

## **Chapter Six**

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### **School-Based Mental Health Services**



# **Comprehensive and Multi-Method Assessment of School-Based Mental Health Services**

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## **Introduction**

Over the past decade, school-based mental health programs have received increased attention based on the growing need for more effective, collaborative systems, which promote the well-being and school success of all children and youth (Weist, Paternite, & Adelsheim, 2005). Ensuring that school-based mental health practices are effective, ongoing evaluations of empirically supported or evidence-based practices that are culturally competent and reflective of a strong commitment to family and community engagement should be a priority (Wandersman, 2003). Given limitations related to external validity and implementation challenges, program evaluators argue for combining different methods of evaluation (Chen, 2005). The use of comprehensive research designs allows for sufficient monitoring of internal and external factors to ensure program success.

This paper will discuss: (1) the strengths and weaknesses of using quasi-experimental designs, (2) the usefulness of this design in providing outcome data to schools and agencies regarding services and student performance, and (3) implications for informing public policy and strengthening community programs. Data from a collaborative program (Project PASS and Cincinnati Public Schools) will be featured to demonstrate the use of comprehensive program evaluation.

## **Strengths of Using Comprehensive Evaluation Methods**

- A well-defined evaluation plan is critical to assessing the needs of students for appropriate identification and referral.
- A multi-method approach strengthens the validity of the data being collected.
- Perspectives from multiple informants enrich the data and the understanding of programs' strengths and limitations.
- Results and outcomes provide more information regarding the process of program delivery and how to improve programs, thus aiming for high scientific and stakeholder credibility.

## **Limitations of Using Comprehensive Evaluation Methods**

- Programs will need a plan for resolving divergence in data sources (in the event of non-convergence among respondents about the impact of the program)
- Efficiency may be compromised to conduct a valid and robust assessment of the program.
- More resources may be needed to collect, manage and analyze data, including an administrative core to develop and manage evaluation protocols.

## **Example: A Collaborative Evaluation Approach Comprehensive Outcomes for Project PASS, a Talbert House School-Based Program**

### **Background**

Project PASS is a collaborative partnership with schools by which comprehensive and integrated social/emotional and behavioral health services are provided. The mission of the program is to provide flexible, strength-based, culturally competent, individualized and family-focused services to students and their families in the communities and school in which they live, to promote healthy behaviors, the development of life skills, and promote collaboration among the child-serving system. The program was developed based on: the School-Based Behavioral Health Project, the Public Health Prevention Model, and the Protective Factors/ Social Competence/ Strength-Based Model.

Project PASS is implemented in six Cincinnati Public Schools where academic, behavioral, and mental health challenges are prevalent. The evaluation plan is designed around seven targeted intervention/

prevention strategies: (a) Increasing Anger Management Skills; (b) Decreasing Aggression Rates; (c) Increasing Self-Esteem; (d) Increasing Social Skills; (e) Decreasing Behavioral Problems; (f) Improving School Performance; and (g) Increasing School Attendance Rates.

### **Data Management Plan and Database Design**

Data are obtained using several measures, including the Anger Scale from the Parent, Facilitator, Teacher Behavior Checklist, the Ohio Scales (Ogles, Melendez, Davis, & Lunnen, 1999), survey questionnaires, school grades, etc. Data are collected by site coordinators and are submitted to *INNOVATIONS* of Cincinnati Children's Hospital, an independent evaluation team, for data entry, analysis, and summary. Currently, data have been collected on over 1,800 students for the 2004-2005 academic year, including 1,131 students receiving prevention or intervention services. Pre- and post-data were available on 794 of these students, numbers sufficient to ensure validity and statistical power in pre-post comparisons.

### **Results**

Students in the program showed positive trends on attendance, proficiency test performance, and discipline. Over the four years that Project PASS has been in operations, attendance rates have increased, from 90.8% to 94.6%, and suspension and expulsion frequencies have decreased dramatically. Suspensions decreased from 221 during the 2001-2002 school year to 8 in 2004-2005. During this time period, expulsions decreased from 18 to 2. Across the six program sites (and related to the seven program goals), outcome data appear in Table 1.

Qualitative data were also collected to assess principal, parent, and student perspectives on the mental health services provided through Project PASS. Parents acknowledged a change in their child's academic and behavioral functioning, and credited Project PASS with being essential in this progress. Principals responded to several questions indicating that the program helps reduce discipline referrals, promotes social consciousness, and higher achievement. In addition, the Ohio Scales were completed on students in the highest risk categories. Data highlight the clinical challenges and needs of these high risk students. The scores on the Ohio Scales (through May, 2005), across participants and time points are shown in Table 2.

**Table 1**  
**Aggregate Student Outcomes for Six Program Sites (2001-2005)**

<i>Program Target</i>	<i>Outcome</i>
Students showing an increase in Anger Management skills and Conflict Resolution.	89.9%
Students improving on Problem Behaviors (as rated by teacher, parent, and group facilitator).	74.4%
Students showing an increase in Caring and/or a decrease in Bullying	72.7%
Students successfully resolving peer conflicts through Peer mediation	90.1%
Students improving in grades from the first quarter to the fourth academic quarter.	93.3%

**Table 2**  
**Ohio Scale Scores for Youth in High Risk Category**

<i>Rater</i>	<i>Scale</i>	<i>Project PASS Mean (SD)**</i>	<i>Community Sample* Mean (SD)</i>
Youth	Problem Severity	24.7 (14.7)	18.18 (15)
	Functioning	57 (11.5)	61.07 (13)
	Hopefulness	10 (4.6)	9.6 (3.8)
	Satisfaction	9.2 (4.6)	N/A
Parent	Problem Severity	27.5 (14.5)	10.3 (9.9)
	Functioning	46.1 (13.6)	64 (12.7)
	Hopefulness	11.6 (4.3)	8.3 (3.5)
	Satisfaction	8.6 (5.1)	N/A
Worker	Problem Severity	23.2 (16.3)	17.6 (9.6)
	Functioning	45.9 (13.5)	67 (9)

\* Community Sample data taken from Ohio Scales User's Manual (Ogles, Melendez, Davis & Lunnen, 1999)

## Conclusions and Implications for Public Policy

This summary highlights an example (Project PASS) of how collaboration and evaluation is critical to assessing the impact of a school-based mental health program and the needs of its participants. The steps utilized in this comprehensive evaluation include (1) Collecting data in order to conduct a “needs assessment” on students referred to the program, (2) Administering quantitative pre-post tests, standardized measures, and school data from the District, (3) Collecting qualitative survey data to assess student, parent, and principal satisfaction and additional data on students identified as “high risk,” and (4) Implementing an evaluation design to assess over 1,800 students (in 2004-05) across six schools. The evaluation plan has been refined over the past four years to ensure feasibility and data integrity. In summary, data reveal that the program is achieving its end goal which is to successfully serve the mental health needs of “at risk” and “high-risk” youth. Results are highlighted by positive trends in student attendance, discipline, and social skills have been observed. In addition, the agencies and the schools have been able to use their data to increase funding of school-based mental health programs as the number of schools that offer mental health services has increased dramatically over the past four years.

Project PASS’ experience highlights the significance of a comprehensive evaluation model to provide outcome data for stakeholders, agency workers, parents, and students. Qualitative analyses inform individual treatment services, while quantitative analyses provide outcomes for interventions and programmatic services targeting at-risk factors and behavioral and mental challenges. These schools and agencies may be able to utilize a similar model to demonstrate the effectiveness of school-based mental health services and to leverage data for public policy and advocacy efforts.

