PARENT TRAINING FOR PARENTS OF CHILDREN WITH DEVELOPMENTAL DELAYS: EXAMINING PARENTING STRATEGIES WITH MUTIPLE CHILDREN

by

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A DISSERTATION

Presented to the Department of Special Education and Clinical Sciences
and the Graduate School of the University of Oregon
in partial fulfillment of the requirements
for the degree of
Doctor of Philosophy

June 2015

DISSERTATION APPROVAL PAGE

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Title: Parent Training for Parents of Children with Developmental Delays: Examining Parenting Strategies with Multiple Children

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Degree awarded June 2015

DISSERTATION ABSTRACT

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June 2015

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Behavioral parent training programs have been widely used with caregivers to prevent and decrease challenging behaviors in young children with and without developmental delays and disabilities (DD). Although behavioral parent training has a robust literature suggesting efficacy in reducing target children's problem behavior and increasing positive parenting, specific parenting behaviors and the impact on children with delays and their siblings is an area that has yet to be fully explored. The current study aimed to examine parenting behaviors during parent-child interactions with children with a developmental delay and their sibling. Fourteen families participating in an ongoing parent training randomized controlled trial intervention were included in the present study to better understand parenting behaviors. Inappropriate parenting behaviors predicted the behavior problems of target children and their siblings above and beyond child and family demographic variables. Primary caregivers in the current sample exhibited more inappropriate parenting behaviors with the target child with DD than their sibling.

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ACKNOWLEDGMENTS

I wish to express sincere appreciation to Dr. Laura Lee McIntyre for her assistance in the preparation of this manuscript. In addition, special thanks are due to Drs. Roland Good, S. Andrew Garbacz, and Elizabeth Stormshak, who served as valuable members of my dissertation committee. I also thank the staff members of the Oregon Parent Project for the dedication to this important research project. Finally, I thank the families who participated and continue to contribute their time to OPP. The investigation was supported by a Research Supplement to Promote Diversity in Health-Related Research, R01HD059838-03S1, from the National Institutes of Health and the *Eunice Kennedy Shriver* National Institutes of Child Health and Human Development, awarded to Dr. Laura Lee McIntyre at the University of Oregon.

DEDICATION

For my mother, Geraldine Parker, the strongest woman I know.

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CHAPTER I

INTRODUCTION

Parent Training

Parent training, education, and support has been described in the literature as an intervention that helps parents to purposefully change their methods of interacting with their children in order to encourage more positive behavior in their children (Croake & Glover, 1977). Croake and Glover note that the history of parent training dates back to the early 1800s, when mothers would meet in groups to discuss the challenges they faced with raising their children. Group-based parent training has become a popular means of intervention, with individual counseling less common. Group-based parent training approaches vary in terms of structure, content and theoretical underpinnings (Chadwick, Momcilovic, Rossiter, Stumbles, & Taylor, 2001).

Parent training programs that rely on behavioral and social learning theories have been further conceptualized as programs that teach parents to manage their children's behavior via behavior modification techniques (Nixon, 2002). This approach is based on the assumption that parent behaviors contribute to the incidence, progression, and maintenance of children's behavior problems (Lundahl, Risser, & Lovejoy, 2006). Thus, intervening on parenting behaviors or the parent-child interaction has been considered to be a primary mechanism of positive treatment outcomes for children. A large literature suggests that parent training can be an effective approach for decreasing problem behavior and increasing prosocial behavior in children (Reyno & McGrath, 2006).

More specifically, behavioral parent training programs draw on principles from applied behavior analysis and may teach parents to identify antecedents and

consequences that precede and follow specific problem behaviors exhibited by children (Henry, 1981). In addition to applied behavior analysis, social learning theory and behavior modification principles provide the foundation for behavioral parent training interventions (Maughan, Christiansen, Jenson, Olympia, & Clark, 2005). From this behavioral approach, the underlying assumption of parent training programs is that both children's prosocial behaviors and their problem behaviors are reinforced by the consequences that follow, be that attention from peers or adults, escape from an aversive task/situation, access to a preferred tangible, or sensory input (Carr, 1994; Hanley, Iwata, & McCord, 2003)

As a strategy for improving child outcomes, parent training programs have been used with caregivers whose children have behavior disorders (e.g., conduct disorder or oppositional defiant disorder) or are at particularly high risk for developing behavior problems (Nixon, 2002). Behavioral parent training interventions have also been used with caregivers of children with developmental delays or disabilities (Matson, Mahan, & LoVullo, 2009). The focus of all of these programs is to increase positive parenting behaviors and decrease child problem behaviors.

Parent Training for Parents of Children with Behavior Problems

Behavioral parent training programs have been utilized specifically for parents of children with heightened behavior problems, with the preschool years being considered a particularly critical period for early intervention (Nixon, 2002). At this period of development, the coercive cycle of parent-child interactions as described by Patterson, Reid, and Dishion (1992) may emerge as a particular learned pattern of interaction. The coercive cycle involves the occurrence of a child problem behavior in response to a limit

being set, followed by a parent/caregiver's emotional response, followed by a more intense or increased problem behavior, followed by the parent removing the limit. From this, parent/caregiver responses may inadvertently reinforce the occurrence of problem behavior, as children learn to behave in a particular way in order to access reinforcement. Both children and parents are reinforced during the coercive interaction pattern such that children may have the limit removed (negative reinforcement) and the parent may be reinforced when the child calms down (negative reinforcement) after the child escapes the task or limit set. Positive reinforcement, in the form of attention (e.g., yelling, whining, screaming), may be at play for both parties as well. Intervening with families with a parent training program may be an appropriate way to indirectly impact child behavior through modifying the nature of the parent-child interactions.

Nixon (2002) reviewed parent training intervention research articles focused on externalizing behavior problems in preschool children. Along with examining studies that employed various types of parent training programs (e.g., parent management training and parent-child interaction therapy, PCIT), Nixon investigated if the addition of supplemental intervention components or modifications to programs increased the benefits of parent participants. Example supplemental components included modules that targeted marital adjustment or provided additional interpersonal skills training. The results of Nixon's review suggested that behavioral parent training programs were effective at reducing child behavior problems; however, analyses on the additional or supplemental modules were inconclusive. Some studies in Nixon's review reported minimal differences between a traditional parent training program and an enhanced version (e.g., Sanders & Christensen, 1985; Spaccarelli, Colter, & Penman, 1992), with

others reporting statistically significant differences in favor of the enhanced version (e.g., Dadds, Schwartz, & Sanders, 1987; Webster-Stratton, 1994; Sanders, Markie-Dadds, Tully, & Bor, 2000).

Serketich and Dumas (1996) reviewed 26 controlled studies to determine the effectiveness of behavioral parent training programs on reducing antisocial behavior in children. For the purposes of their review, the authors defined antisocial behavior as noncompliance, temper tantrums, defiance, and aggressiveness. In order to be included in the meta-analysis, studies had to meet the following inclusionary criteria: 1) the primary target for treatment was at least one antisocial behavior (e.g., aggression, tantrums, or noncompliance), 2) treatment included training parents in the use of differential reinforcement and/or time-out procedures, 3) target children were of preschool or elementary school age, 4) study designs included at least one parent training group and a wait-list control group, each containing a minimum of five participants, and 5) at least one outcome measure addressed the target child's behavior.

Serketich and Dumas (1996) examined mean effect sizes for child and parent outcome variables across the 26 studies. Overall, the authors found the average child with one or more parents receiving the parent training intervention to have less behavior problems after treatment (d = .86) compared to those receiving some other treatment or no treatment at all (e.g., control group). Moreover, Serketich and Dumas highlight that the effects of the parent training interventions appear to generalize across settings, with children also demonstrating improved classroom behaviors. This finding provides additional support for the use of parent training programs and strategies as a way to reduce challenging behavior problems across home and school settings.

A meta-analysis conducted by Maughan et al. (2005) examined 79 studies published from 1966 to 2001 to determine the effectiveness of behavioral parent training as a treatment for externalizing behaviors. Inclusionary criteria for the meta-analysis included: 1) child target behaviors included at least one externalizing behavior, 2) parent training programs included teaching parents to use reinforcement and/or time out strategies, as well as an additional behavioral strategy, such as differential attention, planned ignoring, and point systems, 3) target children were between the ages of 3 and 16, and 4) at least one outcome measure addressed children's behavior.

Results of Maughan et al.'s meta-analysis suggested that behavioral parent training was effective at reducing children's externalizing behaviors, with small to medium effect sizes identified. The authors suggested that the lack of methodological rigor of some published studies may have inflated the results and recommended that future research on behavioral parent training programs include measures of treatment integrity, social validity, parent report and direct observation measures, and generalization of effects across time and settings.

Researchers in Germany recently conducted research examining parent training and its potential effects on children's problem behavior. A study by Hautmann et al. (2011) examined the potential differential effectiveness of a parent training intervention on attention problems and disruptive behavior problems. The researchers were interested in investigating various trajectories of problem behavior and what that might indicate for child outcomes following intervention. Hautmann et al. (2011) recruited a sample of 270 families with the inclusionary criteria of a child between the ages of 3 and 10 years with externalizing behavior problems. Utilizing a within subjects control group design,

families were assessed at four time points: three months prior to the start of intervention, immediately before treatment, immediately post treatment, and at 12-months post intervention follow up. The parent training intervention, the Prevention Program for Externalizing Problem Behavior (PEP) was specifically designed for parents of children with externalizing behavior problems, and for the study, interventionists were required to deliver at least six sessions to participating families.

Using growth mixture models, the authors were able to identify three trajectories of disruptive behavior problems: a large group of "low persisters," a small group of "high and slow desisters" who showed a slow and steady decrease in problem behaviors over time, and a small group of "high and rapid desisters" who showed a strong decrease in disruptive behavior symptoms that remained steady into follow-up (Hautmann et al., 2011). In comparison to the "low persisters" group, the two "high desisters" groups showed statistically significant improvements following the parent training intervention. Additionally, child age was found to predict group membership, with older children being more likely to be in the high and slow desister group. Results from the Hautmann et al. (2011) study indicate that those children in the most impaired groups benefitted the most from the parent training intervention. Children with the most severe behavior problems were shown to have the strongest treatment effects, indicating that parent training may be most effective for those families in which children are exhibiting significant challenging behaviors.

Parent Training as a Method of Prevention

Parent training programs have also been used as a form of prevention, targeting parents of young children who may be at risk for developing heightened behavior

problems. Children and families experiencing poverty, low parental education, high levels of stress, single parents, parent mental illness, and other risk factors are often at an increased risk of having children develop conduct or behavior problems (Webster-Stratton, 1998). Such family risk factors have been found to be associated with heightened behavior problems. Therefore, prevention and early intervention approaches may be important in improving family and child outcomes for at-risk children and families.

Webster-Stratton (1998) examined the effects of a behavioral parent training intervention on a sample of low-income Head Start children and their primary caregivers. Previous research conducted with Head Start populations primarily focused on children's cognitive development, academic readiness, and implications for later achievement (e.g., McWayne & Cheung, 2009), making Webster-Stratton's focus on children's behavioral outcomes relatively novel. Webster-Stratton examined the effects of the Incredible Years program, an intervention that utilized both parent and teacher training components, on parent and child outcomes. Nine Head Start programs were randomly assigned to receive either the intervention or control condition (i.e., Head Start services as usual). The final sample of primary caregivers consisted of 394 parents whose children were enrolled in Head Start, with 37% of the children representing minority backgrounds.

The primary component of Webster-Stratton's parent training intervention involved teaching parents effective parenting skills and discipline strategies. The intervention was an abbreviated version of the Incredible Years Parent Training curriculum and spanned 8 -9 weeks. The additional teacher training involved brief workshops in which teachers and aides received the parent training content and strategies

as well as discussions on how to increase parent involvement in the Head Start program. Participants who were randomized to the control group continued their standard curriculum (Webster-Stratton, 1998).

In order to measure child and parenting competencies, trained staff members conducted home observations to objectively observe parent-child interactions. Additional rating scales and assessments were completed by the parent and teacher in order to measure parent satisfaction, parent school involvement, child social competencies at home and school, child conduct problems at home and school, and family demographics and risk factors.

While a primary aim of Webster-Stratton's (1998) intervention was to improve and strengthen protective factors such as parenting and child social competence, the results also provided information regarding implications for designing and implementing early intervention and prevention programs with Head Start families. Webster-Stratton (1998) noted significant improvements in parent competence for caregivers who participated in the intervention condition relative to control caregivers. Moreover, the intervention parents also displayed reductions in harsh or negative parenting styles compared to the parents in the control group. These findings were consistent immediately following intervention and at follow-up, suggesting that parents maintained such improvements over time. Also of interest, Webster-Stratton was able to further analyze improvements in parenting competence for those parents that attended more than half of the sessions offered compared to those who did not attend as frequently. Significant reductions in the use of physically negative discipline techniques and increases in

positive affect were seen for caregivers who attended more than half of the parent training sessions.

Finally, findings of Webster-Stratton (1998) suggest that children whose families received the parent training intervention were viewed by independent observers to display significantly fewer negative behaviors, noncompliance, and negative affect compared to the control children. Additionally, these differences maintained at follow-up. However, there were not significant differences in parent reported child problem behaviors between the intervention and control groups.

In another study, Webster-Stratton, Reid, and Hammond (2001) examined similar outcomes in a group of parents of children in Head Start programs while utilizing the full 12 sessions of the Basic Incredible Years Parent Training program with similar procedures. From this examination, the authors found that immediately following intervention children in the experimental condition exhibited significantly fewer conduct problems at home and at school compared to children in the control group. There were also significant group differences in positive parenting strategies and negative parenting strategies immediately post-intervention, with parents/caregivers in the intervention condition demonstrating significant increases in positive parent strategies and significant decreases in negative strategies compared to parents in the control group.

Webster-Stratton's Incredible Years Parent Training program has been identified as a well-established intervention for decreasing conduct and behavior problems in children and adolescents (Brestan and Eyberg, 1998). A review of effective treatments identified two specific interventions that meet stringent Chambless criteria for well-established treatments: videotape modeling parent training programs (e.g., Webster-

Stratton's Incredible Years) and parent training programs based on Patterson and Gullion's Living With Children.

In sum, the majority of behavioral parent training programs, including the Incredible Years Parent Training (IYPT) series, were originally developed to treat preexisting externalizing behavior disorders (e.g., oppositional defiant disorder, conduct disorder) or heightened externalizing problems. Within the recent past, however, behavioral parent training programs have taken a decidedly preventive or early intervention approach. As discussed previously, a number of meta-analyses provide sound evidence for the utility of behavioral parent training approaches for parents of typically developing children with or at-risk for behavior problems. For example, Webster-Stratton's Incredible Years Parent Training (IYPT) program has been shown in several randomized trials that it is more effective than control treatments at reducing children's maladaptive behaviors (Webster-Stratton, 1984, 1994). However, the effectiveness of parent training programs for parents of children with developmental delays and disabilities with behavior problems has been less thoroughly explored.

Children with Developmental Delays and Disabilities

Children with developmental delays and disabilities have been documented to be at a heightened risk for developing behavior problems (Dosen & Day, 2001; Einfeld & Tonge, 1996). It has also been established that children with intellectual and developmental disabilities are three to four times more likely to develop a diagnosable psychiatric condition, including a variety of externalizing disorders (Emerson, 2003). Parenting stress may be exacerbated by such challenging behavior in children (Lecavalier et al., 2005) with parents of children with developmental delays and disabilities reporting

significantly more psychological distress compared to parents of typically developing children (Baker, Blacher, Crnic, & Edelbrock, 2002; Orsmond, Lin, & Seltzer, 2007). Further research suggests that there is a bidirectional effect between child behavior problems and stress over time, whereby increases in child problem behavior lead to more parenting stress and more parenting stress leads to increases in child problem behavior (Neece et al., 2012). Thus, parents who experience less parenting stress following the acquisition of new skills from a parent training intervention may be more equipped to handle their child's challenging behavior.

Parent training interventions often provide explicit instruction in specific parenting skills (e.g., behavior management), which are designed to reduce the heightened levels of child problem behavior. As elevated child behavior problems are likely to negatively impact the entire family, interventions resulting in reduced problem behavior may also lead to improvements in parent well-being. What follows in the section below is a review of several behavioral parent training programs designed or modified for use with parents of children with developmental disabilities.

An established, evidence-based intervention that has been modified for use with parents of children with developmental disabilities (DD) is the Stepping Stones Triple P (SSTP) program (Plant & Sanders, 2007). The Stepping Stones Triple P program is grounded in behavioral theory and focuses on giving children positive attention while looking to better understand the purpose of their behavior. Similar to the literature on behavioral parent training programs with typically developing children, the literature on behavioral parent training for parents of children with DD also examines whether enhancements to documented interventions provide additive benefits to participants.

Along this line, Plant and Sanders (2007) examined the effects of a modified SSTP program with a standard version of SSTP.

Seventy-four parents/caregivers of children with DD were randomly assigned to one of three groups: the enhanced SSTP (SSTP-E) which included caregiving coping skills with the usual parenting skills, the standard SSTP (SSTP-S), or a wait-list control group (WL). The researchers observed parent-child interactions via a 30 min videotaped home observation during which parents were to 1) interact with another adult while the child engaged in free play, 2) complete a household task while the child engaged in free play, and 3) complete a structured play task with the child. Other measures of parent reported child behavior, parent competence, and parent well-being were also measured.

The standard version of the parent training program (SSTP-S) involved 10 individually-delivered sessions that taught parents 25 core child management strategies that were specifically developed for children with disabilities (Plant & Sanders, 2007). Modeling, role-playing, feedback, and specific homework activities were used to deliver the content. The enhanced version, SSTP-E, included an additional six sessions that focused on coping with how to provide care for a child with a disability.

Immediately post intervention, there were no significant differences between the two intervention conditions on measures of child behavior, with the exception of difficult child behavior being associated with care giving on the caregiving problem checklist (CPC). Here, the results favored the SSTP-E group. For long-term effects, there were no significant differences between the intervention conditions at 1-year follow-up on negative child behaviors, however there were significant group differences for overall disruptive child behavior with the enhanced group exhibiting significantly lower rates of

difficult behavior (Plant & Sanders, 2007). Finally, as hypothesized, both intervention groups demonstrated improved outcomes when compared to the wait-list control group.

Plant and Sanders (2007) demonstrated how a parent training intervention that had been modified for parents of children with developmental disabilities was effective at reducing problem and disruptive behaviors. The further exploration of how enhancements might provide additive benefits above what typical parent training has usually focused on substantially adds to the literature on intervening with this specific population. Although SSTP shows incredible promise for use with children with DD, this program may be costly to implement given its individualized implementation and emphasis on children with preexisting heightened levels of problem behavior.

McIntyre (2008a) adopted The Incredible Years Parent Training (IYPT) as a group-based, prevention oriented behavioral parent training program for use with caregivers of young children with DD (IYPT-DD). The main objectives of IYPT include fostering and strengthening parent-child relationships, promoting effective limit setting and systematic behavior plans, and increasing children's social skills and self-regulation skills (Webster-Stratton, 2007). The intervention is typically implemented in a group-based format, with 8-14 participants on average, thus is deemed more cost-effective than individual sessions. IYPT utilizes videotaped vignettes to model parent strategies, role-playing, and weekly homework assignments. The IYPT series includes programs for babies, toddlers, and children, as well as teacher specific and advanced parent programs.

McIntyre's DD modifications (IYPT-DD; McIntyre, 2008a) use the toddler version of Webster-Stratton's BASIC program (ages 2-8). McIntyre retained the main areas of play, praise, rewards, limit setting, and handling challenging behavior, but

included the following modifications: identifying at the outset of intervention the blessings and challenges of having a child with DD, focusing on preventing and handling challenging behavior by identifying relevant antecedents and consequences and using a functional behavior assessment framework, and including an informational session with community agency representatives available to discuss available programs that families may qualify for and benefit from (McIntyre, 2008a). Additionally, throughout sessions, the interventionists urge parents to consider how particular topics and skills relate to their child with a disability, compared to a typically developing child. The content on appropriate use of time out techniques are excluded from the IYPT with DD modifications intervention due to the young age and developmental level of children participating (McIntyre, 2008a, 2008b).

In a study examining the feasibility of implementing the IYPT-DD modifications (McIntyre, 2008a), parents/caregivers of 25 children with developmental delays received the intervention and were assessed on child functioning, parent well-being, family variables, and parent-child interactions. Additional measures of consumer satisfaction and group attendance were collected in order to assess feasibility. Overall, parents/caregivers reported they were satisfied (average rating of 5.71 on a 7 point likert scale) with the intervention with 84% of the participants attending at least 80% of the 12 sessions. As such, the modifications appeared to be feasible to implement.

A randomized controlled trial (RCT) evaluating IYPT-DD modifications was conducted with 49 families to determine if the intervention was more efficacious than a usual care control condition (McIntyre, 2008b). Of primary concern was the decrease in negative parenting behaviors (as well as an increase in positive parenting behaviors, like

specific praise statements) during parent-child play interactions along with reductions in child behavior problems. Twenty-four families were randomly assigned to the IYPT-DD modifications condition (21 completed the study), while 25 families were randomly assigned to receive their usual care (23 completed the study). The usual care condition included early childhood education and other related services. Following intervention, children in the treatment condition had significantly lower parent-reported behavior problems than children in the usual care control condition. Parents in the treatment condition had significantly fewer observed negative/inappropriate parenting behaviors during parent-child interaction tasks. There were not significant group differences on positive parenting behaviors, as both groups demonstrated improvements at the post-assessment. Thus, preliminary results of IYPT-DD suggest promise for cost-effective, group-based prevention and early intervention for families with young children with DD (e.g., McIntyre, 2008a, 2008b; Phaneuf & McIntyre, 2007).

Parenting Behaviors

There is an extensive literature that has linked negative and coercive parenting behaviors to the development of and maintenance of problem behavior in typically developing children (e.g., Patterson, Reid, & Dishion, 1992). There is growing evidence that parenting behavior and family processes also influence the development and maintenance of problem behavior in children with developmental delays and disabilities (e.g., Floyd, Harter, & Costigan, 2004; McIntyre, 2008a). Parenting behaviors may serve as either a risk or protective factor in the development and maintenance of problem behaviors (Patterson et al., 1992). Previous literature has focused mainly on cognitive and affective aspects of parenting in children with disabilities, such as parenting stress and

coping strategies. However, there is a growing evidence base that examines parenting behavior and child outcomes in families with children with disabilities.

