Preschool-Based Programs for Externalizing Problems

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Abstract

Few mental health initiatives for young children have used classroom programs. Preschool-based efforts targeting externalizing behavior could help prevent conduct disorders. Additional benefits may include improved academic achievement and reduced risk for other mental health difficulties. Programs that target multiple developmental domains are most likely to succeed. However, more research is needed to guide such initiatives, and practical challenges must be addressed. This paper describes an effort to implement and test preschool classroom-based programs aimed at externalizing and academic problems.

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Preschool-based programs could help prevent externalizing problems, and may also have broad positive side effects, including enhanced academic achievement, reduced risk for other mental health problems, and improved family functioning. These programs are also likely to be an excellent economic investment, reducing societal costs of conduct disorders and their associated difficulties (Schweinhart & Weikart, 1998). However, empirical data justifying such efforts are surprisingly sparse. This paper argues for the importance of early classroom-based programs for externalizing problems. The existing empirical literature on such programs is reviewed. One effort to implement and test such a program is described, with an emphasis on issues in school implementation. Suggestions for future research and practice are offered, including increased consideration of gender and culture.

The Importance of Addressing Early Externalizing Problems

The broad category of externalizing problems variously described as disruptive behavior, aggression, delinquency, Oppositional Defiant Disorder, or Conduct Disorder affects approximately 10% of

children. Externalizing difficulties, in turn, are associated with other problems including substance abuse, family violence, crime, and psychiatric disturbance (Caspi, Moffitt, Newman, & Silva, 1997; Milberger, Biederman, Faraone, & Chen, 1997; Moffitt, Caspi, Dickson, Silva, & Stanton, 1996; Patterson, DeGarmo, & Knutson, 2000). Children raised in poverty are disproportionately affected by externalizing disorders, with higher rates and greater stability of these problems (Qi & Kaiser, 2003; Webster-Stratton & Hammond, 1998). Stressors associated with poverty may exacerbate externalizing problems and impede efforts to seek treatment. In addition, lower-income families may not be able to afford good treatment. In sum, those who need help the most are the least likely to receive it.

Efforts to treat externalizing problems have met with discouraging long-term effects. Even the most successful interventions leave at least one fourth of the children with significant problems (Forehand & Kotchick, 2002; Reid, Webster-Stratton, & Hammond, 2003), and long-term maintenance of benefits is the exception rather than the rule (Kazdin, 1993). Earlier intervention may help, because externalizing behaviors begin at a young age for many children who develop lasting problems (Bierman, Coie, & Dodge, 2002; Campbell, Shaw, & Gilliom, 2000; Heller, Baker, Henker, & Hinshaw, 1996; Patterson, Capaldi, & Bank, 1991). Early onset conduct problems are typically stable, increasingly resistant to change, and predictive of future problems (Webster-Stratton, Reid, & Hammond, 2001; White, Moffit, Earls, Robins, & Silva, 1990).

Expanded approaches that include broader targets may also improve results. Connections between externalizing problems and other areas of functioning suggest that early intervention efforts should consider the context of problems. In turn, addressing externalizing problems is likely to provide benefits across multiple domains, including children's academic development.

Externalizing Problems and Academic Difficulties

Mental health problems are generally associated with poor school performance (Hinshaw, 1992a; Tremblay et al., 1992), arguing for collaboration between schools and mental health programs. Externalizing problems are specifically associated with academic underachievement (Frick et al., 1991; Hinshaw, 1992a, 1992b; Mrazek & Haggerty, 1994). Comorbidity between these difficulties is well-established in school-age children and adolescents, and the association is evident even in preschoolers (Arnold, 1997; Fantuzzo, Bulotsky, McDermott, Mosca, & Lutz, 2003; Heller et al., 1996). Characteristics of externalizing problems such as noncompliance, high activity levels, and poor attention limit children's ability to engage in learning activities.

Poor academic development may cause disengagement, frustration, and lower self-esteem, which may lead a child to act out. Thus, if a child has one problem, the other is likely to develop, creating a cycle whereby the two problems exacerbate each other. In addition, these problems can lead to adult reactions that intensify the cycle. For instance, teachers and parents may become over-controlling, harsh, or withdrawn to escape problem behaviors during potentially frustrating academic tasks. Preschool children with behavior problems receive less teaching (Arnold, 1997), and externalizing problems at the beginning of a preschool year predict poorer emergent literacy skills at the end of the year (Fantuzzo et al., 2003). These findings support the notion that addressing these problems should be most successful in young children for whom the cycle is less well established — attacking preachievement *and* behavior problems during early developmental phases appears crucial for averting negative outcomes" (Hinshaw, 1992a, p. 895).

The hopeful side of this negative cycling is that addressing externalizing problems should improve children's academic development and relationships, reducing the risk of future problems. Improving academic skills and engagement should, in turn, increase self-esteem, decrease frustration, and reduce misbehavior (Miller, 1994; Yoshikawa, 1994). Most program evaluations have used fairly narrow outcome assessments. However, the idea that program benefits are broader than their specific targets is supported by a few related studies (e.g., Anastopoulos, Shelton, DuPaul, & Guevremont, 1993; Huebner, 2000; Kellam & Anthony, 1998). In addition, some evidence exists that preschool academic interventions may decrease delinquency in late adolescence (Schweinhart & Weikart, 1998; Zigler, Taussig, & Black, 1992), further suggesting causal connections between these developmental domains.

