Evaluation of the Statewide Implementation of a Parent Education Program in Louisiana's Child Welfare Agency:

The Nurturing Parenting Program for Infants, Toddlers, and Pre-School Children

Final Evaluation Report

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Introduction

Every year, nearly one million children are victims of abuse or neglect in the United States. Child abuse and neglect is a complex, multi-faceted problem, occurring in every corner of the nation and affecting every member of society, either directly or indirectly. It is estimated that costs associated with child abuse and neglect exceed $108 billion annually (Wang & Holton, 2007). In addition to the financial costs, the human toll of abuse and neglect is incalculable. Children who suffer abuse and neglect are at higher risk for a multitude of other problems including poor physical health, low cognitive achievement, depression, and aggressive behavior (Gaudin, 1993; Huebner, 2002; Thomlison, 2003).

Parent education is one of the most commonly used forms of intervention for abusive or high-risk parents in child welfare agencies across the country (Barth, Landsverk, Chamberlain, Reid, Rolls, et al., 2005; Huebner, 2002; Hurlburt, Barth, Leslie, & Landsverk, 2007). Yet, due to limited monitoring of implementation and evaluation of outcomes, we know very little about the effectiveness of parent education with child welfare populations and, particularly, as implemented within the limits of the child welfare system. These constraints commonly include limited financial resources requiring more reliance on whatever free or low-cost community-based services are available; pressure to comply with Adoption and Safe Families Act (ASFA) guidelines related to timely permanence while adhering to the recommended level of intervention sufficient to meet the needs of high risk parents; difficulty in arranging child participation in parenting classes so that parents have an opportunity to practice new skills; timely and appropriate services to parents with multiple, complex problems, which often requires prioritizing and sequencing of services so that issues such as substance abuse and mental health problems are dealt with first; and a lack of professionally educated and trained parent educators. Yet, there is a clear and legitimate expectation for child welfare agencies to move toward providing a more evidence-based array of parenting interventions.

Furthermore, while parenting programs are plentiful and may contain some of the same components, they can vary in significant ways. Many programs have been designed for a particular target population and have a specific goal or purpose. Programs often vary in content, intensity, duration, and teaching method and have different levels of evidence to support their effectiveness. While some programs clearly demonstrate effectiveness at changing certain behaviors within certain populations, others continue to be used with little to no evidence of effectiveness.

Unlike the fields of mental health and juvenile justice, child welfare has not generally identified or recommended evidence-based approaches for serving its target population to any great degree. The parenting programs with the strongest evidence of effectiveness have most commonly been studied in clinical

settings primarily focused on behavior-disordered children (Barth et al., 2005). Parenting models such as MultiSystemic Therapy (Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998), Parent-Child Interaction Therapy (Eyberg & Robinson, 1982), The Incredible Years (Webster-Stratton, 2000), and Parent Management Training (Patterson, Reid, & Eddy, 2002) are primarily focused on preventing, reducing, and treating serious behavior problems in children. They have been touted as having the most promise for use in child welfare based on their empirical evidence with other high-risk populations (Barth et al., 2005). While behaviorally disordered children represent a portion of the child welfare population and these programs are a valuable resource to meet their specific needs, the majority of families (60 percent) involved in the child welfare system are facing allegations of parental neglect (including medical neglect), and 32 percent of all victims are age 4 years and under (Administration for Children and Families, 2007). Clearly, there needs to be an emphasis on parenting issues in addition to, and other than, those relating to serious behavior problems in children. The parent-child relationship, specifically as it relates to nurturing, attachment, empathy, and parental insight into the needs of the child, must play a key role in improving parenting practices for this population.

In their seminal analysis of parent-training programs in child welfare, Barth and colleagues (2005) made a compelling argument for the need to build the evidence base of parent training programs specifically used in child welfare agency settings. Four parent training programs Parenting Wisely (Gordon, 2003), Project 12 Ways (Lutzker & Rice, 1984), STEP (Adams, 2001), and Nurturing Parenting (Bavolek, 2002), are identified in the article as being commonly used in child welfare and possibly efficacious but lacking rigorous evaluation or implementation on a large enough scale within a child welfare system to withstand scrutiny.

In this study, we evaluate one of these models—Nurturing Parenting—as implemented on a statewide basis in Louisiana's child welfare agency. This study builds on the evidence base of parent training in child welfare systems in several important ways:

1. This is the largest sample size of a pure child welfare population using a parenting program designed for the specific target population, and the only evaluation of the Nurturing Parenting Program (NPP) that combines the Adult Adolescent Parenting Inventory-2 (AAPI-2) scores and agency data of repeat maltreatment.
2. This is the only evaluation of NPP that has information on a large number of parental characteristics in addition to outcomes, allowing for meaningful examination of which clients benefit most.
3. This is the first and only statewide implementation and evaluation of NPP in a state-run child welfare agency. The information learned in this process regarding issues of training, data gathering, assuring fidelity to the model, program costs, and logistics will be valuable to other state systems interested in moving towards a more consistent and evidence-based approach to parenting education.

Specifically, this study examined, through a pre-/post-test study design, the effectiveness of the NPP as implemented on a statewide basis within the Office of Community Services (OCS), Louisiana's child welfare agency. While pre- and post-test designs are not the gold standard in establishing effectiveness, they are typically the first step along a continuum for establishing a program's promise for a specified population. Typically, before embarking on a more rigorous (and resource intensive) study with a quasi-experimental or experimental design, researchers want to see some evidence of effectiveness, such as

statistically significant positive change for participants before and after an intervention.

This particular model of the Nurturing Parenting Program is a 16-week group and home-based program that targets parents and other caregivers of infants, toddlers, and pre-school children involved in the child welfare system. We examined two primary outcome variables: changes in parental attitude pre- and post-intervention, and incidences of post-intervention maltreatment. Additionally, descriptive data regarding parental attendance, satisfaction with the program, and implementation costs are reported. While the study does not fulfill the need for a randomized control trial, it does build on the existing knowledge base by analyzing the systematic, statewide implementation of one specific parenting intervention; providing an analysis of pre and post scores on the AAPI-2 in relation to numerous demographic variables thought to be correlated with abuse and neglect; and measuring the ultimate program outcome of post-intervention maltreatment.

Literature Review

This section provides a broad review of the literature on parent education for families involved in the child welfare system followed by a more in-depth review of the evidence on the Nurturing Parenting Program. Although the use of parenting interventions is documented as far back as the early 1800s (Sherrets, Authier, & Tramontana, 1980), research published on their effectiveness for abusive and neglectful families was not located prior to 1981 (Wolfe, Sandler, & Kaufman, 1981). A decade later, Azar (1989) reported very few effectiveness studies for this target population and those that did exist were primarily of single-case design and very narrowly focused. Yet another decade later, Morrison Dore and Lee (1999) reported "a dearth of well-designed outcome studies" in the child welfare literature (p. 314). Since that time, the research around parenting interventions has begun to grow, albeit slowly and without significant methodological rigor.

A meta-analysis of parent education programs to prevent child abuse conducted by Lundahl, Nimer, and Parsons (2006) reviewed 23 relevant studies; a systematic review by Johnson, Stone, Lou, Ling, Claassen, et al. (2006), using similar but expanded criteria, highlighted 70 studies. However, only three of the programs identified in these reviews have been widely discussed in the literature regarding parenting programs designed for parents of young children involved in the child welfare system: The Nurturing Parenting Program (Bavolek, 2002), Project 12 Ways/SafeCare (Lutzker & Bigelow, 2002), and Triple P (Sanders, Cann, & Markie-Dadds, 2003). Among the numerous reviews of evidence-based or promising programs that cite one or more of these three are California Evidence-Based Clearinghouse for Child Welfare, Center for Social Service Research, Research Response Team of the Bay Area Social Services Consortium (Johnson et al, 2006); FRIENDS National Resource Center for CBCAP, "FactSheet on Parent Education" (2008); "Evidence-Based Treatments in Child Abuse and Neglect" (Chaffin & Friedrich, 2004); and "Parent Training Programs in Child Welfare Services: Planning for a More Evidence Based Approach to Serving Biological Parents" (Barth et al., 2005).

In a systematic review of parent training programs discussed for use with the child welfare population, Barth et al. (2005) developed a four-level rating system based on an integration of criteria established by Chambless and Hollon (1998) and the Cochran Collaborative (Clark & Oxman, 2003). The Nurturing Parenting Program and Project 12 Ways were each rated as having a Level 2 rating of demonstrated program effectiveness because studies were limited to quasi-experimental or single-subject designs with the target child welfare population. Although evaluations of these programs use standardized measures, such as the AAPI-2 (Bavolek, 2002) for the Nurturing Program and the Eyberg Child Behavior Inventory (Eyberg & Pincus, 1999) for Project 12 Ways, the methodology of the studies did not warrant a Level

1 rating due to a lack of clinical trials that included maltreated children with evidence of effectiveness. Similarly, of the 10 parenting programs rated by the California Evidence-Based Clearinghouse for Child Welfare, only two were rated at the highest level for relevance to child welfare, Nurturing Parenting and SafeCare, but they were both only rated at a Level 3 ("Promising") on evidence of effectiveness.

Also worth noting is a study by Chaffin, Silovsky, Funderburk, Valle, Brestan, et al. (2004) evaluating Parent-Child Interaction Therapy (PCIT) (Eyberg & Robinson, 1982). This is the only available study evaluating parent training using a randomized control design with a pure child welfare population to study the efficacy of the program in preventing re-abuse. The study involved 110 families randomly assigned to one of three treatment groups: PCIT, enhanced PCIT (ECPIT), or a traditionally used parent education group. Each intervention consisted of 20 sessions but they varied in content, teaching methods, and the focus of the intervention. The results indicated that PCIT reduced rates of future maltreatment among physically abusive parents. At follow-up (median time 850 days), 19 percent of the PCIT group had a re-report for physical abuse compared to 36 percent who participated in EPCIT and 49 percent who participated in the standard parenting group. Outcomes for child neglect were not improved by PCIT. Repeat maltreatment was actually higher in the group receiving the ancillary services in the expanded model than the PCIT group, possibly suggesting that the focus on other issues detracted from the parent's attention to the primary program focus.

In addition, some research is available that isolates characteristics or components of effective programs. Key components commonly cited include sufficient intensity and duration relative to the severity of risk factors of the family; group and home-based sessions; inclusion of behavioral skills training; clear program goals and on-going program evaluation (Lundahl, Nimer, & Parsons, 2006; Thomlison, 2003); strengths-based perspective; family-based, targeting both parents and children; and utilization of interactive teaching techniques (Brown, 2005; Colosi & Dunifon, 2003; FRIENDS, 2008).

In the most recently published meta-analytic review of components associated with parent training program effectiveness, the authors found clear evidence that including training in positive parent-child interactions and offering an opportunity for parents to practice skills with their own child resulted in better parenting behavior outcomes and fewer child externalizing behavior outcomes (Kaminski, Valle, Filene, & Boyle, 2008). Additionally, when considered independently, teaching parents emotional communication skills had a significant positive impact on parenting skills and behaviors, and including parent training in the use of time-out had significant positive results on reducing child externalizing behaviors. This study also found that contrary to popular thinking, a larger effect size was not related to teaching parents about child development. Likewise, and similar to the PCIT study discussed previously, a smaller effect size was demonstrated when other ancillary services were included in parenting programs.

