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## Efficacy of the Getting Ready Intervention and the Role of Parental Depression

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### Abstract

This study reports the results of a randomized trial of a parent engagement intervention (the Getting Ready Project) on directly observed learning-related social behaviors of children from families of low-income in the context of parent-child interactions. The study explored the moderating effect of parental depression on intervention outcomes. Participants were 204 children and their parents, and 29 Head Start teachers. Semi-structured parent-child interaction tasks were videotaped two times annually over the course of two academic years. Observational codes of child behaviors included agency, persistence, activity level, positive affect, distractibility, and verbalizations. Controlling for gender and disability concerns, relative to children in the control group, those in the treatment condition experienced a significant decline in activity level. Furthermore, compared to children of non-depressed mothers and to control children, those in the experimental condition whose parent reported elevated levels of depression showed greater gains in positive affect and in verbalizations.

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The first five years of children's lives are critical for cognitive, social, and emotional development (Shonkoff & Phillips, 2000). Among the earliest influences on children's learning and development are those that occur in the home setting, within the context of parent-child interactions. Children's early environmental and relational experiences in the home setting constitute the "curriculum of the home" and are related to language and cognitive skills (e.g., Chazan-Cohen et al., 2009; Hood, Conlon, & Andrews, 2008; Raikes et al., 2006), school readiness (e.g., Espinosa, 2002; Pan, Rowe, Singer & Snow, 2005; Weigel, Martin, & Bennett, 2006), and academic success (e.g., Bradley, Burchinal, & Casey,

2001; Foster, Lambert, Abbott-Shim, McCarty, & Franze, 2005; Weigel, Martin, & Bennett, 2006a, 2006b) across the toddler, preschool, and primary grades.

Just as positive developmental trajectories can be traced to early nurturance and cognitive stimulation, the negative influence of family poverty and parental mental illness on children's intellectual development is undisputed. The detrimental effects of poverty are greatest during the preschool years (Duncan, Yeung, Brooks-Gunn, & Smith, 1998). Many variables link socioeconomic factors to school achievement, including verbal interactions between mothers and their children, expectations for achievement, positive affective relations, and disciplinary and control strategies (Hess & Holloway, 1984). Structural equation models have indicated that the influence of family poverty on children's intellectual development is fully mediated by the physical home environment, mother's involvement with her child, cognitive stimulation at home, child health, and child care quality (Guo & Harris, 2000), with cognitive stimulation at home the most influential factor on children's intellectual functioning. Parental style also mediated the effects of poverty, although to a lesser degree than cognitive stimulation. Thus, interventions introduced early to strengthen learning and developmental opportunities in the home environment and support positive parenting interactions stand to benefit young children growing up in poverty in seemingly unparalleled ways.

## Maternal Depression

Among mothers living in economically distressed circumstances, those who are depressed report greater difficulties in parenting and demonstrate fewer nurturing behaviors than those not reporting psychological distress (McLoyd & Wilson, 1991). Maternal depression has been associated with a number of adverse developmental outcomes for young children, including language and cognitive problems (Chapin & Altenhofen, 2010), difficulties in social interactions (Field, 1995), problems in adult-reported prosocial adjustment (Hay & Pawlby, 2003; Perry & Fantuzzo, 2010), emotional dysregulation (Hoffman, Crnic, & Baker, 2006), and behavioral problems (Perry & Fantuzzo, 2010). Maternal depression undermines the parent-child relationship, disrupting attachment (Teti, Gelfand, Messinger, & Isabella, 1995), decreasing engagement in learning (Campbell, Matestic, von Stauffenberg, Mohan & Kirchner, 2007; Leiferman, 2002), and rendering mothers less responsive, less verbally engaging, more critical and reprimanding, less active, and generally less competent than nondepressed mothers (Carter, Garrity-Rokous, Chazan-Cohen, Little, & Briggs-Gowan, 2001; Hoffman et al., 2006). The negative effects of depression on mothers' behaviors are noted even when subclinical levels of symptoms are evident (Assel, Landry, Steelman, Miller-Loncar, & Smith, 2002), especially for girls (Pettersen & Albers, 2001). The present study is aimed at identifying the effects of a relationship-based parental engagement intervention for young impoverished children, and uncovering the role of maternal depression on behaviors important for school success.

## Learning-related Behaviors

As children transition to school, several distinct competencies emerge as necessary for effective performance and classroom functioning. They include pre-academic readiness

skills associated with the acquisition and demonstration of competence in the areas of early language, literacy, and numeracy. They also include foundational behavioral competencies required to interact effectively in classroom and other school-related contexts, and to engage meaningfully with learning tasks. Learning-related social skills (also called *work-related skills* or approaches to learning) are necessary to manage social and task-specific demands in academically-oriented settings (McClelland, Morrison, & Holmes, 2000). They tap behavioral domains such as attention, self-regulation, task orientation, focus, participation, and interest (Cooper & Farran, 1991; McClelland & Morrison, 2003), and have been identified as prerequisite competencies for later learning by creating opportunities for young children to function within school environments. Based on both laboratory tasks (McClelland et al., 2007) and teacher reports (McClelland & Morrison, 2000), they have been found to contribute to a range of children's academic skills, including literacy, math, vocabulary, general information and alphabet skills at the beginning of kindergarten (McClelland & Morrison, 2000). Furthermore, they remain stable in predicting reading and math scores through second grade, such that children who begin kindergarten performing poorly on academic measures continue to lag behind their peers three years later (McClelland et al., 2000).

According to teachers, learning-related social behaviors such as listening to instructions and following through on demands are among the most important skills for success in kindergarten (Foulks & Morrow, 1989). Alexander, Entwisle, and Dauber (1993) found that children's interest and participation in tasks and attention span were significantly related to academic performance in grades 1 and 4. Children who were interested and involved in activities, and who were able to focus and pay attention, performed better academically. Conversely, inattention and overactive behaviors appeared to be the most common correlates of academic failure among children in kindergarten and the early elementary grades (Hinshaw, 1992). Children who demonstrate deficiencies in social and behavioral competence have been found to enter kindergarten and Grade 1 at risk for later behavior problems and academic failure, relative to their more socially and behaviorally skilled peers (Peth-Pierce, 2001; Raver & Knitzer, 2002).

Unfortunately, many children do not possess the behavioral competence necessary for effective functioning in a formal educational setting (Raver & Knitzer, 2002). Forty-six percent of kindergarten teachers have reported that more than half of their incoming students did not possess the basic behavioral competencies necessary to succeed in school (Rimm-Kaufman, Pianta, & Cox, 2000). In addition, 34% of teachers reported that over half of their entering kindergarten students had difficulty with learning-related skills such as working independently.

The preschool period provides an important window of opportunity for children to accomplish the developmental tasks of acquiring learning-related social behaviors, and may be especially influential when intervention efforts seek to strengthen environments that influence daily experiences of young children. However, the tasks associated with behavioral competence can be difficult for children in poverty (Zill, Moore, Smith, Stief, & Coiro, 1991), as well as for those whose mothers are depressed (Supplee, Shaw, Hailstones, & Hartman, 2004). Stress experienced by families in poverty has been found to relate to

diminished levels of emotional support and inconsistent guidance in parenting (Duncan & Brooks-Gunn, 1997). Low socioeconomic status and familial instability, and the concomitant risk factors typically associated with them (e.g., low maternal education, single or variable parental status, lack of daily routines, lack of adequate nutrition and medical care, exposure to an impoverished or dangerous neighborhood) predict a host of social adjustment problems, particularly when these stressors are cumulative (Ackerman, Kogos, Youngstrom, Schoff, & Izard, 1999).

