

## An Evaluation of the Effects of “INSIGHTS” on the Behavior of Inner City Primary School Children

Sandee McClowry,<sup>1,4</sup> David L. Snow,<sup>2</sup>  
and Catherine S. Tamis-LeMonda<sup>3</sup>

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*A prevention trial was conducted to evaluate a temperament-based intervention (INSIGHTS into Children’s Temperament) as compared to a Read Aloud attention control condition in reducing behavior problems among inner city children. The participants were 148 inner-city first and second grade children, their parents, and their 46 teachers who were from six schools in a Northeastern city. Parents were interviewed on the Parent Daily Report at baseline and every two weeks until the completion of the intervention phase to assess the extent of child problem behaviors in the home. The parents also were interviewed at baseline with the Disruptive Module of the Diagnostic Interview for Children and completed the Brief Symptom Index to assess parental depression.*

*A repeated measures multivariate analysis of covariance with parental depression as a covariate was conducted to examine the children’s behavior over the course of the intervention. In order to test the impact of INSIGHTS for the overall sample and to determine whether the intervention was differentially effective for children diagnosed with a disruptive disorder versus those who did not receive a diagnosis, two and three-way interactions were examined and found to be significant. The INSIGHTS intervention was more effective than Read Aloud in reducing children’s problem behaviors at home across both the diagnosed and non-diagnosed*

<sup>1</sup>Steinhardt School of Education, Applied Psychology and Teaching and Learning, New York University.

<sup>2</sup>Psychiatry, Child Study Center, and Epidemiology & Public Health, School of Medicine, The Consultation Center and Division of Prevention and Community Research, Yale University.

<sup>3</sup>Steinhardt School of Education, Applied Psychology, NSF Center for Research on Culture, Development and Education, New York University.

<sup>4</sup>Address correspondence to Sandee McClowry, Steinhardt School of Education, Applied Psychology, 424E New York University, 246 Greene Street, New York, New York 10003; e-mail: sm6@nyu.edu.

groups, but demonstrated a significantly greater efficacy among children who were at diagnostic levels compared to those who were within normal levels.

*Editors' Strategic Implications: The authors describe the promising practice of instructing parents and teachers on how to adapt their behavior management strategies to fit each child's temperament. Replication with a longitudinal follow-up will be necessary to determine whether program effects persist.*

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**KEY WORDS:** prevention; inner city; behavior problems; temperament .

Minority children growing up today in America's inner cities are a generation at risk for the development of behavior disorders (Institute of Medicine [IOM], 1994). The stressors of inner city life, which are multiplicative and interactive, can render children vulnerable to mental health problems (Wilson, 1996). Although inner city children often encounter a number of risk factors and a great deal of adversity, many demonstrate resiliency and exhibit positive developmental outcomes (Kaplan, 1999). Effective parenting and the involvement of other positive adult figures, such as teachers, can serve as protective processes and enhance the resiliency of children (Kesner, 2000; Maccoby & Martin, 1983; Masten, 1999; Werner & Smith, 1992). Conversely, maternal psychological distress due to chronic poverty and other stressors associated with living in the inner city, can negatively impact on parental competency (Downey & Coyne, 1990; Myers & Taylor, 1998).

Disruptive behavior among school-age children is a concern for parents and teachers alike. When adults intervene with warm and effective discipline, minor behavior problems exhibited in early childhood are less likely to escalate to more severe levels and thereby lead to serious mental health problems (Bates & Kohnstamm, 1986; Maziade et al., 1990). Many child behavioral problems during the school-age years fall below the threshold of traditional diagnostic categories. Without early interventions, however, such minor behavior problems might compromise child adjustment and can lead to progressively higher levels of disturbances (Patterson, Reid, & Dishion, 1992). Young children with noncompliant behavior are at heightened risk of developing deficits in their academic skills that can lead to peer and parental rejection and low self-esteem. As these children get older, they are more likely to become involved with a deviant peer group, experience depression, engage in high-risk behavior, and/or develop antisocial attitudes. Delinquency, substance abuse, and poor success in work and interpersonal relationships may follow, leading to career antisocial behavior. The vast majority of adults with serious antisocial behavior exhibited a conduct disorder during the school-age years (Patterson, DeBaryshe, & Ramsey, 1989).

