


# Effects of a Foster Parent Training Intervention on Child Behavior, Caregiver Stress, and Parenting Style

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**Abstract** Findings from Maryland KEEP, a replication of KEEP (keeping foster and kinship parents trained and supported), a foster and kinship parent training intervention are presented. The purposes of this study were to evaluate child behavior change, changes in caregiver parenting style, and permanency and placement stability at baseline and then after the KEEP intervention. The KEEP intervention was provided to 65 foster and kinship parents providing care for children ages 4–12. Children who participated in the study were referred due to behavior problems, as reported by foster parents: they all scored in the clinical range for externalizing behavior on the child behavior checklist (CBCL). Baseline and posttest analyses assessed for child behavior and parenting style changes. Permanency data, including placement moves and exits from child welfare were examined. Overall, foster and kinship parents reported significantly fewer child behavior problems at posttest; severity levels on the CBCL decreased from baseline to posttest and scores on the Parent Daily Report decreased from 7.25 at baseline to 3.0 at posttest. Placement stability significantly increased between baseline and post KEEP intervention. The results provide support for the effectiveness of KEEP for a child welfare population with a high level of behavior problems and for the effectiveness of KEEP as a training program for foster and kinship parents.

**Keywords** Foster parent training · Parent management training · Externalizing behaviors · Foster care · Permanency

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## Introduction

For children receiving child welfare services, trauma and maltreatment histories manifest in mental health needs that frequently result in diagnoses of post-traumatic stress disorder, anxiety, and depression (Bruskas 2008; Stoner et al. 2015). A review of mental health care for children and youth in foster care (Landsverk et al. 2006) found that between one-half and three-fourths of children who enter foster care have demonstrated emotional and behavioral symptoms that require mental health treatment. Subsequent sequelae of this trauma may include failed placements, educational problems, involvement in the juvenile justice system, substance use and health-risk behaviors (Price et al. 2009) and long-term functioning and decision making (Landsverk et al. 2006).

Evidence-based practices are needed to help foster care youth with mental health needs. For example, evidence-based mental health treatment, such as trauma focused cognitive behavioral therapy, has been shown to be effective with children and youth exposed to trauma (see Deblinger et al. 2011). However, this treatment is office-based with the clinician being the agent of change. For youth living in foster or kinship settings, training caregivers to deliver in-home interventions in their work with youth who have been exposed to abuse and trauma may expand therapeutic opportunities. Foster or kinship parents, who care for the children on a full-time basis and have chances for healthy interactions to promote positive behaviors and functioning, may be a missed opportunity for delivering effective treatment. Since 75 % of children in child welfare placements live in either a non-relative foster home (47 % total) or in a relative foster home (28 % total; US Department of Health and Human Services 2014), enhancing the quality of foster parent training to serve

youth with mental health needs could have a profound effect within the child welfare system.

Providing quality care for children in family-based out-of-home placements requires more than just typical knowledge of parenting and normative child development (Murray et al. 2011). Foster parents have frequently reported that child welfare agencies have not provided enough training, support, and information related to their foster child as well as the foster care and court systems (MacGregor et al. 2006). Considering how strongly foster parent self-efficacy and competence are associated with decreased burnout (MacGregor et al. 2006), greater satisfaction (Denby et al. 1999) and retention (Whenan et al. 2009), efforts are needed to promote foster parent capacity. Similarly, recent qualitative studies suggest foster parents are aware of and request the need for specific training. Two studies found that foster parents requested more training on specific problematic daily child behaviors (Cooley and Petren 2011; Murray et al. 2011) that included “real life examples and situations that may arise during foster parenting” (Cooley and Petren 2011, p. 1971).

