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ABSTRACT

Twenty-eight preschoolers with behavioral difficulties (aggression, hyperactivity, impulsivity, and inattention) in a North Carolina Head Start program received an individualized intervention based on the family-centered system of care approach. Interventions included: (1) individual and classroom-based behavior management; (2) on site consultation and teacher training; (3) social skills training; (4) parent behavior management training; (5) family support; and (6) coordinated formal and informal community-based services. Parents and teachers reported decreases in disruptive behaviors, whereas parents of similar children not receiving the intervention reported that disruptive behaviors remained stable or worsened over time. Teachers reported increased confidence in working with children and families and increased knowledge and use of positive proactive behavior management strategies. Families also reported satisfaction with services received. However, no significant differences were noted in other family measures of parenting stress, parenting competence, or family support possibly due to the multiple family risk factors characteristic of the group. (Contains 21 references.) (DB)

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Introduction

While some behavioral problems in early childhood may pass with time, many children do not "outgrow" these difficulties. It is estimated that 10 to 20 percent of preschoolers have significant problems with disruptive or externalizing behaviors such as aggression, oppositionality, impulsivity, and hyperactivity (Heller, Baker, Henker, & Hinshawat, 1996; Larson, Pleass, & Miettinen, 1988; Leadbetter & Bishop, 1994; Shelton et al., 2000). These early behavioral patterns place these children at risk not only for serious emotional disturbance but also for delays in other developmental domains (Campbell, 1996). As a result, they are more likely to need expensive and restrictive special education and mental health services.

Unfortunately, traditional service delivery systems are not well-structured to meet the needs of these young children (Dunst, Trivette, & Deal, 1988; Knitzer, Steinberg, & Fleish, 1990; Stroul & Friedman, 1986). Many young children with significant behavior problems will not receive intensive professional assistance at an early age. When comprehensive, services are often not coordinated nor delivered in the community. In response, several alternative models of service delivery have been designed. Variously termed wraparound, family-centered care, trans-agency, or system of care, these approaches all suggest that proactive, strength-based services reflecting collaborative partnerships between families and professionals as well as coordinated community-based services are likely to be more effective than traditional services (Eber, 1997; Shelton & Stepanik, 1994; Stroul & Friedman, 1986; VanDenBerg & Grealish, 1996; Woodruff & McGonigel, 1988). This type of service delivery is centered around families rather than around service systems. The family's culture, priorities, and values drive the planning, implementation, and evaluation process. These services blend informal and formal supports and address several life domains in one coordinated and integrated plan.

In partnership with the local Head Start programs, Project Mastery was designed to examine the effectiveness of a system of care approach with Head Start children already at-risk for serious behavioral difficulties. This project provided community-based interventions based on a previous NIMH funded Kindergarten Project (Shelton et al., 2000) and Carolyn Webster-Stratton's Parents, Teachers and Children's Videotape Series (2001).

Interventions

Based on information obtained at baseline assessment and during interviews with families and teachers regarding goals and priorities for the child, an individualized intervention plan was developed. Interventions included: 1) individual and classroom-based behavior management, 2) onsite consultation and teacher training, 3) social skills training, 4) parent behavior management training, 5) family support, and 6) coordinated formal and informal community-based services. Specific interventions were chosen if they had empirical support with diverse groups and were able to be tailored to meet the goals of the family and teacher. All services were delivered in the community at the Head Start center.

Method

Participants

During the first year of Project Mastery, 41 preschoolers whose behavioral difficulties with aggression, hyperactivity, impulsivity, and/or inattention exceeded the 93rd percentile for age and gender participated in the project. Twenty-eight children were enrolled in the intervention group. The

remaining thirteen comprised an assessment control group where the child and family received a comprehensive behavioral/developmental evaluation, but no additional intervention over and above what was available in traditional, community settings.

All children were enrolled in Head Start in a semi-urban county of North Carolina. Children ranged in age from 3 to 4 years. All families reported significant economic difficulties as would be expected in order to qualify for Head Start. The majority of the children and families were African-American at 82% of those enrolled, with an additional 13% being Caucasian. The remaining 5% were comprised of other ethnicities. Males were over-represented in this sample at 67% of those enrolled.

