

EVIDENCE-BASED PRACTICE IN SCHOOLS: CURRENT STATUS, POTENTIAL  
BARRIERS, AND CRITICAL NEXT STEPS

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## ABSTRACT

JOELLE D. POWERS: Evidence-based Practice in Schools: Current Status, Potential Barriers, and Critical Next Steps  
(Under the direction of Natasha Bowen)

There is a clear call to use evidence-based practice (EBP) in schools, and a growing knowledge base of practices that have proven to be effective in helping students achieve in educational settings. Yet in spite of the high number of students at risk for school failure and the recommendation and approval of EBP from so many existing entities that inform education reform, the majority of schools are not using empirically supported interventions. Given the current scarcity of EBP in schools, it is imperative to identify and better understand potential barriers to the use of empirical interventions in schools. This information can then be used to guide strategies to promote EBP among school-based practitioners. Practicing from an EBP perspective requires clinicians to look at evidence prior to choosing an intervention. This study supports that approach by identifying potential obstacles inherent in EBP. Resource requirements (start up cost, training, time, and staff) and effect sizes of 51 existing EB programs are reviewed. Results of the current study show that obstacles inherent in existing EB programs such as a lack of easily accessible information about the programs, extensive resource requirements, and low effect sizes may all be contributing to the dearth of research-based service provision in schools. Important next steps for increasing EBP in schools are discussed.

To my husband and my son, you were my greatest inspiration and motivation.

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## CHAPTER I

### INTRODUCTION

Evidence-based practice (EBP) refers to using the best available research to inform clinical services and interventions. There is a clear call to use EBP in schools, and a growing knowledge base of practices that have proven to be effective in helping students achieve in educational settings. Yet in spite of the high number of students at risk for school failure and the recommendation and approval of EBP from so many existing entities that inform education reform, the majority of schools are not using empirically supported interventions (Walker, 2004). Unfortunately, we do not know all of the specific obstacles prohibiting schools from adopting evidence-based programs that are commercially available.

The purpose of this paper is to identify potential barriers to the use of EBP in schools as a first step toward reducing those hurdles and increasing the utilization of empirically supported interventions. The characteristics of EBPs themselves may be a major barrier to their use in schools. Therefore this paper reviews programs just as a practitioner who was practicing from an EBP framework might prior to choosing an intervention. By closely examining the accessibility of information, implementation resource requirements, and the documented effectiveness of currently available Evidence-based (EB) programs for schools, we gain insight into specific traits that may impede their adoption and shed light on potentially important strategies for increasing the capacity of schools to provide empirically supported services. After a review of EBP, the need for EBP in schools, a supporting

theoretical framework, and the current status of EBP in schools--an in-depth review of the resource requirements for existing best practices available for schools, effect sizes for these programs, and implications for practice and research are presented. By reviewing EB programs in this manner we identify potential barriers embedded within available best practices. The findings suggest critical next steps in bridging the gap between research and practice in schools.

### The Need for EBP in Schools

Recent studies show alarmingly high numbers of students are not succeeding in school and are at risk for school failure. The rationale for the current review is the population of students who remain at risk in spite of the growing knowledge base of practices that have proven to be effective in helping students achieve in school. EBP is not routinely used in clinical practice (Hoagwood, 2003-2004). The disconnect between current practices in schools and EBP in spite of existing academic, social, and emotional problems of students provides incentive for studying the phenomenon in the hopes of identifying critical strategies for bridging the gap.

A number of trends support the call for greater use of EBP in schools. They include the academic achievement gap, mental health issues, school violence, and dropout among many others. The following section discusses definitions, prevalence, and possible outcomes of these threats to school success.

### *Academic Achievement Gap*

The achievement gap refers to the distance between the academic performance of majority students and both students of color and those from economically disadvantaged backgrounds (Isaacs, 2003). While this phenomenon has particularly been studied between

Black and White students, research is now often including Hispanic youth as well. In a recent report from the Education Commission of the States (2004), it was confirmed that the average Black or Hispanic student was performing at the same rate as a White student functioning in the lowest quartile of performance for White students. Additionally, the report found that Black and Hispanic students were much more likely than White students to drop out of school and less likely to attend college.

The gap in standardized achievement test scores have repeatedly been demonstrated in studies (Bali & Alvarez, 2004). Unfortunately, research attempting to determine the age at which the achievement gap emerges has had conflicting results (Bali & Alvarez, 2004), but the gap certainly puts minority children at greater risk for school failure even at a young age.

#### *Mental Health Issues*

SAMHSA's National Mental Health Information Center (2004) suggests that mental health problems, "affect one's thoughts, body, feelings, and behavior," and may seriously interfere with a child's functioning (p.1). Mental health problems include depression, bipolar disorder (manic-depressive illness), attention-deficit/hyperactivity disorder, anxiety disorders, eating disorders, schizophrenia, and conduct disorder (SAMHSA's National Mental Health Information Center, 2004).

Research has shown that the prevalence of mental health problems have increased over the past ten years (Roe-Sepowitz & Thyer, 2004), and current statistics are staggering. It is well established in the literature that approximately one fifth of America's youth under age 18 have a diagnosable mental illness (Committee on School Health, 2004; Roe-Sepowitz & Thyer, 2004; Rones & Hoagwood, 2000). According to the 2001 US Surgeon General's Report on Mental Health; 20% of children need active mental health interventions, 11% have

significant functional impairment, and 5% have extreme impairment. Another study reports that as many as 5% of all children exhibit symptoms of serious emotional disturbance (SED) disorders (Roberts, Jacobs, Puddy, Nyre, & Vernberg, 2003). SED disorders impair student functioning across home, school, and community settings (SAMHSA's National Mental Health Information Center, 2004).

Unfortunately it is also widely recognized that very few of these youth receive an appropriate diagnosis and adequate mental health services (Weissberg, 2000). The limited interventions that are provided however, are typically delivered in schools (Kratochwill & Shernoff, 2004; Rones & Hoagwood, 2000). Without adequate treatment many children with mental disorders will suffer into adulthood and are at high risk for problems including alcohol or drug abuse, violent or self-destructive behavior, even suicide (WebMDHealth, 2004).

### *Violence*

Violence in school is also a threat to student success. Violence occurring in schools has declined in recent years, but still warrants immediate attention and intervention (G. L. Bowen, Powers, Woolley, & Bowen, 2004). If students feel unsafe when they are at school it detracts from their attention to academics and ability to fully participate in class (Bowen et al., 2004).

Astor, Vargas, Pitner, and Meyer (1999) define school violence as covering “a wide range of intentional or reckless behaviors that include physical harm, psychological harm, and property damage” (p. 140). Violent behavior in schools has also been described as occurring on a continuum. It ranges from bullying and verbal abuse to homicide (Williams-Evans & Meyers, 2004).

A national study by Crosse, Burr, Cantor, Hagen, & Hantman (2002) found that 66% of all schools (primary and secondary) had incidences of theft, fighting, and vandalism, while 10% had a minimum of one violent crime such as robbery or a fight with weapons. The same study reported that 18% of students had been threatened at school, and 13% had been attacked. Both victims and perpetrators of school violence are at risk for negative outcomes. In addition to possible physical harm, victims are at risk for decreased academic performance, increased truancy, dropout, and depression. Bullies or perpetrators of school violence are also at risk for delinquency and other criminal behavior (White House Initiative on Educational Excellence, 2004).

### *Dropout*

Schools are among the most salient contexts for youth social, emotional, and academic development (Roeser, Eccles, & Sameroff, 2000). Growth in these areas is likely to be negatively affected when students stop attending school. Youth who drop out are broadly defined as students who leave school prior to graduating, earning a diploma, or receiving a GED.

In a study reported by the National Center for Education Statistics (NCES) (2002), when dropout rates were compared by race/ethnicity; 6.9% of White, non-Hispanic, 13.1% Black, non-Hispanic, and 27.8% of Hispanic students left school prior to graduating. Additionally, when students from the poorest 20% of the families in the study were compared to students from the wealthiest 20% of the families, children who were poor were six times more likely to drop out than their peers (Doll & Hess, 2004; NCES, 2002). The achievement gap discussed above, therefore, is also clearly demonstrated in dropout rates.

The same NCES (2002) report stated that more than 10% of youth between the ages of 16 and 24 dropped out in 2000. Outcomes for these youth are bleak. Research has consistently shown students who drop out are at higher risk for presenting “behavioral, academic, social, and attitudinal vulnerabilities” (Janosz, LeBlanc, Boulerice, & Tremblay, 2000, p. 171). The U.S. Department of Labor reports that students who drop out of high school are likely to earn 27% less than those who graduate, and are 72% more likely to be unemployed (2004).

The need for EBP in schools is clearly illustrated in the description of the persistent achievement gap, the prevalence of child and adolescent mental health problems, the continued presence of violence in schools, and high drop out rates, especially for certain race/ethnic and income groups. As current practices do not appear to be adequate, and the implications of these problems continuing for students are serious, EBP appears to be an appropriate option for better addressing threats to school success. To more thoroughly define what EBP is, the history, hallmarks, criteria, opposing viewpoints, and current availability of EBP will be reviewed in the next section.

## CHAPTER II

### A REVIEW OF EVIDENCE-BASED PRACTICE

#### History of EBP

EBP is a new paradigm of clinical interventions with empirical support that stems from the medical model of evidence-based medicine (Franklin, 2001). Evidence-based medicine (EBM) is defined as the “conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients” and includes integrating individual expertise with the best available external evidence from systematic research (Sackett, Richardson, Rosenberg, & Haynes, 1997, p. 2). In addition, EBM involves considering the values and expectations of clients/patients (Gambrill, 1999). The EBM approach was originally developed as an alternative to clinical practice that was informed by authority rather than research findings. This earlier approach is referred to as authority-based practice (Gambrill, 2001).

Authority-based practice (ABP) is the typical practice model in helping professions (Gambrill, 2001), as many clinicians do not commonly base their decisions on research-based evidence (Walker, 2004). Unlike the foundation of empirical findings used to guide decision-making in EBM, clinicians utilizing an ABP framework are likely to rely on authority, consensus, and status (Gambrill, 2001). Gambrill (1999, 2001) argues that clinicians remain authority-based by utilizing the opinions of others and anecdotal experience to inform their decision-making. The author uses terminology such as: “bamboozling,” “obscuring

knowledge,” and “insincere efforts to help clients” in her description of ABP and posits harmful outcomes resulting from this approach include “misinformed and uninformed students and clients (p. 169),” which is a violation of the ethics codes that guide helping professions (Gambrill, 2001).

Evidence-based practice (EBP) is the successor to EBM (Witkin & Harrison, 2001) and is proposed as a better alternative to ABP for the helping professions (Gambrill, 1999). Though there are several variations of the definition and characterization of EBP, the original description of EBM by Sackett and his colleagues (1997) remains the most widely accepted definition for EBP as well. This definition notes the value of evidence on a continuum encompassing empirical research as well as clinical proficiency.

EBP refers to scientific knowledge about clinical practices and interventions (Hoagwood, 2003-2004). Practicing from an EBP framework involves appraising evidence for effectiveness prior to implementing interventions with clients and evaluating the outcomes. The process is designed to create professionals who consistently learn from and draw on practice-related research findings while involving clients as informed participants in decision-making about their treatment.

#### Hallmarks of EBP

Utilizing EBP instead of ABP to provide the highest quality of services to clients is consistent with the values and ethical conduct codes for practitioners (Franklin, 2001; Gibbs & Gambrill, 2002; Howard, McMillen, & Pollio, 2003). Unlike ABP, EBP can provide a link or bridge for transferring research into practice (Reynolds, 2000). Gibbs (2003) explained the fundamental methodology of EBP as:

Placing the client’s benefits first, evidence-based practitioners adopt a process of lifelong learning that involves continually posing specific questions of direct practical

importance to clients, searching objectively and efficiently for the current best evidence relative to each question, and taking appropriate action guided by evidence. (p. 6)

Specific hallmarks of EBP include: (a) creating questions about client needs to guide a literature search (this should describe the client, course of action, and intended results), (b) locating the best evidence with electronic access to databases, (c) assessing the evidence for usefulness by creating a hierarchy of research, (d) determining if results of the literature search and research assessment apply to the client, (e) involving the client in intervention decisions by presenting findings from the search and discussing treatment options, (f) implementing interventions based on evidence findings, and (g) evaluating the intervention outcomes (Gambrill, 2001; Gibbs, 2003; Sackett, Richardson, Rosenberg, & Haynes, 1997).

#### Criteria for EBP

One aspect of EBP that is particularly problematic across disciplines is the absence of clearly established and accepted criteria for identifying interventions and strategies that can be considered evidence-based (Walker, 2004; Rycroft-Malone, et al., 2004). While several federal agencies, evaluators, and researchers have outlined their own guidelines for establishing a hierarchy of evidence, there are no consistently recognized and accepted benchmarks for determining what constitutes EBP (Hoagwood, 2003-2004). The lack of consensus about standards for best practices makes it more difficult to promote the adoption of such interventions (Biglan, Mrazek, Carnine, & Flay, 2003).

Randomized clinical trials appear to be the gold standard for evidence (Rycroft-Malone, et al., 2004), but some evaluators also include quasi-experimental, multiple baseline design, inclusion of a control or comparison group, and standardized outcome measures as features of EBP (Rones & Hoagwood, 2000). Some groups endorse programs that merely

show a change across pre-post evaluations, which may overestimate the effects of the intervention (Biglan, Mrazek, Carnine, & Flay, 2003). The controversy about what specifically comprises clinical evidence continues (Miles, Bentley, Polychronis, Grey, & Melchiorri, 2001).

### Opposing Viewpoints and Critiques of EBP

EBP is vigorously debated in literature from multiple disciplines. Proponents of EBP argue for the increased potential for clients to receive higher standards of service when clinicians utilize research findings to support their practice decisions. Those in favor also assert that practicing from any model other than EBP is unethical and directly counters professional codes for ethical conduct (Gibbs & Gambrill, 2002).

Opponents appear to wholeheartedly disagree with EBP and have many criticisms about the practice model. Questions have been raised about the unpredictable nature of practice with clients, and the potential incompatibility with the systematic methodology of EBP (Witkin & Harrison, 2001). Some are concerned that EBP would inhibit viewing clients with the unique ‘person in environment’ lens, and reduce treatment to a cookbook approach of motorized responses (Webb, 2001). Another criticism is the framework ignores clinical expertise and functions as a reflexive cost-cutting tool (Gibbs & Gambrill, 2002). EBP has also been referred to as an ivory-tower concept that cannot be carried out in the real world as it is limited to existing clinical research that is sorely lacking in many fields (Herbert, Sherrington, Maher, & Moseley, 2001). Additionally, critics claim that EBP has the potential to result in therapeutic nihilism as it restricts practice to a “narrow ends-means rationality such that only certain forms of action are considered legitimate” (Webb, 2001 p. 57).

There are also several assumptions in the description of EBP that should be considered when judging the appropriateness of its utility. One assumption is all practitioners have access to databases that include up-to-date and reliable clinical research. Related, there is a supposition that all practitioners are information literate and will be able to accurately evaluate and interpret research findings prior to adopting them into practice. Another assumption is that clinicians will systematically search for evidence in an unbiased nature rather than seeking only evidence that confirms their hypotheses and preconceived ideas about the best interventions (Herbert, Sherrington, Maher, & Moseley, 2001). Finally, there is a supposition that the client will agree with the best evidence located by the practitioner. These assumptions may function as further fodder for those opposing EBP in the debate about its appropriateness for helping professions.

#### Availability of EBP for Schools

Intervention research testing the effects of empirically based programs that are designed to prevent negative outcomes and involvement in risky behaviors for students (i.e., substance use, aggression, bullying, and school failure) is on the rise (Hoagwood, 2001). In fact, children's mental health intervention research has doubled in the past decade (Hoagwood, 2003-2004). New programs and interventions have been developed to strengthen and build upon protective factors for students (i.e., social competency, academic skills, and self-esteem), and increase positive outcomes. These EBP programs have been reported to increase coping mechanisms and reduce symptoms of behavioral and emotional problems (Hoagwood, 2003-2004).

There is a large body of identified EBP intervention and early prevention programs that currently exist for schools to implement that focus on a range of target areas including

academics, social and emotional competence, behavior, and physical health (Botvin, 2004; Franklin & Hopson, 2004; Shepard & Carlson, 2003). Literature and research reviews in the form of chapters (Rapp-Paglicci, Dulmus, & Wodarski, 2004), meta-analyses (Wilson, Lipsey, & Derzon, 2003), and journal articles (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002; Greenberg, Domitrovich, & Bumbarger, 2001; Rones & Hoagwood, 2000) report that evaluations of many of these new EBP programs have produced promising results by demonstrating significant reductions in negative behavior for intervention groups (Weissberg, Kumpfer, & Seligman, 2003). After a careful review of the literature on school-based intervention programs Greenberg and his colleagues (2003) stated, “There is a solid and growing empirical base indicating well-designed, well-implemented school-based prevention and youth development programming can positively influence a diverse array of social, health, and academic outcomes” (p. 470).

In theory, EBP is a better alternative to ABP as it requires practitioners to provide the best available services to clients based on external evidence and clinical expertise. Improving the quality of therapeutic care and encouraging clients to participate in treatment decisions are positive aspects of EBP that are difficult to deny. Opposing arguments are not convincing enough to refute the overall benefits that may result from practicing from an EBP perspective. Given that threats to school success exist and that many EB interventions are available, practice should evolve to utilize EBP whenever possible.

However, in practice, there are flaws with the EBP model that need to be addressed. In particular, the hallmarks of EBP do not adequately address feasibility, in spite of the fact that feasibility has an impact on each of the other components included in the model. Not explicitly including feasibility in the hallmarks of EBP is a potentially fatal flaw given the

resource constraints of most practice settings. In addition, to adequately determine if an evidence-based program applies to clients, is a feasible option for the practitioners setting, and what impact the program is likely to have if implemented, practitioners need access to adequate information about available interventions. Another significant flaw of the current EBP model is its assumption about the availability of such information. To persevere in the face of its critics, EBP must address these issues.

## CHAPTER III

### A CALL FOR EBP IN SCHOOLS

Mental health professionals practicing in any setting make countless decisions per day concerning client assessment and treatment. These decisions “determine efficiencies, effectiveness, and even fates,” so it not surprising that their professions demand that the decisions be informed, rational, and based on evidence (Proctor, 2002, p. 3). Clinicians in general are being held more accountable for using best practices and documenting outcome effectiveness (Early & Vonk, 2001; Pardeck, 2001), and the same is true for those working in schools.

Schools are critical intervention sites, and are becoming increasingly utilized as mental health service delivery sites. The school environment provides abundant opportunities for building on personal and environmental factors that are associated with resilience and remains one of the most salient social contexts for child and youth development (Minnard, 2002). With copious opportunities to positively impact the lives of students, it is not surprising that EBP is being touted as ideal for use in schools to best support students at risk for negative outcomes. Using best practices in schools for youth is a wise investment of time and resources (Weissberg, Kumpfer, & Seligman, 2003). Advantages to implementing EBP in schools rather than relying solely on community social service providers include: families avoid the stigma of going to a social services agency, services are provided in a familiar

setting, transportation needs are reduced, and, due to the convenience of services, commitment to therapy may be enhanced (Committee on School Health, 2004).

