PREVENTING MENTAL DISORDERS IN SCHOOL-AGE CHILDREN:

A Review of the Effectiveness of Prevention Programs

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PREFACE

This report is the result of a contract awarded by The Center for Mental Health Services to the Prevention Research Center for the Promotion of Human Development at Pennsylvania State University.

Goals of the Review and Report

The central goal of this report is to review and summarize the current state of knowledge on the effectiveness of preventive interventions intended to reduce the risk or effects of psychopathology in school-age children. In doing so, this report

- identifies critical issues and themes in prevention research with school-age children and families
- identifies universal, selective and indicated programs that reduce symptoms of both externalizing and internalizing disorders
- summarizes the state-of-the art programs in the prevention of mental disorders in school-age children,
- identifies elements that contribute to program success, and
- provides suggestions to improve the quality of program development and evaluation

The current report is not intended to describe, in detail, preventive interventions that show effects only on outcomes such as substance use, sexual behavior and contraception, or interventions that promote competence, but have not demonstrated effects on psychological symptomology. A number of recent reports review these related, but separate fields (Catalano, et al, 1998; Durlak, 1995; Durlak and Wells, 1998; Greenberg, Zins, Elias, & Weissberg, 1999; Kirby, et al., 1994; Tobler and Stratton, 1997).

Structure of the Report

The report contains six sections as well as Appendices. Section One reviews current issues and themes in prevention research with school-aged children. Section Two summarizes the process of program review. Section Three reviews universal prevention programs. Sections Four and Five review selective and indicated programs for children at risk for either externalizing or internalizing psychopathology. Section Six provides a brief summary of the findings of this review and their implications for program development and evaluation. Finally, the Appendices provide in-depth information on the effective programs identified in Sections Two, Three and Four.

NARRATIVE

I. Current Issues and Themes in Prevention Research

Introduction

In the last decade prevention has moved into the forefront and become a priority for many federal agencies in terms of policy, practice, and research. This paradigm shift began with a report by the National Advisory Mental Health Council (1990) and is reflected in the combined work of the National Institute of Mental Health (NIMH, 1993) and the Institute of Medicine (IOM, 1994). More recently, the National Advisory Mental Health Council Workgroup on Mental Disorders Prevention Research (NIMH, 1998) outlined a number of priorities and recommendations for research initiatives in prevention science.

The Need for a Preventive Focus in Child Mental Health

Interest in prevention is also reflected in the goals that have been set for our nation's health. One of the original objectives of Healthy People 2000 was to reduce the prevalence of mental health disorders in children and adolescents to less than 17%, from an estimated 20% among youth younger than 18 in 1992 (DHHS, 1991). As of 1997, the summary list of mental health objectives for Healthy People 2000 included reducing suicides to no more than 8.2 per 100,000 youth (aged 15-19) and reducing the incidence of injurious suicide attempts among adolescents to 1.8% and, more specifically, to 2.0% among female adolescents (DHHS, 1997). A number of other objectives were related to child and adolescent mental health. One of the risk reduction objectives in the Violent and Abusive Behavior category was to reduce the incidence of physical fighting among adolescents aged 14-17 from a baseline of 137 incidents per 100,000 high school students per month to 110 per 100,000 (DHHS, 1997). Two additional objectives in this category were to increase to at least 50% the proportion of elementary and secondary schools that include nonviolent conflict resolution skills and to extend violence prevention programs to at least 80% of local jurisdictions with populations over 100,000 (DHHS, 1997). It is unlikely that these goals will be met by the year 2000.

There is growing concern in our country as increasing numbers of children and adolescents are having difficulty managing the challenges of development. Between 12% and 22% of America's youth under age 18 are in need of mental health services (National Advisory Mental Health Council, 1990), and an estimated 7.5 million children and adolescents suffer from one or more mental disorders (OTA, 1986). In addition to the personal suffering experienced by children with emotional or behavioral problems and their families, mental health disorders also have a tremendous cost to society. According to the National Advisory Mental Health Council (1990), in 1990 mental illness cost the United States an estimated 74.9 billion dollars.

While a number of recent reviews (e.g. Kazdin & Weisz, 1998; or see special issue of Journal of Clinical Child Psychology, 27, 1998) and meta-analyses (Casey & Berman, 1985; Kazdin, Bass, Ayers, & Rogers, 1990; Weisz, Weiss, Alicke, & Klotz, 1987; Weisz, Weiss, Han, Granger, & Morton, 1995) provide evidence that childhood disorders are amenable to treatment, the literature must be interpreted cautiously. There is still a great deal to be learned about specific types of treatments, their appropriateness for certain disorders, and the factors that contribute to treatment success and failure. We have not reached the point where we are able to serve all children effectively. As suggested by the Institute of Medicine in their report to Congress on the state of prevention research in mental health, it is important not to overlook the significance of prevention even if treatment efforts have been unsuccessful; in fact, prevention may play a particularly important role for these types of disorders (IOM, 1994).

It is clear that to reduce levels of childhood mental illness, interventions need to begin earlier, or ideally, preventive interventions need to be provided prior to the development of significant symptomology. In addition, efforts need to be increased to reach the many children that do not have access to treatment. Many children and adolescents with clinical levels of problems never receive appropriate mental health services or they receive inappropriate services (Knitzer, 1985; Tuma, 1989). Another problem with service delivery is that some children only become eligible for therapeutic services after they have entered another system such as special education or juvenile court and this is usually after their problems have begun to escalate.

The Role of Developmental Theory in Prevention Research

Prevention science is highlighted by the integration of developmental theory with models from public health, epidemiology, sociology, and developmental psychopathology in conceptualizing, designing, and implementing preventive interventions (Cicchetti, 1984; Cicchetti & Cohen, 1995; Kellam & Rebok, 1992; Lorion, 1990; Sameroff, 1991; Sroufe & Rutter, 1984). As concepts in development have broadened to include ecological analysis (Bronfenbrenner, 1979, 1995; Garbarino, 1992) and multivariate examination of causation and risk (Institute of Medicine, 1994; Rutter, 1987), developmental theory has provided a powerful framework for organizing and building the field.

Given the principle that the developing organism is strongly influenced by context, Bronfenbrenner's model of the nature and levels of context has catalyzed the field (Bronfenbrenner, 1979; Bronfenbrenner & Crouter, 1983; Bronfenbrenner, 1995). The ecological model posits four levels for classifying context beginning with those ecologies in which the child directly interacts and proceeding to increasingly distant levels of the social world that affect child development. The first level, the microsystem, is composed of ecologies with which the child directly interacts such as the family, school, peer group, and neighborhood. The mesosystem encompasses the relationships between the various microsystems (e.g., the family-school connection or between the parents and the child's peer group and peers' families). The absence of mesosystem links may also be an important risk factor in development.

Interactions within both the microsystem and mesosystem are often affected by circumstances that do not directly involve the child. For example, children and youth may be significantly affected by changes in marital circumstance, parental social support, changes in the legal system (e.g., changing definitions of neglect or abuse; regulation of firearms, tobacco, and illegal drugs), the social welfare system (e.g., welfare reforms, boundary changes for categorical services), the mass media (e.g., controls on children's exposure to television violence, the widened horizons via the internet), or other social structures that set policies and practices that alter microsystem and mesosystem interactions. The exosystem is those contexts and actions that indirectly impact the child's development. Many preventive interventions may be viewed as changes at the exosystem level that alter interactions among lower system levels. Finally, the macrosystem represents the widest level of systems influence, consisting of the broad ideological and institutional patterns and events that define a culture or subculture.

Developmental-ecological models can be used both to frame basic research attempts to understand layers of influence on behavior, and also to identify potential targets and mediators of intervention. It is important for researchers to specify, for example, whether their interventions focus primarily on: the microsystem--or a particular portion of it; multiple microsystems (e.g., interventions for both the home and school); the mesosystem (e.g., the family-school connection); informal networks that in turn affect the microsystem (e.g., the development of extended family or peer support to parents); or developing new models of service delivery or regulatory reform (e.g., formal services in the exosystem). Further, one might ask if these different levels of intervention emphasize changing the behavior and attitudes of individuals at these levels (i.e., person-centered), or changing the nature of the system's operation itself (i.e., environment-focused) (Cowen, 1977; Weissberg, Caplan, & Harwood, 1991).

The Role of Risk and Protective Factors in Preventive Interventions

Public health models have long based their interventions on reducing the risk factors for disease or disorder as well as promoting processes that buffer or protect against risk. Community-wide programs have focused on reducing both environmental and individual behavioral risks for both heart and lung disease and have demonstrated positive effects on health behaviors as well as reductions in smoking (Farquhar et al., 1990; Jacobs et al., 1986; Pushka et al., 1989).

Risk factors and their operation During the past decades, a number of risk factors have been identified that place children at increased risk for psychopathology. Coie et al. (1993, p. 1022) grouped empirically derived, generic risk factors into the following seven individual and environmental domains:

1. Constitutional handicaps: perinatal complications, neurochemical imbalance, organic handicaps, and sensory disabilities;

2. Skill development delays: low intelligence, social incompetence, attentional deficits, reading disabilities, and poor work skills and habits;

3. Emotional difficulties: apathy or emotional blunting, emotional immaturity, low self-esteem, and emotional disregulation;

4. Family circumstances: low social class, mental illness in the family, large family size, child abuse, stressful life events, family disorganization, communication deviance, family conflict, and poor bonding to parents;

5. Interpersonal problems: peer rejection, alienation, and isolation;

6. School problems: scholastic demoralization and school failure;

7. Ecological risks: neighborhood disorganization, extreme poverty, racial injustice, and unemployment.

Theory and research support a number of observations about the operation of these risk factors and the development of behavioral maladaptation. First, development is complex and it is unlikely that there is a single cause of, or risk factor for, any disorder. It is doubtful that most childhood social and behavioral disorders can be eliminated by only treating causes that are purported to reside in the child alone (Rutter, 1982). Furthermore, there are multiple pathways to most psychological disorders. That is, different combinations of risk factors may lead to the same disorder and no single cause may be sufficient to produce a specific negative outcome (Greenberg, Speltz, & DeKlyen, 1993). In addition, risk factors occur not only at individual or family levels, but at all levels within the ecological model (Kellam, 1990).

The complexity of developmental pathways is clear from research relating risk factors to disorders. There appears to be a non-linear relationship between risk factors and outcomes. Although one or two risk factors may show little prediction to poor outcomes, there are rapidly increasing rates of disorders with additional risk factors (Rutter 1979; Sameroff, Seifer, Barocas, Zax, & Greenspan, 1987). However, not all children who experience such contexts develop adjustment problems (e.g. Cowen et al., 1992), and no one factor alone accounts for children's adjustment problems (e.g., Sameroff & Seifer, 1990).

Given the above findings, it is apparent that many developmental risk factors are not disorder-specific, but may relate instead to a variety of maladaptive outcomes. The notion of generic and inter-related risk factors has led to a strategy of targeting multiple factors simultaneously with the hope that the potential payoff will be greater than a focused attack on controlling a single risk factor. Recent findings in behavioral epidemiology indicate that mental health problems, social problems, and health-risk behaviors often co-occur as an organized pattern

of adolescent risk behaviors (Donovan, Jessor & Costa, 1988; Dryfoos, 1990; Elliott, Huizinga, & Menard, 1989; Jessor et al., 1991; Jessor & Jessor, 1977). Thus, because risk factors may predict multiple outcomes and there is great overlap among problem behaviors, prevention efforts that focus on risk reduction of interacting risk factors may have direct effects on diverse outcomes (Coie et al., 1993; Dryfoos, 1990).

Protective factors and their operation Protective factors are variables that reduce the likelihood of maladaptive outcomes under conditions of risk. Although less is known about protective factors and their operation (Rutter, 1985; Kazdin, 1991; Luthar, 1993), at least three broad domains of protective factors have been identified. The first domain includes characteristics of the individual such as cognitive skills, social-cognitive skills, temperamental characteristics, and social skills (Luthar & Zigler, 1992). The quality of the child's interactions with the environment comprise the second domain. These interactions include secure attachments to parents (Morissett, Barnard, Greenberg, Booth, & Speiker, 1990) and attachments to peers or other adults who engage in positive health behaviors and have prosocial values. A third protective domain involves aspects of the mesosystem and exosystem, such as school-home relations, quality schools, and regulatory activities. Similar to risk factors, some protective factors may be more malleable and thus, more effective targets for prevention.

Coie et al. (1993) suggested that protective factors may work in one or more of the following four ways: directly decrease dysfunction; interact with risk factors to buffer their effects; disrupt the mediational chain by which risk leads to disorder; or prevent the initial occurrence of risk factors. By specifying links between protective factors, positive outcomes, and reduced problem behaviors, prevention researchers may more successfully identify relevant targets for intervention (Coie et al., 1993; Dryfoos, 1990).

The specification of intervention goals is an important component of preventive-intervention research and practice. This requires both an understanding of risk and protective factors that contribute to outcomes, and also the identification of competencies that are presumed mediators or goals of the intervention. Although these goals may include the prevention of difficulties (e.g., absence of psychopathology, abstention from substance use), they also involve the promotion of healthy developmental outcomes (Pittman & Cahill, 1992). Further, the prevention of deleterious outcomes involves the enhancement of competency mediators (e.g., effective social problem-solving as a mediator of reductions in delinquency).

Preventive Intervention: Definition of Levels

The IOM Report (1994) clarified the placement of preventive intervention within the broader mental health intervention framework by differentiating it from treatment (i.e., case identification; standard treatment for known disorders) and maintenance (i.e., compliance with long-term treatment to reduce relapse; after-care, including rehabilitation). Based, in part, on Gordon's (1983, 1987) proposal to replace the terms primary, secondary, and tertiary prevention,

the IOM Report defined three forms of preventive intervention: universal, selective, and indicated.

Universal preventive interventions target the general public or a whole population group that has not been identified on the basis of individual risk. Exemplars include prenatal care, childhood immunization, and school-based competence enhancement programs. Because universal programs are positive, proactive, and provided independent of risk status, their potential for stigmatizing participants is minimized and they may be more readily accepted and adopted. Selective interventions target individuals or a subgroups (based on biological or social risk factors) whose risk of developing mental disorders is significantly higher than average. Examples of selective intervention programs include: home visitation and infant day care for low-birth weight children, preschool programs for all children from poor neighborhoods, and support groups for children who have suffered losses/traumas. Indicated preventive interventions target individuals who are identified as having prodromal signs or symptoms or biological markers related to mental disorders, but who do not yet meet diagnostic criteria. Providing social skills or parent-child interaction training for children who have early behavioral problems are examples of indicated interventions.

II. The Process of Program Review

Criteria for Review

Outcomes of Interest. The scope of interest included universal, selective or indicated prevention programs that were found to produce improvements in specific psychological symptomology or in factors generally considered to be directly associated with increased risk for child mental disorders. As such, studies were included in which children showed early problems or high-risk for later disorder, but studies were excluded in which children were given diagnostic interviews and met criteria for DSM-III R or DSM-IV disorders. The age focus was restricted to children from ages 5 to 18.

Programs were excluded if they produced outcomes solely related to substance abuse, sexuality or health promotion, but did not show reductions in symptomology related to mental disorders. However, if prevention or health-promotion programs showed multiple effects that included reduction in psychiatric symptoms, they were included in the review. Given the common comorbidity and shared risk factors of mental health problems with other poor outcomes such as delinquency and substance abuse, the lines of distinction regarding what to include and exclude were sometimes fuzzy and required judgement calls.

Evaluation Criteria. Programs were included if they had been evaluated using either a randomized-trial design or a quasi-experimental design that used an adequate comparison group. Studies were required to have both pre and post-findings, and preferably follow-up data to examine the duration and stability of program effects. In addition, it was required that the programs have a written manual that specifies the model and procedures to be used in the intervention. Finally, it was necessary to clearly specify the sample and their behavioral and social characteristics.

Literature Review: Sources and Process

Given the quality-assurance inherent in the peer review process, the search primarily focused on refereed professional journals, which were searched via available databases. These databases included: PsycINFO, Social Science Abstracts, Sociological Abstracts, ContentsFirst (journal tables of contents), and Education Abstracts (ERIC).

From a search of these databases articles were identified related to a core group of programs. Government reports, meta-analyses, reviews, annotated bibliographies and relevant books and book chapters were also reviewed. Among these were reports from the Institute of Medicine, National Advisory Mental Health Council, American Psychological Association, Department of Education, National Institute of Health, and National Institute of Mental Health, as well as reviews and meta-analyses by Kazdin (1988) , Durlak & Wells (1997, 1998) , Rickel &

Allen (1987) , Albee & Gulotta (1997), Weissberg & Greenberg (1998), and Catalano et al (1998), among others.

Relevant internet sources were checked such as the web pages of the Centers for Disease Control and Prevention, the Society for Prevention Research and Early Career Preventionists' Network, the Collaborative for Social and Emotional Learning, the Center for the Study and Prevention of Violence, the Oregon Social Learning Center, and NIMH Prevention Research Center. These sources were cross-checked against the core group of programs to identify and secure articles for additional programs. With each new document obtained, the reference list was reviewed against the list of identified programs to further guard against omissions.

From these collective sources a set of core programs was identified for inclusion in this report. In nearly all cases, the principal investigators was contacted during the review process to address specific questions or review the information for accuracy.

The review led to the identification of over 130 programs. Of those, 34 met the criteria discussed above and thus are included in this report. In addition, the report discusses a number of promising but as-of-yet, unproven models, as well as some programs that have demonstrated effects in areas related to or often comorbid with psychopathology.

III. Universal Preventive Interventions

Universal prevention programs are the broadest forms of preventive intervention in the continuum promoted by the Institute of Medicine's 1994 report. Universal programs may address a group as large as the entire school-age population in a country, as is the case in the Norwegian Intervention Campaign Against Bully-Victim Problems (Olweus, 1993), or may be more narrowly directed at children in a specific grade level or a specific group identified by characteristics unrelated to risk.

In our review, we have identified fourteen universal preventive interventions which have undergone a quasi-experimental or randomized evaluation and been found to produce positive outcomes in either (a) specific symptoms of psychopathology such as aggression, depression or anxiety, or (b) commonly accepted risk factors associated with psychopathology such as impulsiveness, cognitive skill deficiencies or antisocial behavior.

Before discussing the identified programs, it is instructive to point out some of the advantages and disadvantages of universal approaches to prevention, as well as the "trade-off" between universal and targeted (indicated or selective) approaches (Offord, 1996). A potential disadvantage of universal programs is that, based on the relatively low prevalence of psychopathology among children, much of the effort will be spent on children who may not otherwise have developed mental health problems anyway (although the value of promoting competence and positive mental health cannot be overlooked). Further, because of the relatively low dosage provided by most universal interventions, they might not provide sufficient duration or intensity to alter developmental pathways of children already at significant risk for psychopathology. Offord (1996) also raises the question of whether universal programs will have the greatest impact on those at lowest risk, though the findings of some programs (Kellam, Ling, Merisca, Brown, & Ialongo, 1998; Reid, Eddy, Fetrow, & Stoolmiller, in press) contradict this theory by demonstrating stronger effects for more at-risk subgroups.

Among the advantages of universal programs is the reduced risk of the potentially deleterious effects of labeling which may be more likely in targeted interventions whose screening instruments will undoubtedly produce "false positives". Another advantage is the potential for a single preventive intervention to reduce or prevent multiple problems. A growing body of research shows that many poor outcomes such as psychopathology, substance abuse, delinquency, school failure, and teen pregnancy have overlapping associated risk factors and a significant degree of comorbidity. Because of their focus on risk reduction and health promotion, universal preventive interventions often produce reductions in multiple problem areas, as the program descriptions below will demonstrate. In addition, universal programs may also promote well being and enhance resilience.

Durlak (1995) provides another perspective. He points out that if only 8% of well-adjusted children go on to have serious adjustment problems as adults (as opposed to 30% of clinically dysfunctional children), the well adjusted children will represent 50% more of the population of maladjusted adults, based on real numbers. It may then be beneficial to provide universal preventive interventions regardless of the low prevalence rate of childhood psychopathology.

As the Institute of Medicine (1994) states, the decision to implement a universal intervention must weigh the potential benefits, given the risk of psychopathology among the target population, against the cost of implementing such an intervention for a broad (universal) population. As research continues to increase our knowledge of causal risk factors and their relative importance, this equation may balance more in favor of universal preventive interventions.

Effective Preventive Interventions: Universal Programs

Fourteen universal programs were identified as meeting our criteria for inclusion based on study design and positive outcomes related to psychopathology. For ease of discussion, they can be classified into 4 categories: violence prevention programs; more generic social/cognitive skill-building programs, programs focused on changing the school ecology, and multi-component, multi-domain programs. Although we will use this typology for discussion purposes, in actuality the programs do not fall along a linear continuum and may include characteristics of more than one of the above categories. This typology is useful however in that it is somewhat representative of the recent progress of prevention science, as the field continues to move in the direction of comprehensive, multi-system programs that target multiple risk factors across both individual and ecological domains.

The following paragraphs briefly describe the identified programs in terms of program content and evaluation results. More detailed descriptions of each program are provided in Appendix A. In the descriptions that follow, unless stated otherwise all outcomes are significant at the $p<.05$ level or better.

Violence prevention programs Programs that focus specifically on preventing or reducing violence, usually through curriculum-based teaching of nonviolent conflict resolution or decision-making skills, have seen mixed results. The **Second Step** program is a curriculum-based model that focuses specifically on skills to understand and prevent violence. Second Step aims to reduce or prevent aggression by teaching anger management, empathy and impulse control. Grossman and colleagues (Grossman, Neckerman, Koepsell, Liu, Asher, Beland, Frey, & Rivera, 1997) evaluated Second Step in a randomized controlled trial with approximately 800 primarily European-American elementary students from 12 schools in Washington State. Post-test data showed significant reductions in aggression and increases in neutral or prosocial behavior as measured by coded observations, though there were no significant effects found on parent or teacher ratings of behavior problems. Reductions in observer-rated physical aggression in the

classroom were maintained at 6-month followup. The program also includes an unevaluated video-based parents' guide to assist parents in reinforcing the lessons at home.

Farrell, Meyer, and White (in press) evaluated the **Responding in Peaceful and Positive Ways (RIPP)** program. The 25 session RIPP program focuses on social/cognitive skill-building to promote nonviolent conflict resolution and positive communication. Program activities include team building and small group work, role playing, and relaxation techniques. In a randomized trial with approximately 600 students from three middle schools in Richmond, Virginia, Farrell and colleagues report that students made significant gains on measures of decision-making knowledge and use of peer mediation, but those gains were not found on student self-reports of behavioral changes. Although significant reductions were achieved in weapon carrying (immediate post-test) and in-school suspensions (post-test and 6 month follow-up) as measured by school disciplinary data, after controlling for pretest differences and attrition no significant effects were found for fighting, out-of-school suspension, or 4 self-report measures of behavior and adjustment.

General social/emotional cognitive skill-building programs A number of the programs identified in our review focus on generic social/emotional cognitive skill-building as a means to reduce psychopathology, a wide range of deleterious outcomes which share common risk factors, as well as to promote social/emotional competence. As research, experience and practicality have dictated, these programs are often school-based and directed at elementary students.

Among the pioneers in this area are Shure and Spivack (1982), who developed the **Interpersonal Cognitive Problem-Solving** (ICPS) program and conducted some of the early research on the potential impact of cognitive problem solving ability on reducing poor outcomes for children. A classroom teacher generally implements the ICPS program with small groups of children. The program begins by teaching children fundamental skills related to language, thinking, and listening and progresses to practicing more complex interpersonal problem solving through dialogues and role-playing. ICPS has been implemented widely in diverse schools throughout the country and has undergone a number of evaluations. In trials with both preschool and elementary-aged populations, Shure and Spivack have demonstrated that ICPS can significantly improve cognitive problem solving abilities and reduce inhibition and impulsivity, with effects lasting through 1 year followup (Shure, 1997; Shure and Spivack, 1988). However, no data has followed children for more than one year post-intervention and there have been no findings reporting reduction in psychiatric symptoms.

Promoting Alternative THinking Strategies (PATHS) is another elementary-based program to promote social/emotional competence through cognitive skill-building. With an emphasis on teaching students to identify, understand and self-regulate their emotions, PATHS also adds components for parents and school contexts beyond the classroom to increase generalizability of the students' newly-acquired skills. Greenberg and colleagues have conducted several randomized controlled trials of PATHS with a variety of populations (e.g. with regular

education students, with deaf children, with behaviorally at-risk students, and as a universal intervention in a multi-component comprehensive program). In a randomized controlled trial with 200 second- and third-grade regular education students PATHS produced significant improvements in social problem solving and understanding of emotions at post-test. Compared to controls, general education intervention children show one year follow-up improvements on social problem-solving, emotional understanding, self-report of conduct problems, teacher ratings of adaptive behavior, and cognitive abilities related to social planning and impulsivity (Greenberg & Kusche, 1997, 1998a; Greenberg, Kusche, Cook, & Quamma, 1995). These improvements were maintained at 1-year followup and, more importantly, additional significant reductions in teacher and student reports of conduct problems appeared at 2-year followup.

For children with special needs, results indicated post-test improvement on teacher-rated social competence, child report of depressive symptoms, and emotional understanding and social-cognitive skills. At one-year and two-year follow-up, both teachers and children separately reported significant improvements in both internalizing (e.g., depression and somatic complaints) and externalizing behavior problems, as well as improved social planning and decreased cognitive impulsivity (Greenberg & Kusche, 1997, 1998b; Greenberg, Kusche, Cook, & Quamma, 1995).

The **Improving Social Awareness – Social Problem Solving** (ISA-SPS) Program targets the transition to middle school as a normative life event which places children at increased risk for poor outcomes. ISA-SPS focuses on individual skill-building to promote social competence, decision-making, group participation and social awareness. Through a two-year program given to students prior to their transition to middle school, ISA-SPS seeks to bolster students' resilience in the face of the many stresses related to school change.

In a quasi-experimental design with a non-equivalent control group, Elias and colleagues found improvements in youth self-report of coping with stressors related to middle school transition and teacher reports of behavior (Bruene-Butler, Hampson, Elias, Clabby, & Schuyler, 1997; Elias, Gara, Schuyler, Branden-Muller, & Sayette, 1991). More importantly, they report significant reductions in measures of adjustment and psychopathology at six-year followup: the comparison boys had higher rates of involvement with alcohol, violent behavior toward others, and self-destructive/identity problems, whereas comparison girls had higher rates of cigarette smoking, chewing tobacco, and vandalism. As an example of action research, ISA-SPS has undergone continuous testing and refinement since its inception in the early 1980's. The program, now known as Social Decision-Making and Social Problem Solving (SDS-SPS), has evolved into a more comprehensive effort with a greater ecological focus on school system change and has been expanded to address all grade levels. ISA-SPS has seen significant replication through support from the U.S. Department of Education and the William T. Grant Foundation.

Weissberg's **Positive Youth Development Program (PYD)** is another example of a school-based program focusing on student skill-building. The 20 session curriculum to promote general social competence and refusal skills related to alcohol and drug use was evaluated with

282 mostly African-American students from one urban and one suburban middle school in Connecticut. In a quasi-experimental study with a non-equivalent control group, Weissberg and colleagues found the program produced significant improvements in coping skills and students' ability to generate alternative responses to hypothetical situations, as well as teacher reports of several measures of social adjustment including conflict resolution with peers, impulse control, and popularity (Caplan, Weissberg, Grober, Sivo, Grady, & Jacoby, 1992). Interestingly, although this program primarily targeted outcomes related to substance abuse, the program produced no significant effects on measures related to drugs, cigarettes or wine, and only marginal effects related to alcohol.

The PYD program has since been combined with an earlier 16-session version (called the Yale-New Haven Social Problem Solving program) to create the broader, 45-session Social Competence Promotion Program for Young Adolescents (SCPP-YA). Weissberg, Barton, and Shriver (1997) report that in a controlled pre-post study SCPP-YA students maintained stable levels of self-reported antisocial and delinquent behavior while control students saw a 36.8% increase. These findings however have not yet been published in a refereed journal.

Unlike the other universal preventive interventions discussed in this report, which focus primarily on externalizing behavior problems, two universal programs in Israel have demonstrated positive effects on internalizing behavior and suicidality. **Klingman and Hochdorf (1993)** describe a program which demonstrated positive effects on suicide risk for junior-high students in Israel. In a randomized trial with 237 8th grade students, the 12-week group cognitive-behavioral program produced significant reductions in suicidality, as measured by the culturally adapted Israeli Index of Potential Suicide (IIPS), among treatment boys. Effects for girls on the IIPS did not reach the level of significance. Likewise, **Orbach and Bar-Joseph (1993)** also report on a universal suicide prevention program which demonstrated a significant reduction in suicidality, in this case among 11th grade students from 6 high schools in Israel. This introspective, cathartic program was evaluated in a randomized trial examining 393 students (including some conduct disordered students) again using the IIPS. Across all schools, the authors report significant effects on suicidal tendencies, coping skills, and ego identity. Neither of these suicide prevention programs have shown effects on suicidal behavior, examined distal effects, or been replicated.

Programs focused on changing school ecology Rather than focusing primarily on the individual, ecologically-focused programs attempt to address contextual variables in the child's home or school as a means to prevent or reduce psychopathology or other negative outcomes. **The School Transitional Environment Project** (STEP) for example, based on the Transitional Life Events Model, focuses on changing the school ecology to be less threatening to students during the transition from elementary to middle school or from middle school to high school. STEP seeks to reduce the complexity of the new school environment, to redefine the role of the homeroom teacher as more supportive, and to create a stable support mechanism through a consistent set of peers and classmates. Through a series of evaluations and replication studies with primarily urban minority students, with study populations of as many as 2,000 students, Felner

and colleagues (Felner and Adan, 1988; Felner, Ginter, & Primavera, 1982; Felner, Brand, Adan, Mulhall, Flowers, Sartain, & DuBois, 1993) found that STEP's restructuring of the school environment produced significantly lower levels of stress and reductions in anxiety, depression and delinquent behavior. In an experimental study comparing STEP with a more general intervention which taught generic coping and problem-solving skills, the STEP students experienced a better adjustment to school change, especially in academic progress (Felner, et al., 1993).

The **Child Development Project** (CDP) focuses primarily on changing the school ecology to create schools which are "caring communities of learners". CDP provides school staff training in the use of cooperative learning and a language arts model that fosters cooperative learning, as well as a developmental approach to discipline that promotes self-control by engaging students in classroom norm-setting and providing them with opportunities to actively participate in classroom decision-making. School-wide community-building activities are used to promote school bonding, and parent involvement activities such as interactive homework assignments reinforce the family-school partnership. The program was evaluated with approximately 4,500 third- through sixth-grade students in 24 diverse schools throughout the United States and was found to produce significant reductions in self-reported delinquent behaviors including weapon carrying, skipping school, and vehicle theft (Battistich, Schaps, Watson, & Solomon, 1996). It is important to note that effects were found only after controlling for degree of implementation (i.e. findings were only significant for "high level of implementation" schools), reaffirming the importance of fidelity in implementation.

Kellam et al. (1998) describes a randomized controlled trial with nearly 700 first grade students from 19 elementary schools in Baltimore, Maryland. The study assessed the impact of the **Good Behavior Game**, a team-based classroom program designed to improve children's social adaptation to the classroom related to rules and authority, as compared to Mastery Learning, an intervention which promotes reading competency through group goal setting, and a control group. The Good Behavior Game divides the classroom into three heterogeneous teams that compete for rewards based on not exceeding established classroom standards for behavior. At post-test (end of grade one) Kellam and colleagues report significant reductions in teacher and peer ratings of aggression, as well as teacher ratings of shy behavior (a strong risk factor for negative outcomes when coupled with early aggression) among the Good Behavior Game students. Mastery Learning students showed significant improvement in reading competency. At six-year follow-up, there were no main effects of the Good Behavior Game but there was some indication that males rated as highly aggressive at first grade showed treatment effects on teacher-rated aggression. The results should be interpreted with caution based on the potential confounding and threat to internal validity of using ratings of teachers and peers directly involved in the intervention.

The **Intervention Campaign Against Bully-Victim Problems** (Olweus, 1993) is a nationwide program undertaken in Bergen, Norway in 1984-85 to reduce bullying and related

victimization among elementary and middle school children. The program consisted of providing all teachers in Norway with a 32-page booklet that described current knowledge on the scope, cause and effects of school bullying and provided detailed suggestions for what schools and teachers could do to reduce and prevent bullying. An abbreviated 4-page folder on bullying was also provided through the schools to all families in Norway with school-age children. A 25-minute video containing vignettes of bullying situations was also made available to schools. Finally, a brief questionnaire related to bullying was administered to students. The questionnaire was considered part of the intervention as it was intended to act as a catalyst for awareness and discussion of the problem of bullying.

Olweus (1991) conducted a quasi-experimental (staggered cohort) study of the campaign with approximately 2500 students in grades 4-7 from 42 elementary and middle schools. The students were divided into 4 age/grade equivalent cohorts of 600-700 students, with roughly equal numbers of boys and girls in each. Examining data collected at 4 months pre-intervention and 8 and 20 months post-intervention Olweus reports reductions of 50% or more in bully/victim problems for boys and girls across all grades (4-9), with more marked effects after 2 years than after 1 year. Olweus also reports reductions in general antisocial behavior such as vandalism, fighting, drunkenness, theft and truancy, though the published accounts do not address the statistical significance of these findings or the validity of the measurements used.

Multi-domain, multi-component programs The **Linking the Interests of Families and Teachers (LIFT)** program attempts to decrease risk and increase protective factors related to future violence and delinquency. LIFT focuses on the home, the individual student, the classroom and the peer group. In the home, LIFT works to teach parents effective forms of discipline and supervision, including consistent limit-setting and parental involvement. At school, a twenty-session program is taught to increase students' social and problem solving skills and help them resist negative peer groups. Finally, LIFT uses a version of the Good Behavior Game (see description above) to reduce inappropriate physical aggression on the playground.

Reid, Eddy, Fetrow & Stoolmiller (in press) conducted a randomized controlled trial with 671 children and their families from 12 public elementary schools in high-risk neighborhoods in Eugene, Oregon. At post-test, Reid and colleagues report reductions in playground aggression, with the largest effect size among the most aggressive children, as well as improvements in family problem-solving. At 30 months post-test, children from the treatment group were also significantly less likely to have been arrested.

The **Seattle Social Development Project** (Hawkins, Catalano, Morrison, O'Donnell, Abbott, & Day, 1992) is a comprehensive universal prevention program that addresses multiple risk and protective factors across both individual and ecological domains (individual, school, and family). With a strong emphasis on creating and maintaining strong school and family bonds, the program combines modified teacher practices and parent training across a six-year intervention period. Classroom teachers were trained in SSDP instructional methods with three major

components: proactive classroom management, interactive teaching, and cooperative learning. These teaching approaches were used in combination with (a) classroom-based cognitive and social skills training in 1st (Spivak & Shure's ICPS Curriculum, see above) and 6th grade (refusal and life skills); and (b) parent training that emphasized child behavior management in 1st or 2nd grade, academic support in 2nd or 3rd grade, and preventing drug use and antisocial behavior in 5th or 6th grade.

