Examining the Effects of Parent Training on Parent-Child Interactions and Child Behavior

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CHAPTER I

INTRODUCTION

Developing effective parenting interventions to decrease challenging behavior and increase social-emotional skills is important for ensuring positive outcomes for all children. Recent estimates of children who display challenging behavior indicated the prevalence is increasing (Brennan, Shaw, Dishion, & Wilson, 2012; Dunlap et al., 2006) and tended to be higher in children from low-income populations. Researchers estimated that approximately 39% of boys in Head Start show persistent physical aggression (Kaiser, Cai, Hancock, & Foster, 2002). Children with aggressive and persistent challenging behaviors often are suspended or expelled from preschool. In a seminal study, Gilliam (2005) found young children are expelled at a rate of 6.67 per 1000 children. This rate was 3.2 times the rate for children in K-12th grades (Gilliam, 2005). When young children are suspended from school, they miss out on social skills instruction, and engagement and interactions with peers. The U.S. Department of Health and Human Services Department of Education (2014) issued a suspension and expulsion policy statement that emphasized the need for interventions designed to decrease challenging behavior and increase appropriate social behaviors of young children.

Challenging behavior is predictive of poor academic and social outcomes both in the present and in later life. Children with challenging behavior are more likely to have poor academic and social outcomes as they enter formal schooling (Raver & Knitzer, 2002). They also are more likely to have conflicts with their peers and to display challenging behavior during interactions with peers (Dunlap & Fox, 2011). Challenging behavior also is predictive of poor

social-emotional competence, and having poor social skills is associated with poor academic achievement and negative social outcomes for children (Denham & Brown, 2010; Maxwell & Clifford, 2004). Young children in Head Start are likely to need intentional instruction and support to promote the development of social-emotional skills. For example, the Head Start Impact Study indicated that Head Start had little impact on children's social and emotional competence and approaches to learning (Administration for Children & Families, 2005).

If challenging behavior is not addressed early it may worsen over time, and children are less likely to learn or use appropriate pro-social behaviors to replace the challenging behavior (Campbell, Spieker, Burchinal, & Poe, 2006). In fact, in one study children who were rated lower on a social-emotional competence measure by their teachers when they were in kindergarten were 67% more likely to have been arrested in early adulthood, and they had an 82% higher rate of using drugs and needing public housing (Jones, Greenberg, & Crowley, 2015). Conversely, children who were rated higher on social-emotional competence and used social skills such as cooperating, sharing, providing assistance to others, and handling conflict when they were in kindergarten were more likely to graduate from high school, have a college degree, and have a stable job (Jones et al., 2015). Children who are more competent in their social-emotional skills are also typically better at regulating their emotions and interacting positively with teachers and adults (McKown, Gumbiner, Russo, & Lipton, 2009).

Social-Emotional Development in the Family Context

There are ecological risk factors associated with challenging behavior in young children. Living in poverty is associated with multiple risk factors that put children at risk for academic and behavior difficulties. The Early Childhood Longitudinal Study-Birth Cohort (ECLS-B; Halle et al., 2009) found that children who lived in poverty had lower cognitive scores and received

lower behavior ratings by teachers than children who do not live in poverty. Families with low socioeconomic status (SES) in general also have an increased risk of having children with challenging behavior (Jones et al., 2015; Qi & Kaiser, 2003).

According to an analysis of the ECLS-B data (Halle et al., 2009), mothers with low education were more likely to have a child with challenging behavior. The relation between low education, poverty, and stress may be a contributing factor to this increased risk. In a meta-analysis, Fossum, Morch, Handegaard, and Drugli (2009) found that mothers who were more stressed due to life events and a number of other risk factors were more likely to have a child with challenging behavior. Maternal risk factors increase the likelihood there will be fewer mother-child interactions and those limited interactions are more likely to be negative. For example, Martins and Gaffan (2000) found that maternal depression was related to less secure and more disorganized attachment with young children. When parents lacked the appropriate skills to interact positively with their children, children were more likely to develop severe, persistent challenging behavior and conduct problems (Kazdin, 1997; Odgers et al., 2008).

Young children's challenging behavior can also create stress and strained relationships with the family. Children who display challenging behavior can have a negative impact on siblings and make it more difficult for families to complete routines (e.g., grocery shopping) outside the home (Doubet & Ostrosky, 2015). Further, having a child with challenging behavior can be stressful to parents, leading to more negative interactions between parents and children over time (Doubet & Ostrosky, 2015; Durand et al., 2013). Families with children in Head Start often have more than one of these risk factors and are at increased risk for having a child with social-emotional deficits and challenging behavior (Qi & Kaiser, 2003).

Poor parenting or an inconsistent use of positive parenting practices also was associated with an increased risk of having a child with challenging behavior (Kazdin, 1997). Poor parenting is characterized by harsh discipline, low levels of supervision, and negative or few parent-child interactions. When parents consistently use and model poor social and interpersonal skills, their children may have delays in social-emotional competence. Conversely, when parents model interpersonal social skills such as positive social problem solving and appropriate interactions between adults or adults and children, children had more positive models, better social-emotional skills, and were more compliant (Eyberg & Boggs, 1989). Interventions aimed at increasing positive parent-child interactions give parents tools to model appropriate social behaviors, which may lead to decreases in child challenging behavior.

Parent Training

Positive parent-child interactions are associated with more positive outcomes for children and negative interactions are associated with poorer outcomes (Cook, Roggman, & Boyce, 2011; Dawson, Ashman, & Carver, 2000; Rogoff, 2003; Tronick & Beeghly, 2011). Group social-emotional/ behavioral parent training programs (SE/BPT) are designed to increase parenting skills and decrease children's challenging behavior. Effective SE/BPT programs are based on one or more theoretical approaches, such as applied behavior analysis (ABA), social learning theory, ecological systems framework, or use function-based interventions. Group SE/BPT are effective because they deliver information to more parents at one time (Fettig & Ostrosky, 2014; Webster-Stratton, 2004). Other advantages include parents' feeling supported by other parents, especially for families who are isolated; parents giving each other feedback and learning from multiple exemplars; and increased parental buy-in to the intervention as other parents are also implementing the intervention (Campbell & Palm, 2004).

Reviews of SE/BPT collectively found group parent training programs was effective in decreasing young children's challenging behavior and increasing positive parenting skills (Bennett, Barlow, Huband, Smailagic, & Roloff, 2013). More specifically, several comprehensive reviews and meta-analyses have examined the effects of parent training programs on children's behavior with specific populations. For example, reviews of programs for training parents of children with Attention Hyperactivity Disorder (ADHD) found parent training decreased ADHD symptoms and challenging behavior in young children (Comer, Chow, Chan, Cooper-Vince, & Wilson, 2013; Dretzke et al., 2009; Eyberg, Nelson, & Boggs, 2008; Michelson, Davenport, Dretzke, Barlow, & Day, 2013; Sandler, Schoenfelder, Wolchik, & MacKinnon, 2011; Serketich & Dumas, 1996; Weisz & Gray, 2008). Other reviews have investigated the effects of SE/BPT on parents of children diagnosed with Conduct Disorder (CD) or Oppositional Defiant Disorder (ODD), Dretzke et al., 2009; Furlong, McGilloway, Bywater, Hutchings, Smith, & Donnelly, 2013; Reyno & McGrath, 2006), externalizing behaviors (Forehand, Lafko, Parent, & Burt, 2014; Garbacz, Brown, Spee, Polo, & Budd, 2014), and children with disabilities (Petrenko, 2013).

A recent meta-analysis was conducted on the effects of SE/BPT programs on families and their children, ages 3-8 years old, across categories of disability, risk, and mental health (Schnitz, Hemmeter, & Barton, 2015). Schnitz and colleagues (2015) investigated the effects on children with a range of characteristics as many early childhood programs serve children with a variety of strengths and needs. When choosing a parent training program to implement, there is value in understanding parent training program effectiveness across a range of child characteristics. Group SE/BPT programs may not only reduce challenging behavior and increase social-emotional competence in children who already have social-emotional or behavioral issues,

but they may also reduce the likelihood of challenging behavior of children at risk for developing challenging behavior. In the meta-analysis, parents in the intervention groups had more positive parenting skills post-intervention than parents in the control conditions (Hedge's *g* = .61; Schnitz et al., 2015). Both parent report and observations of child challenging behavior showed children in the intervention groups had less challenging behavior post-intervention (Hedge's *g* = .46 - .51) and more social skills (Hedge's *g* = .34 - .44; Schnitz et al., 2015).

Schnitz and colleagues (2015) found few studies systematically measured treatment fidelity of group parent training sessions with an unbiased observer; and studies received low rigor ratings for failing to describe the intervention, not describing the interventionists' training, and not describing participants in detail. Another limitation of group parent training programs was that parents attended fewer than 70% of sessions and many parents dropped out of the intervention (Herman, Borden, Reinke, & Webster-Stratton, 2011; Webster-Stratton, 1998; Webster-Stratton, Reid & Hammond, 2004). As mentioned above, most studies examined specific populations such as children with ADHD, ODD, or CD (e.g., Webster-Stratton, Reid, & Beauchaine, 2011; Webster-Stratton et al., 2004) and did not include children with and without behavior problems in the same study (Schnitz et al., 2015). Research is needed on group parent training programs that address the social, emotional, and behavioral needs of all children in inclusive settings, such as Head Start programs, serving children with varying needs.

Although parent training without follow-up strategies is the most common strategy for increasing parent skills, group parent training may not be enough to support parents' implementation of strategies in their home (National Institute for Health and Clinical Excellence & Social Care Institute for Excellence, 2006). Several authors have noted that group parent training alone is not enough support for some parents, specifically for parents of children with

severe challenging behavior (e.g., Schnitz at al., 2015; Webster-Stratton et al., 2004). In fact, as many as a fourth to a third of participants may not respond to the intervention (Furlong et al., 2012; Webster-Stratton & Hammond, 1997; Webster-Stratton et al., 2004) and need additional supports to implement strategies with fidelity in their homes. The meta-analysis by Schnitz and colleagues (2015) analyzed the follow-up strategies most commonly used by SE/BPT programs, which included giving parents homework, providing supplemental readings, providing supplemental materials such as books, and phone calls to parents. These individualized supports may be a feasible way to provide follow-up support to parents to increase their parenting skills and outcomes for children with a range of needs.

Positive Solutions for Families Intervention

The *Positive Solutions for Families (PSF)* intervention focused on building the capacity of parents by teaching effective strategies for preventing challenging behavior and promoting social-emotional competence. The *PSF* intervention is a universal intervention that teaches parents both universal and secondary, targeted strategies to address young children's behavior based on the *Pyramid Model* (Figure 1).

Figure 1. The Pyramid Model

The *Pyramid Model* is a comprehensive, tiered framework for addressing children's social-emotional competencies and challenging behavior (Fox, Dunlap, Hemmeter, Joseph, & Strain, 2003). The *Pyramid Model* is grounded in evidence-based research at every tier. At the base of the *Pyramid Model* are high-quality environments, and nurturing and responsive relationships. Strategies associated with this tier of the *Pyramid* include supporting play, conversations with children, descriptive praise, encouragement, schedules and routines, and teaching rules/expectations (Birch & Ladd, 1998; Bodrova & Leong, 1998; DeKlyen & Odom, 1989; Hemmeter, Snyder, Kinder, & Artman, 2011; Howes & Hamilton, 1993; Howes, Philips, & Whitebrook, 1992; Howes & Smith, 1995; Kontos, 1999; Mill & Romano-White, 1999; Peisner-Feinberg et al., 1999; Pianta, Steinberg, & Rollins, 1995). The second tier of the *Pyramid Model* includes targeted practices for promoting social skills and emotional competencies. Practices associated with this level are social problem solving, dealing with anger, making friends, and emotional literacy (Denham & Burton, 1996; Domitrovich, Cortes, & Greenberg, 2007; Mize & Ladd, 1990; Schneider, 1974; Webster-Stratton, Reid, & Stoolmiller, 2008). The top tier of the *Pyramid* uses an individualized planning process for developing behavior support plans to address the needs of young children who have persistent challenging behavior despite systematic implementation of the other tiers of the *Pyramid* (Carr et al., 1999; Duda, Dunlap, Fox, Lentini, & Clark, 2004). As the *Pyramid Model* is implemented with fidelity in classrooms, teacher reports indicated young children's social skills improved and challenging behavior decreased (Fox, Hemmeter, Snyder, Binder, & Clarke, 2011; Hemmeter, Fox, Snyder, & Algina, 2012). The tiered nature of the model makes it ideal for addressing the range of social, emotional and behavioral needs found in young children in Head Start Programs. No research to

date has empirically examined the efficacy of the *Positive Solutions for Families* (PSF) group parent training modules.

The purpose of the current study was to examine the effects of the *PSF* intervention on parent-child interactions and children's challenging behavior and social-emotional skills. It was hypothesized that as parents learn strategies for promoting social-emotional competence in their children, children's social-emotional skills were likely to improve and challenging behavior would decrease. Two major adaptations were made to the original *PSF* parent training modules. First, the *PSF* intervention includes seven group parent training sessions based on the *PSF* modules and follow-up phone calls with parents after each group parent training session. An additional session on how to structure routines was added to the original *PSF* intervention. This session (Session 4) was added to teach parents how to structure routines such as bedtime, mealtimes, or going out in the community; as routines are often when challenging behavior occurs. Previous research has shown routines influence children's social-emotional development and increasing the predictability and consistency of routines helped children know what to do and be more successful in routines (Dunst, Raab, Trivitte & Swanson, 2010; Ostrosky, Jung, Hemmeter, & Thomas, 2005). Table 1 contains an overview of each group parent training session.

Table 1

Content of Positive Solutions for Families

Session	Title	Content
1. Making a Connection	Building relationships, quality time, positive comments, and encouragement	Discuss the purpose of the group and the importance of social-emotional development for young children. Discuss goals and ground rules and learn about our families. Identify the importance of building positive relationships with children. Discuss the "power" of using positive comments and encouragement.
2. Making it Happen	Play as a powerful parenting practice, supporting the development of friendship skills, encouraging positive behavior	Discuss *Things to Try at Home* from previous session and link to the importance of supporting social-emotional development. Understand how play can be a powerful parenting practice. Learn ways to help children develop friendship skills. Link building relationships, using positive comments/encouragement, and play to children's behavior.
3. Why Do Children Do What They Do?	Determining the meaning of behavior, making expectations clear, developing and teaching household rules	Examine why children do what they do. Practice ways to determine the meaning of behavior. Understand how to make expectations clear for children. Understand effective ways to develop and teach household rules.
4. Routines, Routines, everywhere	Understanding how to structure routines, giving directions	Define routines and identify common routines in the home and community. Examine ways to structure routines so they are predictable and have clear beginning, middles, and ends for children. Learn how visuals can help teach children the routines. Understand how to give clear directions to children.
5. Teach Me What to Do	Emotional vocabulary, managing anger and handling disappointment, problem solving	Define the concept of emotional vocabulary, identify feeling words and identify effective ways to teach feeling vocabulary. Demonstrate the use of books to support emotional vocabulary and social-emotional development. Identify how the turtle technique can be used to help children cope with feelings of anger and disappointment. Learn how to teach problem-solving skills.
6. Facing the Challenge Part 1	Strategies to promote positive behavior	Examine specific strategies that can be used to promote positive adult and child behavior in home and community settings.

7. Facing the Challenge Part 2	Problem solving, challenging behavior, and everyday routines	Identify that challenging behavior has meaning. Identify the meaning of behavior by examining what happens before and after the challenging behavior. Identify the three parts of a behavior support plan: preventions, new skills to teach, and new responses. Learn to use the *Family Routine Guide* to identify supports for use with children during daily routines.

The second additional component of the intervention involved follow-up phone calls to family members with performance-based feedback. Based on the literature, follow-up phone calls may be needed between group parent training sessions to meet the needs of all families (Hahlweg, Heinrichs, Kuschel, Bertram, & Naumann, 2010; Leung, Fan, & Sanders, 2013; Sanders, 2008; Schnitz et al., 2015). The follow-up phone calls in this study provided individualized feedback to parents based on a goal the parent set in the group parent training sessions. Previous studies using follow-up phone calls did not include performance-based feedback (Sanders, 2008), which might be a critical support element.

The study addressed the following research questions:

1) Does the *PSF* intervention increase parents' use of praise, questions, positive following, and positive touch?
2) Does the *PSF* intervention decrease parents' use of commands, negative talk, and negative touch?
3) Does the *PSF* intervention decrease observed and parent-reported challenging behavior in children and increase parent-reported child social skills?
4) Do parents who have more stress make fewer gains in positive parenting strategies?
5) Are parents' in the intervention group satisfied with the *PSF* intervention?