A study by Floyd, Harter, and Costigan (2004) investigated problem-solving discussions in families with children with mental retardation (MR) in order to better understand family processes generally in families with children with disabilities. The authors measured dyadic exchanges between parents (both mothers and fathers) and their child with a disability compared to their sibling. Floyd and colleagues recruited a sample of 162 two-parent families from the following three groups: families with a child with mild or moderate MR, families with a child with a chronic illness (e.g., cerebral palsy, leukemia), and families with typically developing children without a chronic illness. Groups were further classified into families with a target child with significant behavior problems (as measured by the CBCL) and those with a target child without behavior problems. Parents of children with MR were more directive, persistent, and avoided cycles of negative parent-child exchanges compared to parents of children with a chronic illness or parents of typically developing children. Target children with behavior problems engaged in twice as many negative exchanges with their parents compared to target children without behavior problems. Further, results from the parent-sibling interactions indicated little impact of the target child on the interactions between the parent and the sibling. Though the cross-sectional nature of this study limits conclusions about causality, the results provide evidence of the linkage between behavior problems and parenting behaviors.

Maljaars, Boonen, Lambrechts, Leeuwen, and Noens (2014) investigated parenting behaviors in a sample of parents of children with an ASD and parents of

children without an ASD diagnosis. The authors investigated whether there was a relation between parenting behaviors and child behavior problems in children with and without ASD. Parents self-reported on their parenting behavior and their child's problem behavior. Results indicated that parents of children with ASD demonstrated significantly different parenting behavior from parents of typically developing children, as evidenced by their scores on the Parental Behavior Scale-short version and a measure of ASD-related parenting behaviors (e.g., adapting the environment). Specifically, parents of children with ASD reported lower scores on the Rules and Discipline subscales and higher scores on Positive Parenting, Stimulating the Development, and Adapting the Environment compared to parents of typically developing children. Thus, in this sample, parents of children with ASD self-reported more positive and stimulating parenting behavior. There were, however, significant correlations between parenting behaviors and parent-reported child behavior problems. Specifically, child externalizing behavior problems were related to general parenting behaviors while child internalizing behavior problems were correlated with ASD-related parenting behaviors, providing evidence that parenting behaviors may be associated with problem behavior in children with and without ASD.

While the study by Maljaars et al. (2014) is cross-sectional and implications regarding causality cannot be supported, the findings add to the developing literature base on particular parenting behaviors and how they may be associated with behaviors and outcomes in children with developmental disabilities. While the study by Maljaars et al. had many strengths, the methodology relied exclusively on parent self-report, introducing shared method variance as a threat to internal validity. Thus, examining parenting

behavior through the use of direct observations would address a significant gap in the literature.

Siblings of Children with Disabilities

Research on siblings of children with disabilities has increased in recent years, with investigators focusing on sibling adjustment and well-being. Findings in the literature are inconclusive with respect to whether siblings of children with disabilities experience more problems than siblings of typically developing children. For example, Cuskelly and Gunn (2006) compared the adjustment of 53 siblings of children with Down syndrome (DS) to siblings of typically developing children. On measures of competence and behavior problems, the authors did not find statistically significant group differences. However, previous work by these same authors (Cuskelly & Gunn, 1993) found that mothers of female children whose sibling had DS reported statistically significantly more problem behavior than mothers of male siblings of children with DS and mothers of typically developing children. Such mixed findings necessitate additional research on siblings of children with disabilities in order to better understand their outcomes.

A longitudinal study by Hastings (2007) examined the behavioral adjustment of siblings of children with developmental disabilities. A total of 56 families participated in two assessments over two years. Mothers reported on their child with a developmental disability and their sibling. Results from the study indicated that the problem behavior of the child with a developmental disability at time one was a significant positive predictor of their sibling's problem behavior at time two. However, the sibling's behavior at time 1 was not a significant predictor of the child with a developmental disability's behavior. Thus, the results of the study provide evidence only for a unidirectional effect of the child

with a disability on their sibling's adjustment. Future longitudinal research in this area is warranted in order to better understand how a child with a disability impacts siblings and families broadly.

Examination of particular family, sibling, and target child characteristics that impact sibling adjustment and outcomes is another critical area of research. Benson and Karlof (2008) sought in part to identify the unique contributions of child and family variables in predicting the emotional, social, and behavioral adjustment in siblings of children with an autism spectrum disorder (ASD) diagnosis. The authors found the target child's symptom severity, the intensity of the primary caregiver's involvement in parent education, stressful life events, and family climate were significantly related to the sibling's prosocial and problem behavior. Although behavior problems of the target child with a developmental disability are related to sibling adjustment, other family context and risk factors are associated with sibling adjustment as well. Examining parenting and other family context factors as they relate to sibling and target child adjustment is an area ripe for investigation.

Purpose of the Study

Relatively little is known about how parents interact with their child with a developmental delay compared to how they interact with their other children. Although utilizing treatment strategies and skills with additional, untargeted children may not be a direct goal of parent training interventions, such collateral benefits may lead to improved outcomes for the entire family. Moreover, information about how parents interact with multiple children may provide further evidence for how interventions may be successful with particular families. As such, the present pilot study aimed to examine parenting

behaviors during parent-child interactions with the parent and the child with a delay as well as during interactions with the parent and an untargeted sibling. Given that there is very little empirical research in the parent training and developmental disability fields examining parenting behaviors associated sibling behavioral outcomes, this pilot study was an initial descriptive investigation of parents and their children.

The current study sampled participants of the Oregon Parent Project (PI, L.L. McIntyre, R01 HD059838), a randomized control trial examining the efficacy of IYPTT-DD for parents of preschool-aged children with DD compared to treatment as usual. Given the young age of the target children, the emphasis of this project was on the prevention and early intervention of behavior problems.

Research Questions and Hypotheses

The current pilot study examined parenting behaviors during parent-child interactions with both the target child and the untargeted sibling and child/family variables that are predictive of adjustment of the target child and sibling. Specifically, the following research questions were addressed:

1) Are parent-target child interactions and parent-sibling interactions related?

   It was hypothesized that parent-target child and parent-sibling interactions would be significantly correlated.

2) Do parenting behaviors predict parent-reported sibling problem behavior above and beyond sibling, TC, and family demographics?

   It was hypothesized that parenting behaviors would predict parent-reported sibling problem behavior when controlling for sibling, TC, and family demographic variables.

3) Do parenting behaviors predict observed sibling problem behavior above and beyond sibling, TC, and family demographics?

   It was hypothesized that parenting behaviors would predict observed sibling problem behavior when controlling for sibling, TC, and family demographic variables.

4) Do parenting behaviors predict parent-reported target child (TC) problem behavior above and beyond TC, sibling, and family demographics?

   It was hypothesized that parenting behaviors would predict parent-reported target child problem behavior when controlling for TC, sibling, and family demographic variables.

5) Do parenting behaviors predict observed target child (TC) problem behavior above and beyond TC, sibling, and family demographics?

   It was hypothesized that parenting behaviors would predict observed target child problem behavior when controlling for TC, sibling, and family demographic variables.

CHAPTER II

METHODOLOGY

Participants

A sample of 14 families with a preschool-aged target child with DD and a sibling between 36 and 96 months were in the current study (supported by a diversity supplement grant, R01HD059838-03S1). Participants were recruited from the larger, ongoing Oregon Parent Project. The Oregon Parent Project (OPP) is a NICHD-funded (R01 HD059838) randomized controlled trial examining the efficacy of IYPT-DD on child and family outcomes in families with target children who are preschool-aged with developmental delays. Inclusionary criteria for the current study included: 1) family participation in OPP, 2) sibling between 36 and 96 months living in the home, and 3) sibling living with the primary caregiver for a minimum of 1 year (see Appendix B for the screening questionnaire). Siblings were excluded if they are deaf, blind, or non-ambulatory.

Procedure

The procedures for the current study received approval from the Institutional Review Board housed within the University of Oregon's Research Compliance Office (see Appendix C for IRB approval documentation). At family intake for the larger OPP study, participant records were reviewed to determine if there is a sibling living in the home meeting inclusionary criteria. Families who met inclusionary criteria were contacted by phone by the Principal Investigator (PI) of the proposed study (Kenya Makhiawala) and invited to participate in an additional study focusing on siblings of children with DD. Primary caregivers who agreed to participate received a consent form

(see Appendix D) and two questionnaires (see Appendices E, F and G) via US mail. An initial home visit was scheduled, separate from the OPP home visit. Trained assessors conducted the home visits. Participating families were assigned to an assessment only (control) and parent education (intervention) condition as part of their ongoing involvement in the larger OPP study. Thus, participants in the current sibling study were assigned to a treatment condition. All assessors and home visitors were blind to the participants' condition assignment.

Home visit assessments took place in the family's home and included informed consent (see Appendix D) and informed assent for siblings between the ages of 84 and 96 months (see Appendix H), a brief demographic questionnaire (see Appendix I), and a videotaped parent-child play interaction involving the primary caregiver and the sibling (see Appendix J for videotaping protocol). The parent-child play interaction was a 15 minute interaction and included a 10 minute unstructured play task, a 2 minute clean up, and a 3 minute structured task (e.g., complete a puzzle; see McIntyre, 2008; Phaneuf & McIntyre, 2007). At the time of the home visit, the assessor retrieved the questionnaires previously mailed to the primary caregiver and checked for missing data.

Parent education (IYPT-DD intervention). The IYPT-DD intervention is a 12-week program that meets for 2.5 hours per week with a small group of parents (5-12) and is facilitated by trained group leaders. IYPT-DD is based on the BASIC program (ages 2-8) of the IYPT series, with a focus on topics appropriate for parents of toddlers. The main content areas of play, praise, rewards, limit setting, and handling challenging behavior are included in the DD modified program. Modifications include identifying at the outset of intervention the blessings and challenges of having a child with a developmental

delay/disability, focusing on preventing and handling challenging behavior by identifying relevant antecedents and consequences commonly seen with the child's problem behavior, and an informational session with community agency representatives available to discuss accessible programs that families may qualify for and benefit from (McIntyre, 2008a, 2008b). Additionally, across the sessions, the interventionists urge parents to consider how particular topics and skills relate to their child with a disability, compared to a typically developing child. The content on appropriate use of time out techniques are excluded from the IYPT with DD modifications intervention due to the young age and developmental level of children participating in the project.

Appendix K provides an example outline from one of the lessons focusing on praise. Each week, parents/caregivers are instructed on the key principles of the topic and complete an evaluation on how helpful they feel the material and the interventionists were. Parents also set a goal each week for areas that they'd like to work on (e.g., play with child for 15 minutes each day, complete the reading for next week). Another component of the intervention is the weekly home activity assigned. Parents are given chapters to read and worksheets for tracking their use of key skills and techniques as homework in an attempt to stimulate the discussion and provide concrete examples.

The intervention took place in a community classroom, with a lead interventionist and secondary interventionist (PI) co-facilitating the lesson each week. Interventionists attended training on the Incredible Years program at the University of Washington Parenting Clinic as well as received additional training on the DD modifications from the PI of OPP (Laura Lee McIntyre). Weekly supervision was provided as part of the OPP clinical team meetings.

Measurement

Dependent variables represent multiple methods of assessment, including parent-reported child problem behavior and social skills, and direct observations of parent and child behaviors.

Parent-Reported Questionnaires

Problem behavior. The Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2012) was completed by the primary caregiver to assess the TC's and the sibling's internalizing and externalizing symptoms. The 1 ½ - 5 year version (see Appendix E) was used for siblings who are between 36 – 71 months old and the 6-18 year version (see Appendix F) was used for siblings who are between 72 – 96 months old. The 1 ½ - 5 CBCL version includes 99 specific problems items where parents/caregivers rate children on how true each item with a 0-2 scale (0 = not true, 1 = somewhat or sometimes true, and 2 = very true or often true). The 6-18 CBCL version includes 112 specific problems, with parents providing a rating on the same 0-2 scale. Both versions of the CBCL include two broadband scales, internalizing problems and externalizing problems. For the 1 ½ - 5 version, the internalizing band is comprised of four syndrome types (emotionally reactive, somatic complaints, anxious/depressed, and withdrawn), while the externalizing band is comprised of three syndrome types (sleep problems, attention problems, and aggressive behavior). For the 6-18 year version, the internalizing band includes three syndrome types (anxious/depressed, withdrawn/depressed, and somatic complaints) and the externalizing band includes two syndrome types (rule-breaking behavior and aggressive behavior). This rating scale takes

about 15 minutes to complete and has a test-retest reliability of 0.95 for the specific problems items. Additionally, the total problems scales test-retest reliabilities range from 0.91 to 0.95. The content validity of the CBCL has also been thoroughly researched and well documented. From this, all items have been shown to discriminate significantly between referred and non-referred children, $p < 0.01$ (Achenbach & Rescorla, 2012).

Social skills. The Social Skills Improvement System (SSIS; Gresham & Elliott, 2008) was completed by parents/primary caregivers to measure the social skills of participating siblings. Only the 79-item Social Skills scale of the SSIS (see Appendix G) was included in the present study. The Social Skills scale includes 79 items across 7 subscales: Communication, Cooperation, Assertion, Responsibility, Empathy, Engagement, and Self-Control. The Social Skills scale is estimated to take approximately 10 minutes to complete. Test-retest reliability for the parent-reported Social Skills scale is 0.84. Adequate evidence of validity is reported by test authors (e.g., Gresham, Elliott, Vance, & Cook, 2011).

Adaptive behavior. The Survey Interview Form of the Vineland Adaptive Behavior Scales 2nd Edition (Vineland-II; Sparrow, Cicchetti, & Balla, 2005) was conducted with the primary caregiver in order to assess the target child's adaptive behavior. The Survey Interview Form includes 413 questions in five domains of adaptive behavior: communication, daily living skills, socialization, motor skills, and maladaptive/problem behavior (see Appendix L). As part of OPP, the four adaptive domains were administered. An overall Adaptive Behavior Composite (ABC) is computed from an individual's scores on the four adaptive domains, with a mean of 100 and a standard deviation of 15.

Depression. Primary caregivers completed the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). The CES-D is a 20-item self-report scale that measures depressive symptomatology (see Appendix M). Parents were asked to indicate how often they experience a variety of symptoms over the last week on a 4-point Likert scale, ranging from 0 (rarely or none of the time) to 3 (most or all of the time). Total scores on the CES-D can range from 0 to 60, with higher scores indicating more depressive symptomatology.

Parenting Stress. Primary caregivers completed the Parenting Stress Index – 3rd Edition Short Form (PSI-SF; Abidin, 1995) as part of their participation in OPP. The PSI-SF consists of 36 items and measures the relative stress in the parent-child relationship (see Appendix N). A Total Stress score is yielded from three scales: Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child. Parents were asked to complete the PSI-SF using the TC as the focal child.

Direct Observation Assessment

Direct observation data was collected on the following dependent variables: parent inappropriate behaviors, positive parent behaviors, and inappropriate child behaviors. An established coding system presently used for OPP (see Phaneuf & McIntyre, 2007) was used to code parent and child behaviors during both parent-TC interactions and parent-sibling interactions. Appendices O and P list descriptions of behaviors included in the code.

Parent inappropriate behaviors. Seven inappropriate behavior categories were coded and included inappropriate play behavior, intrusion on child's independence, positive consequences for child's inappropriate behaviors, inappropriate commands, lack

of follow through, criticism, and aggression. Such inappropriate play behaviors may involve parents/caregivers leading their child's play, competing with their child, or insisting that an activity be completed a particular way. Inappropriate commands may include vague or ambiguous commands, failing to allow their child an opportunity to comply with the command, or a repeated command. Additionally, lack of follow through may involve withdrawing the demands of a previously stated command. A 30-sec partial interval coding system was used. See Appendix O for descriptions of parent behavior codes.

Parent positive behaviors. Two positive parent behaviors were coded, including descriptive comments and appropriate praise. Descriptive commenting involved parents/caregivers providing a neutral or positive commentary of their child's play or other positive behaviors, similar to a sports caster announcing a sporting event. Additionally, labeling items and providing vocabulary around something the child is attending to was included in descriptive commenting. Descriptive comments were coded using a 30-sec partial interval coding system. Praise involved the reinforcement of a positive child behavior through attention, verbal praise statement, hug, smile or some other form of excitement or validation. Event recording was used to identify the number of instances a parent uses praise during the observation. Percentage of intervals containing inappropriate and positive parenting behaviors was calculated.

Inappropriate child behaviors. The target child's and sibling's inappropriate behaviors that were coded included aggression, disruption, and negative vocalizations (see Appendix P). Aggression included things such as hitting, kicking, biting, pushing, and throwing objects at another person. Disruption involved banging, swiping, and

throwing (not at another person) objects. Negative vocalizations included screaming, swearing, saying unkind, threatening words, whining, and moaning/yelling/growling in irritation. A 30-sec partial interval coding system was used to code these behaviors. The percentage of intervals containing inappropriate child behaviors was calculated. Noncompliance, defined as failing to initiate or complete a parent request within 5 sec, was calculated during the clean-up portion of the parent-child observation. The number of times a child complied with parent requests was divided by the total number of parent requests to provide a compliance ratio. Noncompliance was calculated by subtracting the compliance ratio from 1.0.

Data Collection

Home Assessors from the Oregon Parent Project served as data collectors for the current study. Trained undergraduate and graduate students from the University of Oregon coded the videotaped parent-child play interactions. Before beginning data collection, Home Assessors received training on the protocol for the current study. They already completed the extensive training on the Oregon Parent Project home visit protocol. Trainings involved thorough practice in administering the questionnaires, developing rapport with families, and responding to questions that may arise. All Home Assessors are mandatory reporters and were required to participate in mandatory reporting training and CITI research compliance training. Home Assessors were trained to reach a 95% accuracy criterion on the administration of the assessment protocol. The coding team was trained to an 85% interobserver agreement criterion on each target behavior coded during the videotaped parent-child play interaction.

Interobserver Agreement

Reliability of the measurement of the dependent measures was assessed during a minimum of 20% of the videotaped home observations. A second coder independently coded the observations. Occurrence only agreement was calculated. Occurrence only agreement was calculated by dividing the total number of intervals both observers agree a response occurred by the number of intervals either observer coded a response and multiplying by 100. For the current study, the total occurrence agreement was 88% for parent-target child interactions and 87% for parent-sibling interactions.

Dependent Variables

The dependent variables were parent-reported and observed behavior problems in the target child and sibling. Primary caregivers reported on the TC's and sibling's problem behaviors with the Child Behavior Checklist (CBCL). The total problems t-score of the CBCL was used for the present study. Observed problem behavior was measured by the child's noncompliance (failing to initiate or complete a parent request within 5 sec).

Independent Variables

Several key variables were entered into the regression analyses in steps and served as the independent variables for the above mentioned research questions. For the regression analyses predicting sibling behavior, the first step included sibling demographic variables as independent variables. This first step included sibling DD status, sibling sex, and sibling age. DD status was a categorical variable where parents reported whether the sibling had been previously diagnosed with a developmental delay or not. The second step for the regression analyses predicting sibling behavior added the

target child's behavior problems as independent variables. This step included the target child's CBCL total problems t-score and their Adaptive Behavior Composite (ABC) score from the Vineland Adaptive Behavior Scales. The third step for the regression analyses predicting sibling behavior added measures of parent mental health as independent variables. This step included parents' total score on the Center for Epidemiological Studies – Depression (CES-D) scale and the total stress index of the Parenting Stress Index (PSI). The fourth and final step in the regression analyses predicting sibling behavior added inappropriate parenting behaviors observed during the parent-sibling play interaction as independent variables. Specifically, positive consequences for inappropriate sibling behaviors, inappropriate commands, and lack of follow through were added in this final step.

For the regression analyses predicting the target child's behavior, the target child's adaptive behavior was entered in the first step as an independent variable. This first step included the target child's ABC score from the Vineland. In the second step, the sibling's demographic variables were entered as independent variables. Again, this step included the sibling's DD status, sex, and age. In the third step, parent mental health variables (CES-D and PSI total stress) were added as independent variables. In the final step in the regression analyses predicting the target child's behavior, inappropriate parenting behaviors observed during the parent-TC play interaction were added as independent variables. Positive consequences for the target child's inappropriate behaviors, inappropriate commands, and lack of follow through were the final variables included.

Data Analysis

Bivariate correlation analyses were run to identify what parent behaviors observed during play interactions with the target child were related to parent behaviors observed during interactions with the sibling. Hierarchical multiple regression analyses were run to assess what child and family variables predicted parent-reported and observed behavior problems in target children with DD and their siblings. The outcome variables of interest in each regression analysis were the total problems t-score on the Child Behavior Checklist (CBCL) and observed noncompliance during the videotaped play interactions.

CHAPTER III

RESULTS

Sample

Descriptive and demographic information on each participating family are presented in Table 1 (see Appendix A for all tables). A total of 16 of the 19 eligible families were recruited from the larger OPP study to participate in the current study (84% response rate). One family withdrew from OPP after their first assessment, revoking their eligibility to also participate in the current project. Additionally, one family's videotaped parent-target child and parent-sibling interactions were completed in Spanish. Spanish-speaking trained video coders are unavailable at this time. Thus, the final sample includes 14 families. Detailed information on each family can be found in Table 1, including information on the primary caregiver/parent, target child with a developmental delay and sibling.

Primary caregivers in the current sample included eight biological mothers, two biological fathers, three foster mothers, and one foster father. Two foster parents were biologically related to the sibling (e.g., the TC was the only foster child) while two foster parents were fostering both the TC and the sibling. The primary caregivers' age ranged from 22 to 60 years (M = 34.36, SD = 11.86). Four of the primary caregivers reported their highest level of education to be a high school degree/GED or specialized training, while the rest of the sample reported having completed at least some college.

On average, the target child participating in OPP was 37.21 months old (SD = 5.01), with siblings ranging in age from 37 to 89 months (M = 63.50, SD = 16.62). All of the target children had a developmental delay of some form, with half (n = 7) diagnosed

with a speech/language delay. Over 40% of siblings (n = 6) had been identified as having a developmental delay, specifically a delay in speech/language.

On average, the target child was reported to have a slightly elevated standard score on the total problems scale of the Child Behavior Checklist (M = 58.93, SD = 13.15). Siblings' problem behaviors were reported to be below average (M = 48.50, SD = 11.91). Additionally, siblings' social skills were reported to be near average (M = 93.93, SD = 7.79). Target children's adaptive behaviors were also assessed. In the present sample, the average Adaptive Behavior Composite (ABC) score on the Vineland Adaptive Behavior Scales – 2nd Edition assessment was 80.57 (SD = 15.58), with five of the target children scoring at or below 75.