To assess the effects of full intervention and late intervention, a nonrandomized controlled trial with three conditions was created. The full intervention group received the intervention package from grade one to six. The late intervention group received the intervention package in grades five and six only, and the control group received no special intervention. 598 students were involved in the follow-up at age 18, six years after intervention. The findings indicated that students in the full intervention group reported significantly stronger attachment to school , improvement in self-reported achievement and less involvement in school misbehavior than did controls (Hawkins, Von Cleve, & Catalano, 1991; Hawkins, Catalano, Kosterman, Abbott, & Hill, in press). While no effects were shown for either the full or late intervention groups for lifetime prevalence of cigarettes, alcohol, marijuana or other illicit drug use at age 18, significantly fewer subjects in the full intervention group than in the control group had committed violent acts, reported heavy alcohol use in the past year or engaged in sexual intercourse. There were no differences between the late intervention and control conditions; this provides a strong argument for beginning social competence programs early in the elementary years and continuing them across different developmental phases.

Promising programs In addition to the universal preventive interventions described above, our review identified a number of other programs that appear promising but do not fit the criteria for inclusion in this report. These programs are not included in this review (excluded from the Appendix) because they lack a controlled design, contain very small samples, or the findings are indirectly related to mental health outcomes.

Although a number of programs include a secondary component for parents, the **Effective Black Parenting Program** (Myers, Alvy, Arrington, Richardson, Marigna, Huff, Main, & Newcomb, 1992) places a primary emphasis on the importance of family ecology by focusing on parental skill-building and family management. The program, developed specifically for African-American families with elementary-aged children, teaches cognitive-behavioral parenting skills with an emphasis on promoting a culturally-relevant style of child self-discipline (as opposed to a more traditional authoritative discipline style). The program showed promising results in a non-randomized control study, but the small sample size and the selective measurement of only families that did not dropout and came to more than half of the sessions limits the generalizability of the findings.

A number of social competence enhancement and violence prevention programs also show promise given that they incorporate best practices as identified in a number of recent national

reports (Drug Strategies, 1998; Elias, 1997), however none of these has demonstrated effects on symptoms of psychopathology. These include the **Social Skills Training Program** (Rotheram, 1982), the **Resolving Conflict Creatively Program** (RCCP – Aber, Jones, Brown, Chaudry, & Samples, 1998), the **Quest Program** (Laird, Syropolous, Black, & Beckley, 1996), **Peacebuilders** (Embry, Flannery, Vazsonyi, Powell, & Atha, 1996), **the Positive Adolescent Choices Training program** (PACT – Hammond and Yung, 1991), **Aggression Replacement Training/Skillstreaming the Adolescent** (Goldstein, Sprafkin, Gershaw, & Klein, 1980; Goldstein and Glick, 1987, Goldstein, 1988), and the **School Development Program** (Haynes, Comer, and Hamilton-Lee, 1988).

Effective programs beyond the scope of this review A number of programs with significant effects based on well-designed evaluations do not fit within the primary focus of this review (psychopathology), but bear some discussion given the common comorbidity of psychopathology with other problems such as substance abuse. Four well-evaluated programs for the reduction of substance abuse may have the potential to reduce symptoms of psychopathology, but no such data has been reported to date. In a number of randomized controlled trials, Botvin and colleagues have shown **the Life Skills Training Program** to be effective in significantly reducing tobacco, alcohol, marijuana and polydrug use (Botvin, Baker, Dusenbury, Tortu, & Botvin, 1990). Evaluation results support the long-term effectiveness of the program, as well as its generalizability. Similarly, Pentz and colleagues (Pentz, Mihalic, & Grotpeter,1997) report that the **Midwestern Prevention Project**, in a series of quasi-experimental studies, showed significant reductions in cigarette and marijuana use. Finally, **Project Northland** (Perry, et al., 1996) and **Project ALERT** (Ellickson, Bell, & McGuigan, 1993) have also demonstrated significant effects on substance use.

Two universal parenting programs should also be mentioned. They are not included in the review because the refereed journal articles on these programs only document changes on observed parent-child interactions, and child substance use outcomes, but not child conduct problems. However, these findings are important as parental behavior, family interaction patterns, and child substance use are critical factors in the development and maintenance of conduct problems. The first program, **Preparing for the Drug Free Years** (PDFY; Hawkins et al., 1988; Hawkins, Catalano, & Kent, 1991), consists of 5, 2-hour, multi-media sessions designed to reduce family-related risk factors and enhance family bonding. The second program, The **IOWA Strengthening Families Program** (ISFP: Molgaard & Kumpfer, 1993) is an adaptation of the Strengthening Families Program originally developed by Kumpfer and colleagues (Kumpfer, DeMarsh, & Child, 1988). Both programs are currently being evaluated in several randomized and controlled studies. The samples in these studies are middle school students and their families.

Kosterman and colleagues (Kosterman, Hawkins, Spoth, Haggerty, & Zhu, 1997) found that after participating in Preparing for the Drug Free Years (PDFY; Hawkins et al., 1988; Hawkins, Catalano, & Kent, 1991), observations of parent-child interactions indicated significantly higher proactive and lower rates of negative communication, compared to controls.

Spoth and colleagues (Spoth, Redmond, & Shin, 1998; Redmond, Spoth, Shin, & Lepper, in press) replicated these findings using PDFY as well as showing improvements in parents' management of child behaviors. In another outcome study, positive direct effects on general child management skills were also demonstrated (Spoth, Redmond, Haggerty, & Ward, 1995). Latent transition and log-linear modeling analyses indicated that PDFY showed effects on both delayed initiation and progression of substance use (Spoth, Reyes, Redmond, & Shin, in press).

Spoth and colleagues (Spoth, Redmond, & Shin, 1998; Redmond, Spoth, Shin, & Lepper, in press) have reported similar findings for The IOWA Strengthening Families Program (ISFP: Molgaard & Kumpfer, 1993) indicating significant intervention effects on global parenting dimensions and indirect effects via intervention-targeted parenting behaviors. At one- and two-year follow-up assessments, significant intervention-control differences indicated a 60% reduction in initiation of alcohol use (Spoth, Redmond, & Lepper, in press). Similar to PDFY findings, the ISFP intervention delayed initiation of substance use at the two-year follow-up (Spoth, Reyes, Redmond, & Shin, in press).

Unpublished findings on ISFP (Spoth, personal communication, 1999) have examined intervention effects on child self-reports of problem behaviors (theft, physical aggression, vandalism, and other delinquent behaviors). At the two-year follow-up there were significant intervention-control differences on child self-reports. Earlier unpublished analyses (Spoth, personal communication, 1999) showed ISFP effects on school-related problem behaviors, and a combination of child and parent reports of affiliation with antisocial peers at the one-year and two-year follow-up assessments, though not at the post-test.

The programs referenced above have produced significant positive outcomes related to substance abuse or individual-child protective factors such as comportment or academic achievement, but either were not subject to carefully designed studies or were not evaluated in terms of their potential impact on psychopathology. This points to what can be seen as a general lack of breadth in outcome measurement for universal programs, a problem due in large part to the categorical nature of funding which promotes a view of prevention narrowly related to specific outcomes. Given the common comorbidity and overlap of associated risk factors, programs and evaluation studies should take a more global approach, measuring a broader range of outcomes.

IV. Programs That Focus On Externalizing Behaviors

Diagnostic Criteria

Three diagnoses currently comprise the disruptive or externalizing behavior disorders of childhood; oppositional defiant disorder (ODD), conduct disorder (CD), and attention deficit hyperactivity disorder (ADHD) (DSM-IV; American Psychiatric Association, 1994). Although there is some similarity in these disorders, they are considered independent and unique diagnoses. Children with ADHD exhibit elevated levels of inattention and hyperactivity-impulsivity. ODD is characterized by a consistent pattern of defiant and disruptive behavior. Although ADHD children can be disruptive, they generally lack the negative quality that is the primary feature of that diagnosis. However, about 40% of children with ADHD will go one to develop significant conduct problems (Offord et al, 1992). CD includes all of the features of ODD but is a more severe and persistent diagnosis: the primary diagnostic criteria include aggression towards people and animals, destruction of property, deceitfulness or theft, and school or home rule violations. CD includes delinquent behaviors that are violations against individuals or property but it is not the same as "delinquency". This is an important distinction to make in terms of definitions of psychopathology. Many children and adolescents who engage in delinquent activity will also be conduct disordered (prevalence estimates vary but are generally between 50% and 90%) but there are some juvenile delinquents that do not have the diagnosis (Otto, Greenstein, Johnson, & Friedman, 1992).

Disruptive behavior disorders are among the most prevalent and stable child psychiatric disorders (Costello, 1989). Forty percent of children diagnosed with conduct disorder between the ages of 8 and 12 still have the disorder four years later (Offord et al., 1992). Many of the most serious and costly adult mental health outcomes and societal problems (e.g. delinquency, substance use, and antisocial personality disorder) have their origins in early conduct problems. Treatment for conduct disorder has demonstrated positive short-term outcomes but there is less evidence for long-term success (Kazdin, 1995). There are a number of reasons why treatment with younger children, or more ideally, prevention at, or prior to, symptom onset is more likely to be effective. Conduct disorder is one of the most difficult conditions to remediate because the disorder is often supported in multiple contexts, the risk factors associated with it tend to cluster together and are related in complex ways, and each risk factor tends to set the stage for increased risk in the next phase of development (Reid & Eddy, 1997).

Current State of Knowledge

Compared to other mental health disorders, a substantial amount of basic research has been conducted over the last two decades on the disruptive behavior disorders. We now have sophisticated developmental models of how these problems develop (Conduct Problems Prevention Research Group, 1992; Loeber & Dishion; Patterson, DeBaryshe, & Ramsey, 1989; Reid & Eddy, 1997) and an awareness of the risk and protective factors involved in their initiation

and maintenance. There is still substantial work to be done, however, in understanding the mechanisms that link these proximal and distal factors, and how they operate over time to increase the likelihood of disorder (IOM, 1994).

Less is known about the developmental model of ADHD and the model that will be described in this section is best suited to describe the development of oppositional defiant disorder and the early-onset subtype of conduct disorder. It is important to remember that the precursors of the disruptive behavior disorders are a heterogeneous set of behaviors that are relevant to all three diagnoses. Many programs focus on these with the intent of preventing the broader groups of negative adolescent outcomes that cluster together and are associated with conduct disorder. Although all three disorders share environmental and biological-genetic components, it is likely that neurological factors that regulate activity and attention play a more substantial role in ADHD.

Developmental Model

Research has shown that parents of children with disruptive behavior disorders tend to be less effective in managing their children's behavior and often engage in practices that actually contribute to, and sustain, their children's maladaptive behavior (McMahon & Wells, 1989; Patterson, 1982). High levels of coercive and punitive discipline, the use of frequent reprimands, and a lack of monitoring have all been linked to elevated levels of child aggression and delinquency (Dishion, 1990; Eron, Huesmann & Zelli, 1991; Pettit, Bates, & Dodge, 1993). Thus, parenting is both an important risk factors as well as factor that may be malleable and thus a target for preventive intervention.

Children with behavior disorders have poorer social skills, higher rates of cognitive distortions (e.g. hostile attribution bias), and cognitive deficits (e.g. poor problem solving). These social-cognitive factors not only contribute to the development of problem behavior, but are also a consequence of it. Children who are disruptive have more difficulty initiating and maintaining normative peer interactions. Over time, most children who continue to display significant amounts of aggression and negative behavior are rejected by their peers and their reputations for aggressive or inappropriate behavior reinforce their status (Dodge & Somberg, 1987). In addition, rejected children are often drawn towards more deviant peers who endorse their behavior and provide increased opportunities for antisocial behavior. Finally, difficulties managing impulses, maintaining attention, and developing positive relationships with peers and adults appear to contribute to difficulties in learning and achieving in the early years of schooling. As a result, social-cognitions, academic skills, and peer social skills are considered potential targets for preventive intervention.

There is also a growing awareness of developmental models of mental disorders outside of academia, influencing federal agencies as reflected in their publications and the programs that they are willing to support (IOM, 1994; NIMH, 1998). As an example, in the early 90's, NIMH funded a series of demonstration projects to apply the knowledge of developmental models of

conduct problems to actual prevention programming.

Effective Preventive Interventions: Externalizing Programs

Many prevention programs do not have the specific goal of reducing the diagnosis of CD, but rather attempt to change levels of symptomology, or only affect the mediating mechanisms (proximal risk factors) theoretically linked to the development of the disorder. It should be noted that in all cases, preventive interventions reviewed here are either selected or indicated, and not provided universally across the population. Interventions can be categorized by their focus (child, parent, or both), intensity, and length. Ten programs met the criteria to be included in the review.

Child-focused interventions There are a number of child-focused and parent-focused conduct problem prevention programs. In general, their results are significant, but modest and tend to fade over longer periods of time. One significant drawback in many of the child-focused programs is that they have small sample sizes and have focused exclusively on boys. Some of these programs represent the earliest forms of intervention in the field. As such, they were implemented prior to the surge in prevention science that has raised the standards for program evaluation (e.g. IOM, 1994). Many of the larger-scale projects have incorporated these components as part of more comprehensive, developmentally based programs (e.g. Conduct Problems Prevention Research Group, 1992; Tremblay, Masse, Pagani, & Vitaro, 1996).

Lochman developed and refined a cognitive-behavioral school-based intervention that focuses on developing anger management skills in aggressive elementary and middle-school aged boys (Lochman, Burch, Curry, & Lampron, 1984). The **Anger Coping Program** consists of 18 sessions that teach affect identification, self-control, and problem-solving skills (Lochman, 1985). Children are given the opportunity to role-play and practice these skills in a small group setting and under conditions of affective arousal. Goal setting and reinforcement are incorporated to support skill acquisition. The program has shown that immediately following the intervention it lowers boys observed disruptive and aggressive behavior in the classroom, and in some cases, improves parent ratings of aggressive behavior (Lochman, 1985; Lochman et al., 1984; Lochman & Curry, 1986; Lochman, Lampron, Gemmer, Harris, & Wyckoff, 1989). In a 7-month follow-up study, children who had received the anger coping program were more on-task in their behavior compared to controls but the differences in their disruptive-aggressive behavior evident at post-test were not maintained (Lochman & Lampron, 1988). Three years after the intervention, differences in parent-ratings of aggression and observations of disruptive-aggressive behavior were not maintained although improvements in children's on-task behavior were maintained for those who had received a six session booster the following school year (Lochman, 1992) The program had no effect of self-reported delinquency, but did have a positive effect on self-reported substance use ratings bringing the anger control subjects into the normative range on self-report ratings.

Some child-focused programs have included normative peers as prosocial models and as a

way of providing the disruptive child with opportunities to practice new skills in actual social interactions. This format also counteracts the alienation experienced by many conduct problem children that makes them vulnerable to the influence of more deviant peers. Indeed, iatrogenic effects have been found in programs where antisocial youth were grouped together (Dishion, Andrews, Kavanagh, & Soberman, 1996). Most studies have shown that the conduct problem youth benefit from this group composition.

Hudley and her colleagues (Hudley, Britsch, Wakefield, Smith, Demorat, & Cho, 1998; Hudley & Graham, 1993, 1995) incorporated normative peers in a program designed to counteract attributional biases and reactive aggression in aggressive children. In her "**Brainpower Program**", aggressive 10 to 12 year old boys were paired with non-aggressive peers and exposed to a 12-lesson school-based intervention focusing on improving the accuracy of children's perceptions and interpretations of others' actions. Compared to a randomized control group, teacher ratings indicated that the Brainpower program was successful at reducing their aggressive behavior immediately following the intervention. At present, this program has only been evaluated on African-American boys. Although this limits the ability to generalize the findings, the use of random assignment, the inclusion of attention-only and no-treatment controls, and the fact that one of the outcome measures was from teachers that were blind to the student's status all contribute to the strength of the findings. There has been no follow-up data to date.

Prinz, Blechman, & Dumas (1994) drew upon the influence of well-adjusted peers by integrating them into groups with aggressive students. The **Peer Coping Skills Training** program targeted 94, 1st to 3rd grade students with high teacher-rated aggression ratings. Students were randomly assigned to either a treatment group or control. In the treatment condition, intergrated teams of children were taught prosocial-coping skills in 22 weekly 50-minute sessions. The teams progressed through different skills and levels of difficulty; new skills were not introduced until the team had demonstrated mastery of the previous skills. This format encouraged and reinforced peer support. Outcomes measured at post-test and 6 months following the intervention supported its positive effects. Children in the PCS program were rated by teachers as significantly less aggressive than controls at post-test ($p<.02$) and follow-up ($p<.01$). Significant improvements were also noted in the intervention children's prosocial coping and teacher-rated social skills.

Aggressive children who also are rejected by their peers are at very high risk for later delinquency and violence (Coie, Lochman, Terry, & Hyman, 1992; Ollendick, Weist, Borden, & Greene, 1992). Lochman, Coie, Underwood, & Terry (1993) designed the "**Social Relations Program**" which consisted of 26 social skills training sessions that focused on improving the skills needed for entrance into peer groups and positive peer play. It also trained the children in social problem solving and anger management. The majority of the sessions were held individually but eight were conducted in small groups and provided the children with some time to practice the skills they were learning. The program was evaluated on a sample ($n=52$) of 9 to 11-year-old, African-American children. Results indicated that compared to matched controls, the aggressive-

rejected children were rated as significantly less aggressive by teachers and more socially accepted by peers at post-test. The effects of the intervention were maintained at one-year follow-up. The students in the aggressive-rejected intervention group were rated by teachers as significantly less aggressive ($p<.03$) and more prosocial ($p<.03$) compared to aggressive-rejected students in the control group.

Adult support: mentoring In the last decade there has been significant community-based interest in the provision of adult support to youth to build protection against adolescent problem behavior. This has included recreation programs, after-school programs, and mentoring. At the present time there is little controlled evaluation research to indicate whether such programs can reduce psychological symptoms or protect children from mental disorders.

An exception is the **Big Brother / Big Sister (BB/BS)** mentoring program recently evaluated by Tierney, Grossman, & Resch (1995) with a sample of 959 youth aged 10 to 16 from 8 BB/BS agencies in geographically distinct areas. The subjects were randomly assigned to a mentor or a wait-list control condition. Based on self-report data from the participants, youth with a mentor reported that they engaged in significantly less fighting compared to controls ($p<.05$) and perceived their family relationships more positively. These effects were primarily due to their significance for white males though the effect on fighting approached significance for minority females. There were no significant differences between groups in terms of self-reported delinquency but treatment subjects reported that they were significantly less likely to initiate the use of drugs and alcohol ($p<.05$). These findings provide some promise for the effects of mentoring programs on promoting adaptive behavior in youth but, due to their reliance on self-report assessments, they should be interpreted cautiously. In addition, the constructs that were measured are not as strongly related to mental health outcomes as other symptoms or behaviors. A more general concern is that while BB/BS is one of the strongest and well-known mentoring programs, there are significant implementation problems in most mentoring programs. Among these is the recruitment and retention of mentors for sufficient periods of time to develop close, protective relations for most youth.

Multi-component programs: involvement of children and families Although child alone and parenting alone prevention models have shown limited effectiveness, a new generation of multi-component models provides the promise of greater impact. Following from developmental models of risk and protection, interventions that target multiple environments (child, school, family, neighborhood) and multiple socialization agents (parent, teachers, peers) over extended developmental periods are probably necessary to alter the developmental trajectories of children who live in high-risk environments and are already showing prodromal signs of CD (CCPRG, 1992; Reid & Eddy, 1997).

The **Adolescent Transitions Program** (ATP; Andrews, Soberman, & Dishion, 1995; Dishion, Andrews, Kavanagh, & Soberman, 1996; Dishion & Andrews, 1995) is a preventive intervention that targets both at-risk adolescents and their parents to prevent further escalation of

problem behaviors. The program is designed to improve the self-regulation of the teens by teaching them problem solving skills. The parent component of the program attempts to improve parent management skills. In the original ATP evaluation, observations of parent-child dyads suggested that the program was successful at improving the quality of interaction in families. The impact on adolescents' behavior in school was only marginal, and for one treatment condition the adolescents' behavior actually worsened over time. Based on this research, Irvine and his colleagues (Irvine, Biglan, Smolkowski, Metzler, & Ary, in press) replicated ATP using only the parent component of the program. In this study, parent ratings of adolescents' behavior indicated significant treatment effects.

Tremblay and his colleagues (McCord, Tremblay, Vitaro, & Desmarais-Gervais, 1994; Tremblay, Masse, Pagani, & Vitaro, 1996; Tremblay et al., 1992; Vitaro & Tremblay, 1994) combined parent training and child social skill training in the **Montreal Prevention Experiment**. The program targeted 166 elementary school-age boys rated above the 70^{th} percentile on a measure of aggressive and disruptive behavior. The subjects were randomly assigned to an intervention or a placebo control condition that lasted two years. The child component consisted of group skill training sessions in which children worked with normative peers to develop more prosocial and adaptive social behavior. Parents worked with family consultants approximately twice a month for two years to learn positive discipline techniques and how to support their child's positive behavior. Initial results did not reveal many group differences although at post-test intervention students were less likely (though not significantly) to be classified as seriously maladjusted. One counterintuitive finding was that intervention subjects were rated by their parents as significantly more disruptive ($p<.02$) and inattentive ($p<.03$) at post-test. The authors attributed this finding to changes in the mother's monitoring and ability to report accurately.

Group difference began to emerge on the follow-up assessments. Intervention students were significantly more likely to be on grade level at one-year follow-up (fourth grade) compared to controls ($p<.05$). When the boys were 11 and 12 there were a number of significant differences between the groups. At the three-year follow-up when the boys were age 12, treatment subjects were significantly less likely than control boys to engage in fighting according to teacher report ($p<.03$) or to be classified as having serious adjustment difficulties. According to self-report data from age 10 to age 12, treatment boys were also significantly less likely to engage in delinquent activity compared to controls. At age 12, peer nominations of aggression from the best friends of boys in the treatment group were significantly lower than those of the control group's best friends ($p<.05$). Effects of the treatment on other forms of antisocial behavior (e.g. self-reported stealing) and substance use continued into early adolescence (age 11 to 15). The results of the Montreal Prevention Experiment reflect the importance of extending assessments beyond the post-test point particularly when the behaviors being targeted by the intervention or more likely to occur later in development (e.g. delinquency). In this program, group differences between the intervention and control group were apparent in multiple domains (i.e. academic, social, behavioral), emerged over time, and became increasingly significant.

Another multi-component program that combines parent and child-focused interventions is the **First Steps Program** (Walker, Kavanagh, Stiller, Golly, Severson, & Feil, 1998; Walker, Stiller, Severson, Feil, & Golly, 1998). This program intervenes with children and teaches them more adaptive behavior that is likely to foster social and academic success. The initial phase consists of a comprehensive screening process (Early Screening Project) which identifies kindergarten children exhibiting elevated levels of antisocial behavior. Families with an at-risk child receive a 6-week home intervention in which program consultants help them develop ways of supporting their child's adaptive behavior. In school, target children participate in a classroom-based, skill-building and reinforcement program that lasts two months. The program was evaluated with 42 subjects (two cohorts) using a randomized, experimental design. Teachers in this study reported significantly less aggressive ($p<.001$) and maladaptive ($p<.001$) behavior for intervention students compared to those in the control group at postintervention. Immediately following the intervention, the teachers also rated the intervention students as significantly more adaptive than the controls ($p<.001$) and observations indicated that program students showed more time engaged in academic activity ($p<.05$). There were no group differences on teacher ratings of withdrawn behavior. Cohort 1 students were assessed again in first and second grade. Cohort 2 students were followed into first grade. Treatment effects were maintained for both groups at these time points. The authors conducted a replication of the First Steps program (Golly, et al., 1998) with a new sample of twenty kindegarten students. The postintervention results were almost identical to those found in the original trial. A number of independent replications are currently being conducted, but outcome data were not available at the time of this report.

The Earlscourt Social Skills Group Program (Pepler, King, & Byrd, 1991; Pepler, King, Craig, Byrd, & Bream, 1995) is a multi-component program that targets three domains: the child, the parents, and the classroom. Students age 6 to 12 exhibiting aggressive and disruptive behavior (according to both teacher ratings and principal reports) are eligible to participate in the program. The primary intervention is social skill training provided in small groups, twice weekly over the course of 12 to 15 weeks. Training sessions are offered to parents but not required. Classroom presentations, teacher involvement, and homework assignments are all utilized to generalize the skills to the classroom setting. The evaluation included 74 boys and girls who were randomly assigned to the intervention or a wait-list control group. Findings revealed that teachers rated intervention students as exhibiting significantly less externalizing behavior than controls at post-test ($p<.05$) and that these were clinically significant changes in symptomatology (defined by the authors as an improvement of .5 SD). It is important to note that significant group differences were only found on teacher ratings and parents failed to see significant behavior changes in the intervention children.

Recently a consortium of prevention researchers have developed **Fast Track**, a school-wide program that integrates universal, selective, and indicated models of prevention. It is intended to provide a comprehensive longitudinal model for the prevention of conduct disorders and associated adolescent problem behaviors (Conduct Problems Prevention Research Group, 1992). This randomized clinical trial involves 50 elementary schools in four U.S. urban and rural

locations. The universal intervention includes teacher consultation in the use of a series of grade level versions of the PATHS Curriculum throughout the elementary years. The targeted intervention package includes a series of interventions that involve the family (e.g., home visiting, parenting skills, case management), the child (e.g., academic tutoring, social skills training), the school, the peer group, and the community. Targeted children and families consist of those who are identified by a multi-stage screening for externalizing behavior problems during kindergarten and they consist of the ten percent of children with the most extreme behavior problems in schools in neighborhoods with high crime and poverty rates.

Results of the first three years indicate there are significant reductions in special education referrals and aggression both at home and at school for the targeted children (Conduct Problems Prevention Research Group, 1998, 1999a, 1999b). Fast Track is predicated on a long-term model (i.e., the intervention will continue through middle-school) that assumes that prevention of antisocial behavior will be achieve by building competencies and protective factors in the child, family, school, and community. The initial results provide evidence for improved social and academic development. Results of the universal component (The PATHS Curriculum, see Universal Prevention section of this report) at the end of grade 1 show lower students' sociometric reports of peer aggression, and improved observers' ratings of the classroom atmosphere in the intervention sample (Conduct Problems Prevention Research Group, 1999b).

Promising programs There were a number of programs that were not included in this review (excluded from the Appendix) because they lack a controlled design, contain very small samples, or the findings are indirectly related to mental health outcomes. They are still considered promising because they incorporate a number of best practices. One example is the recently developed **Coping Power Program**, a modification of the Anger Coping Program (Lochman, 1998; Lochman, in press). The program includes a 33-session child group component and a 16-session parent group component. Initial findings indicate that the program has led to reductions in parent and teacher rated aggression at posttest and at one-year follow up (Lochman, 1998; Lochman, in press).

The **FAST Program** (McDonald et al., 1997; McDonald & Sayger, 1998), is a family-based preventive intervention designed to improve the protective factors in families in which children are exhibiting behavioral and academic problems. The program uses a combination of parent, parent-child, and multi-family sessions to build social support surrounding each family. FAST has only been evaluated in a non-experimental design but showed promise for its ability to build protective factors and improve overall functioning in families but it needs to be evaluated in clinical trials. The author notes that there are currently five evaluations being conducted on the program and all utilize a randomized experimental design (McDonald, 1999, personal communication).

The **Contingencies for Learning Academic and Social Skills** (CLASS; Hops, Beickel, & Walker, 1976) program is a child-focused program that aims to increase appropriate behavior

of acting-out students by training teachers in a number of behavioral principals. The original program was developed and evaluated in the 1970s, and it's most recent version is included in the First Steps to Success Program (Walker, Kavanagh, et al., 1998; Walker, Stiller, et al., 1998). As a freestanding program, CLASS is mentioned as a promising program. It has been shown to increase the positive behavior of disruptive students (Hops et al., 1978; Walker, Retana, & Dersten, 1988). There were limitations to the early evaluations in that the sample sizes were small and there were no long-term follow-up assessments in either of two studies.

Effective programs beyond the scope of this review Although efforts to prevent conduct problems have often focused on children, parents of conduct problem children have also been the targets for change. During the last 25 years there have been numerous demonstrations of the short-term effectiveness of social-learning based parent-training and education programs for families in which children are showing clinical and near-clinical levels of aggression and disruption. These were pioneered by Patterson and his colleagues (Patterson, 1982; Patterson, Chamberlain, & Reid, 1982; Patterson, Reid, Jones, & Conger, 1975) and Forehand and colleagues (Forehand and McMahon, 1981). Recent findings by Webster-Stratton using parent training, and the combination of parent training and child skills training, replicate and bolster these early efforts and demonstrate longer-term effects (Webster-Stratton, 1990; Webster-Stratton & Hammond, 1997; Webster-Stratton, Hollingsworth, & Kolpacoff, 1988, 1989). **The Parent and Children Training Series** (Webster-Stratton, 1992a, 1992b) has also been independently replicated in a community mental health setting and shown to produce similar results (Taylor, Schmidt, Pepler, & Hodgins, 1998).

While most of these programs were designed as treatment programs and were evaluated on clinical populations, the best practices and techniques used in these parenting programs have been more recently applied in a prevention framework in universal models as well as to selected and indicated populations. For example, in the Fast Track program the parenting training component is based on both the **Parent and Children Training Series** (Webster-Stratton, 1992a, 1992b), now referred to as **The Incredible Years: Parents, Teachers, and Children Series**, and the **Helping the Noncompliant Child** curriculum (Forehand and McMahon, 1981). The interface of prevention and treatment is an important issue for the field of prevention science. Some researchers would argue that interventions that improve the behavior of young children exhibiting clinical levels of behavior problems (who may or may not be diagnosed as having Oppositional Defiant Disorder) should be considered prevention programs because ODD is often a developmental precursor for Conduct Disorder. If this is the case then much of the early work in the field of parenting training would be considered "prevention". This report however adopts a more conservative definition of prevention when determining the criteria for effective programs, although the authors recognize the importance of carefully considering definitions for the field given their potential impact on program funding and dissemination.

Webster-Stratton recently adapted her videotape series (this version is referred to as "**PARTNERS**") to a younger, Head Start population (Webster-Stratton, 1998). This program is

mentioned because it meets the criteria for an effective prevention program but was not included in the review because the age of the participants placed it beyond the scope of this review. In the evaluation study, parents of children in nine Head Start centers were randomly assigned to receive the intervention or serve as a control by only receiving the regular Head Start services. The intervention lasted 8-9 weeks and consisted of parent training groups and a teacher-training program. Results at post-test indicated significant improvements in the intervention parents on self-reported measures of discipline practices and other aspects of parenting behavior. Teacher reports indicated that parental involvement in school was higher for intervention parents compared to controls ($p<.01$). Observations of intervention children revealed a significant reduction in conduct problems for the intervention children compared to controls ($p<.001$) and teacher reports indicated significant improvements in school-based behavior ($p<.05$). Follow-up assessments were conducted at 12-18 months following the intervention and significant differences were maintained between the groups on measures of maternal discipline practices ($p<.001$), observations of maternal behavior ($p<.01$), and teacher reports of children's behavior ($p<.05$). These results with a preschool population have not yet been replicated in an older group.

Another group of effective programs that were excluded because they were beyond the scope of the review are family therapy-based interventions that have shown significant success in treating violent and chronic juvenile offenders, and drug-abusing adolescents. These programs include **Multisystemic Therapy** (MST; Henggeler, Melton, Brondino, Scherer & Hanley, 1997), **Functional Family Therapy** (Alexander, & Parsons, 1973: Barton, Alexander, Waldron, Turner, & Warburton, 1985), and **Structural Family Therapy** (Santisteban, Szapocznik, Perez-Vidal, Kurtines, Murray, & LaPierre, 1996; Szapocznik, Perez-Vidal, et al., 1988; Szapocznik, Rio, et al., 1989). In general, these programs have not yet been applied to a less severe population with a prevention focus. Initial efforts are underway to adapt Multidimentional Family Therapy (MDFT; Liddle,1991) to a family-based prevention program (Liddle & Hogue, in press).

Although there is some evidence of the effectiveness of parent education and training for promoting more positive parenting, there is insufficient evidence at this time that parenting intervention alone has led to significantly reduced levels of symptomology in school-age populations over extended periods of time.

V. Programs That Focus On Internalizing Behaviors

Diagnostic Criteria

Among the broad band of internalizing disorders, anxiety disorders and mood disorders are the most prevalent in childhood and have thus been the primary focus of preventive efforts. According to the DSM-IV (APA, 1994), mood disorders consist of depressive disorders (major depressive disorder (MDD), dysthymia (DD) and bipolar disorders (bipolar I, bipolar II). Diagnosis of a bipolar disorder in childhood is rare and MDD may begin at any age but the average age of onset is young adulthood (APA, 1994). It is estimated that prevalence rates for depression ranged from 0.4% to 2.5% for children and from 0.4% to 8.3% for adolescents (Birmaher, Ryan, Williamson, Brent, Kaufman, Dahl, et al., 1996).

Depressive disorders involve a pervasive mood disturbance in which the child or adolescent may experience sadness or irritability, a lack of interest or energy, hopelessness, feelings of worthlessness or inappropriate guilt, psychomotor agitation or retardation, or disturbance in sleep, appetite, or concentration (APA, 1994). In the past there has been controversy over whether young children are cognitively capable of depression. However, research has confirmed that depression is a clearly identifiable disorder in children (APA, 1994; Kovacs, 1996; 1997).

There are a number of diagnoses included within the Anxiety Disorders but the most typical diagnoses applied to children are Separation Anxiety Disorder, Social Phobia, Specific Phobia, and Generalized Anxiety Disorder (APA, 1994). Prevalence rates for these disorders range from 2.3 to 9.2% (Costello, 1989) and average around 8 percent (Bernstein & Borchardt, 1991). In general, anxiety disorders are characterized by excessive worry or distress. This may be in relation to a specific object or situation, or be more pervasive. Regardless of the source of their anxiety, for a child to be diagnosed with a disorder their distress must be significant enough to cause functional impairment. Additional symptoms include restlessness, poor concentration, irritability, sleep or eating problems, crying, or clinging (APA, 1994).

Comorbidity

There is a high degree of comorbidity between and within the internalizing and externalizing dimensions. Harrington, Rutter, and Fombonne (1996) found that a significant number of depressed children and adolescents also develop a comorbid disorder. The most common conditions include dysthymia, anxiety disorders, disruptive disorders, and substance abuse. In the case of comorbid anxiety and depression in childhood, it appears that anxiety tends to precede depression (Kovacs, 1996). In addition to secondary diagnoses, other negative outcomes associated with depression and anxiety disorders include poor academic achievement, poor peer relations, and low self-esteem.

Current State of Knowledge

Although some recent research has focused on the developmental bases of childhood depression and anxiety, it is significantly less than that devoted to the disruptive behavior disorders (Birmaher et al., 1996; Cicchetti & Toth, 1998; NIMH, 1998; Spence, 1996; Spence & Dadds, 1996). As a result, developmental models of anxiety and mood disorders are only beginning to be posited and tested, and the diagnostic criteria for these disorders have failed to incorporate a developmental perspective. Risk and protective factors have been identified for both disorders based on etiological models and correlational studies. There are multiple pathways to each outcome and characteristics of the child are thought to interact with environmental and genetic influences in a complex manner. For example, Kagan and his colleagues (Kagan, Reznick, & Gibbons, 1989) have identified a stable temperamental pattern (i.e. behavioral inhibition) that is related to anxiety problems later in childhood (Biederman, et al., 1993). However, many behaviorally inhibited children do not develop anxiety disorders and researchers are only beginning to understand the mechanisms linking risk factors to the development of disorder.