CHAPTER II

METHODS

Programs

The study occurred in two Head Start programs and one early childhood center. One of the Head Start programs was comprised of centers in suburban areas and one was in an urban area. The suburban Head Start program (Program 1) served approximately 500 children in 14 centers across 9 counties surrounding Davidson County. Parents from four different centers in the suburban program participated in this study. The urban program (Program 2) served over 2000 children in seven Head Start Centers and three partner sites throughout Davidson County. This program was the largest provider of early childhood education in the county. Parents from six centers and one partner site in the urban program participated in the study.

An additional early childhood center (Program 3) that was not a Head Start program also was included. This program was one of three early childhood learning centers administered by the public school system in Davidson County. This center served approximately 200 children in 13 classrooms. Parents in this program had a range of socio-economic backgrounds. Table 2 describes demographic information about each program (suburban, urban, early learning center).

Table 2

Center Demographics by Program

	Suburban Program (*n* = 4) Mean (Range)	Urban Program (*n* = 5) Mean (Range)	ELC Program (*n* = 1) Mean
Total enrollment	68.75 (37-100)	182 (172-251)	248
Ratio of staff at center per child	5.0 (8-22)	5.41 (19-44)	5.76
Average children per classroom	15.2 (2-9)	17.5 (6-13)	19.08
Ratio of FSS per child	39.2 (1-3)	53.5 (2-5)	0
Ethnicity			
Hispanic	33.90 (10-64.86)	2.45 (1-6)	5
Asian	2.17 (0-4)	0.5 (0-1)	0
Black	27.58 (10.81-56)	89.60 (73-98)	60
White	13.95 (10.81-20)	4.36 (1-12)	35
Other	13.95 (0-16.25)	4.46 (0-8)	0
% of children who are ELL	18.66 (.65-33)	2 (1-3)	5
% of children with IEPs	4.25 (1-8)	4.25 (1-12)	12
Biggest needs of families	1. English classes 2. Money management 3. Addressing child challenging behavior	1. GED classes 2. Addressing child challenging behavior 3. Job training	1. Supporting child academic needs 2. Using community resources 3. Addressing child challenging behavior
Community	Suburban to medium size city	Large urban city	Large urban city

Participants

Recruitment. The study was conducted over the course of two years. Groups were conducted in the spring of 2014, the fall of 2014, and the spring of 2015. Throughout this paper, *parent* will be used to refer to any primary caregiver of a child such as a grandparent, uncle, aunt, and so on. The student investigator met with the center managers from the Head Start centers (13) and provided an overview of the study and asked if they would like to offer the study to their parents. The study procedures, benefits/risks, time requirement, and requirements were reviewed. If center managers agreed to participate in the study, parents were then recruited from the centers.

All but one parent training group included parents from only one center. To recruit parents, the student investigator sent home flyers about the study and a letter from the center manager. The flyers also were posted in the centers and in each classroom. The student investigator presented at a parent orientation for all the Head Start centers in both programs and presented at parent meetings throughout the study. The student investigator met with interested parents in small groups or individually at the centers during informational meetings where the study procedures, benefits/risks, and time requirements were reviewed. Parents could choose to sign the consent during the informational meeting or take consent forms home and return them to a designated box located in the center. Parents were not required to attend the informational meeting to participate in the study.

Inclusion criteria. Inclusion criteria for parents were: (a) had at least one child between 3 and 5-years, (b) could write and speak English fluently (parent report) to complete the data collection forms and participate in phone calls, and (c) were available to attend all group parent training sessions. If parents had more than one child who qualified, the child who the parent

reported having the most challenging behavior was included. If there was more than one caregiver in the household who wanted to participate, both were invited to the group parent training sessions, but one parent was identified as the primary parent to complete all assessments. Across all groups, only one family had more than one caregiver attend group parent training sessions.

Retention. During the course of the project, the student investigator had difficulty recruiting and retaining parents. Table 3 provides an overview of recruitment activities and the number of parents contacted during each activity.

Table 3

Parent Recruitment Activities

Number	Activity
21	Parent meeting presentations
84	Visits to schools at drop off and pick up to recruit families
233	Families called an average of 10 times
13	Centers where flyers were distributed (8 centers with 200 kids, 4 centers with 75 kids, 1 center with 28 kids)
13	Met with teachers, family service specialists, and center directors to present project and ask for help recruiting
86	Consented families
53	Families who have completed the intervention and post paperwork
16	Families who completed pre paperwork, but did not complete post paperwork
17	Families signed consent, but did not complete all pre paperwork

A flow chart of participants and their attrition at different stages of the intervention is provided in Figure 2.

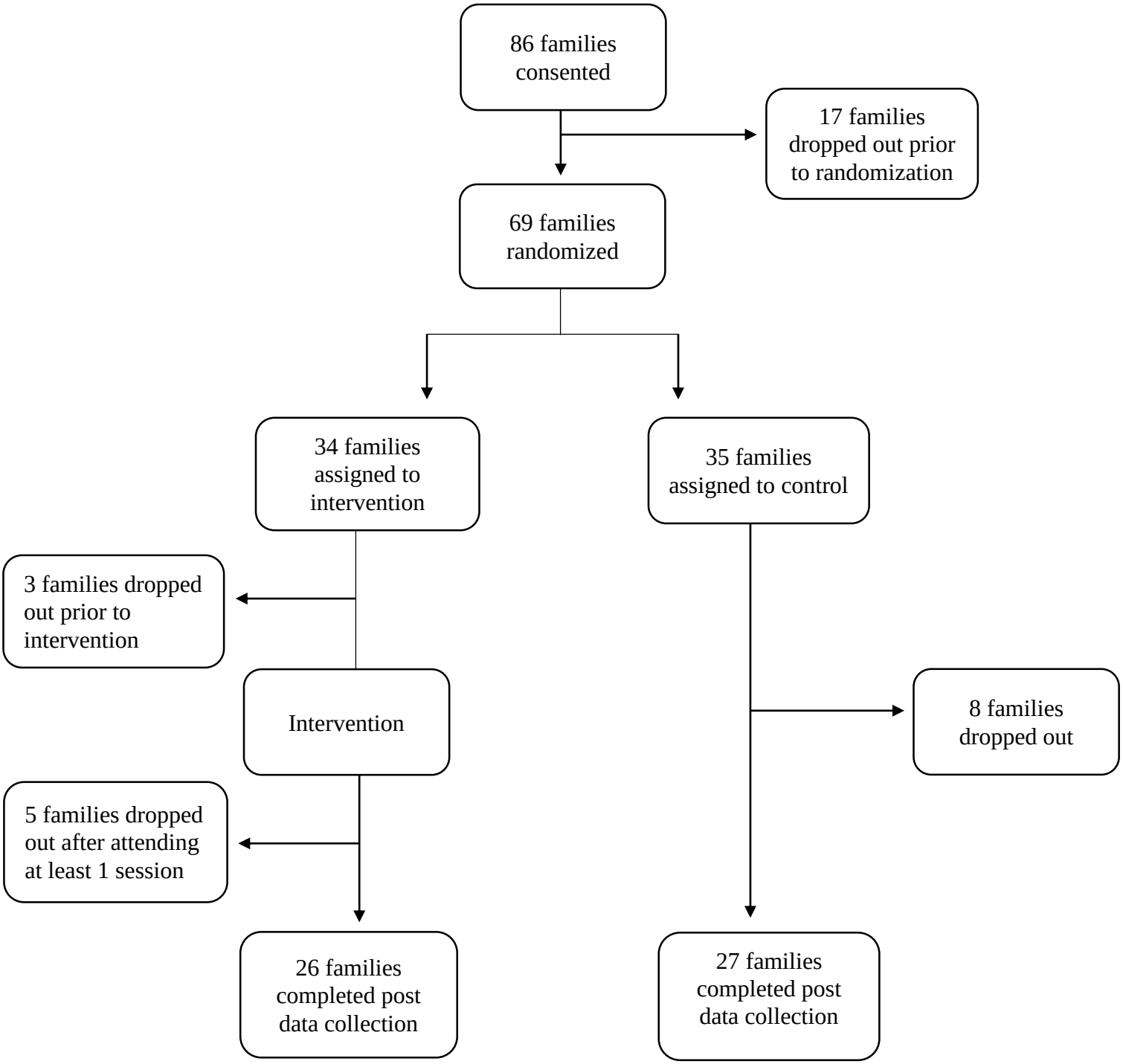

Figure 2. Flow Chart of Participants and Attrition

Eighty-six parents consented to participate in the study. Prior to random assignment, five parents withdrew because they did not have proficient English to complete the phone calls. Twelve parents did not complete pre-intervention data collection. Most parents who did not complete pre-intervention data collection did not complete the Parenting Stress Index (PSI; Abidin, 2012) and/or did not complete videos. Thus, sixty-nine parents completed all pre-intervention data collection and were randomly assigned to either the intervention (n = 34) or control (n = 35) condition. Of the parents assigned to the intervention condition, three attended no sessions, four parents dropped out after the first session, and one additional parent dropped out after two sessions. Of the parents who came to at least one session and then dropped out; two parents lost custody of their children, one reported their child did not have challenging behavior and they did not have time to complete the intervention, and two parents reported other stressors that prevented them from attending the group parent training sessions. Thus, twenty-six parents assigned to the intervention condition (76.47%) completed all pre and post-intervention paperwork. Of the 35 parents randomly assigned to the control condition, six parents were unable to be contacted at post-intervention, and two parents stated they were no longer interested in participating in the study post-intervention. Twenty-seven parents assigned to the control condition completed all pre- and post-intervention paperwork (77.14%). Thus, 53 parents completed all study procedures.

Demographics. Table 4 provides an overview of the parent demographics organized as follows: a) a completed sample (n = 53) of the parents who completed the intervention; and b) an intent-to-treat (ITT; n = 69) sample that included all parents who were randomly assigned regardless of whether they completed the intervention.

Table 4

Parent Demographic Information by Condition and Group

	Completed Intervention (n = 26)	Completed Control (n = 27)	t-test (p- value)	ITT Intervention (n = 34)	ITT Control (n = 35)	t-test (p- value)
Avg. age	34.21	32.30	-0.72 (.47)	33.58	31.80	-0.78 (.44)
% Ethnicity						
Black	57.69	66.67	0.66 (.51)	67.64	68.57	0.08 (.94)
White	30.77	18.52	-1.02 (.31)	23.53	17.14	-0.65 (.52)
Hispanic	3.85	7.41	0.56 (.58)	2.94	8.57	1.00 (.32)
Asian	3.85	3.70	-0.03 (.98)	2.94	2.86	-0.02 (.98)
Other	0	3.70	-1.00 (.33)	0	2.96	1.00 (.32)
Decline	3.85	0	1.00 (.32)	2.94	0	1.00 (.32)
% One parent	34.62	37.04	-0.10 (.92)	50.00	34.28	-0.58 (.56)
% Biological mothers	80.77	74.07	-0.57 (.57)	85.29	74.29	-1.13 (.26)
% Father only	0	3.70	-1.00 (.33)	0	5.71	1.44 (.16)
% High school graduate	88.46	88.89	0.50 (.62)	85.30	94.29	1.23 (.23)
% Employed full time	26.92	37.04	-0.69 (.50)	55.88	37.14	-1.46 (.15)
% Employed part time	15.38	14.81	-0.06 (.95)	11.76	17.14	0.68 (.50)
Avg. # of Siblings	1.96	1	-2.96 (.01)	2	.97	-3.72 (.00)
% Speak English primary	92.31	85.19	-0.81 (.42)	94.12	85.71	-1.16 (.25)
% Receive govt. assist	88.46	77.78	-1.03 (.31)	88.24	85.71	-0.93 (.36)
% Low SES	92.31	92.59	-0.02 (.99)	91.17	91.42	0.07 (.97)
% Have family with bx problem	46.15	33.33	-0.94 (.35)	47.06	31.43	-1.33 (.19)

The quantitative data reported in the demographics narrative refers to the ITT sample unless otherwise indicated. The majority of parents (92%) self-reported as low income and had several other risk factors associated with having a child with challenging behavior such as low maternal education and parental stress. There were 66 female parent participants and 3 male parent participants.

There were 34 male child participants and 35 female child participants in the ITT sample (Table 5). Eighty-one percent of parents reported their child had challenging behavior in the home, and 45% of families reported they had concerns about how their child got along with others. The average age of the children was 4.2 years old (R = 3 – 5).

Table 4

Child Demographic Information by Condition and Group

	Completed Intervention (n = 26)	Completed Control (n = 27)	t-test (p-value)	ITT Intervention (n = 34)	ITT Control (n = 35)	t-test (p-value)
% Ethnicity						
Black	53.85	66.67	0.94 (.35)	64.71	65.71	0.09 (.93)
White	26.92	14.81	-1.08 (.29)	20.59	14.29	-0.68 (.50)
Hispanic	3.85	3.70	-0.03 (.98)	2.94	5.71	0.56 (.58)
Asian	3.85	3.70	-0.03 (.98)	2.94	2.86	-0.02 (.98)
Other	7.69	11.11	0.42 (.68)	5.88	11.43	0.81 (.42)
Decline	3.85	0	0.40 (.66)	2.94	0	0.28 (.67)
% Male	57.69	40.74	-1.22 (.23)	52.94	45.71	-0.59 (.56)
Behavior concerns*	1.46	0.89	-3.11 (.00)	1.35	1	-2.07 (.04)
Academic concerns*	0.58	0.22	-1.91 (.06)	0.50	0.29	-1.25 (0.21)
Independence concerns*	0.38	0.22	-0.92 (.36)	0.38	0.26	-0.79 (0.43)
Get along with others concerns*	1.04	0.33	-3.66 (.00)	0.88	0.40	-2.66 (.01)

*These items were rated as 0 (never), 1 (sometimes), 2 (often)

Setting

All group parent training sessions were held in the local Head Start centers/early learning center where the children were enrolled or at a center in close proximity. Video data collection occurred in the parents' home for all but three parents. One of these three parents completed videos at a local community center; two completed videos at the Head Start center after school hours.

Design

A cluster randomized control trial (RCT) was used to evaluate the effects of the *PSF* intervention. A RCT was used as it is the most rigorous design to compare two groups and evaluate an intervention. After all parents in a center consented and completed all pre-intervention paperwork, children were ranked on their standardized problem behavior scale score of Social Skills Improvement System-Rating Scales (SSIS; Gresham & Elliott, 2008). Using SSIS problem behavior scores, children were matched in pairs and then randomly assigned to intervention or control using a random number generator. If there was an odd number of children, a child from the middle of the score range was assigned to condition by using a random number generator. Thirty-four children were randomly assigned to treatment and 35 to control. Data collection occurred at two time points: prior to and post-intervention. Parents in the control group were offered the group parent training after post data collection.

Measures

Measures were collected at the center, family, and child level. Each type of data and data collection strategy is described below.

Center measures. Demographic information on the center (Table 2) and family service specialists, and a school-wide measure of behavior support was collected in each center.

***School and personnel demographic questionnaire*.** Two self-report questionnaires were used to describe the centers. Both were collected at pre-intervention only. The center demographic questionnaire contained information on the children served, services and resources provided, community partnerships, and parent characteristics (Appendix A). The family service specialist (FSS) questionnaire provided information on the services and training activities provided to families, and the background and training of the family service specialists (Appendix B). The FSS questionnaire was collected to determine the level of support the FSS provided to parents and if parents were offered any other behavior support to address children's needs from the school. The FSS data are presented by program (Table 6).

Table 6

Family Service Specialist Demographic Information by Program

	Program 1 (n = 4)	Program 2 (n = 10)
% Bachelors or higher	100%	100%
Length FSS (years)	5.4 (1- 10)	10.4 (1-22)
Length in Head Start (years)	5.4 (1- 10)	11.16 (7- 22)
Hours training a year	36-100	20-40
Avg. # of families served/yr	57 (40- 78)	55 (45- 65)
Avg. frequency of contact	Daily to weekly	Weekly to Monthly
Best communication methods	Phone, face-to-face, home visit	Phone, face-to-face
Type trainings offered to families	Social-emotional behavioral parent training	None by FSS
No. FSS reported received training in social-emotional or addressing challenging behavior	4	3
Avg. parent attendance at trainings offered by Head Start	10-30%	1-5%

School-wide behavior support. The PreSET was used to (Steed, Pomerleau, & Horner, 2012) measure the level of program-wide behavior supports present at each center. The PreSET (2012) measures included an interview with the school manager, short classroom observations, and teacher interviews; all conducted by the student investigator. The PreSET psychometrics included inter-rater reliability, internal consistency, and construct validity compared to the Teaching Pyramid Observation Tool (TPOT; Hemmeter, Fox, & Snyder, 2008; Steed & Webb, 2013). Inter-rater reliability was strong with an average alpha of .95, and internal consistency was moderately strong with a Cronbach's alpha of .91. The PreSET was highly correlated with the TPOT items that were similar (.41-.58) and was less correlated with domains that were not related to items on the TPOT (.18-.25). The *PSF* intervention was based on the *Pyramid Model* and therefore, the PreSET was an appropriate measure of the behavior supports provided to children related to the intervention. There were differences between the programs on the PreSET at pre-intervention (Table 7). Program 3 (school-based) implemented the most program-wide positive behavior support practices (75.01%) followed by Program 1 (suburban; 59.65%). Program 2 (urban) implemented the least amount of program-wide positive behavioral supports (36.18%).