Effective foster parent training requires establishing parenting confidence and the ability of the foster parents to apply their training to the daily responsibilities and jobs of parenting (Murray et al. 2011), which in turn helps to mediate the stress associated with parenting and create a balanced parenting style that provides both discipline and positive reinforcement. Jones and Morrisette (1999) examined foster parent stress in a sample of 92 Canadian foster parents and found that foster child behavior was one of their top five stressors. Vanschoonlandt et al. (2013) examined foster parent stress in a sample of 39 foster mothers with recently placed foster children. They found that foster mothers experienced significant levels of stress and almost half of the foster mothers were classified as making a negative adaptation to their parenting style due to stress. Similarly, McCarthy et al. (2003) assessing 70 foster parents found that the level of a foster child’s externalizing problems significantly predicted the foster parent’s level of burden. Overall, findings suggest the need for specific foster parent training to address both complex emotional and behavioral difficulties displayed by foster children and the stress level and parenting style of foster parents.

Requirements for and implementation of pre-service and in-service training for foster parents vary widely from state to state (Gerstenzang 2009; Grimm 2003). Most states mandate a minimum of 30 h of training before a child is placed in a foster home with some amount of on-going annual training. However, prospective foster parents in some states are obligated to complete as few as 4 h of training prior to placement; and a rare few have no pre-service training requirements (Grimm 2003). The requirements for in-service training are similarly varied. A handful

of states require 20 h of annual training and a few require none, but most fall somewhere in between (Gerstenzang 2009). Based on this review, trainings for foster parents are available and are often mandatory; however, it is less clear whether these trainings are effective in helping foster parents manage the common challenges presented by the child welfare population.

Previous reviews have noted a scarcity of evaluations of the most commonly used forms of pre- and in-service foster parent training (Dorsey et al. 2008; Festinger and Baker 2013). Increases in knowledge related to the training curriculum have been reported, but none have evaluated effects on child problem behaviors or placement change (Festinger and Baker 2013). In a Cochrane review of in-service multisession cognitive-behavioral-based foster parent training programs, Turner, Macdonald and Dennis (2007) concluded that there was inadequate evidence supporting the efficacy of such programs to provide any guidance for interventionists or practitioners. However, recent evidence has accumulated the effectiveness of group-based in-service trainings for foster parents that use standardized curricula to impact parent and child behaviors (Festinger and Baker 2013).

One example of a foster parent training is the KEEP program, a 16-week group intervention for foster parents and kinship caregivers. The present study examines the impact of the KEEP foster parent training program. The KEEP program is designed to increase positive parenting, decrease externalizing child behaviors and increase placement stability. The central goal of the KEEP program is to help parents develop the skills to reduce child problem behaviors and parental stress in order to prevent disruptions in placement. During the 90-minute group, the facilitator leads the content and discussion while the co-facilitator provides general support and helps keep the conversation on topic. The sessions include topics such as teaching new behaviors, using reward systems, setting limits and avoiding power struggles. The format is both didactic and interactive, where parents have the opportunity to practice skills in a supported environment. At the end of each session, parents make a plan for implementing their new skills. The following week parents can report successes and ask for support from the group if problems arise.

KEEP has demonstrated positive findings in previous studies. In a randomized control trial, caregivers who participated in a KEEP group reported significant reductions in externalizing child behaviors and placement disruptions compared to control group participants (Chamberlain et al. 2008; Price et al. 2008). The intervention effect was partially mediated by the caregiver’s use of positive parenting techniques for children with high rates of child behavior problems at baseline (baseline Parent Daily Report >6). In addition, the children with high frequencies of behavior

problems at baseline saw the steepest decline in problem behaviors (Chamberlain et al. 2008). Although previous studies have concentrated on the behaviors of a single “focal” child, a recent study by Price et al. (2014) presented evidence that KEEP may be associated with declines in problem behaviors for multiple children living in the same home. The authors also reported a significant reduction in stress associated with problem behaviors for caregivers in the treatment group. Subsequent evaluations of KEEP, with and without developer involvement, have produced findings consistent with those reported by Chamberlain et al. (2008) regarding the mechanisms and impact of the program on child problem behaviors in geographically and ethnically diverse samples (Price et al. 2012; Buchanan et al. 2012; Uretsky et al. 2015).