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# **Measuring the Effectiveness of School-Based Interventions for Children with Serious Behavior Problems**

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## **Introduction**

The roots of the assessment process that underlie many behavioral interventions can be found in applied behavior analysis (Gresham, Quinn, & Restori, 1999; Sugai, Horner, & Sprague, 1999). In the past, treatments of students with emotional and behavioral disabilities have focused primarily on the topography of the deviant behavior, and interventions centered mainly on the manipulation of contingency variables (Gable, 1996). Token economies, behavioral contracts, social reinforcement, and point-and-level systems are some of the resulting strategies frequently used with children with behavior problems, but they have not been shown to be widely effective, and the outcomes for these children have not been good (Cullinan, Epstein, & Sabornie, 1992; Greenbaum et al., 1996; Lipsey & Wilson, 1993).

However, there is literature available on effective strategies for children with emotional and behavioral disabilities (e.g., Forness, Kavale, Blum, & Lloyd, 1997) that gives increasing importance to a three-tiered approach to prevent and remediate behavior problems: (1) strategies to reduce the likelihood of behavior problems in the general population (e.g., communicating clearly about expected behaviors and the consequences of violating them, effective classroom management); (2) strategies to screen for behavior problems and provide behavioral and academic support (Coie, 1994; Dishion & Andrews, 1995; Walker, Colvin, & Ramsey, 1995; Walker et al., 1996); and (3) interventions to keep the inappropriate behavior of students with chronic behavior problems from escalating through intensive and individually tailored support services and systems of care (Walker et al., 1996). Several studies suggest that this multitiered approach in schools is effective in reducing behavior problems—e.g., a longitudinal study of the Regional Intervention Program (Strain & Timm, 2001) and studies of the Effective Behavior Supports program (Sugai & Horner, 1994) and First Step to Success (Walker et al., 1998). This research has begun to compile a “tool kit” of strategies or program components that can be used to build more effective interventions for students with emotional disturbances and behavior problems.

Although research conducted in the last several years suggests some potentially promising approaches to behavior interventions, much of it lacks the rigorous, experimental base that is the “ideal method” (National Research Council 2002, p. 109) for determining the true efficacy and effectiveness of interventions. A commitment to increasing the scientific rigor of education research and, thus, its potential for improving practice and student outcomes has been codified in the Education Sciences Reform Act of 2002. This law has sparked the reorganization of federally sponsored education research and the formation of the Institute of Education Sciences (IES) and its *What Works Clearinghouse*—an entity charged with screening education research to identify studies that meet standards of scientific rigor, including an experimental design, and, therefore, whose results can be trusted to identify “what works” in improving student outcomes

In 2004, the Office of Special Education Programs (OSEP) funded four Behavior Research Centers (BRCs) and the National Behavior Research Coordination Center (NBRCC) to investigate the effectiveness of interventions for children with serious behavior problems (grades 1-3 when interventions begin). Since then, the funding has transferred to the National Center for Special Education Research in the Institute of Education Sciences (IES). The BRCs, in collaboration with NBRCC, are conducting randomized clinical trials of behavioral interventions that were found to be efficacious in previous research. The four BRCs are located at the University of South Florida (in collaboration with the

University of Colorado at Denver), Vanderbilt University (in collaboration with the University of Minnesota and Virginia Commonwealth University), the University of Washington, and the University of Oregon. The purpose of this presentation summary is to describe the interventions and research of the four BRCs; discuss how the NBRCC will coordinate, synthesize, and conduct analyses across the BRCs; and propose a research agenda for the next several years.

## Methods

This section will provide a brief description of the interventions being tested and researched in each of the four BRCs and the purpose of the NBRCC.

### University of Oregon BRC

The University of Oregon BRC is evaluating the First Step to Success intervention, a three-month process that incorporates three components in an effort to improve the behavior and academic performance of students with severe behavior problems. Components include universal screening using the Systematic Screening for Behavior Disorders (SSBD; Walker & Sevenson, 1990) tool, a school component, and a family-based intervention. Many children served are from at-risk environments, and the intervention is designed to help students learn behaviors and approaches to learning that will lead to school success. Simultaneously, parents are taught how to teach their children skills for school success. Behavior coaches serve as liaisons between the home and the school. The intervention is based on the theory that a preventive approach (rather than a reactive one) to early signs of poor social adjustment using secondary prevention goals and involving both teachers and families to support students' behavior change will more effectively transform emerging severe behavior problems.

First Step was first developed via a four-year Office of Special Education Programs (OSEP) research grant that ran from 1992 to 1996 and has been broadly recognized as a promising early intervention by both researchers and practitioners. Over the past decade, the program has been extensively researched by its developers and other researchers in the field. To date, nine studies of the program's efficacy and effectiveness have been conducted. These studies have involved differing methodologies (single-subject research, randomized control) and have been conducted by the program's developers (Golly, Stiller, & Walker, 1998; Walker et al., 1998), as well as by other investigators (Beard-Jordan & Sugai, in press; Overton, McKenzie, King, & Osborne, 2002). Collectively, these studies provide evidence that First Step (a) consistently produces effect sizes above .80, (b) shows acceptable persistence of behavioral gains in a majority of cases, and (c) has been shown to work effectively with diverse learners in rural, suburban, and urban school-community settings.

### University of South Florida BRC

The University of South Florida BRC, in collaboration with the University of Colorado at Denver is evaluating the Prevent-Teach-Reinforce (PTR) intervention. PTR is modeled after a positive behavior supports approach and is a team process through which an individualized intervention is developed and implemented. PTR is based on the theory that well-conducted functional behavioral assessments and sound positive behavior support plans for children with severe behavior problems will: (a) decrease the occurrence of maladaptive target behaviors, (b) increase the occurrence of appropriate prosocial behaviors, and (c) consequently produce positive outcomes in the areas of behavior, academics, and lifestyle changes for the child and family.

Research on functional behavioral assessment clearly illustrates the efficacy of this strategy and other functionally based interventions. Recent reviews of the literature have demonstrated a broad effect of functional behavioral assessment, including an increase in reinforcement-based interventions such as teaching replacement behaviors that result in the same consequence (e.g., access to attention) as problem behavior and a decrease in the reported use of punishment procedures (Carr et al., 1999; Kahng et al., 2002; Pelios, Morren, Tesch, & Axelrod, 1999). Research suggests that effective multicomponent



interventions include ecological changes to prevent problem behavior from occurring, educative strategies to teach new skills to replace problem behavior, and contingency management to reinforce the occurrence of adaptive behavior (e.g., Bambara & Kern, 2005; Knoster, 2000; Lucyshyn, Horner, et al., 2002). The PTR intervention is a method of assessment that draws directly on the large research base on functional assessment, is applicable to the majority of students exhibiting problem behavior, and can be conducted by individuals faced with constraints on time, assistance, setting, and expertise.

### **University of Washington BRC**

The University of Washington BRC is evaluating the Check, Connect, and Expect (CC&E) program. CC&E is based on the theory that relationships with school staff, reinforcement of clear expectations and social behavior, and engagement in school activities contribute to improved academic and social outcomes of students. Therefore, the intervention focuses on improving students' positive relationships and prosocial behavior via increased school staff reinforcement and feedback. Students not completely successful with CC&E will receive an additional intensive, functionally based intervention developed by a district behavior specialist, a behavior coach, and the classroom teacher. The intervention planning will be driven by the needs of the individual, but it also will have a standardized procedure, described below.