Table 7

PreSET Scores by Program

	Suburban Program (n = 4)	Urban Program (n = 5)	ELC Program (n = 1)
Expectations defined	79.17% (75.00-87.50)	62.50% (25.00-75.00)	87.50%
Behavior expectations taught	72.22% (50.00-83.33)	45.83% (33.30-66.67)	66.67%
Responses to appropriate and challenging behavior	61.90% (50.00-71.43)	23.21% (14.29-42.56)	64.29%
Organized and predictable environments	73.33% (60.00-90.00)	40.00% (20.00-60.00)	60.00%
Monitoring and decision making	50.00% (37.50-75.00)	40.63% (25.00-87.50)	50.00%
Family involvement	80.00% (60.00-100)	35.00% (20.00-50.00)	70.00%
Management	0.00%	0.00%	83.33%
Program support	83.33% (75.00-87.50)	71.88% (62.50-75.00)	87.50%
Average	59.65% (55.25-66.04)	36.18% (33.93-43.99)	71.05%

Parent measures. Three parent measures were used; two were completed prior to intervention and one completed pre-and post-intervention.

Parent and child demographic questionnaire. A researcher created demographic questionnaire was completed by each parent (Appendix C). The questionnaire requested information on the level of education of family members, number of family members in the household, ethnicity of the family members, income, language used in the home, and exposure to supports and interventions around challenging behavior (Tables 3 & 4). There were no significant differences between groups on parent demographic variables in both the completed and ITT groups.

T-tests indicated the parents in the control group reported significantly fewer concerns with how their child got along with others and fewer concerns about their child's behavior at pretest in both the completed and ITT groups. The number of siblings was also significantly different at pretest in both samples as families in the intervention group had more children than families in the control group. There were no significant differences between other child demographic variables at pretest in the completed and ITT samples.

Parenting Stress Index (PSI). Parents completed the PSI (Abidin, 2012) prior to intervention. This instrument was used in the analysis of the role of parent stress on parent behavior. The PSI (2012) was a 126-item parent report measure of child challenging behavior and parent adjustment. The instrument yielded both child and parent scores that are summed to yield a total stress score that indicates the overall stress in the rater's life. The PSI has good alpha coefficient reliability ranges from .78 to .88 for Child Domain subscales, from .75 to .87 for Parent Domain subscales, and total score reliability of .95 (Abidin, 1990). The measure had an adequate degree of internal consistency with reliability coefficients for child and parent domain

subscales and the total stress scale which were at least .96. Test-retest reliability coefficients range from .55 to .82 for the child domain, from .69 to .91 for the Parent Domain, and from .65 to .96 for the Total Stress score (Abidin, 1990). The PSI is a commonly used index to assess stress of parents who live in poverty (Abidin, 1990; e.g., Webster-Stratton & Hammond, 1997; Webster-Stratton, Kolpakoff, & Hollinsworth, 1989). A *t*-test indicated there were no statistically significant differences between the intervention and control groups prior to intervention in the completed and ITT samples (Table 8). The average parenting stress scores for both conditions were within the normal range.

Table 8

Pre-Intervention Parenting Stress Index Scores by Condition and Group

Domains	Completed Intervention (n = 26)	Completed Control (n = 27)	t-test (p-value)	ITT Intervention (n = 31)	ITT Control (n = 29)	t-test (p-value)
Child Total	119.29 (79-174)	112.72 (68-188)	-0.80 (.42)	116.3 (55-174)	112.48 (68-188)	-0.50 (.62)
Adult Total	123.00 (86-176)	118.64 (71-175)	-0.58 (.57)	120.67 (74-176)	117.93 (71-175)	-0.58 (.69)
Total Stress	242.30 (177-327)	231.36 (139-330)	-0.12 (.90)	236.97 (129-327)	230.41 (139-330)	-0.12 (.60)
Life Stress	13.33 (0-62)	12.91 (0-37)	-0.84 (.41)	14.00 (0-62)	12.04 (0-37)	-0.62 (.54)

Parent child interaction videos in play and routines. Prior to and following intervention, parent-child interactions were video recorded. The purpose of the video-recorded interactions was to measure changes in parent-child interactions as a result of the intervention. Parents were recorded for 10 min in a parent selected routine the parent reported to be challenging and 10 min in a parent selected play routine that included activities such as reading with their children or playing with toys. Parents were encouraged to film the same routine both pre and post-intervention. All videos were at least 10 min. When video recordings were longer than 10 min, the last 10 min of the recording was coded.

In this first four parent groups, the parents (9 control and 8 intervention parents pre-intervention and 7 control and 7 intervention parents post-intervention) made the video recordings themselves either through their personal phones or by checking out a project camera. The process for getting video recordings from parents had to be refined based on difficulties with the first four groups. When parents borrowed camcorders from the project, often they borrowed the camcorders for an extended period despite multiple attempts by the researcher to obtain the camcorders in a shorter time frame. When parents used their phones to record the parent-child interactions, the videos often were of poor quality and had to be rerecorded. Therefore, the research team recorded the parent-child interactions in routines and play both pre-and post-intervention for all subsequent parents. The research team collected 26 control and 28 intervention parent videos pre-intervention and 18 control and 18 intervention parent videos post-intervention. After the videos were collected the student investigator watched the intervention parent videos to learn about the parent-child interactions and to inform feedback on the phone calls. No specific feedback was given to parents about the video interactions at any

time. The videos were coded using the Dyadic Parent-Child Interaction Coding System (DPICS; Eyberg, Nelson, Ginn, Bhuiyan, & Boggs, 2013).

The DPICS (Eyberg et al., 2013) is a widely researched event sampling observational code used to measure parent-child interactions and consists of 29 behavior categories. The DPICS was standardized with children ages 3 to 6, including children who live in poverty. The DPICS items have demonstrated acceptable reliability, convergent validity, and discriminative validity (Eyberg, Nelson, Duke, & Boggs, 2004). The DPICS has an internal reliability of .67. The internal consistency coefficient was .73 in a study with children enrolled in Head Start (Webster-Stratton, Reid, & Hammond, 2001). Maternal reports of child behavior problems were strongly positively associated the DPICS (Child Behavior Checklist, Achenbach, 1998, r =.16). The tool had moderate to strong inter-observer reliability as demonstrated in multiple studies (e.g. Bessmer, Brestan, & Eyberg, 2005). In previous studies, the DPICS was sensitive to changes due to the intervention with children enrolled in Head Start (Reid, Webster-Stratton, & Beauchaine, 2001; Webster-Stratton et al., 2011).

For the current study, the following subset of parent behaviors were measured: *Commands* (direct and indirect), *Praise* (labeled and unlabeled), *Positive Touch*, *Negative Touch*, *Questions* (information and description questions), and *Positive Following* (behavior descriptions and reflections). *T*-tests were run to determine if there were any differences between groups prior to intervention (Table 9). There were significant differences on the praise and positive touch items of the DPICS (Eyberg et al., 2013) in the completed sample indicating parents in the control group used more praise and positive touches than the intervention group prior to intervention. The ITT group had no significant differences on the DPICS variables prior to intervention.

Table 9

Pre-Intervention Dyadic Parent Child Interaction Coding System Scores by Condition and Group

Category	Completed Intervention Pre (n = 25)	Completed Control Pre (n = 25)	t-test (p–value)	ITT Intervention Pre (n = 34)	ITT Control Pre (n = 35)	t-test (p–value)
Play Video						
Praise	1.69(0-20)	3.80(0-10)	2.47 (.02)	2.63(0-20)	3.67(0-10)	0.95 (.35)
Questions	21.46(0-78)	24.20(0-83)	0.56 (.58)	23.94(0-78)	23.82(0-93)	-0.02 (.98)
Positive Following	4.69(0-20)	6.04(0-20)	0.87 (.38)	5.46(0-20)	5.74(0-20)	0.18 (.85)
Commands	12.39(0-35)	16.04(0-58)	0.97 (.34)	15.37(0-53)	15.81(0-82)	-0.12 (.91)
Negative Talk	1.26(0-7)	0.60(0-10)	-1.50 (.14)	1.27(0-7)	0.56(0-10)	-1.69 (.10)
Positive Touch	1.62(0-14)	5.76(0-50)	1.84 (.07)	3.27(0-24)	5.44(0-50)	1.00 (.32)
Negative Touch	0.38(0-3)	0.60(0-4)	0.74 (.46)	0.85(0-8)	0.56(0-4)	-0.75 (.46)
Routine Video						
Praise	1.42(0-24)	2.41(0-21)	1.73 (.09)	2.18(0-20)	2.11(0-8)	-0.06 (.95)
Questions	21.46(0-67)	21.13(0-66)	-0.09 (.93)	21.78(0-78)	19.62(0-61)	-0.54 (.59)
Positive Following	6.19(0-18)	5.54(0-20)	-0.52 (.61)	6.09(0-20)	4.77(0-20)	-1.15 (.25)
Commands	18.34(0-52)	20.54(0-62)	0.62 (.54)	20.30(0-53)	19.23(0-69)	-0.27 (.78)
Negative Talk	1.53(0-9)	1.66(0-5)	0.20 (.83)	1.58(0-7)	1.23(0-9)	-0.59 (.55)
Positive Touch	2.65(0-8)	3.83(0-9)	1.10 (.28)	2.52(0-24)	3.73(0-19)	1.28 (.21)
Negative Touch	0.73(0-7)	0.71(0-6)	-0.06 (.95)	0.57(0-8)	0.81(0-5)	0.64 (.53)

Interobserver agreement (IOA). The student investigator attended a conference session on reliability with the DPICS (Eyberg et al., 2013), read the training manual, practiced coding videos, and then master coded all videos used for reliability. Three research assistants (RAs) were trained to 80% agreement on the DPICS (Eyberg et al., 2013) using video samples of parent-child interactions. The RAs met 80% agreement criteria over three consecutive coding sessions before data coding began. To ensure integrity of the data, videos were coded by observers blind to treatment condition. After coding began, IOA data were collected throughout the study and evenly distributed across intervention and control, and pre and post-intervention. IOA was calculated using the Gross/total agreement method (smaller of two observers' counts / larger of counts) for each DPICS item (Bijou, Peterson, & Ault, 1968). IOA was assessed on both pre and post-intervention videos equally, for a total of 34.51% (78/ 226) of videos. Reliability ranged from 61.20 to 81.02%. The average reliability across items and videos was 74.49% (Table 10). Interobserver agreement was on average higher for routine videos than play videos. There was a statistically significant difference on the average reliability across all DPICS categories when comparing pre routine and play videos (t = -3.00, p = .02). There were no statistically significant differences on the average reliability between pre and post play videos (t = 1.00, p = .36), pre and post routine videos (t = 2.32, p = .06), and post routine and play videos (t = -2.11, p = .08).

Table 10

Gross Method Dyadic Parent-Child Interaction Coding System Reliability Pre/Post

Category	Pre Mean % (Range)	Post Mean % (Range)
Play Video		
Praise	71.31 (0– 100)	75.33 (0 – 100)
Questions	83.73 (44.09 – 100)	79.89 (52.63 – 100)
Positive Following	69.91 (0 – 100)	70.48 (0 – 100)
Commands	84.66 (28.57 – 100)	79.85 (15.38 – 100)
Negative Talk	76.61 (0 – 100)	58.57 (0 – 100)
Positive Touch	55.76 (0 – 100)	64.68 (0 – 100)
Negative Touch	60.76 (0 – 100)	50.00 (0 – 100)
Routine Video		
Praise	72.72 (0 – 100)	79.67 (0 – 100)
Questions	85.56 (35.71 – 100)	83.32 (37.50 – 100)
Positive Following	80.75 (12.50 – 100)	67.42 (0 – 100)
Commands	91.32 (66.67 – 100)	80.24 (0 – 100)
Negative Talk	84.97 (0 – 100)	61.37 (0 – 100)
Positive Touch	81.94 (25.00 – 100)	77.87 (0 – 100)
Negative Touch	71.43 (0 – 100)	58.75 (0 – 100)

Kappa (Cohen, 1960) also was assessed to determine the proportion of the total agreement between observers not explained by chance. Kappa is based on the chance agreement of occurrence and non-occurrence agreement and is affected by the base rate of behaviors (Bruckner & Yoder, 2006). In this study, the negative touch, negative talk, and positive touch items had low base rates and the questions item had high base rates which make it difficult to have high Kappa agreement because chance agreement is high for low and high base rates of behavior (Brucker & Yoder, 2006). In this study, Kappa indicated all reliability data were greater than chance, but most items resulted in poor to moderate agreement (Table 11). The negative talk and negative touch items in the routine videos were moderately high, indicating there is moderately high probability greater than chance that the data are accurate.

Table 11

Summary of Kappa by DPICS Item and Video

	Play Pre (n = 19)	Play Post (n = 20)	Routine Pre (n = 20)	Routine Post (n = 19)
Praise	.36	.44	.46	.47
Questions	.21	.03	.09	.15
Positive Following	.18	.30	.33	.27
Commands	.13	.14	.19	.21
Negative Talk	.14	.54	.68	.24
Positive Touch	.35	.40	.52	.51
Negative Touch	.25	.54	.74	.51

Child measures. There was one parent rating of child behavior and an observation of child behavior pre- and post-intervention.

Social Skills Improvement System Rating Scale. The SSIS (Gresham & Elliott, 2008) was completed by parents pre- and post-intervention. The tool measures social skills, problem behavior, and academic competence of children ages 3-18 years based on parent ratings. Standard scores and percentile ranks were provided for each scale. The average reliability of the Social Skill and Problem Behavior scales is .94 for the national sample. The SSIS has adequate test-retest and interrater reliability coefficients. Test-retest score reliability ranged from .70 to .92 with a mean adjusted scale coefficient of .86; and an interrater reliability coefficient range of .37 to .70 with a mean adjusted scale coefficient of .56. The *t*-test indicated there were no significant differences between groups on the SSIS (2008) prior to intervention in the ITT analysis, but there were significant differences between groups on the problem behavior scale in the completed sample (Table 12). Prior to intervention, parents in the control condition rated their children as having less challenging behavior than parents in the intervention condition.

Table 12

Pre-Intervention Social Skills Improvement System Scores by Condition and Group

	Completed Intervention (n = 26)	Completed Control (n = 27)	t- test (p-value)	ITT Intervention (n = 34)	ITT Control (n = 35)	t- test (p-value)
Social Skills	82.73(52-117)	89.07(61-125)	1.54 (0.12)	85.38(52-117)	90.60(56-117)	1.43 (0.16)
Problem Behavior	114.73(79-160)	105.48(83-154)	-2.00 (0.05)	110.29(79-160)	106.26(83-154)	-1.01 (0.32)

Most (49; 22 intervention, 27 control) child participants were within 1 standard deviation of the mean on the Problem Behavior scale of the SSIS (Gresham & Elliott, 2008) at pre-test, there were also twelve children (7 intervention, 5 control) between 1 and 2 standard deviations above the mean, and eight children (4 intervention, 4 control) who scored more than two standard deviations above the mean on the Problem Behavior scale at pre-test.

There were 11 children in the control condition and 15 in the intervention condition that were more than 1 standard deviation below the normed mean on social skills scale prior to intervention. The other 24 children in the control condition and 19 children in the intervention condition fell within one standard deviation of the normed mean on the Social Skills scale of the SSIS (Gresham & Elliott, 2008).

Child challenging behavior. Child challenging behavior was coded from the parent-child videos both pre- and post-intervention using event sampling. Coders scored an instance of challenging behavior when the behavior met the definition of challenging behavior from the TPOT (Appendix D; Hemmeter et al., 2008). The TPOT is a widely used tool for classroom observations, and the challenging behavior item was applicable to the home setting. There were no significant differences in child challenging behavior prior to intervention between the intervention and control groups in either the completed or ITT samples (Table 13).