### Legislation

Many groups are becoming increasingly involved with evaluating and disseminating information about EBP (Biglan, Mrazek, Carnine, & Flay, 2003). National legislation, federal agencies, and disciplines involved with education research and practices are among those who are calling for and distributing information about evidence-based interventions for schools.

Schools across the nation are feeling the demands of recent reform legislation designed to improve the school performance of students. School reform efforts appear to reveal grave dissatisfaction with the current status of public schools (Walker, 2004), and teachers, administrators, and support staff are being held more accountable for enhancing student performance and reducing both the achievement gap and school failure (Protheroe, Shellard, & Turner, 2003). According to new policies, schools can more effectively accomplish these lofty goals by implementing evidence-based interventions that promote maximum school success and prevent further negative outcomes for students.

The No Child Left Behind Act (NCLB) of 2001 (P.L. 107-110) may be one of the most significant school reform policies passed in years (Simpson, LaCava, & Graner, 2004). NCLB is centered on accountability measured by academic achievement for every child. With the implementation of NCLB, schools are required to test annually every student in grades 3 through 8 in reading, mathematics, and science (Goertz & Duffy, 2003), and schools that do not make adequate yearly progress according to established academic standards receive sanctions. The education initiative describes the need for implementing research-

based practices in schools to meet the higher standards of accountability (Christenson, 2004; Isaacs, 2003). More specifically, the NCLB policy states more than 100 times that educators should support their practices by utilizing “scientifically based research” (Raines, 2004).

#### Federal Agencies

Federal agencies are also supporting empirical practices in schools. Agencies such as the Substance Abuse and Mental Health Services Administration (SAMHSA), the National Institute for Drug Abuse (NIDA), the Center for Substance Abuse Prevention (CSAP), and the U. S. Department of Education among others, highly recommend empirically supported programs for use in schools (Franklin & Hopson, 2004).

According to Hoagwood (2003-2004) there are more than 26 federal websites that use the term “evidence-based practice” to distinguish best practices from less effective strategies. Many of these entities have established their own criteria for evidence and review, evaluate, and recommend programs and resources that meet or exceed their standards to professionals who work with youth. Information about EBP programs is then disseminated on website databases and in published reports.

#### Discipline-specific Literature for School Mental Health Professionals

Schools have become the de facto mental health service providers (Hoagwood, 2001). Treatment is most commonly provided by school social workers, counselors, and psychologists (Brenner, Martindale, & Weist, 2001), and each professional functions to promote student academic progress. While the roles of student counseling, teacher consultation, and parent intervention appear to overlap among the three disciplines, one point of differentiation in their current practice is the emphasis on standardized assessment and report writing evident only in school psychology. One study found that both school social

workers and school counselors perceived the bulk of their time was spent on counseling while school psychologists thought the majority of their own work days were spent completing psychometric testing and generating related reports (Shapiro, Angello, & Eckert, 2004).

There is a mounting body of literature in the journals of each of these disciplines devoted to increasing the utilization of EBP among school practitioners. Professional journals have been employed as informing agents that call for EBP while also increasing awareness about specific programs and strategies that have empirical support. For example, authors in a social work journal stated that using interventions based on valid knowledge lies at the center of the professional practice (Rosen, Proctor, & Staudt, 1999). School counselors are being challenged to become action researchers who collect data about student needs, implement best practices, and evaluate results (Isaacs, 2003). Similarly, school psychology scholars argue that competency for a school psychologist requires data-based decision making and empirical interventions to “permeate every aspect of professional practice” (Crespi & Politikos, 2004, p. 476).

Each of the disciplines has at least one journal dedicated to its professionals who are employed in schools (i.e., *Children & Schools*, *Professional School Counseling*, and *School Psychology Review*). Many of the recent articles in the journals are devoted to EBP, whether they describe specific empirical programs and interventions, ethical responsibilities, challenges to implementation, or other related issues. One speculation about the reason for the rapidly growing body of literature across disciplines encouraging school professionals to use EBP is the number of students who remain at risk for school failure and other negative outcomes in schools.

As discussed above, school practitioners from different professions (social work, counseling, psychology) are being called upon by national school reform legislation, federal agencies, and their professional organizations to use EBPs. The push from so many reputable sources only strengthens the case that EBP is a good and needed phenomenon in schools. The next chapter adds to this argument as well by showing that EBP is consistent with some of the most useful and common theoretical approaches related to child development.

## CHAPTER IV

### THEORETICAL FRAMEWORK SUPPORTING EBP

Theories can help us to understand children and why they may or may not succeed in school. They can also help us to better understand schools, and how they can move toward better addressing the problems associated with school failure with EBP. Ecological risk and resilience perspective will be used for these purposes as well as to illustrate *where* and *why* to use EBP in schools.

#### Ecological Risk and Resilience Perspective

The ecological risk and resilience perspective merges both Bronfenbrenner's ecological theory and the risk and resilience framework. A brief review of the separate theories will precede a description of the combined framework that demonstrates why the joint theory is more effective for describing *where* and *why* to implement EBP in schools.

#### *The Ecological Framework*

Bronfenbrenner's ecological theory describes the influence of external environments on the functioning and progressive adaptation of individuals. Bronfenbrenner's ecological theory posits development occurs within the context of a complex system of relationships that comprise a child's environment and the environment consists of several levels (Bronfenbrenner, 1986). The environment levels are referred to as unique *systems*, and the theory asserts the functioning of an individual is never independent of these systems, rather it is a product of their interaction (Bronfenbrenner, 1986). The key process of the multisystems

perspective is the interactions between children and their environment which result in change (Newman & Newman, 1999). These interactions include activities, roles and interpersonal relationships.

According to ecological theory there are proximal and distal systems that never function independently from one another (Bronfenbrenner, 1986). One proximal system is the microsystem, which is the innermost level of an individual's environment (Berk, 2004). Microsystems are a person's immediate surroundings and interaction patterns, which include the home environment and family. Mesosystems are another proximal system. These include school, church, and neighborhood and can also comprise relationships or connections between two or more microsystems. A child's academic performance at school is an example of a mesosystem as the progress a child makes in reading may be a direct reflection of time spent practicing reading skills with both parents and teachers.

More distal systems in ecological theory are exosystems, macrosystems, and chronosystems. Exosystems are social settings that do not directly involve the individual, but do include people from the individual's microsystem. The district school board is an exosystem that influences the child's school experience even though members may never interact with the child directly. Macrosystems consist of societies' broad social climate that includes cultural and societal values (Berk, 2004). Chronosystems are temporal dimensions of Bronfenbrenner's model that involve the timing of an individual's development interacting with historical time (Bronfenbrenner, 1986).

#### *Risk and Resilience Perspective*

The risk and resilience perspective suggests that the possession of positive and protective factors in a child's life may buffer the effects of risk factors within the social

environment to encourage resilience. Resilience is defined as “a dynamic process encompassing positive adaptation within the context of significant adversity” (Luthar, Cicchetti, & Becker, 2000, p. 543). Resilient children are able to maintain mental or physical health even when exposed to risk factors associated with negative outcomes (Dulmas & Rapp-Paglicci, 2004).

Risks factors are defined as characteristics or influences that increase the probability that a person will develop a disorder or experience negative outcomes (Mrazek & Haggerty, 1994). Conversely, protective factors are characteristics that may have positive promoting effects on outcomes and may interact with risk factors to change or moderate their impact (Pollard, Hawkins, & Arthur, 1999). Protective factors appear to be the “building blocks” of resilience (Minnard, 2002, p. 235). Both risk and protective factors can be traits within the individual or contextual factors of the environment (Fraser, 1997).

Research finds risk factors to be consistently associated with negative school outcomes for students such as school failure, decreased academic performance, and negative behaviors (Pollard et al., 1999). Increasing protective factors may enable students to function well in spite of risks. Therefore, the assessment of the prevalence of risk and protective factors in a child’s social environment is a critical part of identifying determinant intervention targets (Davies, 1999).

#### *Combined Perspective*

Combining the ecological and risk and resilience theoretical perspective provides a more complete foundation for utilizing EBP in schools. According to Corcoran and Nichols-Casebolt (2004), adding the ecological emphasis to the risk and resilience perspective “expands the focus beyond the individual to a recognition of systematic factors that can

create problems as well as ameliorate them” (p. 212). Additionally, the combined framework is more balanced as it considers strengths and risks, the individuality of clients, and multiple systems of their environments (Corcoran & Nichols-Casebolt, 2004).

*Application of the Combined Theoretical Perspective to EBP in Schools*

Ultimately, the ecological risk and resilience perspective identifies *why* and *where* to implement EBP’s in schools. Broadly, the theory explains *why* to utilize EBP by illustrating how an accumulation of risks and a dearth of protective factors can lead to negative outcomes for students. The theory can also highlight *where* to implement EBP by identifying critical systems of students lives that impact school success, and *where* in the systems of the child’s life are the most crucial targets for intervention. These points are further specified and delineated below.

The ecological risk and resilience framework suggests that understanding a child’s performance or perception in any single microsystem is not sufficient for understanding his or her school performance (Marchant, Paulson, & Rothlisberg, 2001). Similarly, research on empirically supported intervention programs has shown that intervening across multiple domains is more efficient than focusing on just one aspect of a child’s environment (Greenberg, et al., 2003). In this respect, the ecological portion of the theory is foundational to the development and implementation of EBP. EBP is supported by theory and research that find development occurring across and between numerous settings for children (Bronfenbrenner, 1986; Fraser, 1996). Accordingly EBP interventions have been created to strengthen student functioning in various salient systems which include peers, family, school, and the neighborhood--each of which Bronfenbrenner argued strongly influences development (Fraser, 1997).

The interplay between multiple system levels also affects student school performance. Information on this interaction is vital to designing appropriate interventions for students (Marchant et al., 2001). For this reason mesosystems are an important facet for targeted intervention in many research-based programs. Activities to increase parent school involvement and home academic support are implemented for parents and teachers as the relationship between the two systems may impact student progress.

Exosystems are reflected in EBP as well. Multiple programs target altering the school climate and increasing support from administrators for teachers. These factors may indirectly effect the learning environment for students. Decisions made by the school board about funding and district policies are also exosystems that may influence the implementation and sustainability of EBP in schools.

Bronfenbrenner also takes unique developmentally instigated characteristics of the individual into account. The ecological portion of the combined theory describes how personal traits can invite or discourage varied experiences and pathways for development. Many evidence-based programs provide selective and indicated services for individual students at higher risk in addition to the universal services implemented with all students. This reflects the ecological aspect of the theory and the unique situation of each youth, rather than assuming what is true for the group is true for the individual.

Uniquely, the risk and resilience portion of the combined theory adds a very purposive component to EBP and supports the function and utility of empirical interventions in schools. We know that specific risk factors are associated with the development of school and mental health problems as discussed in the previous section. For example, risk factors associated with the performance gap include family issues such as economic status and

parent education level as well as school issues such as quality of pre-school education, teacher expectations, and school funding (Education Commission of the States, 2004). Children are at greater risk for developing mental health problems when factors such as heredity, biology, psychological trauma (i.e., physical abuse, emotional abuse or neglect), and environmental stress (WebMDHealth, 2004) are present in their lives. Risk factors for youth violence include child risk factors (gender, birth complications, exhibiting symptoms of ADHD, and early aggression), and environmental risk factors (being from an economically impoverished family, associating with peers engaged in negative behaviors, presence of gangs in school, and living in a community with high crime rates, among others) (Bowen, Powers, Woolley, & Bowen, 2004). Primary risk factors for school drop out include race/ethnicity and economic status, a history of disciplinary problems, substance abuse, and early pregnancy (Focus Adolescent Services, 2000).

Thus, the risk and resilience aspect of the theoretical framework highlights the importance of early prevention and the assessment of young students for the purpose of implementing appropriate interventions that promote positive outcomes. The perspective also gives general suggestions for how to increase school success and positive outcomes for children. By preventing or ameliorating risk factors and building on protective factors, students have a more viable opportunity to become or remain resilient to oppressive risks within their social environments (Pollard et al., 1999).

EBP in schools has theoretical support. More specifically, the theoretical framework presented here advocates for EBP in schools by illustrating how it can assist practitioners in better addressing the problems associated with school failure. The current status of EBP in schools and potential barriers to utilization are more critically examined in the next section.

## CHAPTER V

### CURRENT STATUS OF EBP IN SCHOOLS

Many components of the argument supporting EBP in schools have been presented thus far: current practices are not adequately serving the nation's students, ABP should be replaced with more empirically-based practices, EBPs are likely to be more effective than other approaches, school is an important intervention context, there is a call for EBP from multiple sources and professions, and EBP is consistent with major theoretical approaches to intervention. Given the arguments for EBP, what is the current status of EBP in schools?

Each of the discipline-specific mental health professionals working in schools plays a critical role in the promotion of school success for students. Yet, there is a lack of EBP across the disciplines and there appears to be little empirical support for the current interventions practitioners are using (Lee & Workman, 1992; Gibbs & Gambrill, 2002; Proctor, 2001). More specifically, research supports Gambrill's claims about ABP by finding that that social work practitioners rarely draw on practice-related research findings to inform their interventions (Rosen, Proctor, Morrow-Howell, & Staudt, 1995). Historically there is little research in general about school counseling—and therefore a dearth of evidence about the effectiveness of interventions used (Brigman & Campbell, 2003; Lee & Workman, 1992). While there does not appear to be strong evidence in the literature proving the common use of EBP interventions by school psychologists, there is also push for these practitioners to further adopt and incorporate research-based practices (Kratchowill & Shernoff, 2004).

## Barriers to EBP in Schools

Given this background of student need for intervention in schools, and the call from multiple sources for empirically based interventions, why are EBPs not more prevalent in schools? If we believe that EBPs are the best choice, it is imperative to identify barriers at the practice level as a first step toward increasing their use in schools and improving the outcomes of students who are currently the least likely to succeed in educational settings.

According to Gambrill (2001), Gibbs (2003), and Sackett and colleagues (1997), practicing from an EBP perspective requires practitioners to look at the evidence before choosing an intervention. For school-based clinicians, this task includes evaluating existing practices to identify the most effective services in the context of current student needs and interests, and constraints of the school practice setting. To identify potential barriers to the use of EBP in schools, this study examined three aspects of this critical task in the EBP procedure that would influence practitioners' choice of programs—impact on student outcomes, resource requirements, and the availability of information on EBPs.

The current study represents a first step toward systematically identifying potential barriers to the use of EBP in schools by specifically examining the characteristics of EB programs described above. To accomplish this “first step,” the characteristics of 51 EB programs meeting specified criteria (presented below) were examined to identify their implementation resource requirements and their reported effect sizes. In addition to identifying a number of characteristics that are likely barriers to implementation in schools, the *process* of conducting the study revealed numerous barriers to the use of EBPs related to the accessibility of information and materials about programs that school staff need prior to selecting and implementing program.

## CHAPTER VI

### RESEARCH METHODS

#### Study Overview and Research Questions

Practitioners working from an EB framework are called to thoroughly review evidence prior to intervening with clients. This process entails understanding what resources are required to implement a program and the power of the program to improve student outcomes. Additionally, practitioners should understand the trade-off between resource commitment and effect size to determine whether allocating more resources to a program ensures a larger intervention impact. The current study sought to address these issues by reviewing 51 school-based intervention programs endorsed by sources available to practitioners. Specifically, the study addresses the following research questions:

1. What are the resource requirements?
2. How big an effect on student outcomes can be expected?
3. Do more resources need to be expended to obtain a bigger effect?

The answers to these questions would be important to a practitioner seeking to practice from an EB perspective. Answering these research questions also benefits researchers by beginning to identify potential barriers to the use of EBP, and these barriers then can be studied further to find less expensive and more effective interventions.

Before proceeding, it is important to distinguish between several terms used in the study and encountered in the literature. Terms such as *empirical*, *empirically supported*,

*research-supported*, or *scientifically based* are often used interchangeably to describe interventions that are based on research. The study's research questions pertain equally well to all, because the use of empirically based programs requires both that information about effectiveness can be obtained by practitioners and that program characteristics can be accommodated in schools.

However, two terms used in this study are distinct from the others: *EBP framework* (or *model*) and *EB programs*. The EBP framework or model used by Gibbs (2003) and Gambrill (2001) is more than the use of research-supported interventions because it embodies a comprehensive approach for practice. In addition, there is a focus on EB programs rather than on EB practice in the present study. This is because the majority of practices being recommended or publicized as evidence based are larger-scale, comprehensive programs rather than simpler strategies or practices.

This study focuses on the identification and review of programs publicly promoted as evidence based by sources generally available to practitioners. More than 51 commercially available programs were identified, and each was coded for start-up cost (SUC), days of training, staffing requirements, and program implementation time. Effect sizes also were located and/or calculated for the majority of the programs, to enable the author to substantiate the impact of school-based EB programs and to better identify a pattern between resources required and intervention effects among programs considered evidence based. The methods for locating the programs, for coding the program characteristics, for calculating effect sizes, and the procedures used to identify potential relationships between resources and effect sizes are described below.

## Sample

Prior to searching for programs touted as evidence based, criteria were established for program inclusion in the study. The criteria were designed to enhance the practical utility of the study's findings. To be included, programs were required (a) to be school based; (b) to be group oriented; (c) to have been previously identified as effective by a reputable source, such as a national organization or a peer-reviewed journal; (d) to have empirical evidence documenting effectiveness; (e) to be manualized as an aid to school implementation and program fidelity; and (f) to be commercially available to schools for purchase and/or implementation. The six inclusion criteria ensured that only effective group-level interventions that are currently available and designed for use in schools were reviewed.

Programs were excluded from the study if they were community or home based and had not been adapted for or tested in schools, or if they were designed to be implemented with one individual rather than with multiple students. Because it is well established that many schools have limited financial resources, it seemed economically practical to focus on programs that can be used to intervene with several students rather than on programs that would need to be purchased for one child. In addition, the majority of programs considered evidence based are designed for use with groups of youth.

Programs also were excluded if they had not been identified and recommended by a reputable source accessible or available to school administrators and practitioners. These sources provide information about multiple programs and recommend them based on empirical support. The designation of programs as evidence based by reputable sources should represent a shortcut for practitioners attempting to use evidence-based practices. Publications or online resources describing EBP ideally would lead directly to the best

available interventions, saving practitioners lengthy and expensive literature searches of databases to which they may not have ready access.

Finally, programs were excluded if they lacked a manual or implementation guidelines, or if they were not currently commercially available for schools to use. The review focused only on programs that could be purchased immediately by schools. Ultimately, the inclusion criteria make the study results useful to practitioners because they represent the programs practitioners are most likely to encounter during their searches for effective interventions.

#### *Sources Reviewed for Locating EB Programs*

Multiple sources were reviewed to locate programs that were considered evidence based and that met the criteria for inclusion in the study. Sources providing endorsements of programs were identified and reviewed from June 2004 through October 2004. Sources were specifically chosen to represent those that a practitioner might access while searching for information about effective interventions. These sources included Web sites from federal agencies, online reports, practice-oriented books, and online peer-reviewed journal articles, all designed to provide information about evidence-based programs. Each of the sources provided specific criteria and standards for recommending programs. In each case, only the programs that qualified for the highest quality category used by the source were included in the study. The programs meeting the highest recommendation from sources were often called “model,” “exemplary,” or “effective” programs. The Web site, report, journal, and book sources reviewed, and the critical components of the criteria utilized by each source to qualify programs as evidence based, are described briefly below.