Having a parent with either an anxiety disorder or depression increases the child's risk of developing a similar disorder (Beardslee & Wheelock, 1994; Downey & Coyne, 1990; Last, Hersen, Kazdin, Francis, & Grubb, 1987; Mattison, 1992). In addition, sub-clinical levels of depressive symptomology are associated with increased risk of developing a depressive disorder (Gotlieb, Lewinsohn, & Seeley, in press) and children exhibiting early anxiety symptoms are considered at risk for developing adult anxiety disorders (Spence & Dadds, 1996). It is not clear how cognitive deficits and distortions play a role in the development of internalizing disorders or, why some children develop these maladaptive styles and other do not, but children who are depressed or anxious seem to have more difficulty in this area. Depressed children and adolescents exhibit impaired problem-solving abilities and a pessimistic or irrational cognitive style that impacts their perceptions (Beck, Rush, Shaw, & Emery, 1979; Quiggle, Garber, Panak, & Dodge, 1992). They also report feeling a lack of control over their lives and they are more likely to have depressive and hostile attributional biases (Kaslow, Brown, & Mee, 1994; Quiggle et al., 1992). Anxious children tend to have distorted perceptions of the degree of threat present in certain situations and lack the self-efficacy or effective coping skills to manage their internal distress. Thus, social-cognitions especially regarding self-efficacy, self-control, and cognitive distortion have become a focus for preventive interventions.

Negative life events such as the death of a parent, parental separation or divorce, or psychological trauma (e.g. exposure to violence, natural disaster) appear to play a causal role in the development of internalizing disorders (Goodyer & Altham, 1991). Certain family characteristics may place children at higher risk for these disorders either through genetic transmission or, as social learning theory would suggest, through social modeling and reinforcement. The work of Barrett, Rapee, Dadds, and Ryan (in press) suggests that compared to nonclinic parents, anxious parents may teach their children to perceive threat in ambiguous

situations and utilize avoidant solutions to solve social problems. Khrone and Hock (1991) suggest that overcontrolling or overprotective parenting practices contribute to childhood anxiety by negatively impacting children's ability to effectively learn problem-solving skills. Marital conflict and low cohesion have also been associated with elevated levels of depression in children (Fendrich, Warner, & Weissman, 1990).

Two protective factors that appear to modify the risk factors for internalizing disorders are social support and problem-focused coping strategies (Compas, 1987). Positive coping skills are associated with decreased levels of anxiety and distress and the cognitive difficulties associated with both disorders have the potential to undermine effective coping. Adaptive coping is also modeled through parent-child interactions. This may be another way that offspring of depressed or anxious adults are vulnerable for developing similar disorders as their parents.

Effective Preventive Interventions: Internalizing and Stress-Related Programs

Only one universal prevention program has targeted childhood depression and it failed to find significant effects (Clarke, Hawkins, Murphy, & Sheeber, 1993). Typically, prevention efforts in this domain are targeted towards the two groups considered most at-risk for developing the disorder: children of depressed adults and children or adolescents with elevated depressive symptomatology. Beardslee and his colleagues are currently conducting one of the most in-depth programs for children with depressed parents (Beardslee, Hoke, Wheelock, Rothberg, van de Velde, & Swatling, 1993; Beardslee, Salt, & Porterfield, 1992). Although their intervention model is promising, data regarding the effect of the intervention on children's behavior is unavailable at this time.

Mood disorder prevention programs Prevention programs that target youth with elevated symptomatology are typically cognitive-behavioral and focus on the cognitive deficits and distortions associated with the disorder. The interventions typically take place in schools and are administered to students screened and selected from the general population. Clarke and his colleagues (Clarke, Hawkins, Murphy, Sheeber, Lewinsohn, & Seeley (1995) attempted to prevent unipolar depression in a sample of high school students with their 15-session, **Coping with Stress Program**. Subjects who endorsed scores of greater than 24 on the Center for Epidemiologic Studies – Depression Scale (CES-D; Redloff, 1977) were eligible to participate if they did not meet criteria for a depressive disorder. Although there were no significant differences at the end of the intervention, survival analyses that included assessments through 12 months post-intervention indicated that there were significantly fewer cases of MDD or Dysthymia in the experimental condition compared to the controls ($p<.05$).

The **Penn Prevention Program** is also directed toward altering the cognitive distortions and improving coping skills in at-risk youth. The participants in this program were younger than the Coping with Stress program, and considered at-risk for developing a depressive disorder due to elevated depressive symptoms (mean score on the CDI was 9.1 at pretest) and elevated levels

of child-perceived family conflict. Students with elevated scores on both of these measures (greater than .50 summed z-scores) were eligible to participate in the program. Results from a quasi-experimental evaluation study suggested that the program resulted in clinically significant reductions in depressive symptoms immediately post-treatment and at a 6-month follow-up period. There was support that the reduction was mediated by changes in the children's explanatory styles. Although there were no group differences in externalizing behavior post-treatment, at follow-up the parents of the intervention subjects reported significant improvements in children's home behavior compared to controls. The intervention appeared to be most effective for subjects from high conflict families and those with high levels of depressive symptoms (above the median).

Anxiety prevention programs There have been few preventive efforts to reduce anxiety disorders in childhood and little research evaluating the effectiveness of those that have been attempted (Spence & Dadds, 1996). Programs directed towards reducing anxiety in medical procedures were not included in this review as they are less relevant to long-term risk models for the development of mental health disorders. Only one anxiety prevention program met our criteria.

The **Queensland Early Intervention and Prevention of Anxiety Project** is a large-scale, longitudinal study of a cognitive-behavioral, school-based program. It is designed to prevent the onset and development of anxiety problems in children by teaching them to utilize cognitive, behavioral, and physiological coping strategies while exposing themselves to increasingly fearful situations. The program is primarily focused on the individual child but includes three sessions with parents. The evaluation utilized a multi-level and multi-informant screening procedure to identify youth age 7 to 14 with elevated anxiety symptoms and youth who met the criteria for an anxiety disorder but in the less severe range. Schools were randomly assigned to experimental or control conditions. One of the difficulties in interpreting the findings of the evaluation are that the subjects with diagnoses and those with sub-diagnostic levels of anxiety were combined in many of the analyses. However, 6-months post-intervention when the anxious but non-disordered subjects who received the program were compared to controls they had developed significantly fewer internalizing disorders. This intervention effect was not apparent post-treatment.

Suicide prevention programs Other prevention programs have targeted internalizing symptoms that are related to depression and anxiety disorders. For example, depression is one of three behavioral risk factors (i.e. suicide-risk behaviors, depression, and anger) identified by Eggert and her colleagues as central in the prediction of suicidal potential in youth (Randell, Eggert, & Pike, in press). In a recent evaluation of two school-based intervention programs to prevent suicide, the authors demonstrated that at-risk students benefited in a variety of ways from a brief assessment and resource identification program **(C-CARE)** and a more intensive 12-session group life skills training group **(CAST)**. High school students (9^{th}-12^{th} grade) were designated as "at suicide-risk" if they were a potential dropout from school and if their responses

on a suicide risk screen met specific criteria designated by the authors. The results of a randomized clinical trial indicated that all three groups (C-CARE, C-CARE plus CAST, and a "care as usual" control) exhibited significant decreases in suicide-risk behaviors and anger problems. Both groups of intervention subjects received the C-CARE component and as a group they reported significantly lower levels of depression and higher levels of self-esteem compared to subjects in the control condition. The CAST component was found to be most effective in impacting the personal protective factors and family factors that the authors described as mediating the impact of the three primary risk factors for suicide potential. Subjects that received the CAST component evidenced significant improvements in self-control, problem-solving abilities, and perceived family support compared to controls.

Stress-related prevention programs Some intervention programs are not focused on preventing a specific disorder but are designed to reduce "stress" as it represents a more general internalizing symptom or as it is potentially triggered by a life event. Selected populations such as those experiencing a stressful life event are more susceptible to developing some form of psychopathology at these vulnerable points in development.

Two sets of researchers have applied the Stress Inoculation Training (SIT) counseling paradigm to prevention programs. Hains and his colleagues (Hains, 1992; Hains & Ellmann, 1994; Hains & Szyjakowski, 1990) designed a school-based prevention program **(Stress Inoculation Training I)** to reduce "negative emotional arousal" and other psychological problems associated with stress. They evaluated their program in a series of studies with high school students. In the most recent evaluation (Hains & Ellmann (1994), the sample consisted of youth exhibiting a combination of anxiety, depression, and poor anger control. After participating in a 13-session program that emphasized cognitive restructuring, problem solving, and anxiety management, students with the higher levels of stress before the intervention reported the most significant changes in anxiety and depressive symptomatology. These changes were considered clinically significant.

Kiselica, Baker, Thomas, & Reedy (1994) also applied their 8-session version of an SIT prevention program (**Stress Inoculation Training II**) to a sample of adolescents with elevated self-reported anxiety. Their intervention involved teaching the youth cognitive coping skills and assertiveness training. Intervention subjects reported significantly less anxiety and stress at post-test and 4 weeks after the intervention. While the design of the evaluation was good (i.e. randomized trial), the small sample size and restricted follow-up reduced the generalizability of the findings.

The **Children of Divorce Intervention Project** (Alpert-Gillis, Pedro-Carroll, & Cowen, 1989; Pedro-Carroll, Alpert-Gillis, & Cowen, 1992; Pedro-Carroll & Cowen, 1985) is an example of a school-based prevention program that is designed to prevent potential mental health complications that may result from parental divorce. CODIP is designed to provide children with a supportive outlet to discuss their parent's divorce. It also focuses on counteracting any

unrealistic perceptions or beliefs they may have about the divorce and build problem solving and adaptive coping skills. The program has been modified for different populations and evaluated on multiple occasions by the primary authors. The results indicate that based on responses from multiple informants (i.e. child, parent, teacher) the program is successful in improving children's adjustment.

The **Children of Divorce Parenting Program** (Wolchik, West, Westover, Sandler, Martin, Lustig, Tein, & Fisher, 1993) is also a program that is designed to prevent the potential negative effects of divorce on children, but it focuses solely on parents. The program attempts to improve the quality of the custodial parent-child relationship by supporting parent's effort to be warm and responsive, teaching parents to use clear and consistent discipline practices, and helping parent's use anger management skills to reduce inter-parental conflict. In addition, parents are made aware of the importance of the father-child relationship and non-parental adults as a source of social support for the child. The program has only been evaluated on one occasion, and this was by the program developers. The results indicated that parents who participated in the program felt that their child evidenced significantly fewer problem behaviors at the end of the program compared to children in the control group. Forty-three percent of this main effect was mediated by improvements in the parent-child relationship as hypothesized by the authors.

The **Family Bereavement Program** (Sandler et al., 1992) is an intervention for children who have recently experienced the death of a parent. The program helps the entire family manage the grief process through education and social support. Children are taught adaptive coping skills and parents are encouraged to problem solve how to reduce stress, plan stable positive events, and maintain involvement with family members. The program was evaluated by its developers (Sandler et al., 1992) and the findings suggest that the intervention was successful in reducing children's depressive symptoms and conduct problems according to parent's report.

Programs with secondary effects on internalizing symptoms Although not intended primarily to reduce internalizing problems, two programs have shown significant reductions in this domain. The **PATHS** program (Kuche & Greenberg, 1994) was described in the Universal Programs section but is mentioned here as well. Evaluations of the PATHS curriculum conducted with elementary school aged children have shown significant decreases in depressive symptoms on self-report rating scales, and general internalizing symptoms by teacher report.

The Primary Mental Health Project (Cowen, Hightower, Pedro-Carroll, Work, Wyman, & Haffey, 1996) has also demonstrated significant impact on children's internalizing symptoms. PMHP seeks to prevent psychopathology by providing additional targeted support to early elementary-age children who have been identified as having social/emotional or learning difficulties. The program uses a cadre of paraprofessional support staff coordinated by a school-based mental health professional in order to maximize the number of students who receive support. The intervention focuses on the school domain and changing both the school ecology and the individual child.

Based on an initial universal screening, children who are experiencing behavioral or learning difficulties are identified for PMHP services. The core intervention component is the development of an ongoing interactive relationship with a trained paraprofessional child associate. The child associate meets with the child alone or in small groups in a structured playroom equipped with items designed to encourage expressive play. The expression and exploration of all emotions is encouraged, with limits placed on inappropriate behavior. Child associates exploit opportunities for teaching life skills such as taking turns, following rules, and attending to a task.

In an early non-randomized study of PMHP with approximately 200 subjects, children who had successfully completed one year of the intervention were found to have significantly better adjustment on 2 separate teacher-rated measures of acting out, moody-withdrawn behaviors, and learning difficulties at post test than a matched control group or a group of students who had not successfully completed the intervention (Lorion, Caldwell & Cowen, 1976). With the exception of acting out behavior, these effects retained significance at 12 month followup.

Another non-randomized study of approximately 240 subjects found similar effects, with the greatest impact on students who began the program exhibiting more internalizing symptoms and less acting-out behaviors (Cowen, Gesten & Wilson, 1979). The findings were again based on teacher ratings. A third study without a control group measured pre- to post changes within seven consecutive annual cohorts ranging in size from 206 to 464. This study found significant improvement on 21 adjustment measures reported by teachers, paraprofessionals, and school-based mental health professionals. Though the PMHP has had few methodologically sound evaluations, the cumulative findings of over 20 years of evaluation have strongly supported the effectiveness of the program.

Promising programs In addition to the preventive interventions described above, this review identified two other programs that are promising. The **Zuni Life Skills Curriculum** (LaFromboise, 1991) was designed to reduce risk and build social-emotional competence in Zuni adolescents at risk for suicide and other self-destructive behavior. The intervention was evaluated using a quasi-experimental design (LaFromboise & Howard-Pittney, 1995) with students who participated in the intervention reporting significantly less hopelessness compared to non-intervention students. The intervention students were also observed as having higher levels of suicide intervention skills. While these findings are promising, the Zuni Life Skills Curriculum needs to be evaluated further as there were many aspects of the student's functioning that were not affected by the intervention and liberal significance levels were used to test for group differences.

The **Child Support Group** (CSG; Stolberg & Mahler, 1994) is a 14-week, school-based program for children of divorce. The program focuses on building social-emotional and problem solving skills in the children. It also includes four parental workshops and materials for families to

use at home. The intervention was evaluated on sample of 3rd through 5th grade students and included children of divorce and children from intact families. Children who met criteria for a DSM-III diagnosis were included in the sample. Schools were randomly assigned to the intervention or control conditions. While students who received the intervention were less likely to have adjustment problems (elevated TRF and CBCL Sum t-scores) at post-test and follow-up, effects were stronger for children with clinical-level adjustment problems at pre-test.

VI. Summary of Findings

This review offers evidence that important and meaningful progress has been made in prevention research with children, families and schools during the last two decades. There have been advances in the theory, design, and evaluation of programs, and there are a growing number of programs with documented efficacy of beneficial impact on the reduction on psychiatric symptomology. These research findings have also influenced public policy as federal, state, and local governments are now calling for the utilization of empirically-validated, effective models of intervention for children and families.

Best Practices in Prevention Programming

Over time, researchers, practitioners, and policy makers have developed a more realistic perspective on the necessary intensity and comprehensiveness of programming to prevent psychopathology and promote positive development, especially with children and adolescents growing up in high-risk environments (Panel on High-Risk Youth, National Research Council, 1993). The following conclusions can be made regarding validated programs.

- Short-term preventive interventions produce time-limited benefits, at best, with at-risk groups whereas multi-year programs are more likely to foster enduring benefits.

- Although preventive interventions may effectively operate throughout childhood (when developmentally-appropriate risk and protective factors are targeted) given the resistance to treatment of serious conduct problems, ongoing intervention starting in the preschool and early elementary years may be necessary to reduce morbidity.

- Preventive interventions are best directed at risk and protective factors rather than at categorical problem behaviors. With this perspective, it is both feasible and cost-effective to target multiple negative outcomes in the context of a coordinated set of programs.

- Interventions should be aimed at multiple domains, changing institutions and environments as well as individuals.

- Prevention programs that focus independently on the child are not as effective as those that simultaneously "educate" the child and instill positive changes across both the school and home environments. The success of such programs is enhanced by focusing not only on the child's behavior, but also the teacher's and family's behavior, the relationship between the home and school, and the needs of schools and neighborhoods to support healthy norms and competent behavior.

- There is no single program component that can prevent multiple high-risk behaviors. A package of coordinated, collaborative strategies and programs is required in each community. For school-aged children, the school ecology should be a central focus of intervention.

- In order to link to other community care systems and create sustainability for prevention, prevention programs will need to be integrated with systems of treatment. In this way, communities can develop common conceptual models, common language, and procedures that maximize the effectiveness of programs at each level of need. Schools, in coordination with community providers, are a potential setting for the creation of such fully-integrated models. It is surprising that few comprehensive interventions have been developed and evaluated that combine school-wide primary prevention together with secondary prevention and treatment.

Future Directions

The past decade has brought to fruition well-designed studies that demonstrate the potential of preventive intervention in reducing harmful symptoms for children and youth. However, given the need for effective research in this field there are numerous issues for future research, policy, and practice.

- Few studies meet the criteria for fully-validated program models. Of most concern are the lack of replication of program effects by independent investigators and the absence of long-term follow-up to examine stability of program effects.

- One of the weaknesses in present research efforts is the lack of comprehensive follow-up data to chart the developmental processes of program participants in the years after receiving interventions. As a number of programs show stronger impacts at follow-up than they did at post-test, it is likely that the effects of prevention programs are underestimated at present; examining distal outcomes is critical.

- There has been greater attention to preventive interventions focused on externalizing disorders. As such, we still know less regarding effective prevention models for internalizing disorders. Further, as many children show risk for, or co-morbidity of internalizing and externalizing problems, intervention projects should examine the differential effects that interventions might have on those that have risks or early symptoms of co-morbidity. Further, outcome measures should include assessment of both externalizing and internalizing symptoms.

- A broader point is that there is significant inter-individual variability in program effects. There has been little focus on what factors in the child (e.g., gender, ethnicity) or environment (e.g., quality of home or school environment) might moderate the impact of

intervention. It is necessary to know more regarding for whom specific programs are most likely to be effective.

- With few exceptions, there has been little exploration of how the quality of implementation affects outcomes. There is a need for greater attention to both the measurement of dosage as well as the quality and fidelity of the intervention delivery, especially as empirically-validated prevention programs begin to "go to scale."

- Due in part to the categorical nature of funding, programs often assess quite narrow outcomes (e.g., only substance abuse, psychological symptoms, positive adaptation). As programs often focus the intervention on modifying common risk factors for multiple problem behaviors as well as promoting competence, measures of multiple dimensions of outcome are necessary.

In spite of substantial gains in prevention research during the last two decades, it is important to acknowledge that considerable progress is needed to affect more tangibly the lives of American children and families. Only a small group of researchers have designed and evaluated multi-year, multi-component programs that target multiple mental health outcomes. Few successful efficacy trials have been replicated by independent investigators, and there have been even fewer attempts to evaluate the implementation process and impact of widely disseminated program models. In summary, although a solid scientific base is being created, the most important knowledge regarding preventive interventions will come from the next generation of prevention researchers!

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Appendix A: Effective Programs

ADOLESCENT TRANSITIONS PROGRAM (ATP)

Principal Investigator: Thomas J. Dishion

Level of Intervention: Indicated

Target Population: High-risk adolescents & their families.

References:
Andrews, Soberman, & Dishion, 1995; Dishion & Andrews (1995); Dishion, Andrews, Kavanagh, & Soberman (1996); Irvine, Biglan, Smolkowski, Metzler, & Ary (in press).

Theory (Risk & Protective Factors Targeted):
The Adolescent Transition Project is based on an ecological model of antisocial behavior (Patterson, Reid, & Dishion, 1992). Early adolescence is considered an important time period to target with preventive interventions if signs of antisocial behavior are present because this pattern of behavior is an antecedent to many other adolescent problems (e.g. delinquency and substance use). Certain patterns of parenting practices contribute to children's antisocial behavior and perpetuate the problem over time (Dishion, French, & Patterson, 1995). Based on work of Patterson and colleagues (Patterson, 1992; Patterson et al., 1992), it is clear that coercive parenting is associated with child antisocial behavior. These children often exhibit similar behavior problems at school and experience academic failure and rejection by peers. The combination of punitive parenting practices, a lack of monitoring, and school problems often results in the child disengaging from the school community and being drawn towards associations with deviant peers.

Description of Intervention:
Teen Focus
This component of the program was aimed at developing the self-regulation of the teens in order to reduce problem behavior. The lessons focused on improving the adolescents' ability to set goals, identify small steps towards goals, develop peer support, set personal limits, and engage in problem solving. The curriculum was presented in a group format over 12 weekly, 90-minute, sessions. Presentations and videotapes were utilized to model skills and tokens were used to reinforce behavior in the group. Each group served 8 adolescents. Parent-child activities were sometimes included as part of skill development exercises.

Parent Focus
This component was a step-wise, skill-based curriculum designed to improve parent management skills based on the work of the OSLC (e.g. Patterson et al., 1992). Parents were encouraged to foster and reinforce their adolescent's prosocial behavior, set appropriate limits, and engage in problem solving with the teen. The curriculum was conducted through group sessions (90 minute to two hours long) held weekly for 12 weeks. Group leaders also conducted three individual consultations with each family to tailor skills and discuss family issues. Each group served 8 families (8-16 participants in a group). Skills were discussed and practiced in the group setting and then tried at home. The next week parents reported on their attempts to use the skill and discussed any problems encountered.

Parent and Teen Focus
In the combined groups, peer consultants were used to bridge discussions between adolescents and parents.

Self-Directed Control
Subjects in the control condition received intervention materials in the form of 6 newsletters and 5 videotapes.

Research Subjects:
The sample consisted of 158 families with adolescents between the ages of 10 and 14 (83 boys and 75 girls) who were

primarily Caucasian (95%) and low-income though there was some variability in SES and education. The families were self-referred and became aware of the program through a variety of sources including advertising and referrals through school counselors. Parents were asked to participate in a telephone interview to assess their adolescent's behavior. The screening consisted of items regarding 10 risk areas identified in risk-factor research by Bry and colleagues (Bry, McKeon, & Pandina, 1982). Subjects were eligable for participation if their parent endorsed four or more risk factors. Only 50% of the families that participated in the telephone had an adolescent that qualified to be in the program.

Research Design:
Subjects were randomly assigned to one of 4 conditions: 1) Parent focus, 2) Teen focus, 3) Parent & Teen focus, 4) Self-Directed materials only. A quasi-experimental control group was also recruited that consisted of 39 (17 boys, 22 girls) subjects. Pre-intervention comparisons revealed no significant differences between groups in age or level of symptomatology (CBCL).

Outcomes:
No statistically significant differences in retention rates by condition at termination or follow-up. The two control groups were collapsed as analyses revealed no significant differences between the two groups at post-intervention or follow-up.

Post-Test:
Observations of family problem-solving indicated that teens and parents in the Parent Focus group ($p<.05$), the Teen Focus group ($p<.05$), and the Parent and Teen ($p<.05$) intervention groups exhibited less negative engagement compared to controls. Parents of adolescents in all groups reported significant reductions of home problem behavior (CBCL externalizing score) at termination, so no intervention effects were found. School behavior problems (Teacher CBCL externalizing score) were marginally reduced ($p<.06$) in families assigned to parent interventions (parent-focus or combined group) compared to the control conditions.

Follow-up (1 year):
Observations were not conducted as part of the follow-up assessment. Parents of adolescents in all groups reported significant reductions of home problem behavior (CBCL externalizing score) at follow-up, so no intervention effects were found. Adolescents in the Teen focus group exhibited significantly higher levels of school problem behavior (Teacher CBCL externalizing score) than adolescents in the control group ($p<.05$).

Replication:
Irvine et al. (in press) conducted a randomized trial replication of ATP with 8 small, community samples in Oregon using non-mental health clinicians as group leaders. Subjects were students referred by schools or service agencies based on the Teacher Risk Screening Instrument (Soberman, 1994), a measured adapted by OSLC from the work of Bry and his colleagues (Bry, McKeon, & Pandina, 1982; Bry, Pedraza, & Pandina, 1988). The sample consisted of a total of 303 families and the target children were 61.1% male and 38.9% female. The average age of the target children was 12.2 years (SD = 1.1) and the majority of the subjects were Caucasian (87.5%). Families were randomly assigned to the Parent Focus component of the original ATP program or a wait-list control. Program leaders received extensive training to prepare them to conduct the ATP sessions and then additional supervision while they were implementing the program. Despite substantial attrition at follow-up, parents that dropped out were only significantly different than those who remained in the intervention on one measure across all time points. No interactions were found between treatment condition and attrition on Time 1 variables. The results of latent growth curve modeling analyses indicated that according to parent's reports on the Parent Daily Report (PDR; Patterson, 1974; Reid & Patterson, 1976; Chamberlain & Reid, 1987) and the Child Behavior Checklist (CBCL; Achenbach, 1991), children's externalizing behavior was significantly reduced after their parents participated in the ATP program. The authors conducted additional analyses on a subset of "high attending" families and found that for parents who received four or more sessions of ATP there was a clear and moderate-sized effect of treatment on parent-reported externalizing behavior.

Strengths & Limitations:

The Adolescent Transition Program is a preventive intervention that targets both at-risk adolescents and their families to prevent further escalation of problem behaviors. The program draws on years of research conducted at the OSLC on the developmental model of antisocial behavior and skills training programs for improving parenting practices associated with child problem behavior. In the original evaluation positive program effects were found on observations of parent-child interactions for families in all treatment groups, but iatrogenic effects were found for youth who participated in the Teen focus only group. For these subjects, teacher ratings of externalizing behavior indicated significant increases at follow-up. The authors hypothesized that the structure of this group may have inadvertently fostered the development of deviant associations between the adolescents and contributed to the counter-intuitive findings. There is some recently published research to suggest positive program effects for parent ratings of externalizing behavior when the Parent Focus component of the ATP program is utilized (Irvine et al., in press).

All ATP sessions are based on structured curricula that are accompanied by videotape presentations (Dishion, Kavanagh & Soberman, in press). Unfortunately, neither the original ATP program, or the replication, included any measures to assess program fidelity. In terms of dosage, percentages for families that attended sessions were provided in the original evaluation, but breakdowns in terms of actual number of sessions attended were not provided. In the replication training efforts were described in great detail but training was not mentioned in the original evaluation. Twenty-four group leaders (range of degrees and background experience that would be expected in small community) were recruited in the replication study, and each taught the 12-session program approximately 2.5 times. Each leader agreed to participate in bi-weekly staff review session during the duration of the program but leaders also received extensive training prior to the intervention. The research staff provided workshops, supervision, and phone consultations to program leaders over the four years of the intervention.

ANGER COPING PROGRAM

Principal Investigator: John Lochman

Level of Intervention: Indicated

Target Population: Aggressive and disruptive children and adolescents who have difficulty with anger management.

References:
Lochman (1985, 1992); Lochman, Burch, Curry, & Lampron (1984); Lochman & Lampron (1988); Lochman, Lampron, Gemmer, Harris, & Wykoff (1989); Lochman & Wells (1996)

VERSION 1
Lochman, Burch, Curry, & Lampron (1984); Lochman & Lampron (1988); Lochman & Wells (1996)

Theory (Risk & Protective Factors Targeted):
Children who are aggressive often demonstrate a variety of social cognitive deficits or distortions that contribute to their lack of social competence. Their cognitive problem solving skills are also impaired when they are emotionally aroused. Aggressive behavior is often a reflection of inability to regulate emotional reactions to stimuli that are anger inducing. This behavior pattern is very stable and a risk marker for variety of poor adolescent outcomes (e.g. conduct disorder, delinquency, and substance use. Aggressive children also at risk for school failure, dropout, and poor peer relations.

It is theorized that group format is most effective because it 1) allows children to receive peer feedback, 2) provides in-vivo experiential learning, 3) increases the likelihood of generalization.

Description of Intervention:
The Anger Coping Program is a school-based group intervention designed to reduce future conduct problems, delinquency, and substance abuse. Based on a social-cognitive model of anger arousal and consistent with social information processing models of social competence the intervention focuses on the cognitive distortions and cognitive deficiencies often found in aggressive children. The lessons promote self-instruction and awareness, and builds social cognitive skills.

Sessions were held weekly for 12 weeks and last 45-60 minutes. Groups consisted of 4-6 members and were led by two co-leaders. Program contained lessons designed to improve children's perspective-taking skills, affect recognition, self-control (through inhibatory and coping self-statements), social problem solving, and social skills strategies for managing conflict situations. Sessions included role-plays and activities that generate affective arousal. Reinforcement and feedback are used to support skill acquisition.

<u>Goal-Setting Component</u>
The goal-setting sessions met weekly for 8 weeks. This program was considered a minimal treatment condition. The boys were asked to establish weekly goals for themselves which were monitored by teachers and rewarded if successfully attained.

Research Subjects:
Sample consisted of 76 boys who ranged from 9 to 12 years old. Fifty-three percent of the sample was African-American and the remainder were Caucasian. Subjects were drawn from 8 schools and screened for aggressive behavior with teacher's ratings on the Missouri Children's Behavior Checklist (MCBC, Sines, Pauker, Sines, & Owen, 1969). The numbers of students from each school were not provided. Follow-up analyses were conducted on a sub-sample of 32

boys.

Research Design:
Subjects were assigned "on a rotating basis" to one of 4 conditions: Anger Coping (AG), Goal Setting (GS), a combination of the first two interventions (ACGS), or an untreated control group (UC).

Outcomes:
Repeated measures ANOVA, later used ANCOVA to co-vary pre-test scores.

Post-Test
Boys in the treatment conditions (AC and ACGS) exhibited lower rates of Disruptive and Aggressive Off-Task behavior on classroom observations (BOSPT, Allen, Chinsky, Larcen, Lochman, & Selinger, 1976) compared to controls ($p<.03$). Parents of boys in the treatment condition rated them as exhibiting significantly less aggressive behavior ($p<.02$) on the MCBC compared to controls. Treatment effects were greatest for the combined condition (ACGS). There were no significant differences between groups on teacher or peer ratings after pre-test scores were controlled.

Follow-up (7 month)
In independent observations, treatment boys in the AC condition were compared to controls (UC). AC boys exhibited greater on-task behavior and significantly less passive off-task behavior. Differences in disruptive off-task behavior were not maintained.

Strengths & Limitations:
The Anger Coping Program targeted the social cognitive risk factors associated with children who exhibit disruptive behavior problems by providing intervention on the individual child level. Support was found for the effectiveness of the program in making short-term improvements on children's disruptive and aggressive behavior. The findings also suggested that behavioral strategies (e.g. monitoring and reinforcement) were useful components to combine with cognitive interventions. The fact those significant changes were found on observations and parent report counteracts the fact that teachers and peers did not report any changes. The clinical significance of the findings was not discussed and the effects were not maintained 7 months past the intervention There was also support for the reliability of the observations (i.e. high rates of inter-rater agreement). The authors did not report whether the participants received similar dosages of the interventions and no fidelity measures were included in the evaluation. Although the sample was entirely male there was an even balance of Caucasian and African-American students.

VERSION 2
Lochman (1985)

Theory (Risk & Protective Factors Targeted):
See description above.

Description of Intervention:
Revised version of the Anger Coping plus Goal Setting program (ACGS) extended into an 18-session format. The 18-session program provided additional role-playing experiences and more discussion of anger arousing situations. For more detail see description above.

Research Subjects:
22 boys identified by teachers who were asked to nominate the most aggressive and disruptive students in their class. Average age 10 years 4 months. 55% African American and 45% Caucasian. The same screening procedure was used in Lochman et al. (1984).

Research Design:
In a quasi-experimental design, this sample was compared to the Lochman et al (1984) sample (N=76) who had been

assigned to either the 12 session version of Anger Coping (AC-12), the Goal Setting Only condition (GS), the original combination of these two components which was 12 sessions long (ACGS-12), or an Untreated Control group (UC).

Outcomes:
Same measures used as in first program evaluation. At pretest, the groups were similar on observations of disruptive-aggressive behavior. Group differences were found for on-task, passive/off-task behavior so analyses of covariance were used. The groups were also compared on demographic variables and found to be similar except for age.

Independent observers rated the 22-treatment boys (ACGS-18) as significantly more On-Task, less Passive Off-Task, and less Disruptive-Aggressive in their behavior compared to boys in the GS and UC conditions (p levels between .05 and .001). The boys who received the most recent version of the program (ACGS-18) exhibited significantly more On Task ($p<.05$) and less Passive Off Task ($p<.05$) behavior compared to boys who received the 12 session version of the ACGS program (ACGS-12).

Strengths & Limitations:
The Anger Coping Program targeted the social cognitive risk factors associated with children who exhibit disruptive behavior problems by providing intervention on the individual child level. Support was found for the effectiveness of the program in making short-term improvements on children's disruptive behavior in the classroom. Only observational outcomes were examined but there was support for the reliability of these measures (i.e. high rates of inter-rater agreement). The quasi-experimental design of this evaluation and the small sample size weaken the conclusions that can be drawn from the outcomes of the study. The authors did not provide information on how many referrals were received from teachers in each school and how many children were placed in each group. As was the case in Lochman et al. (1984), there was no discussion of measurement of fidelity or dosage.

FOLLOW-UP VERSION 1 & 2
Lochman (1992)

Theory (Risk & Protective Factors Targeted):
See descriptions provided in first two versions

The purpose of this study was to examine the long term effects of the Anger Coping program given that up until then, other studies of cognitive behavioral treatments had shown limited effects.

Description of Intervention:
See description provided in first version.

Research Subjects:
The sample was drawn from an original pool of 354 identified subjects. The researchers were unable to contact 121 (34%) of those families. The final sample consisted of 31 Anger Control, 52 Untreated Controls, 62 non-aggressive boys (N=145). Out of the 31 Anger Control subjects, 12 were given 6 booster sessions. The non-aggressive subjects were identified by < 7% of their peers as aggressive.

Research Design:
Three cohorts compared by combining samples from Lochman (1995), Lochman et al. (1984), and Lochman & Curry (1986). Also looked at comparison of Anger-Coping (AC), untreated aggressive (UA) and non-aggressive (NON). In addition looked at subset of AC that received 12 sessions and given 6 booster sessions (AC-BOOST) to and AC-ONLY group.

Outcomes:
Structured interviews were conducted with students 2.5-3.5 years after the end of the intervention. Two clusters of

responses were identified from portions of the National Youth Survey (NYS; Elliot, Huizinga, & Ageton, 1985): substance use and general behavioral deviance (GBD). Measures of moderator variables (self-esteem & social problem solving) were included to test hypothesized process in effect of intervention.

Within each experimental group there were no significant differences between the subjects with consent and those without consent or the ones who had lost contact with the study on peer ratings of aggression or social status. The two aggressive conditions (AC and UA) and the two anger coping conditions (AC-BBOST and AC-ONLY) were comparable except there was a significant age difference between the two sets of groups that was not considered large in the absolute sense. Age was not significantly related to any dependent variables except for within the AC condition it was significantly related to general behavioral deviance. Younger subjects displayed more deviant behavior than older subjects in this condition did, but this was not considered relevant to the interpretation of intervention effects. Due to differences between the aggressive and non-aggressive conditions, age and IQ were used as covariates in subsequent analyses.

Intervention effects were tested using MANCOVA and followed by ANCOVAs to determine the source of the effect. AC subjects reported less substance use ($p<.02$) and higher self esteem ($p<.01$) compared to UA subjects but there were no group differences on disruptive-aggressive behavior indicating that effects on this dimension were not maintained from post-intervention. No significant differences between AC-ONLY and AC-BOOST except passive-off task behavior.

The differences in aggression were not maintained and no effects for delinquency were found. Secondary prevention effects were most evident on substance use outcomes. The authors used meta-analysis to contrast the aggressive sample with a normative sample and found AC subjects closer to mean of normative group on substance use, self-esteem, and problem solving compared to the UA group.