Table 13

Pre-Intervention Observations of Child Challenging Behavior during Play and Routine Videos

	Completed Intervention (n = 25)	Completed Control (n = 25)	t- test (p-value)	ITT Intervention (n = 34)	ITT Control (n = 35)	t- test (p-value)
Play Video	0.19 (0-6)	0.33 (0-4)	0.62 (.54)	0.17 (0-4)	0.29 (0-4)	0.62 (.54)
Routine Video	0.44 (0-3)	0.25 (0-3)	-0.90 (.37)	0.39 (0-5)	0.16 (0-4)	-1.51 (.14)

Additional behavioral support. Parents in both the intervention and control conditions completed the additional support questionnaire post-intervention (Appendix E). The form included two questions with open-ended responses to each question. The form asked parents if they attended any other training sessions on addressing challenging behavior or supporting social-emotional competence of young children and if they received help from any other service professional to address their child's behavior or mental health needs during the course of the study. There were no differences between groups in the completed sample and therefore additional support did not need to be accounted for in the analyses (Table 14).

Table 14

Other Behavior Support for Completed Sample by Group

	Completed Intervention (n = 26)	Completed Control (n = 27)
% Attended another workshop to increase social skills or reduce challenging behavior	0	3.70
% Received behavior support from someone else in last 3 months	26.92	25.93

Social validity. There were two measures used to assess the acceptability of the goals, procedures, and outcomes of this study (Schwartz & Baer, 1991).

Group parent training session evaluations. Following every other group parent training session, parents were asked to complete a questionnaire about their experiences with the *Positive Solutions for Families* training sessions (Appendix F). This questionnaire included a five point *Likert*-type scale ranging from strongly disagree to strongly agree, and included items on the perceived usefulness of training content, satisfaction with the training format, and changes in knowledge and skill as a result of the intervention. There also were four open-ended questions

asking parents what they learned from the sessions, suggestions for improving the training, and what they liked most about the training.

Satisfaction with PSF intervention and sustainability questionnaire. Following the completion of the *PSF* intervention, parents were asked to rate the usefulness of the intervention, their perceptions of the format of follow-up phone calls, and suggestions to improve the intervention (Appendix G). Parents also rated their acceptability with the training content, if the training content matched their needs, and if they would continue to use the strategies after support ended. The satisfaction questionnaire was a *Likert*-type rating scale from strongly disagree (1) to strongly agree (5).

Procedures

Field test. The student investigator conducted a field test with four parents prior to the beginning of the study. Four parents attended seven group parent training sessions that followed the *PSF* modules, and one parent completed three follow-up phone meetings. Parents completed weekly questionnaires on the quality of the training and provided verbal feedback to the investigator on each training session. The procedural fidelity checklists for each group training session were revised based on input from parents in the field test, and a new item was included on each form to encourage more active participant participation in each session. The procedures for the bi-weekly follow-up phone meetings with the parents also were refined based on verbal feedback given by the parent who participated in the calls. An item to review the next steps with the parents on each phone call was added, based on the feedback provided. After the field test was completed, study recruitment began.

Pre-intervention data collection. Pre-intervention data collection included demographic form, and parent and child measures. Prior to the group parent training sessions, FSSs and

parents completed demographic forms. After demographic forms were completed, parents completed the SSIS (Gresham & Elliott, 2008), PSI (Abidin, 2012), and two video recordings of parent-child interactions.

The student investigator explained the purpose of each assessment, described how to complete the forms, and modeled completing the first few questions with each parent on each assessment (SSIS and PSI) after the consent meeting. Approximately 33% of parents completed the paperwork at the centers, and the rest of the parents completed paperwork when the student investigator or RA visited the home. If parents had difficulty completing the forms, the student investigator or FSSs read the forms to the parent.

Parents were video-recorded interacting with their children for two- 10 min sessions prior to training. In the first group of parents (n = 12), the student investigator gave the parents recording devices, and the parents completed the videos on their own after the student investigator provided instructions on how to video record. It took some parents several weeks to return the recording devices, and some videos had to be redone due to poor quality. As a result, in all subsequent groups, video recordings were completed by the student investigator or the RA.

Random assignment. After pre-intervention data collection, randomization occurred. Parents were notified of group assignment after all pre-intervention data were collected in a specific center. Nine groups of parents received training at the center their child attended. One group included parents from three different centers because there was not a sufficient number of participants who wanted to participate at each center. The combined group consisted of six parents from three different centers. These six parents were treated as one center and then randomly assigned.

Center data collection. The center measures were collected after parents were assigned to condition. The center manager completed the center demographic form and the FSS completed their demographic form. Times were then scheduled with the center managers to conduct the PreSET (Steed et al., 2012). The PreSET (2012) was used to assess the amount of behavioral supports children received at their school. The PreSET began with a short center manager interview. Two of the interviews were held over the phone and eight were held in person. After the center manager interview, short classroom observations were conducted in half of the classrooms at the center. Each classroom observation lasted approximately 10 min, and then a short interview with the teacher was conducted using the PreSET protocol. A second observer was present during 20% of the center manager interviews and classroom observations. The reliability was 94.25% and 88.23% during the two IOA sessions.

Intervention. The *PSF* intervention involved seven group parent training sessions and seven follow-up phone calls to support parents as they learned to implement the strategies from the *PSF* modules. The *PSF* training materials provided information for parents on how to promote children's social-emotional skills, understand children's challenging behavior, and use positive approaches to help children learn appropriate behavior. Each group parent training session was approximately 2 hours. The *PSF* training materials include presenter scripts, family routines guide, parent workbook (activities, handouts corresponding to session topics, data collection forms, and forms for creating rules and schedules in the home), and videos.

The student investigator conducted the group parent training sessions at the time reported to be most convenient for the group of parents (both morning and night), and training sessions occurred every other week. The group parent training sessions followed a fidelity protocol and emphasized supporting parents as they worked through goal setting and learning to implement

the strategies. Parents were trained in small groups (2-6 parents) that involved interactive discussions about implementation of the strategies. During these discussions, parents could share suggestions and provide feedback to each other. The training sessions used whole group discussions, role plays, and video examples. There was also a workbook for the parents to use to take notes and make plans for their own family.

Parents in the intervention condition also received seven follow-up phone calls after each group parent training session to discuss their progress toward implementing strategies learned in the group training sessions. These calls began following the first group parent training session. At the end of each group parent training session, the student investigator assisted the parents in setting goals for implementing the strategies they learned (See Appendix H for sample parent goals by session). The follow-up phone call followed a specific protocol with a few modifications. These protocols have been demonstrated to be effective in a number of studies with coaching teachers to increase their use of skills (e.g., Hemmeter et al., 2011). All follow-up phone calls began with a positive greeting and review of the goal the parent had been working on in the past week. For example, a parent set a goal to establish rules in their home. The student investigator helped the parent create the rules and plan steps such as posting the rules, explaining the rules to the children, giving examples and non-examples of following the rules, and praising children for following the rules.

The student investigator also asked the parents three primary questions on every call (Appendix I). If a parent reported their child had challenging behavior over the past week, a fourth question was asked about how comfortable the parent felt addressing the challenging behavior. All four questions on the questionnaire used a *Likert*-type scoring system with a range from 0 (not at all) to 5 (all the time). The average parent responses for each question across all

sessions is in Table 15. On each call, parent goals and progress toward completing the goals were reviewed; help was provided on overcoming barriers to intervention implementation, questions were answered, next steps were discussed, and parents were reminded of the next session. All sessions ended with a positive closing to the parent. All phone conversations were audio recorded for procedural fidelity data collection.

Table 15

Parent Responses for Follow-up Phone Calls by Question

Question	Mean (Range)
How much progress have you made toward your goal?	1.92 (0-4)
My child had challenging behavior in the last week.	1.61 (0-4)*
My child's behavior interfered with my family's activities.	0.78 (0-4)*
If you child had challenging behavior, how comfortable did you feel dealing with it?	2.57 (0-4)

*These items are reverse coded

Parent attendance at group parent training sessions was tracked as well as participation in follow-up phone calls. Table 16 shows the number of scheduled and make-up group parent training sessions and phone calls by parent in the intervention group. When parents could not attend the group parent training sessions, the student investigator made up the sessions with the parents individually. Twenty-one of the 26 parents who completed the intervention missed at least one session and had at least one make-up session. Parents attended an average of 5.92 (*R* = 4 - 7) scheduled group parent training sessions. Across parents there was an average of 1.04 individual make-up training sessions, indicating that most parents had approximately 1 make-up session (*R* = 0 - 3). Twenty-five of twenty-six parents completed all group training sessions either by attending the scheduled training session or completing a makeup session.

Parents participated in an average of 6.31 out of 7 (*R* = 1 - 7) possible follow-up phone calls. When parents did not answer the phone or needed to reschedule the follow-up phone call, the student investigator called the parents at another time. Each phone call week, parents were called until the session was completed with each parent. An average of 2.1 (*R* = 1 – 8) calls per parent were necessary to complete the bi-weekly follow-up phone call. Five families completed all phone calls and parent training sessions without makeups.

Table 16

Group Parent Training and Phone Call Completion by Family

ID	# Group	# Make up	# Phone calls completed
1	7	0	7
2	4	2	7
3	6	1	7
4	7	0	7
5	7	0	7
6	7	0	7
7	5	2	7
8	6	1	6
9	7	0	7
10	6	1	7
11	7	0	7
12	6	1	7
13	5	2	7
14	6	1	7
15	3	4	7
16	7	0	7
17	6	1	7
18	5	2	6
19	6	1	7
20	5	2	6
21	6	1	7
22	6	1	7
23	4	3	6
24	7	0	7
25	6	1	7
26	7	0	7
Average	5.92	1.04	6.31

Post-intervention data collection. After the group parent training sessions and follow-up phone calls were completed, post-intervention data were collected. Post-intervention data collection included both the control and intervention group parents completing the SSIS and video recordings identical to pre-intervention data collection. When research assistants completed the videos for parents, parents in the intervention condition were taped by a research assistant and the student investigator completed the videos for parents in the control condition. Parents in both groups also completed the additional support questionnaire, and parents in the intervention group completed the Social Validity and Sustainability Questionnaire. The Social Validity and Sustainability Questionnaire was completed and either mailed back or turned into the research assistant who did not interact with the parents during the intervention.

Training for control group parents. After post-intervention data collection was completed with both groups, parents in the control group were offered the seven-week group parent training sessions using the *Positive Solutions for Families* training modules. Thirteen of the twenty-seven parents in the control condition who completed the post-intervention data attended at least one group parent training session after post-intervention data collection. Of the parents in the control condition that attended group parent training sessions, parents attended an average of 5.38 sessions (R = 1 - 7). Three make-ups were offered to control families across all group as three times the majority of parents did not attend the scheduled session and a make-up was offered the following week.

Procedural Fidelity

Two measures of procedural fidelity were used to ensure the intervention was implemented as intended. Fidelity was assessed for both the group parent training sessions and follow-up phone meetings.

Group parent training fidelity. All group parent training sessions were video recorded, and fidelity was coded from the videos (Appendix J). To assess fidelity, a data collector who was not involved in the group training sessions, completed a fidelity form. Fidelity was assessed for at least 40% of sessions (Table 17). A protocol was followed during all group parent training sessions. The fidelity form differed for each session due to the content of the modules. For example, the first session covered making positive connections with children and the fidelity form assessed if the facilitator provided examples of how to make connections with children. An observer scored whether each element of the training was implemented as intended for each training session. A percentage of items observed was calculated and the average and range were reported. The average fidelity of implementation by the facilitator of the group trainings was 99.71%. Reliability of the primary fidelity observer was assessed on 35.48% of sessions. The average IOA fidelity was 100%.

Table 17

Group Parent Training Fidelity and Interobserver Agreement

	Fidelity # (% of Sessions)	Mean % (Range)	IOA # (% of Sessions)	IOA %
Session 1 (*n* = 10)	4 (40)	97.92 (91.67-100)	1 (25)	100
Session 2 (*n* = 10)	4 (40)	100	1 (25)	100
Session 3 (*n* = 10)	4 (40)	100	2 (50)	100
Session 4 (*n* = 10)	4 (40)	100	2 (50)	100
Session 5 (*n* = 10)	4 (40)	100	2 (50)	100
Session 6 (*n* = 10)	4 (40)	100	1 (25)	100
Session 7 (*n* = 10)	5 (50)	100	2 (40)	100
Average		99.71 (91.67-100)		100

Follow-up phone call fidelity. All phone calls were audio recorded. To assess fidelity, a data collector who was not involved in the phone call listened to the recording and scored a fidelity form. The follow-up phone call fidelity form was the same across all calls (Appendix K). There were 10 items with one item having a choice of yes/ no/ not applicable and all other items were scored yes or no. If parents did not identify additional problems, the *providing support around additional barriers* item was scored as not applicable. Approximately 36.87% of phone meetings were scored for fidelity (Tables 18 & 19). The average fidelity of phone call procedures was high (99.05%). *Asking the parent if there were any issues they needed to problem solve* was the least adhered to step, and six items were adhered to 100% of the time. Of the sessions scored for fidelity, another person coded 25% of those for reliability of fidelity (IOA). Interobserver agreement of fidelity was also high (98.11%).

Table 18

Number and Percent IOA of Phone Call Fidelity by Session

Session (Total # of phone calls)	Fidelity # (%) of sessions	IOA # (%) of sessions	IOA % (Range)
1 (*n* = 27)	11 (40.74)	4 (36.36)	97.92 (91.67-100)
2 (*n* = 26)	10 (38.46)	4 (40.00)	95.84 (91.67-100)
3 (*n* = 25)	9 (36.00)	3 (33.33)	100
4 (*n* = 26)	9 (34.62)	3 (33.33)	100
5 (*n* = 26)	9 (34.62)	3 (33.33)	97.22 (91.67-100)
6 (*n* = 26)	8 (30.77)	2 (25.00)	100
7 (*n* = 24)	9 (37.50)	3 (33.33)	97.22 (91.67-100)
Average			98.11 (91.67-100)

Table 19

Phone Call Fidelity

	Mean % (Range) (*n* = 66 out of 179 total phone calls)
RA opened the meeting with a positive greeting	100
RA asked the family the 3 weekly questions about their child's behavior	98.46 (0-100)
RA reviewed the family's bi-weekly goal	100
RA asked the family to reflect on their implementation of the current goal	100
RA gave the family positive feedback on practices they reported using	100
RA asked the family if there were any issues they need help problem-solving around implementing their goal	95.52 (0-100)
RA generated solutions with the family on how to overcome the barriers if needed	100
RA discussed family's planned actions related to their goals between this follow-up phone meeting and the next training	98.46 (0-100)
RA closed with a positive statement to the family and affirmed the family for their hard work and effort	96.92 (0-100)
RA reminded the family of the next training session	100
Average fidelity % per session	99.05 (88.89-100)

Data Management

Data were entered by research assistants blind to treatment condition. All data were entered by two research assistants and then compared to ensure accuracy. The data entry files were compared in Excel and discrepancies were identified. When a disagreement occurred, the student investigator and research assistant verified the data entry by comparing it to the raw data. The primary database was corrected if necessary. Across the data files there was a 2.8% data entry error rate. All the data were cleaned and verified accurate before analyses were conducted.

Design

A cluster randomized control trial (RCT) was used to evaluate the effects of the *PSF* intervention. A RCT was used as it is the most rigorous design to compare two groups and evaluate an intervention. After all parents in a center consented and completed all pre-intervention paperwork, children were ranked on their standardized problem behavior scale score of Social Skills Improvement System-Rating Scales (SSIS; Gresham & Elliott, 2008). Children were then matched in pairs on their problem behavior score and then randomly assigned to intervention or control using a random number generator. If there was an odd number of children, a child from the middle of the score range was assigned to condition by using a random number generator that indicated whether the child would be in the intervention or control condition. Thirty-four parents were randomly assigned to treatment and 35 to control. Data collection occurred at two time points: prior to and post-intervention. Parents in the control group were offered the group parent training sessions after post data collection.

Data Analysis

The intent-to-treat group was used for all primary analyses; however, the sample that completed treatment also was analyzed to assess differences in characteristics and effects

between the group that completed treatment and the ITT group (Table 20). The ITT group included all parents who were randomly assigned regardless of whether they completed the intervention. All tables contain data for the completed and ITT groups; however, only the ITT sample is reported in text. For this study, 17.2 % of parents were missing post-intervention SSIS data and 25% of parents were missing post-intervention DPICS data. Data were imputed for parents who did not complete the intervention and/or had partial missing data post-intervention using multiple imputation (Shafer & Graham, 2000). Chained equations with 10 iterations for each imputation was conducted using the SPSS software program. Parents in the intervention group that dropped out of the intervention had children with significantly lower problem behavior scores on the SSIS (Gresham & Elliott, 2008) than children's whose parents dropped out and were in the control condition (t = -3.51, p = .01). Estimating effects only for parents that completed the intervention and data collection could yield biased parameter estimates and decreases the power of the study (Graham, 2009; Wothke 2000). Multiple imputation of the data including dependent variables, reduced the bias of parameter estimates, added an additional 16 families to the sample, and yielded a more precise estimate of the effects of the intervention. All imputed findings present the pooled estimates.