## The Getting Ready Intervention

With intervention, parents experiencing poverty and depression can establish enriching environments and warm, responsive parent-child relationships conducive for the development of important academic and behavioral skills (Chazan-Cohen, Ayoub, Roggman, Raikes, McKelvey et al., 2007; NICHD Early Child Care Research Network, 2002). The Getting Ready intervention is a relationally-based parent engagement intervention promoting school readiness for children birth to five living in poverty (Sheridan, Marvin, Knoche, & Edwards, 2008). It is founded on a collaborative (conjoint) consultation model (Sheridan & Kratochwill, 1992, 2008) and triadic strategies (McCullum & Yates, 1994) that together promote parental engagement in caregiving and guidance (i.e., warmth and sensitivity, encouragement of autonomy, and support for learning and literacy); the model encourages flexibility in responding to cultural and familial definitions of parenting roles and expressions of behavior. Triadic strategies (based on McCullum & Yates, 1994) involving an early childhood teacher, parent and child are implemented during natural parent-child interactions to promote parental warmth, sensitivity and active participation in supporting children's early learning. The strategies involve the professional working to establish a dyadic context, affirm parenting competence, focus parents' attention on child-related characteristics, provide developmental information in context, model appropriate interaction strategies, and suggest or reinforce possible parent practices to support development. Furthermore, collaborative interactions between early childhood professionals and parents (based on conjoint consultation; Sheridan & Kratochwill, 2008) are structured in natural contexts, including home visits and parent/teacher conferences, with the intent of engaging parenting figures in active participation, goal setting, and decision making. The primary elements of collaborative interactions include the parent and professional jointly identifying developmental goals for children, specifying learning opportunities in home to support developmental goals, exploring ways parents can interact with children to promote learning, monitoring children's growth and development, assessing progress and measuring goal attainment, and cycling to new goals and learning opportunities.

Outcome research on the Getting Ready intervention supports its efficacy for supporting social-emotional and early language and literacy skills. Sheridan et al. (2010) found that relative to a control group of preschoolers receiving typical Head Start services, those participating in the treatment group showed significantly greater positive direct effects in the area of teacher-reported social-emotional functioning over time. Specifically, teachers reported increased attachment behaviors with adults ( $p < .01$ ;  $d = 0.75$ ), improved initiative ( $p < .05$ ;  $d = 0.56$ ), and reduced anxiety/withdrawal behaviors ( $p < .01$ ;  $d = -0.74$ ). In

another study, Sheridan et al. (2011) found that children experiencing the Getting Ready intervention were reported by teachers to demonstrate significantly greater language and literacy skills relative to peers in a comparison group. Preschool children in the Getting Ready intervention demonstrated significantly enhanced gains in teacher-rated oral language use, reading, and writing over time compared to controls (all  $p$ 's < .05;  $d$ 's = 1.11, 1.25, and .93, respectively). Furthermore, when a developmental concern was evident upon entry into preschool, children in the treatment group consistently demonstrated significantly greater gains on all language and literacy outcomes relative to when no concerns were noted, and compared to children not receiving the Getting Ready intervention. Children who did not speak English upon entry into preschool made greater improvements in the areas of language use and reading, relative to children who reportedly spoke English and relative to controls. Finally, although fewer language gains were seen for children whose parents had less than a high school education or GED, and for children whose parents had health concerns, greater improvements in the area of language use were noted when more adults were residing in the home compared to fewer adults for children in the treatment group as compared to the control group. To date, however, neither the effects of the Getting Ready intervention on direct assessments of learning-related behaviors nor the influence of parental depression on child outcomes have been investigated.

## Purpose of Study and Research Questions

The primary aim of the Getting Ready intervention is to promote school readiness among young children growing up in low socioeconomic conditions who may experience a variety of risk factors (e.g., maternal depression). The purpose of this study was to determine the effects of the Getting Ready intervention on preschool children's learning-related behaviors as assessed through direct observations, and in particular, to determine its efficacy for children of depressed parents. Specific research questions guiding the study are: (1) What are the effects of Getting Ready on preschool children's learning-related behaviors (e.g., agency, persistence) measured via direct observations in the context of parent-child interactions?; and (2) Does parental depression moderate the effects of Getting Ready on children's learning-related behaviors?

## Methods

### Setting

The study took place in 29 randomly assigned (treatment, control) Head Start classrooms operated through a public school system in a moderately sized Midwestern community over the course of 4 years. Classrooms were housed in 21 different elementary school buildings and were in session during the academic year, 5 days each week, for 4 hours each day. All classrooms were accredited by the National Association for the Education of Young Children and all utilized the High/Scope curriculum (Hohmann & Weikart, 2002). Classrooms averaged between 18 and 20 children, ranging in age from 3 to 5. Approximately 10% of the children in each classroom were identified as having disabilities or developmental delays. Each classroom had at least one full-time, state-certified lead

teacher with specialization in early childhood education and one full-time paraprofessional with child development credentials or training.

Standard (i.e., business as usual) services to involve parents in programmatic activities included an average of four 60-minute home visits each academic year, parent–teacher conferences twice each year, and monthly family socialization activities at the school and in the community. Preschool teachers were expected to communicate with families through the scheduled programmatic activities, as well as informal contacts at drop-off and pick-up times, weekly classroom newsletters, and occasional informal notes or telephone calls.

## Participants

The participants in the present study were 204 children enrolled in Head Start, their parents, and their classroom teachers. Table 1 summarizes child and parent demographic information at the time of the baseline assessments.

**Child participants**—Children ranged in age from 35.94 to 51.81 months at baseline (mean age = 42.97 months;  $SD = 3.5$ ). Fifty-one percent of child participants were boys; 49% were girls. The primary language spoken by 77% of children was English, and 19% spoke primarily Spanish upon entry into preschool. Arabic, or a combination of languages, was spoken in 4% of child participants' households. All children were enrolled in the study upon their entry into Head Start (age 3) with the intent that they would receive services and participate in the study for two years.

**Parent participants**—Two hundred four parents or individuals serving in a parenting role participated in the study. The vast majority (94.6%) were female. In relationship to the participating child, 87.3% identified themselves as mothers, 4.9% as fathers, 3.4% as grandmothers, and 4.4% as related to the child in another way (e.g., as a grandfather, stepmother, or foster mother). All of these individuals will be referred to as “parents” in this study. The mean age of parent participants was 29.33 years ( $SD = 7.7$ ). Forty-nine percent reported being married and fifty-one percent reported being single or not with a partner (i.e., divorced, single/never married, separated).

No significant differences were identified at baseline between treatment and control participants on gender, ethnicity, parental education risk, child age or parent age or disability status, indicating equivalency of the groups across demographic variables prior to treatment.