Strengths & Limitations:
The findings of this follow-up study suggest that in general, improving the cognitive-behavioral skills of at-risk youth have limited long-term effects when they are conducted in isolation. The treatment effects on aggressive behavior were not maintained over time. It is important to note, however, that these skills were found to relate to other adolescent outcomes. Although the original Anger Coping Program did not target drug resistance skills or problem solving specifically, it had a significant impact on self-reported use and two moderator variables: problem-solving and self-esteem. The authors discuss the findings in terms of their clinical significance. Although it was not mentioned in previous publications, the author noted that in all of the studies the intervention integrity was monitored through weekly meetings with group leaders.

VERSION 3
Lochman, Lampron, Gemmer, Harris, & Wykoff (1989)

Description of Intervention:
Both programs used goal setting in combination with an operant reinforcement system to reward the boys weekly for compliance with rules.

<u>Anger Control (AC)</u>
See description provided in first version

<u>Anger Control Teacher Consultation (ACTC)</u>
Teacher consultation focused on behavioral management and developing students' problem-solving skills.
ACTC also lasted 18 sessions - It involved 6 contact hours of consultation by the group co-leaders with small groups of 2-4 teachers. Meetings varied in length but averaged 1-2 hours. The goals of the consultation were to help the teachers find ways to support the generalization of anger coping skills, support teachers' in their efforts to solve problems with

students, and help teachers' develop a successful behavior management system within the classroom.

Research Subjects:
At 6 elementary schools in Durham Co., teachers identified the most disruptive and aggressive boys in their classroom. The average level of aggressive behavior in the sample was confirmed with teacher ratings on the MCBC (subjects were on average 1 SD > teacher norms). The sample consisted of 32 boys with an average age of 11 years. 22 boys were White and 10 were African-American.

Research Design:
Schools were alternately assigned to either the AC or ACTC treatment conditions. Three of the 6 schools referred more subjects than could be included in the group interventions so the boys in these schools were assigned on an odd-even basis to either the intervention condition or the untreated control condition. The study compared Anger Coping (AC), Anger Coping plus Teacher Consultation (ACTC), with untreated control (UC).

Outcomes:
Subjects in the 3 conditions were not significantly different at pre-test on age or intelligence level. Due to small sample size, used non-parametric Mann-Whitney U-Tests to compare conditions – change scores pre-post, one-tailed tests. The same measures were used in this evaluation as in the first two versions (i.e. MCBC, BOSPT)

Boys in combined treatment conditions (AC and ACTC) were observed as less disruptive-aggressive ($p<.05$) and reported higher rates of perceived self-competence ($p<.05$) compared to the boys in the untreated control condition. There were no significant differences between the AC and ACTC conditions.

Strengths & Limitations:
The results of this study provide some additional evidence for the effectiveness of the Anger Coping Program compared to no treatment. Boys who received both types of intervention compared to controls were described as less disruptive by observers. There was no support that the addition of a teacher consultation component improved the program. Teachers with students in the AC and the ACTC condition were compared on background variables of experience and racial status and found to be similar. As such, the lack of treatment group differences did not appear to be a function of any teacher characteristic. The results should be interpreted cautiously given the small sample size. The authors also did not include information on measures of dosage or implementation.

ATTRIBUTIONAL INTERVENTION (BRAINPOWER PROGRAM)

Principal Investigator: Cynthia Hudley

Level of Intervention: Indicated

Target Population: Aggressive 10-12 year old African-American boys

References:
Hudley & Graham (1993, 1995)

Theory (Risk & Protective Factors Targeted):
Childhood aggression is very stable over time and predicts a number of poor adolescent outcomes. Many of the social and economic correlates of childhood aggression are more prevalent among ethnic minorities. The authors developed their prevention program for aggressive youth based on an attribution theory of aggression, whereby the cognitive inability to appropriately interpret the intent of others actions may promote reactive aggression. The authors were also interested in the role of emotion in attribution theory and anger as a critical link between social cognition and aggression.

Description of Intervention:
Attributional Intervention:
12-lesson social-cognitive school based intervention was designed to teach aggressive students not to infer hostile peer intent in negative social interactions of ambiguous social origin through role play, story reading, and discussion of personal experiences. The intervention consisted of three components. The first focused on helping the boys accurately detect intentionality in social situations. The second was designed to increase the boys' use of non-hostile attributions when interpreting the intent of others. The third focused on teaching the students appropriate responses to ambiguously caused negative outcomes. The program sessions were held twice-weekly for 6 weeks, in locations away from the regular classroom. A typical session lasted 40-60 minutes. Each group consisted of 6 students, four aggressive students and two non-aggressive students.

Attention Training:
The attention training condition consisted of a 12-session, nonsocial problem solving program based on the Building Thinking Skills program (Black & Black, 1984). The instructional format was similar to the attributional intervention.

Research Subjects:
Subjects were 120 poor (30% received reduced or free lunch), African American boys (from two schools in Los Angeles). From this pool, 78 boys were classified as aggressive and 42 were classified as non-aggressive. Aggressive students were identified with teacher ratings and peer sociometric nominations (positive, negative, aggressive behavior, prosocial behavior). To be aggressive, subjects had to have > median on the aggression subscale of the Teacher Checklist (Coie, 1990; Coie & Dodge, 1988), social preference scores < 0, and have at least twice as many aggressive as prosocial peer nominations. To be non-aggressive, subjects had to be at or below the median on the aggressive subscale of the Teacher Checklist, have a social preference score greater than 0, and have received at least twice as many prosocial as aggressive nominations.

Research Design:
Subjects (72 aggressive and 36 non-aggressive) were randomly assigned to one of three groups: treatment, attention training, or no-treatment control. Intervention and attention-training groups were divided into groups with four aggressive subjects and two non-aggressive subjects in each. The control group also contained aggressive and non-aggressive subjects.

Outcomes:
After subject attrition the final sample consisted of 66 boys.

Post-test:
At post-test, the aggressive boys in the intervention group were rated as significantly less aggressive by teachers ($p<.05$) compared to the attention training or control groups. This treatment effect was also evident on specific items of the teacher ratings related to reactive aggression ($p<.05$).

Aggressive subjects' judgements of intent, feelings of anger, and behavioral tendencies were assessed in four different types of hypothetical peer provocation situations (i.e. prosocial, accidental, ambiguous, and hostile). The overall intervention effect was significant ($p<.001$) and these effects were evident on all three variables, but only in ambiguous scenarios. Treatment group membership accounted for 33% of the multivariate variance. Boys who participated in the attributional program perceived significantly less hostile intent ($p<.001$), reported significantly less anger ($p<.001$), and endorsed less hostile behavior ($p<.05$) compared to the other two groups. There were no significant group differences in disciplinary office referrals (of any type).

In an analog task designed to assess subjects responses in actual peer interactions, aggressive boys who had participated in the intervention were significantly less likely to infer hostile intent ($p<.001$) compared to the other groups. Verbalizations during the task were coded and boys in the experimental condition received significantly higher scores ($p<.01$) than the other two groups. Higher scores indicated more neutral verbal behavior as opposed to aggressive verbal behavior.

Strengths & Limitations:
The Attributional Intervention Program targeted specific social-cognitive risk factors associated with childhood aggression by providing an intervention at the individual child level. In a randomized trial, support was found for the effectiveness of the program in altering the types of attributions and the emotional responses that the participants provided in ambiguous situations. At post-test, subjects were also rated as less aggressive by teachers and observed as less hostile in an actual ambiguous social interaction. These findings are promising given the quality of the evaluation design, the use of multiple sources of information including behavioral observations, and the fact that the teachers who provided student assessments were unaware of the child's status.

A strength of the evaluation was that the authors addressed the issues of dosage, staff training, and program fidelity. All students were required to attend a minimum of 10 sessions and all subjects met this requirement. Group leaders were two African-American women with backgrounds in education. The instructors participated in 16 hours of training with the curriculum developer and conducted 3 experimental and 3 attention-training groups each. Weekly supervision was provided to the group leaders to monitor and discuss implementation integrity. It is important to consider however, that the sample size was relatively small, the subjects were all male, and the majority of the participants were African-American, which limit the generalizability of the findings. In addition, the absence of follow-up data leaves in question the long-term impact of the program.

The author compared the aggressive and non-aggressive subjects to determine the clinical significance of the study findings. Although aggressive boys in the intervention were rated by teachers as less aggressive after participating in the attributional program, they were still rated as significantly more aggressive than the non-aggressive subjects at post-test.

BIG BROTHERS / BIG SISTERS

Principal Investigator: Joseph P. Tierney and Jean Baldwin Grossman

Level of Intervention: Selected

Target Population: Usually low-income children and adolescents (age 5-18) with limited number of supportive adults in their life and minimum level of social skills. Participants are often from single parent homes.

References:
Tierney, Grossman, & Resch (1995); Grossman & Tierney (1998).

Theory (Risk & Protective Factors Targeted):
Based on research that support and guidance from adults is critical for successful adolescent development (Haensly & Parsons, 1993) and that a supportive relationship with an unrelated adult may be a critical protective factor for a child living in a high-risk environment (Garmezy, 1985; Rutter, 1987; Werner & Smith, 1992).

Description of Intervention:
The intervention involves a supportive relationship with a caring adult matched on parent and mentor preferences (e.g. age, race, religion). General matching based on gender, geographic proximity, and availability. Over the course of at least one-year, mentors meet with assigned child 3 times a month for 3-4 hours.

In order to ensure effective matches between volunteers and youth and to monitor program quality, the professional staff of BB/BS screens all applicants, youth, and their families. Orientations are conducted with youth and volunteers, and trainings are conducted with volunteers. BB/BS staff supervise matches between youth and volunteers by contacting all parties within 2 weeks of the initial match and then having monthly telephone contact with the volunteer for the first year of the program. The BB/BS staff also contacts the youth at least 4 times directly the first year.

Research Subjects:
The subjects consisted of 959 youth age 10 to 16. The sample was 37.6% female and 62.4% male. Subjects were almost evenly distributed between BB/BS mentoring (N=487) and control (N=472) conditions. More than 40% of the subjects were living in families that were receiving food stamps and/or cash public assistance.

Research Design:
Subjects were drawn from 8 BB/BS agencies (out of a potential pool of more than 500 agencies) with large caseloads in geographically distinct areas. Youth from these agencies were randomly assigned to mentoring or control. Treatment subjects were paired with a mentor and control subjects were placed on a waiting list for 18 months.

Outcomes:
Using a 90% confidence level, there were no differences between the intervention and control groups.

Many individual items regarding antisocial activities, academic outcomes, & social & cultural enrichment were drawn from interview questions. Youth self-report measures included the Self-Perception Profile for Children (Harter, 1985), the School Values Questionnaire (Berndt & Miller, 1990), the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987), the Features of Children's Friendship Scales (Berndt & Pery, 1986), and the Self-Image Questionnaire for Young Adolescents (Petersen et al., 1984).

Multivariate techniques (i.e. regressions and logits) were used to estimate intervention effects. Characteristics of youth and baseline ratings on outcomes were controlled for in the models. A dummy variable was used to represent status (i.e. intervention vs. control) and the coefficient for this variable was interpreted as a measure of the program impact. Sub-

group-treatment interaction terms were included to estimate sub-group impacts. The treatment group included some youths who were assigned to receive the intervention but were never able to be matched.

Post-Test (18 month):
There was an overall effect for treatment subjects reporting fewer incidents of hitting someone compared to controls ($p<.05$). This finding was not significant for any sub-group. Youth who participated in BB/BS were less likely to report that they initiated illegal drug use ($p<.05$). This effect was only significant in sub-group analyses for minority males ($p<.05$). Although there was no overall effect of the intervention on child self-reported GPA, girls in BB/BS reported higher grades after participating in the program compared to controls ($p<.05$). There were significant treatment effects on youth self-reported truancy. Overall youth in the intervention group reported less skipping of school ($p<.01$). This effect was due to the significant differences for female participants compared to controls ($p<.01$) and included significant effects for both Minority and Caucasian subgroups of girls. Treatment subjects reported more trust ($p<.05$) & more positive perceptions of their relationship ($p<.05$) with their mother (IPPA summary score). This was due to significant differences for white males ($p<.05$). This subgroup also reported increased communication ($p<.05$) with parents but the overall treatment effect for parental communication was non-significant. Minority male intervention youth reported more perceived emotional support from peers ($p<.05$) compared to controls.

Strengths & Limitations:
Big Brothers/Big Sisters is a mentoring program designed to reduce the risk of limited social support that is often associated with poverty and living in a single-parent home. The program attempts to improve adolescent outcomes by providing low-income youth with a stable and nurturing positive relationship with an adult. There is support that the program is effective in improving adolescent report of their academic performance and behavior. Youth who participated in the program also reported more positive perceptions of their significant relationships. However, the project showed few main effects and most of the findings were only significant in specific subgroups.

The quality of the evaluation (e.g. design, sample size) was good, but it was unfortunate that only self-report measures were used to measure outcomes. While self-reported information from youth is acceptable for many different dimensions of behavior, particularly delinquent activity, multiple measures and non-biased sources (e.g. school records) would strengthen the findings.

It is very difficult to measure fidelity in this type of program. While the BB/BS organization has certain procedures outlined for the recruitment, screening, and matching of its volunteers, these processes were not specifically measured in the evaluation. Intervention effects by quality of mentor or dosage were not addressed in the evaluation though the authors reported that these types of analyses are planned for the future.

CHILD DEVELOPMENT PROJECT

Principal Investigators: Eric Schaps, Daniel Soloman, Victor Battistich

Level of Intervention: Universal

Target Population: elementary-aged children

References:
Battistich, Schaps, Watson & Solomon (1996); Solomon, Watson, Battistich, Schaps & Delucchi (1996); Watson, Battistich, & Solomon (1997); Solomon, Watson, Delucchi, Schaps, & Battistich (1988)

Theory (Risk & Protective Factors Targeted):
Derived from socialization, learning and motivation, and prosocial development theories, the Child Development Project is a comprehensive educational "reform" model, intended to transform schools into "caring communities of learners". Its focus is on enhancing protective factors, including school bonding, and recognizing the role of social context in fostering adaptive developmental outcomes. CDP is built upon a theoretical model that hypothesizes that satisfying students' basic needs will lead to greater attachment or bonding to the school community, which in turn will promote commitment to the school community's norms and values, as reflected in behavior consistent with those norms and values.

Description of Intervention:
CDP is a comprehensive school-based model that focuses on creating a cooperative and supportive school environment. Components include school staff training in the use of cooperative learning and a language arts model that fosters cooperative learning, cross-grade "buddying" activities, as well as a developmental approach to discipline that fosters self-control by engaging students in classroom norm-setting and providing them with opportunities to actively participate in classroom decision-making. School-wide community-building activities are used to promote school bonding, and parent involvement activities such as interactive homework assignments reinforce the family-school partnership.

Research Subjects:
The study consisted of approximately 4,500 third- through sixth-grade students in 24 schools (12 treatment schools, 12 control schools) from 6 diverse districts throughout the United States. Approximately 1/3 of the total sample was used for dependent measures of delinquent behavior. The schools in the total sample represented geographically diversity, including the west coast, south, southeast and northeast United States, and included large and small urban, suburban and rural schools. Intervention and control samples were generally well matched demographically each year. In year one, the intervention group was 54% white, 17% African American, 21% Hispanic, 7% Asian, and 3% other, while the comparison group was 47% white, 22% African American, 21% Hispanic, 9% Asian, and 2% other. The proportion of non-white students increased in both groups across time. The overall sample included slightly fewer boys than girls (48.2% and 51.8%, respectively). Most students were between 11 and 12 years old at time of assessment.

Research Design:
A quasi-experimental, cohort sequential design was used. Data were collected after 1 year and 2 years of intervention. District administrators selected treatment schools, with comparison schools matched for student characteristics (SES, ethnicity, English proficiency, and academic achievement).

To measure fidelity of implementation, teachers were assessed through four, 90-minute observations each year and annual teacher questionnaires. Student assessment was conducted through self-report surveys conducted in the top three grades in each school (either 3-5 or 4-6). Self-reports of drug use and delinquent behavior were limited to the top grade (5 or 6) in each school. In addition to questions about cigarettes, alcohol and marijuana, delinquent behavior was assessed based on the frequency (on a 5-point scale) of involvement in 10 specific behaviors during past year. The

students who completed the survey were well-matched to the total population of upper-grade students with respect to gender, ethnicity and SES.

Outcomes:
Multivariate ANCOVAs indicated overall program status x year interaction significant at $p<.04$. Univariate analysis showed significant differences in alcohol use ($p<.02$), though changes in marijuana use did not achieve statistical significance and tobacco use declined at both E and C schools. Among the delinquency measures, only vehicle theft saw a statistically significant ($p<.01$) effect in univariate analysis.

Owing to the difficulty in implementing with fidelity a complex intervention in the short period of time covered in the study, a second set of analyses were conducted which accounted for degree of implementation. Using a classification of high, moderate, and low implementation (based on changes from baseline in six observational measures of program implementation and practice) multivariate ANCOVAs showed a program status x year interaction which was significant for high-implementation ($p<.008$) and moderate implementation ($p<.03$) schools, but was not significant for low-implementation schools.

Using this implementation-level classification scheme, statistically significant effects were found in the high implementation schools for marijuana use, vehicle theft, and carrying a weapon. By the second year of implementation, students in high implementation schools showed significantly lower rates of skipping school, carrying a weapon, and vehicle theft ($ps<.01$).

Strengths & Limitations:
The Child Development Project targets multiple risk and protective factors across both individual and ecological contexts, though with a stronger focus on school ecology. The selection of program schools by administrator was based on perceived willingness to implement the program, with comparison schools matched on demographics, SES, and student achievement scores. There was a strong correlation between fidelity of implementation and program effects, though the measures used to identify the degree of program implementation are limited in that they do not account for (a) school and family involvement activities which are an integral part of the intervention, or (b) within-school variation or variation across years in program fidelity. The study also failed to account for differential program effects for different groups of students and schools (though the study did statistically control for gender, ethnicity, and age).

Because of extreme skewing of both the drug use and delinquency responses, data were recoded to dichotomous variables. Though effect sizes are relatively small, the authors note an a priori expectation that the complexity of the contextual change involved with the program would require as much as 3 years to fully implement. The extreme geographic and demographic diversity of the study lend to its generalizability. There has been no independent replication of the program.

CHILDREN OF DIVORCE INTERVENTION PROGRAM (CODIP)

Principal Investigator: JoAnne L. Pedro-Carroll

Level of Intervention: Selected

Target Population: Children with separated or divorced parents.

References:
Alpert-Gillis, Pedro-Carroll, & Cowen (1989); Pedro-Carroll, Alpert-Gillis, & Cowen (1992); Pedro-Carroll & Cowen (1985).

Theory (Risk & Protective Factors Targeted)
Stressful life events increase the risk of adjustment problems and research has documented the negative psychological effects of divorce for some children. Children from divorced families have been found to have poorer teacher-rated adjustment, skill-development, and school performance (Guidubaldi, Clemshaw, Perry, & Mcloughlin, 1983). They have also been described as more aggressive compared to children from intact families and less popular with peers (e.g. Emery, 1982). These findings emphasize the need for preventive interventions with this population.

Description of Intervention:
The Children of Divorce Intervention Program (CODIP) is a school-based preventive intervention. The original program (Pedro-Carroll & Cowen, 1985) was based on a modified version of the Children's Support Group (CSG, Stolberg & Mahler, 1994), the child component of the Divorce Adjustment Project (DAP; Stolberg & Cullen, 1983). The program consisted of 10 sessions that were co-lead by group leaders. The program emphasizes support and skill building. Children are provided with an opportunity to discuss their thoughts and feelings about their parents' divorce (3 sessions) and taught problem solving skills (3 sessions) and anger management skills (3 sessions) to enhance adaptive coping with their reactions to the event. A final session was used to conduct an evaluation with the children regarding their experiences in the group. The Pedro-Carroll et al. (1986) version of the program was very similar to the original program but consisted of 11 sessions with one session added to focus on building children's self esteem. Alpert-Gillis, Pedro-Carroll, & Cowen (1989) modified the CODIP so that it was more appropriate for a younger (2^{nd} and 3^{rd} graders) urban, low-income, population that was more ethnically diverse. The format was expanded to 16 sessions, materials were adapted, and exercises were added that addressed the developmental and sociocultural realities of the families. The over-arching goals of the program (foster group support, facilitate discussion of divorce-related feelings, promote understanding and reduce misconceptions, teach problem solving skills, enhance positive self and family perceptions) remained the same as previous version. Certain issues were addressed in more depth (e.g. reunion fantasies, relations with non-custodial parents) and more visual-aids were employed. In one of the most recent versions of the program, Pedro-Carroll, Alpert-Gillis, and Cowen (1992) took the 16-session version of CODIP used in Alpert-Gillis et al. (1989) and adapted it for an older (4^{th} through 6^{th} grade) sample of urban, low-income students.

VERSION 1
Pedro-Carroll & Cowen (1985)

Research Subjects:
The subjects (33 girls, 42 boys) were 4^{th} through 6^{th} grade, white, middle-class children. They were recruited by sending letters to all of the students enrolled in 4^{th} through 6^{th} grade in 4 suburban schools. There were 41 children in the intervention and 34 in the delayed intervention control group. Parents of the subjects had been separated or divorced for an average of 23.6 months (range 1-84 months).

Research Design:

The total subject pool was randomly assigned to condition within the schools. Groups were matched for sex, grade, length of time since separation, and 8 pre-adjustment measures.

Outcomes:
The intervention and control groups were not equivalent on the Acting Out factor of the Classroom Adjustment Scale (CARS; Lorion, Cowen, & Caldwell, 1975) and the Good Student factor of the Health Resources Inventory (HRI; Gesten, 1976) at pre-test. Prior to the intervention, control subjects were significantly more likely to be described as acting out and a poor student by teachers than treatment subjects. These group differences were not controlled in subsequent analyses.

The treatment group improved significantly more than controls on 8 of 10 scales of the CARS and the HRI. Teacher ratings were significant on the Shy-Anxious ($p<.001$), Learning Problems ($p<.05$), Adaptive Assertiveness ($p<.05$), Peer Sociability ($p<.001$), Follows Rules ($p<.01$), and Frustration Tolerance ($p<.05$) scales. Children's total score on the Stait-Trait Anxiety Inventory for Children (STAIC; Spielberger, 1973) indicated that intervention subjects reported significant reductions in anxiety symptoms compared to controls ($p<.02$). Parents of intervention subjects described their children as significantly better adjusted on the total score of the Parent Evaluation Form (measure created for this study) compared to parent ratings of control subjects ($p<.001$).

VERSION 2
Alpert-Gillis, Pedro-Carroll, & Cowen (1989)

Research Subjects:
The intervention subjects (52 program subjects, 52 divorce controls, & 81 intact comparisons) were 2nd through 3rd grade, urban children. The sample was 69% Caucasian, 23% African-American, 5% Hispanic, and 3% other. Twenty-three percent of the sample was at or below poverty level (1989). Girls made up 46.5% of the sample. Subjects were eligible if their parents were separated or divorced and they were not currently in treatment. Treatment subjects were recruited through referrals by school professionals, and with program announcements. Control and comparison subjects were recruited by sending letters describing a study about child development and family life.

Research Design:
Quasi-experimental design, matched comparisons with assessment at pre and post-intervention. The three groups were proportional by sex, grade, and racial composition.

Outcomes:
Group differences at pre-test reflected poorer adjustment for children of divorce on the PEF, the two T-CRS sum scores, and the 7 T-CRS factor scores compared to children from intact families. There were no significant differences between the two groups of children from divorced families.

Intervention children reported significantly more positive feelings about their families and improved coping skills on the Children's Divorce Adjustment Scale (CDAS; an adaptation of Sterling, 1986) compared to controls ($p<.001$). Parents of children who participated in CODIP described their children as significantly better adjusted on the total score of the PEF compared to parent ratings of control subjects ($p<.001$). Teachers described intervention students as significantly more competent than control children ($p<.01$). Specifically, they rated them as more assertive ($p<.01$), socially skilled with peers ($p<.01$), and better able to tolerate frustration ($P<.04$) on the T-CRS.

VERSION 3
Pedro-Carroll, Alpert-Gillis, & Cowen (1992)

Research Subjects:

The sample consisted of 188 (110 boys, 78 girls) 4th through 6th grade students from 9 schools (57 intervention, 38 non-program divorce controls, 93 comparisons from non-divorced families). The groups were matched by grade and gender. Fifty-six percent of the sample was Caucasian, 30% African-American, 10% Hispanic, 3.6% Asian, and .4% Native American. The sample represented a range of socioeconomic levels. Subjects were eligible if their parents were separated or divorced, not currently in treatment, and had no severe emotional problems. Treatment subjects were recruited through referrals by school professionals, and with program announcements. Control and comparison subjects were recruited by sending letters describing a study about child development and family life.

Research Design:
Quasi-experimental design, matched comparisons with assessment at pre and post-intervention.

Outcomes:
The intervention, control, and comparison groups were compared at pre-test. On four out of six variables (STAIC, PEF, T-CRS competence sum, T-CRS problem sum) there were significant group differences. In each case, the CODIP children (intervention group) had significantly poorer adjustment than the divorce control group and the intact comparison group.

At post-test, significant group differences were found that favored the CODIP participants. Children who received the intervention reported significantly more positive feelings ($p<.003$) about their families and improved coping on the Child Family Adjustment Scale (CFAS, measure created for this study) compared to both the divorce controls and intact comparison children. Similarly, the intervention children reported significantly less anxiety ($p<.01$) on the STAIC and parents described them as better adjusted ($p<.001$) compared to children in the other two groups. In addition, intervention children reported significantly more positive divorce-related attitudes ($p<.003$) on the Children's Attitudes and Self Perceptions (CASP; Pedro-Carroll & Cowen, 1985) compared to the divorce controls.

Strengths & Limitations:
The Children of Divorce Intervention Program is designed to prevent potential mental health complications (i.e. anxiety, behavior problems) in children that may result from parental divorce. The program focuses solely on the child, and is designed to create a support network that facilitates discussion of divorce-related feelings and attitudes and reduces the likelihood that the child will engage in self-blame for the events taking place. The program attempts to build the child's social problem solving and anger management skills. Out of three studies that evaluated the program only one utilized a randomized trial (Pedro-Carroll & Cowen, 1985) and the others relied on a quasi-experimental designs; the latter design limits the strength of the conclusions that can be drawn from the results. In addition, there was some variation across studies in the degree to which the samples were adequately matched or differences found between groups were managed statistically. However, the fact that CODIP has been evaluated multiple times and that the findings are generally consistent across evaluations is promising. Most of the studies found improvements in children's self-reported anxiety, parent-reported adjustment, and teacher-rated competence. Some evaluations also found teacher ratings of problem behavior improved for children in the program. One caveat is that the follow-up period was not extended in any of the evaluations so it is impossible to determine whether treatment gains were maintained over the long-term. Bias from respondents was also likely to have inflated treatment effects because individuals were aware of status of children.

The authors provided information in each study regarding their attempts to maintain treatment fidelity. Each of the three studies evaluating CODIP included group leader training and on-going supervision. Training took place one month prior to the beginning of the program and group discussions, and supervision occurred weekly during the intervention period (Pedro-Carroll & Cowen, 1985; Pedro-Carroll et al., 1992; Pedro-Carroll et al., 1986).

CHILDREN OF DIVORCE PARENTING PROGRAM

Principal Investigators: Sharlene Wolchik and Irwin Sandler

Level of Intervention: Selected

Target Population: Parents divorced within 2 years, with a child between 8 and 15 years of age

References:
Wolchik, West, Westover, Sandler, Martin, Lustig, Tein, and Fisher (1993)

Theory (Risk and Protective Factors Targeted):
Parental divorce is a stressful life event and has the potential to affect children's adjustment in significant ways. Divorce has been linked with childhood aggression, internalizing symptoms, poor academic performance, and poor peer relations. The authors stressed the importance of using an empirical approach to the design and evaluation of prevention programs. Based on "small theory", the Children of Divorce Parenting Program targeted a number of modifiable processes ("putative mediators") that have been identified in past research as being associated with the quality of children's adjustment after divorce: 1) quality of the child's relationship with the custodial parent, 2) contact with the noncustodial parent, 3) negative divorce-related events including interparental conflict, 4) support from nonparental adults, and 5) discipline strategies.

Description of Intervention:
The Children of Divorce Parenting Program is a parent-based intervention designed to improve the quality of the parent child relationships by encouraging parents to spend quality time with their children, listen to their children, and reinforce positive behavior. Parents are taught how to use clear and consistent discipline practices, and to use anger management skills to reduce interparental conflict. In addition, parents are made aware of the importance of the father-child relationship and non-parental adults as a source of social support for the child, and given the opportunity to problem solve ways to establish these resources. The program consisted of 10 group and 2 individual sessions that were presented to small groups of 6 to 8 participants. Each group was co-led by a male-female team that were primarily graduate students in clinical psychology.

Research Subjects:
Mothers who were divorced within the past 2 years were recruited for participation in the intervention through a random sampling of court records, media articles, and school presentations. A two-step screening process was used to identify subjects. In an initial phone call, parents were interviewed to determine if the family met 7 criteria: 1) the divorce was granted within the last 2 years, 2) the mother had a child between 8 and 15 years of age, 3) the custodial parent was female, 4) no family member was in treatment, 5) the custodial parent had no plans to remarry, 6) the custody arrangement was stable, and 7) English was the primary language in the home. In a pre-test interview, subjects were eliminated (46 out of 177 excluded) if their scores on the putative mediators indicated low-risk (scores at or above 30%) or if there was evidence that the child or mother reported clinical levels of depression (21 children and 1 mother excluded). There were 94 families assigned to groups and 70 who remained in the study through post-test. Ninety percent of the participants were Caucasian, and 61% of the children interviewed were male. The average yearly income was between 20,001 to 25,000 (range = less than 5,000 to 50,000) and 74% of he mothers had attended college.

Research Design:
Participants were randomly assigned to an intervention or wait-list control group.

Outcomes:

There were no significant group differences in attrition rates between those individuals that dropped out of the program and those that remained through post-test. When differential attrition rates were compared by intervention condition, only two significant group differences were found. According to child reports, control subjects who completed the program were significantly less aggressive ($p<.01$) and slightly less depressed ($p<.10$) than those who dropped out of the program. Within the intervention group, control subjects who completed the program tended to report higher levels of depression than those who left the program. The authors noted that these group differences would most likely bias effects against showing favorable outcomes for treatment.

A series of ANCOVA were conducted in which pre-test scores were used as covariates and post-test scores were used as dependent variables.

Post-test:
Parents who participated in the intervention reported significantly lower ($p<.05$) levels of total problem behaviors on the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983) compared to control parents.

Children of intervention participants reported significantly lower levels ($p<.01$) of aggressive behavior on the Youth Report of Hostility Scale (Cook, 1985) compared to controls, the intervention children reported significantly higher levels of depressive symptoms ($p<.05$) on the Child Assessment Schedule (CAS; Hodges, Kline, Stern, Cytryn, & McKnew, 1982) compared to controls. The authors qualified this finding by pointing out that there were no group differences on Child Depression Inventory (CDI; Kovacs, 1981), and that the difference on the CAS may have been due to an extreme outlier in the sample. There was a possibility of differential attrition on child ratings but similar results were found when this was controlled in subsequent analyses.

On the mediating variables significant group differences were also found. A number of these involved interactions with pre-test level. The children of parents in the program who perceived better quality relationships (as reflected in higher Acceptance/Rejection ratings) prior to the intervention, reported significantly higher levels of warmth and acceptance ($p<.05$) in their relationship with their parent compared to controls. One counter-intuitive finding with child reports was that program subjects reported receiving less support from non-parental adults than children in the control group ($p<.05$).

On parent ratings of mediating variables, group differences were found on two measures of the quality of the custodial parent-child relationship. Parents in the program rated the quality of communication ($p<.01$) and the positive routines in their family ($p<.01$) more positively than controls. In addition, at post-test mothers who participated in the program were significantly more likely than controls to be willing to change visitation by the ex-spouse if it was requested ($p<.05$). Interactions were found between intervention condition and pre-test levels on two of the parent measures. Mothers who reported less consistent discipline at pre-test reported significantly more improvement at post-test compared to controls ($p<.01$). When mothers reported high numbers of negative events at pre-test, program participants reported significantly lower rates of negative events at post-test.

Mediational analyses were conducted and confirmed that the quality of the custodial mother-child relationship mediated the effect of the intervention on changes in child behavior. Specifically, 43% of the change in behavior was attributed to mediation by these parent-child relationship factors.

Strengths and Limitations:
The Children of Divorce Parenting Program targets a number of modifiable factors under parental control that have been identified in past research as being associated with the quality of children's adjustment after divorce. It is a parent-based intervention program for mothers with a child between 8 and 15 years of age, who divorced within the last two years. According to parent reports, children of participants evidenced fewer problem behaviors at the end of the program compared to controls. Child reports of behavior change were mixed and somewhat difficult to interpret. There was support from the parent perspective that the program affected mediating factors, related to child behavior. Indeed, forty-three percent of the main effect of the intervention on post-test changes in maternal ratings of child behavior were

mediated by improvements in the parent-child relationship. While these results of this randomized trial are promising, they should be interpreted cautiously. The sample size was very small, unbiased reporters did not make the ratings, and there have been no independent replications of the program.

The authors made significant efforts towards program fidelity, which should be noted. Leaders received intensive training regarding the theoretical basis of the program. They were also trained in the program with videotapes of sessions and role-plays. Group leaders used detailed program outlines to guide the sessions and received weekly supervision (1.5 hours). A 5-part process evaluation was conducted that included monitoring how much time was spent on each component of the sessions, attendance of participants, ratings of the leader's knowledge of the program, participant evaluations of the leaders, and parent ratings of their usage of the program. Results of this evaluation indicated that participants attended a mean of 9.6 of the group sessions, all major components were covered, and evaluations of the group leaders were very positive.

COPING WITH STRESS COURSE

Principal Investigator: Gregory N. Clarke and Peter M. Lewinsohn

Level of Intervention: Selected

Target Population: Adolescents with elevated self-reported depressive symptomatology

References:
Clarke, Hawkins, Murphy, Sheeber, Lewinsohn, & Seeley (1995)

Theory (Risk & Protective Factors Targeted):
Based on multifactorial model of affective disorder proposed by Lewinsohn et al. (1985). In this model, depression is considered the result of multiple etiological elements acting in combination. These include negative cognitive processes, stressful events, vulnerabilities/risk factors (e.g. female gender, history of depression, family history) and immunities to depression (e.g. high self-esteem, coping skills, high frequency of positive activities).

Description of Intervention:
The "Coping with Stress Course" was an adaptation of the Adolescent Coping with Depression Course (Clarke, Lewinsohn, & Hopps, 1990) and consisted of 15 group sessions (45 minutes long) that took place after-school. It was a developmentally oriented cognitive intervention to promote adaptive coping. Adolescents were taught techniques, including cognitive-restructuring skills, to identify and challenge negative or irrational thoughts. The program utilized cartoons, role plays, and group discussions.

Research Subjects:
Initially, all students in 3 suburban high schools (N=1,652) were screened for elevated self-reported depressive symptomatology on the Center for Epidemiologic Studies-Depression Scale (CES-D; Roberts et al., 1991). The cutoff score designated by Roberts (score > or = to 24) was used as a way to identify adolescents at risk for future disorder (N=471). The screening process did not allow for comparisons between those who participated in the first screen and those who declined. In a second screen, subjects (N=222) with parental consent were administered the K-SADS(Schedule for Affective Disorders and Schizophrenia for School-Age Children) diagnostic interview (Orvaschel & Puig-Antich, 1986) to rule out a diagnosable disorder.

