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Early Intervention for Children With Behavior Problems in Summer Settings: Results From a Pilot Evaluation in Head Start Preschools

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Abstract

The objective of this study was to evaluate two early intervention packages to promote successful transitions to kindergarten for preschoolers with behavior problems recruited from Head Start preschools. Fifty children (M_{age} = 61 months; 76% male; 98% minority) referred by teachers due to early externalizing behavior problems were randomly assigned to one of the two groups. Group 1 (high intensity; HI) received a 4-week intensive summer program before the start of kindergarten, weekly parent workshops, and monthly school consultation and parent workshops throughout kindergarten. Group 2 (low intensity; LI) received only parent workshops. Program feasibility, child improvement, and parental satisfaction data were collected along with parent and teacher reports and measures of school readiness. Children in the HI group demonstrated fewer problem behaviors and less student–teacher conflict as reported by teachers. Early intensive summer interventions prior to kindergarten were found to be a promising avenue to promote successful transitions to school for children from Head Start preschools with behavior problems.

Keywords

early intervention, externalizing behavior problems, school readiness, Head Start, summer programs

Introduction

It is well documented that the early school years play an integral role in the development of the skills, knowledge, and behavior critical for school success (Duncan et al., 2007; Ramey & Ramey, 2004; Raver & Knitzer, 2002). The transition into these early school years (preschool to kindergarten) signifies an important developmental milestone; a time in which new expectations, relationships, and

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competencies are formed, laying the foundation for later school success (Rimm-Kaufman & Pianta, 2000). Some children arrive at the kindergarten door ready to succeed, while others do not, often due to emotional and behavioral problems. Estimates indicate that between 5% and 33% of students from preschool programs like Head Start are at risk for emotional and behavioral disorders (Feil et al., 2005; Kupersmidt, Bryant, & Willoughby, 2000; Lopez, Tarullo, Forness, & Boyce, 2000; Sinclair, Del'Homme, & Gonzalez, 1993), suggesting that many children need more than standard Head Start programming to be ready for kindergarten.

Ecological models of the transition to kindergarten and current definitions of school readiness have demonstrated that getting children "ready for school" involves a host of social-emotional and behavioral domains, above and beyond academic skills (Rimm-Kaufman & Pianta, 2000). Researchers have recently emphasized that children's early externalizing behavior problems (e.g., aggression, defiance, inattention, hyperactivity/impulsivity) have significant implications for children's school readiness and their transitions into the early school years (Denham, 2006; McClelland, Acock, & Morrison, 2006). Although early problem behaviors are very common in the preschool years (Campbell, 2002; Egger & Angold, 2006), between 10% and 34% of preschoolers exhibit these behaviors at high frequency/intensity warranting referral for mental health services (Carter, Briggs-Gowan, & Davis, 2004; Furniss, Beyer, & Guggenmos, 2006; Kupersmidt et al., 2000; Upshur, Wenz-Gross, & Reed, 2009), with low-income populations being the most vulnerable (Keenan, Shaw, Walsh, Delliquadri, & Giovannelli, 1997; Keenan & Wakschlag, 2004). Children at socioeconomic risk, who are also displaying early significant behavioral difficulties and who come from culturally and linguistically diverse families, are at risk for poorer outcomes (Mistry, Biesanz, Chien, Howes, & Benner, 2008; Qi & Kaiser, 2003). Without intervention, externalizing behavior problems in the preschool years have been found to predict later problem behaviors in the elementary school years (Angold & Egger, 2007), clinically significant levels of later externalizing behavior problems (Campbell & Ewing, 1990; Lee, Lahey, Owens, & Hinshaw, 2008), academic deficits, underachievement, and school failure (Massetti et al., 2008), greater use of special services (Bradshaw, Buckley, & Ialongo, 2008; Campbell & Ewing, 1990), and placements in special education (Redden et al., 2003). As these problems persist, the costs of intervention later in childhood and adolescence increase (Heckman, 2000). The importance of early intervention programs and their potential long-term benefits and savings is underscored by data estimating that for every dollar spent on high-quality early childhood interventions at ages 4 to 5, program returns equal US$8.70 (Heckman, 2000). Therefore, the need to develop evidence-based interventions in early childhood that will promote the school readiness skills necessary for a successful transition into the early school years for young children who are already displaying clinically significant levels of early behavior problems becomes increasingly important.

Interventions Targeting School Readiness for Children With Behavior Problems

There have been numerous early intervention programs that specifically target the social-emotional competency of preschool and young children with behavior problems during the school year (e.g., The Incredible Years [Webster-Stratton, Reid, & Hammond, 2004], Project Star [Kaminski & Stormshak, 2007], Promoting Alternative Thinking Skills [PATHS; Greenberg, Kusche, Cook, & Quamma, 1995], Early Risers' "Skills for Success" Program [August, Bloomquist, Realmuto, & Hektner, 2007], and First Step to Success [Walker, Stiller, Severson, Feil, & Golly, 1998]). Each of these addresses developmental tasks (e.g., knowledge, skills, age-appropriate functioning), multiple risk factors (i.e., ineffective parenting, biological and developmental risk factors, and peer and community risk factors), and cognitive-affective and social domains (e.g., secure attachment, social interaction, problem-solving, and school readiness skills), and the most effective programs target the multiple levels of risk factors as early as possible.

However, it is important to recognize that although some of these programs address social-emotional and behavioral concerns, they do not address other factors (i.e., literacy) that play an important role in school readiness. Moreover, significantly fewer programs have been specifically designed for the summer transition to kindergarten. Although some programs have been extended to the preschool classroom (i.e., First Step to Success) and have been used in Head Start classrooms (i.e., Preschool PATHS; Domitrovich, Cortes, & Greenberg, 2007), these interventions do not cover the summer months, a time in which the children from low-socioeconomic communities lose more than 1 month's worth of knowledge in math, reading, and language arts (Cooper, Charlton, Valentine, & Muhlenbruck, 2000). For children with behavior problems from low-socioeconomic communities, the summer learning loss may be even larger. Furthermore, because parent involvement plays a large role in promoting school readiness (Burchinal, Peisner-Feinberg, Pianta, & Howes, 2002; McIntyre, Eckert, Fiese, DiGennaro, & Wildenger, 2007; Morrison & Cooney, 2002; Pianta, Smith, & Reeve, 1991), it is important to note that attendance in the parenting components of these early intervention programs has been a limitation of their effectiveness. Studies have demonstrated that as many as 80% of preschool parents do not attend the prescribed number of sessions (i.e., Barkley et al., 2000), suggesting that new approaches are needed to engage preschool parents.

Summer Programs Targeting School Readiness for Children With Behavior Problems

Summer programs provide a unique opportunity to intensively address the school readiness skills necessary to succeed in the elementary school classroom during a time in which preschool children would otherwise likely receive no intervention (Alexander, Entwisle, & Olson, 2001). Programs (e.g., KindergARTen; Borman, Goetz, & Dowling, 2009) have been developed to help halt the summer achievement slide for preschool-aged children from low-income backgrounds, and others (e.g., Kids in Transition to School) have been developed for use with children with developmental delays and children in foster care (Pears et al., 2013; Pears, Kim, Healey, Yoerger, & Fisher, 2015). However, to our knowledge, no summer program has been designed, and systematically evaluated, to focus on the behavioral and social-emotional skills, as well as the maintenance of academic skills for preschool-aged children with early externalizing behavior problems who are transitioning to kindergarten.