The Nurturing Parenting Program

The Nurturing Parenting programs (NPP) (Bavolek, 2002) are primarily based on social learning theory, which supports the widely accepted belief that most parenting patterns are learned during childhood and replicated later in life as the child becomes a parent. In developing a program to assess, treat, and prevent abusive parenting practices, Bavolek and colleagues (1999) conducted a literature review to distinguish specific patterns or constructs of abusive and neglectful parenting. The constructs that were identified center around parental expectations of the child, empathy toward children's needs, use of corporal punishment as a means of discipline, parent-child role responsibilities, and children's power and independence.

In addition, the NPP incorporates many characteristics associated with positive program outcomes, including teaching emotional communication and behavioral skills training and involving both parents and children so parents can practice skills learned with their own child.

Based on the theoretical framework and primary focus on reducing abusive or neglectful behavior, the California Evidence-Based Clearinghouse for Child Welfare rated the Nurturing Parenting Program as a Level 1 (highest level) for relevance to child welfare. However, despite reporting quasi-experimental studies, the lack of randomized control studies resulted in a scientific rating of Level 3, a Promising Practice, on evidence of effectiveness.

Numerous programs fall within the umbrella of the NPP, many designed for specific cultural groups or otherwise unique populations. The programs are customized in a variety of ways, including matching the recommended intensity and duration based on family risk factors and the age of the child. The specific program for parents of infants, toddlers, and pre-school children focuses on parental self-awareness and empowerment, the development of empathy, understanding child development and the role of discipline, emotional communication, behavior skills training, the importance of nurturing routines, and making good choices for child safety (Bavolek, 1985).

The validation study for the Nurturing Parenting Program for infants, toddlers, and pre-school children was conducted in 1984-1985. It involved 260 Head Start parents and their children ages birth to 5 years living in Wisconsin. The program was administered by Head Start staff and included 45 sessions occurring on a weekly basis, each lasting 1.5 hours and taking place in both the center and at home.

The Adult and Adolescent Parenting Inventory (AAPI) and the Nurturing Quiz were administered pre- and post-intervention. Additional data collected from parents and staff on a weekly basis throughout the 9-month study included a process evaluation questionnaire, participation of families, and perceived effectiveness of the program. The AAPI (Bavolek, Kline, & McLaughlin, 1979) is a valid and reliable instrument designed to measure parenting beliefs and attitudes. The Nurturing Quiz is an informal criterion-referenced inventory consisting of 25 multiple choice questions designed to assess a parent's knowledge of specific behavior management techniques such as time-out and ignoring. The process evaluations were completed each week following a home or center session and were designed to elicit information regarding the worth of a specific session, the combination of sessions to date, and recommendations for program improvement.

Sixty-six percent of the participants completed the program with attrition occurring for a variety of reasons. At post-test, a statistically significant and positive increase ($p<.05$) on all constructs of the AAPI was found, demonstrating that parents gained more positive, nurturing attitudes and beliefs as a result of participation. Age-appropriate expectations, empathic responsiveness, and a shift toward the belief in non-violent discipline techniques increased and the likelihood of reversing parent-child roles decreased. Similarly, scores on the Nurturing Quiz improved at a statistically significant rate ($p < .05$) indicating an increase in parenting knowledge of non-violent forms of behavior management.

The results of the parent questionnaire revealed a positive perception of the program's impact on the participant's role as a parent and favorable perceptions of the program's impact on their child's social, emotional, and cognitive growth and development. Furthermore, 97 percent of the parents who completed the program indicated they would recommend this program to other parents (Bavolek, 1985).

Despite these positive results, the study has some limitations. The lack of random assignment to a control

group prohibits conclusively attributing the noted changes to participation in the program. Also, the extent to which the findings can be generalized to other persons, settings, treatments, and outcomes must be considered (Shadish, Cook, & Campbell, 2002). Results of the program may not hold true for families who are not involved in Head Start or other similarly structured settings or those who have significantly different characteristics from those of these participants.

Various models of the NPP have been used alone or as part of a more comprehensive intervention with a range of high-risk populations, including child welfare clients, in numerous published and unpublished studies; however, none apply the methodological rigor required to imply causality. Two evaluations of the NPP implemented on a small scale in child welfare agencies (Licking County, Ohio; Fresno County, California) have been shared with the program's author but have not been published in peer-reviewed journals. In the Ohio study (Primer, 1991) 48 adults identified by the department as physically abusive or neglectful participated in the 15-week program. Post-test results on the AAPI indicated that between 75 percent and 93 percent of participants showed statistically significant positive change on AAPI constructs. Furthermore, 21 participants agreed to take part in a one-year follow-up using the AAPI. Of these participants, 68 percent to 76 percent continued to show positive gains from pre-test scores. Primer (1991) reported that the majority of participants who chose not to participate in the follow-up study stated that the department had successfully closed their case and they did not want further involvement with the child welfare agency. This might imply long-term positive improvement in these parents also as there had been no further agency involvement.

In a study by Wagner (2001) of the NPP in Fresno County, California, the recidivism pattern of 104 NPP graduates was compared to 95 non-graduates. All parents participating had active child protection cases and unsupervised access to at least one child. The results demonstrated lower rates of recidivism (substantiated, unsubstantiated, and inconclusive; only excluding unfounded) among program completers (23 percent) as opposed to non-completers (43 percent); when considering only substantiated cases, the rates were 9 percent and 23 percent respectively. Furthermore, survival analysis reflected a longer period of time before repeat maltreatment occurred for the graduates as opposed to the non-graduates.

Additionally, in a large study (Bavolek & Weikert, 2004) involving a pure child welfare population, the Florida Department of Children and Families mandated that all agencies receiving state funds for providing parent education to abusive, neglectful, or high-risk families referred to the department must administer the AAPI-2 pre- and post-intervention. Although the Department did not mandate which parenting program agencies must use, 22 agencies implemented the NPP (8 used Birth to 5; 14 used 5 to 12 years), 66 agencies did not use a specific curriculum, and 28 used established programs other than NPP.

Results of AAPI-2 pre-post tests (n=11,061) were reported for three groups: non-NPP, NPP Birth to 5, and NPP 5-12. Parents attending either NPP had significantly higher post-test mean scores than those attending a non-NPP. Furthermore, although all three groups had some post-test mean scores in the high-risk range (standardized scores of 1, 2, or 3), the percentage of scores from the non-NPP participants in this group was consistently higher than the scores of those attending the NPP.

Published evaluations of NPP all involve parents who have been determined to be at high risk for abuse or neglect. In one pilot study of pregnant and parenting adolescents, a group often cited as being at risk for abusive and neglectful behavior, Thomas and Looney (2004) found that using a modified version of the NPP (from 20 to 12 weeks), followed by a second phase of educational sessions focused on health, infant massage, and CPR, led to significant improvement in parenting attitudes and beliefs as measured

by the AAPI-2. The sample consisted of 41 adolescents in residential treatment or a rural alternative school. Another published study (Cowen, 2001), funded by the Iowa Department of Human Services, involved a convenience sample of 154 families from 15 Child Maltreatment Prevention Councils. Participants included parents who were self-referred as well as those who were court-ordered to participate. The program evaluated by Cowen (2001) consisted of 15 2.5-hour group sessions or 45 1.5-hour in-home sessions. The results indicated statistically significant improvement on all constructs of the AAPI from pre- to post-test.

Parenting Education in Louisiana

Louisiana's child welfare system, not unlike others across the nation, has struggled with the identification and implementation of consistent, high-quality parent education as an intervention for parents involved in the system. In 2000, a review of parent education programs supported by OCS revealed huge variation in the content, duration, intensity, format, and cost (Hodnett, 2000). Although Louisiana is a state-run system, there was no coordinated planning, monitoring, or evaluation of these programs.

These findings marked the beginning of a committed and diligent effort by OCS to work toward a more deliberate and systematic approach to implementing parent education programs with demonstrated effectiveness. Parents referred or ordered to participate in parenting interventions must be afforded the best opportunity possible for obtaining the knowledge and skills necessary to fulfill their parental responsibility. Furthermore, professionals in the field of child welfare have an ethical obligation to offer services appropriately tailored to the client's need and services that demonstrate predictable, beneficial, and effective outcomes, especially given a scarcity of resources and a need to be accountable for how those resources are spent.

Selection of Program

The process of selecting parenting programs that would be supported by OCS began in 2004 and took nearly a year to finalize. Beginning with a literature review to determine the most effective parenting programs being used with the child welfare population, a team of OCS staff and stakeholders accessed numerous resources including Internet searches, a review of peer-reviewed journal articles, and consultations with the staff of professional organizations such as Child Welfare League of America and the Administration for Children and Families, Office of Child Abuse and Neglect, among others.

Although the literature review revealed studies on specific programs (as discussed previously) with weak evaluation designs, it did prove valuable in defining criteria that, by consensus of many child welfare experts, were thought to be important. Ultimately, our criteria included the following:

1. The program should have a primary focus on preventing child abuse or neglect and some evidence of effectiveness within the child welfare population.
2. Training and manual materials should be available yet flexible and adaptable to accommodate special populations often involved in the child welfare system (i.e., parents with lower levels of cognitive functioning).
3. The program should be able to be implemented by professional, but not necessarily clinical-level, staff.
4. The program should include a component that allows the parent to demonstrate his or her ability to implement skills learned (involves parent/child interaction).

5. The program should reflect an intensity and duration consistent with recommendations for a treatment level of intervention.
6. The program should attend to different learning styles by incorporating a variety of teaching methods and settings.
7. The program should build on parents' strengths and be culturally sensitive.

Based on the fact that the NPP met all of the above criteria and the program's developer was willing to assist us with training and implementation issues, NPP was chosen as the primary program for use throughout the system. Also a factor in choosing the NPP was the program's philosophy of nurturing as a core principle in raising children. Research suggests that parental nurturing of children may be the most important factor in children's positive growth and development (Smith, Cudaback, Goddard, & Myers-Walls, 1994). In addition, there is general agreement that promoting nurturing and empathic parenting practices is critical to the safety and well-being of children (Bavolek, 2002; Donald & Jureidini, 2004; Kochanska & Aksan, 1995; Laible, 2004).

Two other programs, Strengthening Families and Effective Black Parenting, were also viewed as closely aligned with our criteria, and these were also approved for use within OCS. However, OCS management decided that for parents with children birth to 5 years, the NPP would be the only formal program offered through the OCS-funded Family Resource Centers, which is the primary service provider for families involved in the child welfare system. This decision was made for several reasons. First, children in this age group are among the most vulnerable so it was critical to pay close attention to the intervention being provided to these parents and its effectiveness in preventing repeat maltreatment. Second, given the limited resources available to evaluate the parent education interventions, it was only feasible to begin with one program and work to build internal capacity to eventually evaluate different programs and their effectiveness within Louisiana's child welfare population.

Implementation of the Nurturing Parenting Program

Sample selection. OCS contracts with social service providers in each region to operate a Family Resource Center (FRC) where specified services are provided to OCS clients. One of the primary services required of the FRCs is parent education. OCS required all FRC contractors to participate in a 3-day facilitator training with Dr. Stephen Bavolek, who developed NPP. This was done to increase fidelity in the delivery of the program.