The Check, Connect, and Expect (CC&E) intervention being evaluated by the Washington BRC combines two interventions that have been found to be efficacious: the Check & Connect program (Sinclair, Christenson, Evelo, & Hurley, 1998) and the Behavior Education Program (Crone, Horner, & Hawken, 2004). Both programs rely on the use of important practices that have theoretical and empirical support for students with or at risk of emotional disturbance. These include: (a) daily supervision and monitoring, (b) frequent feedback on academic and social performance, (c) point systems that monitor social goals, (d) reinforcement for meeting criteria, (e) the use of a positive adult role model to support the student, and (f) social skills instruction when necessary.

### **Vanderbilt University BRC**

The Vanderbilt BRC's secondary-level, classroom-based intervention is directed toward students receiving special education services in self-contained classrooms and toward students in general education classrooms who are at risk. Components include: (1) academic tutoring in reading; (2) teacher self-monitoring of classroom management; (3) the Good Behavior Game for improving students' classroom behavior; and (4) behavior consultants in classrooms 3-5 hours per week. These interventions are based on the theory that student behavior is directly affected by classroom environment and practices. Training and motivating teachers to engage in practices known to improve the classroom environment will result in improved student behavior and learning. Academic success hinges on reading skills and will be enhanced by direct reading instruction and indirectly by improved student behavior.

Evidence from several meta-analyses of school-based interventions (Stage & Quiroz, 1997; Wilson, Gottfredson, & Najaka, 2001; Wilson, Lipsey, & Derzon, 2003) demonstrates that under controlled research conditions, school- and classroom-based interventions for children with severe behavior disorders can be efficacious. It appears that structured school-based interventions that include the use of behavioral or cognitive-behavioral treatment methods, treatment manuals, and monitoring of treatment integrity are likely to produce the most successful results. The Vanderbilt BRC will research the effectiveness of combining several efficacious interventions: the Classroom Organization and Management Program (COMP; Evertson & Harris, 2003); teacher self-monitoring of use of praise statements and opportunities for students to respond (Sutherland & Wehby, 2001a); Horizons Fast Track A-B (Engelmann et al., 1997); an accelerated Direct Instruction reading program; and a peer group contingency intervention, the Good Behavior Game (Barrish, Saunders, & Wold, 1969; Kellam, Ling, Merisca, Brown, & Ialongo, 1998).

### **National Behavior Research and Coordination Center**

The NBRCC is funded to work closely and effectively with the four BRCs to:

- Develop and implement a data coordination plan—determine uniform measures of context, implementation, participation, outcomes, and satisfaction appropriate to the interventions being tested.
- Develop and implement a data synthesis plan—develop and support BRC staff in the use of a Web-based data system that will collect core data from each site which will be used in the cross site analyses.
- Develop and implement a data analysis plan—determine research questions regarding the context, implementation, participation, outcomes, and satisfaction of each intervention; how these factors compare across interventions; and how these factors vary for students, settings, and schools with different characteristics.
- Develop and implement a dissemination plan—develop a multifaceted dissemination plan to bridge the research-to-practice gap by reaching diverse practitioner, policy, consumer, advocacy, and research communities.

### **Results**

The four BRCs are in the midst of collecting baseline data. Participants will be assessed at baseline, post-test, and one-year followup through the 2007-08 school year.

### **Discussion**

Under the Individuals with Disabilities Education Act (IDEA) and the No Child Left Behind Act (NCLB), schools have an obligation to support students with disabilities to ensure they achieve positive academic and behavioral outcomes. IDEA recognizes that learning may be severely impeded for children with challenging behaviors and provides for students with disabilities to receive appropriate services that will foster their educational achievement.

This presentation summary describes IES-funded research using randomized control group designs to investigate the effectiveness of four school-based interventions for children who exhibit serious behavior problems. The BRCs will analyze data on their evidence-based interventions to assess their impact on child behavior and academic achievement. The National Behavior Research Coordination Center will coordinate, synthesize, and analyze comparable data across BRCs to foster the dissemination of knowledge on effective practices to consumers, practitioners, and policy-makers. At the conclusion of the BRC studies and the cross-site analyses conducted by the NBRCC, additional information about the effectiveness of behavioral interventions for children will add to the extant knowledge base in the field, which subsequently should help inform decision-makers and consumers and improve outcomes for children behavior who exhibit serious behavior problems.

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# **School-Based Wraparound: Child and Family Outcomes**

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## **Introduction**

Upon receipt of a Center for Mental Health Services (CMHS) grant in 1998, a school mental health initiative was implemented in 21 schools in the Appalachian Mountains of Kentucky. Termed the Bridges Project, this collaborative model focused on promoting partnerships among families, educators, and service providers to better meet the needs of youth with emotional and behavioral challenges and their families. The purpose of the project was to build upon and enhance Kentucky's existing system of care in three rural Appalachian mental health regions in eastern Kentucky. This area of the state possesses characteristics that differ dramatically from the rest of the state, including high rates of poverty, unemployment, and illiteracy. Due to the rural nature of the region, lack of transportation, limited community services and resources, and a shortage of human services professionals serve as barriers to effective service delivery. Despite these barriers, the Bridges Project sought to provide services in a way that acknowledged and built upon the strengths of the Appalachian culture.

Acknowledging schools as a critical partner in system of care efforts, the primary feature of the initiative centered upon developing and evaluating a school mental health service delivery model in which school-based student service teams (SSTs), consisting of a service coordinator, family liaison, and intervention specialist employed by a community mental health centers were located within schools. In collaboration with school staff, the SST facilitated the implementation of a continuum of positive behavior intervention and supports (PBIS; Sugai & Horner, 1999), a systems approach focused on building the capacity of schools to teach and support positive behavior of all students. PBIS includes procedures and processes intended for (a) all students, staff, and school settings; (b) non-classroom settings within the school environment; (c) individual classrooms and teachers, and (d) individual student support for the students who present the most challenging behaviors. For youth with the most challenging behaviors, a school-based wraparound approach was used. Wraparound is characterized as a strengths-based process through which intensive, individualized supports are designed, implemented, and monitored. Facilitated by school-based staff, the process begins by identifying the perspectives and goals of the family and the school, then blending these perspectives to prioritize action planning across life domains. Action plan strategies build on youth, family, school, and community strengths, in combination with function-based positive behavioral interventions.

This paper describes the characteristics, outcomes, and services received by youth with emotional and behavioral challenges and their families participating in a school-based wraparound process. Given the school-based nature of the program, particular consideration is given to the examination of educational functioning over time. Policy, program, and practice implications are discussed.

## **Methodology**

Descriptive, outcome, and service experience information was gathered from youth and their families who participated in the school-based wraparound process. Upon referral and acceptance to the Bridges Project, the caregiver completed an intake process through which demographic information, risk factors, presenting problems, and previous service use were gathered. Following the intake process, caregivers and youth were invited to participate in the CMHS national longitudinal outcome study. If consent was obtained, SSTs conducted an intensive structured interview with the caregiver and/or youth (11 and older) at entry into the program and every six months thereafter for up to 36 months. The structured interview was comprised of self-developed instruments as well as commonly used standardized instruments. Descriptive, service experience, and education data were captured using instruments

developed specifically for the CMHS national longitudinal outcome study. Youth outcome measures included the Child Behavior Checklist (CBCL; Achenbach, 1991), which assesses youth problem behavior; the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1990), used to measure youth functioning across life domains; and the Behavioral and Emotional Rating Scale (BERS; Epstein & Sharma, 1997), an assessment of youth emotional and behavioral strengths. The Family Assessment Device (FAD; Epstein, Baldwin, & Bishop, 1983) was used to capture family functioning from the perspective of both the caregiver and youth, while the Caregiver Strain Questionnaire (CGSQ; Brannan, Heflinger, & Bickman, 1998) assessed caregiver perception of their level of strain.