The purpose of this study was to examine the effects of the KEEP training intervention compared to a group of foster and kinship caregivers who did not attend the KEEP training. The study aimed to compare outcomes between the treatment and comparison group members. Specifically, four research questions compared pre-post changes between the two groups for (1) child behavior, (2) parenting stress, (3) discipline and supervision style, and (4) permanency. Two additional research questions assessed the ability of baseline child behavior to predict permanency outcomes as well as assessed the relationship between child behavior and caregiver stress.

## Method

### Participants

To be eligible for the study, foster and kinship caregivers had to have a foster or kinship child placed in their care for a minimum of a month and the child must have been between the ages of 4 and 12 and not in a treatment foster care placement. Recruitment procedures differed for the intervention and comparison groups. Both groups were offered an incentive for participation.

#### *KEEP Participants*

Recruitment of foster and kinship parents to participate in KEEP occurred through a two-stage process. KEEP participants were referred by child welfare workers and then were visited by KEEP facilitators. Recruitment efforts yielded 75 foster and kinship caregivers participating in nine cohorts of the KEEP training. However, to control for variation in answering evaluation measures, 65 unique households consisting of only one caregiver and one child per home were eligible for the study. For consistency, the same foster or kinship parent was asked to answer all questionnaires.

### *Comparison Group*

Recruitment efforts for the comparison group occurred over an 18 month period between 2011 and 2013. Through the State Automated Child Welfare Information System, 282 eligible kin and foster parents were identified. Each of these eligible caregivers was contacted by mail about the study. Over two waves of mailings, only 9 caregivers were recruited (3 %). Further recruitment efforts included advertising in a monthly foster and kinship parenting newsletter distributed by the state child welfare administration over a 4 month period. This resulted in an additional 39 caregivers for a total of 48 comparison group participants.

The total sample for the study was 113; 65 participants in the KEEP group and 48 in the comparison group. Table 1 details baseline demographic characteristics for the intervention and comparison participants. The average age at baseline for caregivers was 50 for the KEEP group (SD = 11, range 27–72) and the comparison group (SD = 10, range 31–82). The majority of study participants were female with 99 % ( $n = 64$ ) of the KEEP group and 98 % ( $n = 47$ ) of the comparison group. Chi-square analyses assessed differences between demographics of the two conditions. Two statistically significant differences were found: race and caregiving duration. Black/African American participants were more likely to be in the KEEP group and White/Caucasian participants were more likely to be in the comparison group. In addition, participants in the comparison group were more likely to have children in their care 24 months or more compared to participants in the KEEP group comparison who had shorter durations of care.

Table 2 details gender and ethnicity for the identified foster or kinship child. Chi-square analyses assessed differences between groups on child ethnicity and gender. White/Caucasian children were more likely to be in the comparison group and Black/African American and Other children were more likely to be in the KEEP group. There were no significant differences in gender or ages between the two groups ( $t = .738$ , ns) with the average age of children in both groups being eight years old.

### Procedure

Maryland KEEP followed the original KEEP model (see Price et al. 2009). From 2010 to 2012, 75 foster and kinship caregivers participated in nine cohorts of the KEEP training program. Several features of the KEEP intervention were designed to promote attendance and adherence and remove barriers for involvement. The groups met in a comfortable environment that was convenient to the parents. Food and daycare were provided for the families.