In addition, OCS State Office Program staff provided training throughout the state for all first-line workers and supervisors on the core principals of the NPP, and the new policy regarding referrals to parent education. Specifically, the policy required that when a parent was assessed as needing parent education and skills training for a child age 0-5 years, the worker had to first consider a referral to the FRC for NPP. The policy did allow a worker to offer an alternate form of parent training if the parent's situation was such that it was not in the parent's best interest to be referred to the FRC for the parenting group. Examples of situations that might have justified an alternate referral include a parent whose work schedule would not allow participation or a parent who had mental, emotional, or behavioral disorders to the extent that group participation was not appropriate. In these cases, alternatives included individual work with the parent by either the FRC staff or OCS caseworker, or the addition of a parenting component to

other interventions the parent might be receiving such as mental health or substance abuse treatment.

Project implementation was to begin throughout the state on September 1, 2005. However, on August 29, 2005, Hurricane Katrina wreaked havoc on the coast of Louisiana, in particular the greater New Orleans area, and two weeks later, Hurricane Rita did the same to the southwestern part of the state. These hurricanes had a major impact on the child welfare system, including the FRCs and their ability to deliver services to families. Thus, not unexpectedly, the implementation plan as originally designed had to be modified significantly. Furthermore, as a result of the hurricane, the New Orleans FRC was forced to modify the NPP model used in the rest of the state so significantly that this center has not been included in this evaluation study.

Two sites did begin using the NPP in late fall 2005, but the remainder of the centers did not begin until the early part of 2006. Additional staff training was conducted during the summer of 2006 along with stakeholder meetings to discuss what aspects of the program were working well and what aspects were not. Slight modifications were made based on feedback from OCS staff and FRC facilitators. For example, the curriculum was initially broken down into two 8-week sections, one to focus on core parenting issues and the second to focus on more advanced skills. A pre- and post-test AAPI was administered at the beginning and end of each section. Facilitators reported that it was hard to motivate parents to continue into the second section and that the extra paperwork involved did not seem to be a good use of time. Also, facilitators reported that even though the vocabulary was written at a 5th-grade level, some of the concepts were difficult for some of the participants to grasp. As a result, we worked with Dr. Bavolek to streamline the curriculum into one continuous 16-week program with only one pre-/post-assessment and we also developed an "Easy Reader" version of the program. The content of the program was not changed, but for those participants with limited reading ability, the Easy Reader was an option.

In addition, OCS committed to conducting a statewide evaluation of this implementation examining both the process of implementation and fidelity to the model as well as analyzing outcome data gathered through the use of standardized measures. It was expected that all sites would implement the 16-week group and home-based model consistently, and a children's group component would be included with each parent group. In addition, each site was instructed to administer the AAPI-2 and Nurturing Parenting Competency Scale pre- and post-intervention and a "Nurturing Family Plan" was to be developed at the start of each program. This plan allowed for a certain amount of customization based on individual parental needs above and beyond those covered in the core lessons, and was also to be used to document parental demonstration of newly learned parenting skills during home visits. Unfortunately, but not entirely surprisingly, as statewide data were collected, it became evident that some sites complied fully with the expectations set forth by the state agency; some failed to follow some of the expectations, seemingly because they did not understand or value the importance of model fidelity or consistent, precise data collection; and others, accustomed to having free rein in program design, did things the way they wanted to with little regard for the expectations set by the state agency. For example, in the first year of implementation, some groups did not incorporate the children's group into the program because, reportedly, it was too hard to get the children there. Other centers, viewing only the parent as the client and only the parent's participation as important, kept detailed attendance logs on the adults but not the children. Therefore, a large portion of the data that we expected to analyze was either missing or its accuracy was too questionable to be included. We intended to include more than two outcome variables, but after close review of the data, we decided to limit the analysis to those outcome variables for which we had the most

reliable data. All centers used the same Nurturing Parenting program; however, there were varying degrees of fidelity to the model. Consequently, this study focuses on the statewide evaluation of the implementation of NPP in Louisiana using two primary outcome variables: change in AAPI-2 scores pre- and post-intervention, and incidents of maltreatment post-intervention. Our primary research questions were these: (a) What is the effect of NPP participation on parental attitudes in a child welfare population and how is this associated with characteristics of parents and families and their level of program participation? (b) What is the effect of NPP participation on incidences of maltreatment in a child welfare population and how is this associated with characteristics of parents and families and level of program participation? Finally, we also present data on parental satisfaction with the program and program cost.

Method

Overview of Research Design

The evaluation used a pre- and post-test design to assess changes in parental attitudes before and after participation in the program. In addition, as described later, child welfare administrative data were used to assess incidences of repeat maltreatment after the intervention. All procedures regarding confidentiality to protect client information were followed as outlined in OCS Administrative Policy 1:545 Confidentiality: Access to Information, Clients and Records for Research.

Sample

Louisiana has 64 parishes, which are divided into 9 OCS service regions. OCS contracts with 12 community-based Family Resource Centers (FRCs) to provide a menu of services to families that encounter the child welfare system because of allegations of abuse and/or neglect of their children. Each FRC serves designated parishes and all parishes in Louisiana are served by one of the FRCs. The contract between OCS and the FRCs requires that, when parenting education is an identified need for parents with children under age 6, NPP should be offered to the family unless specific reasons exist for screening out the parent (such as active substance abuse or serious cognitive impairment that prevents constructive participation in the program). Eleven of the FRCs include NPP as one of the parent education programs offered to families; however, as stated above, the New Orleans FRC was not included in the analysis. The remaining FRC primarily serves as a respite resource for foster and adoptive parents and was not part of the evaluation project. OCS case workers refer parents to FRCs for NPP based on case planning with parents who have suspected or confirmed allegations of child abuse or neglect. Some of the referred parents have had some or all of their children removed from their care and placed in foster care. Other referred parents receive services while also continuing to have custody and care of their children. All adults who were enrolled through an FRC in an NPP class on January 1, 2006 or who were enrolled any time between January 1, 2006 and December 31, 2007 were included as participants in the NPP evaluation study. NPP group begin dates ranged from October 12, 2005 to December 6, 2007, and group end dates ranged from January 25, 2006 to April 15, 2008.

Five hundred and sixty-four parents, guardians, other caregivers, and caregiver partners were enrolled in NPP during this time in the 11 FRCs. Of these participants, 304 were involved in this program while one or more of their children were in foster care, 147 were involved in services while their children remained in the home, and 113 participants had no OCS program affiliation at the time of NPP participation. It is

also worth noting that there were 129 participants with no prior history of substantiated child abuse or neglect in OCS records although referrals are accepted exclusively through the child welfare agency.

A conservative approach to handling missing data was employed in this initial report. In addressing the first research question, "What is the effect of NPP participation on parental attitudes in a child welfare population and how is this associated with characteristics of parents and families and their level of program participation," we limited the sample to those who remained in the program and completed a pre- and post-test AAPI-2. Twenty-five percent of cases were dropped for missing AAPI-2 data—our dependent variable in the multivariate models. For the multivariate analysis, the sample consisted of all caregivers for whom there was complete information on all variables included in the analysis. This resulted in a final sample size of 262, with 11% of cases dropped due to missing data on the independent variables. For the second research question, "What is the effect of NPP participation on incidences of maltreatment in a child welfare population and how is this associated with characteristics of parents and families and level of program participation," our sample consisted of those parents who did not have a child in foster care and for whom we had complete data on the independent variables. Thirty percent of cases were dropped due to missing data on the independent variable. Similar to Wagner (2001), we limited the sample to those participants without a child in foster care as these families are the ones that clearly have access to at least one child and have the opportunity for a repeat maltreatment incident. It is often the case that parents with one child in foster care are still responsible for the care of other children who were not removed from the home; however, we did not have sufficiently complete data within the timeframe of this study to include these parents. For the multivariate models, we only included cases with complete data on the independent variables of interest. This resulted in reducing our sample size by 80 participants.

Data Sources

Three data sources were used to construct the data file for this evaluation: the OCS Tracking Information and Payment System (TIPS), NPP attendance records, and the AAPI-2 pre- and post-test data. A brief description of each data source is presented below; a detailed explanation can be found in Appendix A.

TIPS Administrative Data

TIPS is the administrative data system used by OCS to capture information on caregivers who are or have been the subject of investigations of alleged child abuse and/or neglect. The TIPS system captures the validity finding of the investigation as well as demographic information on caregivers who receive extended services through an OCS program. TIPS data were also used to capture the child abuse/neglect history for NPP participants, including instances of substantiated repeat maltreatment. This data system was also used to identify the OCS program that was providing services to adult participants during the NPP group.

NPP Attendance Records

FRCs completed attendance records for each NPP group conducted during the time period of January 1, 2006 to December 31, 2007. The attendance records included the name and TIPS number of participants, the names of children who attended the children's group and were present for the parent-child interaction component of group sessions, names of facilitators and co-facilitators, notations indicating the dates each participant attended a group session and/or a home session, and notations regarding the

disposition of each participant's program attendance (whether graduated or reason for not graduating). NPP attendance records were used to construct variables related to group and in-home participation of adult participants, level of child participation, and graduation status (or if not graduated why if known) for each participant.

AAPI-2 Data

The NPP uses the AAPI-2 to evaluate changes in parental attitude from the beginning of the program to the end of the program. The AAPI-2 is an assessment of parenting and child-rearing attitudes across five parenting constructs derived from theory, research, and practice based on knowledge of abusive and neglectful parenting behaviors. Two variants are available for use. The AAPI-2 A (pre-test) and B (post-test) inventories are each comprised of 40 5-point Likert scale items from Strong Agreement to Strong Disagreement. The completed AAPI instruments were collected from participants by each site and entered into the AAPI Web site by FRC staff. The AAPI Web site can then be used to generate a printout of the results of one or both variants. The NPP attendance data, TIPS data, and AAPI-2 data were merged into one dataset. The data were reviewed following this process to verify that the merging of files maintained the integrity of the data from each source.

Variables and Measures

This section includes information about the variables used in this study. The variables are grouped into outcome variables and independent variables. A brief definition is included for each variable as well as a description of how the variable was measured in this study. A more detailed explanation is available in Appendix B.

The two outcome variables in this study were Change in Parenting Attitudes and Change in Parenting Behavior. Each variable is defined below.

Dependent Variable—Change in Parenting Attitudes

Change in Parenting Attitudes was defined as the difference between attitudes about parenting prior to program participation and after participation in NPP as measured by the AAPI-2 (Bavolek et al., 1979). Attitudes were measured along five dimensions: Inappropriate Parental Expectations, Parental Lack of an Empathic Awareness of Children's Needs, Strong Belief in the Use and Value of Corporal Punishment, Parent-Child Role Reversal, and Oppressing Children's Power and Independence.

Dependent Variable—Change in Parenting Behavior

Change in Parenting Behavior was defined as not having substantiated incidences of abuse/neglect after participating in the program. This was measured by data from TIPS indicating whether there were valid incidences of maltreatment after program participation.

Independent Variables

Independent variables for the multivariate models are listed in this section and described in detail in Appendix B. The independent variables were divided into parent characteristics including demographics, parent participation, and child participation. These variables were selected for inclusion into the model because they are hypothesized to be associated with the outcome and/or were variables of interest for understanding how outcomes differ for different types of families.

Independent Variables—Parent Characteristics

Parent characteristics and demographic variables included gender, race, education, income, marital status, number of children, history of maltreatment as a child, prior investigations, and AAPI-2 pre-test score.

Independent Variables—Parent Participation

Parent Participation was defined as the extent of participation in program offerings during a 16-week course.