One program developed for elementary school-aged children with clinically significant behavior problems is the children's Summer Treatment Program (STP; SAMHSA's National Registry of Evidence-Based Programs and Practices, 2008; Pelham et al., 2010). The STP is an evidence-based intensive program for children (aged 5-12) with attention-deficit/hyperactivity disorder (ADHD) and related problems (e.g., aggression, noncompliance, learning difficulties). The STP has a long history of treatment efficacy and has been found to improve the behavioral functioning of children with ADHD in the classroom, peer group, and home settings (see Fabiano, Schatz, & Pelham, 2014, for a review). Throughout the program, parents participate in weekly group behavioral parent training, which has been found to dramatically enhance parent attendance in parent training (Pelham, Fabiano, Gnagy, Greiner, & Hoza, 2005). The STP has demonstrated effectiveness in younger age groups (e.g., August et al., 2007) and lends itself to community adaptations (Frazier, Chacko, Van Gessel, O'Boyle, & Pelham, 2012; O'Connor et al., 2012). Recently, it has been adapted for use with pre-kindergarteners with clinically elevated levels of externalizing behavior problems (Graziano, Slavec, Hart, Garcia, & Pelham, 2014). Based on the lack of high-quality summer programming for preschoolers at risk for behavior problems in kindergarten, there is a need to improve the availability of services for children during this important developmental period. An adapted STP, focused on maintaining

academic skills, improving socio-emotional skills, reducing behavior problems, and increasing parent involvement, may be a promising avenue to promote school readiness for children with early behavior problems who are also at socioeconomic risk.

The Current Study

The current study evaluated two intervention packages, one of which included a newly developed intensive Kindergarten Summer Readiness Classroom (KSRC; Hart, Graziano, Kent, et al., 2010). The KSRC was developed for the current study and adapted from the STP to promote successful transitions to kindergarten for preschoolers with behavior problems from linguistically and culturally diverse backgrounds attending Head Start programs. Our goals were to (a) examine the feasibility and acceptability of delivering the two intervention packages (i.e., the KSRC with accompanying parent workshops vs. parent workshops alone) during the transition to kindergarten and (b) evaluate the impact of the KSRC with accompanying parent workshops, compared with weekly parent workshops alone, on indicators of successful transition. In terms of program feasibility and acceptability, we hypothesized that parents would be more engaged in, and satisfied with, intervention programming if their children were receiving the KSRC. In terms of program impact, we hypothesized that compared with weekly parent workshops, children who participated in the KSRC would demonstrate better behavior and improved academic, social, and classroom functioning in their kindergarten classrooms. We hypothesized further that children in the KSRC group would have fewer disciplinary actions and fewer referrals for retention and special education than children who did not receive the KSRC.

Method

Participants and Recruitment

Children and their caregivers were recruited from Head Start centers across a large urban southeastern city between March and the start of the intervention program. Children were referred through the existing mental health referral process for the local Head Start centers. Recruitment activities included brochure distribution by mental health coordinators at program-wide Head Start mental health/disability meetings, presentations at parent workshops, and organized information days at Head Start agencies. Two Head Start centers (one in the north region of the county and one in the south region of the county) were recruited to host the intervention programming, at no additional cost to the centers, to make the program accessible to families attending Head Start centers in both regions of the county. Interested parents were asked to call or speak with study staff and complete screening questions to determine eligibility. Criteria for study entry were as follows: (a) child was entering kindergarten; (b) family was able to attend the summer program or parent workshops at one of the two Head Start centers hosting the intervention programming; (c) child was residing with legal guardian(s); (d) child had a verbal ability estimate, as measured by the Peabody Picture Vocabulary Test–Fourth Edition (PPVT-4; Dunn & Dunn, 1997), at or above 70; (e) child had no history or concurrent diagnosis of any pervasive developmental disorder; and (f) primary referral problem was externalizing behavioral concerns at school as reported by the child's teacher on the Devereux Early Childhood Assessment (DECA; LeBuffe & Naglieri, 1999) completed at the beginning of the Head Start year, or by teacher referral at the time of study recruitment. If the family was eligible, consent and baseline assessment appointments were scheduled at their child's Head Start center. Figure 1 illustrates the recruitment and allocation plan for the study. The final participating sample included 39 boys and 11 girls, with a mean age of 61 months (SD = 3.66 months); see Table 1 for participant demographics and baseline child functioning. Ninety-two percent of participating caregivers were mothers; 8% were

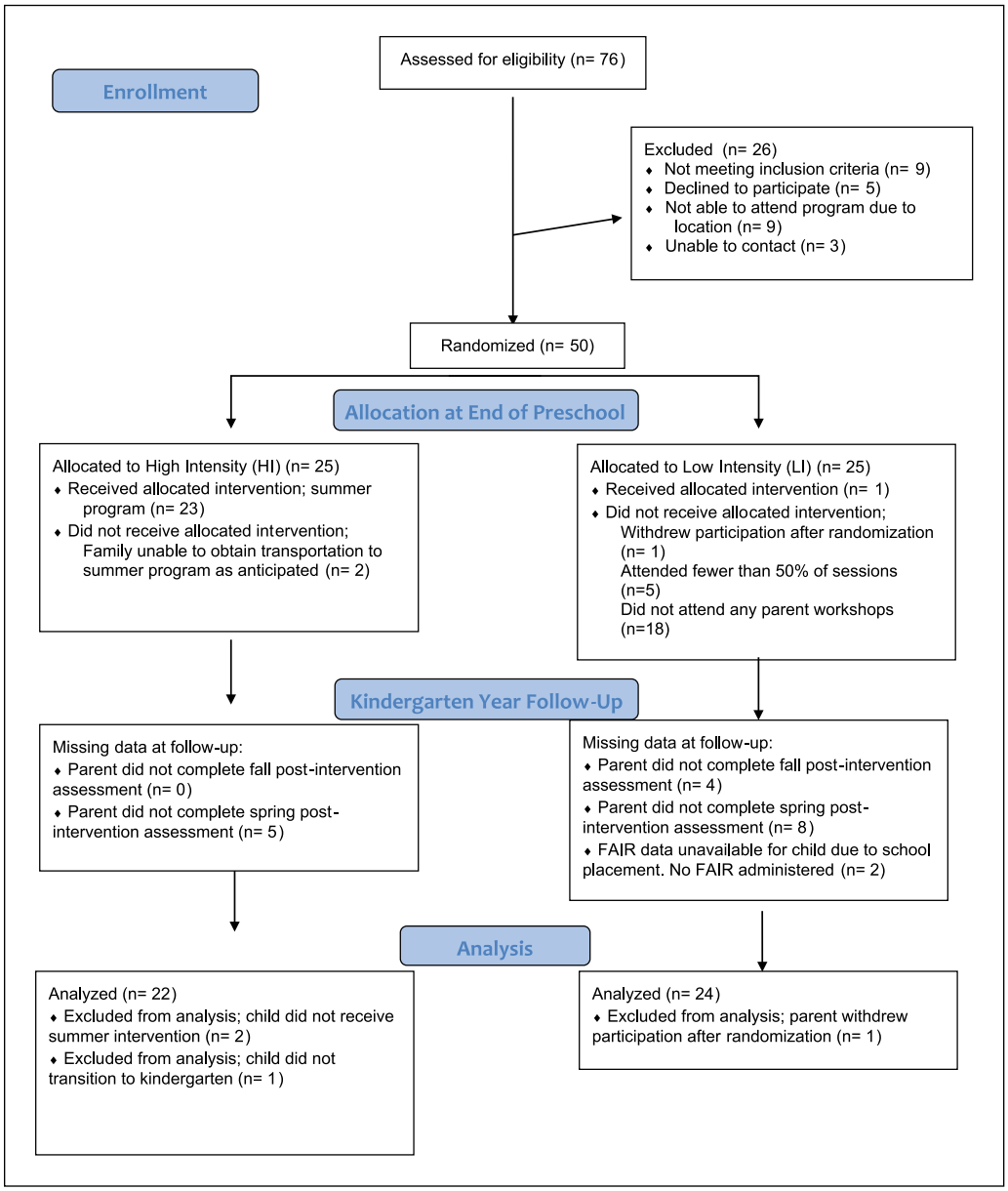

Figure 1. CONSORT 2010 flow diagram.
Note. CONSORT = CONsolidated Standards of Reporting Trials (Schulz, Altman, & Moher, 2010); FAIR = Florida Assessments for Instruction in Reading.

fathers. According to parents' and teachers' combined report on the Disruptive Behavior Disorders Rating Scale (DBD; Pelham, Gnagy, Greenslade, & Milich, 1992), at baseline, 60% of children met symptom criteria for either oppositional defiant disorder (ODD; 22% of sample) or conduct disorder (CD; 38% of sample). Four percent of children met symptom criteria for ADHD inattentive subtype, 18% met symptom criteria for ADHD hyperactive/impulsivity subtype, and 38% met symptom criteria for ADHD combined subtype. Fifty-two percent of children met symptom criteria for comorbid DBD diagnoses. No significant differences were found between groups in

Table 1. Baseline Demographic and Behavioral Characteristics of the Children and Families Enrolled in the Study.