Enhancing the effectiveness of parents and other significant adult figures can reduce the likelihood that minor child behavior problems will progress to more serious disorders. Skilled parents and teachers convey warmth and provide appropriate discipline as they socialize children. Parenting programs aimed

at enhancing specific child management skills have a long history of being successful in resolving child behavior problems (Briesmeister & Schaefer, 1998). Fewer empirical studies, however, have examined programs that enhance the effectiveness of teachers in managing behavior problems in the classroom. Yet, the interpersonal relationships that teachers have with their students critically influence children's adjustment, an effect that is particularly salient for disadvantaged children (DuBois, Felner, Meares, & Krier, 1994; Lynch & Cicchetti, 1992; Pianta, 1999).

Effective parenting and the caregiving that teachers provide can be conceptualized from a goodness of fit model. Many children's behavior problems, according to temperament theory, could be averted if the environment provides goodness of fit, which is achieved when the demands, expectations, and opportunities are consonant with the child's temperament (Chess & Thomas, 1984). School-age temperament is defined as the consistent behavioral style that a child demonstrates across a variety of settings and circumstances, particularly those that involve stress or change (McClowry, 2003). It also is a lens through which individuals view their world that, in turn, influences their perceptions and reactions to life experiences (Rothbart & Bates, 1998). In infancy, biological factors strongly contribute toward the behavioral expression of temperament. But as children develop, their subsequent behavior and adjustment are also affected by their transactions with the environment. A basic premise of temperament-based intervention is that strategies can be taught to enhance goodness of fit by replacing negative patterns of interactions with more responsive and skilled child management strategies (McClowry, 2003).

Although a burgeoning literature exists that describes the relationship between temperament, caregiving, and child behavior, few studies have been conducted to test the efficacy of temperament-based intervention. Likewise, despite the staggering numbers of disadvantaged minority school-age children at risk for the development of behavioral problems, few empirically-based, comprehensive prevention programs are directed at enhancing the effectiveness of parents and teachers of children from inner city communities (Brestan & Eyberg, 1998). The purpose of this paper is to assess whether children who participated in INSIGHTS into Children's Temperament exhibited significantly greater reductions in child behavior problems at home over the course of the intervention as reported by their parents compared to children in a Read Aloud attention control group. The analysis also explored whether the INSIGHTS intervention as compared to Read Aloud was differentially effective for children diagnosed with behavior disorders versus children not diagnosed with these disorders.

### **Description of the INSIGHTS into Children's Temperament Intervention**

INSIGHTS is a comprehensive, temperament-based intervention for inner city primary school-age children and their parents and teachers. The program

provides parents and teachers with a framework for appreciating and supporting the individual differences of children, and teaches them child management strategies directed at reducing behavior problems. Participating children and their classmates learn related content intended to enhance their empathy skills, facilitate their appreciation of the uniqueness of family members, friends, and teachers, and employ problem-solving techniques when they encounter daily dilemmas.

The theoretical and empirical underpinnings for the intervention are derived from an integration of four bodies of literature: temperament, parenting, student/teacher transactional relationships, and prevention science. To develop INSIGHTS as a culturally and developmentally appropriate intervention, a series of pilot studies and focus groups were conducted. Community stakeholders as well as cultural and content experts were involved in assessing the intervention, the research protocol, and the reliability and validity of the measurement strategies (McClowry & Galehouse, 2002). Visual materials including puppets and video-taped vignettes, and a detailed procedure manual, also were developed and assessed in the same manner (McClowry, 2002a, b).

The two-hour, ten-session curriculum for the parent and teacher programs include didactic content, videotaped vignettes, role-playing, discussion, and assignments presented in three parts. The first, "Learning about Child Temperament," teaches the 3 *R*'s: Recognize, Reframe, and Respond. Parents and teachers are taught to recognize the unique qualities a child exhibits as an expression of his/her temperament. They also are assisted in reframing their perceptions of a child by understanding that no temperament is ideal in every situation. In addition, they learn how various responses influence their interactions with a child and subsequent behavior.

In part two, "Gaining Compliance," temperament-based management strategies are implemented to improve the child's behavior. For example, time-out for a child whose temperament is low in task persistence might inadvertently assist him or her in avoiding an activity that requires sustained attention. Instead a temperament-based parent or teacher strategy would assist the child in dividing an assignment in more manageable segments coupled with recognition for each portion completed.