Parenting Behaviors

During the videotaped parent-child interactions, several key parenting behaviors were coded. The play interactions involved a 10-min free play session, a 2-min clean up, and a 3-min structured activity. Trained observers coded inappropriate and positive parenting behaviors across the entire 15-min interaction with a 30-s partial interval coding system. The results of these coded interactions indicated the proportion of intervals that contained each parenting behavior during their parent-target child and parent-sibling play interactions (see Table 2).

The average proportions of intervals containing each parenting behavior for the present sample are listed in Table 2. Each parenting behavior was observed and coded separately for the three sections of the parent-child play interactions (free play, clean up, and the structured activity). Paired sample t-tests indicate a statistically significant difference between the proportion of intervals containing parent inappropriate play with

the target child (M = .29, SD = .18) and the proportion of intervals containing parent inappropriate play with the sibling (M = .12, SD = .10) during the free play section, $t(13) = 3.90$, p = .002. Given the small sample size, trends toward significance are reported. There was a trend toward a statistically significant difference for the proportion of intervals containing parent inappropriate commands with the target child during the free play section (M = .29, SD =.14) and intervals containing parent inappropriate commands with the sibling (M = .20, SD = .12), $t(13) = 1.85$, p = .09 There was an additional trend toward a statistically significant difference for intervals containing parent inappropriate commands with the target child during the clean-up section (M = .80, SD = .20) and intervals containing parent inappropriate commands with the sibling during the clean up (M = .62, SD = .31), $t(13) = 1.86$, p = .09.

Examination of the parenting behaviors suggests that on average, parents exhibited more negative behaviors with their target child with a developmental delay than with the TC's sibling, with the exception of intrusion on the child's independence during the free play section and intrusion on the child's independence, positive consequences for child inappropriate behaviors, inappropriate commands, and lack of follow through during the structured activity. Further, parents exhibited more descriptive commenting with the sibling during the free play and clean up sections than with the target child.

More than half of the intervals during the clean-up section of the play interactions contained parent inappropriate commands and lack of follow through for both the parent-TC interactions and the parent-sibling interactions. Inappropriate commands include vague or ambiguous commands (e.g., commands stated as questions, Let's commands), no opportunity commands (e.g., more than one command is delivered to the child before

they have time to comply), and repeated commands (e.g., commands repeated more than twice as a result of the child's noncompliance). This finding suggests that parents in the current sample struggled with giving effective commands. Parents' lack of follow through involved withdrawing commands in response to the child's negative reaction (e.g., tantruming, screaming, etc.) and ignoring compliance to commands (e.g., failing to recognize compliance or noncompliance). Again, this finding may be indicative of parents' struggle with following through on commands they give to their children. In terms of child compliance during the clean-up task, target children complied with an average of 35% of parent commands (*SD* = .30), while siblings complied with an average of 48% of parent commands (*SD* = .31). See Table 3 for a description of target child and sibling behavior problems during the parent-child interaction task.

Preliminary Analyses

Preliminary analyses were conducted to examine the data for basic assumptions of multiple regression analysis (Verran & Ferketich, 1987). Descriptive statistics revealed no missing data. Data were examined thoroughly to check the assumptions of normality, linearity, and homoscedasticity. Skewness was examined for all quantitative variables, with values ranging from -.50 to .72. Histograms and standardized residual plots were used to further assess normality, and all distributions were approximately normally distributed.

To test the assumption of linearity, bivariate scatter plots, scatter plots of the residuals versus the predicted values, and matrix scatter plots were examined for each regression analysis. The assumption of linearity appears tenable. Homoscedasticity was examined visually with graphical plots of the studentized deleted residuals and the

unstandardized predicted values. The assumption of homoscedasticity also appears tenable.

Question 1. *Are parent-target child interactions and parent-sibling interactions related?* This exploratory research question allowed for the examination of relations among types of parenting behaviors within parent- child interactions (e.g., inappropriate commands and lack of follow through during the interaction with the TC) as well as examination of parenting behaviors across the parent-target child interaction and parent-sibling interaction. Results of bivariate correlation analysis revealed several significant correlations (see Table 4). Specifically, parents' use of positive consequences for inappropriate TC behaviors was significantly positively related to their use of inappropriate commands with the TC ($r = .56, p = .04$). Additionally, parents' use of inappropriate commands with the sibling was significantly positively related to their lack of follow through with commands with the sibling ($r = .73, p = .002$). However, negative parenting behaviors with the target child were not significantly correlated with negative parenting behaviors with the sibling, possibly suggesting that parenting behaviors (or patterns of interactions) may be unique to the parent-child dyad.

Question 2. *Do parenting behaviors predict parent-reported sibling problem behavior above and beyond sibling, TC, and family demographics?* This exploratory research question allowed for the examination of family contextual variables and observed parenting behavior in predicting parent-reported sibling problem behavior. To address this research question, a hierarchical multiple regression analysis was run to determine which child and family variables predicted the parent-reported behavior problems of siblings (see Table 5). The outcome variable was the total problems t-score

on the Child Behavior Checklist (CBCL). Child and family contextual variables were selected for inclusion in the hierarchical regression based on a variety of factors, including a priori selection based on Bronfenbrenner's Ecological Systems theory, empirical findings from extant research, and consideration of significant correlations in the current sample.

In an examination of the sibling's parent-reported behavior problems, child and family variables were entered in steps to determine if specific parenting behaviors exhibited during the clean-up task with the sibling predicted parent-reported sibling problem behavior. The sibling's age, developmental delay status, and sex were entered in the first step. In the second step, the target child's behavior was added, including the total problems score of the CBCL and the Adaptive Behavior Composite score from the Vineland. In the third step, parent mental health risk variables were entered, including the total stress index of the PSI and the total score on the CES-D. In the fourth and final step, negative parenting behaviors exhibited during the clean up task were entered. This final step included positive consequences for inappropriate sibling behaviors, inappropriate commands, and lack of follow through with commands during the parent-sibling play interaction.

Overall, the final model explained 91.8% of the variance in the sibling's score on the CBCL (see Table 5). In the first step, the sibling's demographic variables contributed significantly to the regression model, F (3, 11) = 5.13, p = .018 and accounted for 58.3% of the variance. Adding the target child's behavior to the model explained an additional 10% of the variance in sibling CBCL scores and this change in R^2 was significant, F (5, 9) = 3.88, p = .038. The third and fourth steps of the model were not statistically

significant suggesting that the inclusion of parent mental health and observed parenting behavior did not predict parent-reported sibling behavior above and beyond the contributions of sibling demographics and target child behavior.

Question 3. *Do parenting behaviors predict observed sibling problem behavior above and beyond sibling, TC, and family demographics?* In the next hierarchical regression, the outcome variable was sibling observed noncompliance (see Table 6). The noncompliance variable was coded as the ratio of parent issued commands to the child's compliance with the commands as observed and measured by trained coders. Similar to the previous regression, this regression included four steps, with sibling demographic variables entered in the first step, target child demographic variables in the second step, parenting stress and depressive symptomatology in the third step, and negative parenting behaviors in the final step. The negative parenting behaviors included in the final step were positive consequences for inappropriate sibling behaviors, inappropriate commands, and lack of follow through with commands during the clean-up portion of the parent-sibling play interaction. The final model explained 98.9% of the variance in sibling observed noncompliance. In the first step, the sibling's demographic variables contributed significantly to the model, $F\ (3, 11) = 4.96, p = .020$ and accounted for 57.5% of the variance. The addition of the target child's behavior explained an additional 5.9% of the variance in sibling noncompliance. In the third step, parenting stress and depression explained an additional 33% of the variance and the change in R^2 was statistically significant, $F\ (7, 7) = 26.16, p = .000$. Finally, the fourth step was also statistically significant, $F\ (10, 4) = 34.82, p = .002$. When controlling for the sibling's demographic variables, the target child's behavior, and parenting stress and depression,

the parent's use of negative parenting behaviors (positive consequences for child inappropriate behaviors, lack of follow through, and inappropriate commands) during the clean-up task explained a statistically significant portion of the variance in sibling observed noncompliance (see Table 6).

Question 4. *Do parenting behaviors predict parent-reported target child (TC) problem behavior above and beyond TC, sibling, and family demographics?* Further examinations aimed to determine which child and family variables predict the target child's parent-reported problem behavior (see Table 7). In the first step, the target child's adaptive behavior measured by the Vineland was entered. The second step included the sibling's demographic variables (DD status, age, and gender). The third step included parenting stress and depression scores as a block of parent mental health risk. The final step included negative parenting behaviors exhibited by the parents during the clean up task of the parent-target child play interaction. Overall, the hierarchical regression predicting parent-reported problem behavior on the CBCL was statistically significant and explained 96.6% of the variance, $F\ (9, 4) = 12.761, p = .013$ (see Table 7).

Question 5. *Do parenting behaviors predict observed target child (TC) problem behavior above and beyond TC, sibling, and family demographics?* The final hierarchical regression analysis aimed to identify child and family variables that were predictive of the target child's observed noncompliance (see Table 8). The same sets of predictor variables were entered in four steps as in the previous regression analysis. Overall, the final model explained 76.1% of the variance in the target child's observed noncompliance, however the model did not reach statistical significance.

As prior research has shown that parents of children with developmental delays report significantly more stress and depressive symptomatology, follow-up analyses aimed to explore such parent risk factors in this sample. Six of the 14 families included a sibling with a developmental delay in addition to the target child with a delay. It stands to reason that those parents with two children with delays may report more stress and depression than those who have only one child with a delay.

An exploratory t-test was run to determine if parents of two children with a developmental delay report significantly more parenting stress and depression. The two groups were equal for parenting stress; however the group difference approached significance for parent reported depression (t (14) = -1.97, p = .069) where parents of two children with delays (both the target child and sibling) reported more depressive symptomatology.

Post hoc power analyses indicated that the power to detect obtained effects at the $\alpha = .05$ level was .14 for each of the overall hierarchical regressions in prediction of TC and sibling observed and parent-reported problem behavior, indicating that the analyses were extremely under-powered to detect significant effects. Future investigations similar to the current study will require a sample size of 100 in order to determine significant effects.

CHAPTER IV

DISCUSSION

This investigation aimed to explore the nature of parent-child interactions among young, preschool-aged target children with developmental delay and their parents as well as the parent-child interactions between older siblings and their parents. Further, this study examined child and family variables that predicted observed and parent-reported behavior problems in target children and their older siblings. Specifically, parenting behaviors were hypothesized to predict child behavior problems above and beyond demographic variables and parenting mental health risk factors. Prior research has explored this area with one target child, however very little empirical research has attempted to unpack the relationships between a target child with DD, their sibling, and parenting behaviors. Thus, although this study is very limited in scope, there is a potential to build upon these findings and contribute to the larger literature.

Addressing the Research Questions

Question 1. *Are parent-target child interactions and parent-sibling interactions related?* It was hypothesized that parents would interact with their target child with a delay and their older sibling in similar ways. The recruited sample represents young children with a developmental delay and their older sibling, although the restricted age range for siblings resulted in sample of young children overall. Given this, it stands to reason that parents would demonstrate similar parenting behaviors with both their children, particular since 42% of siblings were reported to also have speech/language delays. Surprisingly, results from the correlation analyses suggest that parenting behaviors during parent-TC and parent-sibling interactions were not significantly

correlated. These results may suggest that parents in the current sample are implementing different parenting strategies with the TC than with their sibling. Parent behavior may be influenced by a number of variables. For example, parent behavior may be much more fluid and situation-specific than trait-like, may be contingent on the child's behavior, may reflect a shared learning history with the child, or may be influenced by other more distal variables (e.g., time of day).

It may be the case that parents in the current sample were unsuccessful with implementing parenting strategies with the TC that they successfully used with the sibling. All of the target children had a developmental delay; however, only 6 of the 14 siblings were reported to have delays in speech/language. Prior research has indicated that children with developmental delays and disabilities often exhibit more behavior problems (Dosen & Day, 2001; Einfeld & Tonge, 1996). In the current sample, target children were reported to have elevated behavior problems on the CBCL, while sibling behavior was not elevated. Further, target children were noncompliant with parent requests during clean-up an average of 65%, while siblings were noncompliant an average of 52%. Thus, parents in the current sample may have been experiencing more challenges in parenting their target child with a delay than the older sibling.

Question 2. *Do parenting behaviors predict parent-reported sibling problem behavior above and beyond sibling, TC, and family demographics?* One of the specific aims of the present study was to identify what child and family variables were predictive of sibling parent-reported and observed problem behavior. As the fields of prevention and early intervention broadly seek ways to best support families with children with developmental disabilities, understanding the entire family system is becoming

increasingly critical. The present study aimed to better understand predictors of sibling adjustment in families with children with developmental delays.

Results of the first hierarchical regression analysis indicated that when controlling for key sibling demographic variables, the target child's behavior was a significant predictor of parent-reported behavior problems in siblings. Additional risk factors of parenting stress, depression, and negative parenting behaviors were not significant predictors of parent-reported behavior problems in siblings. These results may suggest that the target child's behavior may significantly influence how parents report the sibling's problem behavior.

This finding of the target child's behavior as a significant predictor of how the primary caregiver reported the sibling's behavior in families in the present study is noteworthy and in line with previous research. Findings have indicated that the target child's behavior significantly impacts overall family functioning (Baker, Blacher, Crnic, & Edelbrock, 2002). Given this, promoting positive adjustment in young children with developmental delays and their siblings may contribute to parent well-being and overall family adjustment, including adjustment of siblings.

Question 3. *Do parenting behaviors predict observed sibling problem behavior above and beyond sibling, TC, and family demographics?* Results of the second hierarchical regression indicate that inappropriate parenting behaviors (positive consequences for negative behaviors, inappropriate commands, and lack of follow through with commands) significantly predicted observed sibling behavior problems above and beyond sibling demographic variables, the target child's behavior, and parent stress and depression. When controlling for the above-mentioned variables, inappropriate

parenting behaviors maintained a significant prediction of observed sibling noncompliance. These results suggest that parenting behaviors are the most robust predictors of observed noncompliance in siblings in the current sample. These findings are consistent with previous research suggesting strong links between parenting behavior and child compliance (e.g., Marchant, Young, & West, 2004; McIntyre & Phaneuf, 2008; Wierson & Forehand, 1994).

As parenting behaviors were found to be predictive of sibling noncompliance, providing explicit instruction in positive parenting strategies may be an effective way to reduce noncompliance in young children (Marchant et al., 2004). Interventions and supports such as those delivered in the IYPT-DD modifications curriculum may provide parents with positive parenting skills and strategies to add to their usual parenting methods. Again, the results provide preliminary evidence for the importance of supporting parents in reducing child problem behavior.

Question 4. *Do parenting behaviors predict parent-reported target child (TC) problem behavior above and beyond TC, sibling, and family demographics?* Although a primary aim of the current study was to better understand how siblings of children with developmental delays and the entire family are impacted, this study also aimed to investigate predictors of the target child's problem behavior. After controlling for the target child's demographic variables, their sibling's demographic variables, parenting stress and depression, the negative parenting behaviors were a significant predictor of the TC's parent-reported problem behavior. Thus, observed parent behaviors were robust predictors of both sibling and target child problem behavior.

Again, the results suggest that supporting parents in their use of more positive parenting strategies may assist in reducing problem behavior in their young children with developmental delays. Moreover, families that limit the use of inappropriate parenting behaviors may see reductions in the problem behavior of multiple children. Thus, parent training may be an efficient method for improving the overall family well-being as well as improving outcomes for individual children.

Question 5. *Do parenting behaviors predict observed target child (TC) problem behavior above and beyond TC, sibling, and family demographics?* In the final hierarchical regression, the current study aimed to identify predictors of the TC's observed problem behavior (noncompliance). None of the variables entered were found to be significant predictors of the TC's noncompliance. A huge caveat is that this, and other regression analyses, were significantly underpowered limiting the interpretability of findings.

Exploratory Analyses

In addition to addressing the primary research questions, the current study sought to better understand the participating families and how they might be experiencing additional impact from multiple children with challenges. In examining group differences between families with two children with a developmental delay (both the TC and their sibling) and families in which only one child has a developmental delay (the TC), results indicated that there was a trend toward caregivers with two children with delays reporting significantly more depressive symptomatology. Although there were no differences found in parenting stress for parents with only one child with a delay compared to parents of multiple children with delays, this may be due to the way in which parenting stress was

measured. The Parenting Stress Index (PSI) asks parents to consider how stressed they are in parenting a specific child. Thus, the parenting stress scores reported in the current study reflect their experience parenting the TC primarily. Nevertheless, these findings may suggest that caregivers of one or more children with developmental delays may be at-risk for heighted mental health problems. As such, it may be critical to implement interventions that target reducing parent depression as well as enhance parenting. The pilot work of Sheeber et al. (2012), for example, suggests that an internet-facilitated cognitive-behavioral intervention targeting depression in the context of parenting may be effective at reducing depression and enhancing parent-child interactions in mothers of preschool children from low income backgrounds. A combined cognitive behavioral treatment and parenting intervention, such as the one implemented by Sheeber et al. would be a considerable addition to the intervention literature for families with children with DD.

Guiding Theoretical Framework

Social learning theory informs the present study, particularly aspects of the coercive cycle of parenting, where parents and children are negatively reinforced (Patterson, Reid, and Dishion, 1992; Shaw & Bell, 1993). This learned pattern of interaction between parents and children may be a crucial point at which to intervene. The present study aimed to investigate parent-child interactions in a sample of parents of young children with developmental delays and their siblings in order to better understand how the coercive model may be contributing to the family's functioning. Additionally, Bronfenbrenner's Ecological Systems theory (Bronfenbrenner, 1977) guided the selection of variables of interest to explore. This Ecological Systems frame suggests that

individuals are influenced by other proximal and distal contextual variables that, collectively, inform developmental outcomes.

Previous literature has identified particular family variables that are associated with increased risk in young children with developmental disabilities and delays. Family poverty, low parental education, high levels of stress, and parent mental illness, are risk factors that have been found to be associated with heightened behavior problems (Webster-Stratton, 1998). These specific risk factors were included in the current study as potential predictors of child problem behavior.

Limitations

It is important to acknowledge several limitations of the current study. First, the sample size was small, although not unprecedented when considering previous research on siblings of children with delays (e.g., Eyberg & Robinson, 1982). However, the analysis was under-powered to detect significant effects of the hierarchical linear regressions predicting TC and sibling problem behavior. In order for these analyses to be interpretable, future investigations should aim for a much larger sample size (e.g., N = 100). In addition to low power, there are two other limitations as a result of the small sample size. With the small sample, there is greater variability and an increased likelihood of "overfitting" the data to the model, leading to an inflated R^2.

Additionally, this study was correlational and did not involve an experimental manipulation. No comparisons were made between families receiving the intervention and those receiving the treatment as usual control condition. Moreover, the cross-sectional design with data collected at one time point further limits the conclusions that can be drawn. Specifically, no conclusions about causation can be drawn from the

findings. Finally, the current pilot study did not use a conservative method for conducting the multiple comparisons, such as the Bonferroni correction to correct for an increased risk of Type I error (Shaffer, 1995). Rather, the study sought to describe parent-child interactions within a sample of families with children with DD and their siblings.

Many other characteristics of the sample may limit the generalizability of findings. All of the siblings in the present study were older than the TC, which may limit the generalizations that could be made about all siblings of children with delays. Birth order effects cannot be considered with this pilot study, as recruiting families with older and younger siblings was beyond the scope of the project. The larger OPP aims to examine young children with delays, thus the present study sought to examine a restricted range of older siblings. While this limits the generalizability of the results, the pilot nature of the project aimed to investigate parent-child interactions in a specific sample.

Further, the caregiver characteristics of the sample may not generalize to the larger population of primary caregivers of young children with DD. For example, almost 30% of the caregivers in the current sample were foster parents. Thus, foster status may be confounding results in the current sample. Specifically, in four families, the primary caregiver was a foster parent to the target child. In two of these families, the primary caregiver was also a foster parent to the sibling; however in the remaining two families, the primary caregiver was biologically related to the sibling. With this, it is difficult to tease apart biological risk from environmental risk.

An additional potential confound is the sibling's developmental delay status. Six of the 14 siblings had a diagnosed speech/language delay. Thus, results from the study may not generalize to typically developing siblings.

Implications and Future Research

Child and family variables play an important role in understanding how parents interact with their children with developmental delays and their siblings. The present study aimed to better understand these parent-child interactions and how a young child with a developmental delay might impact families broadly. Results from the current sample imply that siblings of children with developmental delays are indeed affected and may experience significant challenges themselves. Moreover, parents of multiple children may be at a heightened risk for negative outcomes, particularly those parents of multiple children with delays. Continuing to examine parent-child interactions like the current study may provide the field with additional information about ways to best support families.

Primary caregivers in the present study exhibited more negative parenting behaviors with their target child with a developmental delay than with their sibling, with a few exceptions. This finding suggests that parents may struggle to implement positive parenting strategies with their young target child with a developmental delay specifically. It may be the case that parents encounter fewer challenges with parenting their older child, as many of the siblings in the present study also had a diagnosed delay. However, siblings on average were 5-years old. Thus, TCs and siblings represent a relatively young sample overall. Continuing to unpack the nature of parent-child relationships in families with multiple children with and without developmental delays is critical.

Future research should continue to explore the ways in which parents interact with their multiple children. The current study with a small sample of families with at least two children has served as a pilot project from which additional research is warranted.

Examining the parent-child interactions within the context of families that received the IYPT-DD modifications intervention compared to those that received treatment as usual might inform the field as to how such interventions lead to positive gains in the entire family unit.

Further, widening the scope of this area of research to include older siblings that are able to report on their own experiences would provide more evidence of how they are impacted by their sibling with a developmental delay. The addition of older siblings' self-reports would add to the richness of the literature and potentially highlight areas upon which to intervene with siblings directly.

Finally, following families over time is an area ripe for future research. As young children with developmental delays transition to school, supporting their learning needs and assisting with family-school partnerships becomes increasingly more critical. Continuing to understand how young children with developmental delays, their siblings, and their parents/primary caregivers interact and function as a family unit will undoubtedly provide invaluable information for school success and long-term outcomes.

APPENDIX A

TABLES

Table 1.