The sample consisted of 9^{th} & 10^{th} grade adolescents, 70% female, 92.5% Non-Hispanic White, with a median age of 15.3 years. The median parent education level was 1-2 years of college. The mean score of the intervention participants on the CES-D was 22.6. This was significantly higher than the mean score for the sample of subjects who declined to participate.

Research Design:
Subjects with elevated depressive symptoms but with no current major depression and/or dysthymia were randomized to the intervention (N=76) or a "usual care" control condition (N=74).

Outcomes:
There were no group differences in terms of study-wide attrition that were related to depression severity or any demographic variables. There were significant differences between intake and post-intervention assessments with more subjects lost from the intervention condition. A significant main effect was found for CES-D scores indicating that the scores for the subjects that dropped out were significantly lower than the scores of those who remained in the program. The treatment and control groups differed by gender (Females more likely to be in the experimental condition than the control condition) so analyses were conducted with gender controlled. Although the study findings were similar when gender was not included, the more conservative findings were reported.

Follow-up (12 month)
Data across all assessment points (i.e. post-intervention, 6 months, 12 months) were included in a set of survival analyses. One-tailed tests were used because a priori hypotheses favored the intervention group. Results indicated that there were significantly fewer cases of MDD or Dysthymia in the experimental condition across the follow-up period compared to the control group ($p<.05$). Total incidence rate for the experimental group was 14.5%. For the control group the total incidence rate was 25.7%.

Repeated-measures ANOVA were used to examine CES-D scores. Results supported a significant reduction in depressive symptomatology in the experimental group compared to controls ($p<.05$) from intake to post-intervention. This result was not maintained when scores from the intake and the 12-month follow-up were compared. There were no significant group differences on a modified version of the Hamilton Depression rating Scale (Hamilton, 1960) used in this study.

Strengths & Limitations:
The Coping with Stress Course targeted the negative cognitive processes that often accompany depressive disorders by providing skills training on an individual level with at-risk youth. The results are extremely promising, particularly given the design of the study (randomized trial) and the use of diagnostic classifications as outcome measures. Diagnostic interviews were audiotaped as an ongoing check on reliability and a senior interviewer independently re-rated a random sample. The authors reported good inter-rater reliability on the interviews. It is important to note that the generalizability of the findings is somewhat limited given that the sample was predominantly middle class, Caucasian, and female.

Group leaders were specially trained school psychologists and counselors, each of whom had a minimum of a Master's degree. The leaders were provided with 40 hours of training. All sessions were audiotaped and a random set were selected and rated for protocol compliance (average protocol adherence was 93.9%). The authors did not provide any data on fidelity of the program once it was implemented.

COUNSELORS CARE (C-CARE) and COPING AND SUPPORT TRAINING (CAST)

Principal Investigator: Leona L. Eggert

Level of Intervention: Indicated

Target Population: High school students at-risk for suicidal behavior due to risk of school dropout.

References:
Randell, Eggert, & Pike (1998)

Theory (Risk & Protective Factors Targeted):
Suicide is a leading cause of death and the frequency of the problem is significant in community samples (11 to 48%). High school dropouts appear to be an at-risk group (40% screen in as at risk for suicide). Lower grades and poor academic orientation are both associated with suicidal ideation. Drug involvement, personal strain, and family strain are often co-occurring risk factors. No single factor can be used to predict suicidal behavior but the interrelationship among suicide-risk behaviors, depression, and anger is important and one of the strongest predictors. Mediators include personal resources (personal control, coping behavior, self-esteem) and family resources (family support, family goals met, family distress). The authors note that the school is considered an appropriate place to conduct a preventive intervention because it provides daily contact with the student and is consistent with the school's role.

Description of Intervention:
Both approaches were designed to build the personal and family strengths, which influence suicide-risk behaviors. The theoretical basis for the programs was the social support literature, social learning theory, and social influence models.

Counselors CARE (C-CARE)
A two-hour computer-assisted, comprehensive assessment of risk and protective factors related to suicide and a brief intervention to designed to provide empathy & support, develop the youth's social network connections with adults in school and home, and develop their own personal resources (e.g. positive coping skills and help-seeking behaviors). The program is administered by specially trained, advance practice clinicians at the student's school. Total intervention lasts 3.5 to 4 hours.

Coping and Support Training (CAST)
Small group, life skills training provided across 12 sessions that meet twice weekly over a 6-week period in the school. Most groups consisted of 6-7 students and were led by specially trained group leaders. Session content included building group support, helping students problem solve, anger management, strengthening students' ability to recognize their own progress, and building self-esteem.

Control
This condition followed the high school's typical procedure for addressing suicidal-risk in a student. A trained interviewer conducted a minimal assessment interview entitled the "Suicidal Ideation and Intent Scales" (Beck, Kovacs, & Weissman, 1979) and then implemented a brief, standardized "social connections" procedure. The student's parents/guardian and appropriate school personnel were also contacted.

Research Subjects:
Total sample consisted of 341 9^{th} through 12^{th} grade students (103 CAST & C-CARE; 117 C-CARE; 121 CONTROL) with an average age between 15 & 16 years. Males and females were equally represented. The sample was 39.9% White, 12.3 African-American, 12.9 Mixed Ethnicity, 12.9% Asian/Pacific Islander, 7% Hispanic/Latino, 2.1% American Indian/Alaska Native, 3.8% Other, and 9.1% Unknown.

Youth were identified as at-risk due to their dropout and suicide potential. A two-stage screening procedure was used.

Stage one consisted of examining school records and utilizing school referrals to identify a pool of youth at-risk for dropout. Students in this group had either 1) been a previous dropout, 2) were in the top 25th percentile for absences, behind credits and have a GPA < 2.3 or a drop in GPA to < 0.7, or 3) referred by the school as in jeopardy of school failure or dropout and meeting one of the above criteria. Youth from this screen were randomly selected and invited to participate. Refusal rates similar across cohorts and study groups.

Once students agreed to participate and consent was obtained they participated in a second screen. In stage 2, students completed the High School Questionnaire (HSQ; Eggert, Herting, & Thompson, 1989; 1995) which included the Suicide Risk Screen (SRS; Eggert, Thompson, & Herting, 1994), an assessment of indicators related to suicide-risk. On average 40-50% of the youth in each cohort identified as high-risk of school dropout also screened in as being at suicide-risk. Students classified as "at suicide-risk" based on this measure were randomly assigned to one of the 3 study conditions. Students in the CAST group were more likely to refuse to participate ($p<.03$) and retention rate for this group was significantly less compared to the other two groups ($p<.001$). These findings were not surprising to the authors who noted that participation in CAST required greater motivation and time by the participant.

Research Design:
Subjects were randomly assigned to one of the two experimental groups (CAST and C-CARE or C-CARE Only) or a control group.

Outcomes:
The C-CARE and CONTROL conditions only lasted 4 weeks and ended prior to the CAST skills training program. An assessment was conducted when these programs ended (Time 2). Participants in these two conditions received an additional set of booster sessions and participated in a second follow-up assessment (Time 3) at 10-weeks after the pre-intervention assessment when the post-intervention assessment for the CAST program was also conducted.

Trend analyses were conducted using MANOVA. Groups were similar on background variables and baseline levels of risk and protective factors except for age. CAST subjects tended to be slightly older.

<u>Post-Test (10 weeks after baseline)</u>
Trend analyses were based on baseline, 4-week, and 10-week follow-up data and included all subjects assigned to each condition (including those who did not participate). Means for all three groups moved towards normative levels suggesting that the changes for all three groups were clinically as well as statistically significant. There were no group differences on suicide-risk behaviors. Significant group differences in levels of depression ($p<.01$) for the intervention groups compared to the control group were attributed to the C-CARE component. There was a significant decline in anger control problems for all three groups.

Program effects on personal protective factors and family factors were also examined. Group differences were found on all three indicators: self-esteem ($p<.001$), personal control ($p<.02$), and problem-solving coping ($p<.001$). Changes in self-esteem were attributed to both of the intervention conditions, but the changes in personal control appeared to be a function of the CAST intervention. Improvements in problem-solving coping were greatest for CAST participants, followed by those in C-CARE, which were greater than those of participants in the control condition. Increases in coping were evident for the CAST group only at Time 3. All three groups evidenced significant decreases in family distress ($p<.000$). The authors attributed this to the parental phone call that was part of all 3 conditions. Youth in the two intervention conditions also evidenced significant increases in their ability to meet conventional family goals ($p<.02$). By the end of the follow-up period it appeared that youth in the CAST condition evidenced significant changes in perceived family support ($p<.05$) which was attributed to the training CAST youth received on how to seek out support from significant adults.

Strengths & Limitations:
There are very few suicide prevention programs and the C-CARE and CAST programs are two of the only programs that have been evaluated with a randomized clinical trial design. The results of the study provide preliminary evidence

for the ability of the two school-based to reduce suicide-risk in youth. Although participants in all three conditions reported significant reductions (statistically and clinically) in suicide-risk behaviors over time, the intervention appeared to contribute to significant reductions in students' depression and the CAST program contributed specifically to improvements in self-efficacy (personal control & problem-solving) and perceived family support. The findings should be interpreted cautiously given the short-term nature of the follow-up and the fact that all of the outcome measures were self-report.

The intervention fidelity of the C-CARE and CAST programs was excellent. The CAST program was implemented with a standardized published protocol. Process evaluation of both interventions were conducted by videotaping all sessions and coding for content compliance and leader competency. Student responses and participation were also coded from the videotapes. The Principal Investigator or program supervisor evaluated each of the tapes for reliability and quality control. They also provided supervision and group consultation to the group leaders. The control condition assessments were also videotaped and randomly reviewed by the program supervisor.

EARLSCOURT SOCIAL SKILLS GROUP PROGRAM

Principal Investigator: Debra J. Pepler

Level of Intervention: Indicated

Target Population: Teacher-identified moderately aggressive or disruptive children in Grades 1 though 6 deficient in social and social-cognitive skills.

References:
Pepler, King, Craig, Byrd, & Bream (1995)

Theory (Risk & Protective Factors Targeted):
Based on research that a variety of mental health problems are associated with deficient social skills (Coie & Kupersmidt, 1983) and poor peer relations (Parker & Asher, 1987). Aggressive children, in particular, are deficient in a number of social skills (e.g. prosocial behavior) and exhibit maladaptive social cognitions (e.g. poor problem solving, hostile attribution bias). In addition, interventions that only target one context where maladaptive behavior is present, are less likely to be successful in changing that pattern or having improvements generalize.

Description of Intervention:
The program addresses factors within the individual child (i.e. social skills), but also attempts to alter the family, school, and peer systems.

Social Skills Component:
This school-based program is based on social cognitive and social learning theory, using a combination of Goldstein's Skillstreaming techniques (Goldstein, Sprafkin, Gershaw, & Klein, 1980) and social learning principles and procedures. It used a group format to conduct twice-weekly 75-minute sessions for 12 to 15 weeks. The groups were led by two trained child care workers and contained approximately 7 children in each group. Social-learning principles (e.g. modeling, reinforcement) were employed to teach the skills.

Eight basic skills presented in program modules of three sessions each: Problem Solving, Feeling Identification, Listening, Following Instructions, Joining In, Self-Control, Managing Teasing, and Resisting Fights.

Parent Component:
Training sessions offered to help parents learn more effective behavior management techniques and to support skill development in the child.

Classroom Component:
In order to generalize skills to classroom setting and the peer group, homework assignments, teacher involvement, and classroom skill presentations were also included.

Research Subjects:
The sample consisted of 74 aggressive (63 boys, 11 girls) children in Grades 1 through 6 with a mean age 9.2 years. The sample included both regular and special education students. Subjects were eligible for participation if they were identified as aggressive by both the teacher (they scored above the mid-point on a 5-point scale of aggressive and disruptive behavior) and the principal, and they had parental consent to participate. Prior to treatment the mean parent and teacher ratings for externalizing behavior were in the clinical range.

Research Design:
Over a two-year period, subjects were randomly assigned to one of the two Fall sessions or a Spring session. The spring

session group served as a waiting-list control group. There were 40 treatment subjects and 34 in the wait-list control group.

Outcomes:
Analysis of covariance was used with Time 1 scores entered as co-variates. For follow-up analyses groups were compared to rule out differential attrition.

Post-Test:
Teachers rated treatment children as exhibiting significantly less externalizing behavior (TRF-CBCL; Achenbach & Edelbrock, 1983) compared to controls ($p<.05$). There were no group differences on parent ratings of externalizing behavior or peer ratings of aggression.

Clinically significant change was defined as .5SD improvement between Time 1 and Time 2. Thirty-six percent of the treatment group made clinically significant improvements compared to 18% of the controls.

Follow-Up (3 month & 9 month)
The attrition rate was similar between the students that dropped out at Time 1 and Time 2 and those that remained at Time 4. The original treatment effect of teacher ratings was maintained at 3-month follow up ($p<.02$) but not at the 9 month follow up period.

Strengths & Limitations:
The Earlscourt Social Skills Group Program is a preventive intervention for children exhibiting aggressive or disruptive behavior in school. It is a multi-component program that focuses on building children's social skills and modifying the home and classroom contexts to support the children's use of more adaptive behavior. The findings from this single evaluation that utilized a randomized trial design provide some initial support for the effectiveness of the program. There were significant methodological weaknesses, however, that limit the conclusions that can be drawn from the data. The sample size was somewhat small and the changes in child behavior were only evident according to teacher reports. There were no intervention effects according to parent ratings or peer reports. In addition, teachers who provided ratings of the students' behavior were the same as those who administered the program. The authors noted that the outcome effects were marginally significant ($p<.09$) at the 9 month follow-up when different teachers rated the students. In this evaluation, no fidelity measures were collected and dosage was not measured. In addition, the evaluation did not allow for any determination of which components were critical for program success. There has been no independent replication.

FAMILY BEREAVEMENT PROGRAM

Principal Investigator: Irwin N. Sandler

Level of Intervention: Selected

Target Population: Children who have experienced the death of a parent.

References:
Sandler, West, Baca, Pillow, Gersten, Rogosch, Virdin, Beals, Reynolds, Kallgren, Tein, Kriege, Cole, & Ramirez (1992).

Theory (Risk & Protective Factors Targeted):
Research has shown that the stress associated with the death of loved one may result in withdrawn, anxious, and depressed responses in children (Felner, Ginter, Boike, & Cowen, 1981) and increased rates of psychiatric symptoms. The Family Berevement Program is based on a theoretical model in which certain factors are critical for the effect that bereavement of parental death has on psychological functioning. Mediators targeted by the intervention included parental demoralization, negative life events, parental warmth, and stable positive events in the family. The program was designed to improve the mediating factors identified in model and thus reduce psychological symptomatology in the child.

Description of Intervention:
The program included two major components: a family grief workshop (3 sessions) and a family advisor program (12 sessions). Some sessions were held with parents only, while others included the entire family. The family grief workshop connected bereaved families to each other, educated them on the nature of the grief process, and provided opportunities to share grief-related feelings. The sessions were also designed to improve communication and foster warmth in the relationship between the surviving parent and the child. The second phase of the program was a highly structured 12-session family advisor program that focused on changing the four mediators identified in the model (parental demoralization, parental warmth, stable positive events, and negative stress events). The family advisor utilized the supportive relationship of the leader with the family to teach relationship skills, increase positive exchanges within the family, and increase quality time that family members spent together. In addition, the family advisor facilitated the parents' use of problem solving techniques to plan stable positive events, and to improve the families' coping with stressful family events. The family advisors had a minimum of a B.S. degree and had personally experienced bereavement.

Research Subjects:
Subjects were recruited by sending letters to surviving spouses of individuals age 25-50 who had died within the prior 2 years. These individuals were identified through State Health Department Death Certificates and referrals through churches & mortuaries. Using the state records, 866 families were identified and 272 were contacted by phone. Of the 88 families that had a child in the required age range, 46 families agreed to participate. Twenty-six families were recruited by referrals. The final subject pool contained 72 families that were primarily from female-headed households and relatively homogeneous SES levels. The sample was 81.9% European-American, 2.7% African-American, 8.3% Hispanic, 1.4% Native-American, 1.4% Asian, and 4.2% other. The average age of the child participants was 12.39 and 51% were male.

Research Design:
Families were randomly assigned to immediate treatment (experimental) or a control group (6-month delayed treatment). If more than one child in the family was age 7 to 17, then one child was randomly selected to be the target child assessed. Families were asked to not participate in any other counseling programs during the experimental trial.

Outcomes:

Chi square analyses indicated that there were no group differences in rates of attrition but Treatment Condition x Attrition interaction effects were found on two variables. Control subjects that dropped out of the study had significantly higher levels of education ($p<.05$) and discussed bereavement issues less ($p<.05$) than subjects who remained in the study.

Post-Intervention

A Treatment x Time x Age of Child effect was found on a composite variable reflecting overall adjustment ($p<.05$). The composite was created by standardizing and summing children scores on parent reports of depression and conduct problems derived from the Child Behavior Checklist (CBCL, Achenbach, 1991). Follow-up analyses revealed that older children (age 12-17) who participated in the program were rated as significantly less depressed ($p<.05$) and exhibited fewer conduct problems ($p<.01$) compared to older control children. Younger children (age 7-11) in the program were described as exhibiting significantly fewer conduct problems compared to controls ($p<.01$).

Significant treatment effects were found on a number of the mediating variables. The program significantly increased parental reports of warmth in the parent-child relationships ($p<.05$), as well as their satisfaction with their social support after participating in the intervention compared to controls ($p<.01$). Parents in the control group reported that they discussed grief-related feelings less frequently over time compared to the intervention group ($p<.05$). Parents of younger children who participated in the program also reported significantly fewer negative life events at the end of the treatment compared to controls ($p<.01$). Analyses were conducted with the sample of older children to test if whether the program effects were mediated by any of the variables proposed. Results indicated that parent reports of the warmth in the parent-child relationship mediated the program effects.

Strengths & Limitations:

The Family Bereavement Program is a program designed to prevent potential mental health complications (i.e. depressive symptomatology, conduct problems) in children that may result from the death of a parent. The programs targets the entire family and is designed to educate members about the grief process. It also creates a support network for families by connecting them with others who have experienced the same event and facilitates adaptive coping along four dimensions through the use of a family advisor who has also experienced significant bereavement. Results of a randomized clinical trial suggest that the program was effective in improving children's adjustment (i.e. lower depressive symptoms and fewer conduct problems) according to the parents' report. It is important to note that while there were changes in children's symptoms according to parents, there were no treatment effects according to children's reports. Extensive steps were taken to ensure the fidelity of the program implementation. The family advisors participated in extensive training and received on-going supervision. Manuals were used to guide both phases of the intervention and outlined specific activities for each session.

FAST TRACK

Principal Investigator: The Conduct Problem Prevention Research Group (Karen Bierman, John D. Coie, Kenneth A. Dodge, Mark T. Greenberg, John E. Lochman, and Robert J. McMahon)

Level of Intervention: Universal, Selected & Indicated components

Target Population: Elementary school-aged children at-risk for conduct disorder and other negative adolescent outcomes (e.g. school drop-out, delinquency) due to elevated teacher and parent-rated conduct problems at school entry.

References:
CPPRG (1992, 1998, 1999a, 1999b).

Theory (Risk & Protective Factors Targeted):
Based on developmental theory of the development of conduct disorder and other adolescent problem outcomes. Multiple influences are thought to interact to increase likelihood of development of disorder. Combination of environmental risks (e.g. poverty, high crime neighborhood), pre and post-natal difficulties, individual differences in attention and activity level, and family factors of high conflict and instability that contribute to ineffective parenting.

Children at risk for developing conduct disorder often enter school unprepared for the social, emotional, and cognitive demands of that context. Their problem behaviors carry over to the school setting and they often experience academic failure. A weak bond between home and school, and a lack of support for parents and teachers, contributes to children's adjustment problems in this context. Additionally, in at-risk neighborhoods, it is often the case that the density of children with problems is higher in the average classroom.

Research and past intervention efforts have shown that prevention should be intense during major transitions (such as school entry and the transition to middle school) and should involve the multiple contexts and sources of influence (i.e. home, school, & peers).

Description of Intervention:
Universal Component
The PATHS school-based curriculum (Kuche & Greenberg, 1994) was implemented in grades 1 through 5 for all students in the intervention and control schools (see program description under Universal Programs).

Selected/Indicated Component
The enrichment program consisted of 5 additional components in grade 1: 1) parent training groups designed to promote the development of positive family-school relationships and to teach parents behavior management skills, particularly in the use of praise, time-out, and self-restraint, 2) home visits for the purpose of fostering parents' problem-solving skills, self efficacy, and life management, 3) child social skills training groups, 4) child tutoring in reading, and 5) dyadic child friendship enhancement activities during the school day (peer-pairing).

In grade 2, parent and child groups met twice monthly and then shifted to a monthly schedule for all succeeding years of the project. Home visiting, tutoring, and child case management activities followed a criterion-based schedule in succeeding years.

Research Subjects:
The total sample across 1st to 3rd grade consists of three cohorts of children with 898 high-risk (intervention and control subjects) and 385 normative comparisons. The sample is 66% male and 34% female with 51% African-American subjects, 47% Caucasian subjects, and 2% belonging to another racial group.

Research Design:

Schools within four sites (Durham, NC; rural Central Pennsylvania; Nashville, TN; and Seattle, WA) were selected as high risk based on crime and poverty statistics. The identified schools were then divided into two matched sets and the sets were randomly assigned to intervention or control conditions.

Multistage screening of all kindergarten children from the schools were conducted using teacher ratings of disruptive behavior (TOCA-R) and parent ratings on similar items. The students with the highest the combined teacher-parent scores (approximately the top 10%) were identified as the selected target population and assigned to intervention (enrichment program) or control based on the school they entered in first grade.

Outcomes:
Outcomes reported are from post-intervention (1st grade) and two follow-up points (at the end of 2nd and 3rd grades). Linear growth curve analyses indicated that across the first three years of the program, parent ratings of oppositional-aggressive behavior (Parent Daily Report; Chamberlain & Reid, 1987) declined over time for both groups but significantly more for intervention children compared to controls. Conduct problem measures assessed at end of each grade indicated that for teacher-rated behavior, intervention students exhibited significantly lower conduct problems (Teacher Observations of Classroom Adjustment-Revised; Werthamer-Larsson, Kellam, & Oueson-McGregor, 1990) than control subjects. Results of survival function analyses indicted that significantly more control subjects were identified as in need of special education services compared to controls. Specifically, there was a 26% reduction in the rate of special education assignment for the intervention students.

Strengths & Limitations:
FAST Track is a well designed randomized clinical trial of a preventive intervention that incorporates all of the current knowledge on the development of antisocial behavior. FAST Track is unique because of the size and diversity of its sample, and the fact that the same program is being conducted in both urban and rural settings. As such, it actually incorporates replications within its design and allows for comparisons across diverse settings and populations. The inclusion of such a diverse and well-representative sample will also allow for a great deal of generalization of the program's outcomes. In addition, very few programs integrate universal and selected components or target multiple risk and protective factors simultaneously across multiple settings and multiple socialization agents.

The initial findings indicating behavioral improvements at home and school, and reductions in special education referrals, are promising and provide hope for the prospect of reducing antisocial behavior and its associated poor outcomes in the long term. These results need to be replicated over time though, and with diverse measurement sources. This will be possible given the longitudinal design of the program and its inclusion of multiple data sources. In addition, given the multiple settings where the program is being conducted it is extremely important that implementation analyses be conducted to establish the fidelity of the program and rule out any differences between sites that may have contributed to the positive outcomes. Results for grade 1 are in press; results at grade 3 have only been presented at conferences.

FIRST STEP TO SUCCESS

Principal Investigator: Hill Walker

Level of Intervention: Selected

Target Population: At-risk Kindergarten children with early signs of antisocial behavior patterns

References:
Walker, Kavanagh, Stiller, Golly, Severson, & Feil (1998); Walker, Stiller, Severson, Feil, & Golly (1998).

Theory (Risk & Protective Factors Targeted):
This intervention is based on the early-starter model of the development of antisocial behavior. Early signs of conduct problems can be detected as early as preschool. Many children bring a pattern of antisocial behavior with them from home when they enter school. This early pattern can be indicative of the beginning of a very stable pattern of maladaptive behavior that predicts more severe problems (e.g. peer rejection, school dropout, delinquency) in middle childhood and adolescence that are then less amenable to treatment.

Description of Intervention:
The program goal is to divert antisocial kindergartners to more adaptive patterns of behavior and to develop the necessary competencies for social-behavioral adjustment. The total program takes approximately 3 months. Intervention consists of three modules: 1) universal screening procedure, 2) school intervention, 3) home intervention. Each consultant managed the school and home components for a caseload of 2-3 subjects.

School intervention
This module is an adapted version of the CLASS program for Acting-Out Children (Hops & Walker, 1988). The program is not a curriculum but is designed to work in conjunction with existing academic program. The goal is to teach the target child more adaptive behavior that fosters academic and social success. Behavioral criterions are set daily and the child is given feedback on their behavior. The child is rewarded if he/she earns 80% of the available points. The program usually requires two months (30 program days) to implement because performance criterion must be met each day before the program proceeds. The consultant begins by implementing the program in the classroom (Consultant phase) but eventually turns the program over to the teacher and provides supervision and support (Teacher phase). During the Maintenance phase the teacher, consultant, and parent maintain the child's improved behavior primarily through praise.

Home intervention
HomeBase is a 6-week skill building program based on research conducted at Oregon Social Learning Center (OSLC). Program consultants who visit the parent's home once a week for 45-60 minutes conduct the home intervention. Parents are expected to monitor the child's school behaviors, provide privileges as reinforcement for school success, and help build child competencies in 1) Communication & Sharing, 2) Cooperation, 3) Limit Setting, 4) Problem-Solving, 5) Friendship Making, & 6) Developing Confidence. The consultant provides the parent with a handbook and activities to use after each skill is introduced.

The program consultant is considered a key part of the interventions, investing 50-60 hours in implementation over a 3-month period. Their duties are to consult with teachers to implement the universal screening and identify potential targets, to encourage parental participation and conduct the homeBase module, and overall program coordination and implementation.

Research Subjects:
Subjects were screened with the Early Screening Project (Walker, Severson, & Feil, 1995), a downward extension of the Systematic Screening for Behavioral Disorders (SSBD; Walker & Severson, 1990). ESP is the most comprehensive

screen but the program provides a choice of four options. ESP utilizes 3 screenings to identify at-risk students. In stage 1 of the multiple-gating procedure, the teachers rank-order 5 children in their class that best fit a standardized description of externalizing problems and 5 that best fit a description of internalizing problems. In stage 2, teachers complete a series of rating scales that included the ESP adaptive scale, ESP maladaptive scales, and the aggression sub-scale of the Child Behavior Checklist-Teacher Report Form (CBCL-TRF, Achenbach, 1991) on the 3 highest ranked students from each list. In the third stage, children were observed in classroom and free play settings to assess their academic engagement (AET). The ESP was nationally normed on a sample of 2,853 children age 3 to 6.

The total sample consisted of 46 Kindergarten students. These subjects were from two cohorts that participated over two years. The sample was 26% female and 7% minority status. Thirty seven percent of the students were considered low-income. Eleven children qualified for special education services (5 LD, 4 speech-language, 2 severely emotional-disturbed).

Research Design:
The program utilized a delayed treatment design. Students observed in ESP screening Stage 3, whose baseline AET levels averaged 65% or lower, and who scored greater than 1 SD above the CBCL Aggression subscale's normative mean were randomly assigned to experimental or wait-list control groups.

Outcomes:
Findings were similar for Cohorts 1 and 2 (both made substantial average gains) so the samples were combined and compared to wait-list controls. Baseline measures were used as covariates in all analyses. At the post-intervention point, students who participated in First Steps were rated by teachers as significantly more adaptive ($p<.001$), less aggressive ($p<.001$), and less maladaptive ($p<.001$) compared to control students. Observations made of the students (AET; Rich & Ross, 1989) indicated that the intervention subjects spent more time engaged academically ($p<.05$) compared to controls. There were no differences between groups on teacher ratings of withdrawn behavior. Similar results were found at followup for Cohort 1 at first and second grade, and for Cohort 2 at first grade.

Strengths & Limitations:
The First Steps program is a multi-component program that targets Kindergarten children who exhibit emerging patterns of antisocial behavior with interventions in the classroom and in the home. Using a randomized clinical trial, the authors demonstrated that children who received the program exhibited significantly less disruptive behavior, more adaptive behavior, and improved in their ability to engage in the learning process. The changes were noted in both teacher reports and observations of the students. One strength of the study was that the teachers who completed the followup assessments in first and second grade were different from the teachers who taught the children in kindergarten. The measures that were used in the evaluation were extensively researched and met high standards for validity and reliability. Two weaknesses of the evaluation were the small size of the sample and the fact that there were very few minority students. It is important to note, however, that the program staff was well trained and the evaluation utilized a number of implementation measures to ensure the fidelity of the program. Although the wait-list design prevented the investigators from assessing maintenance of the changes over an extended period of time, significant treatment effects were maintained one and two years after the intervention ended. The authors replicated the program in a small sample with similar results (Golly, et al., 1998) and independent replications of the program are currently underway.

GOOD BEHAVIOR GAME
(Community Epidemiological Preventive Intervention)

Principal Investigator: Sheppard Kellam

Level of Intervention: Universal

Target Population: Elementary school-aged children

References:
Dolan, Kellam, Brown, Werthamer-Larson, Rebok, Mayer, Laudoff, Turkkan, Ford, & Wheeler (1993); Kellam & Rebok (1992); Kellam, Rebok, Ialongo, & Mayer (1994); Kellam, Ling, Merisca, Brown, & Ialongo (1998)

Theory (Risk & Protective Factors Targeted):
The Community Epidemiological Preventive Intervention (CEPI), a combination of Mastery Learning (Dolan, Ford, Newton, & Kellam, 1989) and the Good Behavior Game (Dolan, Turkkan, Werthamer-Larsson, & Kellam, 1989) is based on research that links aggressive behavior - as early as first grade - to adolescent antisocial behavior, delinquency, and substance use, especially when aggression is combined with shy behavior. In addition, research has shown that academic failure is related to aggressive behavior and increased risk of depressive symptoms. CEPI seeks to address the proximal outcomes related to shy and aggressive behavior and academic achievement through the combined efforts of the Good Behavior Game and Mastery Learning.

Description of Intervention:
The intervention is conducted over the course of grades one and two. The Good Behavior Game (GBG) is a classroom team-based program designed to improve children's social adaptation (i.e. reduce aggression and shy behavior) to the classroom relative to rules and authority. Children are assigned to one of three heterogeneous teams in the classroom. During the GBG period, the teams are penalized points whenever a member engages in verbal disruption, physical disruption, is out of their seat without permission, or is otherwise noncompliant. On the other hand, the program rewards teams of classmates for not exceeding maladaptive behavior standards. GBG is conducted 3 times each week for a 10-minute period. Although the criterion for reward remains constant, the length of time that the game is played increases weekly until it reaches a maximum of 3 hours. The timing of the game and the dispensing of rewards are predictable in the early stages of the intervention, but eventually became more sporadic with the time between behavior and rewards gradually extended.

The Mastery Learning component is designed to improve reading achievement through enrichment of the instructional strategies used by teachers in reading curriculums. The program consists of a group-based approach to reading mastery and a flexible corrective process. Students do not progress to next reading level until 80% of the class has achieved 80-85% of the learning objectives in the unit. Weaknesses of individual students are taken into consideration in the corrective process. Grouping strategies and a variety of correctives contribute to flexibility of the program.

Research Subjects:
Dolan, et al. (1993) reports a sample of 864 students entering first grade in 1985-86 in 19 Baltimore public elementary schools. The sample was 49% male, 64% African-American and 29% white. The GBG sample consisted of 182 students from 8 classrooms, with the GBG internal control composed of 107 students from 6 classrooms. The ML sample consisted of 207 students from 9 classrooms, with the internal control totaling 156 students from 7 classrooms. The external control group consisted of 212 students from 12 classrooms.

In the 6-year followup analysis reported by Kellam, Rebok, Ialongo, & Mayer (1994) 693 students received the intervention for two consecutive years but only 590 were assessed 6 years later. No information is provided on the comparability of the followup sample to the larger group.

Research Design:
5 diverse (e.g. SES, ethnic makeup of neighborhood) urban areas in the city of Baltimore were chosen to participate. Schools and areas were compared. From 19 schools, the 3-4 most similar schools were identified within each area and then randomly assigned to one of three conditions: 1) GBG, 2) ML, or 3) external control condition with no experimental intervention. Individual first-grade classrooms and individual students entering 1st grade were also randomly assigned to intervention or internal control within intervention schools. This design provided both internal (within-school) controls and external (whole school) controls in order to control for within-school contamination of intervention schools and to measure school-level effects.

Measures used to examine intervention impact included teacher ratings, peer nominations and standardized achievement tests. The Teacher Observation of Classroom Adaptation-Revised (TOCA-R, Kellam, et al., 1975) was used as the teacher rating of each child's adequacy of performance on three core classroom tasks. These included social participation (as a measure of shy behavior), accepting authority (as a measure of aggressive behavior), and concentration and readiness to work (as a measure of inattention or concentration problems). The TOCA-R was administered in the fall and spring of first grade. The measures of shy and aggressive behavior specifically were used in the analysis of program impact.

Peer ratings were collected via the Peer Assessment Inventory, a classroom-administered modification of the Pupil Evaluation Inventory (Pekarik, Prinz, Leibert, Weintraub, & Neale, 1976). The Peer Assessment Inventory consisted of six items used to assess the impact of the GBG (3 ratings of aggressive behavior that work well psychometrically as a single score, and 3 ratings of shy behavior that do not work as well as a single score). Internal consistency was .87 for the aggressive behavior scale and .74 for the shy behavior scale.

At six-year followup, the Diagnostic Interview Schedule for Children (DISC 2.25C, Shaffer, Fisher, Piacentini, Schwab-Stone, & Wicks, 1991) was used to identify conduct disorder. The DISC was administered to 184 children consisting of a randomly selected sample of 27 children and 157 others who had screened positive on a conduct problems checklist based on the DSM-III-R (American Psychological Association, 1987).

Outcomes:
ANCOVA analyses, controlling for initial levels and considering boys and girls separately showed the GBG had a significant impact on aggressive behavior for boys and girls. For boys the GBG subjects were rated less aggressive compared to the external control group ($p<.05$) and for girls the GBG subjects were rated less aggressive compared to the internal control group ($p<.05$).

On peer nominations of aggressive behavior, compared to the internal control group, GBG boys received significantly less aggressive nominations by peers after the intervention ($p<.01$). No significant differences between GBG girls and controls were found on peer nominations.

For both boys and girls in GBG, teacher ratings of shy behavior were significantly less than internal controls after the intervention ($p<.01$ for both genders) and significantly less than external controls for girls ($p<.01$).

Further analysis revealed a specificity of impact such that Mastery Learning affected achievement, but produced no significant behavioral effects. Likewise, the GBG produced significant behavioral outcomes but no affect on achievement.

<u>Follow-up (6 years post-intervention)</u>
Over the follow-up assessment points, comparisons between those children assessed and those not assessed at each point revealed inconsistent differences on some teacher ratings and achievement scores. No main effect reduction in aggression as a result of the GBG was found. For males with higher levels of aggression at first grade, however, there were increasing and significant effects of the GBG at 6th grade. Thus the effect of the GBG varied as a function of aggression severity.

