
Effects of a Foster Parent Training Intervention on Placement Changes of Children in Foster Care

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Placement disruptions undermine efforts of child welfare agencies to promote safety, permanency, and child well-being. Child behavior problems significantly contribute to placement changes. The aims of this investigation were to examine the impact of a foster parent training and support intervention (KEEP) on placement changes and to determine whether the intervention mitigates placement disruption risks associated with children's placement histories. The sample included 700 families with children between ages 5 and 12 years, from a variety of ethnic backgrounds. Families were randomly assigned to the intervention or control condition. The number of prior placements was predictive of negative exits from current foster placements. The intervention increased chances of a positive exit (e.g., parent/child reunification) and mitigated the risk-enhancing effect of a history of multiple placements. Incorporating intervention approaches based on a parent management training model into child welfare services may improve placement outcomes for children in foster care.

Keywords: *foster parents; parent management training; placement disruptions*

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The child welfare system provides services designed to promote the well-being of children by ensuring safety, achieving permanency, and strengthening families to care successfully for their children (National Survey of Child and Adolescent Well-Being Research Group, 2005). For a number of families serviced by the child welfare system this may require removing the child from the home and placing him or her in the care of either a relative or a foster family. Once in foster care, the goals of promoting safety, permanency, and child well-being can

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be undermined by disruptions in placement. Recent research suggests that one of the major contributors to placement disruptions are the externalizing behavior problems exhibited by many foster children (Chamberlain et al., 2006; Newton, Litrownik, & Landsverk, 2000). The primary goals of the current study were twofold: to examine the impact of a foster parent training and support intervention on placement changes and disruptions and determine whether the intervention mitigated placement disruption risks associated with children's placement histories.

Importance of Stability in Family Settings

Stability in safe, nurturing family settings affords children opportunities to develop positive and supportive relationships, especially with caregivers and other significant adults (e.g., teachers) that, in turn, facilitates normative development (Cicchetti & Valentino, 2006; Sroufe, Duggal, Weinfield, & Carlson, 2000; Thompson, Flood, & Goodwin, 2006). Stability in family settings also provides continuity in school settings, peer networks, health care providers, and access to community resources and activities. Children who enter foster care have been exposed to family instability and to adverse experiences that increase their risk for maladaptive outcomes (see Cicchetti & Valentino, 2006, for a review of this literature). Thus, provision of a stable family environment that promotes well-being may help to ameliorate some of the consequences of family instability and adversity and alter poor developmental trajectories (Harden, 2004).

Unfortunately, once placed in care, a sizeable proportion of children continue to experience changes in placement. Data from the National Survey of Child and Adolescent Well-Being (NSCAW) study (Rubin, O'Reilly, Luan, & Localio, 2007) reveal that over an 18-month period nearly 30% of foster children experienced placement instability. Other reports of prevalence of placement instability range from 22% (Pardeck, 1984) to 56% (Kufeldt, Armstrong, & Dorosh, 1989) of children in care. A principal reason for such changes, as identified by James (2004) and others (e.g., Chamberlain et al., 2006; Leathers, 2006), is child behavior problems, especially those that are externalizing in nature (e.g., aggressive, disruptive, destructive, and oppositional behaviors). Other reasons for placement changes include reuniting siblings, foster family moving out of the service area, foster parents cease foster parenting, conflicts between foster parent and biological parent, and complaints or abuse allegations against the foster family (James, 2004)

Prevalence of Externalizing Problems and Links to Placement Changes

Findings from the NSCAW study indicate that a high proportion (43% based on teacher report, 50% based on parent report) of children in foster care evidence some form of externalizing behavior problems (National Survey of Child and Adolescent Well-Being Research Group, 2003). In addition, other studies reveal that the levels of antisocial behavior in children receiving child welfare services are statistically indistinguishable from children in intensive mental health treatment programs (Stein, Evans, Mazumdar, & Rae-Grant, 1996; Trupin, Tarico, Low, Jennelka, & McClellan, 1993; see Keil & Price, 2006, for a review of this literature). What makes this overall pattern of findings so troubling is evidence that the severity of the problems presented by foster children appears to be on the rise (Haugaard & Hazan, 2002). This may be attributable, in part, to efforts by child welfare agencies to keep children in their birth homes whenever possible. Consequently, it is possible that only children from the most troubled families, or with the most difficult behavior problems, are entering foster care.