**Table 1** Foster and kinship parent sample demographics (N = 113)

	Intervention (N = 65)		Comparison (N = 48)		X <sup>2</sup>
Ethnicity*					
Black/African American	51 %	(n = 33)	44 %	(n = 21)	X <sup>2</sup> (4) = 9.35, p = .05
White/Caucasian	32 %	(n = 21)	54 %	(n = 26)	
Hispanic	3 %	(n = 2)	0	0	
More than one race	14 %	(n = 9)	2 %	(n = 1)	
Provider type					
Relative/kinship provider	35 %	(n = 23)	31 %	(n = 15)	X <sup>2</sup> (1) = .49, p = .486
Licensed state foster provider	65 %	(n = 42)	69 %	(n = 33)	
Total # of children placed in home (ever)					
1–4	67 %	(n = 44)	44 %	(n = 21)	X <sup>2</sup> (5) = 4.45, p = .486
5–9	14 %	(n = 9)	21 %	(n = 10)	
>10	19 %	(n = 12)	35 %	(n = 17)	
Longest length of stay of foster or kinship child*					
0–6 months	12 %	(n = 8)	8.3 %	(n = 4)	X <sup>2</sup> (7) = 15.34, p = .032
7–12 months	18 %	(n = 12)	10.4 %	(n = 5)	
13–18 months	17 %	(n = 11)	4 %	(n = 2)	
19–24 months	11 %	(n = 7)	6.3 %	(n = 3)	
>24 months	42 %	(n = 27)	71 %	(n = 34)	
Marital status					
Married	42 %	(n = 27)	65 %	(n = 31)	X <sup>2</sup> (4) = 8.47, p = .08
Single/never married	26 %	(n = 17)	23 %	(n = 11)	
Divorced or separated	18 %	(n = 12)	6 %	(n = 3)	
Widowed	14 %	(n = 9)	6 %	(n = 3)	
Employment status					
Full-time	54 %	(n = 35)	58 %	(n = 28)	X <sup>2</sup> (4) = 4.14, p = .388
Part-time	9 %	(n = 6)	13 %	(n = 6)	
Student	5 %	(n = 3)	2 %	(n = 1)	
Retired	20 %	(n = 13)	8 %	(n = 4)	
Unemployed	12 %	(n = 8)	19 %	(n = 9)	
Highest educational level achieved					
Less than high school	6 %	(n = 4)	4 %	(n = 2)	X <sup>2</sup> (7) = 4.76, p = .690
High school/GED	17 %	(n = 11)	21 %	(n = 10)	
Some college	19 %	(n = 12)	31 %	(n = 15)	
Associate degree/vocational degree	15 %	(n = 10)	17 %	(n = 8)	
College degree	26 %	(n = 17)	17 %	(n = 8)	
Graduate degree	15 %	(n = 10)	10 %	(n = 5)	
Some graduate school	2 %	(n = 1)	0	0	

\*  $p \leq .05$ 

During the week the facilitator checked in with the parents by phone and parents completed a “Parent Daily Report”. This check-in is an opportunity to report back on how the skills are working at home and engage in individual problem solving (see Price et al. 2009 for a more detailed model description).

Attendance at each of the 16 sessions was expected. Parents attended an average of 78 % (at least 12 of 16) of the sessions. When a parent missed a session, the group

facilitator would offer to meet the parent to provide a make-up session. If accepted, the facilitator would travel to a location convenient to the parent (e.g. home, work, coffee shop) to review the missed content.

A KEEP intervention cohort and non-equivalent comparison cohort were studied. Baseline data on child behaviors and parenting practices were collected from both groups over two phone calls at the start of the study. Posttest data was collected over two phone calls

**Table 2** Foster and kinship child demographics

Variable	Intervention N = 65		Comparison N = 48		$X^2$
Gender					$X^2 (1) = 3.42,$
Male	51 %	(n = 33)	33 %	(n = 16)	$p = .064$
Female	49 %	(n = 32)	67 %	(n = 32)	
Ethnicity					$X^2 (3) = 8.47,$
Black	48 %	(n = 31)	33 %	(n = 16)	$p = .037$
White	32 %	(n = 21)	44 %	(n = 21)	
Other	17 %	(n = 11)	8 %	(n = 4)	
Missing	3 %	(n = 2)	15 %	(n = 7)	

approximately 6 months post baseline data, which was 2 months after the completion of the KEEP training for the intervention participants. The comparison group completed all the study surveys but did not receive any study-specific services. In addition to primary data collection instruments, state child welfare administrative data were used to assess changes in placement and achievement of permanency for 12-months following completion of the KEEP training and for the comparison group 12-months after their baseline assessment. Institutional Review Board approval for this study was obtained.