### *Web sites*

Procedures used to identify relevant Web sites included an Internet investigation using the Google search engine to look for the keywords *evidence-based practice* or *evidence-based programs*, and *schools*. There is no method to ensure that all relevant Web sites were located and reviewed in this study, but the majority of programs included in the study were recommended by multiple reputable sources.

The first federal agency Web site used to locate evidence-based programs was the Substance Abuse and Mental Health Services Administration (SAMHSA) (2004) model programs site. This Web site provides a wealth of information about “model programs.” SAMHSA’s model program criteria require programs to be strongly implemented and evaluated, to consistently show positive outcomes, to be available for dissemination, and to provide technical assistance for implementation.

The Center for the Study and Prevention of Violence (2004) Web site also was reviewed for school-based programs that could be included in the study. This Web site provides a list of “model programs” that have evidence of deterrent effects, and that have strong research designs, sustained effects, and multiple-site replication studies.

The Web site of the Safe, Disciplined and Drug-Free Schools Review (2001) was used for the study because it included a detailed list of “exemplary programs,” produced in 2001. To be recommended as exemplary, programs had to have at least one evaluation that demonstrated an effect one year or longer beyond baseline, had to be based on methodologically sound evaluations, had to provide replication information, and had to have assistance available for schools that implement the intervention.

The Center for Substance Abuse Prevention (CSAP) (2000) Web site was reviewed for the study because they have created a national registry of effective prevention programs. To be included among CSAP's "model programs," interventions must provide training and technical assistance in addition to producing consistent positive results.

The final federal Web site used to locate programs was from the Department of Health Promotion and Education and the Office of Juvenile Justice and Delinquency Prevention (1999). In 1999 these organizations created a site titled *Strengthening America's Families: Effective Family Prevention Programs for Prevention of Delinquency*. This Web site lists "exemplary programs" based on strong implementation, evaluation, and consistent positive findings.

#### *Reports*

Procedures used to identify relevant online reports also included an investigation with the Google search engine. Again, keywords used in the search were *evidence-based practice* or *evidence-based programs*, and *schools*. The first report reviewed was from the National Institute on Drug Abuse (NIDA) (2003), titled *Preventing Drug Use Among Children and Adolescents: A Research-Based Guide*. The primary criterion for NIDA to recommend programs in the report was the inclusion of a control group during efficacy testing.

Another report utilized as a source for the current study was *Youth Violence: A Report of the Surgeon General* (2001). By the standards of this publication, "model programs" must have significant, sustained effects in a wide range of settings.

The third report was from Child Trends and focused on programs that promote social competency in adolescence (Hair, Jager, & Garrett, 2001). To be included in this list of

“effective programs,” programs must use rigorously implemented experimental evaluations, must be longitudinal, and must use multivariate analysis to determine effectiveness.

### *Books*

The procedure used to identify relevant books advertised to professionals and practitioners included searching Amazon.com. Keywords used in the search were *evidence-based practice*, *evidence-based programs for schools*, and *school interventions*. Three books were reviewed to locate information about effective or evidence-based programs. One book specifically targets school social work interventions (Dupper, 2002), and two are less discipline specific and focus on effective interventions with youth (Allen-Meares & Fraser, 2004; Barrett & Ollendick, 2004). Each of the books describes and recommends empirically supported treatments and programs that could be used in schools.

### *Journals*

One journal was identified that included manuscripts focused on EBPs and that was available online, thus easily accessible to practitioners. The journal, *Prevention & Treatment*, included two online peer-reviewed articles that also were used as resources for locating evidence-based programs for the study. In the first article, Catalano, Berglund, Ryan, Lonczak, and Hawkins (2002) reviewed evaluations of positive youth development programs. Adequate study design and outcome measures, and demonstrated effects on behavioral outcomes were used as criteria for program recommendation. The second online journal article focused on preventing mental disorders through effective programs and interventions (Greenberg, Domitrovich, & Bumbarger, 2001). Recommendations from these authors required program evaluations to use quasi-experimental or randomized trials and to provide evidence of psychopathology symptom reduction.

### *Sample Description*

After reviewing each of the listed resources, a master list of all programs that met the inclusion criteria was created. A total of 51 programs was identified during the search dates and constitute the sample used in analyses ( $N = 51$ ). The programs are social artifacts and serve as the unit of analysis for the study. Many of the programs were recommended by multiple sources, so there was convergence of the recommendations among the various sources.

The majority of the sample programs (62%) target either elementary school students only (29%) or elementary and middle school students combined (33%). Approximately 14% of the programs were created for use in elementary, middle, and high schools combined. The smallest percentages of programs were designed for use in middle schools only (8%), in middle and high schools combined (8%), and in high schools only (8%).

Programs that met the study's inclusion criteria varied in a number of ways, one of which was the level of prevention they targeted. As originally defined by Gordon (1983), some of the program interventions are universal in nature and target all students; they are advantageous for everyone. Other programs are selective and target groups of students who may be more at risk for negative outcomes. Still other programs are indicated and focus on students who are at high risk or who are already exhibiting negative symptoms.

Other differences across programs included key intervention components, targeted outcomes, and proven program results. Key intervention components varied greatly. For example, some programs were based on a series of videos, some included curriculum to be taught weekly by the classroom teacher, and others involved mentors from the community. Outcomes targeted for change (dependent variables) also varied, ranging from increased

academic achievement to reduced use of alcohol, tobacco, or other drugs. The actual evaluated program outcomes and proven results from systematic evaluations were dissimilar as well. For instance, some programs have been shown to decrease antisocial behavior and school dropout, whereas others have increased social skills and academic motivation.

Each sample program was systematically reviewed to identify multiple components. These components included a basic description; the key intervention components; the dependent variables; the outcomes achieved from previous evaluations; the age of students targeted; the level of prevention; the resource requirements (cost, staffing, training, and time); the reported program effect size; the program developers; and the program duration.

### *Program Coding*

In order to address the first research question and to more accurately describe and compare aspects of the programs essential for implementation, codes were created for program start-up costs and for training, staffing, and time requirements. Because resource requirements were reported in various ways in the program materials, all codes are calculated to represent the absolute minimum requirements necessary for one classroom (25 students) over the course of one academic year (36 weeks).

It is important to note that codable information about different program requirements was not available for every program. For many of the programs, multiple resources had to be sought out and reviewed to collect the information necessary for coding. For instance, the number of days required for staff training was listed on the SAMHSA (2004) Web site but the cost of the same program was located on the Web site of the company that sells and distributes the intervention curriculum. In some cases, the original program developers were contacted when information could not otherwise be located. Unfortunately, three programs

were missing some critical coding data (SUC and training information), which resulted in the sample sizes varying slightly across categories for analyses. The missing data is highlighted in Appendix A.

The SUC code is composite and includes the price of any training and materials (e.g., curriculum, videotapes, and training) required to initially implement the program. Codes were derived inductively from the cost information available across programs. The SUC does not include the price of optional booster sessions or program evaluation materials. Start-up costs also do not account for the salary of existing or newly hired staff needed to implement the EBP programs or the additional cost of hiring substitute teachers if classroom employees miss school days to attend required training seminars. Such costs are not available to the researcher, nor are they likely to be consistent across school districts. Therefore, SUC codes should be viewed as conservative estimates.

For example, if we are calculating the SUC for a program that is implemented by the classroom teachers on a weekly basis, and the program Web site lists the training manual as costing \$35, the classroom curriculum as \$300 for one set, an optional booster set of curriculum for \$150, and student workbooks as \$5 each, and the SAMHSA (2004) Web site lists the cost of required training for the program as \$500 per person, then the minimum start-up cost for one classroom is calculated as \$960 (one training manual, one set of curricula, 25 student workbooks, and one classroom teacher being trained). The SUC codes used for analysis were 1 = \$0 to \$200; 2 = \$201 to \$500; 3 = \$501 to 700; 4 = \$701 to 1,000; 5 = \$1,001 to 2,000; 6 = \$2,001 to 3,000; 7 = \$3,001 to 5,000; 8 = \$5,001 to 7,000; 9 = \$7,001 to 10,000; 10 = \$10,001 to 15,000; 11 = \$15,001 to 30,000; 12 = \$30,001 to 50,000; and 13 = \$50,001 to 80,000.

The code for training is based on the number of days required for school staff to attend training prior to the first year of program implementation. Codes were derived inductively from the training information available in program descriptions only if training was described as being required. If training was required for a school to implement the program, the full number of training days was included. If a range of training days was provided, then the minimum number of days was included.

For example, if a program required 1 to 2 days of training, then 1 day of training was coded for the program. If training was described as optional and not required for a specific program, that intervention was coded as “no training” or zero days. The training code does not include optional booster sessions, on-site support training, or training sessions offered for additional years of program duration. Therefore, training codes should also be viewed as conservative estimates. The codes range from no days of training to 8 days. The specific codes for training include 0 = 0 days; 1 = 1/2 day; 2 = 1 day; 3 = 2 days; 4 = 3 days; 5 = 4 days; 6 = 5 days; 7 = 6 days; 8 = 7 days; and 9 = 8 days.

The staffing codes represent the school employees and other people needed to implement the program for one year. Staffing codes as described in program descriptions ranged from one half-time mental health professional (MHP) to all staff being required to implement programs. For example, one program requires a MHP to implement a video series of parent training lessons with individual or small groups of parents, so in this case only a part-time MHP is required to implement the program. In contrast, another program is based on a comprehensive school reform model and requires the participation of every school staff member for implementation.

The specific staffing codes derived from the program descriptions for the current analysis include 0 = no staff; 1 = 1 part-time MHP; 2 = 1 full-time MHP; 3 = 2 full-time MHPs; 4 = part-time MHP +; 5 = 1 MHP +; 6 = classroom teachers; 7 = part-time MPH and classroom teachers; 8 = 1 MHP *and* classroom teachers; 9 = 1 MHP *or* classroom teachers; and 10 = all staff. Note that Codes 4 and 5 include a “+.” This means that additional people are required for the program but that they may not be school employees. Examples of additional individuals needed for program implementation are community volunteers, mentors, tutors, or paraprofessionals.

The time codes represent the amount of time required of both staff and students to implement and participate in the program both in school (during school hours) and out of school (before or after school, on weekends, or during the summer). Time codes were calculated for actual minimum program delivery time over the course of one academic year (36 weeks). Time codes do not include preparation, training, or booster sessions, which could not be estimated.

There were four sets of time codes: (a) staff in-school time, (b) staff out-of-school time, (c) student-in school time, and (d) student-out-of school time. Time codes were the same for each set and ranged from “none” to “ongoing.” For programs that implement new and ongoing models of behavior modification, classroom discipline techniques, or school reform rather than specific and time-limited activities, “ongoing” is used for coding purposes. For programs that have requirements such as homework or field trips without specified time requirements, “some time” was used as the code for analysis. The specific time codes used for analysis are 0 = none; 1 = 1 to 5 hours; 2 = 6 to 10 hours; 3 = 11 to 15 hours; 4 = 16 to 20

hours; 5 = 21 to 30 hours; 6 = 31 to 40 hours; 7 = 41 to 60 hours; 8 = 61 to 80 hours; 9 = 81 to 100 hours; 10 = 101 to 200 hours; 11 = some time (unspecified); and 12 = ongoing.

### Program Effect Sizes

Practitioners working from an EB framework and considering an empirically supported program for implementation at their school site should be interested in the effectiveness of the program. To address the second research question and to substantiate, measure, and compare intervention effectiveness among the identified EB programs, effect sizes were located and/or calculated for as many programs as possible.

There are several reasons that effect size statistics were calculated and used in the study to compare program effectiveness. First, effect sizes are relatively simple statistics to understand. For example, an intervention effect size of zero can be interpreted as no change in the intervention group, and positive effect sizes larger than zero equal greater changes in the intervention group as the statistic (effect size) increases. The ease of interpreting intervention effect sizes is important because the study is so heavily invested in information that is available and useful to practitioners—most of whom have been educated and trained more in practice-oriented skills than in statistics or research methods.

Second, effect sizes provide a useful standardized measure of change, which we can compare across programs. Effect sizes can be calculated from other reported results data even when program evaluation studies do not specifically provide an effect size statistic in their documentation. This is particularly important because the evaluation studies for the sample programs use multiple statistical metrics (e.g., *t* scores, means and standard deviations, or chi-squares) to report intervention effects. Thus, using effect sizes in the study, rather than

just including the diverse statistics reported in the program evaluation publications, allows for much simpler and more straightforward comparison across programs.

Finally, effect sizes allow us to estimate the relationship between interventions and outcomes in both experimental and nonexperimental studies. This provides the opportunity to evaluate program results using different research designs (Dunst, Hamby, & Trivette, 2004). Ultimately, by using effect sizes we can more easily compare intervention effectiveness across the sample EB programs and can begin to contrast intervention results with required resource requirements.

It is important to note that including effect sizes in the study was a limited exercise designed for descriptive purposes. It is not the intent of the author to conduct a full-fledged meta-analysis. Instead, the goal was to determine the availability of information documenting intervention effectiveness.

According to Dunst, Hamby, and Trivette (2004), measuring effect size estimates “the magnitude of the strength of a relationship between an independent (intervention) and dependent (outcome) variable” (p. 1). There are two primary families of effect sizes,  $d$  and  $r$ . The former describes the raw difference in proportions; the latter includes Pearson product moment correlations (Rosenthal, 1994). Cohen’s  $d$  is one of the most commonly used effect size indices from the  $d$  family (Dunst et al., 2004) and is suitable when comparing two group means (Cooper, 1998). Thus, it is the effect size of choice for this study. Cohen’s  $d$  is calculated by finding the difference in mean changes for the experimental and control groups, divided by the pooled standard deviation (Cohen, 1988).

### *Literature Search for Evaluation Studies*

Because none of the sources recommending programs as evidence based included specific effect sizes, additional literature searching was required to locate effect size information for each program. To efficiently and systematically find one evaluation study that included effect sizes (or data that could be converted into effect sizes) for each program, a literature searching protocol was developed. During February and March 2005, Academic Search Elite and PschInfo databases both were explored, using access provided by a major university in the southeast United States. These databases simultaneously search numerous journals and cover a broad spectrum of publications that are likely to include program evaluation studies relevant to the current study.

Program names were used as search keywords. When given the option, searches were limited to scholarly or peer-reviewed journals and the English language. Searches were expanded to include all dates and to search for program names within the full text of the articles rather than just within the titles. If no evaluation studies or articles including appropriate data were located in these databases, the Google search engine was used. Again, program names were used as search keywords, and if program names were known to have changed over the course of time, both the current and the original program names were used for the literature searches. Unpublished manuscripts or research were not sought from program developers or from other scientists involved with program evaluations; effect size data had to be included in a published document or available on a program Web site.

If multiple studies or publications containing outcome data were located for the programs, the most recent article was reviewed for effect size content. In the case that an article did not provide enough statistical information to convert into an effect size, the

article's bibliography or references sections were reviewed in an attempt to identify other evaluation studies for the same program, which might have been cited in the text. In addition, another literature search was conducted in the manner described above, in an attempt to locate the next-most-recent evaluation publication. In the case that no effect size data could be found, it is noted in Chapter VII: Results in the corresponding table and in Appendix C. Ultimately, many analysis decisions were made to systematically convert and report effect sizes for each of the programs. More specific inclusion and exclusion criteria for evaluation articles are described below.

Studies that provided a range of effect sizes without including additional data that could be converted into specific effect sizes were not included in the analysis. When programs reported data about individual outcomes that appeared to be part of a larger composite measure, individual measures were averaged to create a composite. To increase comparability across programs, effect size information was calculated only for child/student outcomes, even when programs targeted and reported results for parents or teachers in addition to children. If outcomes were assessed at multiple time points and reported in one article, effect sizes were calculated for change after one year, or the closest option to a one-year follow-up point. For programs that reported results both of intervention groups receiving the full intervention and of intervention groups receiving partial intervention, the full intervention data were used to calculate the effect size. When negative effects were found for outcomes assessed in an evaluation, the negative effect size was subtracted from the positive effect sizes when determining the average program effect size. If evaluation data analysis resulted in an overall negative average effect size for a program, another evaluation publication was sought to include in this survey. If no effect data could be calculated or

located after reviewing two evaluation publications for one program, no more were sought, and that program was excluded from analysis.

### *Formulas for Converting Results into Cohen's d*

Very few evaluation articles actually provided a total effect size for the program being studied. When effect sizes were not specifically reported in the publications, the data provided (if adequate) was converted into an effect size. The article by Dunst et al. (2004) was instrumental in this process because it provides explicit formulas that were used as guides for the conversion of other data into Cohen's *d* effect sizes. It was most often the case that means and standard deviations were provided pretest and posttest for intervention and control groups, prior to and after implementing the program interventions with students in the experimental group. However, articles also reported results in percentages, chi-squares, betas, *F*'s, *t* tests, and odds ratios. Specific formulas for converting data into Cohen's *d* used in the computation of effect sizes are presented and described below.

The formula for Cohen's *d* is

$$d = (M_1 - M_2) / SD_P ,$$

where  $M_1$  is the mean score for one group of participants,  $M_2$  is the mean score for the other group, and  $SD_P$  is the pooled standard deviation (average variation of the subgroups) for both groups.

The formula for calculating Cohen's *d* for two independent groups of study participants from means and standard deviations is

$$d = (M_E - M_C) / \sqrt{(SD^2_E + SD^2_C) / 2} ,$$

where  $M_E$  is the mean of the experimental group,  $M_C$  is the mean of the control group,  $SD^2_E$  is the squared standard deviation of the experimental group, and  $SD^2_C$  is the squared standard deviation of the control group.

The formula for calculating Cohen's  $d$  for two independent groups of study participants from means and standard errors is

$$d = (M_E - M_C) / \sqrt{[SE^2_E(N_E) + SE^2_C(N_C)] / 2} ,$$

where  $M_E$  is the mean of the experimental group,  $M_C$  is the mean of the control group,  $SE^2_E$  is the squared standard error of the experimental group,  $SE^2_C$  is the squared standard error of the control group,  $N_E$  is the sample size of the experimental group, and  $N_C$  is the sample size of the control group.

The formula for calculating Cohen's  $d$  for two independent groups of study participants from  $t$  values and degrees of freedom is

$$d = 2t / \sqrt{df} ,$$

where  $t$  is the reported student's  $t$  value from the between group comparison and  $df$  is the degrees of freedom from the  $t$  test.

The formula for calculating Cohen's  $d$  for two independent groups of study participants from chi-square statistics is

$$d = \sqrt{(4\chi^2) / (N - \chi^2)} ,$$

where  $\chi^2$  is the chi-square statistic and  $N$  is the total sample size.

The methods for calculating Cohen's  $d$  for two independent groups of study participants from odds ratios include the probit and the logit methods. The probit and logit methods were used instead of the more conservative arcsine method because the random assignment used in the specific evaluation studies reviewed allowed for the expectation of

normal distribution of the outcomes (Lipsey & Wilson, 2001). More specifically, the probit method was used when the sample sizes for both intervention and control groups were reported, and the logit method was used when specific sample sizes for intervention and control groups were not reported. The probit method includes calculating the difference between two probits to calculate an estimate of Cohen's  $d$ . According to Lipsey and Wilson (2001), "The probit of a proportion,  $p$ , is the  $z$ -value of the standard normal distribution below which  $p$  proportion of the distribution falls" (p. 56). The logit method is based on logged odds ratios and includes dividing the logged odds ratio by 1.83 or multiplying it by .55 to get an estimate of Cohen's  $d$  (Lipsey & Wilson, 2001).