Strengths & Limitations:
GBG is a school-based intervention that specifically targets the interaction between aggressive-shy behavior and academic failure, and poor proximal and distal outcomes for children exposed to these risks. The intervention focuses on the classroom context and utilizes peer/group dynamics, but does not address the role of the family or the larger school ecology. The sample size is adequate and heterogenous enough not to limit the generalizability. Two of the primary sources of data (teachers and peers) were aware of the treatment condition and in some ways had a stake in the outcome, which may have affected internal validity. Though attrition was low, it is unclear how attrition may have affected outcome analysis. Little of the long-term followup data has been reported to date. No information on fidelity of implementation was provided, and there has been no independent replication of the intervention.

IMPROVING SOCIAL AWARENESS-SOCIAL PROBLEM SOLVING (ISA-SPS)

Principal Investigator: Maurice Elias

Level of Intervention: Universal

Target Population: Elementary and middle school children, age 6-14

References:
Elias, Gara, Ubriaco, Rothbaum, Clabby & Schuyler, 1986; Elias, Gara, Shuyler, Brandon-Muller & Sayette, 1991; Bruene-Butler, Hampson, Elias, Clabby & Schuyler, 1997

Theory / Risk & Protective Factors:
ISA-SPS is based on the theory that children's ability or inability to cope with stressful decision making situations is associated with a sequence of interpersonal behavior that may result in either positive social behavior or psychopathology or other poor outcomes. ISA-SPS specifically targets the increase in stressors associated with the normative childhood transition from elementary school to middle school. The program addresses this period of increased risk through a social problem solving curriculum intended to provide students with the decision making skills necessary to navigate difficult situations. Rooted in the theories of Piaget and Dewey, and expanding on the work of Spivack and Shure (1988, see elsewhere in this report), ISA-SPS also recognizes the importance of maintenance and generalization of skills as promoted in social learning theory.

Description of Intervention:
The ISA-SPS curriculum consists of three phases: the Readiness Phase, the Instructional Phase, and the Application Phase. The Readiness Phase promotes self-control, group participation and social awareness. The Instructional Phase teaches eight steps for social decision making and problem solving, with particular emphasis on affect, problem analysis and goal setting, means-ends thinking, and anticipation of obstacles. The Readiness and Instructional Phases consist of 20, 40-minute lessons provided twice per week. The lessons include a scripted curriculum with group sharing, skill presentation, stories or video vignettes that serve as catalysts for discussion, dialoguing, and role plays.

The Application Phase provides teachers with training and activities to promote formal and informal reinforcement and extension of the problem-solving skills into contexts that are particularly salient to the students. Teachers are trained to mediate real life conflicts in the school setting by facilitating children's problem-solving thinking rather than stepping in and providing their own direction and solutions. The Application Phase is considered key to the intervention, and guidelines, training and ongoing consultation are provided for teachers, administrators and parents in encouraging children's everyday use of social problem solving thinking and skills. Formal Application Phase lessons are held approximately once per week with data indicating most teachers utilize the application in real-life contexts about three times per week.

Research Subjects:
In a study of the immediate effects of the ISA-SPS intervention, 158 fifth grade students (80 boys and 78 girls) from a primarily poor, primarily white, blue-collar, multi-ethnic town in central New Jersey were assessed. A followup study examined 95% of the original sample 6 years later.

Research Design:
The 158 fifth grade students in the intervention group attended four elementary schools that were assigned to receive either the full intervention (2 schools) or the Instructional Phase only (2 schools). Students from the four experimental schools were then compared with a control group of students who had attended fifth grade in the previous year (and had received no intervention). Discriminant analysis of the four intervention schools showed no significant pre-test differences on measures related to the outcomes of interest.

In the follow up study, the 4 intervention schools were paired by fidelity of implementation into high or moderate fidelity groups, and again compared with a no-treatment control group six years after the intervention.

Outcomes:
In the study of the program's immediate effects, adjustment to the stressors related to the transition to middle school was assessed using the Survey of Middle School Stressors. This instrument examines the presence of 28 situational stressors, which form summary indices related to frequency and intensity of stressful events. In a comparison between the full and partial intervention groups, multivariate analysis showed a significant intervention effect on both of the summary indices of Problem Frequency and Problem Intensity in favor of the full intervention. Further univariate tests showed significant differences favoring full intervention on eleven of the 28 individual stressors. In comparison of the two intervention groups with the control group, a dose-response interaction was found with significant effects on both Problem Frequency and Problem Intensity, with subsequent analysis showing that 14 of the 28 stressors were significant.

The followup study examined the intervention subjects six years after completing two years of the intervention. The National Youth Survey (NYS – Elliot, et al., 1983) and the Youth Self Report (YSR – Achenbach and Edelbrock, 1987) were the primary measures used. The YSR includes the Perceived Competence Scale for Children (PCSC), a measure of self efficacy. ANOVA showed that students who received the intervention scored significantly lower rates than controls on vandalism, physical aggression against parents or other students, and use of alcohol and tobacco. ANOVA on the psychopathology indexes found significantly higher levels of unpopularity and self-destructive/identity problems for control group boys than experimental group boys. Further analysis indicated the areas of greatest clinical significance were depression, self-destructive/identity problems, and delinquency.

Strengths & Limitations:
ISA-SPS is a universal preventive intervention that focuses on teaching individual problem-solving skills as a means of better preparing students to cope with the increased risk associated with the normal period of transition to middle school. The program's focus is primarily on classroom-based curriculum delivery, although schoolwide training activities are used to increase maintenance and generalization. The study of post test effects used a quasi-experimental design comparing two treatment conditions (partial and full) to a control condition. It is unclear whether group assignment was random, and the control group was non-equivalent, although the two experimental groups were comparable on relevant indices. Though all measures were based on self-reports, the distal effects add to the significance of the findings. The program has been widely disseminated as part of the National Diffusion Network (NDN)

ISA-SPS has undergone continuous refinement and expansion since the initial studies referenced above. The program, now known as Social Decision-Making and Social Problem Solving (SDM-SPS) has been expanded to reflect the growing body of research on effective prevention practice, including a greater focus on changing school ecology. Although the characteristics of the sample in the initial study limit the generalizability of the findings, the program has seen a number of replications since that time which generally support the initial findings (Hampson, 1995).

INTERPERSONAL COGNITIVE PROBLEM SOLVING (ICPS)

Principal Investigator: Myrna Shure

Level of Intervention: Universal

Target Population: children age 4-5 (similar program available for older elementary ages)

References:
Shure & Spivack (1982, 1988); Shure (1979, 1988, 1997)

Theory (Risk & Protective Factors Targeted):
ICPS is based on a theory of cognitive problem solving ability as a significant predictor of social adjustment and interpersonal competence. ICPS is intended to prevent both internalizing and externalizing disorders by reducing early aggression and antisocial behavior, impulsivity and inhibited behaviors associated with deficiencies in cognitive problem solving ability.

Description of Intervention:
ICPS is a 12 week interpersonal cognitive problem solving program which uses games, didactic discussion and group interaction techniques to teach children communication and problem solving skills and the thought process necessary for good decision-making. The program consists of 8 weeks of daily 20 minute lessons combined with teacher (or parent) training in "problem solving dialoguing," an informal style of communication meant to foster the exercising of newly-learned problem solving skills. The core skills of ICPS are the ability to generate multiple solutions to interpersonal problems, the ability to consider consequences to one decisions or actions, and the ability to consider others' perspectives as a consideration in decision-making.

Research Subjects:
The study was conducted with 219 low SES, African-American 4 and 5 year olds. The group consisted of 113 treatment subjects (47 boys, 66 girls) and 106 controls (50 boys, 56 girls) in the first year (preschool). Treatment and control subjects were comparable in gender, age, IQ, ICPS test scores and behavioral characteristics. In the second year (kindergarten) 69 of the 113 original treatment subjects were available and were further divided into 39 subjects who received the intervention for a second and 30 who became 2nd year controls. Of the 106 original control subjects, 62 were available in kindergarten.

Research Design:
A quasi-experimental design was used with treatment subjects grouped into 2-year treatment (tt), 1st year treatment – 2nd year control (tc), or 1st year control – 2nd year treatment (ct) and compared to a no-treatment control group (cc). Data were collected pre, post, 6 months, and 1 year, with measures including the Preschool Interpersonal Problem Solving Test (PIPS) to measure alternative solution thinking, the What Happens Next Game (WHNG) to measure a child's ability to identify multiple consequences to actions, and the Hahnemann Preschool Behavior Scale (HPBS) to measure teacher-rated interpersonal behaviors (impatience, aggression).

Outcomes:
The intervention group experienced a significant improvement in interpersonal cognitive problem solving skills (as measured by the PIPS and WHNG) after the first year of training. Even intervention subjects initially rated as impulsive or inhibited improved significantly over the control group. At the end of the second year of intervention (for the tt group), significant effects again favored the intervention group on the PIPS and WHNG measures, with significantly more intervention children rated as behaviorally adjusted on the teacher rated HPBS. Further analysis indicated a strong mediating linkage between cognitive skill improvement and behavior gains, in which students with higher PIPS scores experienced the greatest behavior gains. In followup analysis, with the exception of the PIPS measure at 6 months, all gains were maintained at 6 months and 1 year. A clear dose-response association was found, with children trained two

years improving significantly more than those trained one year, who in turn showed significantly greater improvement (whether trained in preschool or kindergarten) than the no-treatment control group.

Strengths & limitations:
ICPS is a classroom-based universal preventive intervention aimed at providing elementary-age children with structured training in interpersonal cognitive problem solving skills. The program's goal is to teach children "how" to think in interpersonal situations and to come up with multiple potential solutions. The program focuses primarily on the individual, though it has become a core component of a number of more comprehensive approaches since its pioneering research. The study referenced above used a quasi-experimental design with a non-equivalent control group and non-random assignment, and attrition was relatively high. It is unclear what effect pretest differences or attrition may have had on the outcomes. The sample was fairly homogeneous and no information was provided on measurement of implementation fidelity.

ICPS has been widely replicated and several independent studies have supported the cognitive and behavioral gains of students trained in the curriculum (Aberson, 1987; Callahan, 1992; Weddle & Williams, 1993). In addition, Shure reports findings from an unpublished longitudinal study in which ICPS skills and behavior gains lasted through grade 2, and after disappearing in grade 3, reemerged at the end of grade 4 (Shure, 1997).

INTERVENTION CAMPAIGN AGAINST BULLY-VICTIM PROBLEMS

Principal Investigator: Dan Olweus

Level of Intervention: Universal

Target Population: Elementary and middle schools students, teachers and parents

References:
Olweus (1991, 1993, 1994)

Theory (Risk & Protective Factors Targeted):
The Bullying Intervention program is based on a child-rearing model applied in a school setting to reduce low level aggression and conflict. The program targets aggressive behavior, and favorable school, community, and family attitudes toward aggression.

Description of Intervention:
The program was implemented as part of a national campaign against bullying in Norway from 1983 to 1985. It is a school-focused anti-bullying initiative based on awareness and cognitive skill-building. Components of the intervention included a 32-page informational booklet on bullying, bullies and victims provided to all schools, a folder of information and recommendations about children involved as bullies or victims provided to parents, a video of vignettes about bullying available to be shown in classrooms, and a school questionnaire to assess the level of bully/victim problems school-wide and serve as a catalyst for school-wide discussion.

Research Subjects:
The study examined 2500 students in grades 4-7 (the equivalent of grades 5-8 in U.S. schools) in 42 Norwegian schools. The sample was assigned to 4 age-equivalent cohorts of 600-700 each. The sample was demographically, ethnically, and socioeconomically diverse. Students ranged in age from 11 to 14, with approximately equal number of boys and girls.

Research Design:
Because the study was conducted as part of a nationwide campaign, a randomized trial was not possible. Instead, a quasi-experimental staggered cohort design was used in which four adjacent cohorts of students were followed over a two and a half year period. Data were collected at three time periods (pretest, 8 months, and 20 months), such that some cohorts served both as intervention and control (baseline) groups, in different comparisons. Program effectiveness was assessed using an extended version of the Olweus Bully/Victim Questionnaire which provided both self-report bully/vitimization data and classroom-aggregate peer reports of the level of bullying, as well as a 23-item self report questionnaire about antisocial behavior (Olweus, 1989).

Outcomes:
Significant reductions in bullying, aggressive and antisocial behavior were found at 8 and 20 months based both on student self reports and peer reports, including a 50 % reduction in the percentage of students who reported being bullied or bullying others. The author also reported an increase in satisfaction with school life (another possible indicator of schoolwide change in levels of aggression). Generally, the changes were equally substantial for boys and girls. Students reported significant improvements with respect to the climate of order and discipline in the classroom, more positive social relationships, and a more positive attitude toward schoolwork and school.

Strengths & Limitations:
The Intervention Campaign Against Bully/Victim Problems demonstrated substantial reductions in bullying and low-level aggression through a relatively simple intervention which focused primarily on educating schools, students, and families about the problem of bullying. The reported effects of the intervention were found across teacher, student self

report and peer report measures, and can be expected to be generalizable given the very large and diverse population of the study. Potential bias due to attrition was investigated and was not indicated by the data analysis. Analysis of program fidelity at the classroom level demonstrated a clear dosage-response relationship. Classrooms that implemented the three core components of the intervention (including the establishment of classroom rules against bullying) to a greater degree than other classes experienced a greater decrease in bully/victim problems. This too lends to the argument that the effects were indeed a result of the intervention.

Unfortunately, the published (English language) literature on the program does not provide detail on statistical significance or effect sizes for the findings reported, nor does the study examine the role of each of the program components individually in producing the desirable effects. Large scale, independent replications of the program have been conducted in England, Germany, and the United States. The two foreign replications generally supported the findings reported here, although the studies both suffered from methodological flaws (Whitney, et. al, 1994; Hanewinkel & Knaack, 1997). The United States replication produced ambiguous results, finding a significant reduction on self-reported bullying, but no self-reported reduction in being bullied (Melton, et. al, 1998).

LINKING THE INTERESTS OF FAMILIES AND TEACHERS (LIFT)

Principal Investigator: John Reid

Level of Intervention: Universal

Target Population: First and fifth grade elementary children and their families living in high-risk neighborhoods

References:
Reid, Eddy, Fetrow & Stoolmiller, in press

Theory (Risk & Protective Factors Targeted):
LIFT is based on the developmental model of conduct problems, recognizing the coercive impact of social agents in the family and peer domains on children at risk for conduct problems. Based on this model, LIFT attempts to lower the probability of oppositional/antisocial behavior within the school, peer, and home domains, lower the probability that members within each domain would retaliate coercively to such behaviors, and to increase the probability that prosocial behaviors would be supported. The overarching focus of LIFT is to modify the reactions of members in each domain to children's prosocial and antisocial behaviors. Specifically, in the family domain, LIFT promotes calm and consistent limit setting and parental involvement in the childs social domains (especially school). In the peer domain, LIFT targets physical aggression in unstructured settings (i.e. the playground). In the classroom, LIFT promotes developmentally appropriate social skills.

Description of Intervention:
LIFT is a 10 week intervention consisting of parent training, a classroom based social skills program, a playground behavioral program, and systematic communication between teachers and parents.

The school component consists of twenty, 1-hour sessions provided over a 10 week period which include four parts: (1) developmentally appropriate (for 1st or 5th grade students) classroom instruction on social and problem-solving skills, (2) opportunities to practice these skills in large and small group settings, (3) free play in the context of a group cooperation game, adapted from the Good Behavior Game (Dolan, et al., 1993; also see elsewhere in this report), and (4) skills review and presentation or rewards.

The school-parent communication component consists of a telephone and answering machine for each classroom on which teachers leave daily messages about class activities, homework assignments and special events. Parents can call any time to learn about activities or assignments or leave messages regarding their child. A weekly newsletter keeps parents informed and provides suggestions for home activities that compliment those at school.

Finally, a parent intervention focuses on teaches parents to foster a home environment marked by consistent and effective discipline practice and close and appropriate supervision. Parents meet in groups of 10 to 15 families once a week for six weeks to participate in topical presentations, view videotaped scenarios to illustrate new skills, engage in role plays, and receive supplemental reading activities and home practice activities. Parent sessions are held in the school (to foster parent-school connectedness) and are offered each weekday evening and one weekday afternoon to accommodate families' schedules. To further encourage attendance, free child care is provided and prize drawings are held. Whenever a family cannot attend the weekly group, a LIFT staff members attempts to visit the home to review the same material. As a last resort, if a home visit cannot be arranged, a home packet of materials covering session content is delivered to the home.

Research Subjects:
The study was conducted with 671 first and fifth grade students and their families from 32 classrooms in 12 elementary schools in an urban area of the pacific northwest United States. Schools were selected from a catchment area with higher

than average juvenile arrest rates. Schools in the study had an average subsidized or free lunch rate of 49.6%, and 2-3 classrooms per assigned grade (first or fifth) with an average of 21 students per classroom.

The 671 students in the final sample represented 85% of the eligible students in the selected classrooms and consisted of 51% female and 11% minority students. Participants were predominantly from lower to middle SES, with parents having complete high school or attended some college.

Research Design:
The study design was a randomized clinical trial with randomization taking place in each of three successive intervention years. Of the eligible schools, two were randomly selected to the treatment group, two to the control group, and two as alternates. One school from each group was then randomly assigned as a first grade school or a fifth grade school. In subsequent years, all schools that did not participate as intervention or control schools in previous years were eligible to particpate.

After randomization, treatment and control groups were generally well matched on socioeconomic and demographic characteristics. One significant difference between the groups was the mothers' ethnicity, with fewer control group mothers being white (although the difference was not significant for fathers' or children's ethnicity).

Data were collected during the fall (pre-intervention) and spring (post intervention) of each year, with followup data collected in the winter of the following year. A reduced assessment battery was used for followup. Family/child assessment included child behavior problems, academic skills, peer relations, and family management skills (monitoring/supervision, discipline, problem solving). Within each domain, multiple data sources were used, including parent, teacher, and child reports and observations. Behavior in the home was assessed by parents and children visiting the researchers' center for two hours to participate in an interview, complete a questionnaire about parenting practices, child behavior, parental involvement, and child/peer relationship, and to participate in a laboratory task. Parents also completed four brief telephone interviews to assess child and parenting behavior.

School behavior was assessed through a teacher interview and teacher questionnaires which provided information about the academic and social adjustment of each child. Peer nominations were collected from classmates and multiple observations were conducted on the playground for each student by professional, blinded observers. Each student was observed during recess for 10 minutes on three separate days. Finally, end of year academic and discipline data was collected from school administrative records.

Outcomes:
Primary analysis of the effectiveness of the LIFT program was conducted based on the Interpersonal Process Code (IPC; Rusty, Estes & Dishion, 1991) and the Peer Preferred Social Behavior subscale of the Walker-McConnell Scale of Social Competence and School Adjustment (Walker & McConnell, 1995). The IPC indexes rates of maternal aversive behavior as well as rates of child physical aggression towards peers, and consists of concurrently coded variables related to behavior, context, and affect.

To examine the immediate impacts of the program, univariate distributions of the pre-, post-, and followup variables were first assessed. Following any necessary transformation of variables that deviated significantly from the norm, change scores were calculated, with multiple imputation procedures used to reduce bias due to missing data. Based on an a priori assumption that program effects would be related to pre-intervention levels on the relevant measures, change and initial-status were z-scored to standardize the parameter estimates in the final regressions. Change scores for each outcome variable were then regressed on group, gender, grade, and initial status, as well as possible interactions. Random regression by school was used since participants were clustered by school. Given the hypothesis that the impact of the intervention would be at the middle of the distribution of the initial status of each antecedent variable, the standardized regression weights reflect tests within the middle range of the initial status.

For each analysis, an effect was found for group in the predicted direction, with the effect interacting with pre-

intervention scores for two of the three variables. For teacher ratings of peer preferred behavior, there was only a main effect, with the intervention students' social skills viewed more favorably by their teachers the following year than control students. For child physical aggression, there was a significant difference between intervention and control groups for both first and fifth grade students at the pre-intervention mean. For first graders, this effect increased as pre-intervention scores increased, and for fifth graders the effect remained the same across pre-intervention scores. Effect sizes (Cohen's d) across these variables ranged from .12 to .57.

The authors also conducted descriptive analyses of implementation fidelity (including program delivery and integrity of control condition), participant utilization of all components, consumer satisfaction, and impact of attrition. As rated by teachers, interventionists, and independent observers, the program material in both the classroom setting and the parent groups was covered quite thoroughly (all ratings between 91% and 97%).

Participation in the parent group meetings was somewhat problematic (as is common with parent interventions). An average group session was attended by 59% of the families, with 23% receiving materials through the mail, 13% receiving a home visit, and 5% not participating. For both the first and fifth grade groups, attendance at the parent group sessions decreased slightly across the intervention year. 93% of all families received all of the intervention materials in some manner, with 53% receiving all materials face-to-face (either in group sessions or through home visits).

The LIFT line was utilized by at least 78% of the families (based on calls where the families identified themselves) with families averaging 11 calls each. A total of 8128 calls were made to the line. In terms of utilization by students, 90% of the children attended 17 or more of the 20 classroom sessions (including the Good Behavior Game). On average, a child attended 18 of the 20 sessions.

Missing data at post intervention due to attrition ranged from a low of 6% for peer nominations and recess observations to 12% for teacher ratings (which were collected at one year followup). It is unclear how this may have biased outcomes. No data was reported on observation measures or peer sociometrics.

Strengths & Limitations:
LIFT is a comprehensive, multicomponent program that targets multiple domains to reduce the antecedents for conduct disorder in the individual child, school and classroom, peer group, and home. The study described is a randomized clinical trial which addressed not only the effectiveness of the intervention, issues of fidelity, and utilization but also tested for differential effects as a function of pre-intervention levels of the antecedents in question. The data used for the analyses were derived from multiple sources within multiple contexts or domains using measurements with moderate to high reliability. The sample size and demographics of the sample population in this study limit to a minor degree the generalizability of the findings. Measures of fidelity taken from multiple sources indicate the program was implemented thoroughly and utilized to a great extent by the sample population. It is unclear how sample bias or attrition may have affected the outcomes.

MONTREAL LONGITUDINAL EXPERIMENTAL STUDY

Principal Investigator: Richard E. Tremblay

Level of Intervention: Indicated

Target Population: Aggressive 7-9 year old children

References:
Tremblay, Masse, Pagani, & Vitaro (1996); Tremblay, Vitaro, Bertrand, LeBlanc, Beauchesne, Boileau, & David (1992).

Theory (Risk & Protective Factors Targeted):
Based on the early starter model of antisocial behavior, aggressive behavior still present upon entrance to Kindergarten may reflect a failure to learn developmentally appropriate inhibition or use of prosocial strategies to achieve goals. Adults perceive these children as deviant and they are often rejected peers. It is hypothesized that given that gender and SES are both strong correlates of physical aggression and interact, it is likely that long-term risk is increased for low-income boys.

Based on research showing that both factors affect the development of disruptive behaviors, the intervention simultaneously targets parent behavior and child social skills.

Description of Intervention:
Based on model developed at Oregon Social Learning Center (Patterson, 1982; Patterson, Reid, Jones, & Conger, 1975). Parent training is targeted at improving parental behavior (e.g. improve monitoring & positive reinforcement, teach effective, non-punitive discipline, improve coping with crisis) and child social skill training in order to reduce aggressive behavior in the children.

Parent Training Component
Each member of a multidisciplinary team was assigned to work with 12 families. Sessions were scheduled every 2-3 weeks over 2 year period. Families received different amounts of intervention (average 20 sessions) based on need; no family received more than 46 sessions (mean = 17.4 sessions). Consultants helped parents generalize the skills they were learning. There was some contact between the professional consultants and the children's teachers.

Social Skills Training Component
A member of the multidisciplinary team that was not working with the family implemented the program in the schools at lunchtime. Target children were placed in groups with 3-5 teacher-identified prosocial peers. Sessions used coaching, peer modeling, and role playing techniques. Reinforcement contingencies were also implemented to encourage use of positive behavior. During the first year of the program, 9 sessions focused on developing prosocial skills (e.g. group entry, help seeking). The second year consisted of 10 sessions focused on developing self-control skills (e.g. following rules, managing anger-inducing situations).

As part of another program, one subset of the sample (n=25) received additional training in the use of fantasy and another subset (n=9) received a program designed to be critical of television.

Research Subjects:
The subjects were 166 Caucasian, Canadian-born males, primarily low-income, with French-speaking parents. Boys with disruptive behavior scores > 70^{th} percentile (N=259) on the Social Behavior Questionnaire (SBQ; Tremblay et al., 1991) that also met other selection criteria (i.e. ethnicity and education) were eligible for participation (n=249). Children whose parents had more than 15 years of school were excluded from participation. Mean age of subjects was 6.1 years.

Research Design:
Teachers in 53 Montreal schools with lowest SES index assessed all male students in their classes (1,161 boys). Eligible subjects were randomly assigned to treatment group (N=43), control group (N=41), or an attention-placebo control group (N=82). Normative data were provided from a sample (n = 1,000) drawn from the same population as the treatment subjects. Intervention was administered from September 1985 to June 1987.

Outcomes:
Measures included parent ratings of disruptive, anxious, inattentive, and prosocial behavior were drawn from the SBQ. School records provided data regarding class placements. The Pupil Evaluation Inventory (PEI; Pekarik, Prinz, Liebert, Weintraub, & Neale, 1976) was used to assess disruptive behavioral, withdrawal and likability according to peers. Children were asked to provide information regarding delinquency, gang membership, sexual activity, and academic motivation.

At pre-test, mean levels for treatment groups were typically midway between the attention placebo-control and control groups on teacher ratings of behavior but these differences were not statistically significant. Overall, no differences in terms of who consented for treatment but higher levels of consents in families of boys who were frequent fighters ($p<.01$). The groups of disruptive boys (treatment, control, attention-placebo control) did not differ significantly on demographic variables except that in the treatment group, mother's last occupation was of a significantly lower level than that of control group mothers. The sample of disruptive boys and the normative comparison group differed significantly in a number of ways. Families with disruptive sons were more disadvantaged ($p<.001$) and both parents tended to have lower levels of education ($p<.001$). The total family income for these families was lower than that of the comparison families ($p<.001$) and the parents were younger when their son was born ($p<.001$) compared to the normative group.

There were limited significant differences between groups at post-test and follow-up. At age 12, the placebo-control group was rated as significantly more inattentive ($p<.05$).

<u>Post-test (age 9 & 10)</u>
Treatment boys were significantly more likely to be in age-appropriate regular grade compared to both control groups ($p<.05$) at age 10. There were no significant differences on teacher ratings of fighting post-treatment (age 9 or 10) or on School Adjustment Index at age nine.

There was a short-term "paradoxical" impact on mother's perceptions of child antisocial behavior. Post-treatment, mothers of treatment boys reported that their sons were more disruptive ($p<.02$), more inattentive ($p<.05$), & fought more ($p<.003$) than mothers of non-treated boys. These differences were no longer present at age 10,11, or 12. The authors presented data that suggested this finding was due to increased monitoring and accuracy of maternal reports.

<u>Follow-up (age 11 & 12)</u>
At age 12, treatment boys were rated by teachers as significantly less likely to be engaged in fighting compared to controls ($p<.03$). Treatment boys were significantly less likely to be classified as having serious difficulties compared to controls (22% vs. 44%) and were more likely to be rated as being well-adjusted (29% vs. 19%) or having only some difficulties ($p<.05$) based on the School Adjustment Index (composite of teacher & peer ratings of disruptive behavior and class placement).

The authors used discriminant function analysis to examine how treatment, as a factor along with early behavior problems and family adversity, predicted the presence or absence of serious difficulties at age 11-12. Results indicated that treatment explains part of adjustment outcome after level of family adversity was taken into account and is a better predictor than pre-treatment level of behavior problems. The discriminant function correctly classified 69% of the subjects (69% true positives & 69% true negatives).

Using self-report data across ages 10-12, results indicated that treatment boys engaged in significantly less delinquent activity compared to controls ($p<.003$ to $p<.05$).

Early Adolescent Outcomes

Across early adolescence (age 11 to 15), treated boys less likely to report gang membership ($p<.01$), drinking to the point of being drunk ($p<.02$) or taking drugs ($p<.05$). Group differences on teacher-reported disruptiveness did not remain significant when levels were compared from age 10 to age 15.

Strengths & Limitations:

The Montreal Longitudinal Experimental Study is a preventive intervention for children at risk for developing antisocial behavior due to early behavior problems. It is a multi-component program that targets risk factors within the child and the family. The evaluation of the program has been ongoing for the past decade and although the initial results were minimal, they have strengthened over time. There were no program effects until one year after the intervention and changes in problem behaviors were not evident until three years post-intervention and beyond. It is promising that an intervention conducted in elementary school has been shown to improve a variety of negative adolescent outcomes (e.g. gang involvement, substance use, delinquency). While the design was strong (i.e. randomized clinical trial) and the long-term outcomes are impressive, there are some issues that should be considered when interpreting these findings. First, it is important to recognize that this program was conducted on a sample that was entirely male and 100% Caucasian. The intervention dosage was also not consistent between participants. Families received different dosages at discretion of the consultants and six families in the treatment condition did not receive any of the parenting sessions. Multiple informants were used to measure outcomes, which is important, but no observational measures utilized. There has been no independent replication.

PEER COPING-SKILLS TRAINING

Principal Investigator: Elaine A. Blechman

Level of Intervention: Indicated

Target Population: Elementary-school aged children at-risk for conduct disorder due to high rates of aggressive behavior.

References:
Prinz, Blechman, & Dumas (1994)

Theory (Risk & Protective Factors Targeted):
Based on coping-competence model that seeks to change antisocial coping (e.g. aggression) as well as asocial coping (i.e. withdrawal & depressive symptoms) by promoting the development of prosocial skills for coping with affective, social, & achievement challenges. Prosocial coping skills include social-cognitive processes of information exchange, behavior management, and problem solving. However, the problem solving component does not aim to teach specific solutions but rather teaches prosocial skills to help children cope with diverse problems encountered in different social contexts.

In addition, due to lack of social support experienced by many conduct problem children, the content and structure of the Peer Coping Skills program (PCS) is designed to engage the target child in a supportive, positive peer network.

Description of Intervention:
Peer Coping Skills Training
PCS focuses on developing children's prosocial-coping skills of information exchange, behavior management, & problem solving. Two-member teams administer the program, which consists of 50-minute weekly sessions that are conducted outside the classroom, but in the school building. The median number of sessions was 22. Sessions followed the same organization each time: Rules, Reunion (discuss personal week & problems, rehearse skills), Probes (role plays through which assess coping skills, rehearse & master), Group Activity, & Group Reward (token for rule following). Each child must master a specific set performance goal that accompanies each probe that is introduced but the group does not move to subsequent probe until all members have mastered the probe. Group activities take place at the same time as the probes. Dyads must accomplish probes during 3 types of activities: low challenge, medium challenge, & high challenge.

Minimal Classroom
For children in this condition, teachers maintained a Good-News Note system (described in Blechman, 1985), which is a program designed to improve social behavior in the classroom by providing opportunities for positive reinforcement for on-task behavior in the classroom.

Research Subjects:
Subjects were screened on the teacher CBCL (Achenbach, 1991), the CES-T (Blechman, Lowell, Dumas, & Printz, 1993), and an abbreviated version of the Walker-McDonnell Social Skills Scale (Walker & McConnell, 1988). Aggressive group membership required a t-score > or = to 65 on CBCL Aggressive subscale. Competent Non-Aggressive group membership required t-score < 60 on CBCL & CES-T > median. In the PCS group there were 48 aggressive and 52 non-aggressive competent subjects. In the control group there were 47 subjects in the aggressive group and 49 subjects in the non-aggressive competent group. At post-test there were 8 fewer children in the PCS condition and 20 fewer children in the no-PCS condition

Research Design:
Twenty-five, 1st through 3rd grade classrooms in 6 schools were screened. Subjects that met criteria for either

Aggressive or Non-Aggressive Competent classification were randomly assigned a combination treatment of PCS and a minimal classroom condition or no treatment and minimal classroom condition only. A maximum of 4 aggressive and 4 competent-non-aggressive children were chosen from each classroom.

Outcomes:
Measures included teacher reports of aggression and competence, and observations coded with the INTERACT/BLISS system (Dumas, Blechman, & Prinz, 1992) during an information-exchange task The coding resulted in a composite prosocial information exchange score. Intervention effects were examined with analysis of covariance (ANCOVA) using pre-intervention scores as a covariate.

Post-Test:
The aggressive students in PCS were rated by teachers as significantly less ($p<.02$) aggressive (TRF, Achenbach, 1991). Teachers also rated these students as more socially skilled on the CES-T ($p<.02$) and as exhibiting better communication effectiveness ($p<.001$) on the Communication Effectiveness Scale for Teachers (Blechman, Lowell, Dumas, & Prinz, 1993) compared to controls. Observations of aggressive participants receiving PCS indicated that they exhibited higher levels of prosocial coping than controls ($p<.002$).

Follow-up (6 month):
Aggressive students participating in PCS were rated by teachers as significantly less aggressive ($p<.01$) and improved in effective communication ($p<.005$) compared to non-PCS controls. Observations were not conducted as part of the follow-up assessment.

Strengths & Limitations:
PCS is a primarily child-focused program that focuses on improving the skill deficits and maladaptive coping style that often accompany disruptive behavior problems. Although parents were mentioned in the classroom intervention their involvement in the intervention is minimal. The evaluation was well-designed (i.e. randomized trial) and provided support for the intervention. Children who participated in PCS exhibited less aggression and significantly more social skills and prosocial coping compared to controls. These changes were evident through multiple sources (i.e. teacher, peers, & observations). Significant findings were maintained 6 months following the intervention. Although the findings were positive, the small sample size limits their generalizability. In addition, the authors did not mention whether the differential attrition between the intervention groups was significant. One positive aspect of this evaluation was that both genders were well represented. The authors noted several steps that were taken to ensure program fidelity. An intervention manual, clear guidelines for program decisions, and structured forms was used by the staff to administer the program and sessions were videotaped so that staff could review them in on-going supervision. Consumer evaluations were obtained from children, teachers, and parents. There has been no independent replication of the program.

PENN PREVENTION PROGRAM

Principal Investigators: Jane E. Gillham, Lisa H. Jaycox, Karen J. Reivich, & Martin E. P. Seligman

Level of Intervention: Selected

Target Population: Middle-school aged children (10 to 13 years) at-risk due to elevated depressive symptoms or family conflict.

References:
Gillham, Reivich, Jaycox, & Seligman (1995); Jaycox, Reivich, Gillham & Seligman (1994).

Theory (Risk & Protective Factors Targeted):
The Depression Prevention Program is designed to combat cognitive distortions (e.g. pessimistic explanatory style, hostile attribution bias, poor social problem solving) and related deficits associated with depression, such as behavior problems, poor peer relations, lowered self-esteem, and poor academic achievement. Research has shown that the combination of depressive symptoms, lowered self-esteem, and conduct problems are often associated with childhood stresses such as marital or family conflict. Past research has demonstrated the efficacy of cognitive-behavioral techniques in the treatment of depression and social problem solving training for improving children's adjustment.

Description of Intervention:
The intervention was based on cognitive-behavioral principles. Children were taught coping strategies to counteract cognitive distortions and deficiencies, specifically explanatory style. One component of the program (Cognitive Component) focused on teaching children how to interpret problem situations in more adaptive ways by identifying negative beliefs, evaluate the evidence for beliefs, and generating alternatives. This portion of the program included explanatory style training in which children are taught to identify pessimistic explanations and generate more optimistic & realistic explanations to their problems. The second component of the program (Problem Solving and Coping Component) focused on the children's actions for solving their problems by teaching social problem solving and adaptive coping. Children were encouraged to think about their goals before acting, generate solutions, and weigh the pros and cons to their solutions. In addition, this portion of the program taught the children skills for managing parental conflict, and behavioral techniques to enhance assertiveness, negotiation, and relaxation.