Part three focuses on the developmental needs of school-age children while integrating the material that the participants learned in the earlier sessions. For example, parents and teachers are taught how children whose temperament is high in approach require more monitoring to assure that their eagerness to engage in new experiences does not jeopardize their safety. A session-by-session description of the parent and teacher program is presented in Appendix A. Temperament-based parenting strategies are explained in detail in McClowry (2003).

The children's version of INSIGHTS is a weekly, one-hour intervention conducted in the classrooms of the participating teachers. Puppets and other drama techniques are used to teach the children that, based on temperament, various

situations are easy for some individuals while challenging for others. The puppets also are engaged with the children to enhance their ability to problem-solve daily dilemmas.

## METHOD

### Participants and Settings

The participants were 148 inner city children, their parents and teachers from six inner city schools in a Northeastern city. The children were 5 to 9 years old ( $M = 6.6$ ,  $SD = .84$ ). Fifty-five percent of the children were boys. The race/ethnicity of the children included 132 Black (89%) and 13 Hispanic, non-Black (9%), and 3 children (2%) who were racially mixed. Eighty-nine (60%) of the children lived in single-parent homes, 52 (35%) lived in a two-parent home, 7 (5%) declined to report their family configuration. The School District reports indicated that approximately 86% of the children qualified for free lunch programs. The children were students in regular education classrooms.

The composition of the children's families was diverse and reflective of the community. The primary family adult informant was the primary caregiver of the child who, for the sake of simplicity, is referred to as the parent in this report. The primary parental caregivers included 114 mothers (77%), 7 fathers (5%), 15 grandmothers (10%), 2 (1%) aunts, 5 (3%) other, and 5 (3%) declined to report their relationship to the child. The average age of the parents was 37 ( $SD = 10.44$ ; age range: 21–70 years). Ninety-five percent of the parents were female and five percent were male. The race/ethnicity of the parents included 135 Black and 13 Hispanic, non-Black. Education varied substantially among the caregivers: 46 (31.1%) had less than a high school education, 56 (37.8%) had a high school diploma or graduate equivalency degree, 33 (22.3%) had at least some college credits, 10 (6.8%) were college graduates, and 3 (2%) had a graduate degree. Fifty-seven percent of the parents were employed outside the home. The participating parents and the children spoke English as their primary language in their home.

The teacher participants included 46 first and second grade teachers (43 female, 3 male). The majority of the teachers were also minorities: 38 Black, 2 Hispanic, 1 Asian, and 5 White.

Participants were drawn from six schools in the same inner-city school district. Originally, five schools with students with comparable sociodemographic characteristics were randomly assigned to either INSIGHTS (3 schools) or the Read Aloud (2 schools) program. During the course of the study, one of the INSIGHTS schools had a change of principal who declined to have the program at her school. The school was replaced as a site by another school from the district of comparable size and demographic characteristics.

## Instrumentation

Disruptive disorders were assessed at pretest on the Disruptive Disorder module of the computerized version of the Diagnostic Interview Schedule for Children (DISC-IV) (Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000). The module assesses three disorders: attention deficit hyperactivity, oppositional, and conduct. Most of the questions on the DISC are answered “yes” or “no.” Additional questions are posed when there is a positive response to a probe. Due to the young age of the children, only the parent version was used. The reliabilities of the three disorders in a community sample have produced kappas of .60, .68, and .56 respectively (Schwab-Stone et al., 1996). The module takes approximately 20 min to administer.

Child behavior problems were reported on the Parent Daily Report (PDR) (Chamberlain & Reid, 1987) that consists of 31 items of child negative and aggressive behaviors. These items are listed in Appendix B. In this study, parents were interviewed and asked to indicate whether or not each of the problems was exhibited by their child during the previous week. Test-retest reliability of the PDR has been reported by its developers as .60 to .82 (Chamberlain & Reid, 1987). In the current study, the reliability based on the Kuder-Richardson was .87.

Maternal depression was measured using the 6-item depression subscale of the Brief Symptom Index (BSI), which has a reported alpha of .85 (Derogatis, 1993). In this study, the alpha for the depression subscale was .76. The entire index of 53 items takes 5 minutes to complete.