Demographic/behavioral characteristic	High intervention	Low intervention	Total	$t(48)$	χ^2	p
n	25	25	50			
Age	60.44 (3.32)	61.72 (3.94)	61.08 (3.66)			
Gender				—	0.12	.73
Male	19 (76%)	20 (80%)	39 (78%)			
Female	6 (24%)	5 (20%)	11 (22%)			
Child's ethnicity (% minority)	24 (96%)	25 (100%)	49 (98%)	—	0.00	1.00
Hispanic/Latino	13 (52%)	13 (52%)	26 (52%)			
Not Hispanic/Latino	12 (48%)	12 (48%)	24 (48%)			
Parent language				—	1.78	.41
English	16 (64%)	20 (80%)	36 (64%)			
Spanish	8 (32%)	4 (16%)	12 (24%)			
Creole	1 (4%)	1 (4%)	2 (4%)			
Parent employment status				—	1.54	.46
Employed	16 (64%)	16 (64%)	32 (64%)			
Unemployed	5 (20%)	4 (16%)	9 (18%)			
Homemaker	4 (16%)	4 (16%)	8 (16%)			
Parent education status				—	2.82	.24
Less than high school	11 (44%)	8 (32%)	19 (38%)			
High school diploma	2 (8%)	7 (28%)	9 (19%)			
Some college/trade school	12 (48%)	9 (36%)	21 (42%)			
Parent relationship status				—	3.62	.31
Single	12 (48%)	11 (44%)	23 (46%)			
Married	4 (16%)	5 (20%)	9 (18%)			
Separated/divorced	5 (20%)	1 (4%)	6 (12%)			
Living with partner	4 (16%)	7 (28%)	11 (22%)			
Child assessment						
PPVT SS	85.04 (11.63)	79.83 (18.12)	82.49 (15.23)	1.20	—	.24
Letter name	15.76 (9.36)	14.75 (9.87)	15.27 (9.52)	0.37	—	.72
Letter sound	8.80 (9.09)	6.29 (7.94)	7.57 (8.55)	1.03	—	.31
Number (errors)	5.84 (6.16)	5.54 (5.19)	5.69 (5.65)	0.18	—	.86
Parent assessment						
ECBI intensity raw score	123.52 (48.65)	118.52 (40.05)	121.02 (44.18)	0.40	—	.70
ECBI problem raw score	16.04 (11.97)	13.36 (9.26)	14.70 (10.68)	0.89	—	.38
Overall IRS	4.08 (2.41)	3.36 (2.20)	3.72 (2.31)	1.10	—	.28
Teacher assessment						
SESBI intensity raw score	182.21 (53.61)	164.35 (42.58)	173.47 (48.84)	1.26	—	.21
SESBI problem raw score	22.13 (11.27)	21.04 (10.24)	21.60 (10.67)	0.55	—	.73
Overall IRS	5.22 (1.20)	4.77 (1.11)	5.00 (1.17)	1.29	—	.21
Combined parent and teacher DBD symptom scores						

(continued)

Table 1. (continued)

Demographic/behavioral characteristic	High intervention	Low intervention	Total	$t(48)$	χ^2	p
ADHD Inattentive	5.00 (3.14)	4.62 (2.51)	4.82 (2.83)	0.68	—	.50
ADHD hyp/imp	5.48 (3.01)	5.71 (2.56)	5.59 (2.72)	-0.15	—	.88
Oppositional problems	4.16 (2.70)	3.88 (2.79)	4.02 (2.72)	0.52	—	.61
Conduct problems	1.84 (2.19)	2.04 (3.07)	1.94 (2.63)	-0.15	—	.88
Intervention history						
No behavioral intervention	8 (32%)	7 (28%)	15 (30%)	—	—	—
Some behavioral intervention	17 (68%)	17 (68%)	34 (68%)	—	—	—
Medication				—	—	—
Yes	0 (0%)	1 (4%)	1 (2%)			
No	25 (100%)	24 (96%)	49 (98%)			

Note. Tests to determine differences between intervention groups revealed no significant differences between groups on any primary demographic or behavioral variables. Parent Language reflects the language through which staff conducted the assessments and interventions with parents. PPVT = Peabody Picture Vocabulary Test; SS = Standard Score; ECBI = Eyberg Child Behavior Inventory; IRS = Impairment Rating Scale; SESBI = Sutter-Eyberg Student Behavior Inventory; DBD = Disruptive Behavior Disorders Rating Scale; ADHD = attention-deficit/hyperactivity disorder; hyp/imp = hyperactivity/impulsivity.

terms of gender, baseline behavioral functioning, or family demographic characteristics, as detailed in Table 1.

Study Design and Procedure

All study procedures were approved by university institutional review boards. A randomized trial design with pre-, post-, and end-of-school year follow-up assessments was used to obtain preliminary evidence for the promise of the two intervention programs in improving the transition to kindergarten for children with early behavior problems who are also at socioeconomic risk. After eligibility was determined, participants were randomly assigned to one of two intervention groups. Group 1 (high intensity; HI) received a 4-week intensive summer program, the KSRC, before the start of kindergarten; eight weekly parent workshops (the first four were held concurrently with the KSRC, and the second four were held weekly during the month of September after the start of the kindergarten year); and monthly school consultation and parent workshops for the remainder of the kindergarten year. Group 2 (low intensity; LI) received the eight parent workshops held during the same time frame as the HI group and monthly parent workshops held for the remainder of the kindergarten year. Each intervention component is described in detail below.

All families participated in a baseline/pre-intervention assessment scheduled prior to the start of the summer interventions (March-June of preschool year), a fall post-intervention assessment scheduled 9 weeks after the start of the kindergarten school year (October), and a spring post-intervention assessment scheduled 9 months (May-June of kindergarten year) after completion of the summer interventions. At each assessment point, both parents and teachers completed measures regarding children's functioning. Parents completed ratings with study staff at their prospective Head Start center or over the phone. Parents received a US$10 gift card as an incentive for their participation for each wave of ratings they completed. Teachers were given questionnaire packets to complete independently. Preschool teachers, who completed baseline/pre-intervention ratings, received a US$5 gift card for completing baseline assessment measures.

Kindergarten teachers, who completed fall and spring post-intervention ratings, received a US$10 gift card for each assessment. In addition, during the kindergarten year, teachers completed monthly frequency ratings of disciplinary actions and, at the end of the school year, provided recommendations regarding referrals for retention and special education. Data were also collected from the local school district to examine students' academic outcomes at the beginning, middle, and end of the kindergarten year.

At baseline, in addition to the parent and teacher questionnaires, each child completed a brief assessment battery to evaluate his or her academic functioning. The assessment battery was conducted at each child's Head Start preschool by trained graduate student clinicians and included the PPVT-4, an untimed letter name and sound task to assess emergent literacy skills, and a counting task to assess number knowledge. The PPVT-4 is a well-validated and reliable assessment of children's receptive vocabulary that is correlated with standardized verbal IQ measures (Bell, Lassiter, Matthews, & Hutchinson, 2001). Group means on the PPVT-4 fell in the low average range (see Table 1 for participant baseline scores). In the untimed letter name and sound task, children were required to name the letter (presented in capital form) and letter sound presented to them on a flashcard in random order, as knowledge of letter names and letter sounds is one of the strongest single predictors of short- and long-term success in learning to read (Lonigan, Burgess, & Anthony, 2000). For each of these tasks, the maximum score was 26. Group means on these tasks suggest below benchmark performance as indicated by State Standards for Early Learning and Development (Florida Department of Education, 2011). In the counting task, children were asked to count from 0 to 20 to assess number knowledge, as verbal recall of numbers is one of most consistent predictors for later success in mathematics (Stevenson & Newman, 1986). The maximum score on this task was 21. Group means on this task suggest below benchmark performance as indicated by State Standards for Early Learning and Development (Florida Department of Education, 2011). No significant differences were found between groups on these measures.