*Descriptive and Demographic Information for Participating Families (*N *= 14)*

Variable	Family 1	Family 2	Family 4	Family 6	Family 7	Family 8	Family 9
Target Child							
Age (months)	43	39	33	38	42	37	33
Sex	Male	Male	Female	Female	Female	Male	Male
Primary Diagnosis	Chromosome deletion 13Q	DD	Speech	Unknown	Speech	ASD	DD
Vineland-II ABC SS	65	80	100	81	91	89	74
CBCL Total Prob T	65	57	67	57	37	63	54
Sibling							
Age (months)	61	55	64	86	79	37	89
Sex	Male	Male	Female	Male	Female	Male	Female
DD Status	No	Yes	Yes	No	Yes	Yes	No
CBCL Total Prob T	46	61	45	56	48	42	40
SSIS Total	93	81	101	88	98	97	94
Parent/Family							
Age (years)	28	45	27	32	35	28	28
Sex	Female	Female	Female	Female	Female	Female	Male
Highest Education Level	Partial College	Associates Degree	Partial College	Partial College	Standard College	Specialized Training	Graduate Training
Marital Status	Married	Single	Married	Living	Separated	Married	Married
Income	60-69,999	10-14,999	40-49,999	<5,000	<5,000	25-29,999	15-19,999
CES-D	8	16	37	11	4	20	3

Table 1 (extended).

*Descriptive and Demographic Information for Participating Families (*N *= 14)*

Variable	Family 10	Family 11	Family 12	Family 13	Family 14	Family 15	Family 16
Target Child							
Age (months)	35	44	46	30	34	31	36
Sex	Female	Male	Male	Male	Male	Male	Male
Primary Diagnosis	Fetal Alcohol Syndrome	Unknown	Speech	Speech	Speech	Speech	Speech
Vineland-II ABC SS	68	56	78	109	91	89	57
CBCL Total Prob T	74	78	56	54	79	39	45
Sibling							
Age (months)	48	81	69	72	54	55	39
Sex	Female	Male	Male	Male	Male	Female	Male
DD Status	Yes	No	No	No	Yes	No	No
CBCL Total Prob T	33	47	57	53	78	38	35
SSIS Total	93	106	101	101	78	93	91
Parent/Family							
Age (years)	32	26	58	60	25	35	22
Sex	Female	Male	Male	Female	Female	Female	Female
Highest Education Level	Partial College	HS Grad/GED	Partial College	HS Grad/GED	HS Grad/GED	Specialized Training	HS Grad/GED
Marital Status	Married	Divorced	Married	Divorced	Single	Single	Married
Income	60-69,999	25-29,999	90,000+	10-14,999	10-14,999	30-39,999	15-19,999
CES-D	0	14	3	2	14	4	5

Note. Vineland-II ABC SS = Vineland Adaptive Behavior Scales (2nd Ed.) Adaptive Behavior Composite Standard Score (*M* = 100; *SD* = 15); CBCL Total Prob T = Child Behavior Checklist Total Problems T Score (*M* = 50; *SD* = 10); SSIS Total = Social Skills Improvement System Social Skills domain total (*M* = 100, *SD* = 15); CES-D = Center for Epidemiological Scales-Depression (scores $\geq$ 16 = at-risk for depression)

Table 2.

Proportion of Intervals During Parent-TC and Parent-Sibling Play Interactions with Observed Parenting Behaviors

Variable	PC-TC interaction *M (SD)*	PC-Sibling interaction *M (SD)*	*t*
Inappropriate play (A)	.29 (.18)	.12 (.10)	3.90**
Intrusion on independence (A)	.24 (.11)	.28 (.13)	-.74
Pos. consequences (A)	.01 (.03)	.00 (.01)	.81
Inappropriate commands (A)	.29 (.14)	.20 (.12)	1.85†
Lack of follow through (A)	.25 (.14)	.22 (.16)	.51
Descriptive commenting (A)	.29 (.19)	.31 (.11)	-.32
Criticism (A)	.00 (.01)	.01 (.02)	-.56
Physical Aggression (A)	.00 (.00)	.00 (.00)	--
Inappropriate play (B)	.07 (.21)	.02 (.07)	.90
Intrusion on independence (B)	.13 (.29)	.05 (.11)	.81
Pos. consequences (B)	.13 (.24)	.04 (.09)	1.33
Inappropriate commands (B)	.80 (.20)	.63 (.31)	1.86†
Lack of follow through (B)	.63 (.36)	.57 (.35)	.40
Descriptive commenting (B)	.07 (.15)	.11 (.16)	-.69
Criticism (B)	.05 (.14)	.00 (.00)	1.39
Physical Aggression (B)	.00 (.00)	.00 (.00)	--
Inappropriate play (C)	.32 (.27)	.20 (.21)	1.33
Intrusion on independence (C)	.58 (.27)	.58 (.32)	.00
Pos. consequences (C)	.00 (.00)	.02 (.09)	-1.00
Inappropriate commands (C)	.31 (.23)	.31 (.23)	.00
Lack of follow through (C)	.31 (.33)	.38 (.28)	-1.00
Descriptive commenting (C)	.41 (.33)	.36 (.21)	.50
Criticism (C)	.00 (.00)	.00 (.00)	--
Physical Aggression (C)	.00 (.00)	.00 (.00)	--

Note. PC = primary caregiver; TC = target child; Parenting behaviors observed during the free play (A), clean up (B), and structured activity (C) segments of the play interaction include inappropriate play behaviors, intrusion on the child's independence, positive consequences for the child's inappropriate behavior, inappropriate commands, lack of follow through, and descriptive commenting.

† $p < .10$; ** $p < .01$

Table 3.

Proportion of Segments During Parent-TC and Parent-Sibling Play Interactions with Observed Child Behaviors

Variable	PC-TC interaction *M (SD)*	PC-Sibling interaction *M (SD)*
Aggression (A)	.00 (.00)	.00 (.00)
Disruption (A)	.00 (.01)	.00 (.00)
Positive Verbal (A)	.81 (.34)	.98 (.04)
Negative Verbal (A)	.05 (.05)	.04 (.06)
Aggression (B)	.00 (.00)	.05 (.10)
Disruption (B)	.04 (.09)	.03 (.13)
Positive Verbal (B)	.71 (.35)	.83 (.24)
Negative Verbal (B)	.34 (.32)	.15 (.31)
Aggression (C)	.00 (.00)	.00 (.00)
Disruption (C)	.00 (.00)	.00 (.00)
Positive Verbal (C)	.81 (.25)	.96 (.08)
Negative Verbal (C)	.05 (.10)	.07 (.11)
Compliance	.35 (.30)	.48 (.31)

Note. PC = primary caregiver; TC = target child; Child behaviors observed during the free play (A), clean up (B), and structured activity (C) segments of the play interaction include aggression, disruption, positive verbal, negative verbal, and compliance with parent commands.

Table 4.

Bivariate Correlations

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. TC Age	--																
2. TC Sex	.00	--															
3. TC CBCL Total Prob T	.09	-.07	--														
4. TC Obs. NC	-.30	.32	-.06	--													
5. Sib Age	.21	.26	-.14	-.21	--												
6. Sib Sex	-.31	.45	-.13	.65*	.12	--											
7. Sib CBCL Total Prob T	.21	-.05	.15	-.63*	.23	-.41	--										
8. Sib Obs. NC	-.08	.33	.04	.24	.60*	.45	-.35	--									
9. Pos. consequences (TC)	.28	.00	-.14	-.61*	.33	-.25	.41	-.04	--								
10. Lack of follow thru (TC)	-.40	-.34	.04	.21	-.37	.05	-.25	-.17	-.31	--							
11. Inapprop com (TC)	-.19	-.38	-.10	-.47	-.06	-.40	.34	.24	.56*	.30	--						
12. Pos. consequences (Sib)	-.31	.21	.38	-.03	-.10	.08	.47	.03	.00	.00	-.11	--					
13. Lack of follow thru (Sib)	-.16	-.01	.14	-.07	.28	.04	.26	-.03	-.36	.00	-.06	-.08	--				
14. Inapprop com (Sib)	-.07	-.25	-.17	-.17	.00	-.33	.18	.41	-.30	.11	.04	-.33	.73**	--			
15. CES-D	-.06	.21	.30	-.13	-.11	-.09	.19	.18	-.18	-.29	-.43	.67**	-.14	-.36	--		
16. PSI Total Stress Index	.24	-.21	.74**	.12	-.15	.03	-.30	.09	-.19	.20	-.36	.05	-.10	-.17	.07	--	
17. Income	.23	-.17	.31	.01	-.29	.04	-.38	.08	.23	-.15	.12	-.03	.40	-.47	-.02	.40	--

Note. TC = target child; Sib = sibling; Vineland-II ABC SS = Vineland Adaptive Behavior Scales (2nd Ed.) Adaptive Behavior Composite Standard Score (M = 100; SD = 15); CBCL Total Prob T = Child Behavior Checklist Total Problems T Score (M = 50; SD = 10); Obs. NC = observed noncompliance; Pos. consequences = positive consequences for the child's inappropriate behavior; Inapprop com = Inappropriate commands; CES-D = Center for Epidemiological Scales-Depression; PSI total stress index = Parenting Stress Index – Short Form (PSI-SF) total stress score

*$p < .05$, **$p < .01$

Table 5.

Hierarchical Regression Predicting Sibling Parent-reported Behavior (CBCL)

Predictor Variable	β	F	R^2
Step 1		5.135*	.583
Age (in Months)	.456		
DD status	-.672		
Sex	.516		
Step 2		3.877*	.683
Age (in Months)	.403		
DD status	-.686		
Sex	.363		
TC CBCL Total Prob T	.154		
TC Vineland-II ABC SS	.340		
Step 3		2.526	.716
Age (in Months)	.377		
DD status	-.630		
Sex	.357		
TC CBCL Total Prob T	.401		
TC Vineland-II ABC SS	.257		
CES-D	-.133		
PSI Total Stress Index	-.294		
Step 4		4.492	.918
Age (in Months)	.154		
DD status	-1.270		
Sex	.488		
TC CBCL Total Prob T	-.696		
TC Vineland-II ABC SS	-.085		
CES-D	-.685		
PSI Total Stress Index	.275		
Pos. consequences	.818		
Inappropriate commands	-1.120		
Lack of follow through	1.115		

Note. DD status = developmental delay status; CBCL Total Prob T = Child Behavior Checklist Total Problems T Score (M = 50; SD = 10); Vineland-II ABC SS = Vineland Adaptive Behavior Scales (2nd Ed.) Adaptive Behavior Composite Standard Score (M = 100; SD = 15); CES-D = Center for Epidemiological Scales-Depression (scores $\geq$ 16 = at-risk for depression); PSI total stress index = Parenting Stress Index – Short Form (PSI-SF) total stress score; Pos. consequences = positive consequences for the child's inappropriate behavior.

*$p < .05$.

Table 6.

Hierarchical Regression Predicting Sibling Observed Noncompliance

Predictor Variable	β	F	R^2
Step 1		4.957*	.575
Age (in Months)	.454		
DD status	.453		
Sex	-.276		
Step 2		3.112	.634
Age (in Months)	.490		
DD status	.495		
Sex	-.258		
TC CBCL Total Prob T	.191		
TC Vineland-II ABC SS	-.131		
Step 3		26.160***	.963
Age (in Months)	.344		
DD status	.808		
Sex	-.703		
TC CBCL Total Prob T	.578		
TC Vineland-II ABC SS	-.534		
CES-D	.644		
PSI Total Stress Index	-.751		
Step 4		34.819**	.989
Age (in Months)	.455		
DD status	1.074		
Sex	-.753		
TC CBCL Total Prob T	1.036		
TC Vineland-II ABC SS	-.399		
CES-D	.832		
PSI Total Stress Index	-.991		
Pos. consequences	-.276		
Inappropriate commands	.486		
Lack of follow through	-.516		

Note. DD status = developmental delay status; CBCL Total Prob T = Child Behavior Checklist Total Problems T Score (M = 50; SD = 10); Vineland-II ABC SS = Vineland Adaptive Behavior Scales (2nd Ed.) Adaptive Behavior Composite Standard Score (M = 100; SD = 15); CES-D = Center for Epidemiological Scales-Depression (scores $\geq$ 16 = at-risk for depression); PSI total stress index = Parenting Stress Index – Short Form (PSI-SF) total stress score; Pos. consequences = positive consequences for the child's inappropriate behavior.

*p < .05; **p < .01; *** p < .001

Table 7.

Hierarchical Regression Predicting TC Parent-reported Behavior (CBCL)

Predictor Variable	β	F	R^2
Step 1		.457	.037
TC Vineland-II ABC SS	-.192		
Step 2		.220	.089
TC Vineland-II ABC SS	-.246		
Age (in Months)	.009		
DD status	.244		
Sex	-.094		
Step 3		3.155	.730
TC Vineland-II ABC SS	.290		
Age (in Months)	.091		
DD status	.274		
Sex	-.286		
CES-D	.017		
PSI Total Stress Index	.969		
Step 4		12.761*	.966
TC Vineland-II ABC SS	.037		
Age (in Months)	.364		
DD status	.447		
Sex	.059		
CES-D	.264		
PSI Total Stress Index	1.225		
Pos. consequences	-.556		
Inappropriate commands	1.103		
Lack of follow through	-.359		

Note. DD status = developmental delay status; CBCL Total Prob T = Child Behavior Checklist Total Problems T Score (M = 50; SD = 10); Vineland-II ABC SS = Vineland Adaptive Behavior Scales (2nd Ed.) Adaptive Behavior Composite Standard Score (M = 100; SD = 15); CES-D = Center for Epidemiological Scales-Depression (scores $\geq$ 16 = at-risk for depression); PSI total stress index = Parenting Stress Index – Short Form (PSI-SF) total stress score; Pos. consequences = positive consequences for the child's inappropriate behavior.

*$p < .05$.

Table 8.

Hierarchical Regression Predicting TC Observed Noncompliance

Model	β	F	R^2
Step 1		.068	.006
TC Vineland-II ABC SS	.075		
Step 2		2.002	.471
TC Vineland-II ABC SS	-.016		
Age (in Months)	-.217		
DD status	-.141		
Sex	.677		
Step 3		1.057	.475
TC Vineland-II ABC SS	.023		
Age (in Months)	-.206		
DD status	-.101		
Sex	.652		
CES-D	-.076		
PSI Total Stress Index	.053		
Step 4		1.413	.761
TC Vineland-II ABC SS	.231		
Age (in Months)	-.266		
DD status	-.379		
Sex	.422		
CES-D	-.271		
PSI Total Stress Index	-.050		
Pos. consequences	-.438		
Inappropriate commands	-.369		
Lack of follow through	-.109		

Note. DD status = developmental delay status; CBCL Total Prob T = Child Behavior Checklist Total Problems T Score (M = 50; SD = 10); Vineland-II ABC SS = Vineland Adaptive Behavior Scales (2nd Ed.) Adaptive Behavior Composite Standard Score (M = 100; SD = 15); CES-D = Center for Epidemiological Scales-Depression (scores $\geq$ 16 = at-risk for depression); PSI total stress index = Parenting Stress Index – Short Form (PSI-SF) total stress score; Pos. consequences = positive consequences for the child's inappropriate behavior.

APPENDIX B

PHONE SCREEN

Hello, my name is _____ from the University of Oregon Child and Family Center. We appreciate your participation in the Oregon Parent Project (OPP) and wanted to let you know about another study that we are conducting that you may be interested in hearing more about. Our new study is on siblings. Do you have a few minutes for me to tell you about this? If this isn't a good time to talk, when would be a better time?

Let me tell you a little more about this new study.

Our sibling study is called "OPP-Sibs". We are interested in recruiting a group of families who are currently participating in OPP to participate in a study about siblings of preschoolers with developmental delays or disabilities. We are interested in learning more about the behavior, social skills, and play skills of older siblings. For this study siblings need to be between the age of 3 and 8 years old.

Participation in this study is voluntary, so you can choose to participate or not. Choosing to participate in OPP-Sibs will in no way affect your participation in the ongoing OPP study. In addition to being voluntary, your participation in OPP-Sibs is confidential. This means that we won't share your information with others outside of our research team. Should you decide to participate in OPP-Sibs, we will go over an Informed Consent Form, which describes everything in more detail. We'll also make sure that you get a chance to have any of your questions answered. Participating siblings who are 7 years or older will also have a chance to provide their assent for participating in the study and make sure that their questions have been answered.

Participation in OPP-Sibs involves the completion of a short mail-home packet and a brief home visit in which you and the sibling will be asked to play together in a short, 15-minute play task. The mail home packet will involve questions regarding the sibling's behavior and social skills. We'll come to your home at a time that is convenient for your family. The sibling needs to be there for the home visit and. The visit is expected to take 30 minutes or less.

Do you have questions at this time?

Do you have a few more minutes so I can get some information about you and your family to determine whether you meet eligibility for participation?

Does _____(name of TC participating in OPP) have siblings who live at home?

- No
- Yes

Sibling #1: First Name: _____ Age _____
DOB_____
Length of Time Lived with Primary Caregiver _____

Sibling #2: First Name: _____ Age _____
DOB_____
Length of Time Lived with Primary Caregiver _____

Sibling #3: First Name: _____ Age _____
DOB_____
Length of Time Lived with Primary Caregiver _____

Research Eligibility:
_____Currently Participating in OPP

_____Sibling Age (40-96 months; 3-8 years) Sibling's Name: _____

_____Sibling Has Lived with caregiver for 1+ years

- - - - - - - - - - -

(Only complete if eligible and caregiver wishes to participate)

Caregiver's Name : _____

Phone #: (Home) _____ **(Cell#)**_____

Address: _____

Email_____

Family ID: _____

Home Visit Scheduled: _____

Phone Screen entered in data base? _____Yes _____No

APPENDIX C

IRB APPROVAL

DATE: March 18, 2013 **IRB Protocol Number: 02142013.012**

TO: Kenya Makhiawala, Principal Investigator
Department of Child and Family Institute Operations

RE: Protocol entitled, "Oregon Parent Project - SIBS"

Notice of IRB Review and Approval
Expedited Review as per Title 45 CFR Part 46.110, 63 FR 60366, # 6, 7
Additional Protections for Children Involved as Subjects in Research as per Title 45 CFR Part 46.404

The project identified above has been reviewed by the University of Oregon Institutional Review Board (IRB) and Research Compliance Services using an expedited review procedure. This is a minimal risk study. This approval is based on the assumption that the materials, including changes/clarifications that you submitted to the IRB contain a complete and accurate description of all the ways in which human subjects are involved in your research.

This approval is given with the following standard conditions:
1. You are approved to conduct this research only during the period of approval cited below;

2. You will conduct the research according to the plans and protocol submitted (approved copy enclosed);

3. You will immediately inform Research Compliance Services of any injuries or adverse research events involving subjects;

4. You will immediately request approval from the IRB of any proposed changes in your research, and you will not initiate any changes until they have been reviewed and approved by the IRB;

5. You will only use the informed consent documents that have the IRB approval dates stamped on them (approved copies enclosed);

6. You will give each research subject a copy of the informed consent document;

7. **If your research is anticipated to continue beyond the IRB approval dates, you must submit a Continuing Review Request to the IRB approximately 60 days prior**

to the IRB approval expiration date. Without continuing approval the Protocol will automatically expire on March 17, 2014.

Additional Conditions: *Any research personnel that have not completed CITI certificates should be removed from the project until they have completed the training. When they have completed the training, you must submit a Protocol Amendment Application Form to add their names to the protocol, along with a copy of their CITI certificates.*

Approval Period: March 18, 2013 - March 17, 2014

The University of Oregon and Research Compliance Services appreciate your efforts to conduct research in compliance with University of Oregon Policy and federal regulations that have been established to ensure the protection of human subjects in research. Thank you for your cooperation with the IRB process.

Sincerely,

Deborah Olson, PhD IRB Chair
Committee for the Protection of Human Subjects - FWA 00005914
University of Oregon

CC: Laura McIntyre, Faculty Advisor

COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS ↴ RESEARCH COMPLIANCE SERVICES
677 E. 12· Ave., Suite 500, 5237 University of Oregon, Eugene OR 97401-5237
T 541-346-2510 **F** 541-346-5138 **http://humansubjects.uoregon.edu**

APPENDIX D

INFORMED CONSENT FORM

Informed Consent for Participation as a Subject in the OPP-Sibs study
Investigator: Kenya Makhiawala
School Psychology Doctoral Student
Advisor: Laura Lee McIntyre, PhD
Adult Consent Form

Introduction

- You are being asked to be in a research study of families with young children.
- We are recruiting a group of families who are participating in the Oregon Parent Project (OPP). You were selected as a possible participant because of your involvement with OPP and because your child has at least one older sibling between 3-8 years old who lives at home. Your participation in the OPP-Sibs study will in no way affect of impact your participation in OPP.
- We ask that you read this form and ask any questions that you may have before agreeing to be in the study.
- If you agree to participate in this project by signing this consent form, and your child's sibling is 7 to 8 years of age, we will ask them to sign a form to participate as well. We will read your child's sibling a child assent form and ask if he/she also agrees to participate. We will answer any of their questions before they agree to be in the study.

Purpose of the Study:

- The purpose of this study is to understand the behavior, social skills, and play skills of older siblings who have younger brothers or sisters with developmental delays or disabilities.
- Participants in this study are from Oregon and the expected total number of participants is 60. All participants in the OPP-Sib study will be recruited from the larger, ongoing Oregon Parent Project (OPP).
- OPP is funded by the National Institutes of Health (NIH), Eunice Kennedy Shriver National Institute on Child Health and Human Development (NICHD).

Description of the Study Procedures:

- Your participation in OPP-Sibs involves completing 2 assessments, approximately 3 months apart.
- Each assessment involves completing a mail-home packet of questionnaires and completing a short home visit
    - The **mail-home packet of questionnaires** will contain two questionnaires, one that asks about the sibling's behavior and one that asks about the sibling's social skills. The questionnaires are expected to take less than 30 minutes to complete.
    - The **home visit** will take less than 30 minutes to complete and involves a short interview with you where we ask about family background

information and involves a 15-minute play task where we ask you and the sibling to play together with toys and activities that we bring to your home. The play task is the only part of the assessment that the sibling will participate in. This play observation is videotaped so that we may view it later.

Table 1. Schedule of Activities

Assessment Time	Child Age (approximate)	Activities	Completion Time
Time 1 (Intake)	(3.5-8 years)	**Questionnaires** **Home visit** (parent interview & videotaped parent-child play)	30 min 30 min **Total = 1 hr**
Time 2 (3 months post-intake)	(3 years, 9 mo-8 years, 3 mo)	**Questionnaires** **Home visit** (parent interview & videotaped parent-child play)	30 min 30 min **Total = 1 hr**

Risks/Discomforts of Being in the Study:

- Potential risks are minimal and include possible psychological or emotional risks and information risks involving breach of confidentiality

    - **Psychological or emotional risk.** You may feel some discomfort completing questionnaires that ask questions about your child's behavior and social skills. Some participants may view the home visits as minimally intrusive
    - **Breach of confidentiality.** Although project staff go to great lengths to protect your confidentiality, there is a small risk that your name may be associated with your study participation. We minimize the risk of breach of confidentiality by coding all information you provide us (during questionnaires and home visits), so that it cannot be associated with any individual or family. We assign a participant identification number to all your responses. Identifying information needed for participant contact, such as names, addresses, and telephone numbers, will be kept in locked file cabinets in locked offices. Only designated project staff will have access to this information.