Independent Variables—Child Participation

Child Participation was defined as the extent of participation in program offerings during a 16-week course

Independent Variables—Provider Controls

We also used a set of dichotomous variables representing each site to control for unmeasured differences between sites.

Analysis

Descriptive Statistics

We used descriptive statistics to produce means and standard deviations for all variables—for the full sample and for the analytical sample to address the separate research questions.

Bivariate Analyses

To determine if there were pre- and post-test differences in parental attitudes, paired samples t-tests were used with AAPI-2 subscale difference scores. We also tested whether there were significant differences in risk categories pre- and post-test as assessed by the AAPI-2. AAPI-2 standardized scores were categorized as high risk when the score on each subscale was 1, 2, or 3 and medium to low risk when the sten score was 4-10. We used chi-square tests for each subscale of the AAPI to assess significant differences in risk category before and after the intervention.

Multivariate Models

AAPI Difference Scores

Ordinary Least Squares (OLS) regression analysis was used to determine if there were statistically significant predictors of changes in parental attitudes. These models addressed the research question about whether changes in AAPI-2 scores are significantly different by parent demographics, participation levels, or other characteristics. Because participants were nested within providers or FRCs, Huber-White Sandwich Estimators (calculated in STATA 10) were used to correct standard errors for this clustering. Each subscale of the AAPI-2 was modeled separately. We took a hierarchical approach for building our models. First, we estimated the models with the parental characteristics variables, parental participation variables, and child participation variables (Model 1). Next, for Model 2, we added in the provider dichotomous variables to control for unmeasured differences between sites.

Post-Intervention Maltreatment Models

We used logistic regression to estimate predictors of repeat maltreatment. Again, robust standard errors were computed using Huber-White Sandwich Estimators in STATA 10. First. we ran models with the parental characteristics variables, parental participation variables, and child participation variables (Model 1). Model 2 adds the dichotomous variables for providers (FRCs) with one provider (FRC1) serving as the omitted reference category.

Results

Descriptive statistics

Descriptive statistics for study variables for the full sample of participants at the 10 provider sites are presented in Table 1. We report the descriptive statistics for the full sample before missing cases were dropped for each of the analytical models. This table also presents descriptive statistics for each of the analytical samples used in the multivariate models measuring predictors of change in AAPI and repeat maltreatment instances.

For the full sample, 75% of the participants were female and 58% were white. The two analytic subsamples did not differ substantially in gender from the larger study group; however, there were a greater percentage of white participants in these subsamples. Average income was almost $14,000 for the full sample and slightly higher in the subsamples. Of the full sample, 42% completed high school compared to 45% and 43% in the two subsamples. Study participants had, on average, 2.5 children, and this was similar for both subsamples. Of the sample, 36% were married or cohabitating, with only slight variation from this estimate for each subsample. The mean number of maltreatment incidences prior to participation was 1.22 (SD=0.99). About a third of the participants indicated that they had experienced abuse inside their own homes while 17% indicated experiencing abuse outside of their own homes, which is close to the subsample estimates as well. The overall retention rate of program participants (N=564) was 68% while 32% dropped out for various reasons.

Bivariate Comparisons

Matched pairs t-tests were conducted for each pair of pre- and post-test scores from the AAPI-2 subscales. Table 2 presents these results. Cohen's d is the mean difference between the pre- and post-test scores expressed as number of standard deviation units. For example, if two means differ by 4 points and the standard deviation for that difference is 3 points, then Cohen's d is 4/3=1.33. Results demonstrated significant and positive improvements in all five AAPI-2 subscales—Subscale A: Inappropriate Parental Expectations, Subscale B: Parental Lack of an Empathic Awareness of Children's Needs, Subscale C: Strong Belief in the Use and Value of Corporal Punishment, Subscale D: Parent-Child Role Reversal, and Subscale E: Oppressing Children's Power and Independence. The magnitude of positive change was largest for subscales A, B, and C, with these three subscales showing a percentage change pre- to post-test of 6, 9, and 9%, respectively.

To further examine changes from pre- to post-participation in NPP, AAPI-2 standardized scores (STEN scores) were used to group participants into abuse risk categories. STEN scores range from 1 to 10 and

have an average of 5.5 with a standard deviation of 2. Those with AAPI-2 subscale STEN scores of 1, 2, or 3 were coded as 1 = high risk on a particular subscale. Those with STEN scores between 4 and 10 were coded as 0 = medium/low risk of abusing based on that particular subscale. For each subscale, a Chi square analysis was performed to determine if there were differences in distribution of individuals in the high risk vs. low/medium risk categories from pre- to post- participation. These results are presented in Table 3. There was a statistically significant change in the proportion of individuals in high-risk categories for each of the AAPI-2 subscales at the 0.001 level.

For all subscales of the AAPI-2, there was substantial movement from the high-risk category prior to participation to the low/medium-risk category following participation in NPP. For example, Subscale E (Oppressing Children's Power and Independence) saw the greatest percentage of change with 24.1% of participants pre-participation scoring in the high-risk category while post-participation only 11.2% scored in the high-risk category. Of the 71 individuals with high-risk status on Subscale E, 55 or 77.5% of these individuals moved into the medium/low-risk category post-participation in NPP. Subscale C (Strong Belief in the Use and Value of Corporal Punishment) had 21.7% of participants in the high-risk category pre-participation with 10.8% in high risk after participation. Sixty-seven percent of individuals in the high risk category for Subscale C moved into medium/low risk at post-participation testing. Subscale A had similar results as Subscales E and C with 62% of those with high-risk scores on Subscale A moving into medium/low post-participation. Subscales B and D had lower percentages of movement at 53.2% and 52.7%, respectively.

Regression Models for Study Outcomes

AAPI-2 Change Models

The OLS regression models for the AAPI-2 change scores are presented in Table 4. As discussed previously, we present each subscale model with and without the provider variables included. We include models with the provider controls because the individuals are nested by provider, and some unmeasured contextual differences between providers could impact the relationship between the other variables of interest and the outcome variables.

To determine which predictors are of interest in explaining variation in outcome variables, several criteria were used. First, all models presented were statistically significant overall at the .001 level. Individual unstandardized regression coefficients were examined for statistical significance. Statistical significance of the change in R2 was examined when provider dummy variables were added to aid in explanation of results.

AAPI Regression Analysis

The descriptive statistics, presented earlier, demonstrated significant positive improvements between pre- and post-test for all AAPI-2 subscales. The regression models identify what factors contribute to changes in AAPI-2 scores. For all subscales, the pre-test score specific to that subscale was a statistically significant predictor of the difference score, as expected. The regression coefficients were negative in all models indicating that the higher one scored on the pre-test—or the less risk the participant was initially—the lower the difference score. Because there was a maximum score on each subscale, individuals with higher scores on all subscales of the pre-test were less likely to have greater change scores because there was little room for improvement in terms of numeric value on the subscale post-tests

("ceiling effect"). Also, across all the models, many, if not all, the provider variables are significantly associated with change in parental attitudes. This indicates that there are significant contextual effects and differences among providers that affect the outcomes. In some cases, when the provider variables were added to the subscale models, it changed the relationship between the other variables and parental attitudes, suggesting that some of the individual-level changes in parental attitudes were actually differences between sites.For other study variables, the results differed across subscales. Results are presented below by subscale.

Subscale A: Inappropriate Parental Expectations

Other than the Subscale A pre-test score, no other independent variables were statistically significant in both models with and without the provider variables. When providers (FRCs) were not included in the model, the extent of child participation was positive (greater gains) and statistically significant. Once providers were included in the model, this variable was no longer statistically significant, indicating that the effect might be more about differences in quality between providers who involved children and those who did not. All provider dummy variables were statistically significant indicating that each of the providers differed from the reference category provider (FRC1) in the change in AAPI-2 Subscale A scores. This means that overall, pre-test scores on Subscale A and provider differences appeared to be most useful in explaining Subscale A difference scores whereas demographic characteristics and parent and child participation variables were not. Thus, any changes in parents' attitudes toward parental expectations were explained primarily by the individual's pre-test performance and differences inherent in the providers of NPP.

Subscale B: Parental Lack of an Empathic Awareness of Children's Needs

As with Subscale A, the raw pre-test score on Subscale B difference scores was statistically significant and negative, meaning those who were less at risk on parental attitude scores improved less than their higher risk counterparts. Two other variables—income and child participation-- were statistically significant predictors of differences in empathic awareness of children's needs for both models with and without the provider variables. The higher the participant's income and the more children participated, the greater the gains in empathy. For every $1000 dollars of increase in income, on average there was a 0.09 point increase in change in Subscale B. For each additional session a child participates in, there is a 0.14 point positive increase in change in attitudes about empathic awareness of children's needs. Race (White vs. Non-White) had a significant and positive association with improvement in empathy, but this relationship disappeared once providers (FRC's) were controlled for in the model. Variation in the racial makeup of clients for the providers (see Appendix C) included in Model 2 may be responsible for negating the statistically significant race variable in Model 1. This means that race differences in change in empathy may have been due to differences in FRC. Several of the FRC variable regression coefficients were statistically significant and positive (all but FRC8) indicating that these particular providers had more positive results on Subscale B than the reference provider (FRC1).

Subscale C: Strong Belief in the Use and Value of Corporal Punishment

The results for pre/post changes in Subscale C scores are similar to Subscale A. Pre-test scores for Subscale C were statistically significant and negative. Extent of Child Participation, while statistically significant and positive in Model 1, was not statistically significant in Model 2 when provider dummy variables were included. Again, it is possible that differences across providers in the extent of

child participation might be responsible for the non-significant results in Model 2. No demographic or participation variables explained statistically significant variation in pre/post test change scores on Subscale C for Model 2.

Subscale D: Parent-Child Role Reversal

As with all subscales on the AAPI-2, a statistically significant, negative regression coefficient was found for the pre-test for Subscale D. For Subscale D, Parent-Child Role Reversal, there were several significant demographic and extent of participation coefficients in both Model 1 and Model 2. Being female or having a partner meant greater positive change in scores on Subscale D; difference scores for females, on average, were 1.70 points higher than for males, and difference scores for those with partners were 1.19 points higher than for those without partners. Extent of parent participation was a factor in explaining differences in Subscale D scores. Those who participated in at least 14 out of 16 weeks of sessions (either group and/or home sessions) had greater gains on Subscale D (by 1.06 points on average) than those who did not. Only in Model 1, having a high school education versus not graduating from high school was significantly and positively associated with gains on subscale D, but it was no longer significant once differences between providers were controlled for.

Subscale E: Oppressing Children's Power and Independence

As with all other subscales of the AAPI-2, pre-test scores on Subscale E were statistically significant and negatively related with Subscale E change scores. Variables with statistically significant regression coefficients in Model 1 were education (HS completion) and abuse of the parent as a child by someone living within the family. These same variables had statistically significant regression coefficients in Model 2 with an additional variable, household income, also becoming statistically significant in Model 2. As with the Subscale B difference score results, income was statistically significant, but the regression coefficient indicated a small positive change of 0.05 points in difference scores for each thousand-dollar increment in the predictor variable. A $20,000 increase in income then would be associated with a 1 point change, on average. For the education variable, having graduated from high school was associated with a positive 1.18 point difference in attitudes about Oppressing Children's Power and Independence compared to those without a high school diploma. Whether an adult participant was abused in the past by a person inside his or her family was associated with positive outcomes: those who indicated that they were abused by someone in their family had change scores, on average, that were 1.00 point higher on the Parent-Child Role Reversal subscale than those who did not so indicate. The type of abuse experienced within a family, which was not distinguished in this study, may be a factor that helps to account for this finding. For instance, we might expect that individuals who have experienced sexual abuse or certain types of neglect would be more likely to have high levels of parent-child role reversal. Additionally, those who score lower at pretest have a greater opportunity to demonstrate improvement than those who initially scored higher. It may be that those participants who experienced abuse benefited from learning about how to have more appropriate adult/child roles with their children through the NPP curriculum.