**Head Start teacher participants**—Twenty-nine Head Start teachers participated in the study (i.e., 13 in the treatment group; 16 in the control group). Twenty-five completed the teacher demographics questionnaire. All teachers had at least a bachelor's degree, 10.3% held an advanced graduate degree, and all held a state teaching endorsement in Early Childhood Education. All were female, and their mean age was 35.57 years ( $SD = 11$ ). Eighty-eight percent of the teachers self-reported to be White/non-Hispanic; 12% reported to be Hispanic/Latino. Teachers had an average of 9.3 years of experience working in early childhood settings ( $SD = 8.2$  years). In general, teacher participants were involved in the study for 4 years.



## Experimental Design

Random assignment to treatment condition occurred at the building level. Family assignment to treatment or control condition was dependent on the condition to which their child's teacher (and school building) was assigned. All children and families within the same building were assigned to the same experimental condition, resulting in a hierarchically nested design.

Hierarchical linear modeling (HLM; Raudenbush & Bryk, 2002) was used to test whether the Getting Ready intervention was effective at improving preschool children's learning-related behaviors observed in interactions with their parents. The study design is a 4-level complex sampling design (repeated observations [level 1] nested within each child [level 2], children nested within teachers or classrooms [level 3], and classrooms nested within schools or programs [level 4]). Models included fixed effects for treatment group, linear effect of time, and group by time interaction for all variables. Random effects for child- and teacher-level intercepts and child-level slopes were included to account for nesting within individuals within classrooms. Random effects for slopes at the teacher-level were also not significant, indicating that average slopes did not differ significantly across classrooms, and were excluded from the models. Also, because of limited variability in outcome variables at the level of the school, no school-level random effects were found for intercepts or slopes, resulting practically in a three-level model accounting for the teacher level of nesting within the HLM. Time was centered to reflect number of months since randomization.

In addition to the residual variance at level 1, variance components for student intercepts, student slopes, and teacher intercepts were estimated. Child disability and gender were included as covariates. The combined analytic model is as follows:

$$Y_{tij} = \gamma_{000} + \gamma_{001} Time_{ij} + \gamma_{100} Group_j + \gamma_{101} Group_j * Time_{ij} + u_{00j} + r_{0ij} + r_{1ij} Time + r_{tij} + \gamma_{010} Disability_i + \gamma_{020} Gender_i \quad (1)$$

where the parameter of interest,  $\gamma_{11}$ , the group\*time interaction, represents the difference in slopes between the intervention and control groups. Variance components are included to account for intercept variation at the child-level ( $r_{0ij}$ ), variation in slopes at the child-level ( $r_{1ij}$ ), and intercept variation at the teacher-level ( $u_{00j}$ ).

Analyses were conducted with SAS PROC MIXED (Version 9.2) using restricted maximum likelihood (REML) with Kenward-Roger degrees of freedom to account for covariance between fixed effects. The HLM accounts for missing data through the use of full-information maximum likelihood (FIML; Enders, 2001). Through the use of FIML in the HLM framework, all participants with at least one measurement occasion are retained in the data analysis, as long as data on all time-invariant predictors, such as gender and disability, are not missing. Complete data on the participants were available on group, gender, and disability status. FIML maximizes a sum of casewise likelihood functions where each case- or participant-specific likelihood function can be comprised of varying numbers of measurement occasions. Thus, individuals with missing data at later time points still contribute by providing information for the estimation of model parameters. Over the course of the study 31.9 % of children moved to new classrooms and teachers. Of these, 96.9% remained in the same condition (treatment or control) and were retained in the study.

Alternatively, 3.1% switched conditions and were therefore dropped from the study. Children who left the Head Start program altogether were no longer included in active data collection efforts for the study. The analysis took into account occasion-specific clustering of children and parents within teachers, making the analysis a cross-classified model at the teacher level.

## Procedures

### **Recruitment of participants and assignment to experimental conditions—**

Small group meetings were held with teachers in the weeks preceding the start of the school year to inform them of the general goals and expectations of the study, answer procedural questions, and obtain signed informed consent. Participation was voluntary and teachers were informed that they were free to withdraw at any time without negative consequences.

In nine cases, two or more Head Start classrooms were housed in the same building. Therefore, following attainment of informed consent, random assignment was made at the building level to avoid contamination across conditions. Research team leaders randomly generated assignments of building to conditions, resulting in teacher assignment to conditions, which were then shared with school district administrative personnel.

Eligible parents in both the treatment and control groups received study information from their child's Head Start teacher. Children who were three years of age and eligible for two academic years of Head Start program services upon program entry were invited to participate in the study. Parents of all children who met these criteria were invited to participate by their child's teacher, typically in the fall semester of each academic year. Only families who could speak English, Spanish, or both were recruited for study participation to assure successful administration of assessments, surveys, and coding of data. Parents were assured that their participation was voluntary and that their agreement to participate or decision to withdraw in no way affected their Head Start program services. Parents were not made aware of their condition assignment. From the perspective of the parent, the requirements for participation in the treatment and control groups were identical.

Once parents provided verbal consent to teachers, they were contacted by a member of the research team who gathered informed written consent. Approximately ninety percent of parents invited by Head Start teachers agreed to participate in the study. There were no differences in levels of consent obtained for treatment versus control conditions. Children's assignment to a classroom was made by district administration prior to teacher assignment to a condition. That is, class lists were generated in the summer preceding teacher assignment to control or treatment condition. Thus, assignment of children and families to intervention condition was not driven by any specific family or child need for services.

**Data collection—**Data were collected on four assessment occasions over a two-year period for all participants, representing their entire experience in Head Start during which time teachers in the treatment condition utilized the Getting Ready intervention. Baseline data were collected at the point at which parents and children were first enrolled in Head Start and collected in the Fall and Spring for two consecutive academic years across three cohorts of children and families. Parents completed (a) a questionnaire (including



demographic child and family information) at each data collection point lasting 25 to 40 minutes and (b) a parent–child observation session wherein parents and children were video-recorded in 25 minute sessions engaging in a series of interactive tasks (i.e., book reading, puzzles, teaching task, free play). Specifically, children and their parents engaged in: (a) book reading, (b) a novel teaching task (e.g., puzzles), (c) a natural teaching task (e.g., dressing a doll, or folding a towel if the child was resistant to the doll task), (d) clean-up from the teaching task, (e) free play with toys, and (f) clean-up from free play. Bilingual English–Spanish-speaking data collectors administered assessments with Spanish-speaking parents. Assessments were conducted at a location convenient for the family, including the children’s schools, other community locations (e.g., library study rooms), or the families’ homes. At each assessment occasion, families received a gift card to a local retailer as a token of appreciation.

**Getting Ready intervention procedures**—The primary context for teachers’ use of the Getting Ready strategies was a 60-minute home visit conducted, on average, 8.49 times over two years ( $SD = 3.78$ ; range = 1–19). Home visits were conducted with at least one parent, the Head Start teacher, and the child. In cases where other adults or caregivers were present in the home, they were invited to participate. School district interpreters accompanied teachers and provided translational services when a language other than English was spoken by the family. Structural and descriptive details of home visits are provided in Edwards, Hart, Rasmussen, Haw, & Sheridan, 2009; Sheridan, Marvin, Knoche and Edwards (2008); and Sheridan et al. (2011).