## **Results**

### **Descriptive Information for Youth and Families**

For those families and youth for whom descriptive information captured at intake was available ( $N = 496 - 631$ ), the majority were males (67%) with an average age of 11.3 years at program entry. Mirroring the demographics of the Appalachian region, most youth were White, non-Hispanic (97%). Ninety-three percent had annual family incomes below \$18,850, and 87% were covered by Medicaid. These youth also experienced numerous child and family risk factors. About one in five had been physically abused, and 15% had run away at least once in their lifetime. One in two youth had a parent with a history of mental illness and/or substance abuse, while 40% had witnessed family violence and 30% had a parent who had been convicted of a crime.

Due to the nature of the project, most youth were referred by either school or mental health agency personnel. Most youth were referred for multiple presenting problems ( $X = 4$ ), with the most common being noncompliance (51%), hyperactive-impulsivity (43%), attention difficulties (40%), academic problems (39%), poor peer interactions (38%), and physical aggression (36%). Given their presenting problems, most were diagnosed with externalizing psychiatric disorders, such as Attention Deficit Hyperactivity Disorder (33%), Oppositional Defiant Disorder (30%), and Disruptive Behavior Disorder (12%). One in five presented with a Mood Disorder, and 15% presented with an Adjustment Disorder. In addition to having a diagnosable mental health disorder, 37% also experienced chronic physical illness, mostly asthma, allergies, and frequent or severe headaches.

### **Services Received by Youth and Families**

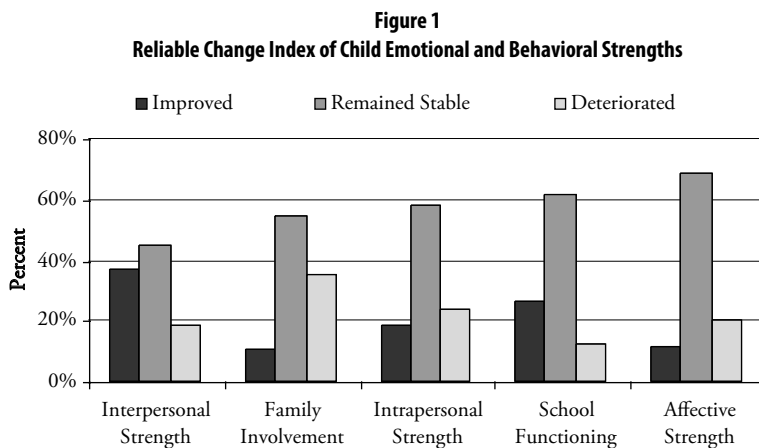
Service use data were captured at six months post entry into the program and every six months thereafter for up to 36 months for those consenting to participate in the CMHS national longitudinal outcome study. Youth and their families received a decreasing number of services over time, with an average of five services delivered during the first six months in the program and four services at 30-month follow-up. There appeared to be a balance in the number of traditional outpatient services and support services delivered, with an average of two services in each category. Individual therapy (81%), medication monitoring (54%), and group therapy (33%) were the most commonly received traditional outpatient services. Case management (65%) and caregiver/family support (35%) were the most commonly received support services. Residential services were used infrequently.

### **Youth and Family Outcomes at 30-Month Follow-Up**

Outcomes were assessed across life domains at program entry and every six months thereafter for youth and families consenting to participate in the longitudinal outcome study. For those with complete education data ( $n = 50$ ), less than half (46%) had an individualized education program (IEP) in the six months prior to intake, with the majority identified as having an emotional or behavioral disability and/or learning disability. The percentage of youth identified and served in special education increased by 10% between baseline and 30-month follow-up. About one in three improved their grade point average between intake and 30-month follow up ( $n = 40$ ). Youth ( $n = 25$ ) receiving school-based wraparound experienced fewer detentions and expulsions following entry into the program. Between baseline and 30-

month follow-up, the percentage of youth who received detention decreased from 36% to 24%, and the percentage of youth expelled decreased from 12% to 4%. The percentage of youth receiving a suspension increased slightly from 29% to 33%.

At 30-month follow-up ( $n = 60$ ), a reliable change index (Jacobson & Truax, 1991) of total problem behaviors indicated that the majority of youth (70%) experienced decreased symptomology over time. Symptomology remained stable for 22% and worsened over time for 8%. While the average internalizing score ( $X = 58$ ) was in the subclinical range at 30-month follow up, the average externalizing score ( $X = 67$ ) remained in the clinical range, attesting to the chronic and severe nature of the problems these youth experience. Youth ( $n = 34$ ) functioning improved over time as well. At intake, the average CAFAS Total Score was 107, while at 30-month follow-up the average decreased to 70. Increased emotional and behavioral strengths were most apparent in the interpersonal and school functioning domains (see Figure 1).



Family outcomes included measures of family functioning and caregiver strain. A reliable change index (Jacobson & Truax, 1991) for 57 families revealed that 37% experienced less global strain at 30-month follow-up, and 44% reported that their level of strain remained stable. The remaining 18% experienced greater strain. While 50% of caregivers ( $n = 30$ ) reported a deterioration in general family functioning between program entry and 30-month follow-up, only 14% of youth ( $n = 14$ ) reported decreased functioning. Likewise, only 23% of caregivers reported improved family functioning compared to 43% of youth.

## Discussion

In recent years, schools have begun to serve as a host environment for the delivery of integrated and coordinated services, including the provision of school-based wraparound. The results presented here support the contribution of school mental health services to improved clinical *and* school functioning of youth with emotional and behavioral problems; however, a less positive impact was realized for family outcomes, such as caregiver strain and family functioning. It is vital that mental health services research include the examination of academic as well as clinical outcomes when assessing service impact. Additionally, these findings indicate that greater attention must be given to the design of services that result in positive outcomes for the family, such as evidence-based family therapy to improve family functioning and effective caregiver supports to diminish caregiver strain. While the delivery of school-based wraparound shows promise as a strategy to address psychosocial barriers to learning, greater attention must be given to determine which services and supports contribute to improved family outcomes.

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# **Relationships among Model Fidelity, Dosage, and Student Outcomes in High Risk Elementary Schools**

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**Walter Powell**

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## **Introduction**

When effective interventions are implemented with a high degree of fidelity, positive outcomes occur (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). When assessing program fidelity, one is examining whether curricula are being provided as designed; that is, are teachers and administrators doing what they were trained to do. Unfortunately, many schools fail to assess whether academic and behavioral initiatives are delivered as intended; however, those that do, tend to find that lower adherence to the intervention protocol results in poorer outcomes for students (Dane & Schneider, 1998).

This study examined the effects of low and high levels of fidelity with the Girls and Boys Town Well-Managed Classroom (GBT WMC), a school-wide classroom management program, on Hartford (CT) Public Schools elementary students' classroom behavior and suspension rates.

## **Method**

### **Participants**

Fifty-six teachers from eight elementary schools participated in the study. Participating schools had an average enrollment of 535 students. Almost all students were African American or of Hispanic descent and qualified for the free/reduced price meal program. Close to half of students lived in homes where English was not the primary language. Less than 22% of 4<sup>th</sup> and 6<sup>th</sup> graders in participating schools met state goals on all three state standardized tests.

### **Intervention**

All teaching, support, and administrative staff at participating schools were trained in the Girls and Boys Town Well-Managed Classroom intervention (GBT WMC). On-site technical assistance, coaching, and evaluation followed training. Staff training included information and practice with (a) establishing clear classroom expectations for student behavior, (b) preventing student disruptive behavior, (c) blending social and academic instruction, (d) reinforcing (verbally) student prosocial behavior and academic performance, (e) correcting student misbehavior effectively, and (f) providing daily social skills instruction. Additional training for administrators included ways to implement a school-wide social skills curriculum, intervene with disruptive students, and use data to support building-wide change.