The Promising Role of Preschools in Such Efforts

Preschools are potentially a major resource for treating and preventing externalizing problems. First, they may be the only available services for children whose parents are unable to seek help. Second, children typically spend a great deal of time at preschool, compared to other programs that may allow for only 1 or 2 hours per week. Third, enrollment in pre-primary programs is rapidly expanding. By 1999, 69% of all 4-year-olds were enrolled in a center-based program (National Center for Educational Statistics, 2000); this figure is even higher if other daycare settings are considered. Fourth, this setting allows for the coordination of efforts between teachers and parents, which should strengthen effects. Fifth, this setting provides important

assessment advantages that could facilitate the early identification of problems. Because teachers work with multiple children, their perspective may be especially important to the early identification of problems (Doctoroff & Arnold, 2004; Power et al., 1998). Sixth, teacher-child ratios tend to be somewhat higher in preschool than grade school, and more time may be available for social-emotionally focused activities. Preschools lend themselves to a broad, multifaceted approach.

Developmentally, the preschool age may be a particularly opportune time to address externalizing issues, before the demands of formal schooling exacerbate problems. Reducing problems before elementary school may prevent the formal labeling of problems and associated stigma. Since kindergarten is a common time for special education assignments, earlier programs may reduce the need for such placements. At kindergarten children typically encounter a largely new peer group with which they will remain for several years. Alleviating behavior problems during preschool may avoid negative first impressions by peers that could be resistant to change. Similarly, initial teacher impressions in grade school may have lasting effects. Finally, the preschool age is an important period in the development of children's self-image and feelings about school. Preschool children, even from disadvantaged backgrounds, typically enter elementary school with positive feelings about school and their own abilities (Stipek & Ryan, 1997). These positive feelings might be fostered and maintained if problems can be addressed before formal school evaluations begin.

Empirical Support for the Importance of Classroom-Based Efforts

The current research literature provides some support for preschool classroom-based approaches to preventing externalizing problems. Small, uncontrolled studies point to benefits of behavioral techniques in reducing problem behaviors. For example, Reynolds and Kelley (1997) demonstrated the effectiveness of a response-cost system for reducing aggressive incidents in aggressive preschool boys. Fewer aggressive acts were observed, and children and teachers both liked the program. Research on classroom approaches for children with ADHD, a disorder associated with externalizing behaviors, is similarly scant but promising (McGoey, Eckert, & DuPaul, 2002). McGoey and DuPaul (2000) have shown that token and response-cost systems can reduce disruptive behavior. Peer coaching has led to less off-task behavior and increased academic engagement (DuPaul, Ervin, Hook, & McGoey, 1998), pointing to the connection between externalizing problems and academic development. Researchers have also examined ways to make programs more practical. For example, whole-

class token systems, an efficient means of implementing behavioral contingencies, have decreased inappropriate behavior (Filcheck, Mc-Neil, & Greco, 2004; Reitman, Murphy, Hupp, & O'Callaghan, 2004). An inclusive treatment package, the ADHD Classroom Kit, has been shown to increase appropriate and on-task behavior (Anhalt, McNeil, & Bahl, 1998). Other work points to ways in which the implementation of existing school-based programs might be improved. For example, consultation models (McDougal, Moody Clonan, & Martens, 2000) and scripted teacher sequences (Martens & Hiralall, 1997) have increased effectiveness.

A second strand of indirect support for preschool externalizing programs comes from randomized controlled trials of four classroom programs for early elementary school that could potentially be extended downwards to preschoolers. *Second Step* teaches empathy, impulse control, and anger management skills (Grossman et al., 1997). The program features classroom- and home-based activities, including class discussion, role-playing, modeling, corrective feedback, and positive reinforcement. A controlled trial with second- and third-graders showed significant decreases in physical aggression and increases in prosocial acts. The *Promoting Alternative Thinking Strategies* program (*PATHS*) was part of the Fast Track prevention program for first graders (Kusche & Greenberg, 1994; Greenberg, Kusche, Cook, & Quamma, 1995). It targets problem-solving, self-control, and emotional regulation skills with 57 short lessons using discussions, directed instruction, and modeling. Intervention children demonstrated significant decreases in aggression, improved emotional understanding, and better problem solving. *First Step to Success* uses intensive classroom intervention and a 6-week home component that focuses on parenting and home-school communication. The program resulted in decreased aggression and increased adaptive and on-task behavior for high-risk kindergartners, and effects were maintained at two year follow-up (Walker et al., 1998). Finally, the *Good Behavior Game* is a classroom-based team competition in which teams earn points or tokens for good behavior and lose them for misbehavior (Embry, 2002). These are then traded in for a group reward. An impressive research base on this program includes an experimental evaluation with first graders (e.g., Kellam, Rebok, Ialong, & Mayer, 1994).