The strategies comprising the Getting Ready intervention are listed and defined in Table 2. The intervention was structured to provide opportunities for teachers to support and enhance the quality of parent–child interactions and learning experiences in daily routines and to create a shared responsibility between parents and teachers to influence children’s school readiness (Sheridan et al., 2008). By integrating the collaborative and triadic strategies described above, a relationship was established allowing teachers and parents to engage in cooperative and trusting interactions, set goals, and create and implement specific practices in support of children’s learning. Teachers were encouraged to use these strategies during all interactions with parents (e.g., family socializations at school, parent-teacher conferences, drop-off and pick up times, and other structured and unstructured communications).

Teachers in the experimental condition were trained in the Getting Ready intervention strategies and supported in their delivery through individualized and small group coaching delivered bimonthly. Details regarding professional development are provided in Brown, Knoche, Edwards, and Sheridan (2009).

### Fidelity of Intervention Implementation

The dosage of intervention, adherence to the general strategies of the Getting Ready intervention, and quality with which Head Start teachers promoted parent engagement were considered important indicators that the treatment was implemented as intended. Data were collected on treatment and control participants to differentiate between treatment and control groups (Dane & Schneider, 1998). Dosage was defined as the number of home visits

received by families over the two-year period they were enrolled in Head Start and receiving the Getting Ready intervention. Adherence and quality (Dane & Schneider, 1998) were coded objectively from digital video records of the teachers' implementation on randomly sampled home visits (Knoche et al., 2010) after they had been involved in Getting Ready activities for at least four months. A variable accounting for both quality and quantity of strategy use was created by computing the product of adherence and quality. A full description of procedures used to assess and document intervention implementation fidelity with this sample is available in Knoche et al. (2010). Additionally, in-depth reviews of home visit records and classroom newsletters were conducted to investigate fidelity of the intervention (Edwards et al., 2009).

### Study Variables and Instrumentation

The independent variable in this study was the Getting Ready intervention delivered in the natural context of home visits. Home visits were completed for participants in both the treatment and control groups. We were particularly interested in investigating the effects of the Getting Ready intervention on children's learning-related social skills in natural, parent-child interactions during semi-structured play and learning activities, rather than in the context of laboratory tasks. Specific behaviors of interest were agency, persistence, activity level, positive affect, distractibility, and verbalizations. Observational assessment procedures and global operational codes for children's behavior were based on well-established measures used across several studies, samples, and contexts (i.e., the *Parent Child Interaction System* [PARCHISY; Deater-Deckard, Pylas, & Petrill, 1997]; child behavior scales developed by Egeland, Sroufe, & Erickson [1983], Egeland et al. [1995], and Weinfeld et al. [1996]). The learning-related social skills were operationally defined and coded on a 5-point Likert scale in terms of behavioral frequency (1 = very low; 5 = very high). Complete descriptors were provided for each construct to capture its explicit intent. In addition, each of the five Likert indicators were operationally defined for each behavior, allowing coders objective information about the criteria for rating each skill. All children were exposed to the same tasks, which served as the context for observations (book reading, teaching, free play, clean up). Similar to the previously established rating systems on which our procedures were based, all child behaviors displayed during video-recorded segments were considered in the coding. Abbreviated definitions for each of the coded behaviors are in Table 3.

Maternal depression was investigated as a moderating variable in this study. It was assessed via the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977), a 20-item measure rating frequency of depressive symptoms in last week using a 4-point Likert-scale. Internal consistency of the CES-D for the present sample was .88. Although CES-D scores are continuous, we chose to categorize participants into clinical depression to aid in the interpretability of the results. CES-D scores of 16 to 20 have been suggested as markers of mild and significant depression, respectively (Radloff, 1977). However, false positives have also been reported with the lower cut-scores (Goldstein, Cherkerzian & Simpson, 2011). Similar to other studies (e.g., Beauchaine, Webster-Stratton, & Reid, 2005; Smith, Landry Swank, 2005), we defined depression as scores that were +1 SD from the baseline sample mean at any time throughout the study<sup>1</sup>. For this sample of families a value of 21 or

higher was used. Over the entire course of the study, 45 parents (22%) reached the cutoff for depression (i.e., 21 or higher).

At baseline, 15.2% of mothers in our sample scored in the elevated range (i.e., 21 or higher). At Time 2, 15.3% met our criterion for depression. At Times 3 and 4, 12% and 7.6% were considered to present elevated levels of depression, respectively. There was no difference in levels of depression (as defined in the present study) between treatment and control group participants,  $\chi^2(1) = .009$ ;  $p > .05$  overall, and there was not a significant difference in number of parents with evidence of depression between groups at any assessment time point. Likewise, the decrease in numbers of parents meeting criteria for depression over time was not significantly different between groups. Finally, analyses were conducted while controlling for two additional variables: child gender and presence of a disability concern. Disability was defined as parent report of an identified disability, such as physical, emotional, learning, language, hearing difficulty or other special needs.

### Observation Procedures and Interrater Reliability

Research assistants rated children's learning-related social behaviors that were captured on video recordings across four assessment occasions (i.e., two per year for two years of a child's preschool experience). Assistants were blind to the experimental condition of the child participant in the video. In some instances, coders viewed recorded interactions of the same child at different assessment occasions throughout the coding process. They received training using manuals developed for this study that contained operational definitions, behavioral indicators and decision rules. Training involved guided practice wherein research assistants coded sample videos until they met a criterion level of agreement. For each coder, mastery criteria were set at 80% interrater reliability across two independently coded parent-child interaction video recordings that were rated by a master coder. Agreement was defined as an exact match, or ratings within one point of each other, on ratings across two observers. This method of agreement has been used in other parent-child interaction studies using a Likert-type rating system (e.g., Wilfong, Saylor & Elksnin, 1991). As coders met criteria, they were assigned videos to rate. Approximately 30% of videos were coded by two coders independently to ensure ongoing reliability of coding. When agreement on any video fell below 80%, a member of the research team met with both coders to discuss points of disagreement, provide clarification on behavioral definitions and indicators, and reach consensus. In this session, the coders watched the interaction and discussed their impressions until the two original coders were able to come to agreement within one point. A master coder participated in the discussion to provide clarification and guidance to help reach consensus. Additional observer checks were conducted on a regular basis throughout the coding process to minimize drift from the standard observational procedures.

Interrater agreement averaged 95.1%. For individual videos, agreement across raters ranged from 87.0 – 98.9% (i.e., within 1 point). The original coded data were used in reporting reliability, but the reconciled data were used in all analyses.

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<sup>1</sup>The CES-D does not yield a clinical depression diagnosis, but rather the identification of depressive symptoms. We use the term "depression" to describe our sample as one demonstrating elevated scores on the CES-D, not clinically diagnosed individuals.

## Results

### Attrition

Families in the present study were enrolled at the time of entry into Head Start and retained as long as possible over the course of two years. Not all families were retained throughout the entire study. Thirty-nine percent of families were retained through the fourth assessment occasion, which occurred approximately 18–20 months after the initial (baseline) assessment. Attrition from the study occurred when families left the Head Start program. The difference in attrition rates between the two experimental conditions (control = 64.6%, treatment = 58.3%) was not statistically significant,  $\chi^2(N = 204, df = 1) = 0.837, p = .36$ . Additional non-significant chi-square tests indicate that the participants who left the program, and thus the study, did not differ significantly from those that remained in the study on key demographic characteristics such as gender, disability, and child age.