Over the course of 12 weeks, treatment groups met weekly after-school for 1.5 hours. Groups consisted of 10-12 members and included in-session instruction and weekly homework assignments. Three doctoral students led the groups.

Research Subjects:
Treatment subjects were recruited by letter from all 5^{th} and 6^{th} grade students (approximately 900 students) in a school district outside of Philadelphia, PA. Two groups of children were identified as "at-risk" for depression: those with elevated symptomatology and those in homes with marital conflict and low family cohesion. Children from 7 elementary schools were screened using the Child Depression Inventory (CDI; Kovacs, 1985) and the Child Perception Questionnaire (Emery & O'Leary, 1982), a measure of children's perceptions of marital conflict. A risk score was created by standardizing and summing the two measures. From a pool of 262 children, 149 children with a score greater than .50 were considered "at-risk". Mean score for both groups pre-treatment on the CDI was around 10. Using similar procedures, control subjects were recruited by letter (approximately 700 students) from a second suburban school district. The final sample consisted of 69 treatment subjects (34 girls, 35 boys) and 74 no-participation control subjects (32 girls, 42 boys). Eighty-three percent of the children were Caucasian and 11% were African–American.

Research Design:
The evaluation used a mixed-method, nested design with unbalanced groups. The study was unable to use true random

assignment because the program was conducted district wide. One school with a higher income level was assigned to the wait-list condition so that if there was any bias in assignment it was not in favor of the intervention condition. Risk scores at each school indicated that there were between group differences on the selection criteria scores. High and low risk groups were paired prior to assignment to intervention or control groups. Experimental conditions were then randomized to one of three treatment conditions (Cognitive, Social Problem Solving, or Combined Treatment) or a control condition so that the assignment of condition to pairs was unbiased.

Outcomes:
There were no differences between intervention and control groups on any pre-test dependent measures but differences were found for two socioeconomic indices. Families of children in the control group reported higher income levels and higher levels of education. There were no differences between the two intervention components so the groups were collapsed and compared to the control condition. No differences in attrition by condition was reported. ANCOVA and MANCOVA were used for analyses to control for initial levels of depression and behavior problems. One-tailed P-values were used for between-group analyses when the authors felt there was a clear, unidirectional prediction that the treatment group would do better than the control group. Some analyses used two-tailed tested. The authors noted that compliance for assessments of conduct problems was low. Parent ratings were not available to the same degree at each assessment which reduced the sample size.

Post-Intervention
Treatment children reported significantly less depressive symptoms on a composite of the CDI and Reynolds Children's Depression Inventory (Reynolds, 1989) compared to controls ($p < .05$). Treatment children exhibited better classroom behavior according to codings of teacher report cards compared to controls ($p<.05$). There were no group differences on the Children's Attributional Style Questionnaire (Kaslow, Tannenbaum, & Seligman, 1978), a measure of explanatory style, but treatment children were less likely to attribute negative events to stable, enduring causes ($p<.05$). Explanatory style mediated the impact of the treatment on depressive symptoms. There were no group differences on parental ratings of externalizing or internalizing problems on the Child Behavior Checklist (CBCL; Achenbach, 1991).

Follow-up (6month)
Treatment children reported significantly fewer depressive symptoms on the composite variable compared to controls ($p < .05$) and on a retrospective report of depression created from the CDI ($p<.05$). Parents of treatment children reported significantly less externalizing symptoms on the CBCL compared to controls ($p<.05$). There were no significant group differences on parent ratings of internalizing symptoms.

No significant interactions were found between the level of children's perceptions of parental fighting and treatment on any measures. When groups were divided at the median on children's perceptions of parental conflict, children in the treatment who reported high parental conflict reported significantly less depressive symptoms at post-test ($p<.05$) and follow up ($p<.05$) compared to the parallel control group. The high conflict treatment subjects also reported significantly less internalizing symptoms at post-test ($p<.05$) compared to high conflict controls. There were no significant treatment effects for self-reported depressive symptoms or more general internalizing symptoms between the low conflict groups. In addition, no intervention effects were found for externalizing behavior for either the low or high parent conflict at post-test. At follow-up, parents of the children in the low conflict treatment group reported significantly fewer externalizing symptoms for their children compared to controls ($p<.05$).

Similar analyses were conducted by creating groups according to severity of depressive symptoms (median splits). Treatment group children with high depressive symptom levels reported significantly less depressive symptoms at follow-up compared to control subjects with high symptom levels ($p<.05$). There were no significant differences between low symptom treatment and control subjects in terms of depressive symptoms at post-test or follow-up.

Follow-up (12, 18, and 24 months)
These results were summarized in Gillham et al. (1995). Treatment children reported significantly fewer depressive symptoms on the CDI compared to controls ($p<.01$). Planned comparisons revealed that the difference was significant at

the 18 month ($p<.01$), and 24 month ($p<.01$) assessments. Across the follow-up period, children who participated in the intervention were also less likely to report moderate or severe depressive symptoms (score of 15 or above) on the CDI ($P<.01$) and this differences was significant at the 12 month ($p<.01$), 18 month ($p<.01$), and 24 month ($p<.05$) assessment points. The intervention continued to affect explanatory style in the participants. Overall, across the follow-up period, intervention children had a significantly more optimistic explanatory style ($p<.01$) than children in the control group and this difference was significant at the 12 month ($p<.01$), 18 month ($p<.01$), and 24 month ($p<.01$) assessment points. Explanatory style continued to mediate the effect of the intervention on depressive symptoms. Finally, while depressive symptoms increased significantly over time for both treatment and control groups ($p<.01$), a significant interaction of time and condition indicated that the control group evidenced a greater increase in depressive symptoms than the treatment group.

Strengths & Limitations:
The Depression Prevention Program is an intervention that targets the cognitive distortions style and deficits associated with depression by providing cognitive-behavioral skills training to individual children identified as "at-risk" for developing depression. The intervention included a unique target population that accounted for two different pathways to depressive disorders: through elevated depressive symptoms and through comorbidity with conduct problems. This attempt to address the comorbidity between internalizing and externalizing problems is rare in the prevention literature. The results of an initial evaluation (Jaycox et al., 1994) indicated that the program was successful in reducing participants self-reported depressive symptoms and that six month post-intervention, parents and teachers reported improvements in the conduct of these children. The results of an second published evaluation (Gillham et al., 1995) were consistent with the initial findings and indicated extended treatment effects including reductions in depressive symptoms over a two year period.

It is important to take a number of factors into account when interpreting these results. The quasi-experimental nature of the design limits the generalizability of the findings. Response rates to the initial screenings for subjects were low and, as a result, the study participants may not represent the general sample of depressed individuals. In addition, as the authors' noted, there were problems with assessment compliance, and the analyses of conduct problems utilized a reduced sample. Only child ratings were used to measure marital conflict and the retrospective report used to assess child depressive symptoms was a new measure without reliability data. A strength of the program was that a detailed training manual was used to ensure program fidelity. The program has not been independently replicated.

POSITIVE YOUTH DEVELOPMENT PROGRAM

Principal Investigator: Roger Weissberg

Level of Intervention: Universal

Target Population: Middle-school students (age 11-14)

References:
Caplan, Weissberg, Grober, Sivo, Grady, & Jacoby (1992); Weissberg, Barton & Shriver (1997)

Theory (Risk & Protective Factors Targeted):
Founded in research on social problem solving through acquisition of cognitive, affective and behavioral skills. Focuses on enhancing children's abilities to coordinate cognition, behavior and affect to accomplish daily social tasks, and creating an environment (school and home) that reinforces and provides opportunities to practice adaptive skills and behavior. The program addresses risk factors associated with drug use and promotes problem solving and stress-management skills.

Description of Intervention:
PYD is a highly structured, 121 page curriculum for a school-based program of 20 sessions provided to 6th and 7th graders during two 50 minute class periods per week over 15 weeks. Focusing primarily on general social competence promotion and substance abuse prevention, the program covers stress management, self-esteem, problem solving, health information related to substance abuse, assertiveness, and the use of social support networks. The curriculum was taught using didactic instruction, class discussion, videotapes, diaries, small-group role-plays, worksheets, and homework assignments. The lessons were provided by masters-level health educators from a community-based agency co-teaching with classroom teachers. The instructors emphasized the relevance and broad applicability of the lessons being taught by using real-life social situations as the basis for discussion.

Research Subjects:
The sample consisted of 282 6th and 7th grade students from an urban middle school (69%) and a suburban middle school (31%) in south-central Connecticut. The sample was nearly equally divided by gender, and ranged in age from 11 to 14 with the median age being 12. The urban population was 90% African American and consisted of 72 treatment and 134 control students. The suburban population was 99% European American and consisted of 37 treatment and 39 control students. Treatment and control groups were similar in race and gender.

Research Design:
From a pool of interested teachers, classes were stratified within ability groupings and randomly assignment to treatment or control group. One class was later moved from treatment to control because of logistical problems. There were significant pretest differences between the urban and suburban sites on factors related to outcomes such as coping skills and intention to experiment with substances. There were also within-site pretest differences between treatment and control groups, although repeated measures ANOVAs and analysis of covariance on post scores using pre scores as covariates yielded no evidence of bias.

Teacher and student surveys were used to collect data at pre and post that measured coping skills, social and emotional adjustment, and intentions, attitudes, and self-reported substance use. Coping skills were assessed using an alternative solutions self-test, adapted from the Decision-Making Questionnaire (Gersick, et al., 1988), and a second stress-coping self-test measure. Social and emotional adjustment was measured using a teacher rating scale developed by Allen, Weisberg and Hawkins (1989) to assess classroom behavior, the Rand Well-Being Scale (Veit & Ware, 1983) as a student self-report of general mood and emotional state, the Behavioral Conduct and Self Worth scales of the Self-Perception Profile for Children (Harter, 1985) as self-report measures of children's perceptions of competency in these domains, and a 4-point scale of problem solving efficacy. Reliability for all measures was moderate to high.

Outcomes:
Repeated-measures MANOVAs indicated significant group x time interactions for coping skills ($p < .001$), social and emotional adjustment ($p < .002$), and intentions, attitudes and self-reported substance abuse ($p < .05$). Followup univariate ANOVAs revealed significant changes in quantity and effectiveness of alternative solution thinking in hypothetical situations, quantity and adaptiveness of stress management skills, teacher ratings of conflict resolution, impulse control, and popularity, self-rated problem solving efficacy, intention to use beer or hard liquor, and self-reported excessive alcohol use.

Strengths & Limitations:
The PYD program focuses on the promotion of individual cognitive and self-management skills as protective factors against poor outcomes for children. PYD places little emphasis on family management. The evaluation demonstrated significant outcomes across a number of measures using both student self reports and teacher ratings. However the sample is somewhat small after considering the division between urban and suburban groups. Important pretest differences between the urban and suburban groups also make it more difficult to interpret generalizability. Although there was no formal assessment of implementation fidelity, the investigators do report taking specific steps during implementation to closely monitor the process. The study also monitored for possible bias related to attrition, which was not indicated through data analysis.

The PYD program's narrow focus has been expanded recently in the development of the Social Competence Promotion Program for Young Adolescents (Weissberg, Barton & Shriver, 1997), which adds a component for prevention of risky sexual behavior and greatly increases the dosage to 45 sessions. Preliminary outcomes show significant reductions in self-reported delinquency and antisocial behavior, though detailed analyses have not yet been published. There has been no independent replication of the original program.

PROMOTING ALTERNATIVE THINKING STRATEGIES (PATHS)

Principal Investigator: Mark Greenberg

Level of Intervention: Universal

Target Population: elementary-aged children

References:
Greenberg, et al. (1995); Greenberg & Kusche (1993, 1996, 1997, 1998); Conduct Problems Prevention Research Group (1999b)

Theory (Risk & Protective Factors Targeted):
Based on the ABCD (Affective-Behavioral-Cognitive-Dynamic) model of development, PATHS focuses on the developmental integration of affect, behavior and cognitive understanding, recognizing that a child's behavior and self-regulation are functions of emotional awareness, affective-cognitive control and social-cognitive understanding. PATHS seeks to provide children with the knowledge and skills necessary for self-control, understanding , expressing and regulating their emotions, and effective social problem-solving. In addition, PATHS also targets improvements in classroom and school ecology.

Description of Intervention:
Originally developed for use with deaf children, PATHS has been adapted through action research for use with regular education and special needs children (learning disabled, language delayed, behaviorally and emotionally impaired, and mildly mentally delayed children). PATHS is implemented by trained teachers with entire classrooms using a 131-lesson curriculum over a period of up to 5 years.

PATHS covers five conceptual domains, including self-control, emotional understanding, positive self-esteem, relationships, and interpersonal problem-solving skills. The curriculum consists of three major units: the Readiness and Self-Control Unit – 12 lessons that focus on readiness skills and developing basic self-control; the Feelings and Relationships Unit – 56 lessons that focus on teaching emotional and interpersonal understanding; and the Interpersonal Cognitive Problem-Solving Unit – 33 lessons that cover 11 formal steps to interpersonal problem solving. PATHS also intersperses lessons on building positive self-esteem and improving peer communications/relations throughout the 3 major units. A supplementary unit contains 30 additional lessons that review and expand on the concepts taught in the 3 major units.

A separate teacher instruction manual is included and parent letters and home activity assignments are used to encourage generalization of the skills to the home environment.

Research Subjects:
PATHS has been evaluated with three trials: (1) a population of 200 regular education first grade children (87 intervention and 113 control; 65 percent white, 21 percent African American); one with 126 special needs children (57 intervention and 69 control); and 57 deaf children (29 intervention and 28 control). .

Research Design:
All three trials utilized randomized, controlled trials (the trials with deaf children used a randomized wait-list control design); For the regular education trials, four schools were randomly assigned to intervention or control conditions. There were no significant differences on pretest measures related to the outcomes of interest.

Outcomes:
Measures included an interview of social problem solving, two tests of non-verbal cognitive abilities, achievement testing, and teacher, parent and child ratings of behavioral problems.

Deaf Children: At post-test intervention children showed significant improvements on problem solving skills, emotional understanding, Results indicated that the intervention led to significant improvement in students' social problem-solving skills, emotional recognition skills, and teacher and parent-rated social competence. There was no effect in this normative sample on teacher or parent-rated psychopathology. One and two year post-test results following the first intervention group indicated maintenance of effects. Results on the wait-list control group indicated replication of effects in a second sample.

Regular Education Children: At post-test, intervention group children had significantly improved social problem solving skills and emotional understanding and were significantly less likely to provide aggressive solutions and more likely to provide prosocial solutions to interpersonal conflicts. Intervention group children also showed significant improvement on the two cognitive ability tests.

At 1-year followup, significant effects were again found on measures of emotional understanding and interpersonal problem solving skills. Significant differences were also found on a task of social planning and on the non-verbal subtest of Coding on the WISC-R. There were no differences on teacher or self-reports of problem behavior at this time point.

At 2-year followup, significant differences on teacher rating of the CBCL subscales of externalizing behavior problems and of total adaptive functioning. In addition, intervention students self-reported a significantly lower rate of conduct problems.

Special Needs Children: At post-test, intervention group children had significantly improved social problem solving skills and emotional understanding and were significantly less likely to provide aggressive solutions and more likely to provide prosocial solutions to interpersonal conflicts. Teachers reported improvements in social competence and internalizing behavior problems (depression/anxiety). Students reported decreases in symptoms of depression.

At 1-year followup, significant effects were again found on measures of emotional understanding and interpersonal problem solving skills. Significant differences were also found on a task of social planning and on the non-verbal subtest of Coding on the WISC-R. Teachers again reported differences on internalizing problems and students reported decreases in depressive symptoms.

At 2-year followup, significant differences on teacher rating of the CBCL subscales of both internalzing and externalizing behavior problems. In addition, intervention students self-reported a significantly lower rate of depression and conduct problems.

Multisite Replication: A more limited, grade 1 only version of the PATHS Curriculum has been examined within the larger Fast Track Multi-Site Program. This study involved a randomized trial in which schools within sites (Seattle, Nashville, Durham, rural Pennsylvania) were randomized in sets of intervention and control status. Grade 1 intervention involved approximately 400 classrooms (198 intervention and 180 control classrooms) and involved assessment of over 5000 children. Classroom teachers delivered a 57-lesson version of PATHS. Findings comparing classroom level data (HLM analysis with classroom as the unit of analysis) indicated lower peer report of aggression and hyperactive-disruptive behavior (using peer sociometric assessment) and higher quality of classroom atmosphere (as by independent observers). There was also a trend for improvement in teacher ratings of disruptive and aggressive behavior. Within the intervention classrooms, the quality of implementation predicted significant variation in both teacher and peer assessments of classroom functioning.

Strengths & Limitations:
PATHS is a school-based intervention that targets the development of social and emotional competence in order to build protective factors and decrease risk for behavior problems and social maladaptation. It also seeks to improve the quality of the classroom ecology. Because of its multiple replications and strong experimental designs, the studies of PATHS

have indicated that it has robust effects across different populations (regular and special needs children) and in both urban and rural locations. A particularly strong point of the recent FAST Track replication is the large sample size and the use of the classroom as the unit of analysis; such analysis are more conservative as they take into account the interdependency among scores within classrooms. In addition, across trials effects have been shown by multiple reporters (teachers, children, peers). Two of the trials have carefully measured implementation (dosage, and fidelity of delivery by teachers) and some results have related quality of implementation to outcome demonstrating a dose-response relationship.

PRIMARY MENTAL HEALTH PROJECT

Principal Investigator: Emory Cowen

Level of Intervention: Selective

Target Population: elementary-aged children (pre-K – 4th grade) screened for behavioral, social/emotional, and learning difficulty

References:
Cowen, Hightower, Pedro-Carroll, Work, Wyman, & Haffey (1996); Hightower (1997); Lorion, Caldwell, & Cowen (1976); Cowen, Gesten & Wilson (1979); Weissberg, Cowen, Lotyczewski & Gesten (1983).

Theory (Risk & Protective Factors Targeted):
PMHP is based on the premise that the traditional school-based mental health professional alone is inadequate to provide substantial assistance to the large number of children who could benefit from additional supports. PMHP addresses this problem by restructuring the role of the school mental health professional and utilizing a cadre of paraprofessional child associates to work more intensively with a larger population of students in a structured playroom environment. The program targets early elementary-age children who are exhibiting early signs of maladjustment in order to prevent future psychopathology.

Description of Intervention:
Based on composites from the initial universal screening, children are identified who seem most appropriate for PMHP services. A more extensive information gathering takes place for these children, followed by the formulation of an intervention plan. Written parental consent is required for further participation. For each identified child, the core intervention component is the development of an ongoing interactive relationship with a trained paraprofessional child associate. Child associates are carefully selected and receive an intensive 24-36 hour training followed by regular topical continuing development training. The child associate meets with the child alone or in small groups once per week for 25 to 45 minutes, for 20-25 sessions over the school year. These meetings take place in a structured playroom equipped with items designed to encourage expressive play. The expression and exploration of all emotions is encouraged, with limits placed on inappropriate behavior. Child associates exploit opportunities for teaching life skills such as taking turns, following rules, and attending to a task.

Weekly or biweekly supervisory meetings are held between the mental health professional and child associates for reviewing progress. Approximately halfway through the intervention, a more comprehensive review of each child's progress is conducted with the entire PMHP team to assess progress to individual goals and to make mid-course corrections to the intervention plan. Each child receives an end-of-project conference, again with the entire PMHP team, including a disposition decision to terminate the child from the program based on significant progress. For most children who do not make adequate progress at the end of one year of intervention, a second year is not recommended (this is based on prior research that showed little or no effects from a second year of intervention).

Subjects:
All children are screened at the beginning of the school year by a team of child associates and mental health professionals, as well as classroom teachers. Informal observations are conducted in multiple school settings. At times child associates arrange with teachers for specific classroom observation times. Screening teams review school administrative records and, where appropriate, prior years' screening information. Many schools utilize rating scales developed by the PMHP. One such scale, the 12-item AML-R Behavior Rating Scale assesses the frequency of acting out, moodiness, and learning problems. This scale is completed for each child by the primary grade teacher. For children in second grade and above, the self-report Child Rating Scale can also be used to measure internalizing, externalizing and social behaviors as well as interest in school.

Study 1 (Lorion, Caldwell & Cowen, 1976)

In this study a group of primary grade children who successfully completed the PMHP after one year (Terminators) was compared to a subgroup who continued the program for a second year (Non-terminators) and a no-treatment control group. The three conditions were split for separate analysis between two measures, the Teacher Referral Form (TRF), and the AML measure described above. Ns for each group were: Terminators= 45; Non-terminators =33; Controls =31. The groups were similar on demographic, socioeconomic and PMHP variables.

Research Design:
Groups appear to have been non-randomly assigned.

Outcomes:
Using the teacher-rated AML, ANOVA analysis showed significant treatment effects for seven of eight followup comparisons at both 5 and 12 months after completion of the first year of intervention. Terminators were significantly less maladjusted than Non-terminators or Controls on all seven measure. The eighth, acting-out behavior measured at 12 months post, showed a non-significant trend in the predicted direction.

On a second measure, the TRF, teachers rated children on 37 behaviorally oriented items relating to maladaptation. The measure forms summary indexes of acting-out, shy-anxious, and learning problems. ANOVAs of the eight comparisons (at 5 and 12 months post), six showed significant intervention effects with Terminators less maladjusted than Non-terminators or Controls.

Study 2 (Cowen, Gesten & Wilson, 1979)

176 subjects from 4 PMHP schools equally distributed across grades k-3 were compared to a retrospective control group of 72 subjects matched on demographic and PMHS variables.

Outcomes:
Significant intervention effects were found on two teacher-rated measures in comparisons to a matched retrospective control group. On the Classroom Adjustment Rating Scale (CARS) effects reached significance on the subscale of adjustment problem severity, but not on the other subscales of acting-out, shy-anxious, learning problems, or total maladjustment. On the Health Resources Inventory (HRI) effects reached significance on the subscales of adaptive assertiveness, frustration tolerance, following rules, and the summary competence scale, but not on the factors of good student or peer sociability.

Study 3 (Weissberg, et al., 1983)
The subjects included seven consecutive annual cohorts ranging in size from 206 to 464 that were assessed pretest and post-test without a comparison group.

Outcomes:
Intervention effects were assessed using the CARS and HRI, the Aide Status Evaluation Form (ASEF – aide-reported instrument that parallels the CARS), and the Professional Termination Report (PTR – completed by the school mental health professional at the end of the school year). Within-group pre- to post change scores were figured for 21 criterion variables (4 CARS, 6 HRI, 4 ASEF, and 7 PTR) for each of the seven cohort years plus the pooled 7-year sample using t-tests. The results showed significant improvement on 22 of 28 CARS analyses, 39 of 42 HRI analyses, 20 of 28 ASEF analyses, and all 49 PTR analyses. T-tests for the pooled seven year sample indicated that PMHP children improved significantly on all 21 adjustment variables.

Strengths & Limitations:
The PMHP seeks to prevent psychopathology by providing additional targeted support to early elementary-age children who have been identified as having social/emotional or learning difficulties. The program uses a cadre of

paraprofessional support staff coordinated by a school-based mental health professional in order to maximize the number of students who receive support. Child associates develop a close, warm relationship with the child and utilize a structured playroom to encourage expressive play and to create learning opportunities. The intervention focuses on the school domain and changing both the school ecology and the individual child.

The PMHP claims to be the most extensively evaluated mental health program ever. Unfortunately, very few of the evaluations utilized well-designed control groups. In the two studies referenced above, group assignment was not random and the results were based on teacher reports that may have been biased as a result of program participation. The third study cited above used no control group, but did review 7 consecutive cohorts of intervention subjects and found consistent program effects. Despite its success with children who exhibit primarily internalizing symptoms, the PMHP has struggled to achieve the same level of effects with acting out students.

QUEENSLAND EARLY INTERVENTION AND PREVENTION OF ANXIETY PROJECT (QEIPAP)

Principal Investigator: Mark Dadds & Susan Spence

Level of Intervention: Indicated

Target Population: Children and adolescents age 7 to 14 years old with elevated and clinical levels of anxiety symptoms and no disruptive behvaior problems.

References:
Dadds, Holland, Laurens, Mullins, Barrett, & Spence, (1999); Dadds, Spence, Holland, Barrett, & Laurens (1997).

Theory (Risk & Protective Factors Targeted):
Anxiety is one of the most common forms of psychological distress reported by children & adolescents. Anxiety disorders are stable if untreated, and associated with other psychological problems. Children exhibiting early signs of anxious behavior are considered more at risk for anxiety disorders. Other risk factors include inhibited temperament, exposure to traumatic and negative life events, and having anxious, overprotective parents. Psychosocial interventions have been an effective form of treatment for children diagnosed with anxiety disorders.

Description of Intervention:
Child Component
This child component consisted of a cognitive-behavioral, school-based, program that taught youth how to cope with anxiety. Group sessions (1-2 hours long) were conducted over a period of 10 weeks. The program is based on the Coping Koala Prevention Manual (Barrett, Dadds, & Holland, 1994), an Australian modification of Kendall's (1990, 1994) Coping Cat anxiety program for children. The strategies presented in the program are based on Kendall's FEAR plan which teaches children how to develop a plan of graduated exposure to fearful stimuli using physiological, cognitive, and behavioral coping strategies. Clinical psychologists led groups with graduate student co-leaders.

Parent Component
Parents participated in three sessions designed to introduce child management strategies, provide them with information on what their children were learning in the program, and teach them how to use similar strategies to manage their own anxiety.

Research Subjects:
Subjects were recruited from a pool of all 3rd through 7th grades from 8 primary schools (N=1,786) in Brisbane, Australia. The schools represented three SES levels. Students were screened on four levels. First, all children completed the Revised Child Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1979). Next, teachers nominated up to three children from their class who exhibited elevated anxiety symptoms and three children with elevated disruptive behavior problems. From the list of children who were nominated as anxious by teacher reports or who reported high levels of anxiety on the RCMAS, teachers were asked to identify non-English speaking children with learning problems, children with developmental delay, or those who they clearly felt were well-adjusted and without an anxiety problem. These children were excluded from the subject pool. Finally, the Anxiety Disorders Interview Schedule for Children – Parent Version (ADIS-P; Silverman & Nelles, 1988), a diagnostic interview was conducted with parents (N=181). Children eligible for this final screen scored 20 or above on the anxiety scale of the RCMAS and were nominated by their teacher as anxious. They were not on their teacher's list of disruptive students and they did not meet any of the reasons for exclusion listed above.

The final sample consisted of 128 students who ranged from 9 to 14 years old. The majority of the sample was White and ranged from working to middle class. Children who met criteria for a DSM-IV anxiety disorder with a severity rating of 5 or less (on an 8-point scale), or who did not meet criteria but had features of an anxiety disorder or met

criteria for a nonspecific sensitivity, were allowed to participated. Students were excluded from participation if the diagnostic interview revealed an externalizing disorder.

Research Design:
Schools were matched for size, demographics, and SES and then randomly assigned to condition. Subjects were assigned to either an intervention or monitoring condition depending on the school they attended.

Outcomes:
There were no significant differences between or within the intervention and comparison groups or between the schools on any demographic or diagnostic variables. Schools were the unit of assignment so the degrees of freedom derived from the number of schools were used in tests comparing the treatment and control groups.

Post-Test:
The results are somewhat difficult to interpret because subjects who qualified as having a disorder prior to the intervention and those who were symptomatic but non-disordered were mixed together in the groups. When the symptomatic but non-disordered group was compared to controls there were no significant differences found at post-intervention.

Follow-up (6 month):
Significant differences were found in anxiety diagnoses between the intervention and control groups. Only 16% of the children in the treatment group (without a diagnosis at the pre-assessment) had a diagnosable disorder at follow-up compared to 54% of the children in the control group ($p<.05$).

Follow-up (12 month & 24 month)
Results of an extended follow-up at 12 and 24 months have recently been reported (Dadds, Holland, Laurens, Mullins, Barrett, & Spence, 1999). No effects were found at 12 months. At 24 months significant differences were found for parent reports of avoidance ($p<.005$) and overall clinician impressions ($p<.001$) derived from parent telephone interviews. A significant diagnostic effect indicated that 20% of the intervention children (this group included both those with and without diagnoses at the pre-assessment) still met criteria for anxiety disorders as compared to 39% in the control group.

Strengths & Limitations:
The Queensland Early Intervention and Prevention of Anxiety Project utilized a cognitive-behavioral program to teach children exhibiting clinical and sub-clinical levels of anxiety, adaptive coping strategies for managing their distress. The program also targeted the families to support their child's developing skills and use similar methods to manage of their own anxiety. Although there were no treatment effects immediately after the intervention concluded, 6 months later the intervention children were less likely to develop an anxiety disorder. These results are promising, particularly given the design of the study (randomized trial) and the use of diagnostic classifications as outcome measures. Effects appeared to fade at 12 months, but again showed impact at 24 months. Unfortunately, no student self-report data was available at the 12 and 24-month follow-up. The findings are difficult to generalize, though, given that the sample was primarily Caucasians in Australia.

Attempts were made to ensure program fidelity but the details provided on this aspect of the evaluation were significantly less than those provided for subject recruitment processes and characteristics. The child component was based on an intervention manual. Although the parent program was not a published program, attempts were made to standardize the presentations by using a set of visual slides with written scripts. Training of therapists took place in a one-day workshop where they were introduced to the program and given an opportunity to rehearse the intervention. The group leaders provided on-going supervision of the therapists in order to ensure treatment integrity. There has been no independent replication of the program.

RESPONDING IN PEACEFUL AND POSITIVE WAYS (RIPP)

Principal Investigator: Albert Farrell

Level of Intervention: Universal

Target Population: Urban, primarily African American middle school students

References:
Farrell, Meyer & White (in press)

Theory (Risk & Protective Factors Targeted):
RIPP is a violence prevention curriculum that focuses on social/cognitive skill building to promote nonviolent conflict resolution and positive communication. The program is grounded in social/cognitive learning theory and targets the influence of intra-personal attributes, behaviors, and environmental factors, following Perry and Jessor's (1985) health promotion model to reduce risk factors associated with violence by promoting nonviolent alternatives.

Description of Intervention:
The 25-session sixth grade curriculum is taught during a 45-minute class period (usually social studies or health education) once per week. The program uses adult role models to teach knowledge, attitudes and skills that emphasize nonviolence and promote positive communication. The program uses team building activities along with small group work, role plays, relaxation techniques and repetition and rehearsal. The curriculum was accompanied by a peer mediation program at each school.

Three African-American males trained as prevention specialists implemented the program in three urban middle schools. A detailed implementation manual was used to increase consistency of implementation.

Research Subjects:
The study sample consisted of 602 sixth grade students (approximately ½ of the sixth grade class, 295 intervention and 307 control) at each of three middle schools in inner-city Richmond, Virginia. Sample students were approximately 50% male and female within each condition, most were between 11 and 12 years old, and 96% were African American.

Research Design:
A randomized controlled trial was conducted with sixth grade classes within each school randomly assigned to intervention or control groups.

Outcomes:
At post test, administrative data indicate that RIPP participants showed a significantly lower rates of fighting, bringing weapons to school, and in-school suspensions than control subjects. RIPP students were also more likely to utilize the peer mediation program, and scored higher than controls on the RIPP knowledge test. After controlling for pretest group differences and attrition effects, no significant effects were found for fighting, out-of-school suspension, or 4 self-report measures of behavior and adjustment; effects for in-school suspension and weapon carrying were sustained.

Strengths & Limitations:
The Responding in Peaceful and Positive Ways program is a narrowly focused social/cognitive skill building program focused specifically on the prevention of violence. The program targets individual student skills and knowledge in the classroom context. Observational measures of implementation fidelity support that the program was generally implemented as planned. The study design was sound, although there was no external control for spillover effects from intervention classrooms within mixed schools. There were pretest differences between control and intervention groups as well as significant differences between the subjects assessed and those lost through attrition, however these differences were recognized and controlled for in the statistical analysis. It is noteworthy that the significant behavioral

effects were found on measures of administrative data, but not on self-report measures. The homogeneity of the sample may limit its generalizability.

The findings of this study are bolstered by the fact that the RIPP program evolved from earlier research by Farrell, et al. on the Richmond Youth Against Violence program. A program similar to RIPP but offering a lower "dosage," Richmond Youth Against Violence produced significant reductions in physical fighting for treatment group boys, though no effects were found for girls.

SCHOOL TRANSITIONAL ENVIRONMENT PROJECT (STEP)

Principal Investigator: Robert Felner

Level of Intervention: Universal

Target Population: students making normative school transitions (from elementary to middle or junior high, or from middle or junior high to high school), especially in large schools with many feeder schools

References:
Felner & Adan (1988); Felner, Brand, Adan, Mulhall, Flowers, Sartain, & DuBois (1993); Felner, Ginter & Primavera (1982)

Theory (Risk & Protective Factors Targeted):
STEP is based on the Transactional-Ecological/Transitional Life-Events model, in which children experience greater risks for negative outcomes during normative transitional life events such as moving from elementary to middle school or from junior to senior high school. This increased risk is due to the heightened complexity and developmental demands of the new setting, and the school's typical inability to provide the necessary support, resources and information for students to transition successfully. STEP seeks to institute ecological changes in the school environment to make the transition less threatening and disruptive, and to create a supportive environment in the receiving school.

Description of Intervention:
STEP's core components include creating "cohorts" of transitioning students who remain together as a group during core classes and homeroom, restructuring the arrangement of classes to create smaller "learning communities" within the larger school, and redefining the role of the homeroom teacher and counselors to provide a greater support structure for transitioning students. In this revised role, the homeroom teacher becomes an advisor to the students in his/her cohort and serves as a liaison between the students, their families, and the rest of the school. The homeroom teacher takes on many of the administrative responsibilities of the traditional guidance counselor, such as helping students select classes and addressing truancy issues with families. The homeroom teacher also meets with the other teachers who provide core instruction to the cohort, to identify students who may need additional counseling or support.

Research Subjects:
Although a number of evaluations and replications of STEP have been conducted, few have focused on behavioral or psychosocial outcomes. In one relevant replication study, the sample consisted of 1204 students from 4 treatment schools and 761 students from 4 control schools. The sample was 17% minority and 44% were from families where the highest level of parent education is high school. The students were entering junior high school in 6^{th} (58%) or 7^{th} (42%) grade. The sample included all non special education students in the 8 study schools, and treatment and control schools were comparable on demographic and socio-economic characteristics. The treatment schools generally had larger entering class sizes and more feeder schools, which theoretically would have biased the study against finding treatment effects for that group.

Research Design:
The relevant study used a quasi-experimental (treatment and control) longitudinal design which assessed both process and outcome measures, and included student and teacher reports as well as collection of administrative data. Outcome measures included the School Transition Stress (STS) index (designed by the author) to measure stress experienced during the transition, the Children's Depression Inventory (Kovacs, 1981) to assess depression, the Revised Children's Manifest Anxiety Scale (Reynolds and Richmond, 1978) to measure anxiety, the Self Evaluation Questionnaire (Dubois, Felner & Brand, 1993) to measure self esteem, the Delinquency Scale of the Youth Self-Report (Achenbach & Edelbrock, 1987) to assess behavior problems, and a subset of the Teacher-Child Rating Scale (Hightower, et al., 1986) to measure teacher rating of classroom behavior. All measures had high internal consistency (all alphas > .84).