The formulas for calculating Cohen's  $d$  for nonindependent groups of study participants (pretest/posttest) from means and standard deviations is

$$d = (M_2 - M_1) / \sqrt{(SD^2_1 + SD^2_2) / 2} ,$$

where  $M_2$  is the mean posttest score,  $M_1$  is the pretest score,  $SD^2_1$  is the squared standard deviation of the pretest group, and  $SD^2_2$  is the squared standard deviation of the posttest.

Additionally, most programs reported results for a multitude of outcomes that were measured during an evaluation. Providing a total program effect size for every program required calculating average effect sizes for almost every study. To create a total mean program effect size, each of the individual measures and composite outcomes reported in a study was converted into an effect size, and then all of the program effect sizes were averaged.

Though there is no general consensus on interpreting the magnitude of effect sizes (Dunst et al., 2004), Cohen established some guidelines that are useful in reporting the results of this study. According to Cohen's cutoffs (1988), effect sizes of .20, .50, and .80 can be

interpreted as small, medium, and large, respectively. For purposes of the study, the range of .20 to .49 is reported as a small effect; .50 to .79 is a medium effect; and .80 and above is reported as a large effect. In addition to Cohen's standards, the author will refer to effect sizes that were less than the .20 threshold as *very small*.

#### Identifying Relationships Between Effect Sizes and Resource Requirements

To address the third research question and to determine whether the programs requiring the most extensive resources for implementation were also the most effective, additional descriptive analyses were completed. Presumably, schools desiring larger effects from an empirically based program might be willing to allocate greater resources for the program's purchase and implementation.

To identify a pattern of relationships between the magnitude of effect sizes and the resource requirements, the mean SUC, training, staffing, and time were calculated for programs reporting the greatest effects (large effect sizes) and for those reporting the smallest effects (very small effect sizes). The resource requirement means were calculated and reported for the total number of programs that fell into the large and the very small effect size ranges. This analysis was completed using the detailed program and effect size information provided in Appendixes A, B, and C.

## CHAPTER VII

### RESULTS

#### Resource Requirements

Appendix A provides detailed information about the characteristics of the 51 programs included in the study. Appendix B provides in-depth information about the specific resource requirements and the corresponding coding for the sample programs.

#### *Start-Up Costs*

The SUC estimate included any materials and staff training costs required for implementation of the program. The figure was calculated for the minimum program cost for one classroom (25 students) over the duration of one academic year (36 weeks). Appendix B presents the list of programs and Table 1 provides information about the number and percentage of programs that fall into each SUC coding category.

As Table 1 shows, the approximate start-up costs for programs varied significantly. Notably, none of the programs was free, and only 12% of programs had start-up costs between \$0 and \$200. These less expensive programs may be among the only EB interventions that a typical school practitioner can afford to purchase; those in the higher price ranges may be unaffordable to clinicians with few discretionary resources. A total of 60% of the programs cost more than \$1,000 to purchase and may be considered well above the price that most school-based practitioners would consider attainable.

Table 1

Start-up Cost Requirement Results for 49 Programs

SUC Codes	Number of Programs ( <i>n</i> )	%
1 = \$0–200	6	12%
2 = \$201–500	2	4%
3 = \$501–700	5	10%
4 = \$701–1000	6	12%
5 = \$1001–2000	8	16%
6 = \$2001–3000	4	8%
7 = \$3001–5000	12	24%
8 = \$5001–7000	3	6%
9 = \$7001–10,000	0	0%
10 = \$10,001–15,000	0	0%
11 = \$15,001–30,000	0	0%
12 = \$30,001–50,000	2	4%
13 = \$50,001–80,000	1	2%

*Note.* *N* = 49 due to missing data on two programs.  
Percentages not equal to 100 due to rounding.

*Training*

The review of programs included a calculation of the minimum days of staff training required prior to implementing the available EB programs. Appendix B presents the programs in each training requirement category and Table 2 presents the number and percentage of programs in each coding category.

As Table 2 shows, 18% of the programs required no training and 4% required the minimum amount of half a day. These may be among the most attractive programs to school-based professionals who have little time to spare during each workday, especially considering that there may be additional travel time spent to attend some of the training sessions. Also, it is important to consider that some school staff may have little flexibility in determining how and when they use their paid professional development days. Of the 49 programs included in this analysis, 22% required 3 to 8 days of training, which may far

exceed time allotted to school staff by the district and school administration for program implementation training.

*Table 2*

Training Requirement Results for 49 Programs

Training Codes	Number of Programs ( <i>n</i> )	%
0 = 0 days	6	12%
1 = 1/2 day	2	4%
2 = 1 day	5	10%
3 = 2 days	6	12%
4 = 3 days	8	16%
5 = 4 days	4	8%
6 = 5 days	12	24%
7 = 6 days	3	6%
8 = 7 days	0	0%
9 = 8 days	0	0%

*Note.* *N* = 49 due to missing data on two programs. Percentages not equal to 100 due to rounding.

### *Staffing*

Minimum staffing requirements refer to the number and type of school employees and other individuals necessary to facilitate, coordinate, and implement the EB programs. Appendix B lists the specific programs that fall into each category of staffing requirements and Table 3 provides information about the number and percentage in each category.

As expected, none of the programs required no staff for program implementation. Only 8% required a part-time mental health professional, whereas all of the rest required one or two full-time staff members or combinations of classroom teachers, MHPs, and other staff. Schools with overextended staff and no budgets for additional employees may hesitate to implement programs requiring heavy staff commitments.

Table 3

Staffing Requirement Results for 51 Programs

Staffing Codes	Number of Programs ( <i>n</i> )	%
0 = No staff	0	0%
1 = Part-time MHP	4	8%
2 = 1 Full-time MHP	4	8%
3 = 2 Full-time MHP	2	4%
4 = Part-time MHP +	1	2%
5 = 1 MHP +	4	8%
6 = Classroom Teachers	22	43%
7 = Part-time MPH and Classroom Teachers	2	4%
8 = 1 Full-time MHP and Classroom Teachers	8	16%
9 = 1 Full-time MHP or Classroom Teachers	2	4%
10 = All Staff	2	4%

*Note.* Percentages not equal to 100 due to rounding.

*Time*

The minimum time required of staff and students both in school (during normal school hours) and out of school (prior to or after school, over weekends, and summer break) was estimated for the EB programs. Appendix B presents the list of specific programs in each category and Table 4 and Table 5 provide the number and percentage in each coding category for staff/student in-school time and staff/student out-of-school time, respectively.

Only 11% of the programs required no staff time during school, and 37% required a minimum of 1 to 10 hours, which may still fall into a feasible range over the course of one year. Close to 20% required 41 to 150+ hours of in-school staff time for actual program implementation, which may be well out of the range of what schools consider possible. In regards to out-of-school time, 73% of the programs required no staff time and 14% required only 1 to 15 hours. These seem like more realistic requirements; schools may have a difficult time getting staff support for programs that require them to work any more than this during

Table 4

Staff and Student In-school Time Requirements for 57 Programs

Time Codes	Staff Number of Programs ( <i>n</i> )	Staff %	Student Number of Programs ( <i>n</i> )	Student %
0 = none	6	11%	6	11%
1 = 1–5 hours	4	7%	4	7%
2 = 6–10 hours	17	30%	18	32%
3 = 11–15 hours	5	9%	5	9%
4 = 16–20 hours	4	7%	4	7%
5 = 21–30 hours	5	9%	5	9%
6 = 31–40 hours	6	11%	5	9%
7 = 41–60 hours	4	7%	4	7%
8 = 61–80 hours	1	2%	1	2%
9 = 81–100 hours	0	0%	0	0%
10 = 101 -200 hours	1	2%	1	2%
11 = Some time	0	0%	0	0%
12 = Ongoing	4	7%	4	7%

*Note.* *N* = 57 due to programs targeting more than one age range (e.g., both elementary and middle schools) and having differing staff time requirements for each. Percentages not equal to 100 due to rounding.

Table 5

Staff and Student Out-of-school Time Requirements for 51 Programs

Time Codes	Staff Number of Programs ( <i>n</i> )	Staff %	Student Number of Programs ( <i>n</i> )	Student %
0 = none	37	73%	36	71%
1 = 1–5 hours	2	4%	2	2%
2 = 6–10 hours	3	6%	1	2%
3 = 11–15 hours	2	4%	1	2%
4 = 16–20 hours	0	0%	1	2%
5 = 21–30 hours	3	6%	2	4%
6 = 31–40 hours	0	0%	0	0%
7 = 41–60 hours	0	0%	0	0%
8 = 61–80 hours	0	0%	0	0%
9 = 81–100 hours	0	0%	0	0%
10 = 101 -200 hours	0	0%	2	4%
11 = Some time	4	8%	5	10%
12 = Ongoing	0	0%	1	2%

*Note.* Percentages not equal to 100 due to rounding.

what is typically considered their time off. As expected, the time requirements for students to participate in the programs are very similar to staff requirements.

### Effect Sizes

Effect sizes (or information that could be converted into effect sizes) were located and calculated for 67% of the programs. Appendix C provides detailed information about the specific program effect sizes, references for the published evaluations reviewed, and sample sizes for each study. Table 6 summarizes the effect size findings.

Effect size data were not available for 33% of the programs. Of those for which information was available (the valid percentage), more than 40% of the programs had a very small effect ( $< .20$ ) according to the corresponding evaluation studies reviewed. Conversion calculations also found that 30% of the program evaluations reported small effect sizes, falling within the range of  $.20$  to  $.49$ . Additionally, 15% of the programs reported medium effect sizes and 15% reported large effects, as the power was between  $.50$  and  $.79$  or equal to or greater than  $.80$ , respectively.

Of the 33% of the sample programs with insufficient effect size data, 22% did not provide enough information in a minimum of two reviewed evaluation studies to calculate effect sizes. In many of these cases intervention results were reported in percentages of change, or a general summary of results was described in the text without including corresponding data that could be converted into an effect size. Similarly, literature searches revealed no evaluation studies for 8% of the 51 programs, and only an evaluation that reported a negative effect size could be located for 6% of the programs.

Table 6

Effect Size Results for 51 Programs

ES Range	Number of Programs ( <i>n</i> )	Percent	Valid Percent
0—.09	5	10%	15%
.10—.19	9	18%	26%
.20—.29	5	10%	15%
.30—.39	4	8%	12%
.40—.49	1	2%	3%
.50—.59	3	6%	9%
.60—.69	2	4%	6%
.70—.79	0	0%	0%
.80—.89	2	4%	6%
.90—.99	1	2%	3%
1.0 +	2	4%	6%
Missing/insufficient data	17	33%	

*Note.* Programs reporting a negative effect size and for which no other evaluation publications could be located are included in the missing/insufficient data category. Programs reporting a negative effect size and for which another evaluation publication could be located are represented in the table according to the second evaluation study. Percentages not equal to 100 due to rounding. Valid percent column indicates the percentage of studies for which information was available (34).

### Relationships Between Effect Sizes and Resource Requirements

To identify a pattern of relationships between the magnitude of effect sizes and resource requirements, the mean SUC, training, staff, and time requirements were calculated for programs reporting the most extreme effects (large and very small effect sizes). The large ( $n = 5$ ) and very small ( $n = 14$ ) intervention effect programs were chosen for this analysis because they should most clearly demonstrate the expected relationship—that more effective programs require more substantial resources and less effective programs require fewer resources for implementation. These calculations were based on the detailed information provided in Appendixes A, B, and C and the results are presented in Table 7.

Table 7

Relationship Between Effect Sizes and Mean Resource Requirements

Resource	Mean for Programs with Large Effect Size ( $n = 5$ )	Mean for Programs with Very Small Effect Size ( $n = 14$ )	Mean for Programs with Very Small Effect Size Without Outliers
SUC	\$490.20	\$4987.50	\$2332.65
Training	1.25 days	2.07 days	NA
Staffing	1.1 individuals	3.07 individuals	1.26 individuals
Staff In-School Time	21.2 hours	24.25 hours	14.57 hours
Staff Out-of-School Time	1.2 hours	3.29 hours	NA

*Note.* Large effect sizes are equal to or greater than .80. Very small effect sizes are smaller than .20. NA is “not applicable”; there were no outliers for this resource.

The mean SUC for the five programs with evaluations reporting large effect sizes was \$490.20, with a range of \$30 to \$1,039.99. For programs reporting a very small effect size, the mean SUC was \$4,987.50, with a range of \$150 to \$39,500. It is important to note that the program reporting a SUC of \$39,500 may function as an outlier in calculating this mean SUC for programs reporting very small effects. Consequently, if we remove that program from the analysis, the average SUC for the 14 programs with very small effects was \$2,332.65, with a range of \$150 to \$5,495. Even with the outlier removed, however, these figures remain well above the mean SUC and range for the programs reporting large effect sizes.

The mean number of training days required for program implementation for the five sample EB programs reporting large effects was 1.25 days, with a range of 0 to 4 days. Note that one of the programs in this category was missing information about training requirements and therefore was excluded from analysis. The average training requirement for the 14 programs reporting very small effect sizes was 2.07 days, with a range of 0 to 5 minimum training days required.

To provide a mean staff requirement for programs, the number of individuals considered necessary to implement programs for one classroom over the course of one academic year was counted without regard for position (MHP, classroom teachers, nurse, mentors, etc.). The mean number of school staff or individuals required to implement EB programs reporting a large effect size was 1.1, with a range of 0.5 to 2 people required. The mean number of individuals essential to implementation of programs with very small effects was 3.07, with a range of 0.5 to 26.5 individuals. The program in this category that requires a mentor for every student requires 26.5 individuals for program implementation functions; this is an outlier and may skew the mean. The mean staff requirement, after excluding this program, was 1.26, with a range of 0.5 to 2 staff or individuals, which is still above (but similar to) the average staff requirement for programs reporting large effects.

The mean time required of staff during school hours to implement a program reporting large effects over the course of one academic year was 21.2 hours, with a range of 0 to 50 hours, compared to 24.25 hours and a range of 0 to 150 hours for programs with very small effects. Because the program requiring 150 hours is the most extensive of all the EB sample programs and functions as an outlier, it was removed from analysis. Without that program, the mean in-school time required of staff for programs with very small effects was 14.57 hours, with a range of 0 to 27 hours.

The average out-of-school time required of staff for implementing programs reporting large effect sizes was 1.2 hours, with a range of 0 to 6 hours. The mean out-of-school time needed to start programs with very small effect sizes was 3.29 hours, with a range of 0 to 24 hours. Note that two of the programs reporting very small effects required an unspecified amount of out-of-school time (coded as “some time”) from staff and were excluded from

analysis. Also, student time requirements were almost identical to time requirements for staff and therefore are not presented in Table 7.

Only two programs reporting large effect sizes required relatively few resources (across those measured in the study) to implement in schools. For the Children of Divorce program, the SUC and training, staffing, and time requirements were all below the relatively low means for programs reporting large effect sizes. Distinctively, the Children of Divorce program, which had a large intervention effect (.84), costs \$30 to start, requires no training, needs only one MHP, and requires only 7.5 hours of in-school staff time (no out-of-school staff time) to implement. The Parenting Wisely program was close; only the SUC and the staff out-of-school time requirements exceeded the mean for the large effect size programs (by approximately \$150 and 5 hours, respectively). Otherwise, Parenting Wisely was also relatively inexpensive, requiring \$659, no training, one part-time MHP, and less than 1 hour of in-school staff time and 6 hours of out-of-school staff time to implement. These were the only sample programs with large effects that required comparatively minimal school resources for implementation.

Conversely, there are several programs that required more extensive resources in several if not all of the categories reviewed in this study. Some of the programs that necessitated higher resources from schools were also those that reported the lowest effect sizes. For example, the Early Risers Skills for Success program reported a very small effect size (.04) but also requires almost \$40,000, 5 days of training, one MHP and classroom teachers, and 150 hours of in-school staff time and 24 hours of out-of-school staff time to implement.

## CHAPTER VIII

### DISCUSSION

This study examined the characteristics of 51 EB programs to determine why, despite poor student outcomes and ongoing calls for empirically based practice, EBP still is not prevalent in schools. In EBP, practitioners are required to thoroughly review evidence prior to intervening with clients. This study addressed three research questions concerning this task of carefully comparing EB programs and their respective resource requirements, their effects on student outcomes, and the relationships between required resources and effect size. Findings and implications for each are discussed in detail below.

#### Resource Requirements

Study findings related to the first research question suggest that resource requirements are extensive for the majority of the EB programs in the sample. The resource requirements may function as barriers to EB program adoption in schools because the finances, training, staffing, and time required to implement most of them in schools are sizeable. More specifically, none of the programs were free, and the majority of the programs (54%) initially cost between \$1,001 and \$10,000 to implement for just one classroom of students.

Additionally, the majority of the programs (56%) included in the study required 1 to 2 days of training, and another 22% required 3 to 8 training days. These requirements would make EBPs out of reach in school districts facing budgetary difficulties or in schools where

teachers and mental health staff have no discretionary funds and little discretionary time for new activities. Also, more than 60% of programs require teachers or full-time MHPs to implement and facilitate the programs, and 27% require more than 30 hours of in-school staff and student time over the course of one academic year. For staff members who already feel stretched by all that they must accomplish each school day, implementing these programs during so many in-school hours may seem impractical. Adding to the issue of time and staffing requirements is the increased pressure on both teachers and students to focus on academics to improve annual test scores (Protheroe et al., 2003). Thus, allotting time and resources to many of the socially and behaviorally focused EB programs may not be the top priority for many schools.

Because of a lack of published evidence about scientific cutoffs for resource availability and feasibility in schools, preliminary results from a recent study addressing these issues are briefly described here. A small, qualitative pilot study was completed in November 2004 by N. K. Bowen, G. L. Shaffer, and J. D. Powers to increase understanding about what resource requirements for EBPs might be feasible for school practitioners. The study involved two focus groups with a purposive sample of school social workers, counselors, and psychologists ( $N = 12$ ) from an urban school district in North Carolina. Participants were identified by a school social work administrator in the district who had ties to one of the researchers.

The mental health practitioners participating in the study indicated that they had no discretionary money (\$0) with which to purchase intervention materials to use with students. Findings also suggested that the practitioners had very little time in which to implement new or additional services and interventions. In general, the sample population was interested in

learning more about existing EB programs but felt that the resource requirements would prohibit the utilization of such tools at their schools unless the EB program was supported at the district level. For practitioners like those involved in the study, therefore, the \$1,000+ start-up cost and 30 hours of in-school time required for many of the programs would represent a barrier to the use of EBPs.

### Effect Sizes

There were many unexpected findings related to the second research question, which addressed program effect sizes. Overall, findings did not suggest that the 51 endorsed EB programs are highly effective in promoting improved student outcomes. In the case of the majority of the programs for which adequate data were located (71%), the most readily available evaluation literature reported a very small or small effect size. Although some social science researchers describe a small effect size (.20) as a reasonable effect with practical significance (Dunst et al., 2004), it was assumed that the publicized “model programs” under review would have evaluation publications reporting larger effects.