Limitations of the Current Research Literature

The Need for More Controlled Trials

Despite the potential for using preschools to address externalizing problems, remarkably few randomized controlled trials have

addressed classroom interventions for behavior problems in pre-schoolers (Bryant, Vizzard, Willoughby, & Kupersmidt, 1999). Controlled intervention trials offer the strongest tests of program effectiveness and the best evidence regarding causal paths among related constructs. They also shed light on developmental mechanisms by examining mediators and moderators of effects. A recent review (Leff, Power, Manz, Costigan, & Nabors, 2001) reported only five rigorous controlled classroom trials that investigated school-based interventions for behavior problems at any age, and none included preschoolers. Since that review, one controlled trial evaluated the teacher version of the *Incredible Years Program* in a preschool setting (Webster-Stratton, Reid, et al., 2001). This intervention included 36 hours of teacher training in addition to a parent component. The program reduced noncompliant and aggressive behaviors at school, and teachers showed improved classroom management. Children whose mothers participated in at least half of the parent training groups also showed a decrease in problem behaviors at home, and effects were maintained one year later. To our knowledge, this remains the only published controlled trial of a preschool-based externalizing program. However, additional exciting work is underway evaluating preschool-based programs. A non-controlled study with 4 preschoolers suggests that the Good Behavior Game may transfer to preschool classrooms (Swiezy, Matson, & Box, 1992). The PATHS program has recently been effective in a controlled trial with preschoolers (Domitrovich, Cortes, & Greenberg, 2002), and these data will be submitted for publication shortly (Greenberg, personal communication). The Interagency School Readiness Consortium is a recent, large-scale initiative funded by NICHD and other agencies. Projects aim to evaluate school readiness programs with integrated social-emotional/academic emphases. Several of these studies include controlled trials of classroom externalizing programs, including Second Step and the Incredible Years.

Gender

Though little is known about preschool-based externalizing interventions, even less is understood about ways in which gender should be considered in these efforts. Externalizing difficulties are more common in boys than in girls (Keenan & Shaw, 1997; Kellam, Ling, Merisca, Brown, & Ialongo, 1998). However, rates are still high in girls (Maughan, Rowe, & Messer, 2004), and seem to be increasing relative to boys. For example, juvenile detentions in girls increased 72% between 1990 and 2000, compared with an increase of 5% in boys (Stahl, Finnegan, & Kang, 2003). Further, lower rates of externalizing problems in girls may actually cause other mental health and

academic problems to be under-recognized, described as an "invisible girls" phenomenon (Morgan & Dunn, 1988). Because externalizing problems are salient and disruptive, they may call attention to children who need help in multiple areas, and distract teachers from less salient problems in other children. In addition, externalizing difficulties are more strongly associated with academic problems in boys than in girls (Keenan & Shaw 1997; Kellam et al., 1998), as early as age 3 (Doctoroff, Greer, & Arnold, 2006; Stowe, Arnold, & Ortiz, 1999). As a result, girls with academic problems may go unnoticed compared to their male classmates. Empirical evidence is consistent with this idea. Girls' early learning difficulties have been shown to be under-identified by teachers (National Research Council, 1998). In a study of 3-5 year old children, externalizing behaviors were a better predictor of early referrals for learning problems than was academic development, and boys were far more likely to be referred for academic help than were girls (Stowe et al., 1999). Such patterns might come into play during classroom intervention efforts. Some work with older children suggests that programs may be more effective for boys than girls (Leff et al., 2001). With respect to preschoolers, little is known about gender differences in response to classroom externalizing programs. However, an early math intervention in Head Start produced improvements in emergent math skills for boys, but not for girls (Arnold, Fisher, Doctoroff, & Dobbs, 2002). We do not know the reason for this disparity, but suspect that teachers may inadvertently implement programs differently with boys compared to girls. It remains to be seen if such differences occur with externalizing programs.

Culture

There is a dearth of research on how cultural factors influence externalizing interventions (Forehand & Kotchick, 1996). Ethnic minority children are overrepresented in low-SES groups, and thus face compounded risks (Brooks-Gunn, Klebanov, Liaw, & Duncan, 1995). Given differential poverty rates, it is not surprising that ethnic minority children experience high rates of externalizing problems and academic failure. For example, 69% of African American students and 64% of Hispanic students show reading skill deficits compared to half as many Anglo American children (National Research Council, 1998). Understanding cultural influences may guide program implementation. For example, cultural factors are likely relevant to parents' and teachers' views about discipline practices, appropriate child behavior, and the role of mental health professionals. Such beliefs may influence how interventions are received and implemented.

Longitudinal Evaluations

Finally, longitudinal evaluations of program outcomes are badly needed. Program benefits may or may not maintain through the transition to grade school. Knowledge about the extent to which gains are lasting is important in evaluating the cost-effectiveness of programs and the need for follow-up supports.

Summary

More controlled trials of classroom-based programs are needed, including broader assessments of the extent to which interventions affect and are affected by academic development and other areas. Possible moderators of outcomes, including gender and culture, need to be considered, as well as individual differences within and across ethnic groups. Longitudinal assessments that include the transition into elementary school are important as well. We implemented the UMass Preschool Project as a step towards addressing these issues.

UMass Preschool Project

Overview

The UMass Preschool Project was a randomized controlled trial, testing classroom and home programs designed to address externalizing problems and promote academic development. We recruited families primarily from daycare centers in lower-SES communities, because of their increased risk of conduct and academic problems. At the same time, we also included higher-SES centers to inform efforts in this context, because the targeted problems are relevant across SES-groups. Within participating classrooms, we included all families, rather than just those with externalizing problems, because of the generally elevated risks associated with poverty, the desire to avoid singling out particular children, and the belief that the programs would be helpful across families. Outcome results are not yet available, but the following describes the study design and our experience implementing the programs, with an emphasis on issues in school-based implementation.