The possible impact of attrition was assessed by comparing baseline child behavioral outcome scores between children who completed four measurement occasions across two school years (“completers”) and those who did not (“non-completers”) on the following child behavioral measures: agency, persistence, activity level, positive affect, distractibility, and verbalizations. Two-tailed *t*-tests ( $\alpha = .05$ ) indicate that non-completers were not significantly different from completers at baseline in any of the six outcome measures. Missing data can thus be considered missing at random (MAR) and did not affect or bias the estimation of the effectiveness of the Getting Ready intervention on the outcomes of interest.

### Direct Effects of the Getting Ready Intervention

Descriptive statistics at baseline for each learning-related social behavior for treatment and control group participants are presented in Table 4. The time X group parameter estimates, standard errors, and *p* values for each outcome are shown in Table 5. The parameter estimate for the time X group interaction can be interpreted as the difference in the per-month growth rate in ratings between the control and treatment groups. In these analyses, time is coded as the number of months since randomization, or baseline. No significant differences were observed in learning-related behavior scores at baseline between the two groups, as evidenced by the non-significant group differences in intercepts (i.e., the Group variable in Table 5).

Controlling for gender and disability concerns, relative to children in the control group, those in the Getting Ready intervention condition experienced a significantly greater decline in activity level ( $\gamma = -.022, t(135) = -2.11, p = .037$ ; see Figure 1). The intervention effect size<sup>2</sup> of  $-.71$  indicates that approximately 76% of control group participants would be expected to demonstrate higher activity levels (e.g., difficulty sitting still, tendencies to run around, fidgety behavior) than treatment group participants, after the intervention. There were no significant direct effects of the Getting Ready intervention on any of the other learning-related social behaviors.

<sup>2</sup>Effect size is calculated as the ratio of the group difference in linear change ( $\gamma$ ) to the standard deviation of the slope values (Raudenbush & Liu, 2001).

## Moderated Effects

The second research question involved testing the moderating effects of maternal depression on child learning-related behaviors. Depression was found to moderate the effects of the Getting Ready intervention on children's overall positive affect ( $\gamma = .060$ ,  $t(142) = 2.12$ ,  $p < .05$ ) and amount of verbalizations ( $\gamma = .073$ ,  $t(315) = 2.87$ ,  $p < .01$ ). Graphic depictions of these results are in Figures 2 and 3, with "low" depression defined as CES-D  $\leq 20$  and "high" depression defined as CES-D  $\geq 21$  at any assessment point. For children whose mothers experienced depression at some point during the intervention period, those in the treatment group had significantly greater gains in positive affect compared to control group participants with a depressed parent. Specifically, children in the treatment condition with a depressed parent showed significantly greater improvement than those whose parent was not depressed, and than control group children with depressed parent. Similarly, the intervention was found to have significantly greater positive effects on verbal behaviors in children in the treatment group whose parents were depressed than those with low levels, and than those in the control group. There was no statistically significant intervention effect on overall positive affect and verbalizations for children with parents not demonstrating depression. Depression did not moderate the intervention effects for child agency, persistence, activity level or distractibility.

## Fidelity

Dosage of intervention was reflected by the number of home visits completed over two years of Head Start. Furthermore, a fidelity index comprised of adherence to strategy use and teacher quality of parent engagement was computed for each teacher over the course of the study. There were significant differences between treatment and control groups in home visit dosage ( $t(193) = 2.47$ ;  $p < .05$ ), with treatment group participants completing more home visits over 2 years ( $M = 8.49$ ,  $SD = 3.85$  for treatment;  $M = 7.16$ ,  $SD = 3.62$  for control). Significant differences were also observed between treatment and control group teachers on the joint index of quality/use of strategies ( $t(23) = 3.72$ ,  $p = .001$ ) with teachers in the treatment group having significantly higher scores ( $M_s = .45$  and  $.27$ ;  $SD_s = .12$  and  $.11$  for treatment and control, respectively).

Additionally, in-depth reviews of home visit records and classroom newsletters provided strong evidence of treatment teachers' generalization of collaborative planning and problem-solving with parents, relative to control teachers, with clear evidence of their efforts to strengthen home-school collaboration and form relationships with parents (Edwards et al., 2009). The most striking finding from home visit reports was the difference favoring the teachers in the Getting Ready treatment group in amount, depth, and detail of child-oriented academic and socioemotional goal-setting with families.

## Discussion

This study investigated the effect of the Getting Ready intervention on directly observed learning-related social behaviors of children from families with low income in the context of parent-child interactions, and explored the influence of parental depression on the intervention's effects. Getting Ready is a relationship-based school readiness intervention

that focuses on parent-child interactions and parent-teacher collaboration. As an ecologically-oriented intervention, it focuses on the key support systems in a young child's life and relationships among them. Specifically, the intervention is intended to promote parental warmth and sensitivity, encourage parents' support of children's autonomy, and facilitate parents' participation in children's learning, including participation through partnerships with early childhood teachers. Previous research has documented the significant positive effects of the Getting Ready intervention on teacher-reported social-emotional and language and early literacy outcomes in preschool children (Sheridan et al., 2010, 2011). The present study represents an initial effort to identify the effects of the parent engagement intervention on children's directly observed, learning-related behaviors as well as the moderating effect of parental depression. Findings from the present study provide support for the effectiveness of the Getting Ready intervention on learning-related behaviors observed in preschool children from low income households, and underscores the importance of interventions for young children of parents experiencing depression. Several results are noteworthy.

The first major finding of this study concerns the effectiveness of the intervention on children's observed activity level. The Getting Ready intervention effectively reduced activity levels demonstrated by children during a semi-structured parent-child interaction activity compared to children in the control group. This corroborates other findings noting the effects of the intervention on teacher reports of children's attachment, initiative and anxiety (Sheridan et al., 2010). This directly assessed behavioral outcome associated with a reduction in overactive behavior is significant given the self-regulation necessary to be successful in formal preschool and kindergarten settings. Profiles of preschoolers have yielded characterizations of overactive children as demonstrating disruptive, dysregulated play behaviors (e.g., refusing to share toys, whining, grabbing other's things, exhibiting temper outbursts; Mendez, Fantuzzo, & Cicchetti, 2002) and at considerable risk for developing conduct problems and hyperactive behavior (Coolahan, Fantuzzo, Mendez, & McDermott, 2000). Thus, children's abilities to regulate their activity levels are among the important learning-related behaviors to target in preparation for school, and through elementary school (Li-Grining, Votruba-Drzal, Maldonado-Carreño, & Haas, 2010).

The processes by which parents influence their child's learning-related behaviors are unclear. It is possible that the same parenting variables shown to mediate cognitive development (i.e., stimulation at home, parenting style; Guo & Harris, 2000) are operative in promoting positive change in learning-related behaviors. Indeed, the Getting Ready intervention may have established environmental conditions conducive for parents to engage in practices outside of home visits that encouraged the development of behaviors conducive to school success. For example, the intervention may have been successful in prompting parents' use of positive and intentional "teaching" and "guidance" strategies in natural learning interactions, or influenced extended collaborative experiences with teachers. However, data are unavailable to discern whether gains in these behaviors were evident for parents in the present study, including for parents who experienced depression. Relatedly, whether changes in parent behaviors or some other variables were responsible for child outcomes is impossible to determine.



