ns= author reported no significant differences
 ES= Effect size (Hedges' g)

8.4 BIVARIATE CORRELATION MATRIX OF STUDY CHARACTERISTICS: RCT/QED STUDIES

Study Characteristics	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1. Published (1=yes)	.71	-.26	.55	-.24	-.08	-.25	.36	-.09	.08	.02	-.17	.13	-.08	.37	-.32	-.17	-.17	-.17	-.15	.32	-.28	.47	
2. Random assignment design (1=yes)		-.26	.55	.04	-.39	.17	-.09	-.09	.39	-.32	-.17	.42	-.39	.37	-.32	-.17	-.24	-.01	.26	.05	-.28	.29	
3. Grade—elementary (1=yes)			-.22	-.29	-.22	.10	.22	-.33	.22	-.18	-.10	-.26	-.22	.30	-.18	.68	-.14	-.18	.14	-.43	.34	-.33	
4. Grade—middle school (1=yes)				-.45	-.33	-.09	.05	.05	.33	-.28	-.15	.55	-.33	.09	-.28	-.15	.01	-.26	.22	.22	-.22	.30	
5. Grade—high school (1=yes)					-.45	.10	-.33	.22	.45	-.37	-.20	.04	-.45	-.04	.62	-.20	.22	.59	.29	.16	-.14	-.02	
6. Grade—mixed (1=yes)						-.09	.05	.05	-1.0	.83	.45	-.39	1.0	-.28	-.28	-.15	-.16	-.35	-.66	-.07	.11	-.03	
7. Race—Caucasian (1=yes)							-.54	-.54	.09	.10	-.27	.17	-.09	-.41	n/a	.41	-.30	.55	-.10	.00	.49	-.13	
8. Race—African American (1=yes)								-.43	-.05	.22	-.22	-.09	.05	.22	n/a	-.22	.26	-.51	-.22	.22	-.28	.05	
9. Race—Hispanic (1=yes)									-.05	-.33	.51	-.09	.05	.22	n/a	-.22	.09	-.04	.33	-.22	-.24	.09	
10. School-based program (1=yes)										-.33	-.45	.39	-.10	.28	.28	.15	.16	.35	.66	.07	-.11	.03	
11. Court-based program (1=yes)											-.12	-.32	.83	-.23	-.23	-.12	-.39	-.29	-.79	.10	.22	.06	
12. Community-based program (1=yes)												-.17	.45	-.12	-.12	-.07	.21	-.18	.10	-.29	-.15	-.16	
13. Group modality (1=yes)													-.39	-.32	-.32	-.17	.21	-.11	.26	.32	-.31	.19	
14. Family modality (1=yes)														-.28	.28	-.15	-.16	-.35	-.66	-.07	.11	-.03	
15. Mentoring modality (1=yes)															-.23	-.12	-.42	-.07	.18	-.22	-.26	-.15	
16. Alternative ed. modality (1=yes)																-.12	.60	.49	.18	.10	.11	.05	
17. Contracting modality (1=yes)																	-.14	n/a	.10	-.29	.61	-.14	
18. Baseline attendance																			.25	.34	.10	-.07	.56
19. Treatment duration (weeks)																				n/a	-.26	-.26	-.09
20. Collaborative program (1=yes)																					-.33	.22	.13

Study Characteristics	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
21. Multimodal intervention (1=yes)																							
22. Attrition																							
23. Attendance																							

Note: n/a = Correlations could not be calculated due to missing data.

8.5 SUMMARY OF INCLUDED SINGLE-GROUP PRE-POST STUDIES

Author (year)	Program Name	Description/Components	N	% Days Absent Pre	% Days Absent Post	Grade Level	Study Results	ES	95% CI Lower	95% CI Upper
Ford & Sutphen (1996)	Attendance Incentive Program	Developed individual intervention plans, support, and incentives to children and their families (in school and in home). Intensive intervention for 9 weeks with 18-week maintenance phase. Intensive phase: met daily with student, verbal praise, encouragement, token/prize, counseling session (15 min–1 hr). Family-based interventions: problem solving to address family problem areas and behaviors; also referrals made. Both school-based and home-based interventions employed.	9	16%	11%	1	+	.71*	1.31	2.31
Baker (2000)	Attendance groups	Supportive, goal-focused groups in school. Students met 25–35 minutes once weekly over 4 months.	14	11%	5%	1	+	1.47*	0.82	2.13
Rogers (2000)	Attendance group	Attendance group met 20–30 minutes weekly for 6 weeks; supportive, educational, problem solving.	4	14%	4%	1	+	1.00*	0.11	1.89
Plavcan (2004)	In-school job assignment outside of classroom	Students were assigned a small job in the school to be performed in the morning, supervised by a teacher.	4	23%	9%	1	+	0.33	-0.34	0.99
Halsey et al. (2004)	Fast Track to Prosecution	Attendance monitoring, letters to parents, home visits, the convening of a school panel/meeting to discuss the attendance issues, and the creation of an action plan accompanied by targets to be met. If no improvement in attendance or parental cooperation is achieved, the case proceeds into Fast Track, a summons is issued, and a panel may be convened to review case and decide whether it should proceed to court or be withdrawn.	324	47%	36%	4	<i>ns</i>	0.34	0.24	0.44
Raimondo (2005)	Focused intervention for middle school	Assistant principal met with the student and parent to increase communication, emphasize importance of attendance, and	26	14%	8%	2	+	1.50*	1.00	1.99