On-site technical assistance and coaching efforts were focused on increasing implementation and adapting the GBT WMC to meet needs of staff and students. On five occasions during the school year GBT consultants conducted structured and unstructured observations in classrooms and common areas of the building. Observation data were shared with teachers and administrators; strengths and areas in need of improvement were discussed; and strategies were developed that targeted classroom and student issues.

### **Design and Measures**

*Design.* A posttest-only comparison group design was used. Dependent measures included student off-task rates during class instruction and student out-of-school suspension rates.

*Fidelity measures.* GBT WMC level of fidelity was determined based on data collected during 16 minutes of direct observation in each participating classroom. During observations, the observer sat in the back of the room and had no interaction with the teacher or students. Twelve minutes of each

observation involved tracking the occurrence of key GBT WMC components, i.e., teacher use of behavior and academic verbal prompts, teacher use of verbal praise for student academic responses and prosocial behavior, the ratio of teacher praise to correction of student misbehavior, and the percent of student compliance with teacher correction (a proxy measure for use of effective correction strategies taught during the WMC training).

**Dosage and assignment to low and high fidelity groups.** Teachers were assigned to either a low or high program fidelity group based on rates of observed use of GBT WMC components (i.e., the dosage of GBT WMC). The bottom and top third of teachers (i.e., those providing the lowest and highest combined dosage of praise, prompts, effective correction, and praise-to-correction ratios) were assigned to the low implementation group ( $n = 20$ ) and high implementation group ( $n = 18$ ), respectively.

**Student off-task behavior.** Off-task rates were determined via direct observation in the classroom. At every one-minute interval during the observation, the observer scanned the room and recorded the number of students who were off-task. Student off-task behavior was operationally defined as *not* visually, verbally, or kinesthetically engaged in the academic lesson.

**Inter-rater agreement.** A second observer was present in 16 of the 56 classrooms (29%) to assess inter-rater agreement. Inter-rater agreement was 100% for assigning teachers to low (< 10% of students off-task) and high ( $\geq 20\%$  of students off-task) levels of disruptive student behavior and 81% (13/16) for assignment to low or high program fidelity group.

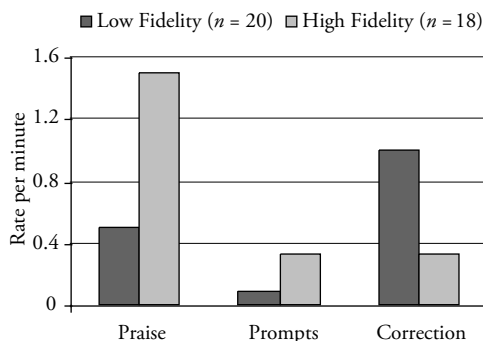
**Suspension rates.** Out-of-school suspensions (OSS) reported to the district and state were summarized for each participating classroom.

## Results

### Fidelity and dosage

High fidelity teachers provided a greater dosage of the intervention than low fidelity teachers. On average, high fidelity teachers praised students three times more often (3 per 2 min vs. 1 per 2 min), prompted students four times more often (1 per 3 min vs. 1 per 12 min), and corrected students three times less often (1 per 3 min vs. 1 per 1 min) than low fidelity teachers (Figure 1). High fidelity teachers had, on average, a praise to correction ratio of 4:1 while low fidelity teachers had a 1:2 ratio; that is, teachers in the low fidelity group corrected students twice as often as they praised them. On average, students in high fidelity classrooms complied with teacher correction 94% of the time while students in low fidelity classrooms complied on 51% of the occasions.

**Figure 1**  
A Comparison of Key GBT WMC Concepts



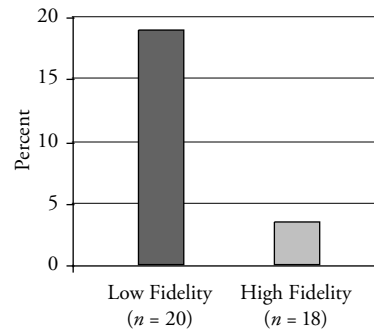
**Student off-task behavior.** Results indicated an inverse relationship between program fidelity level and student behavior problems. On average, low fidelity teachers had 5.5 times more students who were off-task in their classrooms than high fidelity teachers (Figure 2).

**Suspension rates.** Low fidelity teachers had, on average, eight suspension events while high fidelity teachers had four suspensions during the school year. Students in low and high fidelity classrooms were suspended an average of three and two days per suspension, respectively.

### Conclusions

Initial results from this study provide support for a relationship among program fidelity, dosage, and improved outcomes. Those teachers who provided a high dosage of the GBT WMC had more students on task and fewer students suspended than teachers providing a low dosage of the intervention. These findings are preliminary. Alternative explanations for differences among fidelity, dosage, and outcomes, such as teacher quality before their GBT WMC training or assignment bias that resulted in well-behaved students in high fidelity teachers' classrooms, have not been ruled out. Nevertheless, results are encouraging and provide support for studies that have found relationships between intervention fidelity and school based outcomes. Future studies should focus on examining other differences between low- and high-fidelity teachers; strategies administrators, district staff, and outside consultants can use to help low-fidelity teachers provide effective classroom management; and the effect of implementation of the Girls and Boys Town Well-Managed Classroom on academic performance.

**Figure 2**  
**Mean Percent of Off-Task Students**



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# **Risk Status and the Differential Effectiveness of Urban School-Based Mental Health Services**

David L. Hussey

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## **Introduction**

We are entering an era of unsurpassed interest in supporting schools through school-based mental health services. Nationally, increased accountability mandates (i.e., No Child Left Behind) responsive to children with emotional and behavioral disabilities have encouraged educators and mental health professionals to develop school-based models to deliver mental health services. In Ohio, for instance, the Ohio Department of Mental Health (ODMH) and the Center for Learning Excellence have joined together to develop a statewide network of support for the improvement and expansion of mental health services in Ohio schools. Such service models afford opportunities to achieve high penetration and retention rates with at-risk youth earlier in their developmental course. Unfortunately, much of the research from school-based initiatives lack explanatory power because the data elements, while consistent, are not linked to each other, and not linked to individual children, specifically measuring changes in the mental health status of those with serious emotional disturbances.

In 2002 the Ohio Department of Mental Health funded a study (ODMH #04-1201) to learn more about the utility of urban school-based mental health service delivery models that are funded through routine public sector sources such as Medicaid. Eight years (1995-2003;  $N = 2,449$ ) of behavioral rating data were analyzed on youth, consecutively referred to as the Beech Brook School Based Mental Health Program. Beech Brook is a large child-serving agency that has been providing school based mental health services since 1975. The study sample encompasses school-referred children from over 30 Cleveland schools who were enrolled in the Beech Brook school based program at any point in time during the period from 1995-2003. The program mental health staff provided individualized treatment plans to meet the needs of each child in the program, including individual, group, and family assessment and treatment interventions. The interventions were designed to improve social competence and reduce symptoms of emotional/behavioral disturbance that interfere with daily living, personal development, and school performance. Individual interventions included assistance in crisis situations, assessment, linkage, coordination/referral of children and families to other community based services, and training and consultation to teachers and other school personnel. Children discussed issues regarding their home life and progress toward treatment goals, and received assistance in crisis situations when they are unable to function due to conflicts with others. Group interventions were designed to promote the development of interpersonal and community coping skills, improve symptom monitoring, and assist in the self-management of mental health symptoms. The children were divided into small groups consisting of children with similar goals and issues. The effects of feelings and behaviors that interfere with daily living and personal development were recognized, the child's awareness of how these issues affect others was discussed, and alternative coping strategies were identified.