To the extent that effect size information is available to practitioners, low effect sizes may also function as obstacles to EBP because they provide schools with good reason to hesitate in implementing EB programs. School administrators and staff may be less inclined to allocate resources for programs showing little effectiveness with students. In this study, surprisingly, programs with larger effects were shown to require fewer resources than programs with very small effects. With the reality of resource constraints, school leaders will be reluctant to commit resources to low-impact interventions. Additionally, EB programs with smaller effects may not be effective enough to reverse major threats to school success, such as the academic achievement gap and school violence.

## Relationship Between Effect Sizes and Resource Requirements

Attempting to determine whether a relationship exists between the effectiveness of EB programs and the magnitude of resources required, through simple calculations of the range and mean resources for programs, provided unexpected results. Analyses addressing the third research question did not identify any pattern showing that the most effective programs (based on one evaluation study) require more resources. On the contrary, the study found higher resource requirements for programs with the smallest effect sizes.

For example, the mean SUC for programs reporting very small effect sizes was thousands of dollars more than the average SUC for programs reporting a large effect size. The same was true for the training, staffing, and time analyses. For each category of resources, the EB programs reporting much less power required more substantial resources to implement and sustain. The only case that varied from this pattern resulted from removal of a potential outlier in the initial analysis of the mean in-school staff time requirement, which resulted in a lower mean for the programs with very small effect sizes. All other analyses (both initial analysis and after excluding outliers) found that the less effective programs demand more resources.

Though it is a positive finding that programs reporting the largest effects required fewer resources than those reporting lower effects, options for practitioners seeking programs that combine the best effect sizes and the smallest resource requirements appear to be very limited. There were only two programs that reported large effect sizes and required relatively few resources (across those measured in the study) to implement in schools. This is the type of program that should be replicated. By devoting research to examining in depth the characteristics of these two programs, to determine why they work so effectively and

efficiently, it should be possible to duplicate sustainable programs that are successful, that are inexpensive in terms of the resources required, and that focus on alternative target outcomes for students. These efforts would surely increase the feasibility of EBP in schools.

### Research Process

Many aspects of the research process itself add significantly to the overall study findings. The premise of the study was to uncover aspects of EB programs that might inhibit their use by schools, based on information from sources to which practitioners would have access. However, locating basic information about many of the programs that are highly recommended as effective for schools was much more difficult than anticipated. For instance, basic resource requirement information for each program typically was not provided by the original source that recommended the program as evidence based. Piecing together specific information, such as the program training and the cost of materials, often required substantial searching and a review of literature from multiple sources. On several occasions it was necessary to contact the program developers for more specific information about program requirements because these details were so difficult to ascertain from published literature or from online sources. An important exception, however, was the SAMHSA (2004) Web site. Of all the sources reviewed, this site provided the most complete information about EBPs and was a most useful starting point for many of the programs included in this study.

Similar to the trouble in locating information about the resource requirements was the level of difficulty in finding and calculating effect sizes for programs. It was assumed that this information would be readily available for each of the programs, given that they are being so highly recommended based on empirical evidence of successful student outcomes. Nonetheless, almost none of the sources promoting the use of these interventions provided

specific effect size information. In the case of many of the programs, it was difficult to even find a reference for an evaluation study, let alone any easily accessible information about effect sizes or adequate data about the findings from previous intervention evaluations.

When outcome data were found for programs, the results most often reported statistics other than effect sizes. The time and effort spent in converting the many varying statistics into effect sizes that could be more easily compared was quite sizable.

Unfortunately, even after evaluations of some programs were finally located, the publications did not provide adequate data to calculate an effect size.

Thus, both the answers to the research questions and the experience of conducting the research itself yielded important observations about barriers to EBP. Some of the study findings were less than encouraging, but EBP remains a promising practice strategy that will require changes before it becomes common in schools. One barrier that must be addressed is the potentially unethical recommendation of programs as “model” or “evidence based” in spite of very small effect sizes. School staff may trust respected sources, such as those reviewed in this study, to identify interventions that have proven to positively impact students. Many clinicians have not been trained in the research methods required to judge for themselves how effective programs are based on published empirical studies. Hence, it seems misleading to suggest to a school with limited funding, time, and staff that a program showing very small effects is worth the investment of extensive resources.

A suggestion for reducing this barrier is to establish one set of criteria that programs must meet in order to be considered an EBP. A uniform definition of what constitutes EBP and a clear set of standards would enable researchers and practitioners alike to better identify interventions that are more effective than others.

A lack of information about resource requirements and the effectiveness of EB programs also represents a major barrier to their use in schools. It is not practical to expect that school clinicians have the time or the access to search peer-reviewed journals and other data sources that are primarily available to researchers and academics. As long as basic information about EB programs remains unavailable and inaccessible to practitioners, EBP will not materialize in most schools.

To combat this problem, complete details about EB programs, including resource requirements and effectiveness, must be made available to practitioners in a concise format (perhaps in the form of a standardized list that is agreed upon by researchers, journal editors, etc.). The characteristics examined in this study are a good starting point for the list of resource requirements to report. Additionally, effectiveness should be translated and reported in a uniform manner that is understandable to clinicians, rather than reporting data in varying complex statistical formats that may not be meaningful. Providing this information on the Internet may be the most effective method for transferring vital information about EBP to practitioners.

### Limitations

There were several limitations of the study that should be noted. These include the dynamic nature of the unit of analysis, the descriptive scope of the analyses, the lack of comparable information across studies, the reliance on information presently available to practitioners, and the absence of scientific cutoffs about the feasibility of schools to implement EB programs. Each of these is addressed in further detail below.

Unquestionably, the dynamic nature of the unit of analysis is a limitation. Many of the EB programs included in the review might have new and ongoing evaluations that were

published after the data collection dates for this study or that will be published in the near future. Certainly these new evaluations and publications could report altered program requirements, such as more cost-efficient trainings and curriculum, as well as differing effect size information about the efficacy of the program.

Second, addressing the extent of resources required and the use of only one evaluation study for each program for effect size data restricted analyses to being descriptive in nature. It is imperative to note that intervention effectiveness and program effect sizes in this study should be interpreted with caution. For instance, some studies did not include specific sample sizes, which forced utilization of a less precise formula for calculating effect sizes. Therefore, the effects reported in this study should be interpreted as only an estimate of the true intervention effect sizes. Similarly, by providing a report of effect sizes based on only one evaluation study for each of the programs, the study provides only a glimpse into what the outcomes and intervention effects may actually be. Moreover, the utilization of such specific literature searches to locate program effect size information incorporates publication bias into the study.

Third, the lack of comparable information across studies limited the sophistication of analyses. The inability to locate adequate effect size information for 33% of the 51 sample programs limits the capacity to contrast program effectiveness among the sample. Similarly, many of the programs did not have recent evaluation publications. In the case of four of the sample programs, the latest evaluation publications located were from the 1970s and 1980s. Comparisons between programs' resource requirements and their effect sizes would have been strengthened had the information about these factors been more readily available, and

stronger analysis methods may have been possible. This limitation in the current study also represents an important finding of the study, related to the barriers to EBP use in schools.

Fourth, the reliance on information that is available to practitioners is also a study limitation. Locating the sample programs by utilizing only resources to which practitioners would have access risked excluding other programs that could potentially be included in the study and limits the generalizability of findings. It should be noted that methods for gathering program effect size information included using databases available through a major university, which a typical practitioner is unlikely to access. Indeed, employing this data source resulted from the deductive finding that effect size results were not systematically reported by the sources available to clinicians that originally recommended programs as evidence based.

Finally, the study is open to the criticism that it does not systematically examine resources that schools do have available for implementing EBPs. A literature review yielded no scientific cutoffs related to implementation feasibility or the typical resource constraints faced by school practitioners. It was beyond the scope of this study to determine what resources, such as time and money, may currently be feasible for schools. The unpublished information gleaned from the previously described qualitative focus groups is preliminary, and further investigation and research in this area is desperately needed.

#### Implications for Practice and Research

By identifying factors that restrict the implementation of empirically based programs, we gain insight into and a deeper understanding of why schools may not be currently utilizing the EBPs that can best support students who remain at risk for school failure and other negative outcomes. Overall, in spite of the challenges and barriers identified in

previous work and in the current study, EBP is still a viable option for schools and is worth pursuing. The responsibility of addressing the identified barriers rests on the shoulders of both practitioners and researchers, and the results of these efforts are critical to better empowering schools to adopt EBP.

### *Implications for Practice*

Prior to the study, some information was already known about barriers to EBP in schools. Other studies have discussed how making EBP a reality for practitioners remains a “major challenge” (Nutley & Davies, 2000, p. 317). Sadly, “the average school practitioner has never heard a word about it nor been trained in the evidence-based practices that exist” (Franklin & Hopson, 2004, p. 68). A lack of training in effective EBP implementation appears to compound the problem. A recent study by Ennett et al. (2003) revealed that even with EBP materials and curriculum, school practitioners were using ineffective delivery techniques.

Better promotion of EBP in graduate education and internship opportunities for future school practitioners would increase comfort with research-supported models of intervention (Kratochwill & Shernoff, 2004). Additionally, offering training opportunities to postgraduate professionals that provide critical information about EBP in meaningful and useful ways, would certainly encourage school-based clinicians to begin practicing from an EB perspective and may begin to reduce the divide between research and practice (Gambrill, 2001; Howard et al., 2003).

The current study contributes new information to the study of why EBP in schools is a challenge, but there are a number of additional, substantial barriers to the increased use of EBP in schools beyond the previously identified exposure and training issues. Some of the

most basic assumptions of EBP are called into question—for instance, that EB programs are effective and that, if identified by practitioners, they can be implemented in schools. Certainly the fact that literature about EB programs and the related effect size materials are difficult to obtain and severely lack detail contributes to the problem. This barrier reinforces the unrealistic assumption implicit in the concept of EBP: that all practitioners have access to current information about best practices. The present study reveals a deficit of information even about programs being touted as the most effective.

One critical next step in better promotion of EBP in schools is to ensure that information about commercially available EB programs, about the extent of resources they require, and about their documented effectiveness is more easily accessible. This would allow practitioners to be informed consumers of EB programs, as is dictated by models of evidence-based practice. More thorough suggestions about how this may be accomplished are discussed below.

### *Implications for Research*

This paper highlights many implications for research. One implication is the need to identify potential barriers to and the feasibility of implementing EBP in schools, through interviews with school practitioners. There is a dearth of research using school practitioners as direct informants. Studies are needed to better understand the constraints on adopting EBP in school settings from the perspective of current practitioners and administrators.

Further exploration also is needed to increase knowledge about the most successful student interventions (Fortune & Proctor, 2001). Creating new EBP interventions with increased levels of effectiveness and reduced resource requirements, or altering existing programs into more effective, affordable, and easy-to-implement strategies will be critical to

gaining support from schools for utilizing EBP. After appropriately identifying student needs and school resource feasibility, researchers can begin to better design empirically supported interventions.

Another key step to increasing best practices includes identifying who most needs to know more about EBP in schools. Given that so many of the available EBPs require substantial financial, staff, and time resources for implementation, it stands to reason that it is important to target promotional materials about EBP toward administrators such as superintendents and school principals who make decisions about discretionary spending and resource allocations. This suggestion is supported by the preliminary findings of the focus groups, in which participants identified the need for district-level support of EB programs to increase feasibility. More research is needed to better identify the most important marketing targets throughout the hierarchy of school systems to increase the use of best practices.

Identifying how to get EBP information to school staff—and determining which vehicle is the most efficient for relaying this knowledge from researchers to practitioners is also critical (Proctor, 2001). Making it easier to locate multiple pieces of EB program information is salient because school personnel may not have the luxury of spending a great deal of time tracking down information from several resources. Web-based information is a positive phenomenon that represents a way to make the right information available to practitioners. Creating a dynamic Web site that is updated as new programs and materials become available and that offers thorough details about EB programs, including all resource requirements and effect sizes, would be ideal. Providing all the necessary information in one convenient and accessible place may assist school staff making difficult decisions about

empirically supported interventions. At least two such online databases are under construction at the University of North Carolina, School of Social Work.

In addition, a one-stop, full-information source about EBP could address statistical issues that were a limitation in the present study. These issues could be addressed, for instance, by conducting a meta-analysis of each program prior to labeling it as EBP and by reporting these results along with other program details online. Including larger effects from meta-analyses in the criteria for programs to be considered an example of EBP would support a more consistent standard for “model programs.” Though this represents a significant investment of time and labor, it would drastically reduce the problem of programs being recommended to schools as effective without good evidence to support those claims. Finally, providing meta-analyses information to practitioners in a meaningful way would assist school staff in making informed decisions about the best use of their resources when considering an EB program.

Correspondingly, another important step in increasing best practices in schools is to consider promising practices in relation to the feasibility issues. The fact that so many EB programs have high resource costs and show lower data effects, and that so few effective programs have reasonable resource requirements, may indicate the need for further information about and dissemination of promising practices. Promising practices, as defined by the Elementary School Success Profile (ESSP) (2005) Web site, “include tips, practice strategies, and programs that have some evidence of successful results, but not to the extent that the evidence-based programs do.”

Typically, promising practices are less expensive and easier to implement than the more comprehensive EB programs. Guidelines and suggestions about simple strategies that

have some level of proven effectiveness and that are less taxing on limited school resources may prove to be much more useful than providing only information about extensive EB programs. Having a Web site that is free to practitioners and that provides a combination of information about promising practices in addition to EB programs would be helpful in meeting the intervention needs of schools with varying student risks and resource allocations.

The ESSP (2005) Web site is in the early stages of development but currently provides information about EBPs and promising practices to clients at schools that have used the ESSP assessment tool. The ESSP is an ecological assessment tool for third through fifth grade students that is based on the School Success Profile (SSP) developed by G. L. Bowen and J. M. Richman (Bowen, Richman, & Bowen, 2002). The ESSP has undergone rigorous development procedures and has good psychometric properties (Bowen, N. K., submitted; Bowen, N. K., Bowen, G. L., & Woolley, 2004). Further developing the ESSP Web site, making it available to all practitioners, and ensuring that the EBP and promising practice information is consistently updated would make it an invaluable resource for school staff and may further promote best practices in schools.

Some of the study findings indicate an ongoing need for substantial efforts to make EBP a reality in schools. Other findings were more positive. One of the inspiring findings of the study is the volume of programs that are showing some level of effectiveness in helping schools promote student success. The effect levels were not as high as expected, but these programs represent a starting point on which to build. The study also revealed that a substantial amount of research effort is being devoted to the design, testing, and dissemination of EBPs that can be used to positively influence children who are at risk for school failure and other negative outcomes.

Though this study illustrates many implications for practitioners and researchers alike regarding what is needed to make EBP in schools a reality, it also highlights the fact that there is a call for empirical interventions in schools, that there are programs available, and that there is a movement in the field to actively support school practitioners in their efforts to adopt EBP. Though we have not yet attained routine EBP in schools and much remains to be done before EB practice is commonplace, important first steps have been taken and critical next steps have been outlined. More effective programs, better availability of information, and new approaches to funding and marketing all are needed. In light of the alternatives—to base practice on authority or on untested procedures—and given the continued high rates of school failure and other negative student outcomes, EB approaches are worth pursuing.

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APPENDIX A: GROUP ORIENTED AND EVIDENCE-BASED SCHOOL PROGRAMS

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source <sup>1</sup>	Delivery time
Across Ages	Program that uses an inter-generational focus to reduce ATOD	Mentoring, community service, social competence training, and family activities	ATOD <sup>2</sup> , social emotional competence	Decrease in SU and increase in prosocial values	Selective 9-13yrs	\$2,000 2 days of training, \$75 manual, \$25 workbooks for student, aren't, elder,, \$65 training guide for elder, \$25 video  <i>SUC<sup>3</sup>: \$4350 Training: 2 days Staff: 1 full time Coordinator MHP, 1 half time staff, and mentors Time: Staff IS- 17 hrs for lessons Staff OS- 8 hrs training mentors Student IS- 17 hrs Student OS- 108 hrs</i>	Andrea Taylor, Ph.D.	SAMHSA P&T, 2002 CSAP	1-3 yrs
Al's Pals	Prevention curricula and teacher training. 46 lessons delivered 10-15 min. 2x week	Teacher and parent training, in/after school curricula	ATOD, social competence, behavior, violence	Increased pos. behavior and coping skills, decrease antisocial behavior	Universal 3-8 yrs	\$595 curricula \$250 booster sessions -\$250 per person two-day training (required for every teacher and assistant) <i>SUC: \$1095 Training: 2 days Staff: CTs Time: Staff IS- 7.6 hrs Staff OS- none Student IS- 7.6 hrs Student OS- none</i>	Susan Geller, M.S.	SAMHSA CTC	5-24 weeks

<sup>1</sup> Source references are provided at the end of the document.

<sup>2</sup> Acronyms used in the table are described at the end of the document.

<sup>3</sup> Descriptive information about what the italicized resource requirements include is provided at the end of the document.

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
All Stars	Delay onset/prevent high risk behavior through multi-year program Parents participate	Weekly in school curricula for students(group discussions, games, videos, activities), and parent-child homework interaction	ATOD, violence, sexual activity	Decrease in SU, delayed SA, increased communication with parents and parental supervision	Universal /selective 11-14 yrs	\$3000 two-day training Materials: \$165 for facilitator, \$150 for 25 youth.  <i>SUC: \$3315 Training: 2 days Staff: CTs or MHP Time: Staff IS- 9.75 hrs Staff OS-none Student IS- 9.75 hrs Student OS-none</i>	William Hansen, Ph.D.	SAMHSA CSAP	1-3 years  *Spanish
Anger Coping Program	Intervention focuses on the cognitive distortions and cognitive deficiencies often found in aggressive children. Additional goal-setting and teacher consultation components available	1 45-60 min session per/wk over 12 weeks. The lessons promote self-instruction and awareness, and builds social cognitive skills.	ATOD, conduct problems, delinquency	Decrease in aggressive and disruptive behavior	Indicated Boys, 11-14 yrs	-\$1500-3000 for a 1-2 day training (required) \$ 29.95 materials and curricula  <i>SUC:\$1529 Training: 1 day min. Staff: MHP Time: 45 min. wk Staff IS- 9 hrs Staff OS- none Student IS- 9 hrs Student OS- none</i>	J. Lochman. Ph.D.	Handbook, 2004 P&T, 2001 Child Trends CTC	12-18 weeks

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
ATLAS	Prevention program for male athletes. 10 45-min. sessions	Coach facilitated, peer led curricula & activities in small groups	Steroids and ATOD	Decrease in SU and high risk behavior, improved nutrition and exercise	Selective 13-19 yrs male athletes	\$1000-1500 for training \$105.95 for instructor guide \$89.95 squad leader guides \$3.30 for each set of student materials  <i>SUC: \$1172.45 Training: 1 day Staff: Coach and 1 leader Time: Staff IS-none Staff OS- 7.5 hrs Student IS-none Student OS-7.5 hrs</i>	Linn Goldberg, MD Diane Elliot, MD	SAMHSA CSAP NIDA 2003 S,D,DFS, CTC	5-24 weeks
Child Development Project or Caring School Community Program	Designed to build literacy and school community	In-school curricula, parent/child interaction, peer support, skill development, literacy components	Academic achievement, social/emotional competence	Decreased SU, high risk behaviors, increase academic motivation	Universal 5-14 yrs	\$4000 for 2-day training \$60 per teacher for classroom materials \$500 misc. materials  <i>SUC: \$4560 Training: 2 days Staff: CTs Time: Staff IS- 57 hrs+ Staff OS-none Student IS- 57 hrs+ Student OS- some</i>	Eric Schapps, Ph.D.	SAMHSA P&T, 2002 CSAP P&T, 2001 Child Trends 2001	1-3 years



Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Coca-cola Valued Youth Program	School-based program that uses cross-age tutoring to encourage students to stay in school. At-risk students become tutors.	Student recognition of accomplishments and parent involvement are additional components of the program.	School-drop-out, AA	Increased reading and decreased drop-outs.	Indicated 5-11	\$250 per student Teacher coordinator required.  <i>SUC: \$6250</i> <i>Training:</i> <sup>4</sup> <i>Staff: MHP</i> <i>Time:</i> <i>Staff IS- 36 hrs</i> <i>Staff OS-none</i> <i>Student IS-180 hrs</i> <i>Student O- none</i>	Intercultural Development Research Association	P&T, 2002	1yr +
06 Early Risers: Skills for Success	Program that targets children at high risk of developing conduct problems. CORE and FLEX components.	Adult mentoring, activities, behavior modification, in-home services, parent training, peer leadership, counseling, summer school program	Academic achievement, behavior, s/e competence	Improvement in academic achievement, increased social skills, decreased behavior problems,	Indicated 6-12 yrs	\$2000 5-day training for coordinators. 1 advocate for every 25 families. *\$1500-3200 per youth for summer school program  <i>SUC: \$39,500</i> <i>Training: 5 days</i> <i>Staff: MHP and CTs</i> <i>Time:</i> <i>Staff IS-150+</i> <i>Staff OS-24 hrs</i> <i>Student IS-none</i> <i>Student OS-168 hrs</i>	Dr.s Gerald August, George Realmuto, Michael Bloomquist	SAMHSA CSAP NIDA CTC	2-3 yrs

<sup>4</sup> Highlighted text shows missing resource requirement information.