Intervention Description

KSRC. Children assigned to the HI group attended a daily, 4-week full-day program (8:00 a.m.-3:00 p.m.) at one of two hosting Head Start centers. Children received breakfast, lunch, and snacks daily. Families were responsible for travel to and from the Head Start centers. Parents were reimbursed US$2 to cover transportation costs for each day they brought their child to the program. Children were placed in groups of 12 to 13 children. Full-day programming and aftercare was used to better prepare children for the typical school day they would encounter in local area kindergartens. For a schedule of daily activities, see Figure 2. Daily activities focused on two main aspects of school readiness in preparation for the kindergarten year: (a) social-emotional and behavioral preparedness and (b) academic preparedness. In total, children attending the KSRC received 140 hr of intervention.

The classroom at each site was staffed by one lead teacher/developmental specialist and four developmental aides, yielding a 1:3 staff to student ratio. The lead teachers were advanced clinical psychology graduate students with extensive experience in the behavior modification procedures and academic interventions used in the STP. The developmental aides were all undergraduates or first-year graduate students. All staff underwent an intensive week-long training prior to the starting week of camp. Doctoral-level clinical supervision occurred daily.

Social-emotional and behavioral components. The behavior support system used in the KSRC was modeled after the point system used in the STP Academic Learning Centers (Fabiano et al., 2007). The behavior support system used in the learning centers allows for development of children's abilities to follow through with instructions, complete tasks accurately, comply with

Time	Activity
7:30-8:30	Student Arrival/Structured Academic Free Explore
8:30-8:50	Breakfast
8:50-9:20	Morning Meeting
9:20-9:50	Independent Seatwork Period
9:50-10:30	Centers
10:30-10:40	Transition/Bathroom Break (BB)
10:40-11:10	Gross Motor/Recreational Period
11:10-11:20	Transition to ELA
11:20-11:50	Large Group: English Language Arts (ELA) circle time
	Small Group: ELA
11:50-12:10	Lunch
12:10-12:30	Recess
12:30-12:40	Transition/BB
12:40-12:55	Mid Day Meeting
12:55-1:25	Large Group: Math/Science circle time
	Small Group: Math/Science
1:25-1:55	Kindergarten Peer Assisted Learning Strategies (K-PALS)
1:55-2:05	Transition/BB
2:05-2:20	Large or Small Group Learning Game
2:20-2:35	Snack
2:35-2:45	End of Day Meeting
2:45-3:05	Recess
3:05-3:25	Early Dismissals
3:25-5:00	Recreational Aftercare

Figure 2. KSRC daily schedule.
Note. KSRC = Kindergarten Summer Readiness Classroom.

teacher requests, and interact cooperatively and positively with peers—all areas in which children with behavior problems typically display difficulty. A visual response-cost system was implemented in which children began each academic period with 10 green tokens displayed on a chart in front of the classroom. A token was removed for violating one of seven posted classroom rules (i.e., be respectful, follow directions, work quietly, use materials and possessions appropriately, remain seated, raise your hand to speak, and stay on task). In addition, children were able to earn tokens for exhibiting positive behavior and for work completion and accuracy. Tokens earned across activities were visually displayed in individual token jars in the classroom. Children were able to exchange their tokens for daily classroom rewards and privileges such as twice-daily recess. More serious violations (e.g., aggression) resulted in an automatic time out from positive reinforcement along with associated token losses. Children engaged in daily social skills training with the use of puppets that focused on four main skills: participation, communication, cooperation, and encouragement. Social skills were reinforced through labeled praise throughout the program day by staff members. A high praise to rule violations ratio (3:1) was used by staff throughout the program day. A Daily Report Card (DRC; Fabiano et al., 2010; O'Leary, Pelham, Rosenbaum, & Price, 1976; Volpe & Fabiano, 2013), one of the key hallmarks of the STP, was established for each child beginning the second week of the program. Behavioral data collected

on classroom point sheets during the first week were examined to determine individual child targets for improvement (e.g., stays in seat/area with three or fewer reminders). DRCs were used to communicate to parents the degree to which children met their individual behavioral and academic goals. Parents were instructed on how to provide daily DRC-contingent rewards at home. Parents met daily with lead staff members to review their child's progress on the DRC, and parents were instructed to return the DRC the next camp day signed with an indication of the home-reward provided. This enabled staff to verify consistent parental reinforcement of the DRC.

Academic components. The academic curriculum of the KSRC was developed to reinforce Florida State standards for reading, math, and science for entering kindergarteners. Furthermore, the curriculum was designed to reflect a literacy and numeracy rich environment while also addressing the four areas of development (social/emotional, physical, cognitive, and language) outlined in the partnering Head Start agency's curriculum. Recognizing that the culture, expectations, and curriculum of kindergarten are different from the approach of Head Start, material was incorporated from *Ladders to Literacy: A Preschool Workbook* (Notari-Syverson, O'Connor, & Vadasy, 2007), which focuses on emergent literacy skills that have been found to be predictors of later literacy achievement (Lonigan et al., 2000; Storch & Whitehurst, 2002). In addition, curriculum activities for pre-K and entering kindergarten were integrated from the Florida Center for Reading Research (FCRR; 2008) and from Kindergarten Peer-Assisted Learning Strategies (K-PALS; Fuchs et al., 2001). Daily lesson plans for each classroom activity (e.g., morning meeting, centers) were developed to incorporate materials across curricula. Each week had a theme. For example, during the week of At the Beach, all the academic activities, centers, vocabulary of the week, seatwork, as well as homework, were related to the theme. The mode of instruction varied across the day and included small group, whole group, and independent work. Development of programming designed to promote kindergarten readiness incorporated information about expectations of kindergarten collected through literature review and from meetings with Head Start directors and curriculum specialists.

Parent transitional workshops. Parents of children in the HI group were invited to attend four weekly 90-min parent workshops held concurrently with the KSRC. Workshops were held at each of the Head Start centers after the camp day (i.e., 4:00 p.m.-5:30 p.m.) and included child care. Workshops were led by graduate students in clinical psychology. A bilingual translator was present at each parent workshop to translate workshop content to Spanish-speaking or Creole-speaking attendees, and workshop materials were translated for Spanish- or Creole-speaking attendees.

Session content was adapted from the Community Parent Education Program (COPE; Cunningham, Bremner, & Boyle, 1995), a large group, community-based program for parents of children with disruptive behavior disorders. Sessions from the COPE manual were selected to target how parents could improve their child's transition to kindergarten both behaviorally and academically. Specific sessions selected included content on promoting positive learning and behavior, strengthening parent–child relationships at home and teacher–child relationships at school, building home-learning activities to support emergent literacy and numeracy development, building positive approaches to learning, preparing for the first day of school, and working with your child's new school, including content on building strong home–school communication by establishing daily home–school communication using a DRC. Parent discussion, problem solving, and promotion of parental empowerment were emphasized. One week after the start of the kindergarten year, parents were invited to attend four additional weekly parent transitional workshops held at the hosting Head Start centers. Sessions in September focused on getting connected with schools, problem-solving situations that may have occurred in the first weeks of kindergarten, and promoting active parent involvement in children's learning and

developing positive home-learning routines. Eight monthly booster sessions were offered from October to May. Booster sessions focused on problem-solving home and school behaviors. The timing of workshops—four held weekly during the summer, four held weekly during the first month of school, and monthly booster sessions until the end of the school year—was intended to bridge the transition to kindergarten and provide continual support to parents throughout the school year.