A second main finding of the current study supports the Getting Ready intervention for promoting the development of learning-related social outcomes for preschool children from low-income households with parents (especially mothers) experiencing depression. Compared to children of non-depressed parents in both treatment and control conditions, those in the treatment condition whose parent demonstrated elevated levels of depression at some point during the intervention period showed relatively greater gains in overall positive affect and in verbalizations. Positive affect (enthusiasm, attentiveness) and capacity to use words in interaction with teachers and peers are important behaviors that allow children to participate in the learning opportunities of preschool. The findings are noteworthy given that mothers with depression often have less positive interactions with their children placing them at increased risk for developmental and academic difficulties (Campbell et al. 2007; Leiferman, 2002). This same pattern was not evident for children of parents with lower levels of depressive symptoms. For these children, the intervention did not produce significantly different patterns of effects depending on group assignment (treatment or control) over time.

Other interventions targeting parents with challenging psychological profiles (e.g., elevated levels of anger and hostility, depressive symptoms, limited social support) have found these limiting conditions to *diminish* treatment effects (Smith, Landry & Swank, 2005). On the contrary, the Getting Ready intervention appeared to *enhance* the treatment effects for children with a depressed parent. It is possible that the family-centered, collaborative nature of the Getting Ready intervention was effective at producing improvements for this highly vulnerable group. A collaborative orientation with families is grounded in relationships, and parents are considered partners in children's education and development. This type of approach with depressed parents may have been particularly empowering and supportive, conveying the message that they are valuable and capable in their parenting role. This structured process could have been particularly salient for parents struggling with depressive symptoms, helping them to focus on their child and perform actions that were encouraged and affirmed by a respected adult. Despite these speculations, the actual mechanism by which the intervention effected change for children of parents who were depressed is unclear and a number of alternative hypotheses can be posited. Specific improvements in parental psychological variables such as role construct and self-efficacy may have been evident for these parents as a result of the intervention, particularly those experiencing depression. The social support provided by teachers interacting with parents in ways that promoted their sense of competence and self-confidence in a parenting role may have been effective at enhancing buy-in by parents who were depressed, which allowed children to experience added benefits from this parent engagement intervention more than children whose mothers were not depressed. The Getting Ready intervention supports parents in identifying strengths in their children; perhaps through the intervention, parents with depression were able to identify more positively with their children.

Previous research has suggested that the negative effects of maternal depression can be mitigated by positive parent-child interaction (Leckman-Westin, Cohen & Stueve, 2009). The findings from the current study might be explained through a similar mechanism. The Getting Ready intervention aims specifically to improve parent-child interactions for all

families involved in the intervention as a means of supporting positive child outcomes. We did not set out to alter parents' depressive symptomatology, but it is noteworthy that the intervention effectively buffered some of the known deleterious effects of maternal depression on child outcomes. Additional research that examines the specific effects of this parent engagement intervention on parents who are struggling with depression or other mental health issues is warranted, with efforts to uncover the mechanisms that operate to exert its positive effects.

Implementation research with this sample lends some insights into the response of parents to teachers' use of Getting Ready strategies. As previously described, significant differences in parent behaviors among treatment and control group participants during home visits were found (Knoche et al., 2010), with parents in the treatment group interacting significantly more frequently with their children than those in the control group,  $t(48.17) 2.77; p < .05$ ;  $ES = .69$ . Furthermore, independent ratings of parental interest and engagement with their child (i.e., shows genuine interest, participates actively, engages in and initiates meaningful conversations and interactions, remains in close proximity to child, demonstrates enjoyment with child) during home visits were found to be significantly higher for parents in the treatment relative to control group,  $t(61.57) 2.42; p < .05$ ;  $ES = .61$ . Insufficient data per subject prevented us from including fidelity in the current analyses. Also, as described, authentic records revealed differences in the nature and content of home visits between treatment and control groups. Specifically, parents and teachers in the treatment group generated more goals related to children's academic and social-emotional development; the goals reflected greater depth; and there was more specificity and detail in goals generated by participants in the treatment relative to control group participants (Edwards et al., 2009). These complementary studies suggest that the Getting Ready intervention may have positively influenced the parent-child relationship, encouraged greater levels of parent engagement (including enhanced parental warmth and sensitivity towards their child's needs, awareness of strategies to support their child's autonomy), and strengthened the "curriculum of the home" (i.e., parental expectations and interest, cognitive stimulation, affective climate, direct support for learning; Redding, 1992; Walberg, 1984). Future research will explore these parenting assets as potential mediators of the intervention.

Despite the corroborating data suggesting responsiveness to the intervention on the part of parents in the treatment group, it is not possible to link specific parent outcomes to changes in child behavior, including outcomes for depressed parents. The home visit data collected as part of the fidelity studies lack the necessary sensitivity to provide individualized accounts of parental behaviors, precluding our ability to investigate direct intervention effects on parents and the role of parental behaviors on child outcomes. Future research is necessary to uncover significant direct effects of the Getting Ready intervention on parental behaviors, and indirect effects on children's learning-related behaviors.

## Limitations

Despite promising results related to the effect of the Getting Ready intervention on learning-related behaviors of children, some noteworthy limitations warrant discussion. First, the context within which children's behaviors were assessed was a semi-structured parent-child

interaction. Although this represents a generally naturalistic, relational context for assessing learning-related behaviors relative to laboratory tasks, no observations of children's behaviors in authentic home or classroom environments are available. Thus, the extent to which the Getting Ready intervention improved the behaviors of children in actual learning environments is unclear. It could be possible that persistence, enthusiasm, and distractibility were not as likely to be elicited and/or observed in the semi-structured observations. Additionally, behaviors exhibited within specific activities (e.g., free play, clean up) were not coded independently making it difficult to determine children's responses to various environmental or task demands. Further examination of the intervention is needed to fully understand the direct and moderated effects on children's behaviors in settings with teachers, peers, and other learning agents and opportunities.

The sample in the present study was comprised of 204 children enrolled in Head Start center-based programs, with some attrition over time. There is the possibility that different patterns of effects may emerge with larger or samples or those experiencing less attrition. Further, findings can only be generalized to children in Head Start center-based settings, with similar programming and staff composition. There are variations among Head Start classrooms, and we did not control for or measure variables related to the experiences to which children were being exposed in their classrooms. It is possible that children were naturally becoming better able to regulate their activity levels in small interactive settings as a function of being in a formal learning environment (Head Start) over the two year period of their involvement in this study. However, the same can be said for students in the comparison group, whose activity levels did not improve as significantly over time as did those of the treatment group. Nevertheless, the particular context within which this study took place should be considered when interpreting its results. Replication studies are needed.

Other learning-related behaviors beyond improvements in activity level did not change significantly over time as a function of being part of the Getting Ready intervention. That is, with the exception of improvements in activity level, no other direct effects of the intervention on learning-related behaviors (e.g., agency, persistence, distractibility) were noted. It is possible that the limited range of behaviors evident in our sample served to underestimate the treatment's effects. It is also possible that the intervention was effective at producing change in other social-behavioral outcomes not tapped in our coding system. Although we based our coding methods on highly researched and well-regarded observational systems, it is possible that they were insensitive to actual changes in child behaviors. Limited validity data are available beyond teacher reports of significant direct effects on children's attachment, initiative, and anxiety-withdrawal (Sheridan et al., 2010). Although these are similar constructs, they provide minimal evidence on the validity of the observational methods. Furthermore, our understanding of the effects of this intervention is limited to the behaviors we assessed within the context of the observed interactions. Other behaviors related to but not assessed in this study may have been impacted. For example, it is possible that behaviors such as emotion regulation and cooperative exchanges may have been positively affected as a function of the relational parent-child intervention.