Procedure

Project Mastery staff described the project to families at Head Start registration, and interested parents completed a brief behavior rating scale (DuPaul, Power, & Anastopoulos, 1998). They were also asked whether they would be interested in being contacted if their child qualified for the project. If parent ratings exceeded the 93rd percentile for gender and age in either inattention, hyperactivity-impulsivity, or oppositional defiant/aggressive behavior, the family was contacted about participating in the project. Close to 90% of the contacted families agreed to participate. At that point, full informed consent was obtained for the project (for Intervention and Assessment Only control groups) and the baseline measures were administered. Post-test measures were administered at the end of the school year the following June.

Outcome Measures

Area: Child Strengths and Needs

- Woodcock-Johnson Psychoeducational Battery-Revised (WJ-R; Woodcock & Johnson, 1989).
- Behavioral Assessment System for Children (BASC; Reynolds & Kamphaus, 1992).
- Student Observation System (SOC; Reynolds & Kamphaus, 1992).
- AD/HD Rating Scale (DuPaul, Power, & Anastopoulos, 1998)

Area: Parenting and Family Support

- Parenting Stress Index-Short Form (PSI; Abidin, 1995)
- Parenting Scale (PS; Arnold, O'Leary, Wolff, & Acker, 1993).
- Child Behavior Management Questionnaire (CBMQ; O'Dell, 1982).
- Family Support Scale (FSS; Dunst, Trivette, & Deal, 1994).

Area: Quality of Family/Professional Collaboration/Service Coordination

- Early Childhood Environment Rating Scale-Revised (ECERS-R; Harms, Clifford, & Cryer, 1998).
- Parent Satisfaction Survey (PSS; developed by the authors, unpublished).
- Teacher Strategies Questionnaire (TSQ; Webster-Stratton, 2001).

Preliminary Results

Families who participated in Project Mastery were characterized as having average parenting skills, higher parenting stress and lower family support relative to normative data. In addition, children had lower than average IQ, achievement scores, and adaptive behaviors (see Table 1).

There were no significant differences between the Intervention group and the Assessment Only group on any pre-treatment measures. Twenty-six out of the 28 Intervention families and all 13 Assessment Only families completed both pre- and post-data. Repeated measures analyses of variance were conducted in order to determine if the intervention program resulted in positive outcomes for the child, family, and service system across time.

With regard to parenting and family support measures, there were no significant group differences across time on measures of parenting stress (PSI), parenting practice (CBMQ, PSS) or levels of family support (FSS).

However, with regard to child outcomes, there were group differences across time on parents' report of disruptive behavior problems (see Table 2). Generally, disruptive behaviors decreased for children in the Intervention group while disruptive behaviors for children in the Assessment Only group remained stable or worsened over time. A similar pattern was noted on teacher report where the behaviors of children in the Intervention Group were rated as significantly improved relative to those in the Assessment Only group (see Table 2).

Additionally, teachers in the intervention classrooms reported feeling significantly more confident ($p \leq .005$), more likely to promote parent involvement ($p \leq .01$), more likely to offer advice on parenting skills ($p \leq .004$), and more likely to see the value in and use of positive methods of encouraging behavioral competence (e.g., class incentives, reward good behavior, comment on positive behavior, ($p \leq .004$-$.01$) at the end of the project relative to the start of the school year.

All caregivers in the Intervention Group were invited to participate in 10-week parent training sessions. Thirty-nine percent attended at least 50% of the sessions. This means that despite the fact that the sessions were offered free of charge, at the center, with free child care, transportation, and refreshments provided, 61% did not attend. In examining any pre-intervention differences between those who attended and those who did not, a few trends emerged. Although not significant due to the small numbers in each group, the children of the parents who attended parent training had lower IQ and achievement scores than those who did not ($p \leq .15$). Though the two groups (i.e., attending and not-attending) did not differ in the severity of parent reported behavior problems, it is possible that parents who did attend may have perceived an increased need for assistance in parenting their children.

At post-test, parents who did attend the sessions reporting increased parenting competence relative to those who did not attend parent training sessions ($p \leq .10$).

Table 1
Comparisons Between Project Mastery Sample and Normative Samples

	Project Mastery Sample		*Normative Sample*	
	M	*(SD)*	*M*	*(SD)*
Parenting Scale	3.0	(0.64)	3.10	(.70)
CBMQ	5.3	(2.40)	9.1	(.70)
Parenting Stress Index	85.7	(18.00)	71.0	(15.40)
Family Support Scale	33.0	(16.20)	71.0	(15.40)
WJR-BCA	84.2	(17.80	100	(15)
WJR-Skills	85.8	(15.80)	100	(15)
BASC-EC	61.6	(14.40)	50	(10)
BASC-AS	43.2	(9.60)	50	(10)

Note. CBMQ = Child Behavior Management Questionnaire; WJR BCA = Woodcock Johnson Revised-Broad Cognitive Ability; WJR Skills= Woodcock Johnson Revised -Skills Composite Score;; BASC-EC = Behavioral Assessment Scale for Children-Parent Version- Externalizing Composite; BASC-AS = Behavioral Assessment Scale for Children -Parent Version- Adaptive Subscale.