Beech Brook is one of six agencies now providing urban school based mental health services in over 100 schools through a Cleveland consortium in a developing system of care initiative. Collectively, this urban school based mental health service delivery consortium provides a formidable platform for successfully achieving high service penetration rates to at-risk youth. In 2004, the Beech Brook program alone served approximately 800 youth, or 6.7% of the 11,851 children in Cuyahoga County's public mental health system.

## Method

Cross-sectional and longitudinal statistical analyses were used to describe and compare changes in the psychiatric status of youth. Child psychiatric symptomatology and behavioral functioning is measured using the Devereux Scales of Mental Disorders (DSMD; Naglieri, LeBuffe, & Pfeiffer, 1994). The DSMD is the primary research instrument administered at intake and every 90 days thereafter while youth were enrolled in services. The DSMD is a 111-item standardized behavior rating scale designed to evaluate behaviors related to psychopathology in children and adolescents. The DSMD was specifically chosen because of its connection to DSM-IV criteria. The instrument has three composite scores: (a) Externalizing (conduct disorder and attention deficit hyperactivity disorder); (b) Internalizing (depression and anxiety); and (c) Critical Pathology (acute and autistic behaviors), each made up of two subscales. The DSMD total and composite scores have excellent internal reliability (e.g., Cronbach's alpha of .97 for the Total Scale) and test-retest reliability (.96 for the Total Scale). The DSMD uses both teacher and parent raters. A total score of 60 has been empirically determined to be the best cut-score for differentiating clinical from non-clinical samples. Generally DSMD *t*-scores can be interpreted as follows: 40-55 = *Average*; 56-59 = *Borderline*; 60-69 = *Elevated*; and 70+ = *Very Elevated*.

A subset of the 2,449 school-based mental health program children ( $n = 626$ ) received only assessment and consultation services. These children were not seen for continued treatment which included ongoing DSMD ratings at 90 day intervals. DSMD ratings are available for 1,823 unique children enrolled from November 5, 1995 to December 19, 2003. There are over 8,000 DSMD ratings in the data base. Of the children who have two or more parent ratings, there are 4,626 ratings for 1,197 children. Each child has an average of 4.68 ratings made by parents and/or teachers.

## Results

The sample contains descriptive data on 2,449 children assessed by mental health staff. Of these children, 1,992 (81.5%) are African American; 358 (14.67%) are Caucasian; 15 (.6%) are Hispanic; 7 (.3%) are Native American; 3 (.1%) are Asian; 11 (4%) are classified as Other; and approximately 1.4% are unknown. The sample includes more males (72.2%) than females. The mean age at the first rating for this sample is 9.74 years old ( $SD = 2.69$ ).

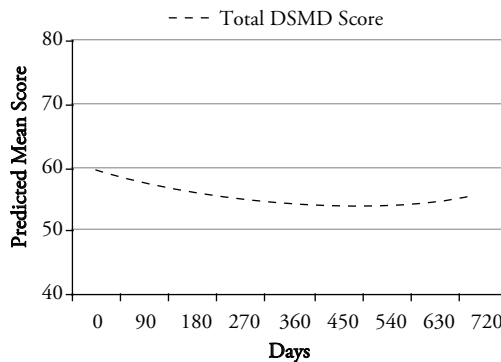
Results showed that upon referral, 70.6% of children rated by parents and 76.6% of children rated by teachers, scored in the Borderline or above range ( $> 55$ ) on the conduct subscale of the DSMD, with more than 35.5% of parent rated children and 30.9% of teacher rating children scoring a 70 or above, or in the Very Elevated range of clinical impairment. Results further showed that upon referral, 62.8% of children rated by parents and 71.1% of children rated by teachers, scored in the Borderline or above range ( $> 55$ ) on the depression subscale of the DSMD, with more than 27.9% of parent rated children and 29.4% of teacher rating children scoring a 70 or above, or in the Very Elevated range of clinical impairment.

Initially, two series of paired *t*-tests were conducted, selecting subjects who have at least two ratings either from their parents (i.e., caretakers) or teachers, or both. Findings indicate statistically significant improvements for youth served in the program by both parent ( $M = 60.65$  (13.34) vs. 56.10 (13.50);  $t = 12.49$ ,  $df = 1196$ ;  $p = .000$ ) and teacher raters ( $M = 59.94$  (10.66) vs. 57.98 (10.88);  $t = 12.39$ ,  $df = 924$ ;  $p = .000$ ). The mean change difference in parent score was 4.55 points, the mean difference in teacher score was 1.96 points.

While paired *t*-tests are often used as a first step to assess pre/post change in agency settings, they are limited in providing a thorough and consistent picture of change. This study will utilize more sophisticated analyses to examine change scores, including analyses of key client and service characteristics that may predict differential change outcomes. Preliminary analyses using hierarchical linear modeling (HLM) included children who had at least two rating scores. The mean number of ratings was 3.9, and the median was 3. Based on the rating dates, investigators calculated statistics about

children's length of stay in the program. The median length of stay was 262 days. The distribution of length of stay in the program is as follows: 61.1% stayed in the program for one year, 27.8% stayed for two years, and 11% stayed for more than two years. Since the majority of children (88.9%) stayed in the program less than two years, a two-year time period was selected as the study observation window to show the change of behavioral measures over time in graphic presentations. All HLM models showed a quadratic change. Figure 1 depicts the overall change for the total DSMD score, encompassing the internalizing, externalizing, and critical pathology dimensions. The observed mean total score of the study sample at baseline was 61.06 ( $SD = 13.51$ ), and the same mean score at the last rating was 56.52 ( $SD = 13.81$ ). Clearly, children's mean total score decreased over time. As Figure 1 shows, the change trajectory was curvilinear. In general, the model-predicted mean trajectory of the study children constantly declined in the first year, and reached a lowest point of 54.14 on the 450<sup>th</sup> day; after that, the predicted mean trajectory started to increase.

**Figure 1**  
**Model-based Prediction of DSMD Total Score Over Time**



## Conclusion

Successful school-based models, with the ability to achieve high service penetration rates using routine and publicly supported funding mechanisms, are in critical demand. Further investigation needs to continue to understand how program effects may be related to differences in client and service characteristics. Clearly, control groups need to be utilized in such studies in order to truly evaluate program effects. Deeper understanding of such promising treatment models that can inform the field regarding practice-based evidence, and are a high priority for more rigorous study and investigation.

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# **School-Wide and Student-Specific Interventions: Behavioral and Academic Effects with Urban Middle School Students**

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## **Introduction**

The recent report *Locating the Dropout Crisis* (Belfanz & Legters, 2004) indicated that high schools with low student promotion rates (i.e., < 50% of freshman become seniors) are concentrated in high poverty, high minority, urban districts. While poor academic achievement is the strongest predictor for dropping out of high school, middle school students living in poverty who engage in deviant behavior and have antisocial peers are at greater risk for dropping out regardless of whether they have a history of academic failure (Battin-Pearson, Abbott, Hill, Catalano, Hawkins, et al., 2000). This study examines effects of a student and family assistance center and school-wide classroom management program in a middle school that serves students from a high crime, high poverty urban community.

The current project focused on increasing time spent on-task during academic lessons, reducing suspension rates, and improving student academic outcomes. This summary describes results at one of the middle schools involved in the project.

## **Method**

### **Participants**

The participating middle school has an urban campus serving 1,140, primarily Black (33%) and Hispanic (63%) students with high-risk profiles: 100% are in compensatory education programs; 95% qualify for free/reduced priced meals, 63% are from families where English is not the home language; 21% qualify for Special Education services; 14% are in English as a Second Language (ESL) classrooms; and 13% of 8th grade students met the state goal on standardized tests of reading, writing, and mathematics during the year prior to the project.