Table 20

Summary of Data by Condition and Group

	Completed				Intent-to-treat			
	Intervention		Control		Intervention		Control	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Demographic	26	--	27	--	8	--	8	--
PSI	26	--	26	--	5	--	3	--
SSIS	26	26	27	27	8	0	8	0
Videos	25	23	25	24	8	0	7	0

There was one parent outcome assessed with seven items (DPICS) and three child outcomes assessed (SSIS problem behavior, SSIS social skills, and observations of child challenging behavior). Hierarchical linear modeling (HLM; Raudenbush & Bryk, 2002) with two levels (parents/ children nested within centers) was used to address research questions 1-4. The first level of the model was parents/ children and the second was the center level variables. The pretest was the grand mean centered for all analyses as well. Pretest was treated as a random effect at the second level. Treatment was treated as a fixed effect. Two models were run for each analysis. The first model regressed the posttest on the pretest and the assigned treatment condition at level 1. The level 1 equation was:

$$y_{ijt}SCORE = \beta_{0j} + y_{1jt-1}\text{Pretest} + \beta_{2j}\text{Treatment} + r_{1ij}$$

The level 2 equation was:

$$\beta_{0j} = \gamma_{00} + u_{00j}$$

$$y_1 = \gamma_{10} + u_1$$

$$\beta_2 = \gamma_{20}$$

Then a second model was run using covariates at levels 1 and 2. Model 2 is preferred because it controls for differences at pretest and accounts for differences between centers by adding PreSET (Steed et al., 2012) to the model. There were significant differences at pretest between the groups assigned to intervention and control on parent concerns for child behavior and how children get along with others; therefore, these variables were included in the level 1 model as covariates. Adding variables to the model that likely account for differences between groups adds more precision to the estimates.

In this model, pretest was treated as a random effects variable and centered using the grand mean across both the intervention and control groups. Treatment condition was treated as a

fixed effect. Concerns for child behavior and how children get along with others were allowed to vary between centers at the second level. The parent concerns for child behavior and how children get along with others were not significant variables in this model; however, including them in the model yielded a more precise estimation of the effects of the intervention. The level 1 equation used in Model 2 was:

$$y_{ijt}SCORE = \beta_{0j} + y_{1jt-1}\text{Pretest} + \beta_{2j}\text{Treatment} + \beta_{3j}\text{Bx Problem} + \beta_{4j}\text{GetAlong} + r_{1ij}$$

The PreSET (Steed et al., 2012) was added as a covariate at level 2 as centers had different levels of behavior supports. The final level 2 equation for Model 2 was:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*\text{PreSET}_{ij} + u_{00j}$$

$$y_{10} = \gamma_{10} + u_1$$

$$\beta_{20} = \gamma_{20}$$

$$\beta_{30} = \gamma_{30} + u_3$$

$$\beta_{40} = \gamma_{40} + u_4$$

To address research question 4, the effects of parent stress on positive parenting skills was assessed using the PSI (Abidin, 2012). The PSI was added to Model 2 and the interaction between parental stress and treatment condition was tested. The effects on parameter estimates and the *p*-value was assessed to determine the effects of stress on intervention effectiveness.

$$y_{ijt}\,SCORE = \beta_{0j} + y_{1jt-1}\text{Pretest} + \beta_{2j}\text{Treatment} + \beta_{3j}\text{Bx Problem} + \beta_{4j}\text{GetAlong} + \beta_{5j}\text{PSI} +$$

$$\beta_{2j}\text{Treatment}*\beta_{5j}\text{PSI} + r_{1ij}$$

The final level 2 equation for Model 2 with the PSI added was:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*\text{PreSET}_{ij} + u_{00j}$$

$$y_{10} = \gamma_{10} + u_1$$

$$\beta_{20} = \gamma_{20}$$

$\beta_{30} = \gamma_{30} + u_3$

$\beta_{40} = \gamma_{40} + u_4$

$\beta_{50} = \gamma_{50} + u_5$

Data were summarized and means and ranges are reported by item for the fifth research question assessing parents' satisfaction with the intervention. These data are reported for the parent ratings of group parent training sessions and the social validity questionnaire.

CHAPTER III

RESULTS

The results are organized by the five research questions that were addressed in this study. All data presented in the results section were from the ITT sample. There were differences between the ITT and completed samples at pretest on the praise and positive following items of the DPICS (Eyberg et al., 2013) and the problem behavior scale of the SSIS (Gresham & Elliott, 2008). Group equivalence was tested on all outcome and demographic measures at pretest. There were two variables that were statistically significant between the intervention and control groups at pretest in the ITT sample (parent concerns for child behavior and with how the child got along with others). Therefore, statistical adjustments were made by including the two variables that were different at pretest as covariates at level 1 in the final HLM model (Model 2; Raudenbush & Bryk, 2002). All results are reported using the results of Model 2. The interclass correlation of the unconditional model analysis was .19 indicating that approximately 19% of the variance of level 1 can be accounted for by level 2. Thus, HLM (Raudenbush & Bryk, 2002) with two levels was warranted. To evaluate the magnitude of the difference between groups on outcome variables at post-test, Cohen's *d* was calculated.

RQ1: Does the *PSF* intervention increase parents' use of praise, questions, positive following, and positive touch?

Videos of parent-child interactions coded using the DPICS (Eyberg et al., 2013) were used to assess parents' use of positive and negative parenting practices in both play and routine videos. Mean DPICS (Eyberg et al., 2013) scores across time and groups are presented in Table

21. The results of the HLM analyses for the positive parent behavior with parameter estimates are presented in Table 22.

The *PSF* intervention directly taught parents to increase their use of praise, play and interact more with their child, and to follow their child's lead in play. Other parenting interventions that target similar parent competencies have found parents in the intervention condition significantly increased their use of positive parenting skills (e.g. Gross et al. 2009; Webster-Stratton et al., 2004). It was therefore hypothesized that parents in the *PSF* intervention condition would increase their use of praise and positive following behaviors after participating in the intervention.

Table 21

Pre and Post-Intervention Scores on the DPICS by Condition and Group

Category	Completed Intervention		Completed Control		ITT Intervention		ITT Control		ITT Cohen's *d*
	Pre (n = 25)	Post (n =23)	Pre (n = 25)	Post (n =24)	Pre (n = 34)	Post (n = 34)	Pre (n = 35)	Post (n = 35)	
Play Video									
Praise	1.73	4.30*	3.76	2.04	2.63	6.40*	3.67	2.04	.64
Questions	22.96	27.74*	24.64	20.75	23.94	28.46	23.82	20.75	.45
Positive Following	4.96	8.83*	5.64	3.21	5.46	10.13*	5.74	3.21	.99
Commands	12.79	11.31	15.72	18.00	15.37	13.32	15.81	18.00	-.35
Negative Talk	1.19	0.57*	0.52	1.33	1.27	1.21	0.56	1.33	-.07
Positive Touch	1.69	2.09	5.88	3.33	3.27	3.04	5.44	3.33	-.08
Negative Touch	0.46	0.48	0.56	0.96	0.85	1.05	0.56	0.96	.03
Routine Video									
Praise	1.46	4.70*	2.52	2.42	2.18	5.79*	2.11	2.44	.60
Questions	20.80	27.44*	20.12	16.17	21.78	30.46*	19.62	16.14	.91
Positive Following	6.46	7.17*	5.64	2.54	6.09	10.53*	4.77	2.57	.94
Commands	19.00	17.48	22.84	18.42	20.30	22.63	19.23	18.44	.20
Negative Talk	1.42	0.61	1.44	1.71	1.58	1.06	1.23	1.70	-.31
Positive Touch	2.61	2.83	3.48	1.96	2.52	4.35	3.73	1.98	.50
Negative Touch	0.65	0.52	0.64	0.63	0.57	1.44	0.81	0.63	.37

*Indicates statistically significant difference between groups

Table 22

Hierarchical Linear Model Analyses for Positive Parent Behavior by Routine and Play Videos

	Completed (n = 53)		ITT (n = 69)		Effect size
	Model 1	Model 2	Model 1	Model 2	(Cohen's d)
Routine video					
Praise					
Treatment	2.54	2.1	4.32*	3.36*	0.60
Intercept	2.26	-1.51	1.91	-0.5	
Pretest	0.44	0.49	0.16	0.23	
BxConcerns	--	0.07	--	-0.43	
GetAlong	--	0.18	--	-0.78	
PreSET	--	0.07	--	-0.08	
Positive following					
Treatment	4.95**	4.62*	6.47**	7.39*	0.94
Intercept	2.63	4.04	3.25	6.56	
Pretest	0.15	0.13	0.28	0.28	
BxConcerns	--	0.03	--	-1.68	
GetAlong	--	0.76	--	0.63	
PreSET	--	-0.03	--	-0.84	
Questions					
Treatment	11.14**	10.22*	7.22	12.75*	0.91
Intercept	16.14	29.16	20.67	35.87	
Pretest	0.19	0.21	0.33	0.3	
BxConcerns	--	1.71	--	-0.95	
GetAlong	--	2.03	--	1.3	
PreSET	--	-0.3	--	-0.37	
Positive Touch					
Treatment	0.94	0.55	1.88	2.27	0.47
Intercept	1.95	0.86	3.71	2.51	
Pretest	0.02	0.02	-0.32	-0.22	
BxConcerns	--	0.02	--	-1.02	
GetAlong	--	0.48	--	0.15	
PreSET	--	0.02	--	0.01	
Play Video					
Praise					
Treatment	2.53	4.45	2.53	4.53**	0.64
Intercept	2.08	4.09	2.08	5.87	
Pretest	-0.08	-0.06	-0.08	-0.04	
BxConcerns	--	-2.02	--	-2.9	
GetAlong	--	-1.12	--	-1.48	
PreSET	--	0	--	0	
Positive following					
Treatment	6.10*	6.54**	6.10*	7.39**	0.99
Intercept	3.08	3.65	3.08	5.55	

Pretest	0.32	0.35	0.32	0.26	
BxConcerns	--	-1.66	--	-1.08	
GetAlong	--	0.69	--	-1.02	
PreSET	--	0.01	--	-0.01	
Questions					
Treatment	5.86	7.9	5.86	7.67	0.45
Intercept	20.81	25.78	20.81	16.29	
Pretest	0.37	0.36	0.37	0.34	
BxConcerns	--	-3.15	--	-1.79	
GetAlong	--	0.03	--	0.53	
PreSET	--	-0.05	--	0.12	
Positive Touch					
Treatment	-0.2	-1.03	-0.33	-1.5	-0.08
Intercept	2.41	2.35	2.41	6.06	
Pretest	-0.04	-0.05	0.33	0.18	
BxConcerns	--	0.07	--	-0.04	
GetAlong	--	1.25	--	1.25	
PreSET	--	-0.01	--	-0.05	

*p <.05, **p <.01, ***p <.001

Routine video praise and positive following. The *PSF* intervention increased parents' use of praise by 0.60 standard deviation units and positive following behaviors by 0.94 standard deviation units in the routine videos. Parents in the intervention group gained significantly more praise statements (3.36; p = .03) and positive following behaviors (7.39; p = .03) at posttest in routine videos than parents in the control condition, controlling for parent report of concerns for child behavior and with how the child got along with others at pretest. Parents in the intervention group on average gained approximately one praise statement per two minutes and followed their child's lead approximately one time a minute in the post routine videos. These increases are meaningful as research has shown parents' use of praise at a rate of one statement per two minutes was correlated with a decreased parental use of criticism (Swensen et al., 2016).

Play video praise and positive following. The *PSF* intervention increased parents' use of praise by 0.64 standard deviation units and positive following behaviors by 0.99 standard deviation units in the play videos. Parents in the intervention group gained significantly more

praise statements (4.53; $p < .001$) and positive following behaviors (7.39; $p < .001$) at posttest in play videos than parents in the control condition, controlling parent report of concerns for child behavior and with how the child got along with others at pretest. This indicates that parents in the intervention group made significant gains in the use of praise statements (approximately one statement per 2 minutes at posttest) and positive following behaviors (approximately one positive following behavior per minute posttest) from pre- to post-intervention in play videos.

Parent questions. The *PSF* intervention increased parents' use of questions by 0.91 standard deviation units in the routine videos. Parents often asked their children questions that were generally neutral such as, "What is your name?" It was hypothesized parents' in the *PSF* intervention would increase their use of questions following the intervention as they would ask their children questions as a way to increase their interactions with their children. Parents in the *PSF* intervention gained and used significantly more questions (12.75; $p = .02$) at posttest than parents in the control condition controlling for parent concerns for child behavior and how the child got along with others at pretest in the routine videos. There was no significant effect for parents' use of questions in the play videos (7.67; $p = .09$).

Positive touch. The *PSF* intervention also taught parents to increase their use of positive touches to their children by giving children high fives, pats on the back, and hugs. It was therefore hypothesized that parents in the *PSF* intervention would increase their use of positive touch post-intervention. There were no significant effects for condition on parents' use of positive touch in the routine videos (2.27; $p = .09$) nor in the play videos (-1.50; $p = .16$).

RQ 2: Does the *PSF* intervention decrease parents' use of commands, negative talk, and negative touch?

Some parent training programs have found parents in the intervention condition decrease their use of negative touches (e.g., Webster-Stratton & Hammond, 1997) and negative parenting behaviors (e.g., Gross et al., 2009), while others have found no significant effects for parent's use of negative behaviors (e.g, Azevedo et al., 2013). The *PSF* intervention targeted increasing parents' telling kids what to do rather than what not to do. For example, telling children to pick up their shoes rather than saying stop leaving your shoes on the floor. It was therefore hypothesized that as parents used more positive language with their children there would be a decrease in negative talk and negative touch for parents that participated in the *PSF* intervention. Table 23 contains the parameter estimates for negative parent behaviors in routine and play videos.

Table 23

Hierarchical Linear Model Analyses for Negative Parent Behavior by Routine and Play Videos

	Completed (n = 53)		ITT (n = 69)		Effect size
	Model 1	Model 2	Model 1	Model 2	(Cohen's d)
Routine Video					
Negative Talk					
Treatment	-1.05	-0.44	-0.49	-0.1	-0.31
Intercept	1.69	3.89	1.66	3.68	
Pretest	0.34	0.33	0.55	0.23	
BxConcerns	--	-0.2	--	-0.33	
GetAlong	--	-0.52	--	-0.43	
PreSET	--	-0.04	--	-0.03	
Negative Touch					
Treatment	0	0.5	0.85	1.31	0.37
Intercept	0.63	1.44	0.67	2.11	
Pretest	0.37	0.42	0.48	0.75	
BxConcerns	--	-0.53	--	-0.77	
GetAlong	--	-0.26	--	-0.55	

PreSET	--	-0.01	--	0.01	
Commands					
Treatment	1.21*	6.09	-4.11	9.04	0.20
Intercept	17.45	39.51	18.66	43.17	
Pretest	0.5	0.55	0.59	0.34	
BxConcerns	--	-0.65	--	-3.49	
GetAlong	--	-3.89	--	-7.35	
PreSET	--	-0.41	--	-0.36	
Play Video					
Negative Talk					
Treatment	-1.17*	-1.43	-1.17*	-0.71	-0.07
Intercept	1.56	1.43	1.56	-0.5	
Pretest	0.47	0.48	0.47	0.47	
BxConcerns	--	0.03	--	-0.09	
GetAlong	--	0.36	--	0.49	
PreSET	--	0	--	-0.05	
Negative Touch					
Treatment	-0.49	-0.5	-0.01	0.16	0.03
Intercept	0.98	0.84	0.94	0.82	
Pretest	0.28	0.29	0.26	-0.07	
BxConcerns	--	0.21	--	-0.44	
GetAlong	--	-0.17	--	-0.01	
PreSET	--	0	--	0.01	
Commands					
Treatment	-5.74*	-3.97	-5.74*	-5.8	-0.34
Intercept	17.99	32.6	17.99	21.44	
Pretest	0.6	0.6	0.6	0.54	
BxConcerns	--	-2.07	--	1.03	
GetAlong	--	-1.57	--	0.31	
PreSET	--	0.60*	--	-0.05	

*$p < .05$

Negative talk and touch. There were no significant differences between parents in the *PSF* intervention and control conditions in parents' use of negative talk (-0.10; $p = .86$) nor negative touch (1.31; $p = .08$) in the routine videos, controlling for parent concerns for child behavior and with how the child got along with others. There were also no significant effects for parents in the *PSF* intervention in the play videos for negative talk (-0.71; $p = .38$), nor negative touch (0.16; $p = .72$).