## Measures

### *Parent Daily Report*

The PDR is a 31-item measure of behavior problems (e.g., arguing, complaining, back talk; see Chamberlain et al. 2008 for a description of the PDR). During each telephone call, the parents reported whether, over the last 24-h, any of the 31 specific behaviors occurred or not, with a yes or no indication. Pre and posttest PDR scores for the child's behavior were computed by summing the number of behaviors reported for each telephone call and then dividing by the number of calls. Changes in the PDR were assessed in terms of raw score change over time and change across the clinical categories of placement disruption risk (based on Chamberlain et al. 2006), which classified PDR scores below 6 as "low risk", 6–13 as "medium risk" and 14 or greater as "high risk". The internal consistency of the PDR in this study was sufficient (Cronbach's alpha of .82 baseline and .85 posttest).

### *Parenting Stress Index*

Parenting stress was assessed using the Parenting Stress Index Short Form (PSI-SF). The PSI-SF is a 36 item measure that is a derivative of the full 120 item measure and measures the overall level of stress a caregiver is experiencing (Abidin 2011). It is designed for caregivers of children ages 3 months to 12 years of age. The PSI-SF is

composed of three subscales with 12 items each: Parental Distress; Parent–Child Dysfunctional Interaction; and (parent assessment of) Difficult Child. Each subscale score ranges from 12 to 60. A higher score indicates a higher level of stress. The total score is a sum of the three subscales, ranging from 36 to 180. A total stress score above a 90 indicates clinically significant levels of stress. In the study sample, Cronbach alpha's of PSI-SF total were .92 at baseline and .99 at posttest and reliabilities for the subscales ranging from .91 at baseline to .94 at posttest.

### *Discipline and Supervision Measure*

The Discipline and Supervision Measure is a composite measure developed by the Oregon Social Learning Center and measures parenting style. Caregivers were asked to self-report their frequency of specific discipline techniques (e.g., time out, yelling, take away) and frequency of positive reinforcement techniques (e.g., verbal praise, hugs, incentives). A ratio of positive reinforcement to discipline techniques is computed through combining average and total positive reinforcement and discipline techniques. Scores range from 0 to 1. A higher score indicates a greater positive reinforcement to discipline ratio.

### *Permanency*

Youth outcomes related to permanency were available in the state child welfare administrative data system for the 56 KEEP youth and 32 comparison group youth who were in state custody at baseline. Permanency was defined as exiting the foster care system or being in a trial home visit or pre-adoptive home. Achieving permanency was measured at three time points: during the 16 weeks of KEEP, within 6 months after KEEP, or within 12 months after KEEP.

## Data Analyses

Data analyses were conducted using IBM SPSS version 22.0. Descriptive and bivariate analyses were used to assess demographic differences between the KEEP cohort and the



**Table 3** Findings from repeated measures ANOVAs

Dependent variable	KEEP ( <i>n</i> = 39)		Comparison ( <i>n</i> = 39)		Group baseline differences <i>F</i>	Repeated measures ANOVA (Time by condition) <i>F</i>	Effect size Partial $\eta^2$
	Baseline M (SD)	Posttest M (SD)	Baseline M (SD)	Posttest M (SD)			
Parent daily report	7 (4.5)	3 (2.2)	6.4 (3.5)	6 (4)	$F(1, 76) = 35.612$	$F(1, 76) = 17.848^*$	.32
Parenting Stress Index Total score	134 (19)	134 (17)	139 (21)	146 (21)	$F(1, 109) = 1.302^*$	$F(1, 71) = 5.612^*$	.073
Parental distress	47 (7)	47 (5)	49 (8)	50 (7)	$F(1, 73) = 1.396$	$F(1, 73) = 1.176^*$	.019
PCDI	48 (7)	40 (6)	48 (7)	42 (7)	$F(1, 72) = .199$	$F(1, 72) = 12.684$	.634
Difficult child	40 (9)	40 (9)	40 (10)	46 (10)	$F(1, 72) = 2.672$	$F(1, 72) = 4.778^*$	.061
Discipline and supervision	.71 (.07)	.70 (.07)	.63 (.07)	.63 (.07)	$F(1, 84) = .765$	$F(1, 84) = .765$	.009

\*  $p < .0001$

comparison condition's foster/kinship parents and youth. Repeated measures ANOVAs were used to identify differences over time and between groups for child behavior, parenting stress, and discipline and supervision. In addition, some analyses were conducted across the whole study sample. First, the relationship between baseline PDR scores and permanency achievement was assessed using an independent samples *t* test. A logistic regression model assessed the relationship between achieving permanency with a youth's baseline PDR score and treatment condition. Next, correlations were conducted to assess the relationship between parent stress and child behavior.