Finally, we did not measure the chronicity of parental depression in this study. Past research has indicated that both the duration and trajectory of maternal depression is correlated with

child behavioral outcomes (Campbell et al., 2007). It is possible that the parents in this study were experiencing situational forms of depression rather than a major depressive disorder given that levels of depression decreased over time across the whole sample. These drops we observed in maternal depression from Time 1 to Time 4 may have been due to gradual recovery from post-partum states, favorable experiences of participating in a supportive Head Start program, increase in child age, or other factors. More research is needed to understand the effects of the Getting Ready intervention for parents who experience varying levels, forms, and duration of depression.

## Conclusion

Findings from this study contribute to a growing literature base on the effectiveness of the Getting Ready intervention as a support for the development of school readiness competencies in children attending publically-funded preschool programs. As local and national resources continue to be directed towards early childhood programs in an effort to support child and family well-being, the Getting Ready intervention is worthy of consideration. The Getting Ready intervention has at its foundation research that supports the parent-child and parent-teacher relationships as mechanisms for promoting healthy development in young children. Importantly, findings from the current study show that the Getting Ready intervention is successful at promoting positive developmental outcomes and may also buffer the deleterious effects of parental depression on children's learning-related social behaviors.

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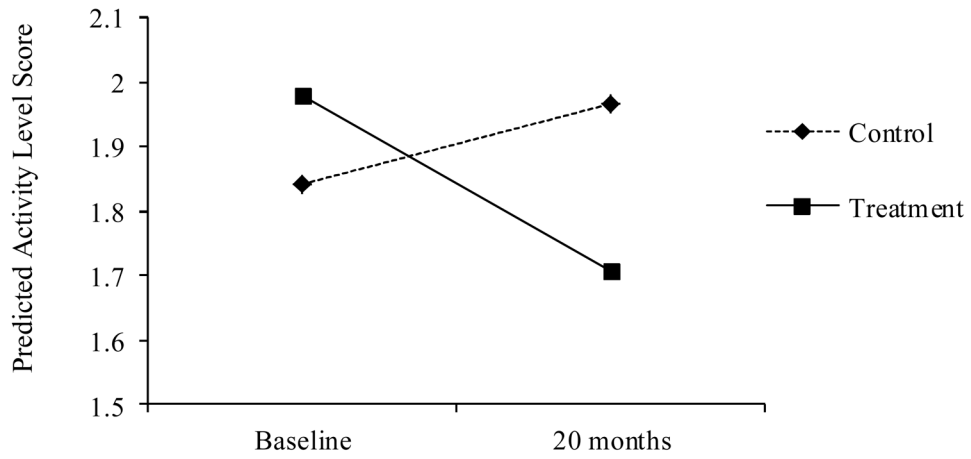
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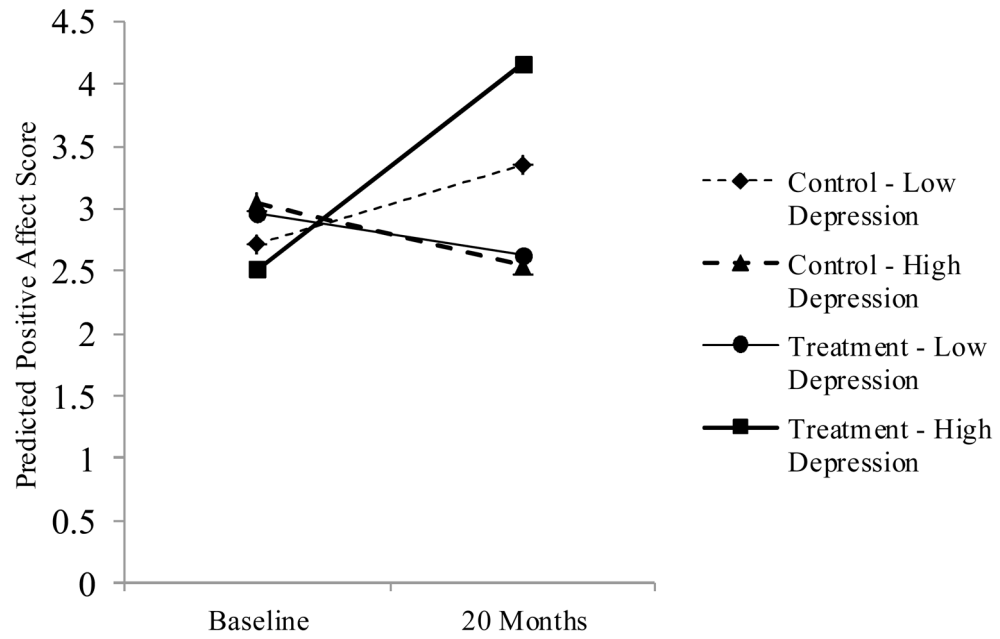
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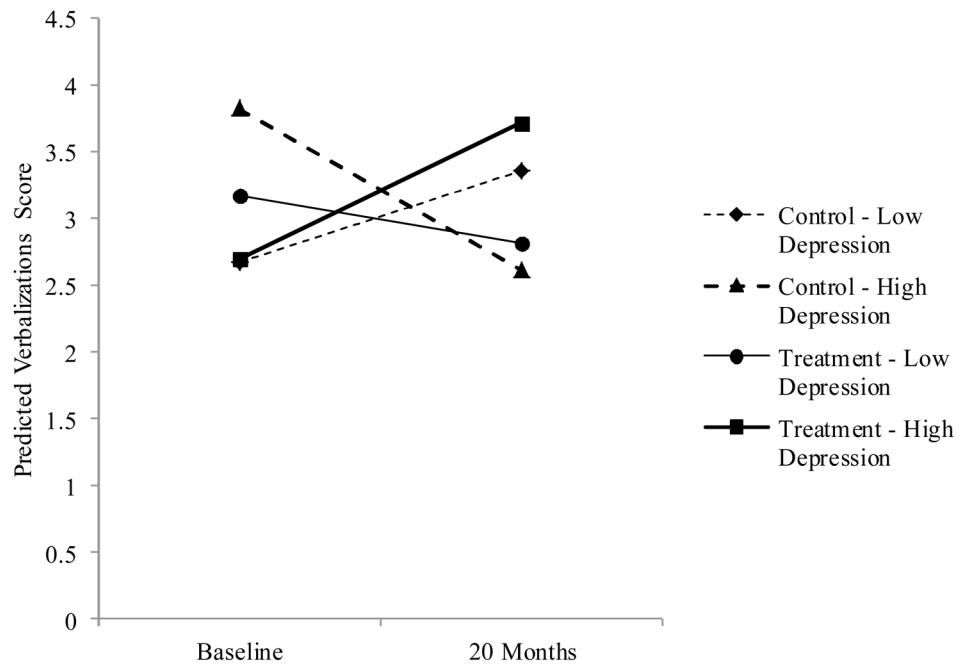
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**Figure 1.**  
Direct effect of Getting Ready intervention on child activity level as assessed directly in parent-child interactions.