Commands. Parents' use of commands were also assessed using the DPICS (Eyberg et al., 2013). Commands could be neutral or negative. For example, "hang up your coat" is a neutral statement and "stop it" is a negative command. Because neutral commands and negative commands were not differentiated in the coding of the videos it was hypothesized there would not be significant changes in parents' use of commands due to the intervention. There were no significant decreases in parents' in the intervention condition use of commands in routine videos (9.04; p = .07) nor for play videos (-5.80; p = .12).

RQ 3: Does the *PSF* intervention decrease observed and parent-reported challenging behavior in children and increase parent-reported child social skills?

Observed child challenging behavior. Event sampling was used to assess children's challenging behavior in both routine and play videos pre- and post-intervention. Mean scores across time and groups are presented in Table 24. The HLM analyses with parameter estimates for each variable are presented in Table 25. As parents increased their positive parenting skills and increased structure in the home as a result of participating in the intervention, it was hypothesized child challenging behavior would decrease. Previous research has shown both children's observed and parent-reported challenging behavior decreased as a result of parents attending group parent training sessions and implementing the strategies learned (e.g., Gross et al., 2010; Webster-Stratton et al. 2004).

Table 24

Pre and Post-Intervention Observed Child Challenging Behavior in Play and Routine Videos by Group

	Completed Intervention (*n* = 24)		Completed Control (*n* = 25)		ITT Intervention (*n* = 34)		ITT control (*n* = 35)		ITT Cohen's *d*
	(Pre)	*(Post)*	*(Pre)*	*(Post)*	*(Pre)*	*(Post)*	*(Pre)*	*(Post)*	
Routine Video	0.44 (0-3)	0.46 (0-4)	0.25 (0-3)	0.63 (0-3)	0.39 (0-5)	0.21 (0-5)	0.16 (0-4)	0.63 (0-5)	-.65
Play Video	0.38 (0-6)	0.88 (0-4)	0.36 (0-4)	0.54 (0-3)	0.17 (0-4)	0.66 (0-6)	0.29 (0-4)	0.62 (0-4)	.03

Table 25

Hierarchical Linear Modeling Analyses for Observed Child Challenging Behavior in Play and Routine Videos by Group

	Completed (n = 49)		ITT (n = 69)		ITT
	Model 1	Model 2	Model 1	Model 2	Cohen's *d*
Routine					
Treatment	-0.02	-0.10	-0.68**	-0.84*	-0.65
Intercept	0.37	-0.19	0.85	0.12	
Pretest	0.03	0.05	0.37	0.14	
BxConcerns	---	-0.02	---	0.02	
GetAlong	---	0.09	---	0.53	
PreSET	---	0.01	---	0.01	
Play					
Treatment	-0.32	-0.41	-0.29	-0.40	0.03
Intercept	0.88	0.29	0.46	0.62	
Pretest	0.52	0.51	0.48	0.48	
BxConcerns	---	-0.03	---	0.28	
GetAlong	---	0.10	---	-0.28	
PreSET	---	0.01	---	-0.01	

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

The *PSF* intervention decreased children's observed challenging behaviors in routine videos by -0.65 standard deviation units. Children in the *PSF* intervention displayed significantly fewer challenging behaviors (-0.84; p =.03) than children in the control group post-intervention in routine videos controlling for pretest, and parent concerns with child behavior and how the child got along with others. There were no statistically significant differences between groups for observed child challenging behavior in the play videos (-0.40; p = .84).

SSIS. The SSIS (Gresham & Elliott, 2008) was used to assess the effects of the *PSF* intervention on parents' report of child problem behavior and social skills. Mean scores across time and groups are presented in Table 26.

Table 26

Pre and Post-Intervention SSIS Scores by Condition and Group

	Completed Intervention (*n* = 26)		Completed Control (*n* = 27)		ITT Intervention *(n = 34)*		ITT control (*n* = 35)		ITT Cohen's *d*
	(Pre)	*(Post)*	*(Pre)*	*(Post)*	*(Pre)*	*(Post)*	*(Pre)*	*(Post)*	
Social	82.73	94.23	89.07	88.11	85.81	96.15	89.55	87.83	.34
Skills	(52-117)	(55-118)	(61-125)	(59-117)	(52-117)	(55-118)	(56-125)	(59-117)	
Problem	114.73	102.08	105.48	110.62	111.13	101.57	106.13	110.95	-.47
Behavior	(79-160)	(81-132)	(83-154)	(57-157)	(79-160)	(81-132)	(83-154)	(87-157)	

Child social skills. The HLM analysis for parent-reported child social skills with parameter estimates for each variable is presented in Table 27. The *PSF* intervention increased children's social skills by 0.34 standard deviation units. Children in the intervention group gained statistically significant more parent-reported social skills (14.37; $p < .001$) than children in the control condition controlling for parent report of concerns for child behavior and with how the child got along with others at pretest. This indicates children in the *PSF* intervention gained almost 1 normative sample standard deviation on the SSIS (Gresham & Elliott, 2008) and the average score of the intervention condition post-intervention approached the average score of the SSIS (2008) normative sample (score of 100).

Table 27

Hierarchical Linear Modeling Analysis for Social Skills Scores on the SSIS by Group

	Completed (n = 53)		ITT (n = 69)		ITT
	Model 1	Model 2	Model 1	Model 2	Cohen's d
Treatment	10.04*	15.03**	10.32**	14.37**	0.34
Intercept	86.07	99.57	87.19	102.77	
Pretest	.56	.46	0.57	0.45	
BxConcerns	---	-6.08	---	-5.72	
GetAlong	---	-2.37	---	-2.03	
PreSET	---	-.14	---	-0.18	

*p <.05, **p <.01, ***p <.001

Child problem behavior. The HLM analysis for parent-reported child problem behavior with parameter estimates for each variable is presented in Table 28. The *PSF* intervention decreased parent-reported child problem behavior 0.47 standard deviation units. Children in the intervention group had statistically significant less parent-reported problem behavior (-15.46; $p <$ .001) than children in the control condition controlling for pretest, and parent report of concerns for child behavior and with how the child got along with others at pretest. This indicates that on

average parents in the intervention group rated their children as having 1 normative sample standard deviation significantly greater decrease in problem behavior score on the SSIS (Gresham & Elliott, 2008) than parents in the control group rated their children. Children in the intervention condition on average scored within the normal range of the normative sample on problem behavior scale of the SSIS (2008) post-intervention.

Table 28

Hierarchical Linear Modeling Analyses for Problem Behavior Scores on the SSIS by Group

	Completed (n = 53)		ITT (n = 69)		ITT
	Model 1	Model 2	Model 1	Model 2	Cohen's *d*
Treatment	-14.64**	-16.61**	-13.16***	-15.46***	-0.47
Intercept	113.37	109.75	112.75	113.53	
Pretest	0.59	0.52	0.59	0.58	
BxConcerns	---	2.32	---	0.77	
GetAlong	---	1.73	---	1.54	
PreSET	---	0.00	---	-0.01	

*p <.05, **p <.01, ***p <.001

RQ 4: Do parents who have more stress make fewer gains in positive parenting strategies?

Increased levels of parental stress is associated with poor parenting skills, negative parent-child interactions, and child psychopathology (Abidin, 2012). Past research has established the link between higher levels of stress and less implementation of strategies learned in group parent training sessions (e.g., Hughes & Gottlieb, 2010). It was hypothesized that parents in the *PSF* intervention who had more stress would attend fewer group sessions and implement the strategies less often than parents who were less stressed.

The HLM models with parameter estimates are presented in Tables 29 (Routine) and 30 (Play). Parent stress was assessed prior to intervention using the PSI assessment (Abidin, 2012). The interaction between parental stress and treatment condition was tested to determine if parent

stress moderated the effects of the *PSF* intervention on parents' use of positive parenting skills. The interaction of treatment condition and parent stress did not have a statistically significant effect on parents' use of praise (0.01; $p = .61$), positive following (-0.05; $p = .29$), and positive touch (0.00; $p = .99$) in the routine videos. The interaction of treatment condition and parent stress did not have a statistically significant on praise (-0.05; $p = .09$), positive following (0.06; $p = .23$), and positive touch (-0.02; $p = .31$) items in the play videos.

To test for non-linearity in the data, a follow-up analysis was conducted to determine if the PSI and treatment interaction was significant when broken into quartiles. It may be that parent stress effects parents' use of strategies more at increased levels that it does at decreased levels of stress and placing parents in quartiles tests for the non-linearity in the data. Parent PSI (Abidin, 2012) scores were placed into quartiles and dummy codes (0, 1) were created for parents for the 2-4th quartiles. The same model that was used for the first parent stress analysis was used in the follow-up analysis with one modification; the interaction term was modified. Each PSI quartile was interacted with the treatment condition and analyses were conducted for the 2nd, 3rd, and 4th quartiles. There were no significant effects for the interaction between treatment condition and the PSI quartiles on any of the dependent variables. In this study, there were no significant interactions between parents' stress and treatment condition suggesting there is either no relation in this population or the low power in this study led to difficulty detecting an effect.

Table 29

Hierarchical Linear Modeling Analyses Model 2 with Parent Stress for Routine Videos by Group

	Completed (n = 49)	ITT (n = 69)
Praise		
Treatment* PSI	0.01	0.01
Intercept	-0.59	3.41
Pretest	0.42	0.29
Treatment	2.17	-1.19
BxConcerns	0.31	0.38
GetAlong	0.26	-0.09
PSI	-0.01	-0.01
PreSET	0.07	0.05
Positive Following		
Treatment* PSI	-0.01	-0.05
Intercept	8.64	5.88
Pretest	0.14	0.27
Treatment	4.81	17.58
BxConcerns	1.49	-1.17
GetAlong	1.01	0.83
PSI	-0.02	-0.01
PreSET	-0.04	0.02
Positive Touch		
Treatment* PSI	0.00	0.00
Intercept	4.18	4.47
Pretest	0.02	-0.25
Treatment	0.87	1.64
BxConcerns	0.29	-1.07
GetAlong	0.34	0.67
PSI	-0.01	-0.01
PreSET	0.001	0.01

Table 30

Hierarchical Linear Modeling Analyses Model 2 with Parent Stress for Play Videos by Group

	Completed (n = 49)	ITT (n = 69)
Praise		
Treatment* PSI	-0.03	-0.05
Intercept	4.37	3.28
Pretest	0.03	-0.03
Treatment	3.80	15.87
BxConcerns	-2.38	-2.00
GetAlong	-0.20	-0.24
PSI	0.00	0.00
PreSET	-0.02	0.04
Positive Following		
Treatment* PSI	0.01	0.06
Intercept	10.05	17.35
Pretest	0.43	0.29
Treatment	6.25	6.51
BxConcerns	-1.12	-1.44
GetAlong	1.00	1.11
PSI	0.00	-0.04
PreSET	-0.01	-0.08
Positive Touch		
Treatment* PSI	-0.01	-0.02
Intercept	7.37	4.31
Pretest	-0.05	0.52
Treatment	-1.51	4.33
BxConcerns	0.96	-0.17
GetAlong	1.52	1.53
PreSET	-0.05	0.00
PSI	-0.01	-0.02

RQ 5: Are parents' satisfied with the with the *PSF* intervention?

Two tools were used to assess the social validity of the intervention: evaluations of group parent training sessions and the Social Validity and Sustainability Questionnaire completed post-intervention. The group parent training questionnaire had 7 items rated on a scale of 1 (Strongly disagree) to 5 (Strongly agree) and four open-ended questions. All parents reported the training was helpful to their family (Table 31; 4.82; R = 4 - 5) and the sessions were informative and

administered well (4.82; *R* = 3 - 5). All average parent ratings on the questionnaire were high (*R* = 4.73 - 4.82). The lowest rated item was related to the training location and format (4.73; *R* = 4 - 5).

Table 31

Group Parent Training Evaluations

Item	Mean % (Range) (*n* = 94)
I felt the information provided in this workshop was very useful for my family	4.82 (4-5)
Meeting format and time works for family	4.73 (4-5)
I would recommend this workshop to another parent.	4.82 (3-5)
I have made at least one change in my parenting strategies since participating in this workshop.	4.73 (3-5)
The training was well organized and clear.	4.81 (3-5)
The presenter(s) was knowledgeable and effective in style.	4.82 (3-5)
There were sufficient opportunities to raise questions and get information from the presenter.	4.80 (3-5)
Average	4.79 (3-5)

The second tool to assess parent satisfaction was the Social Validity and Sustainability Questionnaire. All items were rated on a scale of 1 (Strongly Disagree) to 6 (Strongly Agree). Three items were reverse coded meaning that low scores were more desirable. For example, item 8 assessed if parents had life stressors that got in the way of following through with the intervention. A low score indicated stressors did not affect their intervention implementation, and a high score indicated life stressors prevented them from following through with the intervention. The other two items reversed coded were if parents needed more help to implement the intervention after training and if video recording was disruptive to the family. Ninety-two percent of parents in the intervention group completed the questionnaire. On average, parents responded positively to questions (Table 32; 4.39; *R* = 1 - 5). The highest rated items indicated

parents would recommend the intervention to other parents, made changes in their parenting practices, and will continue to use the strategies learned in sessions when the intervention is over. Eighteen (75%) parents reported they did not need further support to address their child's challenging behavior and six (25%) reported they needed more support to implement strategies to decrease their child's challenging behavior. The lowest rated item was parents reported the forms took a reasonable amount of time to complete (4.38; $R = 2 – 5$).

Table 32

Social Validity of the PSF Intervention

	Mean (Range) (n = 24)
The handouts, workbook, and routines guide that the facilitator gave me helped me use the behavior strategies in my home.	4.71 (3-5)
Video recording in my home during the study was disruptive to my daily routine.	2.04 (1-5)*
The forms I completed took a reasonable time to complete.	4.38 (2-5)
The group training sessions helped me use behavior strategies in my home.	4.67 (3-5)
My parenting practices have changed due to the training and phone calls.	4.83 (3-5)
The suggestions I received from facilitator during phone calls were useful in dealing with my child's challenging behavior and/or increasing positive behaviors in my child.	4.71 (3-5)
Phone calls were frequent enough to support my use of the behavior strategies I learned.	4.54 (3-5)
I had barriers (other responsibilities, family stress, work, etc.) that got in the way of my using the behavior strategies I learned with my child.	2.70 (1-5)*
I need/needed more support to implement the behavior strategies.	2.63 (1-5)*
I understood and know how to use the behavior strategies in my home after trainings and phone calls.	4.75 (4-5)
The behavior strategies facilitator taught me to use helped me to increase my child's social emotional development.	4.71 (3-5)
I have used the behavior strategies facilitator taught me with my child when he/she has challenging behavior.	4.71 (3-5)
I developed a good working relationship with facilitator.	4.67 (1-5)
The facilitator was useful in helping me with things outside the training.	4.68 (4-5)
I was comfortable talking with the facilitator about concerns or issues I had with the use of the behavior strategies.	4.75 (3-5)
I will keep using the behavior strategies when group training and phone calls end.	4.83 (4-5)
I would recommend the use of the practices I learned to other families	4.91 (3-5)
Average	4.39 (1-5)

*These items were reverse coded

CHAPTER IV

DISSCUSION

The purpose of the study was to evaluate the effects of the *PSF* intervention on parents' use of positive and negative parenting practices and on young children's challenging behavior and social skills. The *PSF* intervention included seven group parent training sessions and seven follow-up phone calls following each group parent training session. These components were selected based on research suggesting that parents need more than group parent training to consistently implement positive parenting strategies and subsequently reduce children's challenging behavior (Sanders, 2008; Schnitz et al., 2015; Webster-Stratton et al., 2004).