Research Design

A total of 193 children participated, from 20 classrooms in seven centers. Five of the centers served primarily low-SES families (average income approximately $28,000), while the other two served mostly higher-SES families (average income > $60,000). The children were ethnically diverse, with approximately even numbers of African American, Puerto Rican, and Caucasian children. Children were randomly

assigned to receive (a) both the externalizing and the academic program; (b) the externalizing program only; (c) the academic program only; or (d) neither program. Random assignment was by classroom for the externalizing program and by child for the academic program; in other words, entire classrooms participated or not in the externalizing program, whereas half of the children in every classroom received the academic program. When children were assigned to a program, both their teachers and parents were invited to participate. Children were followed through first grade.

The Programs

Externalizing program: The Incredible Years. We used Webster-Stratton's Incredible Years program to target externalizing behaviors. The parent version of the program has the support of numerous outcome studies (e.g., see Reid et al., 2003). The teacher version has been tested in the one controlled trial described above. Groups of participants watch videotape vignettes of interactions with children (teachers watch teachers and parents watch parents), which were designed to illustrate a wide range of principles with empirical support. The vignettes stimulate discussions designed to teach the principles using these concrete examples. To promote application, the group discusses how principles would apply to their own situations, and role-plays develop skills within sessions. Homework assignments provide practice between sessions, and our group leaders wrote individual notes to each participant in response to each completed homework assignment. In our project, groups of teachers and separate groups of parents met once per week for eight 2-hour sessions, which is abbreviated compared to 32 training hours in the previous evaluation. The sessions that we used covered: (a) *Play and other positive interactions;* (b) *Attention, encouragement, and praise;* (c) *Motivating children, reward programs;* (d) *Effective limit setting and preventing problems;* (e) *Strategies for minor misbehavior;* (f) *Strategies for severe behavior problems;* (g) *Consequences and problem-solving;* and (h) *Putting it all together.*

Academic program: Dialogic Reading. The academic program targeted emergent literacy skills, because of their strong connection to later academic success (Adams, 1990; Al Otaiba & Fuchs, 2002; Whitehurst & Lonigan, 1998). We used Whitehurst's well-validated Dialogic Reading program (Arnold, Lonigan, Whitehurst, & Epstein, 1994; Whitehurst, Arnold et al., 1994; Whitehurst, Epstein et al., 1994). Dialogic Reading centers on shared picture-book reading. Teachers read with small groups of 3-5 children, and parents read individually with their children at home. The program encourages children to become active in story-book reading, while adults prompt and encourage

participation. Dialogic Reading promotes many aspects of academic development, including expressive language, concepts of story structure, and phonemic awareness. It also fosters children's academic interest and engagement. The program emphasizes following children's interests to make reading fun, and children prefer this active approach to more passive traditional reading. Teachers and parents learned specific Dialogic Reading techniques through videotape instruction and individualized practice. The program used a different book each week, accompanied by a book guide with hints (Whitehurst, Epstein et al., 1994). Children took home a copy of each week's book.

How the Project Addressed Literature Limitations

Experimental, longitudinal trial. We employed random assignment to condition to allow for causal inferences about program effects. In addition, we will be able to examine possible moderators and mediators of effects. Because some children were assigned to receive only the externalizing or academic program, results should also shed light on causal pathways in the relationship between academic development and behavior. In addition to preschool assessments, we conducted assessments during kindergarten and first grade.

Broad assessments. In an effort to better understand connections across various areas of children's development, assessments covered a range of areas. Externalizing assessments included parent report (both rating scales and diagnostic structured interviews) and teacher report. In addition, observations of behavior at school and home were included, to allow for convergent evidence and fine-grained analyses of change. Teachers' classroom management skills and strategies were also assessed with direct observations. Academic development was assessed with standardized tests. At preschool, these focused on language and preliteracy skills. In elementary school, achievement tests and grades were added. Information about services received and special education placements were also collected. Other areas of child functioning assessed included prosocial behaviors and internalizing problems. Parenting and parent-child interactions were observed across several structured situations in the home, including a clean-up task, shared reading, and a problem-solving task. Measures of parent psychopathology, marital/relationship quality, and life stress were also included.

Cultural considerations. Programs were chosen to be as applicable as possible across ethnic groups. Given the dearth of empirical literature in this area, choices were based mostly on theoretical considerations and practical judgment. For example, the programs use diverse materials, including videotape models of various ethnicities.

The programs take an active, collaborative approach that respects participants' knowledge, experiences, and ideas. Implementation is individualized, participants problem-solve together, and frequent feedback is sought. This approach sends the message that individual viewpoints are respected, and allows for cultural differences to be considered, without assuming that they exist. As one example, discussions of cultural variations in commands often arise from the Incredible Years' videotape vignettes. Agreement is typically reached that there are some universal aspects of better commands, such as clarity and consistency that are supported by the empirical literature (Dumas & Lechowicz, 1989; Webster-Stratton, 1998). At the same time, cultural background might influence the wording of commands. Discussions about different ways to phrase commands seemed to help parents think more concretely about implementing program principles. One study found that response to the Incredible Years parent program was similar for African American, Asian American, Caucasian, and Hispanic mothers (Reid, Webster-Stratton, & Beauchaine, 2001), but response by ethnicity has not been examined for the classroom program. Dialogic Reading has been used across diverse ethnic groups (e.g., Whitehurst, Arnold et al., 1994), though explicit comparisons of response by ethnicity have not been conducted.