Parents of children in the LI group were also invited to attend the same series of parent transitional programming during the summer and kindergarten year, but their children did not receive the summer program or the monthly conjoint kindergarten school consultation. Sessions were held on a different day than those of the HI group. All parents received US$2 to defray transportation costs for each parent workshop attended.

Parent–teacher–consultant monthly meetings. Families assigned to the HI group received monthly conjoint behavioral school consultation services throughout the kindergarten year. These sessions were modeled from the Multimodal Treatment Study of Children With Attention-Deficit/Hyperactivity Disorder (MTA; MTA Cooperative Group, 1999). Parents were asked to meet 7 times with their child's teacher and a school consultant to provide structure for parents to build positive and consistent school-home communication. The average number of school consultation meetings received was 6.16 (SD = 1.40) sessions; however, the average number of meetings in which parents also attended was 2.59 (SD = 2.03) sessions.

Measures of Feasibility and Acceptability

Intervention integrity and fidelity. Intervention components were operationalized in a program manual. Program staff were expected to memorize and complete a test of the operational definitions for the behaviors to be modified in the program. Training involved procedures for staff to practice and role-play program procedures with direct feedback from clinical supervisors. At the end of training, staff were required to pass a competency test of program procedures prior to program start. Adherence to the manual was reinforced during daily supervisory observations and feedback sessions. During the summer program, doctoral-level research staff members conducted intervention integrity and fidelity observations, using a standard intervention fidelity checklist, on 20% of the program days at both KSRC sites. Checklists were reviewed with classroom staff on a weekly basis for supervision purposes. The average percentage of activity and behavior modification procedures completed across the program days was 96.5%. There were no significant differences across sites.

Attendance. Attendance for each camp day and parent workshop was measured from sign-in sheets completed by staff during drop-off and pickup and at the start of each parent meeting.

Improvement and satisfaction. A pre-kindergarten adaptation of the Improvement Rating Scale (Pelham et al., 2000) was used to measure improvement during the KSRC. Several items were revised to reflect age-appropriate domains (i.e., Conduct Problems, Adult-Directed Defiance, Social Functioning, Inattention, Mood/Self-Regulation, Academic Skills, and Work-Related Behavioral Skills). The scale consisted of 41 items. Counselors were asked to indicate the target child's degree of improvement on each item using a 7-point Likert-type scale that ranged from 1 (*very much worse*) to 4 (*unchanged*) to 7 (*very much improved*). On any item, counselors could also rate that the behavior was *never a problem*. Analyses conducted on items in this study demonstrated high internal consistency among items (Cronbach's $\alpha = .90$).

An eight-item Parent Satisfaction and Improvement Rating scale developed for use in this study (Hart, Graziano, & Pelham, 2010) was completed by parents of children in the HI group. Four

items assessed parent satisfaction on a 1 to 4 scale (1 = *not at all*, 2 = *somewhat helpful*, 3 = *helpful*, 4 = *very helpful*). These items were as follows: "How helpful did you find the program staff?" "How helpful do you think this program was for your child?" "How helpful did you find the weekly parent workshops?" and "How helpful did you find the Daily Report Card you received about your children's behavior?" Two items assessed parent-reported improvement on a 1 to 4 scale (1 = *no improvement*, 2 = *some improvement*, 3 = *noticeable improvement*, 4 = *very noticeable improvement*). These items were as follows: "How much improvement have you noticed in your child's behavior over the course of the program?" and "How much improvement have you noticed in your child's academics over the course of the program?" Parents were also asked to indicate whether they would refer the program to other families by *yes* or *no* response. The final item asked parents to rate the extent to which the program location was convenient for their family on a 1 to 4 scale (1 = *not convenient*, 2 = *somewhat convenient*, 3 = *convenient*, 4 = *very convenient*).

Measures of Behavioral, Academic, and Social Functioning

Teacher and parent report of child behavior problems. At each assessment point, teachers and parents were asked to complete the Eyberg Behavior Rating Scales. Teachers completed the Sutter-Eyberg Student Behavior Inventory–Revised (SESBI-R; Funderburk & Eyberg, 1989), and parents were asked to complete the Eyberg Child Behavior Inventory (ECBI; Eyberg & Ross, 1978). Both questionnaires are designed to identify children aged 2 through 16 in need of treatment for conduct problems. The SESBI-R and ECBI have been found to have high reliability and validity across age and socioeconomic status and are sensitive measures of treatment outcome (Funderburk, Eyberg, Rich, & Behar, 2003; Querido & Eyberg, 2003). The current study used the Intensity Scale score (SESBI-R α range = .96-.97 across all time points; ECBI α range = .93-.95 across time points). No significant differences were found between groups on these measures at baseline.

Impairment. At each assessment point, parents and teachers completed the Impairment Rating Scale (IRS; Fabiano et al., 2006) for their child/student. The IRS is a six-item rating scale that asks parents and teachers to rate how their child/student is functioning on a scale of 0 (*no problem at all; does not need treatment*) to 6 (*extreme problem; definitely needs treatment*) across multiple domains. It has been found to demonstrate adequate reliability and validity and is sensitive to behavioral intervention effects (Chronis et al., 2004; Pelham et al., 2014). The current study utilized the overall IRS score (α range for parent ratings = .76-.89 across time points; range for teacher ratings = .78-.91 across time points).

Social competence. At each assessment point, parents and teachers completed the Social Competence Scale (SCS; Parent & Teacher Versions; Conduct Problems Prevention Research Group, 1995). The SCS is a 12-item measure designed to assess a child's prosocial behaviors, communication skills, and self-control. Parents and teachers were asked to assess how well each statement describes their child on 5-point Likert-type scale, ranging from 0 (*not at all*) to 4 (*very well*). The current study utilized the total SCS score (α range for parent ratings = .79-.88 across time points; α range for teacher ratings = .93-.97 across time points).

Student–teacher relationship. At each assessment point, teachers completed the Student–Teacher Relationship Scale (STRS; Pianta, 2001). The STRS is a 28-item questionnaire designed to assess a teacher's perception of his or her relationship with a student. Items are scored on a 5-point Likert-type scale from 1 (*definitely does not apply*) to 5 (*definitely applies*) and yield scores across three dimensions of student–teacher relationships including Conflict, Closeness, and Dependency. For this study, Conflict scores were compared (α range = .75-.85 across time points).

Frequency of disciplinary actions. Teachers were contacted monthly by research staff throughout the school year (October-May) and asked how many times (if any) out-of-classroom disciplinary actions (e.g., sent to time out room, sent to principal, sent to guidance counselor, detention) were taken with the target child over the past week. The number of out-of-school suspensions (i.e., child suspended from school and asked to stay home for a period of time) for each child was also collected from school district-level data.

Referral for retention in grade or special education. In the spring of the kindergarten year, teachers were asked to report on whether or not they would recommend the child be retained in kindergarten or referred for special education.

Academic outcomes. At the end of the school year, results from the Florida Assessments for Instruction in Reading (FAIR; FCRR, 2009) were obtained to assess each child's early literacy progress. For the current study, Probability of Reading Success (PRS) scores across the fall, mid-year, and spring of kindergarten were compared between groups.

Analytic Plan

The first set of analyses was related to program evaluation and included parent participation rates, parent satisfaction, and parent and counselor ratings of child improvement over the course of the intervention programs. Data relevant to program feasibility and acceptability were primarily descriptive in nature.