## Procedures

Prior to beginning this study, several months were spent initiating a partnership with administrators, principals, teachers, and parents from an inner city school district. Multiple meetings with each group were held to discuss the nature of the study and its implementation within the school district. Stakeholders were advised from the beginning that participating schools would be randomly assigned to either the INSIGHTS or the Read-Aloud attention-control program. After the administrators of the district and five principals enthusiastically agreed to support the study, randomization occurred with 3 schools selected to receive the INSIGHTS intervention and 2 schools to receive the Read Aloud program. Team members then meet with representative teachers and parents at each school. Only after the teachers and parents extended the invitation to bring the program to their schools did participant recruitment begin. In addition, various stakeholders from the school district and community leaders became an Advisory Committee that continued to monitor and expand the community/university partnership throughout the project.

Within each school, classroom teachers were the first to be recruited. A 30-minute information session inviting the first and second grade teachers to

participate was held at each of the participating schools. Once a classroom teacher consented to participate, a variety of strategies were implemented to recruit parents: letters, posters, telephone calls, and brief presentations at parent meetings. After a parent consented to participate, his/her child was asked to give assent.

At baseline, a multi-informant, multi-method assessment was conducted that included a number of interviews including the DISC and the PDR, questionnaires including the BSI, and observational techniques used to identify the children's temperament, behavior, self-perceptions, and transactions with their parents and teachers. Parents received \$30 for baseline data collection activities, teachers were paid \$20, and the participating children received a small gift or book. Parents and teachers in the INSIGHTS program received up to \$150 if they attended all of the workshop sessions.

The intervention stage lasted ten weeks. In the schools hosting INSIGHTS, the program was conducted by facilitators and puppet therapists, who, prior to beginning their role, took a graduate level course that covered content areas related to the program and received an additional 30 hours of training. Facilitators then conducted in parallel the parent and teacher programs using a manual that detailed the content for each of the intervention sessions. During the same ten weeks, a facilitator and a puppet therapist implemented the child intervention with the participating children and their classmates. To maintain program fidelity, facilitators met weekly with the principal investigator who reviewed videotapes of their parent and teacher sessions and discussed issues related to the conduct of the children's program.

In the schools that were assigned to the attention control condition, a Read Aloud program was offered to the participating children. Teachers from the schools were paid a small stipend to conduct the ten-week after-school program. The teachers were provided with books and basic supplies such as drawing pads, markers, and crayons. They read a different book to the children each week and asked them to talk and draw pictures about the story and its characters.

Every two weeks during the intervention stage, the parent informants in INSIGHTS and in the Read Aloud condition were interviewed by telephone using the PDR. The questionnaires, interviews, and observational techniques administered at baseline were repeated after the intervention stage and the same incentives were given again to the parents, teachers, and the children. This paper focuses on the intervention effects related to child behavior problems occurring in the home as reported by the mothers on the PDR.

### **Participation Rates**

Participating parents in the INSIGHTS program attended an average of 8 sessions ( $SD = 2.68$ ) for an 83% attendance rate. The teachers attended an average of 7.5 sessions ( $SD = 2.32$ ) for a 75% attendance rate. Although parents and teachers attended the majority of the sessions within their groups, when

participation did not occur, the facilitators made every effort to meet with the parent or teacher individually prior to the subsequent session to go over the missed content. Attendance for the children in the INSIGHTS classrooms was 88% and was 80% for the after-school Read-Aloud program. No arrangements were made for missed sessions for either of the children's programs.

### Data Preparation and Preliminary Analyses

Prior to running the analyses, several steps were conducted to prepare the data. Since the PDR scales had a skew greater than 1.00, they were transformed with a square root transformation prior to analysis (Tabachnick & Fidell, 1996). Then missing data was replaced using the SPSS 11.0.1 implementation of the EM algorithm (expectation-maximization; SPSS, Inc., 2001), a statistical technique for imputing missing data that uses an iterative estimation procedure to impute missing values using maximum-likelihood estimation (Dempster, Laird, & Rubin, 1977; Little & Rubin, 1987). Missing data rates at baseline for the 148 participants were within acceptable limits for use of this method of imputation (from .7% to 20.0% with the exception of the PDR at time 5 which was 23%). The EM algorithm was implemented using key demographic variables and all other study variables to maximize the likelihood that all available data was used to estimate missing values. The resulting data set was then analyzed using complete data methods for the sample of 148 participants.