Benefits of Being in the Study:

- The purpose of this study is to understand the behavior, social skills, and play skills of older siblings who have younger brothers or sisters with developmental delays or disabilities.
- The benefits of participation may include: psychological or emotional benefits and benefits to the scientific community.

- **Psychological benefits.** You may enjoy thinking about your child's development and family situation and enjoy meeting with a home visitor to discuss your family's circumstances. You may find it interesting and rewarding to contribute to scientific research and advance knowledge about child development and family well-being.
- **Benefits to the scientific community.** Knowledge gained from this study may assist in the development of more effective, family-friendly early intervention supports to promote positive child and family outcomes in families with children with developmental or behavioral concerns. In particular, we wish to learn how to better support the needs of siblings of children with developmental or behavioral concerns.

Payment:

- You will receive $25 after completion of each of the two assessments

Costs:

- There is no cost to you to participate in this research study

Confidentiality:

- The records of this study will be kept private. In any sort of report we may publish, we will not include any information that will make it possible to identify a participant. Research records will be kept in a locked file.
- All electronic information will be coded and secured using a password protected file and a secure server.
- Video tape recordings are strictly limited to research staff involved in the videotaping and coding of parent-child play activities. These videotaped recordings will be stored on a secure network system and strictly limited to project staff. The internal network system requires access to our office building, internal office, and password protected computer systems. Video recordings are used for training and research purposes only and will not be used for other purposes without your written consent.
- Access to the records will be limited to the researchers; however, please note that National Institutes of Health regulatory agencies, and the Institutional Review Board and Internal University of Oregon auditors may review the research records.
- Under Oregon state law, research staff are required to report suspected or known abuse of children or elderly individuals. If any member of the research staff has or is given such information, we are required to report it to authorities.

Voluntary Participation/Withdrawal:

- Your participation is voluntary. If you choose not to participate, it will not affect your current or future relations with the University of Oregon, Child and Family Center, Early Childhood CARES, Child Development and Rehabilitation Center (CDRC), or other early childhood education program that you may be affiliated with.
- You are free to withdraw at any time, for whatever reason.

- There is no penalty or loss of benefits for not taking part or for stopping your participation.

Contacts and Questions:

- The research conducting this study is Kenya Makhiawala, a graduate student in the College of Education, with direction and support from Oregon Parent Project's Principal Investigator, Laura Lee McIntyre, PhD, BCBA-D. For questions or more information concerning this research you may contact Kenya at (541-346-4209) or ktalton@uoregon.edu (e-mail) or Dr. McIntyre at (541-346-5123) or llmcinty@uoregon.edu (e-mail).
- If you believe you may have suffered a research related injury, you may contact: the Research Compliance Services Office, University of Oregon at (541-346-2510) or ResearchCompliance@uoregon.edu (e-mail).

Copy of Consent Form:

- You will be given a copy of this form to keep for your records and future reference.

Statement of Consent:

- I have read (or have had read to me) the contents of this consent form and have been encouraged to ask questions. I have received answers to my questions. I give my consent to participate in this study. I have received (or will receive) a copy of this form.

Signatures/Dates

Printed Name of Primary Caregiver	Relationship to Child
Primary Caregiver Signature	Date

I agree to be videotaped during the in-home visit for research purposes only. I understand that the video recordings will be kept on a secured internal hard drive and that access to video recordings is strictly limited to research staff. I understand that the video recordings will not have any identifying information.

_____

Study Participant Signature Date

Verification of Explanation:

I certify that I have carefully explained the purpose and nature of this research to: - _____ in appropriate language. She/he has had an opportunity to discuss it with me in detail. I have answered all her/his questions and she/he provided affirmative agreement to participate in this research study.

_____ _____

Researcher's Signature Date

APPENDIX E

CHILD BEHAVIOR CHECKLIST: 1 1/2 – 5 YEARS

Directions: Below is a list of items that describe children. For each item that describes the child ***now or within the past 2 months***, please fill in the bubble under number ***2*** if the item is ***very true or often true*** of the child. Fill in the bubble under the number ***1*** if the item is ***somewhat or sometimes true*** of the child. If the item is ***not true*** of the child, fill in the bubble under the ***0.*** Please answer all items as well as you can, even if some do not seem to apply to the child.

0=Not True (as far as you know) 1=Somewhat or Sometimes True 2=Very True or Often True

0	**1**	**2**	
o	o	o	1 Aches or pains (without medical cause; do not include stomach or headaches)
o	o	o	2 Acts too young for age
o	o	o	3 Afraid to try new things
o	o	o	4 Avoids looking others in the eye
o	o	o	5 Can't concentrate, can't pay attention for long
o	o	o	6 Can't sit still, restless, or hyperactive
o	o	o	7 Can't stand having things out of place
o	o	o	8 Can't stand waiting; wants everything now
o	o	o	9 Chews on things that aren't edible
o	o	o	10 Clings to adults or too dependent
o	o	o	11 Constantly seeks help
o	o	o	12 Constipated, doesn't move bowels (when not sick)
o	o	o	13 Cries a lot
o	o	o	14 Cruel to animals
o	o	o	15 Defiant
o	o	o	16 Demands must be met immediately
o	o	o	17 Destroys his/her own things
o	o	o	18 Destroys things belonging to his/her family or other children
o	o	o	19 Diarrhea or loose bowels (when not sick)
o	o	o	20 Disobedient
o	o	o	21 Disturbed by any change in routine
o	o	o	22 Doesn't want to sleep alone
o	o	o	23 Doesn't answer when people talk to him/her
o	o	o	24 Doesn't eat well (describe): _____
o	o	o	25 Doesn't get along with other children
o	o	o	26 Doesn't know how to have fun; acts like a little adult
o	o	o	27 Doesn't seem to feel guilty after misbehaving
o	o	o	28 Doesn't want to go out of home

0	1	2	
o	o	o	29 Easily frustrated
o	o	o	30 Easily jealous
o	o	o	31 Eats or drinks things that are not food – **don't** include sweets (describe): _____
o	o	o	32 Fears certain animals, situations, or places (describe): _____
o	o	o	33 Feelings are easily hurt
o	o	o	34 Gets hurt a lot, accident- prone
o	o	o	35 Gets in many fights
o	o	o	36 Gets into everything
o	o	o	37 Gets too upset when separated from parents
o	o	o	38 Has trouble getting to sleep
o	o	o	39 Headaches (without medical cause)
o	o	o	40 Hits others
o	o	o	41 Holds his/her breath
o	o	o	42 Hurts animals or people without meaning to
o	o	o	43 Looks unhappy without good reason
o	o	o	44 Angry moods
o	o	o	45 Nausea, feels sick (without medical cause)
o	o	o	46 Nervous movements or twitching (describe): _____
o	o	o	47 Nervous, highstrung, or tense
o	o	o	48 Nightmares
o	o	o	49 Overeating
o	o	o	50 Overtired
o	o	o	51 Shows panic for no good reason
o	o	o	52 Painful bowel movements (without medical cause)
o	o	o	53 Physically attacks people
o	o	o	54 Picks nose, skin or other parts of body (describe): _____
o	o	o	55 Plays with sex parts too much
o	o	o	56 Poorly coordinated or clumsy
o	o	o	57 Problems with eyes (without medical cause) (describe): _____
o	o	o	58 Punishment doesn't change his/her behavior
o	o	o	59 Quickly shifts from one activity to another
o	o	o	60 Rashes or other skin problems (without medical cause)
o	o	o	61 Refuses to eat
o	o	o	62 Refuses to play active games
o	o	o	63 Repeatedly rocks head or body
o	o	o	64 Resists going to bed at night
o	o	o	65 Resists toilet training (describe): _____
o	o	o	66 Screams a lot
o	o	o	67 Seems unresponsive to affection

0	1	2	
o	o	o	68 Self-conscious or easily embarrassed
o	o	o	69 Selfish or wont share
o	o	o	70 Shows little affection toward people
o	o	o	71 Shows little affection toward people
o	o	o	72 Shows too little fear of getting hurt
o	o	o	73 Too shy or timid
o	o	o	74 Sleeps less than most children during the day and/or night (describe): _____
o	o	o	75 Smears or plays with bowel movements
o	o	o	76 Speech problems (describe): _____
o	o	o	77 Stares into space or seems preoccupied
o	o	o	78 Stomachaches or cramps (without medical cause)
o	o	o	79 Rapid shifts between sadness and excitement
o	o	o	80 Strange behavior (describe): _____
o	o	o	81 Stubborn, sullen, or irritable
o	o	o	82 Sudden changes in mood or feelings
o	o	o	83 Sulks a lot
o	o	o	84 Talks or cries out in sleep
o	o	o	85 Temper tantrums or hot temper
o	o	o	86 Too concerned with neatness or cleanliness
o	o	o	87 Too fearful or anxious
o	o	o	88 Uncooperative
o	o	o	89 Under-active, slow moving, or lacks energy
o	o	o	90 Unhappy, sad, or depressed
o	o	o	91 Unusually loud
o	o	o	92 Upset by new people or situations (describe): _____
o	o	o	93 Vomiting, throwing up (without medical cause)
o	o	o	94 Wakes up often at night
o	o	o	95 Wanders away
o	o	o	96 Wants a lot of attention
o	o	o	97 Whining
o	o	o	98 Withdrawn, doesn't get involved with others
o	o	o	99 Worries
o	o	o	100 Please write in any problems the child has that were not listed above _____

_____

_____

APPENDIX F

CHILD BEHAVIOR CHECKLIST: 6 – 18 YEARS

Directions: Below is a list of items that describe children. For each item that describes the child ***now or within the past 2 months***, please fill in the bubble under number ***2*** if the item is ***very true or often true*** of the child. Fill in the bubble under the number ***1*** if the item is ***somewhat or sometimes true*** of the child. If the item is ***not true*** of the child, fill in the bubble under the ***0.*** Please answer all items as well as you can, even if some do not seem to apply to the child.

0=Not True (as far as you know) 1=Somewhat or Sometimes True 2=Very True or Often True

0	**1**	**2**	
o	o	o	1 Acts too young for his/her age
o	o	o	2 Drinks alcohol without parents' approval (describe): _____
o	o	o	3 Argues a lot
o	o	o	4 Fails to finish things she/she starts
o	o	o	5 There is very little he/she enjoys
o	o	o	6 Bowel movements outside toilet
o	o	o	7 Bragging, boasting
o	o	o	8 Can't concentrate, can't pay attention for long
o	o	o	9 Can't get his/her mind off certain thoughts; obsessions (describe): _____
o	o	o	10 Can't sit still, restless, or hyperactive
o	o	o	11 Clings to adults or too dependent
o	o	o	12 Complains of loneliness
o	o	o	13 Confused or seems to be in a fog
o	o	o	14 Cries a lot
o	o	o	15 Cruel to animals
o	o	o	16 Cruelty, bullying, or meanness to others
o	o	o	17 Daydreams or gets lost in his/her thoughts
o	o	o	18 Deliberately harms self or attempts suicide
o	o	o	19 Demands a lot of attention
o	o	o	20 Destroys his/her own things
o	o	o	21 Destroys things belonging to his/her family or others
o	o	o	22 Disobedient at home
o	o	o	23 Disobedient at school
o	o	o	24 Doesn't eat well
o	o	o	25 Doesn't get along with other children
o	o	o	26 Doesn't seem to feel guilty after misbehaving

0	1	2	
o	o	o	27 Easily jealous
o	o	o	28 Breaks rules at home, school, or elsewhere
o	o	o	29 Fears certain animals, situations, or places (describe):
			_____
o	o	o	30 Fears going to school
o	o	o	31 Fears s/he might think or do something bad
o	o	o	32 Feels s/he has to be perfect
o	o	o	33 Feels or complains that no one loves him/her
o	o	o	34 Feels others are out to get him/her
o	o	o	35 Feels worthless or inferior
o	o	o	36 Gets hurt a lot; accident prone
o	o	o	37 Gets in many fight
o	o	o	38 Gets teased a lot
o	o	o	39 Hangs around with others who get in trouble
o	o	o	40 Hears sounds or voices that aren't there (describe):
			_____
o	o	o	41 Impulsive or acts without thinking
o	o	o	42 Would rather be alone than with others
o	o	o	43 Lying or cheating
o	o	o	44 Bites fingernails
o	o	o	45 Nervous, highstrung, or tense
o	o	o	46 Nervous movements or twitching (describe):
			_____
o	o	o	47 Nightmares
o	o	o	48 Not liked by other kids
o	o	o	49 Constipated, doesn't move bowels
o	o	o	50 Too fearful or anxious
o	o	o	51 Feels dizzy or lightheaded
o	o	o	52 Feels too guilty
o	o	o	53 Overeating
o	o	o	54 Overtired without good reason
o	o	o	55 Overweight
o	o	o	56 Physical problems ***without known medial cause:***
o	o	o	a Aches or pains (***not*** stomach or headaches)
o	o	o	b Headaches
o	o	o	c Nausea, feels sick
o	o	o	d Problems with eyes (***not*** if corrected by glasses) (describe):
			_____
o	o	o	e Rashes or other skin problems
o	o	o	f Stomachaches
o	o	o	g Vomiting, throwing up
o	o	o	h Other (describe):
			_____
o	o	o	57 Physically attacks people

0	1	2	
o	o	o	58 Picks nose, skin, or other parts of body (describe): _____
o	o	o	59 Plays with own sex parts in public
o	o	o	60 Plays with own sex parts too much
o	o	o	61 Poor school work
o	o	o	62 Poorly coordinated or clumsy
o	o	o	63 Prefers being with older kids
o	o	o	64 Prefers being with younger kids
o	o	o	65 Refuses to talk
o	o	o	66 Repeats certain acts over and over; compulsions (describe): _____
o	o	o	67 Runs away from home
o	o	o	68 Screams a lot
o	o	o	69 Secretive; keeps things to self
o	o	o	70 Sees things that aren't there (describe):_____
o	o	o	71 Self-conscious or easily embarrassed
o	o	o	72 Sets fires
o	o	o	73 Sexual problems (describe): _____
o	o	o	74 Showing off or clowning
o	o	o	75 Too shy or timid
o	o	o	76 Sleeps less than most children
o	o	o	77 Sleeps more than most children during the day and/or night (describe): _____
o	o	o	78 Inattentive or easily distracted
o	o	o	79 Speech problem (describe): _____
o	o	o	80 Stares blankly
o	o	o	81 Steals at home
o	o	o	82 Steals outside the home
o	o	o	83 Stores up things he/she doesn't need (describe): _____
o	o	o	84 Strange behavior (describe): _____
o	o	o	85 Strange ideas (describe): _____
o	o	o	86 Stubborn, sullen, or irritable
o	o	o	87 Sudden changes in mood or feelings
o	o	o	88 Sulks a lot
o	o	o	89 Suspicious
o	o	o	90 Swearing or obscene language
o	o	o	91 Talks about killing self
o	o	o	92 Talks or walks in sleep (describe): _____
o	o	o	93 Talks too much
o	o	o	94 Teases a lot
o	o	o	95 Temper tantrums or hot temper

0	1	2	
o	o	o	96 Thinks about sex too much
o	o	o	97 Threatens people
o	o	o	98 Thumb-sucking
o	o	o	99 Smokes, chews, or sniffs tobacco
o	o	o	100 Trouble sleeping (describe):

_____

o	o	o	101 Truancy; skips school
o	o	o	102 Underactive, slow moving, or lacks energy
o	o	o	103 Unhappy, sad, or depressed
o	o	o	104 Unusually loud
o	o	o	105 Uses drugs for nonmedical purposes (***don't*** include alcohol or tobacco) (describe):

_____

_____

o	o	o	106 Vandalism
o	o	o	107 Wets self during the day
o	o	o	108 Wets the bed
o	o	o	109 Whining
o	o	o	110 Wishes to be of opposite sex
o	o	o	111 Withdrawn; doesn't get involved with others
o	o	o	112 Worries

Please write in any problems your child has that were not listed above:

o	o	o	113 _____
o	o	o	114 _____
o	o	o	115 _____

Does your child have any illness or disability (either physical or mental)?

oNo oYes – please describe:

What concerns you most about your child?

Please describe the best things about your child.

APPENDIX G

SOCIAL SKILLS IMPROVEMENT SYSTEM: RATING SCALES – SOCIAL SKILLS

SUBSCALE

Directions: Please read each item and think about your child's behavior during the past two months. Then decide **how often** your child displays the behavior. For each of the items, please also rate **how important** you think the behavior is for your child's development

	A. How Often?				**B. How Important?**		
Social Skills							
	Never	Seldom	Often	Almost Always	Not Important	Important	Critical
1. Expresses feelings when wronged	O	O	O	O	O	O	O
2. Follows household rules	O	O	O	O	O	O	O
3. Tries to understand how you feel	O	O	O	O	O	O	O
4. Says "thank you"	O	O	O	O	O	O	O
5. Asks for help from adults	O	O	O	O	O	O	O
6. Takes care when using other people's things	O	O	O	O	O	O	O
7. Pays attention to your instructions	O	O	O	O	O	O	O
8. Tries to make others feel better	O	O	O	O	O	O	O
9. Joins activities that have already started	O	O	O	O	O	O	O
10. Takes turns in conversations	O	O	O	O	O	O	O
11. Says when there is a problem	O	O	O	O	O	O	O
12. Works well with family members	O	O	O	O	O	O	O
13. Forgives others	O	O	O	O	O	O	O
14. Speaks in appropriate tone of voice	O	O	O	O	O	O	O
15. Stands up for others who are treated unfairly	O	O	O	O	O	O	O
16. Is well-behaved when unsupervised	O	O	O	O	O	O	O
17. Follows your directions	O	O	O	O	O	O	O
18. Tries to understand how others feel	O	O	O	O	O	O	O
19. Starts conversations with peers	O	O	O	O	O	O	O
20. Uses gestures or body appropriately with others	O	O	O	O	O	O	O

	A. How Often?				B. How Important?		
Social Skills							
	Never	Seldom	Often	Almost Always	Not Important	Important	Critical
21. Resolves disagreements with you calmly	O	O	O	O	O	O	O
22. Respects the property of others	O	O	O	O	O	O	O
23. Makes friends easily	O	O	O	O	O	O	O
24. Says "please"	O	O	O	O	O	O	O
25. Questions rules that may be unfair	O	O	O	O	O	O	O
26. Takes responsibility for his/her own actions	O	O	O	O	O	O	O
27. Completes tasks without bothering others	O	O	O	O	O	O	O
28. Tries to comfort others	O	O	O	O	O	O	O
29. Interacts well with other children	O	O	O	O	O	O	O
30. Responds well when others start a conversation or activity	O	O	O	O	O	O	O
31. Stays calm when teased	O	O	O	O	O	O	O
32. Does what she/he promised	O	O	O	O	O	O	O
33. Introduces herself/himself to others	O	O	O	O	O	O	O
34. Takes criticism without getting upset	O	O	O	O	O	O	O
35. Says nice things about herself/himself without bragging	O	O	O	O	O	O	O
36. Makes a compromise during a conflict	O	O	O	O	O	O	O
37. Follows rules when playing games with others	O	O	O	O	O	O	O
38. Shows concern for others	O	O	O	O	O	O	O
39. Invites others to join in activities	O	O	O	O	O	O	O
40. Makes eye contact when talking	O	O	O	O	O	O	O
41. Tolerates peers when they are annoying	O	O	O	O	O	O	O
42. Takes responsibility for her/his own mistakes	O	O	O	O	O	O	O
43. Starts conversations with adults	O	O	O	O	O	O	O
44. Responds appropriately when pushed or hit	O	O	O	O	O	O	O

	A. How Often?				B. How Important?		
Social Skills							
	Never	Seldom	Often	Almost Always	Not Important	Important	Critical
45. Stands up for herself/himself when treated unfairly	O	O	O	O	O	O	O
46. Stays calm when disagreeing with others	O	O	O	O	O	O	O
47. Has difficulty waiting for turn	O	O	O	O	O	O	O
48. Repeats the same thing over and over	O	O	O	O	O	O	O
49. Forces others to act against their will	O	O	O	O	O	O	O
50. Has stereotyped motor behaviors	O	O	O	O	O	O	O
51. Fidgets or moves around too much	O	O	O	O	O	O	O
52. Keeps others out of social circles	O	O	O	O	O	O	O
53. Is inattentive	O	O	O	O	O	O	O
54. Acts without thinking	O	O	O	O	O	O	O
55. Becomes upset when routines change	O	O	O	O	O	O	O
56. Is aggressive toward people or objects	O	O	O	O	O	O	O
57. Withdraws from others	O	O	O	O	O	O	O
58. Has temper tantrums	O	O	O	O	O	O	O
59. Does things to make others feel scared	O	O	O	O	O	O	O
60. Breaks into or stops group activities	O	O	O	O	O	O	O
61. Has low energy or is lethargic	O	O	O	O	O	O	O
62. Uses odd physical gestures in interactions	O	O	O	O	O	O	O
63. Bullies others	O	O	O	O	O	O	O
64. Acts anxious with others	O	O	O	O	O	O	O
65. Talks back to adults	O	O	O	O	O	O	O
66. Says nobody like her/him	O	O	O	O	O	O	O
67. Gets distracted easily	O	O	O	O	O	O	O
68. Acts sad or depressed	O	O	O	O	O	O	O
69. Is preoccupied with object parts	O	O	O	O	O	O	O
70. Disobeys rules or requests	O	O	O	O	O	O	O
71. Has sleeping problems	O	O	O	O	O	O	O
72. Lies or does not tell the truth	O	O	O	O	O	O	O

	A. How Often?				B. How Important?		
Social Skills							
	Never	Seldom	Often	Almost Always	Not Important	Important	Critical
73. Gets embarrassed easily	O	O	O	O	O	O	O
74. Says bad things about self	O	O	O	O	O	O	O
75. Has nonfunctional routines or rituals	O	O	O	O	O	O	O
76. Cheats in games or activities	O	O	O	O	O	O	O
77. Acts lonely	O	O	O	O	O	O	O
78. Fights with others	O	O	O	O	O	O	O
79. Has eating problems	O	O	O	O	O	O	O

APPENDIX H

INFORMED ASSENT FORM

University of Oregon
Child Assent for Participation in Research Study (Ages 7-11)

This is a project that Kenya Makhiawala is doing to learn more about kids and families. You can help with this project if you would like to. You do not have to help if you do not want to.