The parenting skills targeted during the group sessions are similar in content to the *Incredible Years (IY;* Webster-Stratton, 1998) and the *Triple P* (Sanders, 2008) parent training programs. The difference between the programs lies mainly in the number of group sessions and follow-up strategies. The *IY* preschool parenting program is typically delivered in 18-20, 2-hr sessions and *Triple P* is typically delivered in 4 group sessions and 4 phone calls. The phone calls in the *PSF* intervention are more targeted toward parent needs and goals than the *Triple P* intervention. A review of the *IY* program reported an average parent outcome effect size of .53 (Pidano & Allen, 2015). A recent meta-analysis reported an average child disruptive behavior effect size of .27, child social skills average effect size of .23, and average child observed challenging behavior outcome effect size of .37 (Menting, de Castro, Orobio, & Matthys, 2013). In the current study, the parent outcome effect sizes (d = .60-.99) were greater than in the *IY* program. Specifically, parents in the intervention group used significantly more praise

statements, questions (routine only), and positive following behaviors (e.g., behavior descriptions and reflections) during routine and play videos than the parents in the control group. The parent-reported child social skills (.34) and problem behavior (.47) effect sizes and observations of child challenging behavior (.65) were greater in this study than the studies in the *IY* meta-analysis as well. A meta-analysis of the *Triple P* parenting program reported an average parent effect size of .38 and average child problem behavior effect size of .35 (Norwak & Heinrichs, 2008). These effect sizes were lower than the effect sizes found in this study as well. This suggests that parent training programs that have fewer group parent training sessions and include a targeted individualized component of the intervention such as phone calls may be more effective than parent training programs that have more group parent training sessions without follow-up or targeted follow-up for parents with low-income backgrounds.

There were no significant effects of the intervention on parents' use of negative parenting practices. Previous research has found small to medium effect sizes favoring the intervention condition on parents' use of negative parenting practices (e.g., Gross et al., 2009; Webster-Stratton et al., 2004), while others have found no significant effect on parents' use of negative behaviors (e.g., Azevedo et al., 2013). The *PSF* intervention targeted parents' use of positive parenting skills but did not directly targeting decreasing negative parenting behaviors. Negative parenting behaviors such as commands and negative talk might be more difficult for parents to stop using when their children continue to have some challenging behavior or noncompliance.

Parent stress did not moderate the effects of the intervention on parents' use of positive parenting skills in this study. On average parents in both the intervention and control groups scored within the average stress range compared to the normative sample. The failure to detect a significant effect may be due to the low power in the study or the lack of significant variability in

PSI (Abidin, 2012) scores in each group. Additionally, the adaptations the student investigator made for each parent may have mitigated the effect of stress on the parent's implementation of the intervention.

Parents in the intervention condition were satisfied with the intervention and data collection procedures. Parents reported before the intervention they were worried about being videoed in their home, and a few parents reported they did not want to participate in the intervention due to the video recording. After the intervention, parents rated the video recording favorably and stated they did not mind the videotaping post-intervention as they felt more confident in their skills. Many studies (e.g., Gross et al., 2009; Webster-Stratton et al., 2004) use videos as an assessment tool, but no studies have reported using the videos to guide feedback to parents. In this study the feedback to parents was guided by parent's weekly report of progress and the pre-assessment videos. This aided the student investigator in tailoring the intervention to meet the parents' needs. Videos of parents may be important for practitioners who work with parents so intervention can be guided by an unbiased assessment of the parents' skills and to provide more individualized feedback to parents based on this assessment to help parents implement the strategies with greater fidelity.

Parents were also satisfied with the follow-up phone calls, and most reported this was enough support to help them implement the intervention. The high social validity of the phone calls suggests phone calls may not only address the need for a more targeted intervention to meet the needs of more parents of varying needs, but is also acceptable to parents. Parents also reported they were likely to continue to use the strategies after the study ended. The *PSF* intervention may be a more effective and more appealing to parents than other parent training

programs due to the fewer number of group parenting training sessions coupled with the targeted individualized goal setting and feedback.

At the end of each group training session, parents chose a goal to work on and phone calls were used to support parents' implementation of their goal in their home. Goal setting each session aided parents in focusing on a target skill to implement and set measurable steps to meet the goals. This may have aided in helping the parents feel less overwhelmed with all the strategies learned. As the study progressed parents got better at creating goals for themselves that were doable in the two week time frame between calls. Parents also reported the goal setting was a helpful component of the intervention. This has important implications for working with parents as goal setting may be one component to increasing parents' implementation of the intervention. Parents were encouraged to continue to set goals for parenting every couple of weeks to hold them accountable.

Contributions to the Literature

The study also extends the literature by including families of children with a range of social-emotional and behavioral needs. Most (49) child participants were within 1 standard deviation of the mean on the problem behavior scale of the SSIS (Gresham & Elliott, 2008) at pre-test. Twelve children were between one and two standard deviations above the mean, and eight children scored more than two standard deviations above the mean on the problem behavior scale at pre-test. On average, parents in the intervention condition increased their positive parenting skills and children decreased their challenging behavior, suggesting the intervention was effective across a range of children.

This study also adds to the literature by providing an accurate measure of dosage per parent for both the group parent training sessions and follow-up phone calls, and the retention

and recruitment strategies used. The student investigator employed several strategies to keep parents involved in the intervention such as providing meals, childcare, books and giveaways at training sessions; and meeting parents for data collection when it was convenient for them. The student investigator called parents multiple times a week to remind them of training sessions and drove to parents' homes to talk to the parent in person if they did not answer the phone. During the intervention, the student investigator met with the parents individually to make up missed sessions, and these sessions usually occurred at the family's home. Parents averaged 1.04 make-up sessions, but some parents required as many as 3 or 4 make-up sessions. The student investigator also called parents an average of 2.1 times a week to reach the parents for the follow-up phone calls. This suggests to keep parents engaged in the intervention it may take multiple retention strategies that were used in this study.

Limitations

There were several limitations to this study that warrant further discussion. First, the findings should be interpreted with caution due to the small sample size. The study was underpowered, and the cluster size needed to nest the data was not met. For example, 2 programs only had four participants each, and the cluster size needed was at least 12 parents per group. Due to the small sample size and because parents who dropped out of the intervention were missing not at random, data were imputed. The imputed data set yielded a slightly larger sample (16 additional parents) and a more precise estimate of coefficients of effects of the intervention on outcome measures; however, the findings should still be interpreted with caution.

Second, there is possible correlated measurement error with respect to the SSIS findings (Gresham & Elliott, 2008) as parents were aware of their group membership which might have affected their ratings of their children. Correlated measurement error would lead to an increased

likelihood of a Type I error. Parent ratings of their own skills or their children's behavior is prevalent in the parent training literature which means there may be correlated measurement error across the literature. However, the findings from the observations of children's behavior in this study were similar to the findings from the parent ratings; thus, minimizing the likelihood of correlated measurement error. Further, the parent-report findings suggest that at the very least, parents view their children more positively as a result of participating in the intervention which may be a positive outcome as well.

Third, there was difficulty recruiting parents to participate in the intervention. The student investigator presented at parent meetings, posted flyers, met with center directors and family service specialists, sent letters to parents, and met parents before and after school. Program personnel and prior participants also helped recruit parents for the study. Parents who were initially interested in the intervention but who did not participate cited time needed to participate in the intervention, the video recording, and paperwork as barriers to participation. However, the majority of parents who participated in the intervention condition indicated, after the intervention, that the video recording in their home was non-invasive and the data collection forms took a reasonable (less than 30 min) amount of time to complete. It may be that parents viewed video recording and data collection differently after they participated in the *PSF* intervention. Despite the revised recruitment strategies, only 86 parents consented to participate in the study. The goal was to recruit 150 families based on the power analysis used to the plan the study in order to detect at least a small effect size on all outcome measures.

Attrition also was high and occurred at two time points: prior to randomization (17) and between randomization and post-intervention data collection (16). Twenty percent (17/86) of the families that consented to participate did not complete some portion of the pre-intervention

paperwork. While the student investigator called these parents numerous times to follow-up, the parents did not answer, they scheduled an appointment but then did not show, or they kept rescheduling appointments. The attrition rate between randomization and completion of the intervention was 23% (16/69) resulting in a total of 53 parents (62% of those who consented) who completed the intervention. This rate is similar to other studies conducted with Head Start families (Hughes & Gottlieb, 2004; Webster-Stratton, 1984) but slightly higher than other parent training studies (e.g., Kim, Cain, & Webster-Stratton, 2008). Parents in the intervention condition who dropped out after randomization were more likely to have a child with low levels of challenging behavior, and parents who dropped out of the control condition tended to have children with more challenging behavior.

Another limitation was that social validity of the intervention was only measured through parent report. This parent report assessed the parents' perceptions of the intervention and the social validity of the study procedures. Although the parents rated the intervention favorably they may have done so because of their bond with the study investigator or may have reported an inflated rating of their own skill. A more unbiased measure of social validity should be used such as having raters blind to condition rate the pre and post parent videos and determining if the parent behavior in the post videos are rated significantly more favorably than the pre videos.

Finally, reliability of the DPICS (Eyberg et al., 2013) was assessed using the Gross method and was low (74%). The Gross method is not as stringent as other methods such as point-by-point agreement. The authors of the DPICS recommend the use of the Gross method (Eyberg, Nelson, Duke, & Boggs, 2005) and report Kappa reliability estimates higher than those found in the current study. The low reliability was in part due to the complexity of the coding system as evidenced in other studies that have used this coding system. Coders had to make decisions on

what item the parent behavior should be coded as, and if the behavior fit more than one item, they had to make a decision on which one to code according to the hierarchy of the coding system. For example, if a parent asked a question that was also praise statement such as "Wow, did you draw that pretty picture?", then praise only was scored because praise is higher in the hierarchy than questions. In addition reliability on some items were lower (e.g., Negative Touch, Positive Touch) due to low incidences of the behavior. If a coder missed one instance of the behavior, the reliability with the other coder would be 0%. While the overall IOA was comparable to similar parent training interventions studies (Gross et al., 2009; Webster-Stratton et al., 2004), future research should use a more stringent method for calculating IOA.

Implications for practice and future research

The goal of this study was to conduct a small-scale randomized trial evaluating the effects of the *PSF* intervention on parent-child interactions and children's challenging behavior and social skills. This study should be replicated with more parents to allow for a more rigorous evaluation of the *PSF* intervention. The study was effective for children with a range of behaviors suggesting it is important to provide training and individualized support to parents of children with a range of challenging behavior. Further research is needed on the *PSF* intervention to address the recruitment and retention limitations of this study; and to replicate the findings with other populations such as with parents of children with disabilities.

The reliability of the DPICS (Eyburg et al., 2013) was low suggesting the next step should be to recode the parent outcome videos with a more simplified code that measures only those outcomes that were targeted through the *PSF* intervention (praise, positive following behavior, directions, commands, and positive touch). Further, expanding codes, such as commands, into parent statements that tell the child what to do versus what not to do would be a

more salient measure of parent behavior targeted in this study than the commands coded from the DPICS (2013) in this study.

As more intensive follow-up is needed to keep some parents engaged in the intervention, practitioners should determine the best way to communicate with parents. One efficient way to communicate with parents may be to send automatic text messages to parents. These text messages could provide reminders of parent training sessions and parent goals for the week, and also provide parenting tips throughout the intervention to keep the parents engaged. Research evaluating the effects of these strategies coupled with the added follow-up of texting parenting tips to parents throughout the interventions is needed.

Remote coaching through internet or video-based parent training may be a feasible way to overcome the barriers associated with parents having to come to the center for the parent training. Parents reported barriers to attending group parent training sessions such as stress, lack of gas money, and reliable transportation; and some parents lived as far as 30 miles away from the centers. Remote coaching may also be a way to provide additional coaching to parents through live and video feedback. For example, some families reported they did not meet their goals on weekly calls and more intensive video feedback might increase their follow through. Remote coaching may also be more cost-effective for centers as there would be no need to provide food and childcare. Remote coaching has been shown to be effective in increasing parents' use of early literacy practices (Carta, Lefever, Bigelow, Borkowski, & Warren, 2013) and infants' social-emotional competence and cognitive skills (Baggett et al., 2010; Guttentag et al., 2015). Future research should assess whether in-person or remote coaching is more effective in increasing parent skills and the conditions under which remote coaching would be used and effective.

The findings of this study suggest that for some parents, intervention might need to focus on not only increasing their rate of positive practices, but more specifically targeting a decrease in their use of negative practices. While most parents (88.23%) in the intervention condition increased their base rate of practices post-intervention, some of these parents had increases in both positive and negative parenting practices. For example, during the pre-intervention video, one parent left the room repeatedly and rarely interacted with her child. Therefore, the parent's base rates of positive and negative parenting practices prior to intervention were low. Post-intervention, the mom sat on the floor and played with the child during the play video and helped the child clean the room for the routine video. Her overall increase in parenting practices post-intervention included an increase in both positive and negative parenting practices.

Given that parents responded differentially to the intervention and appeared to need different levels of support, a more comprehensive approach might be needed to support all parents in implementing practices that are likely to have a positive effect on their children's social skills and challenging behavior. One approach to addressing the varying needs of parents might be to use a tiered model of training and support. Providing support to parents through a tiered model that provides increasing levels of support based on the needs or performance of individual parents and children needs further investigation. Given the cost of parent training programs, it would be useful to determine and provide only the level of support needed by each parent. The first level might include providing parents with materials on positive social-emotional development in young children and parenting practices such as those found at www.vanderbilt.edu/csefel and www.challenginbehavior.org. The second level would include using the *PSF* parent training program that supports parents in implementing positive parenting strategies. At this level some parents would receive follow-up strategies such as phone calls if

they reported needing further support to implement the strategies learned in the group parent training sessions. The most intense level of support would be the provision of individualized behavior support planning combined with parent coaching to address implementation of the behavior support plan. Additional studies are needed to evaluate the effects of each tier, how to make decisions about which tier is needed for an individual family, and the effects of the implementation of all tiers combined.

To understand the potential long-term benefits of parent training, both parent and child behaviors should be measured over time. All parents reported they would keep using the strategies after the intervention ended, but no follow-up data were collected. Measuring parent use of strategies would also confirm the social validity of the intervention if parents continued to use the strategies once the intervention ended. Measuring parent use of positive strategies over time is also important to determine what supports parents need to maintain their use of the strategies and to determine if long-term use of the strategies leads to better outcomes for children. It is possible that child behavior change may not occur concurrently with change in parents' use of positive strategies (e.g., Hahlweg et al., 2010), but rather the parents' use of the strategies over time leads to child behavior change. Therefore measuring children's challenging behavior and social skills over time would provide a more comprehensive understanding of the effects of parent training on child behavior change. Other parent training studies such as Kim and colleagues (2008) collected maintenance data six months after the parent training intervention ended and found that child challenging behavior increased but remained below pre-test levels. Measuring child behavior and parent use of positive parenting strategies over time has important implications for making decisions about the utility of parent booster or refresher sessions to

maintain parents' use of the practices, and the subsequent changes in children's social skills and challenging behavior.

Future research might also address the potential benefits of concurrently implementing the *Pyramid Model* in classrooms and the *PSF* intervention for families of children in those classrooms. There is an emerging research base that coaching teachers to implement the *Pyramid Model* in classrooms has positive effects on child behavior (Fox, Hemmeter, Snyder, Binder, & Clarke, 2011; Hemmeter et al., 2012). Research is needed to assess if adding the *PSF* intervention to a classroom application of the *Pyramid Model* would yield more positive and lasting effects for children than parent training or the classroom application alone.

Conclusion

The prevalence of young children with challenging behavior is high, and young children are at great risk for future problems if challenging behaviors are left untreated (Dretzke et al., 2009; Dunlap et al., 2006). As parents are a child's first teacher, group parent training may be an effective way to prevent and address challenging behavior in young children. The results of this study provide initial evidence that the *PSF* intervention may be an effective way to increase positive parenting practices, decrease challenging behavior, and increase child social skills. Some parents also reported a high level of stress on the PSI (Abidin, 2012) suggesting high levels of parental stressors may negatively impact parents' use of positive parenting skills. Future research is needed replicate this study, determine more precise measurement of parent behaviors, and identify ways to modify the *PSF* intervention to meet the needs of all parents. Additional approaches might include using tiered systems of support for parents, with the goal of meeting parents' individual needs and ensuring positive outcomes for all parents and children; or using distance training and coaching to address barriers to group parent training attendance.