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Families and Schools Together (FAST)	Multifamily group intervention designed to increase family-school bonds and community	Parent outreach, family group sessions, and monthly reunions	A/A, school failure, ATOD	Decreased aggression, anxiety, family conflict. Increased academic competence, communication between parent/child.	Universal, selective, indicated 5-14 yrs	\$3900 for training the FAST team, \$1200 per family for 2 yrs ½ time coordinator, plus group leaders, \$36000-45000 for 24-30 families  <i>SUC: \$33,900</i> <i>Training: 2 days</i> <i>Staff: ½ time MHP, plus group leaders,</i> <i>Time:</i> <i>Staff IS- none</i> <i>Staff OS-24+</i> <i>Student IS -none</i> <i>Student OS- 24+</i>	Lynn McDonald, Ph.D.	SAMHSA	1-3 yrs
First Steps to Success	Program that catches students early and trains teachers and parents how to modify negative behaviors	3 components: Universal screening of kindergartners, school intervention + 6 week home intervention	Antisocial behavior	Decreased aggression, increase in adaptive behavior and academic engagement	Universal screening, selective intervention 5-6 yrs	\$145 Starter kit \$40 parent kit  <i>SUC: \$185</i> <i>Training:</i> <i>Staff: MHP and CTs</i> <i>Time:</i> <i>Staff IS- 50 hrs for MHP, ongoing behavior mod for CTs</i> <i>Staff OS- none</i> <i>Student IS-ongoing</i> <i>Student OS-ongoing</i>	Dr. Hill Walker	P&T, 2001 CTC	2 months

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Friends for Children	10 sessions plus booster sessions that are taught by classroom teachers and focus on self-esteem, prob solving, and pos. peer relationships	Taught in one grade each year. Has optional parent evening component to involve families	Anxiety and depression	Decreased anxiety disorder	Universal 10-12	\$260 1day group training per teacher Teacher manual-\$45 Each student manual-\$15  <i>SUC: \$680 Training: 1 day Staff: CTs Time: Staff IS- 10 hrs Staff OS- none Student IS- 10 hrs Student OS- none</i>	Dr. Barrett	Handbook, 2004	1 yr per class of students
Friends for Youth	10 sessions plus booster sessions that are taught by classroom teachers and focus on self-esteem, prob solving, and pos. peer relationships	Taught in one grade each year. Has optional parent evening component to involve families	Anxiety and depression	Decreased anxiety disorder	Universal 15-16 yrs	\$260 1 day group training per teacher Teacher manual-\$45 Each student manual-\$15  <i>SUC: \$680 Training: 1 day Staff: CTs Time: Staff IS- 10 hrs Staff OS- none Student IS- 10 hrs Student OS- none</i>	Dr. Barrett, Cynthia Turner, Hayly Webster	Handbook, 2004	1 yr per class of students
Good Behavior Game	Behavior management model	Uses a board game to establish two classroom teams. Students compete against each other for good behavior and rewards.	Disruptive, inattentive, or aggressive behavior	Reduces observable symptoms of ADHD and ODD/CD	Universal 5-12 yrs	\$149 for each classroom <i>SUC: \$149 Training: none Staff: CTs Time: Staff IS- ongoing Staff OS- none Student IS- ongoing Student OS- none</i>	Dr. Barrish, Saunders and Wolf	Handbook, 2004 P&T, 2001	1 yr (ongoing)

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Growing Healthy	Comprehensive health education curriculum. Helps children develop and practice healthy life skills	Premise: if children understand how their bodies work, they will be more likely to establish healthy habits. Activities include small groups, role play, and dissection.	Health-related habits	Increased improvement on all health knowledge, attitude, and practice measures	Universal Grades 4-7	\$174.95 Curricula for one grade (and 1 class) \$56.95 teaching materials \$120 1 day training per teacher  SUC: \$351.90 Training: 1 day Staff: CTs Time: <i>Staff IS- 21 hrs</i> <i>Staff OS- none</i> <i>Student IS- 21 hrs</i> <i>Student OS- none</i>	American Cancer Society, American Lung Association, American Heart Association	P&T, 2002	4 yrs
Can Problem Solve (formerly Interpersonal Cognitive Problem Solving)	Program to assist children in learning non-violent methods to resolve conflicts	Curriculum that includes 77-83 lessons. Includes games, stories, puppets, and role play. Parent intervention also available	Violence and aggression	Increased positive and prosocial behavior, and problem-solving skills	Universal/selective 4-12 yrs	\$39.99 per book 1 – 2day training required (\$1000 per day)  <i>SUC: \$1039.99</i> <i>Training: 1 day</i> <i>Staff: CTs or MHP</i> <i>Time:</i> <i>Staff IS- 38.5 hrs</i> <i>Staff OS- none</i> <i>Student I- 38.5 hrs</i> <i>Student OS- none</i>	Dr. Myrna B. Shure	P&T, 2001 OJJDP	10-12 wks

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Incredible Years Training Series	Multifaceted curricula for parents, teachers, + children	Parent and teacher training, therapy, parent-child interaction, skill development	Antisocial/ Aggressive behavior, s/e competence	Improvements in peer interactions, school behavior, increased problem solving strategies, social competence, reduction in ODD/CD diagnosis	Universal/S elective/ Indicated 2-8yrs	\$300-400 for 2-3 day training \$495 each for 2 teacher training guides \$50 parent manuals \$50 teacher manuals \$30 manual for Children \$1300 BASIC curricula \$975-teacher management \$1075 classroom curricula  <i>SUC: \$4027.50</i> <i>Training: 2 days</i> <i>Staff: MHP</i> <i>Time:</i> <i>Staff IS-44 hrs</i> <i>Staff OS- 12 hrs</i> <i>Student IS-) 44 hrs</i> <i>Student OS-none</i>	Dr. Webster-Stratton	SAMHSA Blueprints Handbook, 2004 CSAP OJJDP CTC	5-52 weeks  *Spanish
Keep A Clear Mind	Take-home drug education program	Peer-led curricula, family education sessions, peer resistance education, homework assignments, incentives	ATOD	Decreased perception of peer substance abuse, increased peer pressure resistance and parent-child communication	Universal 8-12 yrs	\$1,000 for training (not required) \$3.95 manual per student  <i>SUC: \$98.75</i> <i>Training: not required</i> <i>Staff: CTs</i> <i>Time:</i> <i>Staff IS- none</i> <i>Staff OS- none</i> <i>Student IS- none</i> <i>Student OS-2 hrs</i>	Michael Young, Ph.D	SAMHSA CSAP	5-24 weeks  *Spanish

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Keepin' It REAL (Refuse, Explain, Avoid, Leave)	Curriculum that uses videos and traditional ethnic values to protect against DU. 10 45-50 min. lessons	Strategies are taught to increase drug refusal and positive d-making through curricula, activities, and videos. 5 multicultural videos are available	ATOD	Reduction in DU, and intent to accept substances. Increased refusal skills and behavioral outcomes.	Indicated 10-17 yrs	\$1000-3,000 for 1 day training \$ 99.95 for 1 classroom curriculum \$3.79 each student workbook  SUC: \$1194.70 Training: 1 day Staff: CTs Time: Staff IS- 7.5 hrs Staff OS- none Student IS- 7.5 hrs Student OS- none	Patricia Dustman, Ed.D.	SAMHSA	10 weeks  *Available in Spanish
Know Your Body	Designed to promote competencies on health and self-management. Educates youth on connections between smoking and negative outcomes	Curriculum-based. Teachers deliver 40 min-2-hrs of curricula per week	Modify personal health behaviors to prevent cancer, (smoking, diet, exercise)	Decreased smoking and levels of saturated fat in lunches	Universal 5-11 yrs	1 <sup>st</sup> yr- \$5 per 2 <sup>nd+</sup> =\$0-2 Training- \$350 Teacher's guide [\$40-\$75] and a training packet [\$15].  SUC: \$530 Training: 1 day Staff: CTs Time: Staff IS- 24 hrs Staff OS- none Student I- 24 hrs Student OS- none	The American Health Foundation	P&T, 2002 Dupper,	6 yrs k-5th

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Leadership and Resiliency Program	Enhances resiliency and prevents drug and violence involvement through weekly in-school resiliency groups.	Partnership between high school, SSA, and animal shelter. Students are expected to participate in community service.	ATOD and violence	Reduction in school suspensions, juvenile arrests -Increased GPA, school attendance, and graduation rates.	Selective/ Indicated 14-19 yrs *multiple ethnic groups	\$3200 training Free curricula if downloaded or \$150 for hard copy. Requires graduate level counselor or specialist  <i>SUC: \$3200 Training: 4 days Staff: MHP Time: Staff IS- 36 hrs Staff OS- none Student IS- 36 hrs Student OS-18 hrs+</i>	Amrit Daryani	SAMHSA	1-3 yrs
LifeSkills Training (MS + HS)	SU and violence prevention curriculum. Can be taught by CT	In-school curricula and skill development. M-school:15 45min. sessions +10 each add. Yr. E-school: 24 45 min. sessions + additional.	ATOD and violence	Decreased SU, increased resistance, positive self-image, DM skills,	Universal 5-14 yrs	\$1000 for 3-day training for trainers \$4000 2-day training for teachers (Training required for all teachers) \$625 for classroom materials  <i>SUC: \$4625 Training: 2 days Staff: CTs Time: Staff IS-11.25 hrs (MS) 18 hrs (ES) Staff OS- none Student IS- 11.25 hrs (MS) 18 hrs (ES) Student OS- none</i>	Gilbert Botvin, Ph.D	SAMHSA Blueprints P&T, 2002 Handbook, Dupper, CSAP NIDA, S,D,DFS, Surgeon General CTC	1-3 yrs.

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Lions-Quest Skills for Adolescence	Positive youth development program. 102 45 min. lessons, activities, school wide events	Includes parent and community involvement	ATOD, s/e comp, character building, good citizenship	Decreased SU, increased AA and attendance, more positive behavior	Universal 10-14 yrs	\$2,500 training for up to 50 participants \$120 1 set of curriculum \$3.95 each parent book  <i>SUC: \$2718 Training: 2 days Staff: part time MHP and CTs Time: Staff IS- 54 hrs Staff OS- none Student IS- 54 hrs Student OS- some homework</i>	Susan Keister, M.A. Michael Buscemi, M.Ed.	SAMHSA NIDA CTC	1-3 yrs.
Olweus Bullying Prevention Program	Program developed to reduce bullying by altering the school climate.	Behavior modification through school wide, classroom level, and individual interventions.	A/A behavior, violence	Decreased reports of a behavior, improved classroom behavior and discipline, decrease in bullying behavior	Universal, Indicated 6-15yrs	\$1000 for training \$200 per school for assessments \$65 per teacher for classroom materials -Requires a part-full time coordinator  <i>SUC: \$1265 Training: 1/2 to 1 1/2 days Staff: part time MHP and all CTs Time: Staff IS- 12 hrs + Staff OS-none Student IS 12 hrs + Student OS-none</i>	Dan Olweus, Ph.D.	SAMHSA Blueprints Handbook, Dupper CSAP P&T, 2001 CTC	25-52 wks

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Parenting Wisely	A self-administered, computer-based program that teaches parents and their children important skills for combating risk factors for substance use and abuse	Highly interactive and nonjudgmental CD-ROM format accelerates learning	ATOD, AA behavior	Decreases aggressive behaviors and increases parenting skills	Selective/ Indicated 9- to 18yrs	No Training required. \$659 for 1 program kit (includes: <i>PARENTING WISELY</i> Interactive CD-ROM)  <i>SUC: \$659</i> <i>Training: none</i> <i>Staff: part time MHP</i> <i>Time:</i> <i>Staff IS- none</i> <i>Staff OS- 6 hrs</i> <i>Student IS- none</i> <i>Student OS- none</i>	Donald Gordon, Ph.D.	OJJDP CTC	3-6 weeks
Positive Action (ES,MS+HS)	<u>Comprehensive</u> program with lessons at each grade level reinforced with family, school, and community activities. Each component can stand alone, schools implement only the components they desire.	In school curricula, parent-child interaction, school climate change. Positive actions are constantly reinforced.	ATOD, S/E competence	Decreased SU, violence, disciplinary problems, absences, and increased AA.	Universal, Selective, Indicated 5-18 yrs	\$600 per day training PA coordinator, parent coordinator, and community coordinator required for full program. \$3750 for k-5 kit with only one class per grade.  <i>SUC: \$4350</i> <i>Training: ½ to 2 days</i> <i>Staff: MHP+CTs</i> <i>Time:</i> <i>Staff IS- 35 hrs(E+ M), 19.25 hrs (H)</i> <i>Staff OS- none</i> <i>Student IS- 35 hrs(E+ M), 19.25 hrs (H)</i> <i>Student OS- none</i>	Carol G. Alfred, Ph.D.	SAMHSA CSAP	0-12 yrs

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Primary Mental Health Project	Program helps detect and prevent these social, emotional, and school-adjustment problems.	Trained paraprofessionals, called child associates, deliver services to children. Mental health professionals supervise, train and consult with the paraprofessionals.	S/E competence	Decreases negative adjustment behaviors. Increases social skills.	Selective 5-8yrs	\$30-Book about project \$40-Manual \$30-Supervision book \$20-Video \$200- Play equipment \$62.50 assessments \$140 training per person  <i>SUC: \$802.50 Training: 2 days Staff: MHP +min. 2 paraprofessionals Time: Staff IS- 36 hrs Staff OS- none Student IS- 36 hrs Student OS- none</i>	?	CMHS, 99	1 year?
Project ACHIEVE	<u>Comprehensive</u> school reform program focuses on positive outcomes consistent with NCLB with 7 components	Implement steps (7 interdependent components over 3 yrs.	AA, A/A behavior, S/E competence, violence, school reform	Decreased discipline problems and spec. ed. placements. Increased pos. school climate.	Universal, selective 3-14yrs	\$3000 for 2-day training \$8500 for 3-day in-service \$125 classroom materials \$69 teacher manual \$49.95 parent video  <i>SUC: \$3243.95 Training: 2 days Staff: all Time: Staff IS- ongoing Staff OS- none Student IS- ongoing Student OS- none</i>	Howard Knoff, Ph.D.	SAMHSA CSAP	1-6 yrs.  *Spanish

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Project ALERT	Drug prevention program delivered by teachers weekly with small group activities.	In-school curricula, videos, parent-child interaction. Parents given homework to complete with child.	ATOD	Decrease in SU	Universal 11-14 yrs	\$150 for each person trained on-line and one set of materials or \$4200 for on-site training (Teachers must be trained)  <i>SUC: \$150</i> <i>Training: 1 day</i> <i>Staff: CTs</i> <i>Time:</i> <i>Staff IS- 8.25 hrs</i> <i>Staff OS- none</i> <i>Student IS- 8.25 hrs</i> <i>Student OS- none</i>	Phyllis Ellickson, Ph.D	SAMHSA P&T, 2002 Handbook, Dupper, CSAP NIDA S,D,DFS, CTC	1-3 yrs
Project Northland	Alcohol and DU resistance program. Peer led activity driven learning experiences with parent involvement.	Community involvement, in-school curricula (comic books), parent-child interaction, peer leadership.	ATOD	Decrease in SU, enhances DM skills, and parenting skills	Universal 11-14 yrs	\$5250 for 3-day training \$245 for each grade set of materials Coordinator oversees and trains teachers  <i>SUC: \$5495</i> <i>Training: 3 days</i> <i>Staff: CTs</i> <i>Time:</i> <i>Staff IS- 6 hrs</i> <i>Staff OS- some</i> <i>Student IS- 6 hrs</i> <i>Student OS- some</i>	Cheryl Perry, Ph.D., Carolyn Williams, Ph.D.	SAMHSA Handbook P&T, 2002 CSAP Child Trends, 2001 S,D,DFS CTC	0-4 wks

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Project Success	Program to reduce SU by providing a full range of prevention interventions through trained professionals in an <i>alternative school</i>	Partnership between agency and school is established. In-school curriculum, parent training, and counseling referrals made.	ATOD	Decrease in SU, problem behavior, and associations with negative peers.	Selective, Indicated 14-18 yrs	\$375 per person (in NY) or \$2500-6000 on site training \$150 per manual Project director and coordinator needed  <i>SUC: \$525+</i> <i>Training: 5 days</i> <i>Staff: 2 MHPs</i> <i>Time:</i> <i>Staff IS- 8 hrs</i> <i>Staff OS- 4 hrs</i> <i>Student IS- 8 hrs</i> <i>Student OS- none</i>	SAS Corporation	SAMHSA CSAP	5-24 wks
Project Toward No Drug Abuse	Interactive program for the prevention of SU. 12 lessons (40 min) over 4-6 weeks	Behavior mod, in-school curricula (teacher led) and skill development	ATOD	Decrease in SU and carrying weapons to school	Selective, Indicated 14-19 yrs	\$1000 for training \$70 per teacher manual \$60 for 5 student workbooks \$40 for 1 video Training: \$1000  <i>SUC: \$1410</i> <i>Training: 1-2 days</i> <i>Staff: CTs</i> <i>Time:</i> <i>Staff IS- 8 hrs</i> <i>Staff OS- none</i> <i>Student IS- 8 hrs</i> <i>Student OS- none</i>	Steve Sussman, Ph.D	SAMHSA Blueprints CSAP NIDA S,D,DFS CTC	0-24 weeks