	students	develop a contract. For students with more severe absence issues, meeting also included school resource officer and school adjustment counselor. Individualized strategies developed as part of the contract. Consult with guidance counselor and psychologist also as needed.									
NCSE (2006b) #1	King County Truancy Reduction Demonstration Program	2.5 hour pre-court attendance workshops, behavior contracts, and possibly case manager assigned; students with more than 15 unexcused absences go to court.	32	21%	14%	<i>ng</i>	+	.44*	.09	.80	
NCSE (2006b) #2	King County Truancy Reduction Demonstration Program	Pre-court attendance workshops, behavior contracts, and possibly case manager assigned; students with more than 15 unexcused absences go to court.	25	31%	11%	<i>ng</i>	+	.96*	.50	1.42	
NCSE (2005)	A comprehensive truancy intervention program (Jacksonville, FL)	Jacksonville's comprehensive truancy intervention program consisting of a school-based intervention that begins with a meeting of school staff and parents to address a child's unexcused absence (Attendance Intervention Team); a nonjudicial hearing held at the county courthouse for parents and students that can include case management, parenting skills classes, and referrals (Truancy Arbitration Program). Supplementing the overall truancy efforts are 4 truancy centers located across the city for grades 6–12 called the Truancy Interdiction Program.	108	<i>ng</i>	6%	4	+	.59*	.39	.79	
NCSE (2006a)	Truancy Arbitration Program (Jacksonville, FL)	Diversion program that holds parents accountable for their child's school attendance. Earlier and less intense version of NCSE (2005).	59	14%	9%	99	+	1.34*	.99	1.69	
Mueller et al. (2006)	Ada County Attendance Court	A quasiformal program; one court hearing and follow-up hearings held in neutral, nonthreatening environment.	44	23%	11%	1	+	1.24*	0.85	1.63	
Becerra (2001)	Buchanan County Prosecuting	Prosecuting attorney's office would charge parent with Class C misdemeanor, which carries a possible sentence of 1–15 days in	20	18%	6%	4	+	2.58*	1.67	3.48	

Attorney's Office jail or \$1–\$300 fine and probation.
intervention program

Notes: * $p < .05$; Grade level: 1= elementary, 2= middle school, 3= high school, 4= mixed grades
Study results reported by author: + = author reported significant differences between groups; *ns* = author reported no significant differences
ES= Effect size (Hedges' *g*)

8.6 BIVARIATE CORRELATION MATRIX OF STUDY CHARACTERISTICS: SGPP STUDIES

Study Characteristics	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1. Published (1=yes)	.68	-.17	-.58	.29	-.29	.00	-.58	.52	.52	-.05	.84	-.19	-.41	.43	-.03	
2. Grade—elementary (1=yes)		-.03	-.85	.66	-.66	.48	.85	.36	.36	-.36	.56	-.51	-.48	.07	-.20	
3. Grade—middle school (1=yes)			-.20	.36	-.36	.43	-.30	-.10	-.10	-.28	--	.30	.21	--	.23	
4. Grade—mixed (1=yes)				-.85	.85	-.71	1.0	-.30	-.30	.48	-.56	.67	.35	-.07	.07	
5. School-based program (1=yes)					-1.0	.84	-.85	.36	-.26	-.54	.56	-.85	-.12	-.38	-.13	
6. Court-based program (1=yes)						-.84	.85	-.36	.26	.54	-.56	.85	.12	.38	.13	
7. Group modality (1=yes)							-.71	.21	-.21	-.48	-.01	-.71	-.25	-.67	.09	
8. Family modality (1=yes)								-.30	-.30	.48	-.56	.67	.35	-.07	.07	
9. Mentoring modality (1=yes)									-.09	-.14	.81	-.30	.21	.40	-.38	
10. Contracting modality (1=yes)										.08	--	.30	-.43	.68	.68	
11. Baseline attendance												-.1	.57	.24	.09	-.23
12. Treatment duration (weeks)													-.56	-.14	.71	-.21
13. Collaborative program (1=yes)														.35	.58	-.27
14. Multimodal intervention (1=yes)															.08	-.44
15. Attrition																-.36
16. Attendance outcome																

Note:-- = Correlations could not be calculated due to missing data