## Results

For the KEEP intervention cohort at posttest 78 % ( $n = 51$ ) of caregivers were able to be contacted; 22 % ( $n = 14$ ) caregivers were unable to be reached after multiple attempts by researchers. For the comparison group, 77 % ( $n = 37$ ) of caregivers were able to be contacted and 23 % ( $n = 11$ ) were unable to be contacted for posttest procedures. Attrition analyses assessed differences on demographic variables (ethnicity, age, gender, length of time foster/kinship child was in the home, and identified child demographics) between those who could be contacted and those who could not. No statistically significant demographic differences were identified, suggesting that respondents were not significantly different from non-respondents.

At baseline, the average score for the KEEP group on the PDR was 8 (SD = 7) and the average score for the comparison group was 6.4 (SD = 4), suggesting that KEEP youth had about 1–2 more problem behaviors each day than comparison youth. A Repeated Measures ANOVA was used to assess for differences over time and between groups. There was a significant difference in PDR scores for both time [ $F(1, 76.000) = 35.612$ ,  $p = .0001$ ]

and time by group [ $F(1, 76.000) = 17.848$ ,  $p = .0001$ ]. There were no significant differences between the groups at pretest. Posttest PDR scores showed differences in means between the groups that were statistically significant, with the KEEP group reporting an average of 3 problem behaviors (SD = 2) and the comparison group reporting about 6 (SD = 4). The KEEP group had a statistically significant reduction in PDR scores with 5 fewer problem behaviors reported from baseline to posttest, while the comparison group did not have any significant change.

The average total score on the PSI-SF at baseline for the KEEP parents was 134 and was 139 for the comparison sample, indicating both groups were above the clinically significant stress cut-off score of 90 at baseline. Repeated Measures ANOVA analyses found a statistically significant difference between groups ( $p = .05$ ), but not a significant difference over time for either group, see Table 3. At both baseline ( $M = 139$ ) and posttest ( $M = 146$ ), the comparison group scored higher on the PSI-SF than the KEEP group (134 at baseline and 134 at posttest) for the Total Score. At posttest the comparison group scored higher on the Parental Distress and Difficult Child posttest subscales (see Table 3). There were no significant reductions in parenting stress during the study period on either the total scale or any of the three subscales.

There was not a difference between groups or over time for the Discipline and Supervision ratio. The comparison group had a discipline and supervision ratio of .63 at both baseline and posttest. The KEEP group had a baseline of .71 and posttest ratio of .70, showing little change over time or between groups (see Table 3).

For the subset of 88 youth who were in public child welfare placement at baseline, exiting the system or moving to a trial home visit or pre-adoptive home was assessed over time (Table 4). Of the 56 KEEP youth, 10 (18 %) achieved permanency during KEEP, 19 (34 %) achieved permanency during or within 6 months following KEEP,

**Table 4** Permanency findings (N = 88)

	KEEP (n = 56)	Comparison (n = 32)	$\chi^2/p$ value
Permanency during KEEP	10 (18 %)	6 (19 %)	.08 ( $p = .77$ )
Permanency during or within 6 months	19 (34 %)	12 (38 %)	.08 ( $p = .77$ )
Permanency during or within 12 months	24 (43 %)	18 (56 %)	.12 ( $p = .72$ )

and 24 (43 %) achieved permanency during or within 12 months after KEEP. Comparison youth had permanency rates that were comparable, with 6 (19 %) during KEEP, 12 (38 %) during or within 6 months after, and 18 (56 %) during or within 12 months after KEEP. None of these group differences were statistically significant.