To examine intervention effects on primary outcome measures (i.e., parent and teacher ratings of child behavior problems, impairment, social competence, and student–teacher relationship) and objective outcome measures (i.e., academic performance) general linear model (GLM) repeated-measures procedure in the Statistical Package for the Social Sciences, Version 19.0 (SPSS 19.0; see Keselman, Algina, & Kowalchuk, 2001) was conducted for each dependent variable with a baseline value with group (HI vs. LI) as the between-subject variable and time (Time 1 vs. Time 2 vs. Time 3) as the within-subject variable. Significant main effects were followed with post hoc contrasts, with Bonferroni correction to account for Type I error, to determine when the significant change occurred, whether within or between groups. For this study, only significant Time × Group interactions were explored. For dependent variables that were not measured at baseline, post-intervention objective measures of successful transition (i.e., retention in kindergarten, referral for special education, frequency of disciplinary actions) were compared between groups using two-sample t tests. Effect sizes (Cohen, 1988) were calculated for both fall and spring post-intervention outcomes. As recommended by Thompson (2002), confidence intervals (CIs) for all effect sizes were also included. Intervention outcome analyses included 46 children. No teacher rating data were missing at follow-up. Missing data on parent measures were imputed using the expectation maximization (EM) method as implemented in SPSS 19.0 (see Enders & Peugh, 2004). There were no statistically significant differences between families with missing data on the Time 1 ECBI Intensity score.

Results

Feasibility and Acceptability

Attendance. The mean percentage of days attended across north and south sites at the KSRC was 89% (SD = 0.15) for children who were able to attend the summer program (i.e., 23 of the 25 children assigned to the HI group). Regarding attendance in parent transitional workshops, there was a significant difference in attendance between groups before the start of kindergarten,

Table 2. Counselor-Rated Overall and Domain-Specific Improvement.

Domain	Very much worse or much worse	Somewhat worse	Unchanged	Somewhat improved	Much improved or very much improved	*M* (*SD*)
Conduct problems	0.0%	13%	26.1%	43.5%	13.0%	4.59 (0.91)
Adult-directed defiance	4.3%	21.7%	21.7%	34.8%	13.0%	4.32 (1.13)
Social functioning	0.0%	0.0%	30.4%	56.5%	13.0%	4.83 (0.65)
Inattention	0.0%	4.3%	13.0%	47.8%	34.8%	5.13 (0.82)
Academic skills	0.0%	0.0%	26.1%	39.1%	34.7%	5.13 (0.87)
Work-related behavioral skills	0.0%	8.7%	8.7%	47.8%	30.4%	5.05 (0.90)
Mood/self-regulation	0.0%	13%	34.8%	30.4%	21.7%	4.61 (0.99)
Overall	0.0%	13%	8.7%	34.8%	43.5%	5.07 (1.08)

Note. % indicates the proportion of children rating in the improvement category by counselors.

$t(40.62) = 4.90$, $p < .05$, $d = 1.44$, with parents in the HI group attending more sessions than parents in the LI group ($M = 2.30$, $SD = 1.43$ vs. $M = 0.50$, $SD = 1.06$ summer sessions, respectively). After the start of kindergarten, there was a marginally significant difference in attendance between groups, $t(39.47) = 2.01$, $p = .051$, $d = 0.59$, with parents in the HI group attending more sessions than parents in the LI group ($M = 0.78$, $SD = 1.04$ vs. $M = 0.25$, $SD = 0.74$ September sessions, respectively). After completion of the September sessions, there was a marginally significant difference in attendance of booster sessions between groups, $t(38.21) = 1.90$, $p = .07$, $d = 0.57$, with parents in the HI group attending more mean sessions than parents in the LI group ($M = 1.13$, $SD = 1.67$ vs. $M = 0.33$, $SD = 1.13$ booster sessions, respectively).

There was also an effect for site location (only for the HI group), $t(21) = -2.79$, $p = .01$, $d = -1.16$, with parents in the HI south group attending more summer sessions than parents in the HI north group ($M = 3.00$; $SD = 1.28$ vs. $M = 1.55$, $SD = 1.21$, respectively); marginally more during the September sessions, $t(21) = -1.96$, $p = .06$, $d = -0.82$ ($M = 1.17$, $SD = 1.11$ vs. $M = 0.36$, $SD = 0.80$, respectively); and significantly more booster sessions throughout the kindergarten year, $t(13.57) = -2.71$, $p = .03$, $d = -0.93$ ($M = 1.8$, $SD = 2.04$ vs. $M = 0.36$, $SD = 0.67$), respectively. There were no significant site differences in attendance at parent workshops for parents in the LI group. Due to the significant differences in parent workshop attendance between sites in the HI group, the effect of site was controlled for in subsequent analyses.

Improvement and satisfaction. Overall, counselor-perceived improvement ratings (see Table 2) indicated that most of the children (78.3%) improved at least somewhat after participating in the KSRC. On average, the children showed improvement across domains. To examine HI group parent satisfaction and improvement, all eight items of the Parent Satisfaction and Improvement Rating scale were examined categorically by response. One hundred percent of parents rated the summer program, parent workshops, DRC, and staff as helpful for their child and their family. One hundred percent of parents reported noticeable improvement in their child's behavior, and 91% reported noticeable improvement in their child's academics. All parents reported that they would recommend the summer program to other families. Seventy percent of parents reported that the program was convenient for their family.

Behavioral, Academic, and Social Functioning Outcomes

Mean scores and standard errors on all outcome measures between baseline, fall post-intervention, and spring post-intervention are shown in Table 3.

Behavior problems. In the overall model, there was a significant within-subjects main effect of time, $F(2, 86) = 3.23$, $p < .05$, on SESBI intensity raw scores, indicating an overall reduction in scores across groups across all three time points. Within-subjects contrasts reveal that in the fall, there was a marginally significant main effect of time, $F(1, 43) = 3.68$, $p < .07$, and a significant Intervention Group × Time interaction, $F(1, 43) = 4.25$, $p < .05$, on SESBI intensity raw scores, indicating a larger decrease in SESBI intensity scores from baseline to fall for children in the HI group compared with children in the LI group. In the spring, no significant main effects were found. No significant effects were found on parent ratings of behavior problems.

Impairment. For both teacher and parent reports, no significant within- or between-subjects effects were found, indicating that the average IRS score did not differ between groups.

Social competence. For both teacher and parent reports, no significant within- or between-subjects differences were found, suggesting that the average social competence scores across the three time points did not differ between groups or between sites.

Student–teacher relationship. In the overall model, there was a significant within-subjects main effect of time, $F(2, 86) = 10.20$, $p < .05$, and Time × Group interaction, $F(2, 86) = 4.54$, $p < .05$, on STRS Conflict scale scores, indicating that teacher-rated conflict with students reduced for both groups but that there was a greater reduction in conflict scores for children in the HI group. There were no other significant effects. Between baseline and fall, within-subject contrasts reveal a significant effect of time, $F(1, 43) = 22.28$, $p < .05$, on STRS Conflict scale scores, indicating that teacher-rated conflict with students reduced for both groups. However, there was a significant Intervention Group × Time interaction, $F(1, 43) = 7.83$, $p < .05$, indicating a greater reduction in conflict scores from preschool to fall kindergarten for children in the HI group when compared with children in the LI group. Between fall and spring, within-subject contrasts reveal a significant effect of time, $F(1, 43) = 4.83$, $p < .05$, on STRS Conflict scores, indicating that teacher-rated conflict with students continued to reduce for both groups across the kindergarten year.

Frequency of disciplinary actions. A non-parametric Mann–Whitney U test was conducted to examine differences between groups on mean disciplinary action scores. Children in the HI group had marginally fewer disciplinary actions than children in the LI group ($M = 0.10$, $SD = 0.19$ vs. $M = 0.29$, $SD = 0.50$, respectively, $p = .07$, Cohen's $d = 0.47$). Children in the HI group had fewer out-of-school suspensions than children in the LI group ($M = 0.09$, $SD = 0.43$ vs. $M = 0.58$, $SD = 1.41$, respectively, $p = .08$, Cohen's $d = 0.46$).

Grade retention and referral for special education. Binary logistic regressions were conducted to examine whether intervention group significantly predicted whether a child was to be recommended for retention in kindergarten and whether a child was referred for special education. Intervention group was a marginally significant predictor, $B = 2.16$, Wald $\chi^2(1) = 3.75$, $p = .054$, odds ratio (OR) = 8.65, 95% CI = [0.97, 77.32], indicating that a child in the LI group was 8.65 times more likely to be recommended for retention than a child in the HI group. Intervention group did not significantly predict whether or not a child was referred for special education, $B = 1.10$, Wald $\chi^2(1) = 0.85$, $p > .05$, OR = 3.00, 95% CI = [0.29, 31.23].