Table 2
Group by Time Repeated Measures Analyses of Child Measures

		Parent Report (M scores)			
		Assessment Only		*Intervention*	
BRS		Pre	Post	Pre	Post
	AD/HD-HI***	16.5	16.4	15.7	11.2
	AD/HD-I	15.2	12.5	13.6	9.8
	AD/HD-Total*	31.8	28.8	29.3	21.0
	ODD**	16.1	15.8	13.9	7.8
BASC					
	EC**	62.9	64.6	57.0	50.6
	BSI**	65.3	67.9	57.9	52.6
	HYP	68.1	67.4	58.6	52.6
	INN	71.1	67.2	62.1	58.2
	AGG**	57.9	62.9	54.1	48.9
		Teacher Report (M scores)			
		Assessment Only		*Intervention*	
BRS		Pre	Post	Pre	Post
	AD/HD-HI*	12.0	13.3	11.8	7.6
	AD/HD-I	9.3	9.7	10.4	7.6
	AD/HD-T	21.3	22.5	22.3	15.2
	ODD***	9.9	12.6	12.6	6.7
BASC					
	EC***	56.1	63.0	60.5	53.9
	BSI**	53.4	59.7	55.9	51.0
	HYP**	56.8	61.6	56.5	50.4
	INN**	55.0	59.4	57.2	54.7
	AGG***	54.5	63.3	63.1	56.8

Note: BRS=Behavior Rating Scale, AD/HD-HI= Hyperactive/Impulsive Subscale, AD/HD-I=Inattention Subscale, AD/HD-T=Total Score, ODD=Oppositional Defiant Subscale; BASC=Behavior Assessment System for Children, EC=Externalizing Composite, BSI=Behavioral Symptom Index, HYP= Hyperactivity Subscale, INN-Inattention Subscale, AGG=Aggression Subscale.
Note: *= $p < .10$, **= $p < .05$, ***= $p < .01$

Discussion

As hoped, parents and teachers of children receiving the system of care approach reported significant decreases in negative child behaviors. In addition, teachers reported increased confidence in working with the children and families and increased knowledge and use of more positive, proactive strategies. Families also reported satisfaction with the services received. These findings suggest that a system of care approach can be more effective in addressing the behavioral challenges of Head Start children than services that are traditionally offered in the community.

Despite these successes, no significant differences were noted in the other family measures of parenting stress, parenting competence, or family support. Most families did not the parent training sessions, despite having reported significant concerns about their ability to parent their child successfully. All families participating in Project Mastery reported needs in multiple domains. They experienced economic hardship,

were predominantly single parents, reported less social support, more stress related to parenting their child and less knowledge of effective parenting skills. In addition, the children had lower than average cognitive abilities, academic achievement and adaptive skills as well has higher than average externalizing behaviors.

Given these multiple child and family risk factors, it may be that an even more comprehensive and longer term intervention strategy is necessary to effect change in family and child outcomes. Although this project attempted to address multiple child and family domains, the course of intervention and the degree to which more systemic concerns (e.g., economics, housing, work) were addressed was relatively short. The 10-week model employed in this study is likely not sufficient to effect long-term change in all areas. In order for families to benefit from these types of services, other areas of functioning must be addressed more systematically to decrease social and economic stressors (e.g., social support, transportation, finances, etc.).

Several questions remain. First, to what degree are the gains that were observed maintained over time? Follow-up data will be collected into kindergarten with additional funds being sought to follow the children into elementary school. Previous studies have shown that very intensive wraparound services are effective for at-risk children; however, when services are withdrawn, gains are not maintained (Shelton et al., 2000). The degree to which these gains are maintained once the intervention is discontinued will have implications for whether continued support or at least transition services may be necessary to reduce the risk for these children and families. Second, what are the child, family, and teacher factors associated with more positive outcomes, and what factors are associated with continued risk? Anecdotal data suggest that multiple disruptions in housing and a significant number of negative life events (e.g., loss of job, homelessness) may pose a greater risks to child development than child characteristics. If so, this further argues for a system of care approach in order to fully address the needs and priorities of these children and their families.

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