**Figure 2.**  
Effect of Getting Ready intervention on child positive affect moderated by parental depression.



**Figure 3.**  
Effect of Getting Ready intervention on child verbalizations moderated by parental depression.

**Table 1**

Child and Parent Demographics at Baseline (N = 204)

	Child	Parent
Mean Age	42.97 months ( <i>SD</i> = 3.5) (range = 36–52 mos)	29 years ( <i>SD</i> = 7.7) (range = 19–62 years)
Gender		
Male	51%	5.4%
Female	49%	94.6%
Ethnicity		
White	32%	47%
Black	18%	16%
Latino/Hispanic	27%	27%
American Indian/Native Alaskan	2%	3%
Asian American	-	1%
Other	20%	6%
Identified Disability	12%	
Highest Level of Education		
< High school diploma		25%
High school diploma/GED		57%
Two year degree		8%
Four year degree		1%
Mean CES-D Score		11.95 ( <i>SD</i> = 9.49)

Note: Treatment *N* = 108; Control *N* = 96

**Table 2****Getting Ready Strategies**

<b>Strategy</b>	<b>Definition</b>
Establish parent – child/parent-professional relationship	Elements of the environment are intentionally and actively arranged to increase the probability of developmentally matched, mutually enjoyable parent-child interaction. Meaningful interaction and conversation are exchanged between the early childhood professional (ECP) and parent conveying support or interest in family activities.
Focus parent's attention on child strengths	Verbal statements are used to comment upon, expand, or question the interaction to draw parents' attention to particular competencies or actions within child.
Invite and discuss observations about child	The ECP invites the parents' input regarding the child's development, likes/dislikes, and supportive strategies.
Affirm parent's competence	Statements are made to recognize and reinforce parent-initiated positive interactions with the child, as well as evidence of child competence as an outcome of effective parenting practices.
Provide developmental information	Information about the child's development and developmental milestones are provided by ECP through verbal labeling or interpreting the child's emotional, cognitive, language, and/or motor abilities within the context of play and interaction.
Identify mutual goals/expectations	Concerns for the child as seen by the ECP and parent are discussed, and the parent and ECP collaboratively select concerns to focus on and establish goals vis-à-vis those concerns.
Brainstorm and make suggestions	This involves both a collaborative and directive process between the ECP and parent, wherein the parent and ECP brainstorm and select strategies that fit into their respective home and classroom settings and daily routines. The ECP makes explicit statements to the parent about behaviors to support the child's development and/or the parent-child interaction as needed.
Model effective strategies	The ECP demonstrates developmentally appropriate strategies for interacting with the child; parent responds by modeling the behavior.
Establish home-school plan with goals and practices	Specific goals are stated or reiterated, with a discussion of specific plans that will be used at home and in the classroom to support the child's development and toward those goals.



**Table 3**

## Operational Definitions for Learning-related Social Behaviors

Child Behavior Code	Abbreviated Definition
Agency/Enthusiasm	The vigor, excitement, and eagerness demonstrated toward the task/interaction by the child.
Persistence	The extent to which the child actually was task- oriented in the session.
Activity Level	The child's overall activity level during the session; at high end child's tendency to run around room, ounce on furniture, etc. and at low end child does not display unusual amount of activity.
Positive Affect in Response to Task	The child's expressions of global positive affect.
Distractibility	The degree to which the child maintains attention to the situation.
Verbalizations	The amount of utterances emitted by the child during the observation.

**Table 4**

Descriptive Statistics for Outcome Variables at Pre- and Post-Test

Child Behavior Codes	Treatment Baseline	Control Baseline	Treatment 20 mos	Control 20 mos
Agency/Enthusiasm	M (SD) 3.69 (0.7)	3.67 (0.8)	3.53 (0.8)	3.91 (0.8)
Persistence	M (SD) 3.78 (0.7)	3.72 (0.8)	4.02 (0.7)	3.82 (0.8)
Activity level	M (SD) 1.89 (0.7)	1.71 (0.8)	1.56 (0.5)	1.91 (0.9)
Positive affect	M (SD) 2.80 (0.9)	2.79 (0.8)	2.76 (0.9)	3.03 (0.8)
Distractibility	M (SD) 2.07 (0.7)	1.96 (0.8)	1.69 (0.6)	1.94 (0.8)
Verbalizations	M (SD) 2.97 (0.9)	2.83 (0.9)	2.82 (0.7)	3.18 (0.8)

*Note.* Behaviors were coded on a 5-point Likert scale in terms of behavioral frequency (1 = very low; 5 = very high).

**Table 5**  
Direct Effects (with Covariates) of the Getting Ready Intervention on Child Learning-related Social Behaviors

Dependent Variable	Estimate	SE	df	t-value	p
<b>Agency</b>					
Intercept	3.67	.08	237.81	43.15	.00
Gender	.03	.07	192.14	.38	.71
Disability	-.07	.11	205.96	-.61	.54
Time	.01	.008	145.76	1.61	.11
Group <sup>a</sup>	.07	.10	194.96	.71	.48
Time*Group <sup>b</sup>	-.02	.01	144.35	-1.59	.11
<b>Persistence</b>					
Intercept	3.72	.09	261.08	42.32	.00
Gender	.16	.08	184.47	2.05	.04
Disability	-.14	.12	202.72	-1.20	.23
Time	.005	.007	295.74	.80	.43
Group	.03	.10	229.34	.25	.80
Time*Group	.006	.009	304.17	.71	.40
<b>Activity Level</b>					
Intercept	1.80	.10	235.92	18.86	.00
Gender	-.20	.08	179.41	-2.49	.01
Disability	.08	.13	193.17	.65	.52
Time	.008	.008	137.74	1.03	.303
Group	.14	.11	194.70	1.25	.21
Time*Group	-.022	.01	135.48	-2.11	.04
<b>Positive Affect</b>					
Intercept	2.79	.10	221.03	26.84	.00
Gender	.05	.10	182.51	.54	.59
Disability	-.11	.15	190.10	-.74	.46
Time	.02	.009	131.51	2.08	.04
Group	.07	.12	186.73	.61	.54
Time*Group	-.013	.01	130.162	-1.15	.25
<b>Distractibility</b>					
Intercept	1.96	.09	236.00	21.37	.00
Gender	-.08	.08	195.92	-1.02	.31

Dependent Variable	Estimate	SE	df	t-value	p
Disability	.09	.13	207.68	.67	.50
Time	-.003	.007	125.02	-.45	.66
Group	.10	.10	198.63	.92	.36
Time*Group	-.02	.009	124.12	-1.76	.08
Verbalizations	2.85	.10	230.43	27.55	.00
Gender	-.05	.09	177.36	-.55	.58
Disability	-.01	.14	193.57	-.05	.96
Time	.02	.008	126.89	1.97	.05
Group	.15	.12	189.62	1.29	.20
Time*Group	-.02	.010	125.33	-1.68	.10

<sup>a</sup> Group is the difference between treatment and control groups in intercepts.

<sup>b</sup> Time\*Group is the difference between treatment and control groups in slope means.