For purposes of this study, preliminary analyses were conducted to determine whether there were any differences at baseline between the participants in INSIGHTS and in the Read Aloud group. The groups were comparable on all major variables. Based on  $\chi^2$  analyses, the proportion of girls and boys, educational level and marital status of the parents, and race/ethnicity of the children and their parents were not significantly different between the groups. *T*-tests showed that there were no significant differences at baseline in the age of the children or their parents, or in parental depression or child PDR scores.

## RESULTS

A multivariate repeated measures analysis of covariance (Tabachnick & Fidell, 1996) was conducted to examine whether children who participated in INSIGHTS demonstrated a greater reduction in child behavior problems at home over the course of the intervention compared to children who participated in the Read Aloud attention control group. The repeated measures were the parental reports of child problem behavior on the PDR over the five time periods between baseline and posttest. Parental depression was entered as a covariate to reduce respondent bias, since depressed parents are known to over report childhood



**Table I.** Means and SDs of Child Behavior Problems at Home (PDR) over Time and Effect Sizes

	Baseline	Time 2	Time 3	Time 4	Time 5	Effect Size
INSIGHTS <i>n</i> = 91	8.75 (5.9)	6.26 (4.9)	5.61 (5.2)	4.76 (4.5)	4.48 (4.8)	.37
Read Aloud <i>n</i> = 57	7.49 (5.2)	6.95 (4.6)	6.40 (4.2)	6.09 (5.1)	6.02 (4.2)	.15

behavior problems (Fergusson, Lynskey, & Horwood, 1993). Two independent variables were entered in the analysis: condition (INSIGHTS versus Read Aloud) and diagnostic group (diagnosis of one or more disruptive behavior disorders on the disruptive module of the DISC versus no diagnosis).

The results of the analysis were first examined to determine whether the assumption of sphericity was met. The Mauchley’s test of sphericity was significant,  $\chi^2(9, N = 148) = 81.85, p < .001$ , indicating that this assumption was not met. Consequently, adjusted values were utilized based on the Huynh-Feldt method of correction for repeated measures. The analysis revealed a significant time effect,  $F(3.28, 143) = 7.61, p < .001$ . The number of child problem behaviors at home declined consistently over the five time periods. Importantly, a significant time by condition interaction effect was observed,  $F(3.28, 143) = 5.72, p < .001$ . Children participating in INSIGHTS showed a greater decline in reported problem behaviors over time than children in the Read Aloud program. The problem behavior scores over the five time periods for the two conditions are shown in Table I. The overall effect for INSIGHTS was  $d = .37$ , while the effect size for the Read Aloud program was  $d = .15$ .

In order to test the question of differential effectiveness based on whether or not the child met diagnostic criteria, the disruptive module of the DISC and the PDR were examined within the multivariate repeated measures analysis of covariance. Children were classified as having a diagnosis if they reached criteria on one or more of the following DISC disruptive behavior scales: attention deficit hyperactivity disorder, oppositional disorder, and conduct disorder. Forty-two (or 28%) of the 148 children in the sample were at a diagnostic level on at least one or more of these scales, while 106 children did not meet diagnostic criteria. It should be noted that the most prevalent diagnosis was ADHD. Twenty-four (or 57%) of the 42 children with one or more diagnoses had ADHD only, and an additional 9 (or 21.5%) had ADHD in combination with one or both of the other diagnoses. A summary of the diagnostic profile of the sample by condition is shown in Table II. For the overall sample, the proportion of children with a positive diagnosis was not significantly different between the INSIGHTS and Read Aloud programs.

The three-way interaction effect of time  $\times$  condition  $\times$  diagnostic group was examined and also found to be significant,  $F(3.28, 143) = 2.67, p = .04$ . This pattern of change over time indicated that INSIGHTS, while effective in reducing behavior problems for all children whether in the diagnostic or