Outcomes:
MANOVAs for student self reports of socio-emotional adjustment and teacher ratings of student behavior showed significant effects ($p < .001$) after controlling for student background variables. Followup univariate analysis showed significant groups effects across all data sets. STEP students reported significantly lower levels of school transitional stress and better adjustment on measures of anxiety, depression, self esteem, and delinquent behavior than controls. Teacher ratings of classroom behavioral adjustment were also significantly better than controls. STEP students grades and attendance patterns were significantly better than controls as well.

Strengths & Limitations:
The STEP program focuses entirely on school environment as a risk factor and seeks to improve student outcomes through ecological change. Though it may be more effective as part of a more comprehensive prevention effort, other studies of STEP have found it to be more effective than programs targeting transitional life events through individual skill building. Earlier studies have also demonstrated STEPs effectiveness when targeted at the transition to high school (the present study focused on the transition to junior high/middle school) and with extremely high risk schools. Although its focus is somewhat narrow, the study demonstrated significant outcomes with a relatively large sample across a wide range of behavioral and emotional indices, using both student and teacher reports. Group equality and attrition did not appear to be at issue.

SEATTLE SOCIAL DEVELOPMENT PROJECT

Principal Investigators: J. David Hawkins and Richard Catalano

Level of Intervention: Universal

Target Population: elementary aged children

References:
Hawkins, Catalano, Morrison, O'Donnell. Abbott, & Day (1992); O'Donnell, Hawkins, Catalano, Abbott, & Day (1995); Hawkins, VonCleve, & Catalano (1991); Hawkins, Catalano, Kosterman, Abbott & Hill (in press).

Theory (Risk & Protective Factors Targeted):
The SSDP is based on the public health model of preventing adolescent health-risk behaviors by focusing on risk and protective factors associated with these behaviors. Research indicates that many of the same risk factors predict multiple poor outcomes including delinquency, substance abuse, teen pregnancy and school dropout. Bonding to school and family can serve to protect against this broad range of risk factors. SSDP was designed to increase bonding to school and academic success and to reduce early and persistent physical aggression, academic failure and poor family management practices including unclear rules, poor monitoring and harsh or inconsistent discipline. The intervention is designed to target multiple risk factors in multiple contexts (home & school) given research that risk for poor outcomes increases with multiple risk factors.

SSDP stems from the Social Development Model (Hawkins, Catalano, & Miller, 1992), and is designed to effect processes that result in three types of strong bonds (attachment, commitment, and belief) between families and schools. Strong bonds are hypothesized to serve a protective function by moderating the effect of social norms about maladaptive behavior (e.g. drug use, delinquent acts). Children bonded to family and school are more likely to subscribe to the prosocial norms of individuals in these contexts and to utilize refusal skills effectively.

According to the Social Development Model, children's bonding is dictated by the degree of opportunity for active involvement in the family and classroom, the necessary skills to interact in these environments, and recognition or reinforcement for prosocial behavior in these groups. The Social Development Model also suggests that early and sustained intervention is necessary to change the developmental trajectory for these outcomes.

Description of Intervention:
SSDP is a combination of modified teaching practices in mainstream classrooms and parent training. The program is designed to be developmentally appropriate across the intervention period and to reduce academic failure, early conduct problems, and peer rejection, all thought to be antecedents of future maladaptive behavior or other poor outcomes.

In the classroom component, teachers are trained in proactive classroom management (Brophy, 1986), interactive teaching (Block, 1971, 1974; Brophy, 1987), and cooperative learning (Slavin, 1991). First-grade teachers were also trained to implement the Interpersonal Cognitive Problem Solving curriculum developed by Shure and Spivack (1988, see elsewhere in this report). This program focuses on developing children's communication, conflict-resolution, and problem-solving skills. In the 6th grade, teachers also presented refusal skills training related to substance abuse and peer pressure.

The parent training component consists of parent classes offered as an optional program in 1st-3rd grade in collaboration with local school and parent councils. In first & second grade, the 7-session "Catch 'Em Being Good" program was offered. This program is designed to improve parental monitoring of child behavior, help parents provide expectations for child behavior, and support parents' use of positive reinforcement and negative consequences for behavior. In 2nd and 3rd grade, the 4-session "How to Help Your Child Succeed in School" was offered in order to improve communication and involvement between parents and children, to help the parents support their child's learning, and to

support collaborative relationships between parents and teachers. A 5-session program was also offered to help families develop family positions on drug use and to support children's use of resistance skills.

Research Subjects:
The sample consisted of 643, 1st – 5th graders (199 treatment, 709 control & unexposed). Ninety three percent of the sample was between 10 and 11 years old. The breakdown between gender was fairly even with 52% male and 48% female subjects; 44% of the students were Caucasian, 26% were African-American, and 22% were Asian-American. Approximately 56% of the students were low-income and qualified for the subsidized school lunch program. Also, because a policy of mandatory busing to achieve racial equality in the schools was in place during the study period, all schools in the study represented heterogeneous populations of students from at least two different neighborhoods each.

Research Design:
The most recent study examined the effects of the full intervention package provided to students throughout their elementary school years (grades 1-6), compared to a late intervention provided only in grades 5 and 6 and a no-treatment control group. Students in the sample were from eight schools in high crime areas within the Seattle Public School System. Two schools were administratively assigned to receive intervention, two schools were administratively assigned as control classrooms, and the remaining six were randomly assigned to intervention or control conditions. In the fifth grade all students in the 18 Seattle elementary schools were included in the study. When the participants were age 18 (in the spring of 1993) 598 of the original participants from all three conditions (93%) were successfully interviewed. Measures of internal validity showed the full intervention and late intervention groups were not significantly different on a number of socioeconomic and community contextual variables.

Outcomes:
Teacher Instructional Practices (Kerr, Kent, & Lamb, 1985); Student's perceptions of Proactive Family Management, Restrained Punishment, Family Communication, Family Involvement, and Attachment to Family; Student's perceptions of School Rewards, Attachment to School, and Commitment to School; scores on standardized achievement tests; Student's self-reported Beliefs and Norms, and self-reported Substance Use and Delinquency.

Post-second grade: Results (Hawkins, VonCleve, & Catalano, 1991) found reduced rates of teacher-reported aggression ($p<.01$) and externalizing behavior ($p<.05$) only in Caucasian, male, treatment students compared to controls. Lower levels of self-destructive behaviors were also found only in Caucasian, female, treatment students over controls.

Post-Test results (beginning of 5th grade): Intervention students reported more proactive family management by parents ($p<.025$) and greater family communication ($p<.025$) compared to controls. Intervention students report greater involvement by family ($p<.05$), bonding to family ($p<.025$), attachment to school ($p<.025$), commitment to school ($p<.025$), and found school more rewarding ($p<.025$). No significant differences were found on drug-related norms.

Follow-up results (end of 6th grade): Teachers reported intervention students spent significantly less time with deviant peers compared to controls ($p<.05$).

Long-term followup at age 17&18: Researchers examined the differential effects of the full and late intervention, as well as the potential mediating effects of gender and poverty. Full intervention students showed statistically significant positive outcomes related to commitment and attachment to school at age 18; self-reported achievement (though change in school-reported GPA did not reach significance and there was no effect on achievement test scores); self-reported involvement in school misbehavior; committing violent delinquent acts by age 18; heavy alcohol use in the past year at age 18 (though no significant effects were found for any of the lifetime measures of drug use); and engaging in sexual intercourse and having had multiple sex partners by age 18.

Though only the full intervention group showed significant effects, a dosage effect was observed on several of the variables, showing the full intervention group having the greatest positive change, followed by the late intervention group, and finally the control group. The only gender x intervention effects found were for repeating a grade and

engaging in sexual activity, both favoring male students.

Strengths & Limitations:
The SSDP is a multi-component preventive intervention that targets multiple risk and protective factors across multiple domains. The study was not randomized, although extensive analysis of potential threats to internal validity and attrition effects provide no reason to expect bias. The significant outcome measures appear to be all self-report measures, although information on the actual constructs is not provided in the most recent publication. The distal measurement of effects and the heterogeneity of the sample lends to the generalizability of the outcomes. The long-term followup with little attrition makes this an exceptional study. Results indicated that only intervention that began in the early grades had long-term impact on post-graduation outcomes. No measures of implementation fidelity were discussed.

SECOND STEP: A VIOLENCE PREVENTION CURRICULUM

Principal Investigator: David Grossman

Level of Intervention: Universal

Target Population: elementary-aged children (grades 1-3); similar curriculum available for other age groups.

References:
Grossman, Neckerman, Koepsell, Liu, Asher, Beland, Frey, & Rivera (1997)

Theory (Risk & Protective Factors Targeted):
Second Step targets early and persistent antisocial (aggressive) behavior and seeks to promote prosocial behavior as reflected by competence in peer interactions and friendships and in interpersonal conflict resolution skills. It seeks to improve interpersonal problem-solving skills by training children in cognitive processing (identifying the interpersonal problem and generating non-aggressive solutions).

Description of Intervention:
The Second Step curriculum consists of 30 lessons, 35 minutes each, taught once or twice per week in a classroom setting. The program is designed to teach anger management, empathy, and impulse control. Lessons consist of photograph lesson cards accompanied by a scenario that forms the basis for discussion and role-plays. A video-based parents' guide provides familiarization with the program and encourages the reinforcement of skills at home. The home intervention component was not available at the time of the study and thus was not assessed in the evaluation.

Research Subjects:
The study assessed 790 second and third grade, primarily white students from 12 elementary schools (6 matched pairs) in Washington state. The students were 53% male.

Research Design:
Randomized controlled trial with 12 elementary schools from 4 school districts in King County (Seattle) Washington. Schools were used as the unit of randomization to reduce potential contamination between intervention and control groups. Schools were selected based on: no previous experience with Second Step or similar curricula; at least 4 classrooms of 2nd and 3rd graders; faculty and principal approval of the curriculum and evaluation; and school agreement not to introduce other related programs during the study. Schools and classrooms were also selected based on their perceived willingness to deliver the curriculum and facilitate the evaluation. Schools were paired according to school district, proportion of students eligible for free or reduced-cost lunches, and proportion of minority students. After matching, schools in each pair were randomly assigned to intervention or control groups. 49 classrooms (equal numbers of 2nd and 3rd grade) participated. Active parental consent was used.

Outcomes:
Data were collected at pre, 2 weeks post, and 6 month followup, and included parent and teacher ratings as well as coded observations.

Teacher ratings included 2 self-administered instruments for all enrolled subjects – the School Social Behavior Scale and the Teacher Report From (an adaptation of the Child Behavior Checklist, using only the delinquency and aggression subscales.) Two items on the TRF related to extreme behavior were eliminated at the request of school administrators.

Parent ratings included 2 self-administered instruments for all enrolled subjects – CBCL, using the 2 subscales analogous to the aggression and delinquency scales of the TRF, and the Parent-Child Rating Scale (P-CRS). A combination of monetary incentives, mailings, and telephone calls were used to increase parent response.

Direct observations were recorded for 12 randomly selected subjects from each classroom (588 total students) using the Social Interaction Observation System (modeled after the State-Event Classroom Observation System). Observations were done by two observers spending 2 to 4 days in each classroom. Entries were made in 30 ten-second intervals for a total of 5 minutes. Approximately 60 minutes of observation time was conducted for each subject during each of the first two data collection points, and approximately 45 minutes for each at the third. Coded behavior categories included prosocial and neutral, verbal negative, and physical negative. Prosocial and neutral behaviors were grouped together because observers had difficulty differentiating between the two categories in the field. Observations were conducted in the classroom, cafeteria, and playground. Approximately 10% of the observations were intentionally sampled simultaneously by both members of the observer team. Using the interclass correlation coefficient, the interobserver agreement mean *K* value across all time points was .92 for neutral/prosocial behavior, .50 for physical negative, and .45 for verbal negative. Observers were trained in a 4 to 6 week session and were blinded to the study purposes, hypothesis, and research design. Observers, teachers and students were all blinded to student assignment to the observation group. Observers were instructed to have minimal contact with teachers or other school staff. To minimize effects of observers' presence in the classroom, a 2-hour habituation period was used upon observers' first entry to the classroom, during which time no observation data was collected.

Data collected at 2 weeks post treatment showed reductions in physical aggression ($p=.03$) and increases in prosocial behavior ($p=.04$) based on observations, while levels of aggression increased in control group. No significant effects on parent or teacher-rated behavior were found.

Six month followup data showed physical aggression in the classroom remained significantly ($p=.03$) reduced; other previously identified outcomes did not retain significance.

Strengths & Limitations of Evaluation:
Teachers from intervention schools participated in a 2-day training conducted by the program developers. Two investigators monitored and rated the quality of program implementation twice during the intervention period using a numerical rating. K-score for interobserver reliability was .60.

Participating subjects (those with parental consent and completed parent and teacher surveys) were similar to the total eligible population by sex and SES (as measured by subsidized school lunch eligibility), but were more likely to be white (79% vs 75%). The intervention and control groups were similar in age, sex, teacher reported behavior problems, household composition, family SES, and classroom size. A larger proportion of control subjects were in special education and were African-American, while a higher proportion of intervention subjects were Asian-American.

The study design was sound. While coded observations showed significant effects, there were no differences between groups on parent or teacher ratings. Another (non-randomized) controlled study of the same curriculum in middle schools found no statistically significant improvement (Orpinas, Parcel, McAlister, & Frankowski, 1995).

SOCIAL RELATIONS PROGRAM

Principal Investigator: John E. Lochman and John D. Coie

Level of Intervention: Selected

Target Population: Aggressive, rejected, and non-aggressive rejected fourth grade, African-American students.

References:
Lochman, Coie, Underwood, & Terry (1993)

Theory (Risk and Protective Factors Targeted):
This program is based on the significant amount of research that relates children's aggressive behavior to adjustment difficulties in the peer context and specifically to peer rejection. Rejected children exhibit a variety of social skill deficits that contribute to active disliked by peers. Research suggests that aggressive-rejected children have more significant social-cognitive deficits and are at greater risk for poor adolescent outcomes. Social skills training programs have improved the social acceptance of rejected children and cognitive-behavioral programs have shown success in improving the behavioral outcomes of conduct problem children.

Description of Intervention:
The program consists of 4 components: 1) Social problem solving (7 sessions), 2) positive play training (9 sessions), 3) group-entry skill training (14 sessions), and 4) anger-control (4 sessions). In the first component the children learned problem solving steps including identification of a problem and goals of the situation, how to inhibit impulsive behavior, and how to generate possible solutions. The second component focused on helping the children gain the skills necessary to play effectively with peers (e.g. communication, negotiation, cooperation). In the third component the children were taught how to join a group of peers including how to identify group leaders and match their behavior to the group. In the final component, the children learned how to reduce their impulsive behavior through identification, the use of self-statements, and discussion of competition in interpersonal situations. The training took place over 26, 30-minute individual sessions and 8 small group sessions. The sessions took place twice weekly between October and April of the school year. The order of the sessions was altered slightly for the aggressive-rejected students. They received the anger-control unit immediately after the problem solving unit.

Research Subjects:
Twenty-eight third-grade classrooms (602 students) in an inner-city school system were screened with peer-nomination techniques. Positive ("liked most"), negative ("liked least"), and aggressive ("starts fights") nominations were gathered on each child and a social preference score was constructed for each child. Rejected children had a social preference score less than –1.0SD, standardized liked-most scores less than zero, and standardized liked-least scores greater than zero. Aggressive children had standardized nomination totals for "starts fights" greater than 1.0SD. A sample of 86 socially rejected, African-American boys was identified. From this group, 52 (27 boys, 25 girls) students who remained in school for the entire fourth grade year and who had parental consent were used in the final sample.

Prior to the intervention, 13 students were placed in the Aggressive-Rejected intervention (ARI) group, 33 in the Rejected-Only (RI), 11 in the Aggressive-Rejected control (ARC) group, and 29 in the Rejected-Only control (RC) group. Of the 52 subjects who completed the post-test assessment, 9 were in the ARI group, 17 were in the RI group, 9 were in the ARC group, and 17 were in the RC group. At the one-year follow-up assessment the sample consisted of 44 subjects: 7 in the ARI group, 17 in the RI group, 6 in the ARC group, and 14 in the RC group.

Research Design:
Children were randomly assigned to intervention (ARI or RI) or control (ARC or RC) groups on the basis of their screening scores.

Outcomes:
Used ANCOVAs with pre-intervention scores as covariates.

Post-Test
Students in the ARI group were rated by teachers as significantly less aggressive ($p<.04$) on the Teacher Behavior Checklist (Coie & Dodge, 1988) and less rejected ($p<.01$) compared to the ARC group. The ARI group had significantly more positive social acceptance according to peers than the ARC group ($P<.04$). There was a significant main effect for Intervention status on children's ratings of their self-worth (Perceived Competence Scale for Children, Harter, 1982). Control children reported higher levels of self-worth compared to intervention children.

Follow-up (1 year)
According to teacher ratings, the ARI group exhibited significantly less aggression ($p<.03$) and more prosocial behavior ($p<.05$) than the ARC group. A significant Intervention x Academic problem (academically adequate vs. academically inadequate) interaction effect for the Aggression score ($p<.01$) and the Prosocial score ($p<.01$) which was attributed to the fact that the academically adequate intervention group had lower aggression and higher prosocial scores than the control group. There was no longer a main effect on child self-reported self-worth.

Strengths and Limitations:
The Social Relations Intervention Program targeted the social cognitive risk factors associated with children who exhibit disruptive behavior problems by providing intervention on the individual child level. Based on teacher ratings, the findings indicated that the program was most effectiveness in reducing aggression and improving prosocial behavior in aggressive-rejected children at post-test. These results were maintained at one-year follow-up. The program was also successful in altering peer ratings of the children's behavior at post-test though these results were not maintained over time. The design of this study was strong (i.e. randomized clinical trial) and it included both boys and girls which is unusual. Unfortunately, due to the small sample size and the reliance on an entirely African-American sample, the authors were unable to examine gender differences and the findings are somewhat limited in their generalizability. The authors noted that the staff who administered the program were trained for 2 weeks prior to starting the intervention and participated in weekly supervision meetings. However, there were no measures used to ensure program fidelity and dosage was not discussed. These types of measures should have been included given that the authors made some modifications to a previous program.

STRESS INOCULATION TRAINING I

Principal Investigator: Anthony Hains & Michael Szyjakowski

Level of Intervention: Selective

Target Population: Male students in 11th or 12th grade.

References:
Hains & Szyjakowski (1990)

Theory (Risk & Protective Factors Targeted):
Research has shown that stress negatively impacts different aspects of psychological functioning. Consequences of stress include elevated anxiety, depression, suicidal behavior, poor academic performance, and delinquent behavior. Cognitive and behavioral coping skills provide individuals with a strategy to manage stress. As a result, they have the potential to serve a protective function and reduce the negative impact of stressful events.

Description of Intervention:
The authors adapted a Stress Inoculation Training program (Meichenbaum & Deffenbacher, 1988) into a school-based prevention program for high school students that included cognitive coping skills and relaxation training. The 13-session program consisted of three phases: a conceptualization phase, a skill acquisition phase, and a skill application phase. The sessions used both group and individual formats but group sessions were used to introduce the component skills of cognitive restructuring, problem solving, and anxiety management. The two authors served as the therapists for the intervention.

Research Subjects:
Students from an all-male, parochial school in the Midwest responded to an announcement describing a school-based program on stress management. Out of the 30 youth that attended the orientation, 24 participated in the program. All of the participants were Caucasian except for one subject who was African-American.

Research Design:
Subjects were randomly assigned to an intervention group (N = 12), or a wait-list control group (N = 12). Three subjects in the treatment condition dropped out prior to the end of the intervention.

Outcomes:

MANCOVA was used to test for an overall group effect while controling for preintervention differences. Univariate ANCOVAs (Group x Level) were conducted on each of the dependent measures using the pre-assessment score as a covariate.

Post-intervention

Results indicated that intervention subjects reported significantly less trait anxiety on the State-Trait Anxiety Inventory (STAI; Spielberger, 1983) compared to controls ($p<.05$). They also reported significantly less anger and higher self-esteem. No group differences were found on the State Anxiety subscale or on depressive symptomatology.

VERSION 2
Hains (1992)

Target Population: Male students in 10th and 11th grade.

Theory (Risk & Protective Factors Targeted):

Research has shown that stress negatively impacts different aspects of psychological functioning. Consequences of stress include elevated anxiety, depression, suicidal behavior, poor academic performance, and delinquent behavior. Cognitive and behavioral coping skills provide individuals with a strategy to manage stress and thus, have the potential to serve a protective function and reduce the negative impact of stressful events.

Description of Intervention:
Stress Inoculation Training
See description above.

Anxiety Management Training
Students assigned to this intervention group learned self-controlled relaxation skills through anxiety management training (Suinn & Deffenbacher, 1988). The intervention was based on a manual developed by Suinn (1986) but the structure of the intervention was modified slightly to parallel the cognitive intervention group. Youth were taught to recognize cues that trigger anxiety reactions and then to respond with behaviors that promote relaxation (e.g. visualization, progressive muscle relaxation).

Research Subjects:
Students from an all-male, parochial school in the Midwest responded to an announcement describing a school-based program on stress management. Out of the 30 youth that attended the orientation, 25 participated in the program. All of the participants were Caucasian except for one subject in the cognitive intervention who was Asian.

Research Design:
Subjects were randomly assigned to the cognitive intervention group (N = 9), the anxiety management training group (N = 8), or a wait-list control group (N = 8). Three subjects in the treatment condition dropped out prior to the end of the intervention.

Outcomes:
A MANOVA conducted on pre-assessment measures established the equivalence of the intervention and control groups prior to intervention. MANCOVA was used to test for an overall group effect while controling for pre-intervention differences. Univariate ANCOVAs (Group x Level) were conducted on each of the dependent measures using the pre-assessment score as a covariate.

Post-Intervention

Results indicated that intervention subjects reported significantly less state anxiety ($p<.001$) and less trait anxiety ($p<.01$) on the State-Trait Anxiety Inventory (STAI; Spielberger, 1983) compared to controls. They also reported less depression ($p<.055$) on the Reynolds Adolescent Depression Inventory (RADS; Reynolds, 1987) compared to controls. Group differences were not found on a measure of anxious self-statements.

Significant differences from the ANCOVAs were followed by orthogonal comparisons to compare the two interventions to the control group. A similar pattern of results were found when youth in either intervention group were compared to controls but no significant differences were found between the two intervention groups.

Follow-Up
There was no follow-up data available for the control group due to the design of the intervention. A MANOVA was used to determine whether there was any change in the dependent variables from post-treatment to follow-up for either of the intervention groups. There were no significant differences suggesting a maintenance of treatment gains.

VERSION 3
Hains & Ellmann (1994)

Target Population: High school students (9^{th} – 12^{th} grade)

Description of Intervention:
See description above. Two therapists (one Ph.D. and one doctoral student) facilitated the treatment groups.

Research Subjects:
Students from a suburban high school in the Midwest responded to an announcement describing a school-based program on stress management. Out of the 25-30 youth that attended the orientation, 21 participated in the program (16 girls, 5 boys). All of the participants were Caucasian except for one subject who was Asian-American. Based on pre-assessments, subjects were classified as being either high emotional arousal or low emotional arousal. In order to be classified as high arousal, the student needed a score that was 1 SD above the normative mean or above the cutoff on two of four measure of trait anxiety, trait anger, anger expression, or depression. The measures included in the assessment were the State-Trait Anxiety Inventory (STAI; Spielberger, 1983), the Stait-Trait Anger Expression Inventory (STAXI; Spielberger, 1988), and Reynolds Adolescent Depression Inventory (RADS; Reynolds, 1987).

Research Design:
Subjects were randomly assigned to the treatment (7 girls, 4 boys) or a wait-list control group (9 girls, 1 boy). The groups were not equated on gender or age.

Outcomes:
As described previously, youth in both the intervention and control groups were divided into high and low emotional arousal. Univariate ANCOVAs (Group x Level) were conducted on each of the dependent measures using the pre-assessment score as a covariate to control for any pretraining differences. One-tailed comparisons were used to interpret interactions.

Post-Intervention:
Main effects for group were found on trait anger ($p<.04$) and anger expression ($p<.04$) with the treatment subjects having lower post-assessment scores than controls regardless of arousal level. Group x Level interactions on trait anxiety ($p<.08$), depression ($p<.08$) were marginally significant but follow up tests indicated that high emotional arousal subjects in the treatment group obtained significantly lower scores that high arousal subjects in the wait-list group on trait anxiety ($p<.03$) and depression ($p<.03$).

High arousal subjects in both the treatment and control groups were in the clinical range prior to the intervention. After participating in the program, the scores of all of the high arousal subjects who participated in the intervention were within the non-clinical range.

Strengths & Limitations:
The Stress Inoculation Training Program is a brief intervention designed to prevent psychological symptoms related to stress. The program targets adolescents and attempts to teach them cognitive-behavioral coping skills and relaxation training. The results from three evaluations suggest that the program is effective in reducing self-reported internalizing symptoms (i.e. anxiety, depression) in youth. In the most recent evaluation, positive outcomes (that were also clinically significant) were only found in youth that reported higher levels of distress prior to participation (i.e. high arousal group). Although the authors utilized a randomized trial design in all three studies, the sample sizes were extremely small and two of the three samples were all boys. There was only a brief period before the wait-list control group was given the intervention, which prevented an examination the extended effects of the program. In addition there was significant attrition in the intervention group in the first evaluation. A treatment manual was used consistently, and in one evaluation regular therapist meetings were held to review the program and address problems. No measures of program fidelity were included and the program has not been independently replicated.

STRESS INOCULATION TRAINING II

Principal Investigator: Mark S. Kiselica

Level of Intervention: Selective

Target Population: Adolescents with elevated self-reported anxiety symptoms.

References:
Kiselica, Baker, Thomas, & Reedy (1994)

Theory (Risk & Protective Factors Targeted):
Research has shown that high levels of anxiety can be maladaptive and negatively impact psychological functioning. Elevated anxiety is the primary feature of anxiety disorders in childhood but it is also associated with depression, oppositional behavior, poor peer relations, and poor academic performance. Teaching children strategies for managing anxiety could prevent maladaptive outcomes (Suinn, 1990). Stress Inoculation Training (SIT; Deffenbacher, 1988; Huebner, 1988; Meichenbaum, 1985; Meichenbaum & Deffenbacher, 1988) has been used as an anxiety management strategy to teach youth cognitive-behavioral coping skills to control anxiety reactions.

Description of Intervention:
The authors utilized Meichenbaum's (1985) stress inoculation training model (Meichenbaum & Deffenbacher, 1988) to create an 8-session preventive intervention for adolescents with elevated self-reported anxiety. An assertiveness training component was added to the program. Participants learned about the process of anxiety arousal and both instrumental and cognitive-palliative (emotion-regulation) coping skills (Meichenbaum & Deffenbacher, 1988) such as progressive relaxation, cue-controlled relaxation, cognitive restructuring. The program was administered by two trainers (one Ph.D. level counseling student, and one master's level professional counselor). The control group was also administered an 8-session program that was held once a week. This program consisted of "guidance" classes held in a traditional classroom setting. The format was similar to the intervention in that the first sessions were used to establish trusting relationships with the adolescents.

Research Subjects:
The sample (N = 48) was entirely Caucasian and drawn from a rural, public high school (total population = 7,000) in a midde-class to lower middle-class community. Ninth grade students enrolled in four required sections of a class taught by the two trainers completed the State-Trait Anxiety Inventory Trait Anxiety Scale (STAI A-TRAIT; Spielberger, Gorsuch, & Lushene, 1970). Students with the highest scores on the STAI A-TRAIT were rank ordered and paired. The final sample consisted of 24 treatment (13 boys, 11 girls) and 24 control subjects (13 boys, 11 girls). All subjects remained in the study though they were informed of their right to refuse participation.

Research Design:
After students were rank ordered and paired, each pair of subjects was randomly assigned to the intervention or the control condition.

Outcomes:

MANCOVA was used to test for an overall group effect while controling for preintervention differences. Univariate ANCOVAs (Group x Level) were conducted on each of the dependent measures using the pre-assessment score as a covariate.

Participants in both the intervention and control groups were administered two measures as a manipulation check. Early in the program students were asked about their expectations for success in their program. Following the intervention they were asked about their attitude toward the program they received. Intervention and control participants had similar expectations and attitudes towards their respective programs. All participants also completed a knowledge acquisition

measure that assessed the degree to which they learned concepts presented in the intervention training sessions. Overall, participants in the SIT intervention scored significantly higher than control participants ($p<.001$) and female participants scored higher than male participants ($p<.01$). A three-way interaction (treatment condition x gender x time) indicated that female participants in the SIT intervention scored significantly higher than male participants on this measures ($p<.05$).

Post-intervention & Follow-Up

Results indicated that intervention subjects reported significantly less anxiety on the STAI A-TRAIT ($p<.001$) and less stress ($p<.01$) on the Symptoms of Stress Inventory (SOSI; Leckie & Thompson, 1979) at post-test and follow-up. There were no group differences on the student's quarterly grade point average (GPA). Scores for SIT participant's on the knowledge acquisition measure were correlated with these three adjustment measures but no significant relationships were found.

Strengths and Limitations:

Kiselica, Baker, Thomas, and Reedy (1994) developed a stress inoculation training program for adolescents that was successful in reducing self-reported anxiety and stress by training participants in cognitive coping skills and providing assertiveness training. The design of the evaluation was good (i.e. random assignment to condition), but the short-term follow-up assessment (4 weeks after post-test) and the small sample size limit the generalizability of the findings. A unique aspect of this program was that the authors included measures of the participant's expectations and attitudes towards the intervention to confirm group equality. No other specific measures of program implementation were included and no independent replication has been done.

SUICIDE PREVENTION PROGRAM I (Klingman & Hochdorf, 1993)

Principal Investigator: Avigdor Klingman

Level of Intervention: Universal

Target Population: Junior High (8th grade) students

References: Klingman & Hochdorf, 1993

Theory (Risk & Protective Factors Targeted): The program targets hopelessness, loneliness, and depression as precursors to self-harm and suicide. Through a cognitive-behavioral approach, the program seeks to teach students how to think about stress and distress, to provide them with coping and problem-solving skills, and to help them identify and utilize a peer support network.

Description of Intervention: The program is implemented in groups (of about 18 students each), over the course of 12 weekly sessions of about 50 minutes each. The intervention includes seven distinct topical units which collectively follow Meichenbaum's (1977, 1985) three-phase intervention model (i.e. an educational-conceptual phase, an exercise-training phase, and an implementation-application phase).

In the educational-conceptual phase, a warm, collaborative and socratic environment is created in which to discuss the universality of stress/distress and educate students on the role cognitions and emotions play in fostering and maintaining distress. The units utilize warm-up exercises, illustrated handouts, and optional home assignments of free-writing and story completion.

The skill acquisition phase focuses on developing a repertoire of adaptive coping skills and identifying signs of distress and suicide risk among peers. The units utilize vignettes/role plays, group discussion, modeling, newspaper clips, and handouts listing suicide risk warning signs and steps to be taken.

The application phase occurs concurrent to the skill acquisition phase and seeks to provide opportunities for rehearsing and practicing new skills in contexts beyond the classroom. With a focus on modifying cognitive events, irrational thinking, internal dialogue, and automatic thoughts, activities consist of graded home and out-of-class assignments coupled with in-class feedback and discussion.

Research Subjects: 237 primarily low to middle class 8th grade students from a single junior high school in Israel. 47% of the subjects were boys.

Research Design: Students in each 8th grade class were randomly assigned to two groups; the groups were then randomly assigned to experimental or wait-list control conditions. Pretest measurements were taken one week prior to the start of the intervention. Post-test measurements were taken two weeks after completion of the program. The primary emotional measures included the Isreali Index of Potential Suicide (IIPS), adapted from the original Index of Potential Suicide (Zung, 1974), the UCLA Loneliness Scale (Russell, Peplau and Cutrona, 1980), and the Index of Empathy for Children and Adolescents (Bryant, 1982). Reliabilities for the IIPS were .81 for the whole scale and .71 to .86 for subscales.

Outcomes: ANCOVA showed a significant main effect for males only on the IIPS and Index of Empathy. There was no significant main effect for the Loneliness Scale.

Strengths & Limitations: As a universal preventive intervention targeting internalizing behavior problems, the program discussed by Klingman and Hochdorf is unusual. The results, though significant only for boys, did not show the iatrogenic effects thought likely according to some of the suicide prevention literature (Shaffer, et al, 1988). The authors

posit that the stronger effect for boys may be a function of the didactic and cognitive (as opposed to emotion-oriented and group-centered) nature of the program – which may be more appealing to 8th grade boys. The study did not examine distal effects, and there has been no replication of the program. Without replication, it is unclear what impact the cultural aspects of the program may have on the generalizability of the results.

SUICIDE PREVENTION PROGRAM II (Orbach & Bar-Joseph, 1993)

Principal Investigator: Israel Orbach

Level of Intervention: Universal

Target Population: High School (11th grade) students

References: Orbach & Bar-Joseph, 1993

Theory (Risk & Protective Factors Targeted): The program is based on the underlying notion that a gradual controlled confrontation with inner experiences and life difficulties related to suicidal behavior accompanied by an emphasis on coping strategies can immunize students against self-destructive behavior.

Description of Intervention: An elaboration of the model advocated by Ross (1987), the program consisted of seven weekly meetings of two hours each. These student workshops were aimed at eliciting introspective discussion about the students' own emotional experiences. The guided discussions focused on critical issues for adolescents, emphasizing coping and learning alternative ways to solve problems, and encouraging self-help and peer-help.

The meetings were semi-structured and centered on three phases of discussion: description of students' actual experiences; working through the experience being discussed; and coping with the external problem and/or the inner experience of emotions. The discussion leaders (trained school counselors and psychologists) were provided with guidelines for each meeting, including how to promote discussion and how to handle resistance, negativistic responses, and anxiety.

Research Subjects: 393 high school juniors from six different high schools in Israel participated. 5 of the participating schools represented a normal, middle-class population. The participating class from the sixth school was a special education class made up of students with conduct disorder, but of normal intelligence. 45% of the subjects were male.

Research Design: Students were randomly assigned to experimental (n=215) and control groups (n=178). Students completed pretest and post-test questionnaires relating to suicidal tendencies, hopelessness, ego identity, and coping ability. The primary measures used included the Israeli Index of Potential Suicide (Tzuriel & Bar-Joseph, 1989, Cronbach's alpha = .81), the Adolescent's Ego Identity Scale (Tzuriel, 1984, alpha = .85), Beck's Hopelessness Scale (Beck, Weissman, Lester & Trexler, 1974, alpha = .89), and the Self-Control Schedule (Rosenbaum, 1986, alphas ranged from .70 to .86).

Outcomes: Complete randomized block design ANOVAs were calculated for all six schools on the dependent variables. Group X time interactions were significant for suicidal tendencies, ego identity and coping. The interaction for hopelessness was not significant. Further group X time ANOVAs were conducted for each school individually. These showed significant interactions for 5 of the six schools (including the conduct disorder class) on the measure of suicidal tendencies, and 3 of 6 schools for the other three measures. In group X time X gender repeated ANOVAs, females in two of the schools showed a larger decrease on the measure of suicidal tendencies.

Strengths & Limitations: This program, like the other Israeli Suicide Prevention Program referenced in this report, is unusual in that it targets internalizing behavior problems through a universal intervention. Although the complete randomized block ANOVA showed significant interaction for the combined group, the stronger effects for girls (significant in 2 of the six schools on the suicide potential measure) may be due to the cathartic, introspective nature of the program. The study did not examine distal effects, and there has been no replication of the program. Without replication, it is unclear what impact the cultural aspects of the program may have on the generalizability of the results. Attrition was less than 10%.