Changes in AAPI-2 scores: Summary of results

For four of five models with AAPI-2 subscales, including providers (FRCs) statistically improved model performance. The amount of additional variation explained was never more than 8% when providers were

included. The one exception was Subscale E where there were small differences between providers and the reference provider and model fit did not statistically improve.

In terms of the participation variables, the extent of child participation only had a significant relationship with gains in parental attitudes once provider variables were included for subscale B—Parental Lack of an Empathic Awareness of Children's Needs, and attending 14 or more sessions (high dosage) was statistically associated with improved scores on Subscale D—Parent-Child Role Reversal. We tested different thresholds in our models for participation and none of them had a significant effect on any other subscales. In other words, for most of the AAPI-2 subscales, it appears that the amount of participation did not impact the size of the change in attitudes among participants who completed the program.

Very few demographic characteristics of parents explained differences in attitude changes before and after the intervention. For Subscale B, being white and household income had some significant positive associations with gains. Income was also positively associated with gains on subscale E. Females were significantly more likely than males to have positive gains in attitudes about Parent-Child Role Reversal (Subscale D), but gender was not significantly associated with gains for other subscales. Having a high school diploma was significantly and positively associated with gains in attitudes about Parent-Child Role Reversal (Subscale D) and Oppressing Children's Power and Independence (Subscale E). Overall, the models developed for explaining changes in AAPI-2 scores performed well, were statistically significant, and had adjusted R2 values of between 19% and 45%.

Post-Intervention Maltreatment Logistic Regression

Table 5 contains the logistic regression results for predicting post-intervention maltreatment from a selection of study variables, also organized as rows in the table. Providers (FRCs) are controlled for in these analyses because individuals were nested within the centers providing services. In each of the regression analyses, two models were run, one without the provider variables included and the other with all variables—including the provider controls. Change in R2 was determined and evaluated for statistical significance. Since the outcome was dichotomous (1 = incidence of post-intervention maltreatment vs. 0 = no incidence of post-intervention maltreatment), logistic regression was used to predict whether occurrence of a post-program maltreatment incidence can be explained by any of the demographic, participation, or provider variables. Fourteen percent of participants in the analytic subsample had incidences of repeat maltreatment (12% for the full sample). As with the AAPI-2 change scores, we ran two models to include a comparison of how provider differences affect the other study variables in terms of ability to predict post-intervention maltreatment.

The results for Model 1 and Model 2 are similar. Therefore, only Model 2 will be discussed as it contains all of the independent and control variables. In Model 2, cases for some of the providers were dropped from the model because variation in the outcome among participants nested within those provider sites was lacking. In other words, participants within four of the sites were dropped because none (or relatively few) of them had a repeat maltreatment instance. These provider variables were also dropped from the model.

In Model 2, several independent variables predicted the likelihood of post-intervention maltreatment. A high rate of attendance (attended at least 14 out of 16 week sessions) was statistically significant' the odds of maltreating post-participation was 73% lower for those with high rates of attendance than for those with lower rates of attendance (OR=0.27). As with results in Model 1, results in Model 2 indicated that

those with partners (married/unmarried common law) had higher odds of maltreating after participation in NPP than those who were not married or cohabitating (OR=2.7). Odds of maltreating post-participation in NPP were 5.3 times greater for individuals who indicated that they had experienced abuse as a child outside of their home. Additionally, a one-incident increase in the number of prior incidences of maltreatment resulted in increased odds of maltreating post-participation (OR= 3.7). Overall, it appears that substantial participation (14 or more sessions) had a positive impact on reducing the odds of repeat maltreatment by parents.

Discussion

The purpose of this study was to evaluate the effectiveness of the NPP for parents of infants, toddlers, and pre-school children as implemented throughout Louisiana's child welfare system during 2006-2007. Results indicated statistically significant improvement from pre- to post-test in parental attitudes on all five sub-scales of the AAPI-2. In addition, our finding that a lower rate of repeat maltreatment among participants who attended at least 14 sessions of the 16 session program reaffirms the value of this program for use with a child welfare population assuming adequate participation and retention.

As is typically found in a child welfare population of parenting participants, the majority had been referred due to allegations of neglect, which makes these positive findings particularly valuable. Although PCITwas effective in reducing repeat maltreatment in a physically abusive population, the findings of Chaffin and colleagues (2004) suggested that neglectful parents did not demonstrate improvement after participation in PCIT.

Child participation in a parenting intervention has often been cited as "good practice" yet literature regarding the specific impact is scarce. This study demonstrated significant improvement in a participant's attitude about empathic responsiveness as measured in Subscale B (Parental Lack of an Empathic Awareness of Children's Needs) of the AAPI-2 in relation to Child Participation. Empathy may be one dimension of parenting that is particularly enhanced by interventions working closely with parents and children to build that relationship through direct practice.

As expected, participants with a prior validated instance of maltreatment were more likely to have an incident of repeat maltreatment. It was also hypothesized that a high dosage of treatment (at least 14 sessions) would reduce the likelihood of repeat maltreatment and, in fact, the odds of repeat maltreatment in this group were 73% lower than those with lower levels of attendance. Less predictable was the finding that participants who reported experiencing abuse outside of the home had a significantly greater increase of repeat maltreatment, but those who reported experiencing abuse inside the home did not. One possible explanation for this finding is that participants may be more likely to attribute treatment by others as abusive and may not view their own parents' behavior as abusive. Also, it may be harder for an individual to admit experiencing abuse within his or her own home than if it happened outside of the home; thus, the incidents of abuse inside the home may be underreported. Furthermore, it may be that even as an adult, admitting that one was abused or neglected at the hand of his or her own mother, father, or other relative is a memory one would rather deny. More research is needed to understand the differential impact of different types of maltreatment and sources of abuse.

Program implementation

As we noted throughout this report, implementing a statewide comprehensive parenting program with fidelity in a state child welfare agency is a monumental task. Although the FRCs all used the same curriculum, the inconsistencies in the process made it nearly impossible to detect what contributed to positive outcomes. Thus, closely monitoring model fidelity is a necessity.

We were also interested in understanding participation and satisfaction with this program for this population. Difficulty retaining parents in child welfare services is a common problem. For a statewide program to have an overal retention rate of 68% over a two-year period is remarkable and supports the rating by the California Evidence-Based Clearinghouse for Child Welfare for the NPP as a Level 1 for relevance to the child welfare population.

Another indication of parental satisfaction with the program stemmed from the results of program satisfaction surveys. At the end of each 16-week group program, parents were asked to complete a satisfaction survey. The one-page instrument consisted of true/false questions, multiple choice (circle all that apply), and open-ended questions for participant comments. Overwhelmingly, participants reported a high degree of satisfaction with the structure and content of the NPP. For parents whose children were in foster care, this was often viewed as a treasured "extra" visit with their child who was also attending the program, and 99% of the parents surveyed reported this was a factor that motivated them to continue to attend each week. In addition, when parents were asked "What keeps you coming back week after week?" the common reasons cited were "Because I wanted to learn more about being a good parent" and "Because I enjoyed the group." When given the opportunity to add comments, the most frequent comments related to a positive relationship with the facilitator.

We also wanted to understand the program costs and how these might vary by provider. Costs varied considerably from one FRC to another ranging from $580 to $910 per session for a group of 10-12 adults and up to 15 children. The average cost per FRC during 2006-2007 was $687.00 exclusive of one-time start-up costs. The single factor that had the greatest impact on cost was the number of paid staff used by the FRC. At a minimum, implementing the NPP required four facilitators: two for the parent's group and two for the children's group. Depending on the number of children, some groups required significantly more adult help. Including children in the intervention has the potential to increase costs significantly. Whether children's facilitators are paid or not, having children participate necessitates a larger facility for the groups with appropriately furnished children's space, transportation, snacks, and supplies. On the high end, one FRC utilized its entire staff of 10 for each weekly session, while the FRCs associated with a university tended to have a pool of unpaid student interns available to help with the children's group, which defrayed some of the human resource costs. As an example, Nicholls State University involved Master's-level early childhood development interns as co-facilitators and only utilized two paid agency staff; one lead facilitator for the parent's group and one for the children's group.

The second largest expense was transportation. Again this varied by FCR depending on whether it was in an urban or rural location. In urban locations, the clients are sometimes given bus tokens, which is much less costly than transportation in rural locations where FRCs must provide their own transportation, sometimes transporting 8-10 adults and 10 or more children 30 minutes one way. Additionally, materials such as parent handbooks, activity supplies, and snacks must be furnished for each session.

Other costs such as facilitator training and administrative and technical assistance support must be figured into the overall costs.

Limitations

As is the case with all field research, some limitations apply. First, the study is limited by missing data. It was expected that implementing a program on a statewide basis with multiple sites that were individually managed would result in some inconsistencies in program delivery and data collection; however, we did not anticipate the extent to which this would occur. In the two analytic samples used to assess the impact of participation and demographics on parental attitudes and repeat maltreatment, approximately 30 percent of the data was dropped due to missing outcome or demographic data. This amount of missing data certainly compromises the generality and representativeness of our findings. If those participants who had missing data are significantly different from those who didn't, our results may not be applicable to the target population we are investigating. This concern points to the importance of emphasizing thorough and complete data collection in comprehensive, standardized evaluations such as this. We plan to conduct future analyses using these data employing techniques for dealing with missing data.

Second, this study design did not incorporate random controlled assignment nor did it involve a comparison group, which limits the ability to infer causality or to generalize findings. However, as stated previously, this study represents a first step in the process toward establishing promise for implementing the NPP on a large scale within a typical state-run child welfare system. And the results demonstrate that the program shows promise in leading to positive changes in attitudes predictive of child abuse and neglect and instances of repeat maltreatment.

Recommendations

Recommendations and lessons learned

The lessons learned during the first few years of implementation are countless, and the value of the evaluation process over the past year has been immeasurable in terms of moving the agency forward in its mission to provide high-quality parent education and training. As is often the case, the work was more complex and time-consuming than anticipated, and we reaffirmed what we suspected: it takes significant human and financial resources to implement a statewide program effectively, and in such a way as to adhere to the fidelity of a program model. In addition, countless hours were spent collecting, merging, and entering data. A process spanning several months of tedious data review and cleaning was required before analysis could even begin. This involved frequent communication with each of the FRCs to complete and verify data submitted. Despite a strategically planned implementation process and full support of the agency, training of committed facilitators and staff, and a certain level of control over the delivery of the service, it is clear that ensuring an evidence-based service array of parenting interventions in child welfare that are implemented consistently across the state will require a long-term commitment of agency time and resources and a strong partnership with agency stakeholders.

While not perfect, we have made great strides in service delivery based on several lessons learned. Within the limits of this report, we outline the recommendations that we believe will provide the most significant benefit to other child welfare agencies in their quest to provide more effective parenting services.