APPENDICIES

Appendix A

Head Start Center Questionnaire

Date: _____

Completed by (Circle one): Center Manager Other Administrator

1. What is your center's total student enrollment? _____
2. How many staff work in your center? _____
3. How many lead teachers/ classes do you have this year? _____
4. How many Family Service Specialists do you have? _____
5. What services to families do Family Service Specialists provide?
   _____
   _____
6. Do you have any community agency partners? If so, please describe relationship.
   _____
   _____
   _____
   _____
7. What percentage of your students are:
   a. Hispanic/ Latino(a)? _____
   b. Asian? _____
   c. American Indian/ Native American? _____
   d. Black or African American? _____
   e. Native Hawaiian/ Pacific Islander? _____
   f. White? _____
   g. Other? _____
8. Does your center contain Early Head Start classrooms? _____

9. Which of these words best describes the community around your center?
    a. Rural or farming community
    b. Small city or town (fewer than 50,000 people)
    c. Medium city (50,000-100,000)
    d. Suburb
    e. Large City
    f. Military base
    g. Indian Reservation

10. What percentage of the students in your center are English Language Learners (speak a language other than English at home)? _____

11. What percentage of students has identified special needs (IEPs)? _____

12. What are the three biggest needs of families in your center?
    1.
    2.
    3.

Appendix B

Family Service Specialist Demographic Questionnaire

1. What is the highest degree you have earned? Please check one.

____ High school diploma

____ Some college

____ Child Development Associates (CDA)

____ Associates Degree

____ Bachelors Degree

____ Masters Degree

____ Other (please describe)

2. What is your degree or certification in (if applicable)? Please check one.

____ Not applicable (no certification or degree)

____ Child Development Associates (CDA)

____ Early Childhood Education/ Child Development

____ Early Childhood Special Education

____ Psychology

____ Social Work

____ Mental Health

____Consumer Science

____Other (please describe)

3. How long have you been a Family Service Specialist? _____

4. How long have you worked in your current job? _____

5. About how many hours of training (e. g., workshops) do you receive each year as a part of your job? _____

6. Have you ever received training in challenging behavior or social-emotional development? If so, please describe. _____

_____

_____

7. How many families do you work with? _____

8. How often do you contact families? _____

9. What is the best way to contact your families? _____

10. About how many families are:

_____ African American

_____ American Indian/ Alaskan Native

_____ Asian/ Pacific Islander

_____ Hispanic

_____ White, not Hispanic

_____ Other

11. What are the three biggest needs of the families you work with?
    1
    2.
    3.

12. What type of parent training does your center currently offer? _____

_____

13. What is the average attendance at parent events? _____

Appendix C

Parent and Child Demographic Questionnaire

1. What is child's date of birth? / /

2. What is child's gender?
   - ❑ Male
   - ❑ Female

3. Please choose the category that best describes child's ethnicity:
   - ❒ American Indian/Alaska Native
   - ❒ Asian/Pacific Islander
   - ❒ Black, not Hispanic
   - ❒ Hispanic
   - ❒ White, not Hispanic
   - ❒ Other (specify):_____
   - ❒ Decline

4. Please choose the category that best describes your ethnicity:
   - ❒ American Indian/Alaska Native
   - ❒ Asian/Pacific Islander
   - ❒ Black, not Hispanic
   - ❒ Hispanic
   - ❒ White, not Hispanic
   - ❒ Other (specify):_____
   - ❒ Decline

5. Child lives with:
   - ❒ Biological mother and father
   - ❒ Biological mother and stepfather
   - ❒ Biological mother only
   - ❒ Biological father only
   - ❒ Biological father and stepmother
   - ❒ Foster parents
   - ❒ Relatives
   - ❒ Other (specify): _____

6. How many siblings or other children who live in the home with the child?
   _____ # of children Ages: _____

7. Does anyone in your immediate family (parents, siblings, nieces, nephews) have behavioral problems?
   _____ Yes _____ No
   If Yes, please describe who and what the problem is.

_____	_____	_____	_____
(relationship)	(age)	(problem)	(lives with child?)
_____	_____	_____	_____
(relationship)	(age)	(problem)	(lives with child?)
_____	_____	_____	_____
(relationship)	(age)	(problem)	(lives with child?)

8. What languages are spoken in child's home? (Check ALL that apply)
   - ❒ English
   - ❒ Spanish
   - ❒ Other language (specify _____)
   - ❒ Unknown/Decline

9. What is the primary caregiver's age:

10. What is the primary caregiver's gender?
   - ❑ Male
   - ❑ Female

11. What is the relationship of the primary caregiver to the child? (select one)
   - ❒ Birth mother
   - ❒ Adoptive mother
   - ❒ Foster mother
   - ❒ Step-mother
   - ❒ Other relative guardian (e.g., aunt)
   - ❒ Birth father
   - ❒ Adoptive father
   - ❒ Foster father
   - ❒ Step-father
   - ❒ Other non-relative guardian

12. What is the highest grade completed by primary caregiver? (select one)
   - ❒ 8th grade or below
   - ❒ 9th grade
   - ❒ 10th grade
   - ❒ 11th grade
   - ❒ High School
   - ❒ GED
   - ❒ Some College
   - ❒ Trade school
   - ❒ 2 yr degree
   - ❒ 4 yr degree
   - ❒ Some graduate school
   - ❒ Graduate degree

13. Please mark the line next to the range that is closest to your total average yearly household cash/check income before taxes including child support.

____$0 to $4,999 ____ $20,000 to $24,999

____$5,000 to $9,999 ____ $25,000 to $29,999

____$10,000 to $14,999 ____ $30,000 to $49,999

____$15,000 to $19,999 _____Over $50,000

15. Do you or your child receive any additional support (e.g., Tenn Care, Unemployment, Food Stamps?) _____ yes _____ no

16. What is the primary caregiver's employment status?
    - ❑ Full-time
    - ❑ Part-time
    - ❑ Unemployed/Not working
    - ❑ Unknown/Decline

**Complete 17, 18, and 19 only if primary caregiver is NOT the child's mother:

17. What is the child's mother's age:

18. What is the child's mother's employment status?
    - ❑ Full-time
    - ❑ Part-time
    - ❑ Unemployed/Not working
    - ❑ Unknown/Decline

19. What is the highest grade completed by the mother? (select one).
    - ❒ 8th grade or below
    - ❒ 9th grade
    - ❒ 10th grade
    - ❒ 11th grade
    - ❒ High school
    - ❒ GED
    - ❒ Some college
    - ❒ Trade school
    - ❒ 2 yr degree
    - ❒ 4 yr degree
    - ❒ Some graduate school
    - ❒ Graduate degree

20. What is the child's father's date of age:

21. What is the child's father's employment status?
    - ❑ Full-time
    - ❑ Part-time
    - ❑ Unemployed/Not working
    - ❑ Unknown/Decline

22. What is the highest grade completed by the father? (select one).
    - ❒ 8th grade or below
    - ❒ 9th grade
    - ❒ 10th grade
    - ❒ 11th grade
    - ❒ High school
    - ❒ GED
    - ❒ Some college
    - ❒ Trade school
    - ❒ 2 yr degree
    - ❒ 4 yr degree
    - ❒ Some graduate school
    - ❒ Graduate degree

23. Do you have any concerns about how your child behaves?
_____ Yes _____ No _____ A little

If yes, please check all that apply:

- ❑ My child is shy or withdrawn
- ❑ My child has tantrums more that I would expect
- ❑ My child has trouble listening or following directions
- ❑ Other (please describe):
  _____

24. Do you have any concerns about how your child gets along with others?
_____ No _____ Yes _____ A little

If yes, please describe:
_____

25. Do you have any concerns about how your child is learning to do things for himself/herself?
_____ No _____ Yes _____ A little

If yes, please describe:
_____

26. Do you have any concerns about how your child is learning preschool or school skills?
_____ No _____ Yes _____ A little

If yes, please describe:
_____

27. Is your child or anyone in your family currently receiving any services to address problem behavior or mental health needs?
_____ No _____ Yes

If yes, please check who:
_____child
_____other family

Please describe: _____

Appendix D

Definition of Child Challenging Behavior

Challenging behavior is defined as behavior that includes (a) physical aggression such as hitting, kicking, punching, spitting, throwing objects forcefully, pinching, pushing, and biting; (b) climbing on things in the classroom that is not permitted; (c) destroying property, destroying what another child is working on regardless of the other child's response; (d) taking toys away from other children forcefully; (e) running that poses a safety risk for the child or others or elopement from the classroom; (f) tantrum behaviors that might include behaviors such as kicking, screaming, pushing an object or person, stomping feet, or head banging; (g) verbal aggression including yelling, threats, screaming at another person, calling children bad names, and saying bad words; (h) ordering an adult to do something (e.g., "leave me alone"); (i) persistent or prolonged crying that is loud or disruptive or ongoing crying that interferes with the child's engagement in activities; (j) inappropriate use of materials (e.g., jumping off chairs, slamming materials, throwing objects); (k) statements that are noncompliant (e.g., "I'm not going to do it") or clear and explicit verbal or physical refusal to follow directions; and (l) inappropriate touching, stripping, and other behaviors that are hurtful, disruptive, or dangerous to self or others.

Appendix E

Additional Support Questionnaire

1. In the past three months I attended a workshop/training to help me address my child's social skills or problem behavior:

   ☐ Yes ☐ No

   If yes, please describe:

   _____

   _____

   _____

   _____

2. I received support to help me with my child's behavior from someone in the past three months:

   ☐ Yes ☐ No

   If yes, please describe:

   _____

   _____

   _____

   _____

   The support was from: (check all that apply)

   ☐ My child's pediatrician
   ☐ Mental health counselor
   ☐ Psychologist or psychiatrist
   ☐ Family service coordinator at my child's Head Start center
   ☐ Behavior specialist/therapist
   ☐ Family counselor
   ☐ DCS worker
   ☐ Therapist
   ☐ Parent training program
   ☐ Case manager
   ☐ Other, please describe:

   _____

   _____

Appendix F

Parent Training Evaluation

Directions: Please take a moment to provide feedback on the training that you received. Fill in the box that corresponds to your opinion for each statement. Please add any additional comments that you may have at the bottom of the page.

Please fill in the box that best describes your opinion as a result of attending this training…	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
(1) I felt the information provided in this training was very useful for my family.	O	O	O	O	O
(2) The training format (time, location, child care) worked well for me and my family.	O	O	O	O	O
(3) I would recommend this training series to another parent.	O	O	O	O	O
(4) I have made at least one change in my parenting strategies since participating in this training project.	O	O	O	O	O
(5) The training was well organized and clear.	O	O	O	O	O
(6) The presenter(s) was knowledgeable and effective in style.	O	O	O	O	O
(7) There were sufficient opportunities to raise questions and get information from the presenters.	O	O	O	O	O

Please respond to the following questions regarding this training:

8) Please list 2 actions that you will take in the next couple of weeks as a result of this training:

   1.

   2.

9) I really liked the way...

10) The training would have been better if…

11) Other comments and reactions:

Appendix G

Social Validity and Sustainability Questionnaire

Parent ID: _____ Date: _____

Directions: Please circle the number that works best for your answer to each question. We are asking about the strategies you learned that Alana taught. We call them behavior strategies in the survey.

The following questions deal what you think about the training materials and data collection.

1. The handouts, workbook, and routines guide that Alana gave me helped me use the behavior strategies in my home.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
				
1	2	3	4	5

2. Video recording in my home during the study was disruptive to my daily routine.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
				
1	2	3	4	5

3. The forms I completed took a reasonable time to complete.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
				
1	2	3	4	5

The following questions deal with what you think of the group trainings and phone calls.

4. The group training sessions helped me use behavior strategies in my home.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
☹		😐		☺
1	2	3	4	5

5. My parenting practices have changed due to the training and phone calls Alana provided.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
☹		😐		☺
1	2	3	4	5

6. The suggestions I received from Alana during phone calls were useful in dealing with my child's challenging behavior and/or increasing positive behaviors in my child.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
☹		😐		☺
1	2	3	4	5

7. Phone calls were frequent enough to support my use of the behavior strategies I learned.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
☹		😐		☺
1	2	3	4	5

The following questions deal with how you used the behavior strategies you learned in group trainings and on phone calls.

8. I had barriers (other responsibilities, family stress, work, etc.) that got in the way of my using the behavior strategies I learned with my child.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
☹		😐		☺

1 2 3 4 5

9. I need/needed more support to implement the behavior strategies.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
☹		😐		☺
1	2	3	4	5

10. I understood and know how to use the behavior strategies in my home after trainings and phone calls.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
☹		😐		☺
1	2	3	4	5

11. The behavior strategies Alana taught me to use helped me to increase my child's social emotional development.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
☹		😐		☺
1	2	3	4	5

12. I have used the behavior strategies Alana taught me with my child when he/she has challenging behavior.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
N/A				
☹		😐		☺
1	2	3	4	5

The following questions deal with how Alana worked with you.

13. I developed a good working relationship with Alana.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
☹		😐		☺
1	2	3	4	5

14. Alana was useful in helping me with things outside the training.

Strongly Disagree N/A	Disagree	Neutral	Agree	Strongly Agree
☹		😐		☺
1	2	3	4	5

15. I was comfortable talking with the Alana about concerns or issues I had with the use of the behavior strategies.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
☹		😐		☺
1	2	3	4	5

The following questions deal with how you will continue to use the behavior strategies now that the training is over.

16. I will keep using the behavior strategies when group training and phone calls end.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
☹		😐		☺
1	2	3	4	5

17. I would recommend the use of the practices Alana taught me to other families.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
☹		😐		☺
1	2	3	4	5

Appendix H

Sample Parent Goals by Session

Session 1

I will spend one on one time with my child for at least 10 minutes every day
I will provide positive, descriptive feedback to my child at least 5 times every day.

Session 2

I will turn the tv off and play with my child for at least 5 minutes, two times a day.
I will follow my child's lead more and let him pick the activity and what we do within the activity. I will do this at least once a day.

Session 3

I will establish the rules for the home and present them to my children. I will provide rule reminders at least 2 times a day.
I will ask my children what the current rules are, then review one rule with them and have them act out examples and non-examples of that rule. I will continue with this until all four rules are presented.

Session 4

I will post the visual schedule and teach my child how to use it.
I will create a consistent bed time routine and implement it every day to help my children go to bed earlier.

Session 5

I will teach my children about emotions (happy, sad, excited, sacred, and surprised) and use the emotions cube to play games with my children.
I will read at least two books to my children a day and ask them how the characters are feeling and what they could do to help them feel better if they are feeling bad.

Session 6

I will use first then at least four times a day to motivate my child to do things he does not want to do. I will also use neutral time to teach him what to do instead of act out.
I will give my child at least two choices in at least three activities, daily.

Session 7

I will read the routines guide for the problems I am having and create a plan for going to the store and what to do when my child throws a tantrum.
I want to increase my consistency with all the things I have put in place and use them at least 75% of the time.

Appendix I

Weekly Family Questions

1. How much progress have you made toward your goal since the last time we met?

- ☐ None
- ☐ A little
- ☐ Some
- ☐ A lot
- ☐ I have met my goal

2. My child had challenging behavior the past week.

- ☐ All of the time
- ☐ Most of the time
- ☐ Some of the time
- ☐ A little of the time
- ☐ Never

3. My child's behavior interfered with my family's daily activities.

- ☐ All of the time
- ☐ Most of the time
- ☐ Some of the time
- ☐ A little of the time
- ☐ Never

If challenging behavior occurred, answer the following item:

4. When my child had challenging behavior, I:

- ☐ Didn't know what to do
- ☐ Tried something and it didn't work
- ☐ Tried something and it sort of worked
- ☐ Tried something and it mostly worked
- ☐ Knew how to handle it

Appendix J

Group Parent Training Fidelity

Positive Solutions for Families Training Session 2 Fidelity Checklist

Site:_____ Date:_____

Session:_____ Trainers:_____
_____

Fidelity Coder ID:_____ Start time:_____

Number of Participants:_____ End time:_____

Activity		Observed	
		Yes	No
Session 2	Facilitator reviewed agenda for class		
	Facilitator asked some families to reflect on their implementation of the goal they set in the previous session		
	Facilitator described the importance of play		
	Facilitator reviewed tips on playing with children		
	Facilitator presented information on skills children need to develop friendship skills		
	Facilitator linked previous session (building relationships or positive comments) and play to children's behavior		
	Some participants completed a role play on play with children		
	Facilitator asked some participants to complete an activity		
	Participants set goals for the week and facilitator assisted as necessary		
	Facilitator reminded participants of next training session		

Appendix K

Phone Call Fidelity

Family ID: _____ Researcher ID: _____

Follow-up phone meeting date: _____ Session #: _____

Date fidelity completed: _____ Fidelity coder ID: _____

Reliability: ☐ Yes ☐ No Reliability coder ID: _____

Score	Total possible	Total present	%

Follow-up phone meeting component	Yes	No	N/A	Notes
1. The RA opened the meeting with a positive greeting (note if occurred before recording began).				
2. The RA asked the family the 3 weekly questions about their child's behavior.				
3. The RA reviewed the family's bi-weekly goal.				
4. The RA asked the family to reflect on their implementation of the current goal.				
5. The RA gave the family positive feedback on practices they reported using.				
6. The RA asked the family if there were any issues they needed help problem-solving around implementing their goal.				
7. The RA generated solutions with the family on how to overcome the barriers if needed.				
8. The RA discussed family's planned actions related to their goals between this follow-up phone meeting and the next training.				
9. The RA closed with a positive statement to the family and affirmed the family for their hard work and effort.				
10. The RA reminded the family of the next training session.				

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