### **Interventions**

Two interventions were introduced to the middle school during the two successive years of the project. The first intervention involved establishing a Student and Family Assistance Center (SFAC) in the building. SFAC is based on the Substance Abuse and Mental Health Service Administration's "Science-Based Prevention Programs and Principles" Residential Student Assistance Program and has been modified for an urban population. Services vary by needs of the student and situation but most services fit under the headings of counseling, peer mediation, or conflict resolution. The SFAC is staffed by three full-time licensed social workers and 25 to 30 part-time bachelor and masters-level interns from local universities. Students can self-refer or be referred to SFAC by school administrators and staff. Referrals are typically the result of student disruptive behavior in the classroom or verbally or physically aggressive behavior between students in common areas of the building. SFAC services are available to students throughout the school day. When students depart the SFAC, they typically return to their class, return to the administrator's office, or are referred for other school- or community-based services.

The second intervention, The Girls and Boys Town Well-Managed Classroom (GBT WMC) involves training for school staff and administrators followed by on-site technical assistance, coaching, and evaluation. Staff training includes information and practice with (a) classroom management plans that establish clear classroom expectations for student behavior, (b) the prevention of student disruptive behavior, (c) the blending of social and academic instruction, (d) verbal reinforcement for student

prosocial behavior and academic performance, (e) methods for correcting student misbehavior, and (f) a daily lesson on social skill instruction and generalization of skill use. Training for administrators includes ways to implement a school-wide social skills curriculum, intervene with disruptive students, and use data to support building-wide change.

**Dependent measures**

*Student classroom behavior.* The percentage of students who were off-task during classroom instruction was used to assess the effectiveness of classroom management strategies. Off-task rates were determined via direct observation in the classroom. At every one-minute interval during the observation, a trained observer scanned the room and recorded the number of students who were off-task. Prior studies that have used this process of recording off-task rates have reported inter-rater agreement between 88% and 90% (Burke, Hensley, Duppong-Hurley, & Oats, 2002). Student off-task behavior was operationally defined as not being visually, verbally, or kinesthetically engaged in the academic lesson. For the purposes of this study, the building administrator identified classrooms that were challenging for the staff and/or had high rates of student office referrals. Seven classrooms on this list had student off-task rates above the 10% threshold for a well-managed classroom during at least one of five technical assistance visits during the school year (Time 1, Figure 1). These seven teachers and their students were observed during the end of the school year evaluation to assess improvement in the most challenging classrooms.

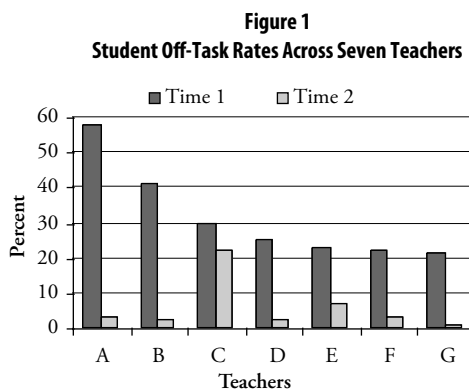
*Suspension rates.* The total number of in-school (ISS) and out-of-school suspensions (OSS) that were reported by the school to the district were summarized for each year of the project.

*Academic performance.* Results from the annual state-wide administration of the Connecticut Mastery Test (CMT; Connecticut State Department of Education, 2002) were used to assess improvement in academic performance. For this study, we summarized and compared the annual percentage of students who met state goals on the reading, writing, and math portions of the test.

**Results**

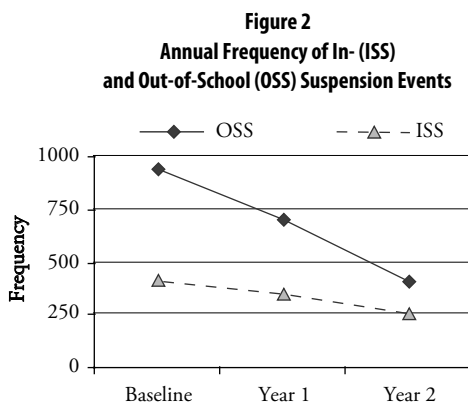
**Student classroom behavior**

During the end-of-the-school year evaluation, classroom observations indicated that all teachers had improved off-task rates and that 95% or more of the students were on-task at each one-minute interval in six of the seven challenging classrooms (Figure 1).



### Suspension rates

The frequency of ISS and OSS events decreased steadily from baseline through year two of the project (Figure 2). From the baseline school year to Year 1 of the project, ISS and OSS decreased by 25% and 15%, respectively, when the SFAC program was implemented. When SFAC and GBT WMC programs were combined, ISS and OSS rates decreased an additional 42% and 28%, respectively.



### Academic performance

The percentage of students who participated in CMT testing and met the state goal on CMT reading and writing tests steadily increased in each project year. The percentage of students meeting the state goal improved from 25% at baseline to 30% in year two of the project on reading tests and from 31% to 37%, respectively, on writing tests. Results on the math test fluctuated each year.

### Discussion

Urban schools face unprecedented challenges in an era of accountability and results-based testing. This study provides preliminary support for the combined use of school based support services for students and staff. Results suggest that use of student and family assistance centers and the Girls and Boys Town Well-Managed Classroom helps increase on-task behavior during academic lessons, reduce in-school and out-of-school suspensions, and improve scores on standardized tests of reading and writing with high risk students.

Middle school students in high poverty, high crime communities are exposed to environmental toxins in the school and community that place them at increased risk for dropping out. Interventions that provide students with support in solving immediate problems (SFAC) and the opportunity to learn and use social skills in a safe environment (GBT WMC) have the potential to reduce the affects of poor academic achievement in earlier grades. Additional studies, including use of random assignment of student, staff, or schools to treatment and comparison groups will be necessary.

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# **Child and Family Predictors of Absenteeism among At-Risk Students**

Mary L. Keeley  
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## **Introduction**

School absenteeism has been identified as a precursor or symptom for many negative outcomes for children and adolescents, including school dropout, social and occupational problems, and mental health disorders (American Psychiatric Association, 2000; Kearney & Silverman, 1996). Historically, researchers have focused more attention on the issue of student dropouts than on issues related to problematic absenteeism. School dropout is often preceded by a series of events, such as grade decline and absences, that become increasingly characterized as academic disengagement and avoidance behaviors (Epstein & Sheldon, 2002). Researchers have argued that shifting the focus away from the single event of dropout and toward rates of daily attendance may aide in the early identification of at-risk students (Epstein & Sheldon, 2002). Despite this need for early identification, prevention research in the area of school absenteeism is lacking, and further examination of the potential factors related to absenteeism is necessary to guide intervention studies.

Current researchers have highlighted that chronic non-attenders are a heterogeneous population and that steps should be taken to piece apart subgroups who share common risk factors that may be amenable to targeted treatment (King et al., 1998). Two such subgroups are unexcused and excused absences. Excused absences denote instances of absenteeism defined as any formal school absence agreed on by parents and school officials as legitimate in nature (e.g., approved parent and doctor notes). On the other hand, unexcused absences are instances of formal school absence judged by school officials to be unjustified. Oftentimes, unexcused absences denote “skipping school.”

Comparatively less research has examined family-related factors associated with school absenteeism. Most studies of school absenteeism or dropout that have examined family factors have used purely demographic variables in analyses (Rumberger, Ghatak, Poulos, Ritter, & Dornbusch, 1990). More precise explanations of the specific mechanisms underlying the family characteristics contributing to absenteeism are needed to aid in the development of strategies that will be effective for preventing absenteeism.