Data on PDR scores and permanency status were available from 68 youth (36 in the KEEP group; 32 in the comparison group). In a *t* test, mean PDR baseline scores for youth who achieved permanency within 1 year after KEEP was 5.5 (SD = 3.2), compared to 7.5 (SD = 4.5) for youth who had not achieved permanency. In a logistic regression model predicting permanency achievement within 1 year, even after controlling for group membership in KEEP versus the comparison, baseline PDR score remained significant ( $B = -.136$ ;  $p = .033$ ; OR = .873), but group membership was non-significant ( $p = .865$ ). Model results suggest that when controlling for group membership, youth who achieved permanency in 1 year had a 14 % lower PDR baseline score compared to youth who had not achieved permanency.

Baseline PDR and baseline Total Stress scores on the PSI-SF were significantly inverse correlated,  $r(111) = -.484$ ,  $p = .0001$ . A higher PDR baseline was correlated with a lower baseline total PSI score. At post-test, there was no longer a significant correlation between PDR and Total Stress PSI scores,  $r(73) = -.006$ ,  $p = .581$ , suggesting the relationship between stress and child behavior changed over time. There were differences from baseline to posttest within groups. For the KEEP group, baseline PDR and baseline Total Stress PSI-SF scores were significantly correlated,  $r(63) = -.505$ ,  $p = .0001$ . However, they were not significantly correlated at posttest,  $r(37) = .131$ ,  $p = .428$ , suggesting the relationship between parent stress and child behavior changed during the KEEP program. For the comparison group, PDR and Total Stress PSI-SF were significantly correlated at both baseline [ $r(46) = -.513$ ,  $p = .0001$ ] and posttest [ $r(37) = -.383$ ,  $p = .026$ ]. In both cases, higher PDR scores were correlated with lower Total Stress PSI scores.

## Discussion

The current paper examined four key outcomes for the treatment and comparison group participants in an independent replication of the KEEP program. Differences in

treatment condition and time were examined for child behavior, parenting stress, parenting style, and permanency. In addition, the relationship between child behavior and caregiver stress as well as the ability of baseline child behavior to predict permanency outcomes were evaluated. The findings presented agree with previous studies that have reported significant decreases in child behavior problems for participants in KEEP interventions (Chamberlain et al. 2008; Leathers et al. 2011, Price et al. 2012). Perhaps the most significant finding, the KEEP group displayed a significant reduction in PDR scores with a display of five fewer problem behaviors reported from baseline to posttest, while the comparison group did not demonstrate any significant change. The present study did not find any significant differences by intervention group or over time on parenting stress, discipline and supervision style or permanency.

Previous research has found that externalizing behaviors of foster children have been related to higher levels of parenting stress as well as the use of negative discipline practices (see Vanderfaeillie et al. 2013). In this study, the decrease of externalizing behaviors for the KEEP group, as measured by the PDR, was not associated with decreased parental stress (as measured by the PSI-SF) and there was not a significant relationship for the KEEP group at posttest for stress and child behavior.

This finding suggests that improving child behavior is not a simple cure for foster parent stress. Other factors that may be associated with foster parent stress likely were not affected by the KEEP intervention. Previous research suggests that foster parent satisfaction and subsequent reports of stress are influenced by the perceived social support of the foster care agency, being part of the treatment team, and being an active part of decision-making for their foster child (Denby et al. 1999; Geiger et al. 2013; Hudson and Levasseur 2002; MacGregor et al. 2006). Other research has noted that stress for foster parents is related to their relationship with the foster child's biological family that includes managing their foster child's disappointment and conflict with their families of origin (Jones and Morrissette 1999). Additionally, foster parent stress and fatigue is associated with personal factors of the foster parent that can include demands from jobs outside the home, caring for other relatives such as aging parents, and declining health status of the foster parents (Buehler et al. 2003; Mathiesen et al. 2001; Terling-Watt 2001).