Take training completion seriously

The completion of parenting classes is frequently tied to reunification of children in foster care with their parents or taken as a sign that a family receiving in-home services is ready to have their case closed. Yet agency workers are often forced to use a hodgepodge of parenting services, typically based on what happens to be offered in the community. It is critical that parenting interventions be taken seriously. The intervention should be carefully chosen for its demonstrated effectiveness with the specific target population, and be delivered by a knowledgeable and competently trained facilitator. With child safety and well-being at stake, families in the child welfare system deserve no less.

Insist on program fidelity

Program administrators must insist on fidelity to the components of a particular program model that have a demonstrated relationship to effective outcomes, while allowing enough flexibility to meet individual client needs. When implementing a new program, the size and scope of implementation must be in accord with sufficient administrative resources to include comprehensive monitoring, quality

assurance and technical support in order to assure fidelity to the model, oversight of data gathering, on-going evaluation, and feedback to stakeholders. Evidence-based programs such as Multisystemic Therapy and Nurse Family Partnership have been able to maintain fidelity to their models and achieve successful outcomes for good reason:they insist on highly trained providers, on-going consultation, and oversight of program implementation and monitoring of program effectiveness.

Implement changes in a strategic and realistic manner

A full scope of training, technical assistance, monitoring, and evaluation is required for effective, consistent, high-quality service delivery. In the absence of this level of support on a statewide basis, begin with a small-scale project and phase in additional sites as resources allow. If an agency feels the need to make some large-scale changes quickly, these should be limited to more general, overall processes. For instance, an agency might institute a policy that requires a face-to-face meeting between the caseworker, parent, and facilitator prior to beginning a class to insure that everyone is clear about the purpose of the intervention and the expectations for participation and successful completion.

Involve all key stakeholders

Implementing an evidence-based program with fidelity can be challenging under ideal conditions much less those often found in child welfare agencies. The process can be tedious and labor-intensive. It is helpful to involve all stakeholders in the process of program selection, identification of components that must be tracked and measured, initial and on-going training, and program evaluation. Although it may not be fiscally possible, in a multi-site program, regularly scheduled meetings of all key stakeholders (facilitators of parents and children's groups, OCS representative from each region, parent advocates, and program administrators) would likely have been a good investment of time and money.

Data completeness and accuracy are key

Emphasize the importance of complete and standardized data to assess outcomes and effectiveness—for accountability and sustainability. The more commitment staff has towards evaluation, since researchers often need to rely on them to collect and report the data, the better the quality of the data that will be obtained.

Tables

Table 1:
Parental Characteristics and Child and Parent Participation Variables for Participants and Analytic Subsamples

Type	Variable	All Participants n=564			AAPI Regression Sample n=262		Maltreatment Regression Sample n=181	
Demographic Variables		Mean	Standard Deviation	N	Mean	Standard Deviation	Mean	Standard Deviation
	Female (1=yes; 0=no)	0.75	0.43	562	0.77	0.42	0.73	0.45
	White (1=yes; 0=no)	0.58	0.49	562	0.66	0.47	0.68	0.47
	Income (thousands)	13.74	11.94	449	14.40	12.24	15.98	13.69
	High school completion (1=yes; 0=no)	0.42	0.49	465	0.45	0.50	0.43	0.50
	Number of children	2.54	1.45	468	2.54	1.46	2.67	1.61
	Have a partner through marriage or unmarried/common law (1=yes; 0=no)	0.36	0.48	531	0.39	0.49	0.38	0.49
	Experienced abuse in own family (1=yes; 0=no)	0.29	0.45	467	0.26	0.44	0.29	0.45
	Experienced abuse outside of family (1=yes; 0=no)	0.17	0.38	467	0.16	0.36	0.20	0.40
Other: Individual	Number of maltreatment investigations prior to program participation	1.22	0.99	564	1.24	0.97	0.99	0.77
	AAPI pre-test							
	Pre-test Subscale A (35 points)	19.69	4.61	468				
	Pre-test Subscale B (50 points)	36.96	6.37	468				
	Pre-test Subscale C (55 points)	39.58	7.71	468				
	Pre-test Subscale D (35 points)	23.46	5.38	468				
	Pre-test Subscale E (25 points)	19.63	2.99	468				
Parent Participation	Attended at least 14 out of 16 weeks of group and/or home sessions (1=yes; 0=no)	0.52	0.50	564	0.81	0.40	0.55	0.50
Participation: Children								
	Extent of Child Participation – number of sessions attended by children of individual	6.55	5.88	523	8.65	5.72	7.22	5.66

Table 2.
AAPI-2 Subscale Descriptive Statistics and Paired T-Test Results

Type	Variable	AAPI Sample (N=295)				
AAPI Subscales		Mean	Standard Deviation	Percent Change	t	ES*
Subscale A (35 points)	Pre-test	19.61	4.78			
	Post-test	21.80	5.00			
	Post- Pre-test difference	2.19	5.05	0.06	7.43***	0.45
Subscale B (50 points)	Pretest	36.80	6.59			
	Post-test	41.34	6.17			
	Post- Pre-test difference	4.54	6.02	0.09	12.95***	0.71
Subscale C (55 points)	Pre-test	39.42	7.85			
	Post-test	44.48	7.30			
	Post- Pre-test difference	5.05	7.31	0.09	11.87***	0.67
Subscale D (35 points)	Pretest	23.44	5.65			
	Post-test	24.57	5.61			
	Post- Pre-test difference	1.13	4.74	0.03	4.10***	0.20
Subscale E (25 points)	Pretest	19.63	3.02			
	Post-test	20.47	2.81			
	Post- Pre-test difference	0.84	3.32	0.03	4.35***	0.29

*Effect size is Cohen's d calculated at http://web.uccs.edu/lbecker/Psy590/es.htm.
***p< 0.001

Subscale A: Inappropriate Parental Expectations

Subscale B: Parental Lack of an Empathic Awareness of Children's Needs

Subscale C: Strong Belief in the Use and Value of Corporal Punishment

Subscale D: Parent-Child Role Reversal

Subscale E: Oppressing Children's Power and Independence

Table 3.
Chi Square Analysis of AAPI-2 Subscale Risk Categories Pre- and Post-Intervention (N= 295)

			POST-TEST			
			High Risk	Medium/Low Risk	X^2	Phi
Subscale A	PRE-TEST	High Risk % of total	27 9.2%	44 14.9%	26.80***	0.30
		Med/Low Risk % of total	25 8.5%	199 67.5%		
Subscale B	PRE- TEST	High Risk % of total	58 19.7%	66 22.4%	55.74***	0.44
		Med/Low Risk % of total	15 5.1%	156 52.9%		
Subscale C	PRE- TEST	High Risk % of total	21 7.1%	43 14.6%	40.78***	0.37
		Med/Low Risk % of total	11 3.7%	220 74.6%		
Subscale D	PRE- TEST	High Risk % of total	52 17.6%	58 19.7%	58.02***	0.44
		Med/Low Risk % of total	16 5.4%	169 57.3%		
Subscale E	PRE- TEST	High Risk % of total	16 5.4%	55 18.6%	12.12***	0.20
		Med/Low Risk % of total	17 5.8%	207 70.2%		

***p< .001

Subscale A: Inappropriate Parental Expectations

Subscale B: Parental Lack of an Empathic Awareness of Children's Needs

Subscale C: Strong Belief in the Use and Value of Corporal Punishment

Subscale D: Parent-Child Role Reversal

Subscale E: Oppressing Children's Power and Independence

Table 4.
Regression Analysis Results for AAPI-2 Subscales (n=262)

AAPI Subscale	Subscale A Inappropriate Parental Expectations				Subscale B Parental Lack of an Empathic Awareness of Children's Needs				Subscale C Strong Belief in the Use and Value of Corporal Punishment				Subscale D Parent-Child Role Reversal				Subscale E Oppressing Children's Power and Independence			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	b	SE[a]	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE	B	SE	b	SE	b	SE
FRC2[b]			**6.14**	**0.41**			**6.43**	**0.44**			**9.08**	**1.37**			**3.49**	**0.55**			**0.89**	**0.89**
FRC 3			**3.15**	**0.51**			**6.66**	**0.53**			**5.74**	**1.03**			**1.08**	**0.44**			**1.39**	**0.52**
FRC 4			**3.01**	**0.39**			**3.10**	**0.60**			**3.66**	**0.86**			0.15	0.38			0.30	0.48
FRC 5			**1.18**	**0.33**			**2.89**	**0.46**			-0.11	0.82			-0.82	0.38			0.31	0.46
FRC 6			**1.52**	**0.49**			**3.97**	**0.58**			**3.26**	**0.91**			0.32	0.49			**-0.72**	**0.28**
FRC 7			**4.80**	**0.53**			**5.72**	**0.50**			**6.60**	**1.04**			**2.75**	**0.56**			**1.17**	**0.46**
FRC 8			**1.46**	**0.36**			0.19	0.72			0.84	0.78			**-2.42**	**0.24**			**1.39**	**0.30**
FRC 9			**2.88**	**0.45**			**3.92**	**0.55**			**5.56**	**1.04**			**2.60**	**0.43**			0.65	0.42
FRC 10			**3.25**	**0.43**			**4.30**	**0.49**			**2.29**	**1.03**			**1.28**	**0.45**			0.62	0.46
Female	0.27	0.60	0.37	0.58	0.62	0.70	0.85	0.70	-0.39	1.50	-0.11	1.60	**1.51**	**0.67**	1.70	0.64	-0.31	0.47	0.18	0.47
White	-0.28	0.58	-0.79	0.66	**1.41**	**0.64**	0.43	0.58	1.40	0.78	0.79	0.82	0.25	0.61	0.01	0.75	-0.17	0.16	-0.36	0.28
HS Grad	0.68	0.48	0.74	0.54	-0.09	0.57	0.09	0.57	0.83	0.66	1.08	0.85	**0.75**	**0.34**	0.69	0.37	**1.17**	**0.40**	**1.18**	**0.40**
Income	0.02	0.02	0.05	0.02	**0.07**	**0.02**	**0.09**	**0.02**	0.03	0.03	0.06	0.03	-0.00	0.02	0.02	0.02	0.03	0.02	0.05	0.02
Partner	-0.37	0.24	-0.55	0.26	1.23	0.66	1.00	0.54	0.80	0.91	0.57	0.99	**1.45**	**0.55**	**1.19**	**0.46**	-0.36	0.51	-0.43	0.53
Abuse In	-0.25	0.75	0.24	0.79	0.01	0.82	0.46	0.88	0.87	0.86	1.62	0.92	-0.72	0.49	-0.51	0.45	**0.77**	**0.19**	**1.00**	**0.23**
Abuse Out	0.31	0.55	-0.10	0.60	1.45	0.68	1.25	0.65	1.47	1.14	1.07	1.07	0.91	1.09	0.48	1.11	0.24	0.35	0.24	0.28
# Child	0.05	0.18	0.15	0.22	-0.21	0.20	-0.11	0.19	-0.45	0.21	-0.28	0.22	-0.06	0.16	0.07	0.12	-0.16	0.11	-0.12	0.12
Prior Invest	-0.24	0.27	-0.26	0.27	-0.10	0.24	-0.22	0.32	0.52	0.27	0.36	0.33	0.01	0.30	0.07	0.32	-0.16	0.20	-0.22	0.24
Pre-test on Subscale	**-0.52**[c]	**0.08**	**-0.54**	**0.09**	**-0.53**	**0.09**	**-0.57**	**0.09**	**-0.55**	**0.06**	**-0.62**	**0.06**	**-0.36**	**0.04**	**-0.39**	**0.04**	**-0.77**	**0.05**	**-0.74**	**0.05**
Attended 14+ sessions	-1.16	0.63	-0.81	0.73	0.01	0.67	0.40	0.62	-0.13	0.62	0.35	0.85	**0.87**	**0.39**	**1.06**	**0.47**	0.43	0.42	0.64	0.47
# of Sessions Child	**0.08**	**0.03**	0.02	0.02	**0.25**	**0.06**	**0.14**	**0.05**	**0.12**	**0.05**	0.06	0.10	0.06	0.06	-0.01	0.03	0.00	0.04	-0.01	0.05
Constant	**12.36**	**1.24**	**9.67**	**1.29**	**19.45**	**3.76**	**17.38**	**3.56**	**24.00**	**2.59**	**22.41**	**2.49**	**6.27**	**1.71**	**5.91**	**1.71**	**15.01**	**1.33**	**13.66**	**1.34**
Adj. R^2	0.21		0.26		0.36		0.44		0.31		0.38		0.19		0.25		0.44		0.45	
R^2 Change	**				***				***				***				ns			

a All standard errors (SE) are adjusted for 10 FRC clusters using robust standard error estimates (Huber-White Sandwich estimators) in STATA 10.

b FRC1 is reference category for dummy variable comparisons on providers.

c Bold regression coefficients are statistically significant at $p < 0.05$.