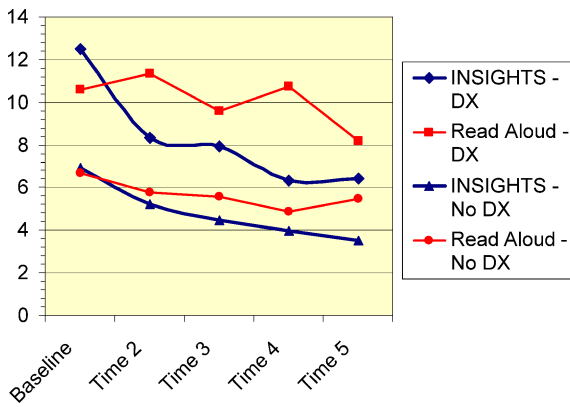
**Table II.** Number and Percentage of Children Diagnosed and Not Diagnosed on the DISC by Condition

	INSIGHTS		Read Aloud		Total	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
One diagnosis	23	25.3	9	15.8	32	21.6
Two diagnoses	6	6.6	2	3.5	8	5.4
Three diagnoses	1	1.1	1	1.8	2	1.4
Total with a diagnosis	30	33.0	12	21.1	42	28.4
Total with no diagnosis	61	67.0	45	78.9	106	71.6
Grand Total	91	100.0	57	100.0	148	100.0

non-diagnostic group, had an even greater effect with the diagnostic group. The three-way interaction effect is illustrated in Fig. 1, and Table III lists the problem behavior scores and effect sizes for the four treatment-diagnostic groups across the five time periods. The effect sizes for the children in INSIGHTS were  $d = .42$  for those who had a diagnosis and  $d = .39$  for those who did not. The effect sizes for the children in the Read Aloud program with and without a diagnosis were  $d = .19$  and  $.15$ , respectively.

### DISCUSSION

This study provides further evidence that school-based prevention programs can be effective in reducing child behavior problems. In addition, differential effects were found depending on whether or not the child was diagnosed with a disruptive behavior disorder. While greater reductions in problem behavior were



**Fig. 1.** Child behavior problems over time by diagnostic and treatment groups

**Table III.** Means and SDs of Child Behavior Problems Over Time (PDR) by Diagnostic Group and Effect Sizes.

	Baseline	Time 2	Time 3	Time 4	Time 5	Effect Size
INSIGHTS—diagnosis <i>n</i> = 30	12.50 (6.1)	8.34 (5.8)	7.94 (6.8)	6.34 (6.2)	6.41 (6.9)	.42
Read aloud—diagnosis <i>n</i> = 12	10.58 (6.8)	11.33 (5.3)	9.58 (5.4)	10.75 (7.1)	8.16 (5.6)	.19
INSIGHTS—no diagnosis <i>n</i> = 61	6.90 (4.8)	5.24 (4.0)	4.46 (3.8)	3.98 (3.2)	3.53 (3.0)	.39
Read aloud—no diagnosis <i>n</i> = 45	6.67 (4.4)	5.79 (3.6)	5.55 (3.4)	4.85 (3.7)	5.45 (3.7)	.15

found for the INSIGHTS group compared to control children, this effect was even greater for those children with diagnoses of disruptive behavior disorders. Based on this finding, the study provides additional support that preventive interventions can promote positive change in high-risk subgroups.

Regarding the magnitude of change observed, INSIGHTS demonstrated an overall effect size of .37. This effect size compares favorably to those reported in a meta-analysis of school-based programs aimed at reducing aggressive behavior (Wilson, Lipsey, & Derzon, 2003). According to Wilson et al. (2003) interventions that directly focused on children’s behavior typically had an effect size that ranged from .20 to .33.

The age of the participants, according to Wilson et al. (2003) also appears to have a differential effect. Interventions with pre-school and kindergarten children in comparison with adolescents had effect sizes of .33 and .37 respectively, but only .17 for elementary and middle school students. The overall effect size of .39 reported for the elementary children in this study without a diagnosed disruptive behavior disorder is considerably higher than the average effect size of .13 to .26 that Wilson et al. (2003) reported for selective intervention samples.

The effect size of children in INSIGHTS with a disruptive disorder, however, was .42 which is similar to the .41 Wilson et al. (2003) cite as the average effect size for programs focusing on indicated samples. One of the possible reasons, in this study as well as others, for the differences in effect sizes of the intervention for indicated versus selective populations may be related to measurement (Wilson, Gottfredson, & Najaka, 2001). Indicated samples begin with higher levels of behavioral problems and, therefore, have a greater degree of potential to demonstrate positive changes. It is also possible that particular program elements in preventive interventions such as INSIGHTS have a greater influence of the behavior of high-risk children and their parents. Further research is needed to tease out whether particular components of interventions lead to these differential effects.