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Project Toward No Tobacco Use	Classroom based drug prevention curriculum: comprehensive 10-day program	Program examines media, social influences, and peer portrayal of TU	Tobacco prevention	Decreases SU	Universal/ 10-15 yrs	\$1000 for 2-day training \$40 material, \$40 tobacco video. \$79.95 for stand up for yourself video, \$18.95 for 5 student workbooks. Trained teachers required  <i>SUC: \$1254.70 Training: 2 days Staff: CTs Time: Staff IS- 6.6 hrs Staff OS- none Student IS- 6.6 hrs Student OS- none</i>	Steve Sussman, Ph.D	SAMHSA CSAP	0-4 weeks
Promoting Alternative Thinking Strategies (PATHS)	Program to facilitate social skills and reduce behavior problems. Teachers implement 131 lessons (20-30 min).	Three units: self-control, feelings, problem-solving skills.	AA Behavior, S/E competence	Decreases aggressive behavior, , improves social competence, problem-solving, and classroom climate.	Universal/ Selective 5-12 yrs	\$3000 for training \$645 for 1 set of materials Full time coordinator required  <i>SUC: \$3645 Training: 2 days Staff: MHP + CTs Time: Staff IS- 43.6 hrs Staff OS- none Student IS- 43.6 hrs Student OS- none</i>	Mark Greenburg, Ph.D.  Carol Kusche, Ph.D.	SAMHSA Blueprints P&T, 2002 Handbook CSAP P&T, 2001 NIDA CTC	3-6 yrs

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Protecting You/Protecting Me	Zero tolerance curriculum program designed to prevent SU. Can be taught by CT	Interactive classroom modules- 42 (30-50 min) lessons (8 for each grade 1-4, 10 for grade 5). Some lessons include parents.	ATOD	Decreases SU, increases anti-drug attitudes,	Universal 5-11yrs	\$640 1-day training \$540 for 2 sets of materials  <i>SUC: \$910 Training: 1 day Staff: CTs Time: Staff IS- 4 hrs Staff OS- none Student IS- 4 hrs Student OS- none</i>	MADD	SAMHSA	3-6 yrs
Reconnecting Youth	Partnership model including school, parents, and peers for drug prevention targeting students at risk of SF.	Lesson for 50 min. per day for a semester (80 days), school bonding activities, parent involvement, and school crisis response.	ATOD, S/E competence, A/A behavior	Decrease in SU, anxiety, stress, hopelessness, and school drop outs. Increased grades.	Indicated 14-18yrs	\$3000-3750 for 5-day training \$189 for curricula -One full time coordinator required for every 6 classes  <i>SUC: \$3189 Training: 5 days Staff: pt MHP Time: Staff IS- 66.66 hrs+ Staff OS- some Student IS- 66.66 hrs Student OS- some</i>	Leonna Eggert, Ph.D & Liela Nicholas	SAMHSA CSAP NIDA	5-24 wks

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Reducing the Risk	Program to be added to health course designed to increase knowledge about contraception and risks involved with early sexual activity. Taught by CTs	Includes teacher and peer role modeling, and parental involvement. 15 class periods (50 min) with homework activities.	Delaying sexual activity and effective contraception	Increased contraception knowledge. Lower rates of initiation of intercourse among virgins	Universal 14-19 yrs.	\$210 start-up material kit \$2400 for 3 day training  <i>SUC: \$2610</i> <i>Training: 3 days</i> <i>Staff: CTs</i> <i>Time:</i> <i>Staff IS-12.5 hrs</i> <i>Staff OS- none</i> <i>Student IS- 12.5 hrs</i> <i>Student OS- some</i>	Kirby D, Barth RP, Leland N, and Fetro JV	P&T, 2002 CTC	15 class sessions  *Available in Spanish
104 Resolving Conflict Creatively Program (RCCP)	Program designed to teach children to make peaceful choices through education. 51 lessons in 12 units	Includes classroom curricula, teacher training, admin training, parent involvement, support staff training, peer mediation.	Violence, s/e competence	Decrease in violence (physical and verbal)	Universal/s elective 5-18 yrs	\$55 per classroom of 25 students for materials \$6000 for 24 hr teacher training required  <i>SUC: \$6025</i> <i>Training: 4 days</i> <i>Staff: CTs and MHP</i> <i>Time:</i> <i>Staff IS- 25.5 hrs</i> <i>Staff OS- some</i> <i>Student IS- 25.5 hrs</i> <i>Student OS- some</i>	Linda Lantieri	Dupper	25 wks +

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Responding in Peaceful and Positive Ways (RIPP)	Violence prevention program that promotes peaceful conflict resolution choices. 12-25 sessions, 50 min each	An adult role model teaches students and models prosocial behavior.	A/A behavior, s/e competence, violence	Decreases SU, school discipline problems. Improves prosocial attitudes effective problem solving skills.	Universal 11-14 yrs	\$29.00 book \$45 manual One full time coordinator required. \$650 for 5 day training per person  <i>SUC: \$724 Training: 5 days Staff: MHP and CTs Time: Staff IS- 10 hrs (6-7<sup>th</sup> grades ), 20.8 hrs (8<sup>th</sup>) Staff OS- none Student IS- 10 hrs (6-7<sup>th</sup> grades ), 20.8 hrs (8<sup>th</sup>) Student OS- none</i>	Lynn Meyer, Ph.D. & Wendy Bauers, MA	SAMHSA P&T, 2002 P&T, 2001 CTC	1-3 yrs
Schools And Families Educating SAFE Children (based on MACS)	School and community based program to assist children with transition into K and 1 <sup>st</sup> grade	20-week family program, 2x/wk (for 30 min. each) tutoring for students on reading	Academic success	Improved academic success, social competence, and effective parenting practice	Universal 5-6yrs	<b>Curriculum?</b> Site coordinator, family group leaders, and tutors needed.  <b>SUC:</b> <i>Training: 3 days Staff: MHP and tutors Time: Staff IS-15 hrs Staff OS- 30 hrs Student IS- 15 hrs Student OS- 30 hrs</i>	Drs. Patrick Tolan, D. Gorman-Smith, and David Henry	SAMHSA	5-24 wks



Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Social Competence Program for Young Adolescents	Classroom curriculum for promoting social competence	3 modules that include 45 sessions (40 min. each) on social competence, substance abuse, and high risk sexual behavior	ATOD and social competence	Improves problem solving skills, peer relations, and social adjustment	Universal 10-14 yrs	1 set of materials is \$90. Training not required (or offered)  <i>SUC: \$90</i> <i>Training: none</i> <i>Staff: MHP, CTs</i> <i>Time:</i> <i>Staff IS- 33.75 hrs</i> <i>Staff OS- none</i> <i>Student IS- 33.75 hrs</i> <i>Student OS- none</i>	Dr. Weissberg	P&T, 2002	1 yr
Start Taking Alcohol Risks Seriously (STARS for Families)	Health promotion program to prevent alcohol use	Nurse delivers 20 minute Health consultation, 10 fact postcards mailed to parents each week, and family take home lessons	Alcohol prevention	Decrease in SU	Universal 11-14 yrs	\$299 for materials \$2,000 training Nurse needed to deliver consultations, coordinator required  <i>SUC: \$2,299</i> <i>Training: 2 days</i> <i>Staff: MHP and nurse</i> <i>Time:</i> <i>Staff IS- .3 hrs (20 min.)</i> <i>Staff OS- none</i> <i>Student IS- .3 hrs (20 min.)</i> <i>Student OS-some</i>	Chudley Welch, Ph.D.	SAMHSA Handbook CSAP CTC	5-24 wks 1-3 years *Spanish required

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Strengthening Families Program for Parents and Youth 10-14 (formerly Iowa SFP)	Video-based intervention for parents and children. 2 hr meetings 1x per week for 7 weeks.	Targets parenting skills, life skills for youth, and family bonds	ATOD and problem behaviors	Decrease in SU and problem behavior. Increased resistance to peer pressure. Increased appropriate limits and affection by parents	Indicated 10-14 yrs	3 group leaders needed for sessions. 1 leader for every 3-4 families. \$2500-3500 for 2-3 day training required. \$775 for teaching package.  <i>SUC: \$3275 Training: 2 days min. Staff: MHPs Time: Staff IS- none Staff OS- 14 hrs Student IS- none Student OS- 14 hrs</i>	Virginia Molgaard, Ph.D.	SAMHSA Child Trends NIDA S,D,DFS OJJDP CTC	7 weeks with 4 optional booster sessions *Avail. in Spanish
Students Managing Anger and Resolution Together (SMART) Team	Multimedia software designed to teach conflict resolution skills	Computer- based instruction for 8 modules over 6 hours	Violence, health, and positive youth development	Increase in prosocial behavior	Universal 10-14 yrs	\$190 per set of 2 CDs for each student  Computers required  <i>SUC: \$4750 Training: none Staff: CTs Time: Staff IS- none Staff OS- none Student IS- 6 hrs Student OS- none</i>	Kris Bosworth, PH.D.	SAMHSA CSAP	6 hours

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Success for All	Comprehensive school reform program for restructuring elementary schools	Includes: reading rehearsal strategies, 1-on-1 tutoring, cooperative learning, vision/hearing screenings, continuous assessments, parent workshops with SS agencies, behavioral interventions, etc.	AA, overall positive youth development	Increased reading scores	Universal 5-12yrs	2% of total budget (average title 1 school has budget of 4 million per yr –\$ 80,000)  <i>SUC: \$80,000</i> <i>Training: 8 days</i> <i>Staff: all</i> <i>Time:</i> <i>Staff IS- ongoing</i> <i>Staff OS- none</i> <i>Student IS- ongoing</i> <i>Student OS- none</i>	Robert E. Slavin and Nancy A. Madden	P&T, 2002 Dupper,	6 yrs
Teaching Students to be Peacemakers	Conflict resolution program. 20 30-min. lessons	All students participate as mediators. Also teaches skills to faculty and staff	A/A behavior, violence	Decreases violence, destructive conflicts, + discipline problems. Increases AA.	Universal 5-15 yrs	\$32 for manual \$30 video \$475 for training per person (30 hrs- 4 days)  <i>SUC: \$537</i> <i>Training: 30 hrs- 4 days</i> <i>Staff: CTs</i> <i>Time:</i> <i>Staff IS- 10 hrs</i> <i>Staff OS- none</i> <i>Student IS- 10 hrs+</i> <i>Student OS- none</i>	David Johnson, Ed.D.  Roger Johnson, Ed.D	SAMHSA Dupper,	20 wks + ongoing mediation

Appendix A (continued)

Programs	Description	Key components	D.V.s	Outcomes	Grade/pop	Cost/resources	Developers	Source	Delivery time
Teen Outreach Program	Program designed to promote AA and prevent teen pregnancy through volunteer and classroom activities, discussions, and curricula	Class discussions take place 1 time per week (45-50 min.), and volunteer activities include 20 hrs per yr minimum.	AA and teen pregnancy	Decreased school failure, suspension, and teen pregnancy	Universal or Selective 12-17yrs	No training required \$30 manual \$295 per classroom + \$25 per student workbook  <i>SUC: \$950</i> <i>Training: none</i> <i>Staff: CTs</i> <i>Time:</i> <i>Staff IS- 27 hrs+</i> <i>Staff OS- none</i> <i>Student IS- 27 hrs</i> <i>Student OS- 20 hrs</i>	Cornerstone Consulting	P&T, 2002 CTC	1 yr  *Spanish
Too Good for Drugs (ES+MS+HS)	Drug prevention program that builds resiliency through social competence through dev, appropriate curricula	K-8 <sup>th</sup> = 10 lessons per grade. 9-12 <sup>th</sup> =26 total lessons. Role play, parental involvement, and skill development included	ATOD	Increased protective factors related to drugs and social competence skills	Universal 5-17yrs	\$2000 training \$100-130 materials \$750 for high school kit \$595 after-school kit \$250 educators kit -School wide and grade level coordinators needed  <i>SUC: \$2350</i> <i>Training: 1-2 days</i> <i>Staff: MHP, CTs</i> <i>Time:</i> <i>Staff IS- 5 hrs (E), 7.5 hrs (M), 26 hrs (H)</i> <i>Staff OS- some</i> <i>Student IS- 5 hrs (E), 7.5 hrs (M), 26 hrs (H)</i> <i>Student OS- none</i>	Mendez Foundation	SAMHSA CSAP	5-24 weeks 12 years

## ACRONYMS USED IN APPENDIX A

1. AA – academic achievement
2. A/A behavior – aggressive and antisocial behavior
3. ADHD – attention deficit hyperactivity disorder
4. ATOD – Alcohol, tobacco, and other drugs
5. CT – classroom teacher
6. DU – drug use
7. D.V.s – dependent variables
8. ODD/CD – oppositional defiant disorder, conduct disorder
9. S/E – social and emotional competence
10. Staff IS – Staff in school time
11. Staff OS – Staff out of school time
12. Student IS – Staff in school time
13. Student OS – Staff out of school time
14. SU – substance use
15. SUC – Start up cost

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APPENDIX B: EBP PROGRAM CODING

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Minimum SUC Coding and Corresponding Programs (49)	
1. \$0-200	Children of Divorce (\$30) Good Behavior Game (\$149) Keep A Clear Mind (\$98) Project Alert (\$150) Safe Dates (\$149) Social Competence Program for Young Adolescents (\$90)
2. \$201-500	Children In the Middle (\$458) Growing Healthy (\$351.90)
3. \$501-700	Friends For Children (\$680) Friends for Youth (\$680) Know Your Body (\$530) Project Success (\$525) Teaching Students to be Peacemakers (\$537)
4. \$701-1000	Parenting Wisely (\$701+) Primary Mental Health Project (\$802.50) Protecting You, Protecting Me (\$910) RIPP (\$724) Second Step (\$703) Teen Outreach Program (\$950)
5. \$1001-2000	Al's Pals (\$1095) Anger Coping Program (\$1529) ATLAS (\$1172) I Can Problem Solve (\$1039) Keepin' it REAL (\$1194) Olweus Bullying (\$1265) Project Toward No Drug Abuse (\$1410) Project Toward No Tobacco Use (\$1254)
6. \$2001-3000	Lion's Quest (\$2718) Reducing the Risk (\$2610) STARS for Families (\$2299) Too Good for Drugs (\$2357)

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Appendix B (continued)

Minimum SUC Coding and Corresponding Programs (49)	
7. \$3001-5000	Across Ages (\$4350) All Stars (\$3315) Child Development Project (\$4560) Incredible Years (\$4027) Leadership and Resiliency (\$3200) LifeSkills Training (\$4625) Positive Action (\$4350) Project Achieve (\$3243) PATHS (\$3645) Reconnecting Youth (\$3189) Strengthening families Program (\$3275) SMART Team (\$4750)
8. \$5001-7000	Coca-cola Valued Youth Program (\$6250) Project Northland (\$5495) RCCP (\$6025)
9. \$7001-10,000	
10. \$10,001-15,000	
11. \$15,001-30,000	
12. \$30,001-50,000	Early Risers: Skills for Success (\$39,500) FAST (\$33,900)
13. \$50,001-80,000	Success For All (\$80,000)

Minimum Days of Training Codes (49)

0. = 0 days	Children in the Middle Children of Divorce Good Behavior Game Keep A Clear Mind Parenting Wisely Safe Dates Social Competence Program for Young Adolescents SMART Team Teen Outreach Program
1. = 1/2 day	Olweus Bullying Program Positive Action

Appendix B (continued)

Minimum Days of Training Codes (49)	
2. = 1 day	Anger Coping ATLAS Friends for Children Friends for Youth Growing Healthy I Can Problem Solve Keepin' it REAL Know Your Body Project ALERT Project Toward No Drug Use Protecting You Protecting Me Second Step Too Good for Drugs
3. = 2 days	Across Ages Al's Pals All Stars Child Dev. Project FAST Incredible Years LifeSkills Training Lion's Quest Primary Mental Health Project Project ACHIEVE Project Toward No Tobacco Use PATHS STARS for Families Strengthening Families Program for Parents and Youth ages 10-14
4. = 3 days	Project Northland Reducing The Risk SAFE Children
5. = 4 days	Leadership and Resiliency Program RCCP Teaching Students to be Peacemakers
6. = 5 days	Early Risers Skills for Success Project Success Reconnecting Youth RIPP
7. = 6 days	
8. = 7 days	
9. = 8 days	Success for All

Appendix B (continued)

Minimum Staffing for Program Implementation Codes (51)	
0.	= No staff
1.	= Part Time MHP Anger Coping Children in the Middle Children of Divorce Parenting Wisely
2.	= 1 Full time MHP Coca-cola Valued Youth Program Incredible Years Leadership and Resiliency Program Reconnecting Youth (* 1 for every 6 classes)
3.	= 2 full time MHP Across Ages Project Success
4.	= Part Time MHP +
5.	= 1 MHP + <sup>5</sup> FAST PMHP SAFE Children STARS for Families Strengthening Fam Program 10-14
6.	= Classroom Teachers Al's Pals ATLAS (*coaches) Child Development Project Friends for Children Friends for Youth Good Behavior Game Growing Healthy Keep A Clear Mind Keepin' It REAL Know Your Body LifeSkills Training Project ALERT Project Northland Project Toward No Drug Use Project Toward No Tobacco Use Protecting You/Protecting Me Reducing the Risk Safe Dates Second Step SMART Team Teaching Students to be Peacemakers Teen Outreach Program
7.	= Part Time MPH and Classroom Teachers Lions-Quest Olweus Bullying

<sup>5</sup> + = Community volunteers, paid paraprofessionals, nurse, etc.