Table 3. Results of Analyses Examining Difference Between High- and Low-Intensity Intervention Groups in Fall and Spring of Kindergarten.

	High intensity (n = 22)			Low intensity (n = 24)				
	Baseline[a]	Fall[b]	Spring[c]	Baseline[a]	Fall[b]	Spring[c]	Time × Group	
Measure	*M* (*SE*)	*M* (*SE*)	*M* (*SE*)	*M* (*SE*)	*M* (*SE*)	*M* (*SE*)	*p* value	*d* [95% CI]
Teacher report								
SESBI-R	177.02 (9.54)	124.68 (11.05)	125.75 (10.89)	163.78 (9.13)	146.37 (10.58)	133.40 (10.43)	**.045**[ab], .322[bc]	**−.43[b] [−1.01, 0.16]** −.15[c] [−0.73, 0.43]
IRS	5.26 (.24)	2.84 (.48)	2.83 (.51)	4.82 (.23)	3.65 (.46)	3.20 (.49)	.107[ab], .450[bc]	−.37[b] [−0.95, 0.22] −.16[c] [−0.74, 0.42]
SCS-Total Score	1.86 (.17)	1.68 (.19)	1.86 (.19)	1.95 (.17)	1.60 (.18)	1.75 (.19)	.578[ab], .932[bc]	.09[b] [−0.49, 0.67] .12[c] [−0.46, 0.70]
STRS Conflict	36.45 (1.80)	24.20 (1.85)	26.46 (2.04)	32.40 (1.73)	27.98 (1.77)	29.91 (1.96)	**.008**[ab], .908[bc]	**−.45[b] [−1.03, 0.14]** −.37[c] [−0.95, 0.22]
Parent report								
ECBI	125.29 (9.53)	117.38 (8.26)	118.67 (8.35)	119.48 (9.13)	114.85 (7.90)	116.96 (8.00)	.702[ab], .847[bc]	.07[b] [−0.51, 0.65] .05[c] [−0.53, 0.62]
IRS	4.12 (.48)	2.87 (.53)	2.38 (.41)	3.52 (.46)	3.21 (.50)	3.19 (.40)	.204[ab], .338[bc]	−.14[b] [−0.72, 0.44] −.43[c] [−1.01, 0.16]
SCS-Total score	1.86 (.17)	2.11 (.15)	2.11 (.14)	1.95 (.17)	2.27 (.15)	2.00 (.13)	.786[ab], .200[bc]	−.23[b] [−0.81, 0.35] .17[c] [−0.41, 0.75]

Note. CI = confidence interval; SESBI-R = Sutter-Eyberg Student Behavior Inventory–Revised; IRS = Impairment Rating Scale; SCS = Social Competence Scale; STRS = Student–Teacher Relationship Scale; ECBI = Eyberg Child Behavior Inventory. Estimated marginal means across time points with site as a covariate reported. *p* values are reported for contrast tests between time points (i.e., [ab] = comparison of baseline scores [a] with fall scores [b]; [bc] = comparison of fall scores [b] with spring scores [c]); Significant *p* values are bolded; Cohen's *d* values are reported for effect sizes at each time point (i.e., [b] = effect size of finding at fall; [c] = effect size of finding at spring).

Table 4. Results of Analyses Examining Differences in FAIR PRS Scores Between High- and Low-Intensity Intervention Groups Across the Kindergarten Year.

Academic outcomes	High intensity (n = 22)			Low intensity (n = 21)			Time × Group	
	Fall	Mid	Spring	Fall	Mid	Spring		
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*p* value	*d* [95% CI]
FAIR PRS scores	.58 (.23)	.59 (.28)	.76 (.23)	.57 (.26)	.64 (.32)	.65 (.35)	.468[ab], **.009[bc]**	.04[a] [−0.56, 0.64] −.17[b] [−0.77, 0.43] **.37[c] [−0.23, 0.98]**

Note. CI = confidence interval; FAIR = Florida Assessment for Instruction in Reading; PRS = Probability of Reading Success. *p* values are reported for contrast tests between time points (i.e., [ab] = comparison of fall scores with mid-year scores, [bc] = comparison of mid-year scores with spring scores); Cohen's *d* values are reported for effect sizes at each time point (i.e., [a] = effect size of finding at fall, [b] = effect size of finding at mid-year,[c] = effect size of finding at spring).

Academic outcomes. A GLM repeated-measures procedure was conducted to examine group differences on PRS scores (see Table 4). There was a significant effect of time, $F(1, 41) = 7.84$, $p < .05$, with both groups' PRS scores increasing over the kindergarten year. The Intervention Group × Time interaction was marginally significant, $F(1, 41) = 2.83$, $p = .07$, indicating that the PRS scores of children in the HI group increased at a greater rate than those of children in the LI group. Post hoc contrasts demonstrate that the Group × Time interaction was significant between the mid-year and end-of-year FAIR assessments, $F(1, 41) = 7.412$, $p < .01$. No between-subjects effects were found; however, the differences between group means at the end of the year yield a medium effect size in favor of children in the HI group.

Discussion

This study represents the first attempt to evaluate the initial promise of an intensive early intervention program designed to promote successful transitions from Head Start preschools to kindergarten for preschoolers with behavior problems. In this study, we developed an intensive summer kindergarten readiness class and parenting workshops designed to improve the transition into kindergarten. We implemented and evaluated the effectiveness of the KSRC relative to weekly parent workshops alone on improving children's transition to kindergarten. Our results demonstrate preliminary program feasibility and acceptability for the KSRC, with higher rates of attendance in the parent workshops for families of children receiving the KSRC. Results from teacher ratings demonstrate more rapid improvement in teacher-rated child behavior at the start of kindergarten and lower levels of teacher-rated conflict for children in the HI group than for children in the LI group. Children in HI group were marginally less likely to receive disciplinary actions and to be retained in kindergarten than children in the LI group and performed marginally better on measures of academic outcomes at the end of the kindergarten year. No significant group differences were found on parent and teacher measures of behavioral impairment or social competence. In addition, no significant group differences were found on parent-rated child behavior problems or referrals for special education. Each finding is discussed in detail below.

Consistent with our hypotheses, we found that children in the HI group demonstrated more rapid improvement in their behavior between the end of preschool and the fall of kindergarten as measured by teacher ratings of child behavior problems and had less conflict with their teachers per teacher report than did children in the LI group. It is important to note that although these improvements were maintained across the kindergarten year, no significant differences emerged

between children in the HI and LI groups during the spring, suggesting that children in the LI group were functioning at the same level as children in the HI group by the end of the kindergarten year. We did not find significant effects of either intervention group on parent report of child behavior problems or on parent and teacher report of functional impairment. The lack of significance on parent report may be due to the primary referral problem being problems in school or the decline in parent attendance at the parenting workshops at the start of the kindergarten year across both intervention groups. It may be necessary for future iterations of the program to consider enhancing elements of the parenting workshops to increase parent engagement to have a greater effect on parent-reported measures of behavioral functioning. Although we provided child care and compensation to defray the cost of travel, parents in the HI group attended, on average, three of eight parenting workshops. Therefore, it is unlikely that parents would have experienced a significant decline in behavioral symptoms at home from this brief intervention. Of note, however, examination of both teacher- and parent-rated IRS scores reveals that the HI group mean fell below the clinical cutoff (IRS score of 3 or higher) in the fall and spring of kindergarten, whereas the LI group mean remained above the clinical cutoff. Although there was not a statistically significant difference in these clinical cutoff scores between the HI and LI groups, the reduction in impairment for families of children in the HI group provides preliminary evidence suggesting some meaningful change at school and at home. Perhaps it would be beneficial for future programming to provide all parenting workshops before the start of the kindergarten year (e.g., twice weekly parenting workshops over the course of the 4-week KSRC) so as to reduce the likelihood of workshop absenteeism once the busy kindergarten school year begins.