### Strengths and Limitations

The results of the analyses presented in this paper should be examined in light of the strengths and limitations of the overall study. One of the strengths of the research protocol was that the PDR was collected five times during the course of the intervention. Eddy, Dishion, and Stoolmiller (1998) recommend at least 3 data collection points so that behavioral trends of the participants can be plotted over time. The repeated use of the PDR was advantageous for other reasons; the telephone calls served as a reminder about the ongoing activities of the study and the manner of data collection entailed minimal cost.

Another strength of this study is the comparison of the INSIGHTS intervention with a Read Aloud program that served as an attention control condition. A limitation of a number of preventive intervention studies is that they lack a control group on which to compare results; even fewer prevention studies have an attention control group (Serketich & Dumas, 1996). An added benefit to having the Read-Aloud program was that it reduced the community's legitimate concern about having a control group that offered no services to disadvantaged children.

The effect size of the Read Aloud program, although small by intervention standards, provided a small benefit to the children who reported that they enjoyed the opportunity to spend time with a teacher after school simply reading books. Other intervention programs such as Barrera et al. (2002) have incorporated an intensive reading program as one of the components of their intervention. A methodological limitation of this study was that the Read Aloud program consisted of 10 hours of intervention compared to the combined 50 hours of contact derived from the parent, teacher, and child programs in INSIGHTS. Moreover, the Read Aloud program did not include a comparable parental component. An attention control condition for the parents would have engaged them in the Read Aloud program by teaching strategies to enhance their children's reading enjoyment. Future research is needed to test the impact of having both child and parent attention control conditions.

Another limitation of the present analysis is that only the immediate effects as reported by the parents were examined. Maintaining beneficial changes over an extended period of time following an intervention is critical for establishing the efficacy of an intervention (Serketich & Dumas, 1996; Tucker & Gross, 1997). Equally important is examining intervention effectiveness based on other informants or methodological approaches. Other analyses, currently underway, will explore both immediate and long-term effects of the intervention based on observational data and teacher reports. Evaluation of interventions such as INSIGHTS is also needed at the classroom level. In the future, larger studies involving more schools and classrooms will be required to ascertain whether INSIGHTS has an impact at the level of the classroom or school environment.

### Implications for Future Research and Social Policy

The results presented in this paper have other implications for future research and for social policy as it affects inner city schools. Over the last several years there have been a burgeoning number of research studies that have examined temperament constructs and their relationship to developmental outcomes (Bates, 1989; McClowry, 2003). Publications focusing on clinical applications also have increased. The number of empirical reports of temperament-based interventions, however, has been scarce. This study lends support that the tenets set forth in temperament theory can be used as a foundation for intervention aimed at reducing child behavior problems.

INSIGHTS was originally designed as a selective preventive intervention for children at-risk for behavior disorders due to adverse sociodemographic factors. Twenty-eight percent of the children in the study screened positive for a disruptive disorder, thus, meeting the criteria as an indicated sub-population. These same children also received the most benefit from the intervention. In fact, at post-test, their behavior did not differ from the baseline scores of the children in INSIGHTS and the Read Aloud program who did not have a diagnosis. This finding is consistent with other studies that found that children who had disruptive disorders exhibited behavior after intervention that was equivalent to their non-disordered peers (Serketich & Dumas, 1996). What is unknown is whether continued intervention with such high-risk children might yield additional benefits. One possibility for future research is to screen preschool or kindergarten children for disruptive disorders and to provide them with a longer and more intensive version of INSIGHTS to assess whether this would lead to further reduction in their behavior problems.

A striking finding of this study has important implication for social policy. Even though the children in this study were students in regular 1st and 2nd grade classrooms, 28% were identified as having a disruptive disorder. Although the sample in this study was voluntary and, thus, may not be representative of the inner city population, it still provides evidence that the mental health needs of inner city primary school children are substantial. Teachers report discipline problems in public schools as their major concern (Elam & Gallup, 1989). The problem is particularly apparent in inner city classrooms where behavior problems often disrupt academic activities (Carta, 1991). While the majority of school-age children who receive mental health services first receive them in the education sector (Farmer, Burns, Phillips, Angold, & Costello, 2003), inner-city schools like the ones that participated in this study, often lack adequate financial and personnel resources to provide the high level of special and preventive services needed by their students.