Appendix B (continued)

Minimum Staffing for Program Implementation Codes (51)	
8. = 1 MHP <b>and</b> Classroom Teachers	Early Risers First Steps Positive Action PATHS RCCP RIPP Social Competence Program for Young Adolescents Too Good for Drugs
9. = 1 MHP <b>or</b> Classroom Teachers	All Stars I Can Problem Solve
10. All Staff	Project ACHIEVE Success for All

Staff In-School Time (57)

0. = None	ATLAS FAST Keep A Clear Mind Parenting Wisely Strengthening Families Program SMART Team
1. = 1-5 hours	Children In The Middle Protecting You/Protecting Me STARS for Families Too Good For Drugs (ES)
2. = 6-10 hours	Al's Pals All Stars Anger Coping Children of Divorce Friends for Children Friends for Youth Keepin' it REAL Project ALERT Project Northland Project Success Project Toward No Drug Use Project Toward No Tobacco Use RIPP (6-7 <sup>th</sup> ) Safe Dates Second Step (ES) Teaching Students to be Peacemakers Too Good For Drugs (MS)

Appendix B (continued)

Staff In-School Time (57)	
3. = 11-15 hours	LifeSkills Training (MS) Olweus Bullying Program Reducing the Risk SAFE Children
4. = 16-20 hours	Second Step (MS) Across Ages LifeSkills Training (HS) Positive Action (HS) RIPP (8 <sup>th</sup> )
5. = 21-30 hours	Growing Healthy Know Your Body RCCP Teen Outreach Program
6. = 31-40 hours	Too Good For Drugs (HS) Coca-cola Valued Youth I Can Problem Solve Leadership and Resiliency PMHP Positive Action (ES+MS) SCPYA
7. = 41-60 hours	Child Dev. Project Incredible Years Lions-Quest PATHS
8. = 61-80 hours	Reconnecting Youth
9. = 81-100 hours	
10. = 101 – 200 hours	Early Risers (150)
11. = Some time	
12. = Ongoing	First Steps to Success Good Behavior Game Project ACHIEVE Success For All

Appendix B (continued)

Staff Out-of-School Time (51)	
0. = None	Al's Pals All Stars Anger Coping Child Dev. Project Children of Divorce Coca-cola Valued Youth First Steps to Success Friends for Children Friends for Youth Good Behavior Game Growing Healthy I Can Problem Solve Keep a Clear Mind Keepin' it REAL Know Your Body Leadership and Resiliency LifeSkills Training (MS + HS) Lions-Quest Olweus Bullying Program PMHP Positive Action (ES, MS+HS) Project ACHIEVE Project ALERT Project Toward No Drug Use Project Toward No Tobacco Use PATHS Protecting You/Protecting Me Reducing the Risk RIPP Safe Dates Second Step (ES+MS) SCPYA STARS for Families SMART Team Success For All Teaching Students to be Peacemakers Teen Outreach Program Children in the Middle Project Success
1. = 1-5 hours	Across Ages ATLAS Parenting Wisely
2. = 6-10 hours	

Appendix B (continued)

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Staff Out-of-School Time (51)	
3. = 11-15 hours	Incredible Years Strengthening Families Program
4. = 16-20 hours	
5. = 21-30 hours	Early Risers FAST SAFE Children
6. = 31-40 hours	
7. = 41-60 hours	
8. = 61-80 hours	
9. = 81-100 hours	
10. = 101 -200 hours	
11. = Some time	Project Northland Reconnecting Youth RCCP Too Good For Drugs (ES+MS+HS)
12. = Ongoing	

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Student In-School Time (57)	
0. = None	ATLAS Early Risers FAST Keep a Clear Mind Parenting Wisely Strengthening Families Program
1. = 1-5 hours	Children in the Middle Protecting You/Protecting Me STARS for Families Too Good For Drugs (ES)

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Appendix B (continued)

Student In-School Time (57)	
2. = 6-10 hours	Al's Pals All Stars Anger Coping Children of Divorce Friends for Children Friends for Youth Keepin' it REAL Project ALERT Project Northland Project Success Project Toward No Drug Use Project Toward No Tobacco Use RIPP (6-7 <sup>th</sup> ) Safe Dates Second Step (ES) SMART Team Teaching Students to be Peacemakers Too Good For Drugs (MS)
3. = 11-15 hours	LifeSkills Training (MS) Olweus Bullying Program Reducing the Risk SAFE Children Second Step (MS)
4. = 16-20 hours	Across Ages LifeSkills Training (HS) Positive Action (HS) RIPP (8 <sup>th</sup> )
5. = 21-30 hours	Growing Healthy Know Your Body RCCP Teen Outreach Program Too Good For Drugs (HS)
6. = 31-40 hours	I Can Problem Solve Leadership and Resiliency PMHP Positive Action (ES+MS) SCPYA
7. = 41-60 hours	Child Dev. Project Incredible Years Lions-Quest PATHS
8. = 61-80 hours	Reconnecting Youth
9. = 81-100 hours	

Appendix B (*continued*)

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Student In-School Time (57)	
10. = 101 –200 hours	Coca-cola Valued Youth (180 hrs)
11. = Some time	
12. = Ongoing	First Steps to Success Good Behavior Game Project ACHIEVE Success For All

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Appendix B (continued)

Student Out-of-School Time (51)	
0. = None	Al's Pals All Stars Anger Coping Children in the Middle Children of Divorce Coca-cola Valued Youth Friends for Children Friends for Youth Good Behavior Game Growing Healthy I Can Problem Solve Incredible Years Keepin' it REAL Know Your Body Leadership and Resiliency LifeSkills Training (MS+HS) Olweus Bullying Program Parenting Wisely Positive Action (ES,MS+HS) PMHP Project ACHIEVE Project ALERT Project Toward No Drug Use Project Toward No Tobacco Use PATHS Protecting You/Protecting Me Reducing the Risk RIPP Safe Dates Second Step (ES+MS) SCPYA STARS for Families SMART Team Success For All Teaching Students to be Peacemakers Too Good For Drugs (ES+MS+HS)
1. = 1-5 hours	Keep a Clear Mind Project Success
2. = 6-10 hours	ATLAS
3. = 11-15 hours	Strengthening Families Program
4. = 16-20 hours	Teen Outreach Program
5. = 21-30 hours	FAST SAFE Children

Appendix B (*continued*)

Student Out-of-School Time (51)	
6. = 31-40 hours	
7. = 41-60 hours	
8. = 61-80 hours	
9. = 81-100 hours	
10. = 101-200 hours	Across Ages
	Early Risers (168)
11. = Some time	Child Dev. Project
	Lions-Quest
	Project Northland
	Reconnecting Youth
	RCCP
12. = Ongoing	First Steps to Success

APPENDIX C: PROGRAM EFFECT SIZE INFORMATION

Program	ES study reference	Sample size	Outcomes measured (included in ES analyses)	Averaged M ES (Cohen's <i>d</i> )
Across Ages	Rogers & Taylor (1997) Summary of results- no specific data provided.	I= 76 students <sup>6</sup> C=118	3 composites <sup>3</sup> : 1. Personal & social resources 2. School outcomes 3. Problem behavior	.14
Al's Pals	Aseltine et al., (2000) Lynch, Geller, & Schmidt (2004)	I =17 classrooms C=16 classrooms	4 composites: 1.CBCS-30 2.PKBS 3.Problem behavior 4. Coping <sup>3</sup>	.67
All Stars	McNeal et al. (2004). Results provided only for mediating variables.			
Anger Coping Program	Giles et al., (2001). Outcomes for variables influencing mediators. <sup>9</sup> Lochman (1992)	I=31 students Matched C=52 students	5 composites: 1.Substance use 2.Behavior deviance 3.Self-esteem 4.Social problem solving 5.Off-task classroom behavior	.31
ATLAS	Goldberg et al. (2000)	Total n=2390-3207 students (varies on specific outcomes measured)	29 composites measuring aspects of steroid, alcohol, and drug knowledge and use.	.07
Child Development Project or Caring School Community Program	Solomon et al., (2000) Specific effect sizes reported only for a subset of the sample. Battistich et al. (2000) Watson, et al. (1997) Specific data reported only for teacher change and subsets of the sample. <sup>9</sup>	I=12 schools (799 students in second year of program) C=12 matched schools (823 students in second year of program)	3 composites <sup>3,5,6,8</sup> : 1. Drug use 2. Status Offenses 3. Victimization in school	-.07 <sup>10</sup>

Appendix C (continued)

Program	ES study reference	Sample size	Outcomes measured (included in ES analyses)	Averaged M ES (Cohen's <i>d</i> )
Children of Divorce	Pedro-Carroll & Emory (1985)	I=40 children C=32 children	2 composites: 1. Classroom Adjustment Rating Scale (CARS) 2. Health Resources Inventory (HRI)	.84
Coca-cola Valued Youth Program	No effect size information located.			
Early Risers: Skills for Success	August et al., (2003)	I=111 students C=109 students	3 composites <sup>3,4</sup> 1. Child academic achievement 2. Teacher-rated child behavior 3. Parent-rated child behavior	-.04 <sup>10</sup>
	August et al. (2001)	I=124 students C=121 students	8 composites and 4 indicators including academic competence, aggression, social skills, and parent investment.	.04
Families and Schools Together (FAST)	McDonald, Trahan, Beckman, (2002)	4 separate studies included: 1. Cambridge, MA I=194, C=188parents 2. UW-Madison WCER n=26 matched student pairs 3. UW-Madison CHPPE I=185, C=112 students 4. UW-Madison WCER N information not available	Study outcomes from each study: 1. SSRS, CBCL, social activities, behavior, school experiences, academic progress, school report cards 2. CBCL, SRSS, classroom behavior, reading and math skills, school records 3. CBCL, SRSS 4. CBCL, SRSS, classroom behavior, school records	.52
First Steps to Success	Golly, Stiller, & Walker (1998)	N=16-20 students (varied by outcome assessment)	5 composites: 1. Academic engagement time 2. Adaptive 3. Maladaptive 4. Aggression 5. Social Withdrawal	.85
Friends for Children	Barrett & Turner (2001)	I=405 children (2 groups) C=84 children	3 composite outcomes: 1. SCAS 2. CDI 3. RCMAS	.16

Appendix C (continued)

Program	ES study reference	Sample size	Outcomes measured (included in ES analyses)	Averaged M ES (Cohen's <i>d</i> )
Friends for Youth Good Behavior Game	No effect size information located. Kellam et al., (1998). Results not specific for intervention and student changes.			
Growing Healthy (formerly known as School Health Curriculum Project)	Ialongo (2001). Reported results are confounded with academic intervention. <sup>9</sup> Connell, Turner, & Mason (1985)			
		I=324 classrooms C=383 classrooms	4 composites: 1. Program specific 'tailored' knowledge 2. Overall knowledge 3. Overall attitudes 4. Overall practices	.67
I Can Problem Solve (formerly Interpersonal Cognitive Problem Solving)	Shure & Spivack (1982)	I=39 children C=26-27 children	2 Composites: 1. PIPS-solutions 2. WHNG-consequences	1.97
Incredible Years Training Series	Webster-Stratton, Reid, & Hammond (2001)	I=141 children C=59 children	1 composite <sup>4</sup> : 1. Estimate of conduct problems at home	.34
Keep A Clear Mind	Young, Kersten, & Werch (1996)	I=581 students <sup>6</sup> C=395 students	6 items: 1. Expect to use cigarettes 2. Expect to use snuff 3. Perceptions of peer use-alcohol 4. Perceptions of peer use-tobacco 5. Realization that tobacco is harmful 6. Perception of parent attitudes about marijuana	.26
Keepin' It REAL (Refuse, Explain, Avoid, Leave) Know Your Body	Hecht et al. (2003). Not enough data for conversion (N in ranges). Could not locate other ES info. Taggart et al. (1990) Not enough results data provided.			
		I=805 C=310	9 measures of risk factors including blood pressure, cholesterol, and skinfold thickness.	.03
Leadership and Resiliency Program	Walter et al. (1985) Could not locate effect size data or evaluation publication.			
LifeSkills Training	Botvin, Griffin, Diaz, & Ifill-Williams (2001)	I=2,144 students C=1,477 students	10 single outcomes measuring smoking, drinking, and drug use frequency and quantity	.15

Appendix C (continued)

Program	ES study reference	Sample size	Outcomes measured (included in ES analyses)	Averaged M ES (Cohen's <i>d</i> )
Lions-Quest Skills for Adolescence	Eisen et al. (2003). N reported in ranges. Not sufficient data			
	Eisen et al (2002). P values reported but not specific n. F reported only for some outcomes. Not sufficient data. <sup>9</sup>			
Olweus Bullying Prevention Program	Olweus et al. (1998). No specific data included.			
	Olweus (1994). No specific data included.			
Parenting Wisely	Olweus (1991). No specific data included. <sup>9</sup> Lagges & Gordon (1999)	I=33 students C=29 students	3 composites: 1. Parenting knowledge 2. Scenarios 3. Parental attitudes	.95
Positive Action	Flay, Allred, & Ordway (2001)	2 studies included 1. Nevada I=12 schools Matched C=24 schools 2. Hawaii I=8 schools Matched C=16 schools	Nevada: 2 composites <sup>3</sup> , 1 single 1. Achievement 2. Violence 3. Absenteeism Hawaii: 2 composites <sup>3</sup> 1. Achievement 2. Behavior	.58
Primary Mental Health Project	Cowen & Hightower, (1989). Summary, no specific data included.	I= 14 students C= 12 students	5 composites: 1. CARS 2. HRI 3. PIAT 4. PPVT 5. PSCS	-.63 <sup>10</sup>
	Suter & Kehle (1989)			
		I=101 students C=45 students	4 composites: 1. CARS T 2. HRI SUMFAC 3. ASEF T 4. PTR	.28
Project ACHIEVE	Cowen et al. (1979) Knoff & Batsche (1995) Results provided in percentages.			
Project ALERT	Could not locate other ES info. Ellickson et al., (2003) Results provided in percentages.			
	Ghosh-Dastidar et al. (2004)	I=2,553 students C=1,723 students	3 composites: 1. alcohol 2. cigarettes 3. marijuana	.10

Appendix C (continued)

Program	ES study reference	Sample size	Outcomes measured (included in ES analyses)	Averaged M ES (Cohen's <i>d</i> )
Project Northland	Perry et al. (2002)	I=1401 communities C=1549 communities	4 composites (Phase 1): 1. Tendency to use alcohol 2. Past month alcohol use 3. Past week alcohol use 4. Binge drinking	.10
Project Success Project Toward No Drug Abuse	Could not locate any ES information. Sussman et al. (2003)	RCT N= 575 students	4 composites <sup>6</sup> : 1. Tobacco 2. Alcohol 3. Marijuana 4. Hard drugs	.15 <sup>11</sup>
Project Toward No Tobacco Use	Dent et al (1995) – data presented in percentages only.  Sussman et al (1993) not enough data for ES calculation. <sup>9</sup>			
Promoting Alternative Thinking Strategies (PATHS)	Kam et al (2004). Data for each outcome not presented.	I=130 students C=156 students	3 composites: 1. Feelings vocabulary +general questions 2. Understanding of emotional experience 3. Feelings regulation + expression	.34
Protecting You/Protecting Me	Greenberg et al. (1995) Bohman et al. (2004)	I=151 students C=160 students	11 composites: 1. Vehicle safety 2. Riding with an impaired driver 3. Drinking and driving 4. Underage drinking 5. Media literacy 6. Social skills 7. Stress management 8. Decision making 9. Rules 10. Brain importance 11. Brain development	.28
Reconnecting Youth	Eggert et al., (1995)	I=36 students C=35 students	8 composites: 1. Suicide risk behaviors 2. Depression 3. Hopelessness 4. Stress 5. Anger 6. Personal Control 7. Self-Esteem 8. Social network support	.10
Reducing the Risk	Kirby & Barth (1991). Results data provided in percentages only.			
No other evaluation with ES data located.				

Appendix C (continued)

Program	ES study reference	Sample size	Outcomes measured (included in ES analyses)	Averaged M ES (Cohen's <i>d</i> )
Resolving Conflict Creatively Program (RCCP)	Aber, Brown, Chaudry, Jones & Samples (1996). No specific results data included.			
Responding in Peaceful and Positive Ways (RIPP)	Farrell et al (2001).	RCT I=321 students C=305 students	2 composites: 1. Disciplinary code violations 2. Self-report violent behavior	.02 <sup>11</sup>
Schools And Families Educating SAFE Children (based on MACS)	Huesmann et al. (1996). No specific results data included.			
Safe Dates	Gorman-Smith (2003). Only teacher effects reported. <sup>9</sup>			
	Foshee et al. (2004). Results provided in betas. Not sufficient data.			
	Foshee et al. (2000). Only means reported. Not sufficient data.			
Second Step	Foshee et al. (1998). Only means reported. Not sufficient data. <sup>9</sup>			
	Orpinas. Et al. (1995). Results data in percentages.	Total N= 714 students	2 composites measured across two school years: 1. Aggression 2. Perceived difficulty of social skills	.27
Social Competence Program for Young Adolescents	Van Schoiack-Edstrom et al., (2002) Caplan et al. (1992)	N varies by outcome: 1. Coping skills I=90 students C=132 students 2. Adjustment I=109 students C=173 students	2 composites: 1. Coping skills <sup>3</sup> 2. Adjustment <sup>3</sup>	.48
Start Taking Alcohol Risks Seriously (STARS for Families)	Werch et al. (2003)	2 studies: 1. Neighborhood school I=100 students C=107 students 2. Magnet School I=150 students C=150 students	2 composites <sup>3</sup> : 1. Alcohol 2. Risk factors	.15

Appendix C (continued)

Program	ES study reference	Sample size	Outcomes measured (included in ES analyses)	Averaged M ES (Cohen's <i>d</i> )
Strengthening Families Program for Parents and Youth 10-14 (formerly Iowa SFP)	Spoth, Redmond, & Shin (2000)	I=152 families C=151 families	3 composites: 1. Aggression & hostility, observer rated 2. Aggression & hostility, family member reported 3. Aggression and destructive conduct, self-report	.25
Students Managing Anger and Resolution Together (SMART) Team	Bosworth, et al. (2000)	I=321 students C=195 students	5 composites: 1. Awareness 2. Beliefs 3. Efficacy 4. Intentions 5. Aggression	.08
Success for All	Slavin & Madden (2000)	Summary of multiple studies: I=68 student cohorts C=68 student cohorts (cohort=50-150 students)	1 composite: 1. Reading	.50
Teaching Students to be Peacemakers	Johnson & Johnson (2004)	16 studies: N= 8 schools in 2 countries	14 composites: 1. Learned procedure 2. Learned procedure retention 3. Applied procedure 4. Applied procedure retention 5. Strategy constructiveness 6. Constructiveness retention 7. Strategy two-concerns 8. Two-concerns retention 9. Integrative Negotiation 10. Quality of solutions 11. Positive attitude 12. Negative attitude 13. Academic achievement 14. Academic retention	1.25
Teen Outreach Program	Allen & Philliber (2001)	Randomized assignment for a subset of n. I=1673 students C=1604 students	3 composites 1. Pregnancy 2. Course failure 3. Academic suspension	.18 <sup>11</sup>
Too Good for Drugs	No ES data located.			

*Note. \*Effect size calculator used for programs with no specific information about sample size was accessed March 3, 2005 from <http://web.uccs.edu/lbecker/Psy590/escalc3.htm> . Effect size calculator used for programs with specific information about sample size was accessed March 5, 2005 from <http://www.cemcentre.org/ebeuk/research/effectsize/EffectSizeCalculator.xls> .Effect size calculator used for converting odds ratios into Cohen's *d* was accessed April 7, 2005.*

## PROGRAMS EXCLUSION/ANALYSIS DECISIONS FOR EFFECT SIZE TABLE

1. Unpublished effect size information was not used in this study.
2. Studies that provided only a range for the effect sizes were not included.
3. For programs measuring individual outcomes that appear to be part of a larger composite measure, averaging the effect sizes for the individual outcomes created a composite.
4. Effect size information was calculated only for child/student outcomes (excluding parent or teacher change outcomes) when programs targeted parents or teachers in addition to children.
5. If outcomes were assessed at multiple time points and reported in one article, effect sizes were calculated for change after one year, or the closest option to a 1-year follow up point.
6. For programs that reported results of intervention groups receiving the full intervention and intervention groups receiving partial intervention, the full intervention data were used to calculate effect size.
7. When more than 1 program evaluation was located, the most recent article was chosen. If adequate results data were not provided in the most recent article, the next most recent evaluation with adequate data that could be located was used.
8. When programs results found negative effects for outcomes assessed- the negative effect size was subtracted from positive effect sizes for a composite average program effect size.
9. If no effect data or only negative effect data could be calculated or located after reviewing two evaluation publications for one program, that program was excluded from analyses.
10. If evaluation results found a negative effect size for a program, another evaluation publication was sought out to include in the table.
11. Three programs reported outcome results in odds ratios. The probit and logit methods were used instead of the more conservative arcsine method as random assignment allowed for the expectation of normal distribution of the outcomes (Lipsey & Wilson, 2001). More specifically, for two of programs using odds ratios, the probit method was used to calculate Cohen's *d* as it includes the sample sizes for both intervention and control groups in the formula, for the third program, the logit method was used as the article did not report specific sample sizes for intervention and control groups for the follow-up outcome data used in the effect size calculations.