** Change in R2 is statistically significant at 0.01 level.

***Change in R2 is statistically significant at 0.001 level.

Table 5.
Logistic Regression Results for Post-Intervention Maltreatment Incidence

Variables	Post-Intervention Maltreatment					
	Model 1			Model 2		
	b	SE[a]	OR	b	SE	OR
FRC2[b]				n/a	n/a	n/a
FRC 3				1.14	0.67	3.13
FRC 4				n/a	n/a	n/a
FRC 5				0.32	0.26	1.38
FRC 6				**-3.51**	**1.32**	**0.03**
FRC 7				**-1.13**	**0.57**	**0.32**
FRC 8				n/a	n/a	n/a
FRC 9				n/a	n/a	n/a
FRC 10				-0.32	0.48	0.73
Female	0.58	0.43	1.79	0.66	0.55	1.93
White	0.36	0.69	1.43	0.28	0.83	1.32
HS Grad	-0.43	0.42	0.65	-0.48	0.54	0.62
Income	0.02	0.02	1.02	**0.04**	**0.02**	**1.04**
Partner	**0.91[c]**	**0.43**	**2.48**	**1.00**	**0.39**	**2.72**
Abuse In	-1.36	0.98	0.26	-1.82	1.16	0.16
Abuse Out	**1.33**	**0.41**	**3.78**	**1.67**	**0.72**	**5.31**
# Children	-0.06	0.12	0.94	0.11	0.23	1.12
Prior Investigations	**0.94**	**0.28**	**2.56**	**1.31**	**0.41**	**3.71**
Attended 14 + sessions	**-1.12**	**0.34**	**0.33**	**-1.30**	**0.59**	**0.27**
# of Sessions Child	0.06	0.05	1.06	0.09	0.09	1.09
Constant	**-3.87**	**0.92**		**-4.83**	**1.46**	
R^2	0.17			0.31		
N	181			152[b]		

a Standard errors were adjusted for clusters by FRC using Huber-White Sandwhich estimates in STATA 10.

b FRCs were dropped from analysis because membership predicted no post-intervention maltreatment incidence perfectly.

c Bold coefficients are statistically significant at $p < 0.05$.

Appendix

A: Data Sources

TIPS Administrative Data

TIPS is the administrative data system used by OCS to capture information on caregivers who have been or are being investigated for alleged child abuse and/or neglect. The TIPS system captures the validity finding of the investigation as well as demographic information on caregivers who receive extended services through an OCS program. TIPS data were also used to capture the child abuse/neglect history for NPP participants, including instances of substantiated repeat maltreatment. This data system was also used to identify the OCS program that was providing services to adult participants during the NPP group.

In-home services, offered through the Family Services Program (FS), are provided to families within which abuse or neglect has occurred and children remain in the custody and care of a parent or caregiver. Out-of-home services, the Services to Parent Program (SP), are provided to parents when abuse or neglect has occurred and some or all of the children have been removed from the home and placed in foster care. TIPS data are available from files stored in a data warehouse. These files are updated at least weekly and are routinely tested for accuracy and completion. These files were used to extract and export data sets to Excel, which were then converted to Microsoft ACCESS for manipulation and merging with the NPP attendance record data.

An extraction file was created containing all SP and FS cases that were opened for services any time between January 1, 2005 and June 30, 2008. The extraction file contained client TIPS number, client first and last name, client date of birth, race, marital status, date on which SP or FS case opened, reason SP or FS case was opened, date on which SP or FS case closed, and reason for case closure if case was closed for services. The TIPS number is a unique identifier that is assigned to an individual and is used each time that individual is entered ino any child protection program. A client in the TIPS system cannot be "open" in both the SP and FS programs at the same time. The SP/FS data file was linked to the NPP data file using the TIPS number and the SP/FS open and closure dates. The SP or FS record with an open date on or before the NPP group start date with a missing closure date or a closure date after the group start date was captured in the NPP attendance file for each participant who was receiving extended services through OCS.

A separate extraction file was created for all substantiated CPI investigations from July 26, 1980 (the

earliest date found for an investigation case) and June 30, 2008. The investigations file was limited to cases involving family investigations and captured only those members of investigation cases who were identified as being in a parent or caretaker role in the investigation. The investigations file was matched to the NPP data file in three phases. The first phase captured all investigations with an open date prior to the NPP participant's group start date. Phase two captured all investigations that occurred between the group start date and the group end date. Phase three captured all investigations that occurred after the NPP group end date. Each phase included counts of substantiated allegations for each of four categories: neglect, physical abuse, sexual abuse, and all other substantiated findings.

NPP Attendance Records

FRCs completed attendance records for each NPP group conducted during the time period January 1, 2006-December 31, 2007. The attendance records included the name and TIPS number of participants, the names of children who attended the children's group and were present for the parent-child interaction component of group sessions, names of facilitators and co-facilitators, notations indicating the dates each participant attended a group session and/or a home session, and notations regarding the disposition of each participant's program attendance (whether "graduated" or reason for not graduating). NPP attendance records were used to construct variables related to group and in-home participation of adult participants, level of child participation, and graduation status (or if not graduated why if known) disposition for each participant.

The NPP attendance records were completed on paper forms that were faxed or mailed to OCS central office for data entry. Each attendance record was reviewed for completeness and a Missing Information Report was prepared and emailed to the FRCs for completion. The Missing Information Report was grouped into the following five categories: group begin and end dates, group attendance record (adult and child), home visit record (adult and child), completion status (disposition), and AAPI identification number.

Follow-up phone calls were made to each FRC to further clarify issues identified in the Missing Information Reports and to assist in finalizing data collection. The attendance information was entered into a Microsoft ACCESS database created specifically for capturing NPP data. The database was comprised of five indexed tables: providers, groups, facilitators/co-facilitators, adults, and children. The database assigned unique identifiers to each group, adult participant, child participant, facilitator/co-facilitator, and FRC. In order to identify the adults who attended as couples and link them to child participants, the TIPS number of the primary parent was used as a family identification number for all family members.

Data Cleaning

Once the NPP attendance data were entered into the ACCESS database, the first phase of data cleaning and error detection was undertaken. In order to detect erroneous TIPS numbers in the NPP data files, the Adult and Child data files were matched against TIPS data using participants' TIPS numbers. The name and date of birth associated with the TIPS number in the TIPS system was captured in a file along with the name and TIPS number from the NPP database. The resulting data file was manually reviewed to verify that the name in the NPP database matched the name in the TIPS database. Slight variations in the spelling of names prevented an automated match process using names in combination with TIPS numbers. Cases in which the name from the NPP file did not match the name from TIPS were reviewed

to determine the source of the error. If the error could not be resolved by reviewing TIPS records and the paper NPP attendance records, the FRC was contacted to obtain additional information to aid in resolving the issue. Some examples of issues that were identified and corrected in the NPP data included data entry errors, attendance logs that contained incorrect TIPS numbers, attendance logs that recorded a child's TIPS number for the parent, and TIPS records where names had changed due to marriage or adoption.

The adult and child participant data files contained participants without TIPS numbers. A TIPS search was conducted for all these names to determine if a TIPS number could be found. FRCs were contacted to obtain additional identifying information such as names of other family members, social security number, and date of birth to help isolate the TIPS number for the participant. Confirmed TIPS numbers were entered into the NPP database. Some adult and child participants in the NPP did not have a record of involvement with child protective services. Examples of participants without TIPS numbers included relatives who were serving as caregivers but had not been involved in a child protection investigation, siblings of child victims who themselves were not identified victims of an investigation, and partners or spouses who had not been identified as participants of abuse or neglect.

Data queries were also constructed to identify children in the adult data file, adults in the child data file, and children who were not connected to any adult by a family TIPS number. These cases were researched and appropriate corrections were made in the NPP database. Data entry staff also manually reviewed randomly selected records in the database against paper attendance logs to check for accuracy of data entry.

Once the initial data clean-up steps were completed, a series of queries were crafted to construct a data file containing all adult participants, including group ID, number of participants in the group, number of group and in-home sessions attended by adult participants, NPP provider, region in which group was conducted, group facilitator and co-facilitator, start and end dates of the group, number of child participants linked to the adult, group sessions attended by any child linked to the adult, and total number of group sessions attended by any child linked to the adult.

AAPI-2 Data

The NPP uses the AAPI-2 to evaluate changes in parental attitude from the beginning of the group to the end of the group. The AAPI-2 is an assessment of parenting and child-rearing attitudes based on research of abusive and neglectful parenting behaviors. The AAPI-2 attempts to measure parenting attitudes across five parenting constructs derived from theory, research, and practice. Two variants are available for use. The AAPI-2 A and B inventories are each comprised of 40 5-point Likert scale items of Strong Agreement to Strong Disagreement. These items were derived from a larger pool of items that were developed from statements made by parents about children. Content validity was evaluated by submitting the items to professionals in different fields to review the items and rate them for clarity, construct fit, and respond to the items. The resulting inventories were administered by 53 different agencies in 23 states. Participants in agency services included both abusive and non-abusive adult parents, teen parents, and abused and non-abused adolescents. Factor analysis confirmed five subscales with internal consistency estimates (Cronbach's a) for the A and B variants ranging from .83 to .98.

Typically, the 'A' variant is used as the pre-test measurement of parental attitudes and the 'B' variant is used as the post-test measurement of parental attitudes. The pre-test AAPI-2 is usually administered to

adult participants during the first NPP group session. The post-test AAPI-2 is usually administered by the facilitator during the last scheduled group session. The completed AAPI instruments were collected from participants by each site and entered into the AAPI Web site by FRC staff. The AAPI Web site can then be used to generate a printout of the results of one or both variants.