Gender. One reason for including all children was the hope that girls' problems would be more likely to be addressed than in past efforts. Gender differences in program response will be evaluated.

Program Implementation

General descriptions of the programs have been previously published (e.g., Arnold & Whitehurst, 1994; Reid, Webster-Stratton, & Baydar, 2004; Webster-Stratton, Reid et al., 2001), and resources are available for those wishing to implement this program (e.g., Webster-Stratton, Mihalic et al., 2001). However, intervention research reports are typically only able to provide a brief technical description of programs, and are not designed to capture program tenor. We believe that the tone and flexibility of programs are also critical, so the following includes a description of these. In addition, little has been written about school implementation issues, so this report emphasizes these issues. Though we focus on teacher and school issues, much of the discussion applies to the parent programs.

Forming a partnership. Our partnership with local centers was greatly facilitated by a central resource and training agency, who surveyed local center directors regarding their interest in participating. From interested centers, a lottery was held to choose participating sites. Therefore, our partnership began with particularly interested

and motivated directors. This would typically be the case with com-
munity implementations, because usually only interested centers
would participate. However, there could be situations in which direc-
tors do not wish to take part, but are told to by an upper administra-
tor. Examples might include a Head Start district administration or
Action Commission making participation decisions for their centers.
In addition, the interest of directors does not guarantee similar in-
terest from teachers. These issues are discussed in the program chal-
lenges section below.

    Center characteristics. Our project centers varied considerably
on most dimensions. One center was a Head Start center, one was
run by a local agency, and the others were private. Class sizes ranged
from 6 children to more than 20. Surprisingly, none of the centers were
using any formal curriculum (the programs used are designed to be
complementary with existing programs rather than to replace them).
Three centers had adequate budgets (the two higher-SES centers and
the Head Start center), whereas the other four were financially strug-
gling. The ethnic composition of the centers varied substantially, from
predominately Puerto Rican to largely Caucasian, to mixed ethnicity.
Teachers' educational background also varied. Approximately 20%
of the teachers had college degrees (the teachers from the higher-SES
centers). Most of the other teachers had a high school diploma, while a
few had not completed high school. Teaching experience ranged from
decades to two years. None of the teachers had formal instruction in
behavior management beyond brief in-service trainings. During the
assessment phase of our project we spent substantial time in the class-
rooms, so we began with information about the teachers and their
skills. We think that such time spent in the classrooms is invaluable.
The programs seemed appropriate even for such varied settings, and
they can be adjusted to take participant differences into account. For
example, the videotape vignettes can start a basic or more advanced
discussion, and the individualization of the program allows for flex-
ibility in meeting different goals.

    On the whole, our experiences implementing the programs were
quite similar across centers, even with respect to the fairly dramatic
differences in SES. The programs seem to be very robust to school
and teacher differences. At the same time, more empirical research
is needed on the interaction of specific school characteristics and in-
tervention outcomes. The diversity of our participants will allow for
some analyses of differences such as SES and ethnicity, though limi-
tations in sample size for subgroups will make these analyses some-
what exploratory.

Buy-in issues, strategies for engagement. Our project provided some incentives that would not typically be available in a non-research application. Each of their classrooms received approximately $200 of educational materials. Teachers were paid for program time outside of work hours, for attending training sessions or completing child assessments, at a rate somewhat higher than their typical pay. Our sense is that these resources were not a major factor in participation decisions, but they did seem appreciated, and likely helped somewhat with engagement. More important, we think, were within-program factors that would be part of any implementation effort, specifically with respect to the program tone.

Program tone. We believe that the positive and enjoyable tone of the programs is critical. The Incredible Years emphasizes using teachers' expertise in problem-solving as a group. The programs are interesting, and the videotape examples are particularly engaging. Participants also enjoy the group format. We framed the programs as supporting teachers in their difficult and important jobs, noting that they typically get feedback only when a problem arises. We made a point of thanking teachers for their work, and provided small gestures of appreciation at each workshop, such as refrigerator magnets or chocolate bars. We were struck by how powerful these simple tokens were. One teacher got tearful, saying that "nobody ever thanked me or helped me before." The parenting group similarly fosters a feeling of collaboration, providing emotional as well as practical support. For example, parents traded babysitting and out-grown clothes. Dialogic Reading also has a very positive tone. The program is framed in terms of finding ways to make reading fun, and choices are made around children's strengths and interests. More generally, we believe that the programs' emphasis on children's (and teachers') strengths is very important. Negative behaviors and emotion associated with externalizing problems can, understandably, cause adults to focus almost exclusively on these difficulties. The Incredible Years begins with sessions on building positive relationships as the foundation of the program. For example, teaching and parenting "pyramids" characterize positive relationships with children as the foundation for preventing and reducing externalizing problems, and parents and teachers are given strategies for identifying and promoting children's positive behavior. Similarly, Dialogic Reading shifts the focus of shared reading time away from compliance to relationship building by following children's interests.