In addition, we did not find significant differences between groups on teacher- and parent-rated social functioning. Although the teaching and consistent reinforcement of social skills are a key component of the KSRC, this finding may have implications for program development. Specifically, it may be necessary for future iterations of the program to integrate other evidence-based child training social-emotional curricula (e.g., The Incredible Years Dinosaur Social Skills and Problem-Solving Curriculum, Preschool PATHS program) to enhance the effects of the KSRC social skills training.

On objective measures of behavioral and academic outcomes, results demonstrated that children in the HI group had marginally fewer disciplinary actions and out-of-school suspensions across the kindergarten year than children in the LI group. We also found that children in the LI group were at marginally greater odds of retention referral than children in the HI group and that children in the HI group demonstrated greater improvement on kindergarten achievement measures (i.e., FAIR PRS scores). We did not find that the likelihood of being referred for special education differed between the groups. Although it is commonly thought that special education referrals and retention are correlated and have similar likelihoods, related research with children with learning disabilities (LDs) has demonstrated that minority and urban youth with LDs are more apt to be retained before being referred for evaluation (Barnett, Clarizio, & Payette, 1996). It has been suggested that this discrepancy may be due to a host of factors, including teachers' beliefs about remediation for slow learning and developmentally immature students who have not yet "caught up" with their peers or school district's attempts to implement response to intervention (RTI) models of intervention before making an official referral for special education. Nevertheless, our retention data demonstrate preliminary promising effectiveness of the intensive program on improving child outcomes. Moreover, given the large costs associated with retention—a projected annual cost of US$8,333 per child in 2013 dollars converted from US$6,556 in 2003 dollars based on the analyses of Chambers, Shkolnik, and Perez (2003)—it is promising that this early intervention may reduce the likelihood that later, higher-cost actions are used.

Regarding program evaluation and parent engagement in intervention activities, on measures of program satisfaction, parents of children in the HI group reported noticeable improvement in their children's behavior and academics, found the parent workshops helpful, and reported that

they would refer other parents to the program. However, our results clearly demonstrate that parents are more likely to attend intervention programs during the transition to kindergarten if their children are also receiving a daily summer program, as evidenced by different rates of parent attendance for the HI group than the LI group. The challenges associated with engaging families in preventive interventions for conduct problems have been highlighted in the literature (e.g., Baker, Arnold, & Meagher, 2011). Our findings further elucidate these challenges and point to the need for concurrent child intervention groups to increase attendance in parent training, particularly for preventive interventions with families from low-income backgrounds.

Strengths and Limitations

Our results demonstrate some initial promise that intensive interventions delivered during the summer before the start of kindergarten, with supportive services implemented throughout the year, have a greater positive effect on multiple domains, than less intensive intervention programs. Specifically, children in the HI group experienced greater improvements in teacher-reported behavioral functioning along with a higher quality student–teacher relationship. In addition, objective measures indicated that children in the HI group experienced fewer disciplinary actions, obtained higher literacy scores, and were significantly less likely to be retained at the end of kindergarten compared with children in the LI group. More importantly, our program fills a noticeable gap in early intervention programming for children with problem behaviors and significantly improves attendance in parent programs as concurrent child programming is provided.

In addition, this program was implemented and evaluated within a culturally and socioeconomically diverse community, which is important given that Hispanic/Latino children represent the largest minority group in the United States comprising 16% of the population younger than 18 and more than 25% of children of 5 years of age or younger (U.S. Census Bureau, 2009). Although prevalence rates of behavioral problems in Hispanic/Latino children are similar to those in the overall population (Briggs-Gowan, Horwitz, Schwab-Stone, Leventhal, & Leaf, 2000), they are significantly less likely to receive mental health treatment (Dettlaff & Cardoso, 2010; Kataoka, Zhang, & Wells, 2002). It will be important for future evaluations to consider intervention preference for families from these diverse populations (e.g., summer programs with group parenting interventions vs. individual or home-based parenting interventions). Moreover, it will be important to evaluate the extent to which these interventions are culturally acceptable.

Despite these strengths, there are several limitations to consider. This study was a small, randomized pilot evaluation. Sample size determination was based primarily on feasibility, specifically related to size of standard groups used in previous STPs (typically 12-17 children) and to funds available to hire classroom personnel. Behavioral progress made during the summer program relied on parent and counselor report. It would be important for future studies to integrate more objective measures of children's behavior (e.g., independent observations) during the summer program to evaluate progress. In addition, although we collected independent fidelity measures on the KSRC, we were unable to conduct fidelity checks for the parent transitional workshops and had to rely on workshop leaders completing their own fidelity checklists. Replication of these findings in a larger sample, with additional intervention fidelity measures in place, is needed to maximize the chance of finding significant effects. Cross-rater effects, specifically for teacher ratings, may also have contributed to group differences observed in the fall and to the lack of group differences in the spring. However, in a meta-analysis conducted by Achenbach, McConaughy, and Howell (1987), teacher-to-teacher ratings were found to be significantly correlated to one another, suggesting considerable consistency between reports by pairs of teachers. Moreover, given that intervention took place during the transition to kindergarten, using different raters from baseline to fall was unavoidable and represents the complexity of the developmental context in which this study was conducted. In addition, given that the

post-intervention follow-ups occurred while continued intervention was taking place for children in the HI group, it would be important to evaluate outcomes after intervention has completely ended. The wide range found in the CIs of the effect sizes presented provides further evidence that the current findings are preliminary in nature. Nevertheless, our effect sizes demonstrate initial promise, with small to medium effects of our intervention on five out of eight child outcomes at the beginning of the kindergarten year.

Although every effort was used to reduce attrition across the study, the attrition we experienced during intervention for families assigned to the LI group was much greater than expected. In fact, as the allocation plan for this study illustrates, only one of the families assigned to this group completed the recommended intervention regime. Therefore, the LI group may not represent a specific intervention group, but rather a control condition, and our results speak more directly to the effect of the HI programming versus no programming at all. Future studies should evaluate the extent to which there are difference in outcomes between HI and LI programming, when acceptable levels of attendance in intervention are achieved. However, we believe this finding suggests that early intervention for externalizing behavior problems in low-income populations needs to involve a child component, in addition to a parent component to best engage families. We also had some difficulty keeping parents involved in the study assessments and had to remove three children from the HI intervention from our analyses. However, our rates of attrition were comparable with those of other work within Head Start populations (Stormshak, Kaminski, & Goodman, 2002; Webster-Stratton, 1998).

Future Directions and Relevance for Early Intervention Practices

Further early intervention program development and evaluation to help promote successful transitions to kindergarten is greatly needed. Future work should examine the length of the summer intervention (i.e., 4 vs. 8 weeks), modifications to enhance social-emotional readiness outcomes, progress monitoring of the academic skills being taught in the curriculum, integration of more intensive academic programs within the summer curriculum to enhance academic outcomes, as well as factors that contribute to intervention response and nonresponse (e.g., behavioral impairment reported by teachers and parents; parent reinforcement of DRC during the KSRC; differences in levels of home–school communication and collaboration in the kindergarten year). Issues related to the dissemination of the KSRC would also be important to investigate. For example, it would be important to examine the extent to which the intervention could be delivered by early childhood providers rather than trained university staff and students. It also would be important to examine possible funding mechanisms (e.g., community grants, educational vouchers) for sustaining these programs over time. Depending on the funding in place, future work would need to examine the extent to which the KSRC could be implemented with less staff support (higher vs. lower staff-to-student ratios). We aim to continue developing this type of programming given these promising results and plan to use our data to develop interventions that specifically address issues of intervention attendance and adherence for children and families from similar backgrounds. With further development and evaluation, it is our hope that early, targeted, intensive interventions, such as the KSRC, will serve a central role in the early intervention of externalizing behavior problems and that extensions of this program can be disseminated into existing early childhood or community summer programs to maximize these young children's transition into kindergarten.

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