There was no change in the discipline and supervision ratio for either the KEEP group or the comparison group. However, for both groups, the baseline discipline and supervision ratio was greater than what has been reported in previous KEEP studies (see Chamberlain et al. 2008 and Leathers et al. 2011), meaning that this sample of foster parents reported more reinforcement to discipline. While a ceiling effect may have influenced the ability to detect change, a more sensitive measure of discipline or even an observer rating rather than self-report may yield clearer findings in subsequent studies.

This study did not find any impact of the KEEP training on permanency outcomes for foster and kinship children. Previous KEEP research has documented the impact of KEEP on increasing the odds of achieving a positive exit from care (e.g., return to biological parent or kin, adoption) (Price et al. 2008). There are two important differences in study design that may account for some of the differences in results. The study conducted by Price et al. was much larger than the present study ( $n = 700$ ) and randomly assigned participants to treatment and control conditions. Without random assignment, the groups in the current study may have differed on unmeasured factors that could have masked any changes in permanency. The current study also may have been unique in the readiness for permanency among participants. In the current study, 43 % of the participants achieved permanency within 1 year, compared to just 13 % of the participants in the Price et al. sample, which assessed exit at 11 months post intervention.

## Limitations

Findings from this study should be considered in light of the sample size. The sample size was adequate to identify medium to large effect sizes; however, a larger sample size would have allowed for analyses to assess mediation and moderation effects (see Chamberlain et al. 2006). The KEEP and comparison sample were dissimilar on the demographic variables of ethnicity and longest length of stay for the foster or kinship child and children in the KEEP group displayed higher behavioral problems. These differences may have impacted findings. Also, there may be unmeasured differences between the two groups in regards to parenting skills, need for or use of other mental health and social support services, youth permanency plans, and information around permanency variables that include the number of out-of-home placements and total length of time in care. A randomized control design would have been better able to account for differences between the groups.

The sample size for this study is also a limitation in terms of detection of differences. Using G\*Power 3.1, we conducted a post hoc analysis to assess the power to

identify significant mean differences between the matched pairs. Using the smallest analytic sample (56 KEEP and 32 comparison), we had sufficient power (.80 or greater) to detect an effect size greater than .3. Based on this finding, it is possible that small effects would not have been detected due to a relatively small sample size. This is a limitation of the study.

Another limitation includes the truncated follow-up. Posttest analyses of changes in behavior, parenting stress, and parenting discipline were completed about 2 months post intervention, and permanency results were assessed for only 12 months. A longer follow-up period may have allowed for more differentiated findings.

Apart from methodological differences between studies, the lack of measurable impact by KEEP on permanency may be due to other factors. For this KEEP sample, the baseline PDR was higher than baseline PDR findings from previous KEEP studies, suggesting a more troubled sample. This high display of child behavioral problems may have influenced overall permanency findings.

## Implications

The findings presented in the current study cohere to a growing body of evidence supporting research-supported training programs, such as KEEP, as an effective strategy for reducing problem behaviors among children in foster care (Dorsey et al. 2008). Given that pre-service or single session in-service trainings for foster parents have not generated any evidence of impact on child problem behaviors (Dorsey et al. 2008), these findings are encouraging for interventionists and practitioners working to improve outcomes among youth in foster and kinship care. Future evaluations of KEEP should include large-scale replications in child welfare serving agencies and longitudinal follow-up, which include independent assessments of parenting skill retention, child behaviors, and permanency outcomes. In addition, the relationship between discipline style and externalizing behaviors among children in foster care deserves further study. Understanding the mechanisms that underlie the observed change in child behavior may prove key to improving child outcomes and targeting services. Thus, further studies aimed at understanding the relationship between parenting skills and child problem behavior may help improve our understanding of causal pathways by which foster parent-training interventions operate.

Overall the findings from the present study suggest that group based foster parent programs are an effective method for reducing problem behaviors among children in out of home care. Such interventions present an opportunity to improve the level of training provided to foster parents and



the level of care provided to the young people served through the child welfare system. Although these improvements did not readily translate into reduced foster parent stress or increased permanency, they are valuable in their own right.

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