Scheduling groups, reducing participation barriers. Teacher participation requires time, and therefore resources. At two centers, we paid for substitute staff and conducted workshops during daytime work

hours. At other centers, we paid teachers to stay for workshops immediately after work. Teacher pay is typically very low, so the cost of either option is small in absolute terms, but for a center on a tight budget, may still pose an obstacle. For parents, sessions were run at their child care centers. They were scheduled to fit parents' schedules as best as possible, which was nearly always at dinnertime. We provided child care and meals to facilitate participation.

Group leaders. Each Incredible Years teacher group was co-led by the project Principal Investigator (PI) and a doctoral student in clinical psychology. The PI was a faculty member and clinical psychologist, and the doctoral students were from the PI's research group. The PI received training in the Incredible Years directly from Webster-Stratton, and in turn trained the doctoral students. Each Incredible Years parent group was run by two of the doctoral students who assisted with the teacher program. Webster-Stratton prefers that more extensive training be received by group leaders, and that they become certified in her training program. We plan to follow that model in future work. Dialogic Reading meetings were all run by the PI, with assistance from doctoral students for the modeling and feedback portions of the training. The PI was a past doctoral student of Whitehurst, with extensive experience implementing Dialogic Reading training. With respect to ethnicity, the leaders did not match the participants—we had no group leaders of color. There is minimal empirical data on the importance of matching with this type of program, but there could certainly be advantages. For example, participants might feel more comfortable raising difficult issues to a leader of the same ethnicity. In terms of gender, most of the participants were female—only one male teacher and a handful of fathers participated. Most groups were run by one male and one female, with one group run by two males. With respect to language, two of the group leaders spoke adequately fluent Spanish. One leader was from Colombia, and the other had studied in Spain. Their abilities allowed for some Spanish communication with our Puerto Rican families, though most communication was in English. Greater Spanish fluency would have certainly been helpful.

Home-school connections. The teacher and parent programs presented the same material, in the same order, in the same weeks. This scheduling was designed to allow teacher-parent coordination, and to improve consistency in children's experiences across settings. The Incredible Years emphasizes parent-teacher communication. Parents are encouraged to talk with teachers about how their children are doing, and in cases of problems, to coordinate solutions. There was substantial variability in how often improved communication occurred. In some cases, collaborative plans were developed to address concerns.

Other times, efforts were parallel but separate. Teachers also varied substantially in how actively involved they were in recruiting parents to participate in programs. Some teachers worked very hard to encourage parents to attend, while others left that job to our research team. Not surprisingly, parents recruited by their children's teachers were much more likely to participate than those contacted by our unfamiliar group. In future work, we would put greater emphasis on teachers helping to recruit families.

Teacher participation and satisfaction. For the Incredible Years, all invited teachers and assistant teachers participated. Teachers attended over 90% of the scheduled sessions. Missed sessions were linked to work absences; almost every instance was because of illness. Only one teacher missed two consecutive sessions, due to back surgery. On the other hand, it was clear that, in part, teachers attended because they were told to by their directors (see program challenges section, below). Nonetheless, we ended with consensus that the program was helpful. On weekly satisfaction surveys, more than 85% of the ratings were in the highest category of helpfulness, with almost every other rating in the second-highest category. For Dialogic Reading, all teachers participated in training and agreed to include small group reading in their classrooms. Based on reading logs, there was variability in the extent to which small group reading was done. Children were read to in small groups an average of 2.1 times per week ($SD = 1.6$), for an average of 16 minutes per reading session ($SD = 7.3$).

Parent participation and satisfaction. Parental participation was lower than hoped, though not dissimilar to previous programs of this kind. 62% of the entire group of invited parents participated in the study. Of those children assigned to the Incredible Years program, 60% had at least one parent participate in the program. On average, parents attended 55% of the sessions (median participation = 63%). Satisfaction with the program was very high, based on informal report and satisfaction ratings—88% of the satisfaction ratings were in the highest category of helpfulness.

Interface between the externalizing and academic programs. Our experiences reinforced our belief that the connections between externalizing and academic problems are important. Teachers reported that the Incredible Years program improved circle-time, allowing for more time on planned activities and less on behavior management. Consistent with previous research (Huebner, 2000), Dialogic Reading seemed to have broad positive effects on adult-child interactions. The program requires little need for adult control, allowing a break from power struggles that may be nearly constant with externalizing children. Some participating parents said that Dialogic Reading made them feel like a good parent for the first time.

Program Challenges

Despite very positive experiences implementing the programs, we certainly faced obstacles and challenges. Formal research reports are typically unable to spend much space describing practical challenges, but they are an unavoidable part of community implementations, and the school setting raises some particular issues.

Multiple participants. A complication of working in schools is the need for engagement at all levels, from upper administration to assistant teacher. Different participants may have different preferences, priorities, and needs. For example, center directors' interests are not necessarily similar to their teachers'. Such differences can interfere with program effectiveness. At the same time, these programs provide an opportunity to improve alliances across these levels. At two centers the director came to the teacher meetings. Their presence may have interfered with teachers speaking frankly, given that complaining about directors was a theme of some groups. However, their attendance also facilitated communication. For example, at one center, misbehaving children were sent to the director's office. The director thought she was doing the teachers a service, whereas the teachers thought this approach was ineffective and undermining. Once this was realized, more effective and preferred strategies were identified. In the end, the directors' presence proved quite helpful.