Stephen Bavolek, co-developer of the AAPI-2 instrument, provided an extraction file of AAPI-2 data that had been entered by the FRCs. The AAPI-2 data were supplied in the form of an EXCEL spreadsheet that contained an identification number for each participant and participant responses on all items on the AAPI-2 instruments. The spreadsheet also included raw and standardized scores for each AAPI-2 item with appropriate items reverse-coded. The standardized scores range from 1 to 10 and are standardized with all other participants in the AAPI database. Each pre-test and post-test AAPI-2 response was contained in the spreadsheet as a separate record. The EXCEL file was imported to ACCESS and split into two separate tables, one containing pretest data and the other containing post-test data. The two files were then joined using the respondents' unique identification numbers so that each respondent had one record containing both pre- and post- variant data. NPP attendance records did not include the AAPI ID number and this was requested from the FRCs in order to match NPP participants to their pre- and post-AAPI-2 scores

Once the AAPI-2 data was modified into one record for each participant, another phase of data cleanup was initiated. Some individuals who were coded as "graduated" were found to have only the pre-test variant; some had only the post-test variant; some non-graduates had pre- and post- variants; some non-graduates had post- variants but no pre- variant. These cases were researched by reviewing the AAPI Web site and the paper attendance record and by contacting the FRCs to determine if any pre- or post- AAPI-2 instruments had not been recorded into the AAPI Web site. All newly identified pre- and post- AAPI-2 data were added to the joined AAPI-2 data file.

The cleaned NPP attendance data, TIPS data, and AAPI-2 data were merged into one data table containing all variables from each primary data source. The data were reviewed following this process to verify that the merging of files maintained the integrity of the data from each source.

Appendix B: Variables and Measures

This section includes information about the variables used in this study. The variables are grouped into outcome variables and independent variables. A definition is included for each variable as well as a description of how the variable was measured in this study.

There are two outcome variables in this study: Change in Parenting Attitudes and Change in Parenting Behavior. Each variable is defined and a description of measurement process is included.

Dependent Variable—Change in Parenting Attitudes

Change in Parenting Attitudes was defined as the difference between attitudes about parenting prior to program participation and after participation in NPP as measured by the AAPI-2 (Bavolek et al., 1979). Attitudes were measured along five dimensions as noted below. Variable names from the source data set are included in parentheses:

1. **Subscale A**: Inappropriate Parental Expectations (RawAdiff) can range from –28 to 28 with a negative value indicating a worsening of parental attitude, 0 indicating no improvement in attitude and 28

representing the maximum improvement. Improvement on this scale indicates better understanding of child growth and development, exhibiting expectations of the child that are more appropriate to the developmental level of the child, and a shift away from demanding and controlling attitudes toward being supportive of the child.

2. **Subscale B**: Parental Lack of an Empathic Awareness of Children's Needs (RawBdiff) can range from –40 to 40 with 40 representing the maximum improvement in parental attitude. Improvement on this scale indicates a better understanding of children's needs, recognition of children's feelings, and understanding how to nurture and encourage positive growth in children.
3. **Subscale C**: Strong Belief in the Use and Value of Corporal Punishment (RawCdiff) can range from –44 to 44 with 44 representing maximum improvement in parental attitude. Improvement on this scale represents a shift in attitude from a controlling, rigid disciplinarian and a strong belief in corporal punishment toward a more democratic view of family rules, use of alternatives to corporal punishment, and increased respect for children and their needs.
4. **Subscale D**: Parent-Child Role Reversal (RawDdiff) can range from –28 to 28 with 28 representing maximum improvement in parental attitude. Improvement on this scale indicates a shift away from viewing children as peers and using them to meet self-needs toward more appropriate family role expectations in which children are allowed to express their developmental needs and the parent finds support and companionship from other adults.
5. **Subscale E**: Oppressing Children's Power and Independence (RawEdiff) can range from –20 to 20 with 20 representing maximum improvement in parental attitude. Improvement on this scale indicates a change in attitude from one who expects strict obedience to his or her demands and restricts power and independence to one who encourages children to express their views and develop their abilities to problem-solve.

Dependent Variable—Change in Parenting Behavior

Change in Parenting Behavior was defined as not having incidences of maltreatment or abuse/neglect after participating in the program. This is measured by data from TIPS indicating whether there were valid incidences of maltreatment after program participation. The TIPS data was obtained through June 30, 2008. This dichotomous variable is indicated by a '1' if there was a post-intervention incidence of maltreatment and a '0' if not.

Independent Variables

Independent variables for the multivariate models are defined and described in this section. The independent variables are divided into Parent Characteristics including demographics, Parent Participation, and Child Participation. The independent variables used in the multivariate models to address the research questions are the same. These variables were selected for inclusion into the model because they are hypothesized to be associated with the outcome and/or were variables of interest to see how outcomes stemming from the intervention may or may not be different for different types of respondents.

Independent Variables—Parent Characteristics

Gender

Gender is defined as the participant's sex. The dichotomous variable is coded as 1 for female and 0

for male. Two of the data sources used for this project contained a gender variable: TIPS and AAPI-2. However, both sources contained missing information. The TIPS data was the most complete source of information. The TIPS gender variable is recorded based on client self-report and worker knowledge and observation. The AAPI-2 data contains client self-report of gender. TIPS gender was used as the primary source for this variable. If the value was missing, the pre-intervention AAPI-2 gender value was used. If both the TIPS gender and the pre AAPI-2 gender fields were missing, the post-intervention AAPI-2 gender value was used. If all values were missing, the variable was coded as system missing.

Race

Due to small sample sizes, we created a single dichotomous variable to represent white and non-white participants (Black/African American, Hispanic, Native American/Alaska Native, Pacific Islander/ Hawaiian Native, and Other). These values were coded '1' for white (56%) and '0' for non-white (44%). Two of the data sources were used to construct this variable: TIPS and AAPI-2. However, both sources contained missing information. The TIPS data were the most complete source of information. The TIPS race variable is recorded based on client self-report and worker knowledge and observation. The AAPI-2 data contain client self-report of primary racial or ethnic identity. If TIPS race was missing, the pre-intervention AAPI-2 race value was used. If both the TIPS race and the pre AAPI-2 race fields were missing, the post-intervention AAPI-2 race value was used.

Education

Education was derived from participant self-report on the pre-intervention AAPI-2. We created a dichotomous variable with '1' indicating high school graduate or higher and '0' for less than high school graduation. The variable was constructed from participant selections to indicate the highest grade completed from the following list of responses: grade school, 7th grade, 8th grade, 9th grade, 10th grade, 11th grade, high school graduate, some college, college graduate, and post-graduate or above.

Income

Income was derived from participant self-report on the pre-intervention AAPI-2. Participants were asked to indicate their current household income by selecting from the following list of responses: under $15,000, $15,001 - $25,000, $25,001 - $40,000, $40,001 - $60,000, and over $60,000.

Marital Status

Marital status is defined as whether the participant reported having a partner. This dichotomous variable was coded '1' for participants with a partner (married, unmarried partner, or common law partner) and '0' for participants who reported no partner (divorced, single, separated, widowed, and other). Two of the data sources used for this evaluation contained a marital status variable: TIPS and AAPI-2. However, both sources contained missing information. The TIPS marital status variable is recorded based on client self-report and other sources of information available to the child welfare worker. TIPS marital status was the most complete source of information and was used as the primary source for this variable. If TIPS marital status was missing, the pre-intervention AAPI-2 marital status value was used. If both the TIPS marital status and the pre-intervention AAPI-2 marital status fields were missing, the post-intervention AAPI-2 marital status value was used. If all values were missing,

the variable was coded as system missing.

Parent History of Child Maltreatment as a Child

This dichotomous variable was coded '1' for yes and '0' for no. The pre-intervention AAPI-2 was the source of this item. Participants completing the AAPI-2 instrument were asked to respond to the following question: As a child, did you experience any type of abuse by a person within your family?

Parent Experienced Abuse Outside of Home

This dichotomous variable was coded '1' for yes and '0' for no. The pre-intervention AAPI-2 was the source of this item. Participants completing the AAPI-2 instrument were asked to respond to the following question: As a child, did you experience any type of abuse by a person living outside your family?

Number of Children

The pre-intervention AAPI-2 was the source of this item. Participants self-reported the number of children they had. This number ranged from 0 to 10. It was not possible to determine the number of children residing in the home or the number of children who resided in the home who were below the age of 18.

Prior Investigations

Information used to construct this variable was drawn from the TIPS database by extracting all valid allegations for parents or caretakers in family investigations from January 1, 1980 through June 30, 2008 and matching these data to program participants by TIPS number. The variable indicates the number of validated incidents of abuse or neglect associated with each individual adult participant prior to the start date of the participant's NPP. The values for this variable ranged from 1 to 7.

AAPI-2 Pretest Subscale Scores

These variables are the raw scores as reported on the AAPI Web site for the pre-test inventory completed by program participants. There are two versions of the AAPI-2, an A version and a B version. Each version contains 40 items. The raw scores are composite scores computed from individual responses on the 40-item instruments. Each of the 40 items is associated with one of five parenting constructs. Each item on the instrument is scored from 1 to 5 to indicate degree of agreement with the item. Specific item responses are reverse-coded so that all items within a construct are consistently scored to represent more or less positive parenting attitudes. These responses are then summed to generate the raw score. A higher raw score is interpreted to represent a more positive parenting attitude, which is also associated with a lower risk of engaging in abusive behavior. The description of each construct and corresponding raw score range are as follows:

A_Raw	(inappropriate parental expectations)	7 to 35
B_Raw	(lack of empathy)	10 to 50
C_Raw	(physical punishment)	11 to 55
D_Raw	(role reversal)	7 to 35
E_Raw	(power and independence)	5 to 25

The A and B versions of the AAPI-2 were constructed with the same metric so either variant could be

used as the pre-test inventory or the post-test inventory. The difference between the pre-intervention AAPI-2 raw score and the post-intervention AAPI-2 raw score for each construct was computed to serve as a measure of change in parenting attitudes (described above in Outcome Variables).

Independent Variables—Parent Participation

Parent Participation was defined as the extent of participation by the adult caregiver in program offerings during a 16-week course. The variable, COVERAGE, a quantitative count of attendance at either a group and/or home session out of a total of 16 sessions, was used to indicate extent of coverage of curriculum. This variable was recoded into the dichotomous variable, which indicates whether an individual attended 14 or more group and/or home sessions during 16 weeks (coded as '1') or if the individual attended fewer than 14 out of 16 weekly group and/or home sessions (coded as '0'). In exploratory analyses, we tested several different thresholds of participation in our models, and this cut-off seemed to perform best as measured by a significant effect and overall model fit. Independent Variables—Child Participation

Child Participation was defined as the extent of participation in program offerings in terms of how many sessions a child of a participant attended. This variable, called CHILD PARTICIPATION, indicates the total number of sessions attended by at least one of the participant's children. Values ranged from 0 to 16 with 0 indicating that no child participated or no children's group was offered by the FRC as part of the program.

Provider

The 10 FRCs whose participant data were included in the analysis were dummy coded into 10 dichotomous variables of '1' to indicate a particular provider and '0' otherwise. The variables were FRC1 through FRC10 as follows:

FRC1: 1=Community Support Program; 0=otherwise

FRC2: 1=Discovery; 0=otherwise

FRC3: 1=ETC Resource Center; 0=otherwise

FRC4: 1=Family Connection/Family Matters ULM; 0=otherwise

FRC5: 1=Kingsley House; 0=otherwise

FRC6: 1=Nicholls Family Service Center; 0=otherwise

FRC7: 1=Positive Steps; 0=otherwise

FRC8: 1=Project Celebration Inc.; 0=otherwise

FRC9: 1=The Extra Mile; 0=otherwise

FRC10: 1=VOA Alexandria; 0=otherwise

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