In the project you will be asked to play some with some games and toys with your mom or dad for 15 minutes. During the 15 minutes, on of our project staff will be tape recording while you guys play and they will also be giving instructions. We will be doing this today and again in about 3 months.

Your name will not be put on any papers written about this project. Your name will not be put on the tape recordings and they will be erased after the study is done.

If you decide to help with this project but then change your mind you can stop helping at any time.

If you do not understand what our project staff is asking you to do, please ask them questions.

If you want to help with this project, please write your name on the line at the bottom of this page.

Student's Name
_____

Student's Signature
_____

Witness in lieu of signature: In my judgment, the student understands the information in this consent form and agrees to be in the study.

Witness Signature _____
Date _____

APPENDIX I

DEMOGRAPHIC QUESTIONNAIRE

Directions: I'm going to start by asking you some questions about you, your child, and your family to get an idea of who lives here and what your family demographics look like.

1. Child's Name: _____
(first) *(middle)* *(last)*

2. Child's date of birth: _____

3. Child's gender: ○ Male ○ Female

4. **TC's** race? (*Check **all** that apply)*

□ White/Caucasian
□ Black/African American
□ Hispanic/Latino: _____
□ Asian: _____
□ Native American: _____
□ Pacific Islander: _____
□ Other: _____

5. Has (TC) been identified as having a developmental delay or learning problem?
○ Yes ○ No *(skip to q#6)*

a. **Primary Diagnosis:**

○ Developmental Delay
○ Speech/Language Delay
○ Autism Spectrum Disorder (autism, PDD, Asperger's)
○ Cerebral Palsy
○ Unknown
○ None
○ Chronic medical illness: _____
○ Other: _____

b. When was (TC) identified with this condition?

○ At birth or infancy (0-11 months)
○ One year old (12-23 months)
○ Two years old (24-35 months)
○ Three years old (36-47 months)
○ Four years old (48-59 months)
○ Five years old (60-71 months)
○ Unknown
○ N/A (No primary diagnosis)

c. Who identified (TC) with this condition?

- Primary Care Physician/Pediatrician
- Other Physician/Specialist (e.g., neurologist, psychiatrist, other specialist)
- Psychologist (e.g., school psychologist)
- Social Worker
- Other: _____
- Unknown
- N/A (No primary diagnosis)

5. Does (TC) have a secondary condition?

- Yes
- No *(skip to q#6)*

a. **Secondary condition:**

- ADHD
- Disruptive behavior disorder
- Seizure disorder
- Other: _____

b. When was (TC) identified with this condition?

- At birth or infancy (0-11 months)
- One year old (12-23 months)
- Two years old (24-35 months)
- Three years old (36-47 months)
- Four years old (48-59 months)
- Five years old (60-71 months)
- Unknown

c. Who identified (TC) with this secondary condition?

- Primary Care Physician/Pediatrician
- Other Physician/Specialist (e.g., neurologist, psychiatrist, other specialist)
- Psychologist (e.g., school psychologist)
- Social Worker
- Other: _____
- Unknown

6. Does (TC) have any medical/health problems?

- Don't know
- No
- Yes: _____

7. Is (TC) seen regularly by a physician?

- Yes
- No

8. Is (TC) currently taking any medications?

- Yes (list below)
- No

Medication:_____ Dosage:_____ Reason:_____
Medication:_____ Dosage:_____ Reason:_____
Medication:_____ Dosage:_____ Reason:_____

9. Now we'd like to ask you some questions about TC's school.

a. Is (TC) currently enrolled in a school program? ⭘ No ⭘ Yes, name of school: _____

b. At school, what level/grade is s/he in?

⭘ Kindergarten
⭘ Intermediate Kindergarten
⭘ 1st grade
⭘ 2nd grade
⭘ 3rd grade

c. Is (TC) receiving special education services, that is, do they have an IEP?

⭘ No
⭘ Yes Why is your child receiving special education? (**Examiner:** Record response verbatim, then code)

*Verbatim response:*_____

□ Learning disability
□ Physical disability
□ Speech/language problems
□ Emotional/behavioral problems
□ Cognitive impairment/mental retardation
□ Gifted
□ Sensory impairments
□ Other heath impairment: _____

d. What type of classroom is s/he in? *(check all that apply)*

□ Typical _____ (hours per week)
□ Typical with assistant
Is the assistance provided through the school or outside agency?
⭘ School ⭘ Other agency ⭘ Don't know
□ Pull out _____ (hours per week)
□ Home schooled

e. Has s/he been held back in school? ⭘ Yes ⭘ No

f. Does (TC) receive any other services at school, for example, Title 1 reading, Talented and Gifted program, etc.? *(check all that apply)*

□ Title 1 □ Talented and Gifted □ Other: _____

In the last 6 months:

10. Does (TC) receive **related services** for either the primary or secondary diagnosis?

o Yes o No (skip to the end)

a. Speech Therapy o Yes o No Number of sessions per month: ____
b. Occupational Therapy o Yes o No Number of sessions per month: ____
c. Sensory Integration o Yes o No Number of sessions per month: ____
(combined with OT or other therapy. e.g., use of weighted vests, brushing, swinging, body sock, joint compression, sensory table, sensory diet, etc.)
d. Physical Therapy o Yes o No Number of sessions per month: ____
e. Behavioral programming o Yes o No Number of sessions per month: ____
f. Adaptive P.E. o Yes o No Number of sessions per month: ____
g. Play Therapy o Yes o No Number of sessions per month: ____
h. Music Therapy o Yes o No Number of sessions per month: ____
i. Therapeutic Listening o Yes o No Number of sessions per month: ____
j. Other:_____ o Yes o No Number of sessions per month: ____

APPENDIX J

VIDEOTAPED OBSERVATION PROTOCOL

Oregon Parent Project
Home Visit Observation Protocol

General Instructions to parent:
"Next we will be conducting a short, 15 minutes observation of you and your child playing with some toys I brought. It is important that both you and your child stay here together in this room. Please do your best to minimize distractions. So do not make any phone calls or turn the TV on during our 15 minute observation. Do you have questions?

Standardized Toys - Free Play
(10 minutes)

After video camera is set up and the family is ready say,
"**You and your child will have the chance to play with these toys I brought. Try to pretend like I'm not here and play like you normally would. I'll let you know when it's time to clean up. *GO AHEAD AND PLAY"**

After 9 minutes of recording free play, say,
"**You have one more minute before it's time to clean up and get ready for the next activity."**

Clean up
(2 minutes)

After the warning minute is over, say (to both parent and child),
"It's time to clean up now. Please put all of toys back into the box. *GO AHEAD AND CLEAN UP."

If all of the toys have been picked up after two minutes, say,
"Thank you for cleaning up so quickly! We have one more activity today."

If all the toys have NOT been picked up, say,
"Thank you for helping clean up. Let me quickly help finish so we can move on to our last activity." (Finish later if necessary.)

If clean up is complete but the two minutes are not yet finished, say,
"Wow! That was fast! We have ____ more minutes/seconds until the next activity."

Structured Activity
(3 minutes)

Say (to both parent and child),
"Here are three different activities you can choose from. Please pick something to work on. *GO AHEAD AND GET STARTED"

After 2 minutes of recording the activity, say,
"**You have one more minute.**"

After the warning minute is over, say (to parent and child),
"That's it for our activities. Great work!" (To child say) **"Thanks for playing today! I brought some stickers with me. Would you like to pick one?"**

Start Stopwatch at "GO" statements

APPENDIX K

INTERVENTION LESSON OUTLINE

I. Welcome

A. Greetings and overview of today's lesson

B. Report of home activities

i. Experiences of Play

ii. Descriptive Commenting

iii. Review of play principles

II. Today's topic: Effective praising

A. Brainstorm benefits and barriers of praise

i. Videotape vignettes

ii. Role play

III. Wrap up, Review, and this week's homework

A. Key Points of today

B. Homework

i. Read chapter 2 (Praise)

ii. Practice praising and listing behaviors you want to see increase

iii. Next week's topic: Rewards

IV. Evaluation and Self-Monitoring Checklist

APPENDIX L

VINELAND ADAPTIVE BEHAVIOR SCALES 2ND EDITION – SURVEY

INTERVIEW FORM

Communication Domain

Response Options: **2** = Usually; **1** = Sometimes or Partially, **0** = Don't Know

Receptive

1	Turns eyes and head toward sound.	2	1	0	DK
2	Looks toward parent or caregiver when hearing parent's or caregiver's voice.	2	1	0	DK
3	Responds to his or her name spoken (for examples, turns toward speaker, smiles, etc.).	2	1	0	DK
4	Demonstrates understanding of the meaning of the word *no*, or word or gesture with the same meaning (for example, stops current activity briefly).	2	1	0	DK
5	Demonstrates understanding of the meaning of the word *yes*, or word or gesture with the same meaning (for example, continues activity, smiles, etc.).	2	1	0	DK
6	Listens to story for at least 5 minutes (that is, remains relatively still and directs attention to the storyteller or reader)	2	1	0	DK
7	Points to at least three major body parts when asked (for example, nose, mouth, hands, feet, etc.).	2	1	0	DK
8	Points to common objects in a book or magazine as they are named (for example, dog, car, cup, key, etc.).	2	1	0	DK
9	Listens to instructions.	2	1	0	DK
10	Follows instructions with one action and one object (for example, "Bring me the book"; "Close the door"; etc.).	2	1	0	DK
11	Points to at least five minor body parts when asked (for example, fingers, elbows, teeth, toes, etc.).	2	1	0	DK
12	Follow instructions with two actions or an action and two objects (for example, "Bring me the crayons and the paper"; "Sit down and eat your lunch"; etc.).	2	1	0	DK
13	Follows instructions in "if-then" form (for example, "If you want to play outside then put your things away"; etc.).	2	1	0	DK
14	Listens to a story for at least 15 minutes.	2	1	0	DK

15	Listens to a story for at least 30 minutes.	2	1	0	DK
16	Follows three-part instructions (for example, "Brush your teeth, get dressed, and make your bed; etc.).	2	1	0	DK
17	Follows instructions or directions heard 5 minutes before.	2	1	0	DK
18	Understands sayings that are not meant to be taken word for word (for example, "Button your lip"; "Hit the road", etc.).	2	1	0	DK
19	Listens to an informational talk for at least 15 minutes.	2	1	0	DK
20	Listens to an informational talk for at least 30 minutes.	2	1	0	DK
	Expressive				
1	Cries or fusses when hungry or wet.	2	1	0	DK
2	Smiles when you smile at him or her.	2	1	0	DK
3	Makes sounds of pleasure (for example, coos, laughs, etc.).	2	1	0	DK
4	Makes nonword baby sounds (that is, babbles).	2	1	0	DK
5	Makes sounds or gestures (for example, waves arms) to get parent's or caregiver's attention.	2	1	0	DK
6	Makes sounds or gestures (for example, shakes head) if he or she wants an activity to stop or keep going.	2	1	0	DK
7	Waves goodbye when another person waves or parent or caregiver tells him or her to wave.	2	1	0	DK
8	Says "Da-da," "Ma-ma," or another name for parent or caregiver (including parent's or caregiver's first name or nickname).	2	1	0	DK
9	Points to object he or she wants that is out of reach.	2	1	0	DK
10	Points or gestures to indicate preference when offered a choice (for example, "Do you want this one or that one?"; etc.).	2	1	0	DK
11	Repeats or tries to repeat common words immediately upon hearing them.	2	1	0	DK
12	Names at least three objects (e.g., bottle, dog, favorite toy, etc.).	2	1	0	DK
13	Says one-word requests (for example, *up, more, out,* etc.).	2	1	0	DK
14	Uses first names or nicknames of brothers, sisters, or friends, or says their names when asked.	2	1	0	DK
15	Answers or tries to answer with words when asked a question.	2	1	0	DK
16	Names at least 10 objects.	2	1	0	DK

17	States own first name or nickname (for example, Latesha, Little Sister, etc.) when asked.	2	1	0	DK
18	Uses phrases with a noun and a verb (for example, "Katie stay"; "Go home"; etc.).	2	1	0	DK
19	Asks questions by changing inflection of words or simple phrases (for example, "Mine?"; "Me go?"; etc.); grammar is not important.	2	1	0	DK
20	Says at least 50 recognizable words.	2	1	0	DK
21	Uses simple words to describe things (for example, *dirty, pretty, big, loud,* etc.).	2	1	0	DK
22	Asks questions beginning with *what* or *where* (for example, "What's that?"; "Where doggie go?"; etc.).	2	1	0	DK
23	Uses negatives in sentences (for example, "Me no go"; "I won't drink it"; etc.); grammar is not important.	2	1	0	DK
24	Tells about experiences in simple sentences (for example, "Ginger and I play"; "Dan read me a book"; etc.).	2	1	0	DK
25	Says correct age when asked.	2	1	0	DK
26	Says at least 100 recognizable words.	2	1	0	DK
27	Uses *in, on,* or *under* in phrases or sentences (for example, "Ball go under chair"; "Put it on the table"; etc.).	2	1	0	DK
28	Uses *and* in phrases or sentences (for example, "Mom and Dad"; "I want ice cream and cake"; etc.).	2	1	0	DK
29	Says first and last name when asked.	2	1	0	DK
30	Identifies and names most common colors (that is, red, blue, green, yellow, orange, purple, brown, and black). Scoring tip: Make a "2" if the individual names 6 to 8 colors; make a "1" if the individual names 2 to 5 colors; mark a "0" if the individual names 0 or 1 color.	2	1	0	DK
31	Asks questions beginning with *who* or *why* (for example, "Who's that?"; "Why do I have to go?"; etc.).	2	1	0	DK
32	Uses present tense verbs ending in *ing* (for example, "Is singing"; "Is playing"; etc.).	2	1	0	DK
33	Uses possessives in phrases or sentences (for example, "That's her book"; "This is Carlos's ball"; etc.).	2	1	0	DK
34	Uses pronouns in phrases or sentences; must use correct gender and form of pronoun, but sentences need not be grammatically correct (for example, "He done it"; "They	2	1	0	DK

went"; etc.).

35	Asks questions beginning with *when* (for example, "When is dinner?"; "When can we go home?"; etc.).	2	1	0	DK
36	Uses regular past tense verbs (for example, *walked, baked,* etc.); May use irregular past tense verbs ungrammatically (for example, "I runned away"; etc.).	2	1	0	DK
37	Uses *behind* or *in front of* in phrases or sentences (for example, "I walked in front of her"; "Terrell is behind you"; etc.).	2	1	0	DK
38	Pronounces words clearly without sound substitutions (for example, does not say "wabbit" for "rabbit", "Thally" for "Sally", etc.).	2	1	0	DK
39	Tells basic parts of a story, fairy tale, or television show plot; does not need to include great detail or recount in perfect order.	2	1	0	DK
40	Says month and day of birthday when asked.	2	1	0	DK
41	Modulates tone of voice, volume, and rhythm appropriately (for example, does not consistently speak too loudly, too softly, or in a monotone, etc.).	2	1	0	DK
42	Tells about experiences in detail (for example, tells who was involved, where activity took place, etc.).	2	1	0	DK
43	Gives simple directions (for example, on how to play a game or how to make something). Scoring tip: Mark a "2" is the directions are clear enough to follow; mark a "1" if the individual articulates directions but they are not clear enough to follow; make a "0" if the individual never attempts to articulate directions	2	1	0	DK
44	Uses *between* in phrases or sentences (for example, "The ball went between the cars"; etc.).	2	1	0	DK
45	Says own telephone number when asked.	2	1	0	DK
46	Easily moves from one topic to another in conversation.	2	1	0	DK
47	Stays on topic in conversations; does not go off on tangents.	2	1	0	DK
48	Explains ideas in more than one way (for example, "This was a good book. It was exciting and fun to read"; etc.).	2	1	0	DK
49	Has conversations that last 10 minutes (for example, relates experiences, contributes ideas, shares feelings, etc.).	2	1	0	DK
50	Uses irregular plurals correctly (for example, *children*, *geese*, *mice*, *women*, etc.).	2	1	0	DK

51	Says complete home address (that is, street or rural route, apartment number, city, and state), with or without zip code, when asked.	2	1	0	DK
52	Describes a short-term goal and what he or she needs to do to reach it (for example, says, "I want to get an A on my test, so I'm going to study hard"; etc.).	2	1	0	DK
53	Gives complex directions to others (for example, to a distant location, for recipe with many ingredients or steps, etc.). Scoring tip: Mark a "2" if the directions are clear enough to follow; mark a "1" if the individual articulates directions but they are not clear enough to follow; mark a "0" if the individual never attempts to articulate directions.	2	1	0	DK
54	Describes a realistic long-range goal that can be done in 6 months or more (for example, says, "I want to buy a bike, so I'll babysit and run errands to earn enough money to buy it"; etc.).	2	1	0	DK
	Written				
1	Identifies one or more alphabet letters as letters and distinguishes them from numbers	2	1	0	DK
2	Recognizes own name in printed form.	2	1	0	DK
3	Identifies at least 10 printed letters of the alphabet.	2	1	0	DK
4	Prints or writes using correct orientation (for example, in English from left to right; in some languages from right to left or top to bottom).	2	1	0	DK
5	Copies own first name.	2	1	0	DK
6	Identifies all printed letters of the alphabet, upper- and lowercase.	2	1	0	DK
7	Prints at least three simple words from example (for example, *cat, see, bee*, etc.).	2	1	0	DK
8	Prints or writes own first and last name from memory.	2	1	0	DK
9	Reads at least 10 words aloud.	2	1	0	DK
10	Prints at least 10 simple words from memory (for example, *hat, ball, the,* etc.).	2	1	0	DK
11	Reads simple stories aloud (that is, stories with sentences of three to five words).	2	1	0	DK
12	Prints simple sentences of three or four words; may make small errors in spelling or sentence structure.	2	1	0	DK
13	Prints more than 20 words from memory; may make small	2	1	0	DK

	spelling errors				
14	Reads and understands material of at least second-grade level.	2	1	0	DK
15	Puts lists of words in alphabetical order	2	1	0	DK
16	Writes simple correspondence at least three sentences long (for example, postcards, thank-you notes, email, etc.).	2	1	0	DK
17	Reads and understands material of at least fourth-grade level.	2	1	0	DK
18	Writes reports, papers, or essays at least one page long; may use computer.	2	1	0	DK
19	Writes complete mailing and return addresses on letters or packages.	2	1	0	DK
20	Reads and understands material of at least sixth-grade level.	2	1	0	DK
21	Edits or corrects own written work before handing it in (for example, checks punctuation, spelling, grammar, etc.).	2	1	0	DK
22	Writes advanced correspondence at least 10 sentences long; may use computer.	2	1	0	DK
23	Reads and understands material or at least ninth-grade level.	2	1	0	DK
24	Reads at lease two newspaper articles weekly (print or electronic version).	2	1	0	DK
25	Writes business letters (for example, requests information, makes complaint, places order, etc.); may use computer.	2	1	0	DK

Daily Living Skills Domain

Response Options: **2** = Usually; **1** = Sometimes or Partially, **0** = Don't Know

	Personal	2			
1	Opens mouth when food is offered.	2	1	0	DK
2	Eats solid foods (for example, cooked vegetables, chopped meats, etc.).	2	1	0	DK
3	Sucks or chews on finger foods (for example, crackers, cookies, toast, etc.).	2	1	0	DK
4	Drinks from a cup or glass; may spill.	2	1	0	DK
5	Lets someone know when he or she has wet or soiled diapers or pants (for example, points, vocalizes, pulls at diaper, etc.).	2	1	0	DK
6	Feeds self with spoon; may spill.	2	1	0	DK
7	Sucks from straw.	2	1	0	DK

8	Takes off clothing that opens in the front (for example, a coat or sweater); does not have to unbutton or unzip the clothing.	2	1	0	DK
9	Pulls up clothing with elastic waistbands (for example, underwear or sweatpants).	2	1	0	DK
10	Feeds self with fork; may spill.	2	1	0	DK
11	Drinks from cup or glass without spilling.	2	1	0	DK
12	Feeds self with spoon without spilling.	2	1	0	DK
13	Urinates in toilet or potty chair.	2	1	0	DK
14	Puts on clothing that opens in the front (for example, a coat or sweater); does not have to zip or button the clothing.	2	1	0	DK
15	Asks to use toilet.	2	1	0	DK
16	Defecates in toilet or potty chair.	2	1	0	DK
17	Is toilet-trained during the day.	2	1	0	DK
	Scoring tip: Mark a "2" if the individual uses the toilet without help and without accidents; mark a "1" if the individual needs help, such as with wiping, or has some accidents; mark a "0" if the individual always needs help or has frequent accidents.				
18	Zips zippers that are fastened at the bottom (for example, in pants, on backpacks, etc.).	2	1	0	DK
19	Wipes or blows nose using tissue or handkerchief.	2	1	0	DK
20	Is toilet-trained during the night.	2	1	0	DK
21	Puts shoes on correct feet; does not need to tie laces.	2	1	0	DK
22	Fastens snaps.	2	1	0	DK
23	Holds spoon, fork, and knife correctly.	2	1	0	DK
24	Washes and dries face using soap and water.	2	1	0	DK
25	Brushes teeth.	2	1	0	DK
26	Buttons large buttons in front, in correct buttonholes.	2	1	0	DK
27	Covers mouth and nose when coughing and sneezing.	2	1	0	DK
28	Buttons small buttons in front, in correct buttonholes.	2	1	0	DK
29	Connects and zips zippers that are not fastened at the bottom (for example, in jackets, sweatshirts, etc.).	2	1	0	DK
30	Turns faucets on and adjusts temperature by adding hot or cold water.	2	1	0	DK
31	Wears appropriate clothing during wet or cold weather (for	2	1	0	DK

	example, raincoat, boots, sweater, etc.).					
32	Bathes or showers and dries self. Scoring tip: Mark a "2" if the individual bathes or showers without help, including turning the water on and off; mark a "1" if the individual needs help with any part of bathing or drying or with turning the water on and off; mark a "0" if the individual never bathes or showers without help or without reminders.	2	1	0	DK	
33	Finds and uses appropriate public restroom for his or her gender.	2	1	0	DK	
34	Washes and dries hair (with towel or hair dryer).	2	1	0	DK	
35	Cares for minor cuts (for example, cleans wound, puts on a bandage, etc.).	2	1	0	DK	
36	Takes medicine as directed (that is, follows directions on label).	2	1	0	DK	
37	Uses thermometer to take another's temperature.	2	1	0	DK	
38	Seeks medical help in an emergency (for example, recognizes symptoms of serious illness or injury, such as shortness of breath, chest pain, uncontrolled bleeding, etc.). Scoring tip: You may mark "N/O" for No Opportunity if the individual has not been in a medical emergency.	2	1	0	DK	N/O
39	Follows directions for health care procedures, special diet, or medical treatments. Scoring tip: You may mark "N/O" for No Opportunity if the individual does not have a health concern that requires special procedures, diet, or treatments.	2	1	0	DK	N/O
40	Keeps track of medications (nonprescription and prescription) and refills them as needed.	2	1	0	DK	
41	Makes appointments for regular medical and dental checkups.	2	1	0	DK	
	Domestic					
1	Is careful around hot objects (for example, the stove or over, an open fire, etc.).	2	1	0	DK	
2	Helps with simple household chores (for example, dusts, picks up clothes or toys, feeds pet, etc.).	2	1	0	DK	
3	Clears unbreakable items from own place at table.	2	1	0	DK	
4	Cleans up play or work area at end of an activity (for example, finger painting, model building, etc.).	2	1	0	DK	