Participation barriers for teachers. In one respect, teacher participation was not problematic, because teachers were instructed to attend by their center directors. On the other hand, teachers did miss some sessions when absent from work. Options for dealing with missed sessions include group leaders meeting individually with absent teachers, having co-teachers update them, or using phone consultations. We used each of these options as seemed appropriate at various centers. Some type of formal make-up that continues homework participation seems important. More difficult than a missed session is a teacher who leaves her job. Daycare teaching has extremely high turnover. One of our lead teachers left her job part way through the program. Such turnover is, obviously, disruptive to the program as well as the classroom. There is no complete solution for this problem, but it points to the benefits of including as many teachers and staff as possible. The more universal such participation is, the more project elements become a standard part of center culture. In addition, when assistant teachers participate, they may be able to lead implementation if a primary teacher leaves partway through a program.

Engaging teachers. For the most part, teachers seemed interested or at least open-minded about the programs. At the same time, the forced nature of the attendance was evident in some early skepticism

in a few teachers. One teacher said that there was "nothing left to learn when you have been doing this for 30 years," and another that "in-services are a waste of time." A few other teachers seemed happy to have a break from work, but not particularly interested in the programs. By the end, every teacher seemed invested. Different strategies seemed most effective for engaging different teachers. In some cases, patience on the part of the group leader seemed most important—once teachers realized they wouldn't be forced to participate, they were more willing to join in. In other cases, teachers responded well when asked to help other group members solve problems. Ultimately, the tone of respect and collaboration seemed to win teachers' engagement.

Participation barriers for parents. We had fewer parents participate in our programs than we hoped. We think that this was not accounted for by the program itself, given the very high program satisfaction. Rather, it seemed that competing demands of life were simply more pressing. Offering child care and food seemed important, but not sufficient. In the future, we will consider delivering programs to parents' homes or providing transportation to group meetings, though practical issues regarding typically limited resources need to be considered. Another option might be to more specifically target programs for parents who are concerned about externalizing problems, since their motivation for participating might be higher.

Making programs active but feasible. Changing teaching or parenting style is not easy. It requires translating abstract ideas into concrete examples, practice, and trial-and-error adjustments. To succeed, programs must not only teach new ideas, but time must be invested in practicing new skills. Therefore, it is not surprising that single-day workshops, the most common teacher training approach, are likely to be ineffective (Kupersmidt, Bryant, & Willoughby, 2000), and intensive programs are more promising. At the same time, preschool teachers are often over-worked, under-appreciated, under-trained, and under-paid. Efforts at increased accountability, such as recent Head Start tracking requirements, may translate into additional paperwork and curriculum burdens. Any program that adds too much to teachers' substantial burdens will likely fail. In our view, the biggest challenge of successful classroom programs is making programs active and intensive enough to succeed, yet practical to implement. In trying to balance these considerations, we strived to make homework assignments limited and manageable, with simple but critical paperwork. As an example, one Incredible Years goal is to reverse typical attention patterns to focus primarily on children's positive behavior. Simply talking about this principle does little to change actual practices, but neither can teachers be expected to constantly track their

attention allocation. A homework assignment might thus be to catch
three children being good at circle-time each day, and to jot down a
few words on a homework form to remind them what they did for the
next group session. This type of assignment helps teachers to attend
to the principle in their own classroom, without overwhelming them.
With respect to Dialogic Reading, implementation takes approximate-
ly 4 hours of teacher time per week, assuming 20 children in a class-
room, read to for 15 minutes, three times per week, in groups of four.
This amount of time is feasible, though not trivial, in most classrooms.
We consulted with teachers individually about when and how do this
to most practically, and these individual consultations seemed impor-
tant in implementation. If necessary, reading can be covered with par-
ent, grandparent, or other volunteers.

   Philosophical negotiations: time-out, rewards, and didactic teaching.
Several topics in early child care are characterized by contrasting philo-
sophical beliefs, often accompanied by strong emotions. Three of these
complicated our program implementation, requiring compromises or
alternative approaches. First, the Incredible Years program uses time-
outs for physical aggression and other severe misbehaviors. Three
centers had policies against time-outs. One was willing to temporarily
change their policy after hearing our rationale and implementation
plan. They found time-outs to be a great improvement, and they made
the change permanent. A second center was willing to use time-outs
with slight modifications and a name change ("calm-downs"). The
third was adamant that nothing resembling time-out could be used,
and so we adjusted the program such that time-outs were not used. A
second issue involved using tangible incentives. One center director
and several teachers believed that rewards undermine intrinsic moti-
vation. In most cases, participants changed their minds after hearing
the program rationale. In a few instances, we de-emphasized the role
of incentives in the program. These slight program changes did not
seem to have a negative impact on the parent programs, which were
not modified. We did not find it problematic, for example, for parents
to use time-outs when teachers did not. Previous studies have suc-
cessfully taught parents these techniques with no complementary in-
volvement from schools, and this situation was similar to those cases.
We were, with permission from the centers, up front with the parents
about these differences of opinion and content, which stimulated in-
teresting and useful conversations about these topics.

   Finally, Dialogic Reading includes some direct teaching of pre-
academic skills, integrated within engaging activities. Despite the pro-
gram's emphasis on following children's interests, a few teachers be-
lieved that any direct instruction was developmentally inappropriate

for preschoolers. We found that we needed to be very careful in our choice of language, carefully describing Dialogic Reading to be clear that the program was appropriate to children's developmental levels. In all of these cases, resolutions were achieved. Negotiations depended on a collaborative relationship that allowed these issues to be raised and constructively addressed. On the other hand, these issues caught us by surprise to some extent, and in future work we would be better prepared to recognize and address them.