The consequences of children not receiving early services for disruptive disorders are serious. Aggressive behavior without intervention stabilizes at about 8 years of age, which for most children is around third grade (Huesmann, Eron, Lefkowitz, & Walder, 1984; Wilson et al., 2003). School-based interventions, like

INSIGHTS, can reduce aggressive and other problem behaviors among at-risk and high-risk children. Unfortunately, the need for such programs in the inner city schools is considerable, while the funding sources are scarce.

## APPENDIX A

### INSIGHTS: CURRICULUM OUTLINE FOR PARENTS AND TEACHERS

#### **Part 1: The 3 R's of Child Management: Recognize, Reframe, and Respond**

##### *Session One: Recognizing Child Temperament*

The program begins with a welcome from the facilitator and the opportunity for the participants to introduce themselves and explain why they have chosen to take part in the program. The facilitator then presents an overview of the program and discusses the need for consistent attendance and the importance of keeping session discussions confidential in order to maintain trust among the participants. The content of the session includes a discussion of the major concepts of temperament: its biological basis, resistance to modification, manifestation in situations involving stress and change, and relationship to goodness of fit. Vignettes demonstrating the four dimensions of school-age temperament are shown. Participants are asked to observe the children during the week for expressions of temperament.

##### *Session Two: Reframing Child Temperament*

The participants are given a computer generated temperament profile of the children that is based on the information that they provided at baseline. They then discuss how the temperament profile does or does not match their intuitive impressions. Strengths and concerns regarding particular child temperaments are discussed. For example, a child who is high in approach is eager to meet new people and try new activities. His/her parents and teachers, however, might be concerned about the safety of such a child. The participants are asked to observe the children's behavior and their own response to a situation that occurs during the week.

##### *Session Three: Parent and Teacher Responses*

Vignettes in this session demonstrate how parent and teacher responses lead to different adult/child interactions. The participants learn to identify their responses

as optimal, adequate, or counter-productive. The importance of the manner in which messages are spoken or delivered is also discussed.

## **Part 2: Gaining Compliance**

### *Session Four: Gaining Control*

The session focuses on how parents and teachers can gain compliance through effective child management techniques. Individual contracts for dealing with identified behavior problems are designed. Homework includes implementing the contract and reporting results in subsequent sessions.

### *Session Five: Giving Recognition*

The importance of recognition is stressed in this session. Examples of reinforcements are discussed, demonstrated in the vignettes, and role-played in modeling exercises.

### *Session Six: Disciplining School-Age Children*

General principles of discipline are discussed in this session. Vignettes display some of the common behavior problems that school-age children often exhibit. Guidelines for using time-out are presented. Strategies for dealing with children who are high or low on the temperament dimensions are emphasized. The parents and teachers develop a discipline plan for isolated incidents which they are encouraged to implement consistently.

### *Session Seven: Parents and Teachers Are People Too*

Gaining compliance is still emphasized in this session, but adult needs are also discussed. Strategies to implement time-out for participants are explored.

## **Part 3: Giving Control—Sessions Eight Through Ten**

### *Session Eight: Fostering Independence*

The developmental need of school-age children for independence is explored in this session. Vignettes demonstrate age-appropriate activities and child management strategies to foster responsibility and positive life-style habits.

*Session Nine: Reviewing the Three R's*

Content from session one through three is reviewed. The participants are engaged in identifying the 3R's in vignettes depicting more complex disciplinary situations.

*Session Ten: Putting it All Together*

The content of sessions four through seven is reinforced. Vignettes demonstrating more complex behavioral problems are shown. Parents and teachers are given the opportunity to model their responses. Completion certificates are given to the participants.

## APPENDIX B

### Parent Daily Report Items (Chamberlain & Reid, 1987)

Aggressiveness	Lying
Arguing	Negativism
Bedwetting	Pants wetting
Competitiveness	Pouting
Complaining	Running around
Crying	Running away (wandering)
Defiance	Sadness/unhappiness
Destructiveness	Soiling
Fearfulness (unreasonable)	Stealing
Fighting with sibs (physical only)	Talking back to parent
Fire-setting	Teasing
Hitting others	Temper tantrums
Hyperactive	Whining
Irritableness	Yelling

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