5	Puts away personal possessions (for example, toys, books, magazines, etc.).	2	1	0	DK	
6	Is careful when using sharp objects (for example, scissors, knives, etc.).	2	1	0	DK	
7	Clears breakable items from own place at table.	2	1	0	DK	
8	Helps prepare foods that require mixing and cooking (for example, cake or cookie mixes, macaroni and cheese, etc.).	2	1	0	DK	
9	Uses simple appliances (for example, a toaster, can opener, bottle opener, etc.).	2	1	0	DK	
10	Uses microwave oven for heating, baking, or cooking (that is, sets time and power setting, etc.). Scoring tip: You may mark "N/O" for No Opportunity if there is no microwave in the home.	2	1	0	DK	N/O
11	Puts clean clothes away in proper place (for example, in drawers or closet, on hooks, etc.).	2	1	0	DK	
12	Uses tools (for example, a hammer to drive nails, a screwdriver to screw and unscrew screws, etc.).	2	1	0	DK	
13	Washes dishes by hand, or loads and uses dishwasher.	2	1	0	DK	
14	Sweeps, mops, or vacuums floors thoroughly. Scoring tip: Mark "2" if the individual mops, sweeps, or vacuums so well that the task does not have to be redone; mark a "1" if the individual doesn't consistently complete the task well; mark a "0" if the individual never mops, sweeps, or vacuums, or does the task so poorly that it always needs to be redone.	2	1	0	DK	
15	Clears table completely (for example, scrapes and stacks dishes, throws away disposable items, etc.).	2	1	0	DK	
16	Uses household products correctly (for example, laundry detergent, furniture polish, glass cleaner, etc.).	2	1	0	DK	
17	Prepares basic foods that do not need mixing but require cooking (for example, rice, soup, vegetables, etc.).	2	1	0	DK	
18	Cleans one or more rooms other than own bedroom.	2	1	0	DK	
19	Uses sharp knife to prepare food.	2	1	0	DK	
20	Uses stove or oven for heating, baking, or cooling (that is, turns burners on and off, sets oven temperature, etc.).	2	1	0	DK	
21	Prepares food from ingredients that require measuring, mixing, and cooking.	2	1	0	DK	
22	Washes clothing as needed.	2	1	0	DK	

23	Performs maintenance tasks as needed (for example, replaces light bulbs, changes vacuum cleaner bag, etc.).	2	1	0	DK	
24	Plans and prepares main meal of the day.	2	1	0	DK	
	Community					
1	Demonstrates understanding of function of telephone (for example, pretends to talk on phone, etc.).	2	1	0	DK	
2	Talks to familiar person on telephone.	2	1	0	DK	
3	Uses TV or radio without help (for example, turns equipment on, accesses channel or station, selects program, etc.). Scoring tip: You may mark "N/O" for No Opportunity if there is no TV or radio in the home.	2	1	0	DK	N/O
4	Counts at least 10 objects, one by one.	2	1	0	DK	
5	Is aware of and demonstrates appropriate behavior while riding in car (for example, keeps seat belt on, refrains from distracting driver, etc.).	2	1	0	DK	
6	Demonstrates understanding of the function of money (for example, says, "Money is what you need to buy things at the store"; etc.).	2	1	0	DK	
7	Uses sidewalk (where available) or shoulder of road when walking or using wheeled equipment (for example, skates, scooter, tricycle, etc.).	2	1	0	DK	
8	Demonstrates understanding of function of clock (for example, says, "Clocks tell time"; "What time can we go?"; etc.).	2	1	0	DK	
9	Follows household rules (for example, no running in the house, no jumping on the furniture, etc.).	2	1	0	DK	
10	Demonstrates computer skills necessary to play games or start programs with computer turned on; does not need to turn computer on by self. Scoring tip: You may mark "N/O" for No Opportunity if there is no computer in the home.	2	1	0	DK	N/O
11	Summons to the telephone the person receiving a call or indicates that the person is not available.	2	1	0	DK	
12	Identifies penny, nickel, dime, and quarter by name when asked; does not need to know the value of coins.	2	1	0	DK	
13	Looks both ways when crossing streets or roads.	2	1	0	DK	
14	Says current day of the week when asked.	2	1	0	DK	

15	Demonstrates understanding of right to personal privacy for self and others (for example, while using restroom or changing clothes, etc.).	2	1	0	DK	
16	Demonstrates knowledge of what phone number to call in an emergency when asked.	2	1	0	DK	
17	Tells time using a digital clock or watch.	2	1	0	DK	
18	States value of penny (1 cent), nickel (5 cents), dime (10 cents), and quarter (25 cents).	2	1	0	DK	
19	Discriminates between bills of different denominations (for example, refers to $1 bills, $5 bills, etc., in conversation; etc.).	2	1	0	DK	
20	Obeys traffic lights and *Walk* and *Don't Walk* signs.	2	1	0	DK	
21	Points to current or other date on calendar when asked.	2	1	0	DK	
22	Demonstrates understanding that some items cost more than others (for example, says, "I have enough money to buy gum but not a candy bar"; "Which pencil costs less?"; etc.).	2	1	0	DK	
23	Tells time by the half hour on analog clock (for example, 1:30, 2:00, etc.).	2	1	0	DK	
24	Makes telephone calls to others, using standard or cell phone.	2	1	0	DK	
25	Orders a complete meal in a fast-food restaurant. Scoring tip: You may mark "N/O" for No Opportunity if individual has not eaten at a fast-food restaurant.	2	1	0	DK	N/O
26	Carries or stores money safely (for example, in wallet, purse, money belt, etc.).	2	1	0	DK	
27	Tells time by 5-minute segments on analog clock (for example, 1:05, 1:10, etc.).	2	1	0	DK	
28	Obeys curfew parent or caregiver sets.	2	1	0	DK	
29	Watches or listens to programs for information (for example, weather report, news, educational program, etc.). Scoring tip: You may mark "N/O" for No Opportunity if there is no TV or radio in the home.	2	1	0	DK	N/O
30	Counts change from a purchase.	2	1	0	DK	
31	Demonstrates computer skills necessary to carry out complex tasks (for example, word processing, accessing the internet, installing software, etc.). Scoring tip: You may mark "N/O" for No Opportunity if there is no computer in the home.	2	1	0	DK	N/O

32	Evaluates quality and price when selecting items to purchase.	2	1	0	DK	
33	Obeys time limits for breaks (for example, lunch or coffee breaks, etc.).	2	1	0	DK	
34	Travels at least 5 to 10 miles to familiar destination (that is, bikes, uses public transportation, or drives self).	2	1	0	DK	
35	Demonstrates understanding of right to complain or report legitimate problems when dissatisfied with services or situations.	2	1	0	DK	
36	Notifies school or supervisor when he or she will be late or absent.	2	1	0	DK	
37	Uses savings or checking account responsibly (for example, keeps some money in account, tracks balance carefully, etc.).	2	1	0	DK	
38	Travels at least 5 to 10 miles to unfamiliar destination (that is, bikes, uses public transportation, or drives self).	2	1	0	DK	
39	Earns money at part-time job (that is, at least 10 hours a week) for 1 year. Scoring tip: Do not mark 1.	2		0	DK	
40	Attempts to improve job performance after receiving constructive criticism from supervisor. Scoring tip: You may mark "N/O" for No Opportunity if the individual has not held a job.	2	1	0	DK	N/O
41	Manages own money (for example, pays most or all own expenses, uses checks or money orders for purchases as needed, etc.).	2	1	0	DK	
42	Has held full-time job for 1 year. Scoring tip: Do not mark 1.	2		0	DK	
43	Budgets for monthly expenses (for example, utilities, rent, etc.).	2	1	0	DK	
44	Applies for and uses personal credit card responsibly (for example, does not exceed credit limit, pays on time, etc.).	2	1	0	DK	

Socialization Domain

Response Options: **2** = Usually; **1** = Sometimes or Partially, **0** = Don't Know

Interpersonal Relationships

1	Looks at face of parent or caregiver.	2	1	0	DK
2	Watches (that is, follows with eyes) someone moving by	2	1	0	DK

crib or bed for 5 seconds or more.

3	Shows two or more emotions (e.g., laughs, cries, screams, etc.).	2	1	0	DK
4	Smiles or makes sounds when approached by a familiar person.	2	1	0	DK
5	Makes or tries to make social contact (for example, smiles, makes noises, etc.).	2	1	0	DK
6	Reaches for familiar person when person holds out arms to him/her.	2	1	0	DK
7	Shows preference for certain people and objects (for example, smiles, reaches for or moves toward person or object, etc.).	2	1	0	DK
8	Shows affection to familiar persons (for example, touches, hugs, kisses, cuddles, etc.).	2	1	0	DK
9	Imitates or tries to imitate parent's or caregiver's facial expressions (for example, smiles, frowns, etc.).	2	1	0	DK
10	Moves about looking for parent or caregiver or other familiar person nearby.	2	1	0	DK
11	Shows interest in children the same age, other than brothers or sisters (for example, watches them, smiles at them, etc.).	2	1	0	DK
12	Imitates simple movements (for example, claps hands, waves goodbye, etc.).	2	1	0	DK
13	Uses actions to show happiness or concern for others (for example, hugs, pats arm, holds hands, etc.).	2	1	0	DK
14	Shows desire to please others (for example, shares a snack or toy, tries to help even if not capable, etc.).	2	1	0	DK
15	Demonstrates friendship-seeking behavior with others the same age (for example, says, "Do you want to play?" or takes another child by the hand, etc.).	2	1	0	DK
16	Imitates relatively complex actions as they are being performed by another person (for example, shaving, putting on makeup, hammering nails, etc.).	2	1	0	DK
17	Answers when familiar adults make small talk (for example, if asked, "How are you?" says "I'm fine"; if told, "You look nice," says, "Thank you"; etc.).	2	1	0	DK
18	Repeats phrases heard spoken before by an adult (for example, "Honey, I'm home"; "No dessert until you clean your plate"; etc.).	2	1	0	DK
19	Uses words to express own emotions (for example, "I'm	2	1	0	DK

	happy"; "I'm scared"; etc.).				
20	Has best friend or shows preference for certain friends (of either sex) over others.	2	1	0	DK
21	Imitates relatively complex actions several hours after watching someone else perform them (for example, shaving, putting on makeup, hammering nails, etc.).	2	1	0	DK
22	Uses words to express happiness or concern for others (for example, Says, "Yeah! You won"; "Are you all right?"; etc.).	2	1	0	DK
23	Acts when another person needs a helping hand (for example, holds door open, picks up dropped items, etc.).	2	1	0	DK
24	Recognizes the likes and dislikes of others (for example, says, "Chow likes soccer"; "Susie doesn't eat pizza"; etc.).	2	1	0	DK
25	Shows same level of emotion as others around him or her (for example, does not downplay or overdramatize a situation, etc.).	2	1	0	DK
26	Keeps comfortable distance between self and others in social situations (for example, does not get too close to another person when talking, etc.).	2	1	0	DK
27	Talks with others about shared interests (for example, sports, TV shows, summer plans, etc.).	2	1	0	DK
28	Starts small talk when meets people he or she knows (for example, says, "How are you?; What's up?"; etc.).	2	1	0	DK
29	Meets with friends regularly.	2	1	0	DK
30	Chooses not to say embarrassing or mean things or ask rude questions in public.	2	1	0	DK
31	Places reasonable demands on friendship (for example, does not expect to be a person's only friend or to have the friend always available, etc.).	2	1	0	DK
32	Understands that others do not know his or her thoughts unless he or she says them.	2	1	0	DK
33	Is careful when talking about personal things.	2	1	0	DK
34	Cooperates with others to plan or be part of an activity (for example, a birthday party, sports event, etc.).	2	1	0	DK
35	Demonstrates understanding of hints or indirect cues in conversation (for example, knows that yawns may mean, ""I'm bored," or a quick change of subject may mean, "I don't want to talk about that"; etc.).	2	1	0	DK
36	Starts conversations by talking about things that interest	2	1	0	DK

	others (for example, says, “Tyrone tells me you like computers”; etc.).				
37	Goes on group dates.	2	1	0	DK
38	Goes on single dates.	2	1	0	DK
	Play and Leisure				
1	Responds when parent or caregiver is playful (for example, smiles, laughs, claps hands, etc.).	2	1	0	DK
2	Shows interest in where he or she is (for example, looks or moves around, Touches objects or people, etc.).	2	1	0	DK
3	Plays simple interaction games with others (for example, peek-a-boo, patty-cake, etc.).	2	1	0	DK
4	Plays near another child, each doing different things	2	1	0	DK
5	Chooses to play with other children (for example, does not stay on the edge of a group or avoid others).	2	1	0	DK
6	Plays cooperatively with one or more children for up to 5 minutes.	2	1	0	DK
7	Plays cooperatively with more than one child for more than 5 minutes.	2	1	0	DK
8	Continues playing with another child with little fussing when parent or caregiver leaves.	2	1	0	DK
9	Shares toys or possessions when asked.	2	1	0	DK
10	Plays with others with minimal supervision.	2	1	0	DK
11	Uses common household objects or other objects for make-believe activities (e.g., pretends a block is a car, a box is a house, etc.).	2	1	0	DK
12	Protects self by moving away from those who destroy things or cause injury (e.g., those who bite, hit, throw things, pull hair, etc.).	2	1	0	DK
13	Plays simple make-believe activities with others (e.g., plays dress-up, pretends to be superheroes, etc.).	2	1	0	DK
14	Seeks out others for play or companionship (e.g., invites others home, goes to another’s home, plays with others on playground, etc.).	2	1	0	DK
15	Takes turns when asked while playing games or sports.	2	1	0	DK
16	Plays informal, outdoor group games (e.g., tag, jump rope, catch, etc.).	2	1	0	DK
17	Shares toys or possessions without being asked.	2	1	0	DK

18	Follows rules in simple games (relay races, spelling bees, electronic games, etc.).	2	1	0	DK
19	Takes turns without being asked.	2	1	0	DK
20	Plays simple card or board games based only on chance (e.g., Go Fish, Crazy Eights, Sorry, etc.).	2	1	0	DK
21	Goes places with friends during the day with adult supervision (for example, to a shopping mall, park, community center, etc.).	2	1	0	DK
22	Asks permission before using objects belonging to or being used by another.	2	1	0	DK
23	Refrains from entering group when nonverbal cues indicate that he or she is not welcome.	2	1	0	DK
24	Plays simple games that require keeping score (for example, kickball, pickup basketball, etc.).	2	1	0	DK
25	Shows good sportsmanship (that is, follows rules, is not overly aggressive, congratulates other team on winning, and does not get mad when losing).	2	1	0	DK
26	Plays more than one board, card, or electronic game requiring skill and decision making (for example, Monopoly, Cribbage, etc.).	2	1	0	DK
27	Goes places with friends in evening with adult supervision (for example, to a concert, lecture, sporting event, movie, etc.).	2	1	0	DK
28	Follows rules in complex games or sports (for example, football, soccer, volleyball, etc.).	2	1	0	DK
29	Goes places with friends during the day without adult supervision (for example, to a shopping mall, park, community center, etc.).	2	1	0	DK
30	Plans fun activities with more than two things to be arranged (for example, a trip to a beach or park that requires planning transportation, food, recreational items, etc.).	2	1	0	DK
31	Goes places with friends in evening without adult supervision (for example, to a concert, lecture, sporting event, movie, etc.).	2	1	0	DK
	Coping Skills				
1	Changes easily from one at-home activity to another.	2	1	0	DK
2	Says “thank you” when given something.	2	1	0	DK
3	Changes behavior depending on how well he or she knows another person (for example, acts differently with family	2	1	0	DK

	member than with stranger, etc.).				
4	Chews with mouth closed.	2	1	0	DK
5	Says “please” when asking for something.	2	1	0	DK
6	Ends conversations appropriately (for example, says, “Good-bye”; “See you later”; etc.).	2	1	0	DK
7	Cleans or wipes face and hands during and/or after meals.	2	1	0	DK
8	Responds appropriately to reasonable changes in routine (for example, Refrains from complaining, etc.).	2	1	0	DK
9	Says that he or she is sorry for unintended mistakes (for example, bumping into someone, etc.).	2	1	0	DK
10	Chooses not to taunt, tease, or bully.	2	1	0	DK
11	Acts appropriately when introduced to strangers (for example, nods, smiles, shakes hands, greets them, etc.).	2	1	0	DK
12	Changes voice level depending on location or situation (for example, in a library, during a movie or play, etc.).	2	1	0	DK
13	Says he or she is sorry after hurting another’s feelings.	2	1	0	DK
14	Refrains from talking with food in mouth.	2	1	0	DK
15	Talks with others without interrupting or being rude.	2	1	0	DK
16	Accepts helpful suggestions or solutions from others.	2	1	0	DK
17	Controls anger or hurt feelings when plans change for reason(s) that cannot be helped (for example, bad weather, car trouble, etc.).	2	1	0	DK
18	Keeps secrets or confidences for longer than one day.	2	1	0	DK
19	Says he or she is sorry after making unintentional mistakes or errors in judgment (for example, when unintentionally leaving someone out of a game, etc.).	2	1	0	DK
20	Shows understanding that gentle teasing with family and friends can be a form of humor or affection.	2	1	0	DK
21	Tells parent or caregiver about his or her plans (for example, what time he or she is leaving and returning, where he or she is going, etc.).	2	1	0	DK
22	Chooses to avoid dangerous or risk activities (for example, what time he or she is leaving and returning, where he or she is going, etc.).	2	1	0	DK
23	Controls anger or hurt feelings when he or she does not get his or her way (for example, when not allowed to watch television or attend a party; when suggestion is rejected by	2	1	0	DK

friend or supervisor; etc.).

24	Follows through with arrangements (for example, if promises to meet someone, meets that person; etc.).	2	1	0	DK
25	Stops or stays away from relationships or situations that are hurtful or dangerous (for example, being bullied or made fun of, being taken advantage of sexually or financially, etc.).	2	1	0	DK
26	Controls anger or hurt feelings due to constructive criticism (for example, correction of misbehavior, discussion of test score or grade, performance review, etc.).	2	1	0	DK
27	Keeps secrets or confidences for as long as needed.	2	1	0	DK
28	Thinks about what could happen before making decisions (for example, refrains from acting impulsively, things about important information, etc.).	2	1	0	DK
29	Is aware of potential danger and uses caution when encountering risk social situations (for example, binge drinking parties, Internet chat rooms, personal ads, etc.).	2	1	0	DK
30	Shows respect for co-workers (for example, does not distract or interrupt others who are working, is on time for meetings, etc.).	2	1	0	DK

Motor Skills Domain

Response Options: **2** = Usually; **1** = Sometimes or Partially, **0** = Don't Know

Gross

1	Holds head erect for at least 15 seconds when held upright in parent's or caregiver's arms.	2	1	0	DK
2	Sits supported (for example, in a chair, with pillows, etc.) for at least 1 minute.	2	1	0	DK
3	Sits without support for at least 1 minute.	2	1	0	DK
4	Creeps or moves on stomach across floor.	2	1	0	DK
5	Sits without support for at least 10 minutes.	2	1	0	DK
6	Raises self to sitting position and sits without support for at least 1 minute.	2	1	0	DK
7	Crawls at least 5 feet on hands and knees, without stomach touching floor.	2	1	0	DK
8	Pulls self to standing position.	2	1	0	DK
9	Crawls up stairs.	2	1	0	DK
10	Takes at least two steps.	2	1	0	DK

11	Stands along for 1 to 3 minutes.	2	1	0	DK	
12	Rolls ball while sitting.	2	1	0	DK	
13	Climbs on and off low objects (for example, chair, step stool, slide, etc.).	2	1	0	DK	
14	Crawls down stairs.	2	1	0	DK	
15	Stands for at least 5 minutes.	2	1	0	DK	
16	Walks across room; may be unsteady and fall occasionally.	2	1	0	DK	
17	Throws ball.	2	1	0	DK	
18	Walks to get around; does not need to hold on to anything.	2	1	0	DK	
19	Climbs on and off adult-sized chair.	2	1	0	DK	
20	Runs without falling; may be awkward and uncoordinated.	2	1	0	DK	
21	Walks up stairs, putting both feet on each step; may use railing.	2	1	0	DK	
22	Kicks ball.	2	1	0	DK	
23	Runs smoothly without falling.	2	1	0	DK	
24	Walks down stairs, facing forward, putting both feet on each step; may use railing.	2	1	0	DK	
25	Jumps with both feet off floor.	2	1	0	DK	
26	Throws ball of any size in specific direction.	2	1	0	DK	
27	Catches beach-sized ball with both hands from a distance of 2 to 3 feet.	2	1	0	DK	
28	Walks up stairs, alternating feet; may use railing.	2	1	0	DK	
29	Pedals tricycles or other three-wheeled toy for at least 6 feet. Scoring tip: You may mark “N/O” for No Opportunity if the individual does not have a tricycle or three-wheeled toy. However, if the individual has such a vehicle but does not ride in it for any reason, including parent or caregiver does not think he or she is ready, mark “0”.	2	1	0	DK	N/O
30	Jumps or hops forward at least three times.	2	1	0	DK	
31	Hops on one foot at least once without falling; may hold on to something for balance.	2	1	0	DK	
32	Climbs on and off high objects (for example, jungle gym, 4-foot slide ladder, etc.).	2	1	0	DK	
33	Walks down stairs, alternating feet; may use railing.	2	1	0	DK	
34	Runs smoothly, with changes in speed and direction.	2	1	0	DK	