The aim of the current study was to examine factors related to school absenteeism for two types of absences: unexcused absences versus excused absences. The current study examined data from a sample of students referred by school guidance counselors to a school-linked mental health program. This study hypothesized that both child- and family-related factors would contribute to absenteeism. Additionally, this study hypothesized that differences would emerge between factors associated with unexcused and excused absences, such that older age, more externalizing problems, and families characterized by conflict and disorganization would emerge as predictors of unexcused absences, whereas younger age, more internalizing problems, and families characterized by less cohesion would emerge as predictors of excused absences.

## **Method**

Participants were 90 youth (34 females and 56 males) and their families living in a primarily rural region of the Southeastern United States. Children ranged in age from 4 to 17 ( $M = 10.82$ ,  $SD = 3.19$ ). Eighty-nine percent of the children were Caucasian, 7% were African American, 1% were Hispanic, and 3% were classified as other ethnicity. Fifty-two percent of primary caregivers were married or living together and 48% were single. Approximately 40% of families had an income less than \$20,000; 40% of families had an income between \$20,000 and \$40,000; and 20% of families had an income greater than \$40,000.

This study was conducted with children and their families who were referred to Project CATCH (Columbia Acting Together for Children), a federally funded prevention and intervention project, for school-linked mental health services due to concerns about behavioral, academic, or emotional problems. School guidance counselors identified at-risk students and then referred the child to Project CATCH. After this referral, clinicians conducted a formal assessment of emotional and behavioral functioning via standardized measures. Academic functioning was assessed via school records.

### Instruments and Data Collection

Parents completed the Behavior Assessment System for Children – Parent Rating Scale (BASC-PRS; Reynolds & Kamphaus, 1998). This study used the Internalizing Problems and Externalizing Problems composite scales as indicators of symptom severity and the Social Skills composite as an indicator of a child's social competence. The Family Environment Scale (FES; Moos & Moos, 2002) was used to measure the parent's perceived family climate. This study examined three of these subscales: Cohesion, Conflict, and Organization.

School absences were assessed over a 12-month time period prior to the initial CATCH assessment and were obtained from school records. Excused absences constituted instances of absenteeism defined as any formal school absence agreed on by parents and school officials as legitimate in nature. Unexcused absences were instances of formal school absence judged by school officials to be unjustified.

### Results

The number of unexcused absences ranged from 0 to 28 ( $M = 5.41$ ,  $SD = 6.90$ ), and the number of excused absences ranged from 0 to 26 ( $M = 7.02$ ,  $SD = 6.87$ ). The number of total absences ranged from 0 to 48 ( $M = 12.43$ ,  $SD = 11.58$ ).

We conducted two separate multiple regressions in which the predictor variables for each regression were child age, child internalizing symptoms, child externalizing symptoms, child social skills, family income, parental marital status, family cohesion, family conflict, and family organization. The dichotomous variable, parental marriage status, was dummy coded, such that (0) represented married/living together and (1) represented single.

In the first analysis, unexcused absences was the criterion variable. In this analysis we found that the aforementioned predictor variables accounted for 33% of the variance in unexcused absences ( $R^2 = .33$ ;  $F[9,80] = 4.37$ ,  $p < .001$ ). Table 1 presents standardized regression coefficients and  $t$ -statistics for each predictor variable. In the second analysis, excused absences was the criterion variable. In this analysis we found that the predictor variables accounted for 29% of the variance in excused absences ( $R^2 = .29$ ;  $F[9,80] = 3.62$ ,  $p = .001$ ). Table 2 presents standardized regression coefficients and  $t$ -statistics for each predictor variable.

**Table 1**  
Standardized Regression Coefficients and  $t$ -Statistics  
for each Predictor of Unexcused Absences

Predictor	Beta	$t$
Age	.36	3.73**
Marriage status	.04	.40
Income	-.26	-2.58*
Internalizing symptoms	.02	.19
Externalizing symptoms	.14	1.19
Social skills	-.13	-1.25
Family cohesion	.28	1.96
Family conflict	.08	.64
Family organization	-.25	-2.03*

Note: \* $p < .05$ ; \*\* $p < .01$

**Table 2**  
Standardized Regression Coefficients and  $t$ -Statistics  
for each Predictor of Excused Absences

Predictor	Beta	$t$
Age	.08	.75
Marriage status	.05	.42
Income	-.28	-2.71**
Internalizing symptoms	.46	4.09**
Externalizing symptoms	-.17	-1.41
Social skills	-.10	-1.00
Family cohesion	.02	.16
Family conflict	-.18	-1.32
Family organization	-.12	-.94

Note: \* $p < .05$ ; \*\* $p < .01$

Results provided some support for the hypothesis that different factors would emerge as predictors of unexcused versus excused absences. In particular, findings indicated that (1) older child age, lower family income, and lower family organization were significantly related to unexcused absences and (2) greater internalizing symptoms and lower family income were significantly related to excused absences.

## **Discussion**

Results from this study indicate that family income is implicated in both excused and unexcused instances of school absenteeism. This finding suggests that children and adolescents from poorer families may be at a disadvantage when it comes to attending school. Factors that may reduce motivation or opportunities to attend school, and that are also associated with low income, include a lack of educationally stimulating material in the home, more health-related problems, and transportation difficulties. Results from this study suggest that interventions aimed at reducing overall school absenteeism should include some aspect that addresses family resources.

Since family disorganization was predictive of unexcused absences, interventions targeting youth with these absences may benefit from assessing and addressing issues of family organization. Disorganized families are characterized by chaotic interactions, ineffective communications, and instability in supervising responsibilities, and these qualities are likely contributors to a student's absenteeism. Research has suggested some preliminary support for interventions that involve connecting parents with school contact persons and assigning students and families with attendance problems to a truancy officer (Epstein & Sheldon, 2002). Such contact with families may help them to enhance communication, increase monitoring, and assume greater responsibility for their children's educational involvement. Interestingly, child externalizing symptoms and family conflict were not significantly related to unexcused absences. In the past, a child's oppositional or delinquent nature was implicated as a factor in "skipping school" (Lauchlan, 2003). However, results from this study suggest that risk factors for unexcused absences may be more related to the structure and organization of the family environment than to externalizing problems within the child.

In contrast, youth internalizing symptoms were found to be predictive of excused absences. Thus, interventions targeting youth with these absences may benefit from inclusion of components that address internalizing symptoms, including anxiety, depression, and somatic complaints. Indeed, there is preliminary evidence that referring chronically absent students for counseling is associated with reduced absenteeism (Epstein & Sheldon, 2002). Research on the effectiveness of cognitive-behavioral intervention programs for chronic non-attenders has reported mixed results (Lauchlan, 2003). Future research studies in this area should investigate whether use of targeted cognitive-behavioral techniques (e.g., relaxation training, cognitive restructuring, and exposure) with only those children evidencing internalizing symptoms would provide clearer empirical support for cognitive-behavioral treatment for school non-attenders.

In conclusion, researchers have indicated that attendance at school serves as a protective factor for at-risk youth (Henry, Caspi, Moffitt, Harrington, & Silva, 1999). This study examined possible contributors to non-attendance so as to identify areas in which intervention may be helpful in improving attendance rates among at-risk youth. Findings suggest that different factors are related to excused versus unexcused absences, thus illustrating the importance of considering tailored interventions based on the type of absenteeism and other symptoms exhibited by the student. Future research should continue to evaluate predictors of absenteeism among subgroups of non-attenders. Furthermore, future research should focus on systematic empirical investigations of whether targeted interventions are effective in reducing absenteeism.

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