Language differences. Poverty disproportionately affects families whose first language is not English. We were only equipped to offer the program in English; group leaders spoke passable but not fluent Spanish. Though most of our Puerto Rican participants spoke English fairly well, we believe it would have been more effective for some families to have the program in their native language. The Incredible Years parent program is available in Spanish and several other languages, and this is a critical consideration. With respect to Dialogic Reading, we invited bilingual parents to read in their language of choice. Dialogic Reading does not require parents to read the text of books, so it can serve as a low-stress opportunity to practice English, or to talk about pictures in Spanish, regardless of the book's language.

Continuing programs when research is done. We had hoped that our research project would begin the ongoing use of these programs. Most centers expressed interest in continuing and extending the programs. We offered to facilitate program continuation by teaching daycare directors or teachers how to lead workshops, and by co-leading groups with them the next year. Centers indicated that they would like to do this, but none of the centers followed-up on this offer, and programs were not continued. Despite this failure, we think that program continuation is feasible. The programs are nicely structured. They include comprehensive, user-friendly manuals and supporting materials, and are suitable for community leaders to implement. Our impression is that center administrators did not find the time to pursue the programs, but that they would have been delighted to have them if practical details were arranged for them. In future work, we would offer a more specific plan for training continuing leaders that included a specific timeline for meetings, and logistical support (e.g., we would provide food). If teachers could be paid for their time in training, this would also make success more likely.

Future Directions

Addressing participation barriers. In terms of school engagement, Gresham (2004) describes the need to carefully conceptualize program scope and intensity while considering programs' social validity.

We think that the current programs balanced these considerations, and we were pleased with school engagement. Similar to previous efforts of this kind, parental participation was somewhat limited. Attrition is an under-researched topic, but the literature is consistent in finding that children with the most problems are the least likely to receive programs. On one hand, combined parent-school approaches should work best, so participation barriers need to be identified and addressed. On the other hand, consideration for practical issues and limited resources suggest that parental participation is unlikely to ever be complete. This further points to the importance of school-based approaches for reaching children whose parents might not participate.

Culture. Cultural differences and strengths should be more directly considered in improving programs. For instance, extended family and community members play a critical role in many African American and Latino families, so integrating multiple family members might improve outcomes (Jarrett & Burton, 1999). Parenting in African American families has been characterized as emphasizing respect and in Latino families as emphasizing flexibility (Forehand & Kotchick, 1996). Such generalizations do not, of course, apply to all families, but when such strengths are present, they nicely match the emphases of the programs we used. At the same time, little empirical data guide the use of such programs (e.g., Forehand & Kotchick, 1996). Almost no studies have directly investigated how culture may shape the form or effectiveness of interventions, particularly in the context of schools. Very little is known about the best way to assess or incorporate relevant cultural factors. Studies should include diverse samples, and examine within group as well as between group differences, considering possible cultural influences without making generalized assumptions. Better understanding of cultural factors would allow program emphases to be tailored to community needs and improve program participation, satisfaction, and outcome.

Relational aggression. Relational aggression is defined as behaviors intended to damage another's relationships or feeling of inclusion by a group (e.g., Crick & Grotpeter, 1995). Examples include withdrawing friendship, love or acceptance, spreading rumors, and gossiping. Growing evidence indicates that relational aggression is an important problem in 3-5 year-old children (Crick, 1996; Crick, 1997; Crick, Casas, & Mosher, 1997). Because relational aggression is often relatively covert, it is likely under-recognized. The treatment literature on externalizing problems has not examined intervention effects on relational aggression. On one hand, relational aggression is conceptually distinct from overt aggression, may not be characterized by the core noncompliance of overt aggression (McMahon, 1999), and is

not directly targeted by traditional externalizing programs. For these reasons, extant programs might not have large effects on relational aggression. On the other hand, overt and relational aggression are fairly strongly correlated (Crick et al., 1998), and targets of externalizing programs such as coercive cycling, problem-solving deficits, adult modeling, emotional regulation, and relationship deterioration might operate similarly in both kinds of aggression. Thus, whether externalizing programs have effects on relational aggression is an open question that needs to be examined.

Follow-up evaluations. Longer-term follow-up assessments are critical to evaluating programs' ultimate success. Such assessments involve practical issues such as families who move, or at the very least, scatter from one preschool to different elementary schools. They also involve conceptual challenges. For example, measures appropriate for preschoolers, such as letter identification tasks, may not be appropriate for older children. NICHD and ACF have recently invested resources into improving assessment options for young children, and so this may improve shortly.

Follow-up supports. Beyond follow-up assessments, follow-up intervention supports may be necessary for at least some high risk children. Funding options are often targeted at one age—improved coordination across the transition to elementary school would be helpful. Also, more knowledge is needed about what continuing support, for whom, and when, would help to better target resources for continued success.

Summary

Ultimately, the best prevention and treatment programs for externalizing problems and for children's mental health more generally, will likely include preschools as one component. Programs that allow for broad participation should provide widespread benefits, particularly in high-risk communities. To be most effective, programs need to target multiple elements of children's development, recognizing the connections among areas of functioning. Programs should build on strengths as well as address difficulties, to help children fulfill their potential for success.

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