35	Rides bicycle with training wheels for at least 10 feet. Scoring tip: You may mark "N/O" for No Opportunity if the individual does not have a bicycle. However, if the individual has a bike but does not ride it for any reason, including the parent or caregiver does not think he or she is ready, mark "0".	2	1	0	DK	N/O
36	Catches beach-sized ball (from at least 6 feet away) with both hands.	2	1	0	DK	
37	Hops forward on one foot with ease.	2	1	0	DK	
38	Skips at least 5 feet.	2	1	0	DK	
39	Catches tennis or baseball-sized ball (from at least 10 feet away), moving to catch it if necessary.	2	1	0	DK	
40	Rides bicycle with no training wheels without falling. Scoring tip: You may mark "N/O" for No Opportunity if the individual does not have a bicycle. However, if the individual has a bike but does not ride it for any reason, including the parent or caregiver does not think he or she is ready, mark "0".	2	1	0	DK	N/O
	Fine					
1	Reaches for toy or object	2	1	0	DK	
2	Picks up small objects (no larger than 2 inches on any side); may use both hands.	2	1	0	DK	
3	Moves object from one hand to the other.	2	1	0	DK	
4	Squeezes squeaky toy or object,	2	1	0	DK	
5	Picks up small object with thumb and fingers.	2	1	0	DK	
6	Removes object (for example, a block or clothespin) from a container.	2	1	0	DK	
7	Puts object (for example, a block or clothespin) into container.	2	1	0	DK	
8	Turns pages of board, cloth, or paper book, one at a time.	2	1	0	DK	
9	Stacks at least four small blocks or other small objects; stack must not fall.	2	1	0	DK	
10	Opens doors by turning doorknobs.	2	1	0	DK	
11	Unwraps small objects (for example, gum or candy).	2	1	0	DK	
12	Completes simple puzzles of at least two pieces or shapes.	2	1	0	DK	
13	Turns book or magazine pages one by one.	2	1	0	DK	

14	Uses twisting hand-wrist motion (for example, winds up toy, screws/unscrews lit of jar, etc.).	2	1	0	DK	
15	Holds pencil in proper position (not with fist) for writing or drawing.	2	1	0	DK	
16	Colors simple shapes; may color outside the lines.	2	1	0	DK	
17	Builds three-dimensional structures (for example, a house, bridge, vehicle, etc.) with at least five small blocks.	2	1	0	DK	
18	Opens and closes scissors with one hand.	2	1	0	DK	
19	Glues or pastes two or more pieces together (for example, for art of science projects, etc.).	2	1	0	DK	
20	Uses tape to hold things together (for example, torn page, art project, etc.).	2	1	0	DK	
21	Draws more than one recognizable form (for example, person, house, tree, etc.). Scoring tip: Mark a "2" if the individual draws two or more recognizable forms; make a "1" if the individual draws one form; mark a "0" if the individual does not draw any recognizable forms.	2	1	0	DK	
22	Makes recognizable letters or numbers.	2	1	0	DK	
23	Draws circle freehand while looking at example.	2	1	0	DK	
24	Uses scissors to cut across paper along a straight line.	2	1	0	DK	
25	Colors simple shapes; colors inside the lines.	2	1	0	DK	
26	Cuts out simple shapes (for example, circles, squares, rectangles, etc.).	2	1	0	DK	
27	Uses eraser without tearing paper.	2	1	0	DK	
28	Draws square freehand while looking at example.	2	1	0	DK	
29	Draws triangle freehand while looking at example.	2	1	0	DK	
30	Ties knot.	2	1	0	DK	
31	Draws straight line using a ruler or straightedge.	2	1	0	DK	
32	Unlocks dead-bolt, key, or combination locks that require twisting. Scoring tip: You may mark "N/O" for No Opportunity if there are no dead-bolt, key, or combination locks in the home.	2	1	0	DK	N/O
33	Cuts out complex shapes (for example, stars, animals, alphabet letters, etc.).	2	1	0	DK	

34	Uses keyboard, typewriter, or touch screen to type name or short words; may look at keys. Scoring tip: you may mark "N/O" for No Opportunity if there is no computer in the home.	2	1	0	DK	N/O
35	Ties secure bow.	2	1	0	DK	
36	Uses keyboard to type up to 10 lines; may look at the keys. Scoring tip: you may mark "N/O" for No Opportunity if there is no computer in the home.	2	1	0	DK	N/O

APPENDIX M

CES-D

You are going to read a list of ways you may have felt.
Please circle the number that best indicates how often you have felt this way **during the week;** rarely or none of the time; some of the time; occasionally; or a moderate amount of time; or most of the time

During the past week, that would be from _____ (date) through today:		Rarely or none of the time. (less than 1 day)	Some or a little of the time. (1-2 days)	Occasionally (3-4 days)	Most or all of the time (5-7 days)
a.	I was bothered by things that don't usually bother me.	0	1	2	3
b.	I did not feel like eating; my appetite was poor.	0	1	2	3
c.	I felt that I could not shake off the blues, even with help from my family and friends.	0	1	2	3
d.	I felt that I was just as good as other people	0	1	2	3
e.	I had trouble keeping my mind on what I was doing.	0	1	2	3
f.	I felt depressed.	0	1	2	3
g.	I felt that everything I did was an effort.	0	1	2	3
h.	I felt hopeful about the future.	0	1	2	3
i.	I thought my life had been a failure.	0	1	2	3
j.	I felt fearful.	0	1	2	3
k.	My sleep was restless.	0	1	2	3
l.	I was happy.	0	1	2	3
m.	I talked less than usual.	0	1	2	3
n.	I felt lonely.	0	1	2	3
o.	People were unfriendly.	0	1	2	3
p.	I enjoyed life.	0	1	2	3
q.	I had crying spells.	0	1	2	3
r.	I felt sad.	0	1	2	3
s.	I felt that people dislike me.	0	1	2	3
t.	I could not get "going".	0	1	2	3

APPENDIX N

PARENTING STRESS INDEX – SHORT FORM

Directions: The questions on the following pages asks you to mark an answer which best describes your feelings. While you may not find an answer which exactly states your feelings, please mark the answer which comes closest to describing how you feel. Your first reaction to each question should be your answer. Please mark the degree to which you agree or disagree with the following statements by circling the number which bests match how you feel.

	Strongly Disagree	**Disagree**	**Not Sure**	**Agree**	**Strongly Agree**
1. I often have the feeling that I cannot handle things very well	o	o	o	o	o
2. I find myself giving up more of my life to meet my children's needs than I ever expected.	o	o	o	o	o
3. I feel trapped by my responsibilities as a parent.	o	o	o	o	o
4. Since having this child, I have been unable to do new and different things.	o	o	o	o	o
5. Since having this child, I feel that I am almost never able to do things that I like to do.	o	o	o	o	o
6. I am unhappy with the last purchase of clothing I made for myself.	o	o	o	o	o
7. There are quite a few things that bother me about my life.	o	o	o	o	o
8. Having a child has caused more problems than I expected in my relationship with my spouse (or male/female friend).	o	o	o	o	o
9. I feel alone and worried without friends.	o	o	o	o	o
10. When I go to a party, I usually expect not to enjoy myself.	o	o	o	o	o
11. I am not as interested in people as I used to be.	o	o	o	o	o
12. I don't enjoy things as I used to.	o	o	o	o	o
13. My child rarely does things for me that make me feel good.	o	o	o	o	o

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
14. Sometimes I feel my child doesn't like me and doesn't want to be close to me.	o	o	o	o	o
15. My child smiles at me much less than I expected.	o	o	o	o	o
15. My child smiles at me much less than I expected.	o	o	o	o	o
16. When I do things for my child, I get the feeling that my efforts are not appreciated very much.	o	o	o	o	o
17. When playing, my child doesn't often giggle or laugh.	o	o	o	o	o
18. My child doesn't seem to learn as quickly as most children.	o	o	o	o	o
19. My child doesn't seem to smile as much as most children.	o	o	o	o	o
20. My child is not able to do as much as I expected.	o	o	o	o	o
21. It takes a long time and it is very hard for my child to get used to new things.	o	o	o	o	o
22. I feel that I am:	o	o	o	o	o
o not very good at being a parent	o	o	o	o	o
o a person who has some trouble being a parent	o	o	o	o	o
o an average parent	o	o	o	o	o
o a better than average parent	o	o	o	o	o
o a very good parent	o	o	o	o	o
	Strongly Disagree	**Disagree**	**Not Sure**	**Agree**	**Strongly Agree**
23. I expected to have closer, warmer feelings for my child than I do and this bothers me.	o	o	o	o	o
24. Sometimes my child does things that bother me just to be mean.	o	o	o	o	o
25. My child seems to cry or fuss more often than most children.	o	o	o	o	o
26. My child generally wakes up in a bad mood.	o	o	o	o	o
27. I feel that my child is very moody and easily upset.	o	o	o	o	o

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
28. My child does a few things which bother me a great deal.	o	o	o	o	o
29. My child reacts very strongly when something happens that my child doesn't like.	o	o	o	o	o
30. My child gets upset easily over the smallest thing.	o	o	o	o	o
31. My child's sleeping or eating schedule was much harder to establish than I expected.	o	o	o	o	o
32. I have found that getting my child to do something or stop doing something is:	o	o	o	o	o
o much harder than I expected	o	o	o	o	o
o somewhat harder than I expected	o	o	o	o	o
o about as hard as I expected	o	o	o	o	o
o somewhat easier than I expected	o	o	o	o	o
o much easier than I expected	o	o	o	o	o
33. Think carefully and count the number of things which your child does that bother you					
(For example: dawdles, refuses to listen, overactive, cries, interrupts, fights, whines, etc.)					
o 10+ o 8-9 o 6-7 o 4-5 o 1-3					

APPENDIX O

SUMMARY TABLE OF PARENT BEHAVIORS

	Category	Examples
Level 1	**Inappropriate Play Behavior (Play)**	- Parent Directed Play - Competitiveness - Quiz Questions - Insensitive to child's signals/cues
Level 1	**Intrusion on Child's Independence (Intru Ind)**	- Parent assists child with task when unnecessary. - Parent Insists on Completing a Task his/her way
Level 2	**Positive Consequences for Child's Inappropriate**	- Inappropriate Delivery of Tangible - Delivery of verbal and/or non- verbal attention after inappropriate behavior
Level 2	**Inappropriate Commands (Inapp Comm)**	- Ambiguous command - No-Opportunity Commands - Repeated Commands - "Don't", "Stop", or "No" Command without Including other options - Threatening Commands
Level 2	**Lack of Follow Through (Lack Foll)**	- Withdrawing Commands - Ignoring Compliance to Commands
Level 3	**Criticism (Crit)**	- Criticism w/out negative words - Criticism w/ good tone but negative meaning - Negating child's statement or behaviors -Criticism identifying an unacceptable level of behavior
Level 3	**Aggression (Agg)**	- Physical Aggression (yanking/pulling/overly rough) - Verbal Aggression including yelling
	Descriptive Commenting	- Providing an appropriate running commentary on child's play or other positive behavior - Labeling items that child is engaged with or actively interested in
	Praise	- Reinforcing a positive child behavior through attention, a hug, a high five, a smile, verbal praise, or excitement.

APPENDIX P

SUMMARY TABLE OF CHILD BEHAVIORS

Category	Examples
Aggression **(AGG)**	- Hitting - Kicking - Biting
Disruption **(DIS)**	- Banging objects (toy, wall, floor) - Swiping objects
Negative Verbalizations/ Vocalization **(- VERBAL)**	**-** Screaming **-** Swearing **-** Saying unkind, threatening words
Positive Verbalizations/ Vocalizations **(+ VERBAL)**	**-** Neutral or positive statements **-** Attempts to speak **-** Echolalia
# of Parent Commands **(# COM)**	**-** Instructions, commands, or requests made by the parent
# of times Comply with Parent	**-** Completing (or attempting) to complete with request within 5

REFERENCES CITED

Abidin, R. R. (1995). *Parenting Stress Index: Professional Manual* (3rd ed.). Odessa, FL: Psychological Assessment Resources, Inc.

Achenbach, T. M. & Rescorla, L. A. (2012). The Achenbach system of empirically based assessment. Retrieved from http://www.aseba.org/ordering/reliabilityvalidity.html

Baker, B. L., Blacher, J., Crnic, K. A., & EdelBrock, C. (2002). Behavior problems and parenting stress in families of three-year-old children with and without developmental delays. *American Journal on Mental Retardation, 107*(6), 433-444.

Benson, P. R., & Karlof, K. L. (2008). Child, parent, and family predictors of latter adjustment in siblings of children with autism. *Research in Autism Spectrum Disorders*, *2*(4) 583–600.

Brestan, E. V, & Eyberg, S. M. (1998). Effective psychosocial treatments of conduct-disordered children and adolescents: 29 years, 82 studies, and 5,272 kids. *Journal of Clinical Child Psychology*, *27*(2), 180–189.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist, 32*, 513-531.

Carr, E.G. (1994). Emerging themes in the functional analysis of problem of behavior. *Journal of Applied Behavior Analysis, 26*, 157-172.

Chadwick, O., Momcilovic, N., Rossiter, R., Stumbles, E., & Taylor, E. (2001). A randomized trial of brief individual versus group parent training for behaviour problems in children with severe learning disabilities. *Behavioural and Cognitive Psychotherapy*, *29*(02), 151–167.

Croake, J. W. (1977). A history and evaluation of parent education. *The Family Coordinator*, *26*(2), 151-158.

Cuskelly, M., & Gunn, P. (2006). Adjustment of children who have a sibling with Down syndrome: Perspectives of mothers, fathers and children. *Journal of Intellectual Disability Research*, *50*, 917–25.

Dadds, M. R., Schwartz, S., & Sanders, M. R. (1987). Marital discord and treatment outcome in behavioral treatment of child conduct disorders. *Journal of Consulting and Clinical Psychology, 55*, 396–403.

Dosen, A. & Day, K. (2001). *Treating mental illness and behavior disorders in children and adults with mental retardation* (Ed.). Arlington, VA: American Psychiatric Publishing, Inc.

Einfeld, S. L. & Tonge, J. (1996). Population prevalence of psychopathology in children and adolescents with intellectual disability: II. Epidemiological findings. *Journal of Intellectual Disability Research, 40*(2), 99-109.

Emerson, E. (2003). Prevalence of psychiatric disorders in children and adolescents with and without intellectual disability. *Journal of Intellectual Disability Research, 47,* 51-58.

Eyberg, S. M., & Robinson, E. A. (1982). Parent-child interaction training: Effects on family functioning. *Journal of Clinical Child Psychology*, *11*(2), 130–137.

Floyd, F. J., Harter, K. S. M., & Costigan, C. L. (2004). Family problem-solving with children who have mental retardation. *American Journal of Mental Retardation*, *109*(6), 507–24.

Gresham, F. M., & Elliott, S. N. (2008). *Social Skills Improvement System: Rating Scales*. Bloomington, MN: Pearson Assessments.

Gresham, F. M., Elliott, S. N., Vance, M. J., & Cook, C. R. (2011). Comparability of the social skills rating system to the social skills improvement system□: Content and psychometric comparisons across elementary and secondary age levels. *School Psychology Quarterly*, *26*(1), 37-46.

Hanley, G. P., Iwata, B. a, & McCord, B. E. (2003). Functional analysis of problem behavior: A review. *Journal of Applied Behavior Analysis*, *36*(2), 147–185.

Hastings, R. P. (2007). Longitudinal relationships between sibling behavioral adjustment and behavior problems of children with developmental disabilities. *Journal of Autism and Developmental Disorders*, *37*(8), 1485–92.

Hautmann, C., Stein, P., Eichelberger, I., Hanisch, C., Plück, J., Walter, D., & Döpfner, M. (2011). The severely impaired do profit most: Differential effectiveness of a parent management training for children with externalizing behavior problems in a natural setting. *Journal of Child and Family Studies*, *20*(4), 424–435.

Henry, S. A. (1981). Current dimensions of parent training. *School Psychology Review*, *10*(1), 4–14.

Lecavalier, L., Leone, S., & Wiltz, J., (2005). The impact of behaviour problems on caregiver stress in young people with autism spectrum disorders. *Journal of Intellectual Disability Research, 50*(3), 172-183.

Lundahl, B., Risser, H. J., & Lovejoy, M. C. (2006). A meta-analysis of parent training: Moderators and follow-up effects. *Clinical Psychology Review*, *26*(1), 86–104.

Maljaars, J., Boonen, H., Lambrechts, G., Van Leeuwen, K., & Noens, I. (2014). Maternal parenting behavior and child behavior problems in families of children and adolescents with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *44*(3), 501–12.

Marchant, M., Young, K. R., & West, R. P. (2004). The effects of parental teaching on compliance behavior of children. *Psychology in the Schools, 41*, 337-350.

Matson, J. L., Mahan, S., & LoVullo, S. V. (2009). Parent training: A review of methods for children with developmental disabilities. *Research in Developmental Disabilities*, *30*(5), 961–968.

Maughan, D. R., Christiansen, E., Jenson, W. R., Olympia, D., & Clark, E. (2005). Behavioral parent training as a treatment for externalizing behaviors and disruptive behavior disorders□: A meta-analysis. *School Psychology Review*, 34(3), 267–286.

McIntyre, L. L. (2008a). Parent training for young children with developmental disabilities□: Randomized controlled trial. *American Journal on Mental Retardation*, *113*(5), 356-368.

McIntyre, L. L. (2008b). Adapting Webster-Stratton's incredible years parent training for children with developmental delay: Findings from a treatment group only study. *Journal of Intellectual Disability Research*, *52*(12), 1176-92.

McIntyre, L. L., & Phaneuf, L. K. (2008). A three-tier model of parent education in early childhood. *Topics in Early Childhood Special Education, 27*, 214-222.

McWayne, C., & Cheung, K. (2009). A picture of strength: Preschool competencies mediate the effects of early behavior problems on later academic and social adjustment for Head Start children. *Journal of Applied Developmental Psychology*, *30*(3), 273–285.

Neece, C. L., Green, S. a, & Baker, B. L. (2012). Parenting stress and child behavior problems: A transactional relationship across time. *American Journal on Intellectual and Developmental Disabilities*, *117*(1), 48–66.

Nixon, R. D. V. (2002). Treatment of behavior problems in preschoolers: A review of parent training programs. *Clinical Psychology Review*, *22*(4), 525–546.

Orsmond, G. I., Lin, L., & Seltzer, M. M. (2007). Mothers of adolescents and adults with autism: Parenting multiple children with disabilities. *Journal of Intellectual and Developmental Disabilities 45*(4), 257-270.

Patterson, G.R., Reid, J.B., & Dishion, T.J. (1992). A social learning approach (IV). *Antisocial Boys*. Eugene, OR: Castalia.

Phaneuf, L., & Mcintyre, L. L. (2007). Effects of individualized video feedback combined with group parent training on inappropriate maternal behavior. *Journal of Applied Behavior Analysis*, *40*(4), 737-741.

Plant, K. M. & Sanders, M. R. (2007). Reducing problem behavior during care-giving in families of preschool-aged children with developmental disabilities. *Research in Developmental Disabilities 28*(4), 362-385.

Radloff L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401.

Reyno, S. M., & McGrath, P. J. (2006). Predictors of parent training efficacy for child externalizing behavior problems--a meta-analytic review. *Journal of Child Psychology and Psychiatry*, *47*(1), 99–111.

Sanders, M. R., & Christensen, A. P. (1985). A comparison of the effects of child management and planned activities training in five parenting environments. *Journal of Abnormal Child Psychology*, *13*, 101–117.

Sanders, M. R., Markie-Dadds, C., Tully, L. A., & Bor, W. (2000). The Triple P-positive parenting Program: A comparison of enhanced, standard, and self-directed behavioral family intervention for parents of children with early onset conduct problems. *Journal of Consulting and Clinical Psychology, 68*, 624–640.

Serketich, W. J., & Dumas, J. E. (1996). The effectiveness of behavioral parent training to modify antisocial behavior in children: A meta-analysis. *Behavior Therapy*, *27*(2), 171–186.

Shaffer, J. (1995). Multiple hypothesis testing. *Annual Review of Psychology, 46*, 561-584.

Shaw, D. S., & Bell, R. Q. (1993). Developmental theories of parental contributors to antisocial behavior. *Journal of Abnormal Child Psychology, 21*, 493-518.

Sheeber, L. B., Seeley, J. R., Feil, E. G., Davis, B., Sorensen, E., Kosty, D. B., & Lewinsohn, P. M. (2012). Development and pilot evaluation of an internet-facilitated cognitive-behavioral intervention for maternal depression. *Journal of Consulting and Clinical Psychology, 80*, 739–749.

Spaccarelli, S., Cotler, S., & Penman, D. (1992). Problem-solving skills training as a supplement to behavioral parent training. *Cognitive Therapy and Research, 16*, 1–18.

Sparrow, S. S., Cicchetti, D. V., & Balla, D. A. (2005). *Vineland Adaptive Behavior Scales* (2nd ed.). Circle Pines, MN: American Guidance Service.

Verran, J. & Ferketich, S. (1987). Testing linear model assumptions: Residual analysis. *Nursing Research, 36*(2), 127-130.

Webster-Stratton, C. (1984). Randomized trial of two parent-training programs for families with conduct-disordered children. *Journal of Consulting and Clinical Psychology*, *52*(4), 666–678.

Webster-Stratton, C. (1994). Advancing videotape parent training: a comparison study. *Journal of Consulting and Clinical Psychology, 62*, 583–593.

Webster-Stratton, C. (1998). Preventing conduct problems in Head Start children: Strengthening parenting competencies. *Journal of Consulting and Clinical Psychology*, *66*(5), 715–730.

Webster-Stratton, C. (2007). Tailoring the incredible years parenting programs according to children's developmental needs and risk factors. In J. M. Briesmeister & C. E. Schaefer (Eds.), *Handbook of parent training* (pp. 161-200). Hoboken, New Jersey: John Wiley & Sons.

Webster-Stratton, C., Reid, M. J., & Hammond, M. (2001). Preventing conduct problems, promoting social competence: A parent and teacher training partnership in head start. *Journal of Clinical Child Psychology*, *30*(3), 283-302.

Wierson, M., & Forehand, R. (1994). Parent behavioral training for child noncompliance: Rationale, concepts, and effectiveness. *Current Directions in Psychological Science, 3*, 146-150.