Results from several investigations have revealed an association between child behavior problems and placement disruptions. Using a longitudinal design, Newton et al. (2000) found that externalizing behavior problems, as assessed by the Child Behavior Checklist (CBCL; Achenbach, 1991), was the strongest predictor of placement changes for a sample of 415 youth in San Diego County. Corroborating this finding, Chamberlain et al. (2006) found that for each increase in the number of behavior problems above six in a 24-hr period there was a 17% increase in the risk for a placement disruption within the next 12 months. Newton et al. (2000) also found that placement histories characterized by multiple placements contributed to an increase in internalizing and externalizing behavior of foster children, even after controlling for levels of prior behavior problems. Moreover, for children who did not initially exhibit behavior problems, the number of placement changes was significantly related to each of the CBCL broadband scale scores approximately 12 months later. Consistent with this finding, Rubin et al. (2007) examined a subsample of the NSCAW study and found that children with unstable placements during an 18-month period had twice the odds of having behavior problems (as assessed by the CBCL) as children who achieved early stability in their foster placements. Thus, children who enter foster care displaying high levels

of disruptive behaviors are at increased risk for experiencing a change in placement, and that the number of changes in placement after entering foster care contributes to the development of behavior problems, even among those who may not enter foster care displaying high levels of behavior problems.

There is evidence to suggest that child behavior problems may also interfere with efforts to reunify children in foster care with their biological parents. Children with externalizing behavior problems have been found to be one half as likely to be reunified as children without problems, even after controlling for background characteristics and type of maltreatment (Landsverk, Davis, Ganger, Newton, & Johnson, 1996). It is not surprising that children with behavior problems have been shown to experience longer lengths of stay in foster care (Lawder, Poulin, & Andrews, 1986). Caseworkers may consider that the risks of a poor outcome to reunification are higher when parent and family problems are combined with child behavior problems and, therefore, sway the caseworker to either delay reunification or even recommend against reunification.

Need for Addressing Placement Changes

In addition to changes in placement undermining the family stability required for normal development and thereby increasing the risk for child behavior problems, changes in placement can also result in economic costs to child welfare agencies. Recently, in a series of focus group sessions conducted with caseworkers and caseworker supervisors in San Diego County, it was estimated that each placement change required an average of more than 25 hr of casework and support staff time to process the change of placement, including time in identifying and placing a child in a new setting, staff meetings, court reports, and accompanying paperwork (Price, 2007). Furthermore, using administrative child welfare data linked to Medicaid claims, Rubin et al. (2004) found that multiple placements and episodic foster care increased the predicted probability of high mental health service use.

The deleterious effects of multiple placements on children within child welfare settings have long been a concern of caseworkers, child welfare administrators, and health care providers. Legislative initiatives, such as the Child Welfare Act and Adoption and Safe Families Act of 1997 (Public Law 105-89), have led child welfare agencies to place a greater emphasis on shorter lengths of stay in foster care and greater placement stability. The U.S. Department of Health and Human Services (DHHS; 2002) now monitors

the number of placement changes recorded for children in foster care as part of the national outcomes standards Child and Family Services Review. The critical issue now being addressed across child welfare agencies is how best to reduce placement disruptions and increase placement stability. One approach that has been suggested is to provide foster parents with the training and support that would enable them to understand and manage the behavioral challenges of the children in their care (Chamberlain et al., 2006; Grimm, 2003).

Fortunately, there is a body of research supporting the effectiveness of several treatments in addressing disruptive behaviors, especially those utilizing a parent management training model. One of these approaches has been specifically designed for use in a foster family setting. Based on the basic tenants of social learning theory and two decades of empirical research with troubled families and youth, researchers from the Oregon Social Learning Center (OSLC) began testing a parent-mediated intervention model with youth displaying severe emotional and behavioral problems, and severely delinquent youth, which eventually led to the development of the Multidimensional Treatment Foster Care (MTFC) model. The basic MTFC model involves placing one youth in a well-trained and supervised foster home. The findings from a number of studies reveal the effectiveness of the MTFC model among youth with severe emotional and behavior problems (Chamberlain, Leve, & DeGarmo, 2007; Chamberlain & Reid, 1991, 1994; Eddy & Chamberlain, 2000; Leve & Chamberlain, 2004). Following from this research, Chamberlain, Moreland, and Reid (1992) examined whether it was feasible and useful to utilize components of the MTFC model to address the needs of "regular" foster and kinship families, with the goal of reducing child behavior problems and negative changes in placement and increasing foster parent retention. Foster parents in Lane County, Oregon, with a new placement were randomly assigned to one of three conditions: parenting training using MTFC components, payment and assessments only, and assessments only. Compared to the group receiving a payment only and the control group, parents in the parent-training group evidenced significantly greater decreases in child behavior problems, fewer failed placements because of child behavior or emotional problems, and significantly less attrition. The intervention examined in the current investigation utilizes this same treatment approach and represents an extension of this earlier research. The specifics of the intervention, titled KEEP (Keeping foster and kinship

parents trained and supported), are provided in the Method section.

The first aim of this investigation was to examine the effects of the KEEP intervention on placement changes among children currently in foster care. In an effort to expand on the research on placement changes by differentiating types of placements changes, the distinction was made between positive versus negative changes of placement. Positive placement changes were represented by any exit from the foster or kinship placement home that was made for a positive reason, such as a reunion with biological parent or other relative or an adoption. Negative changes of placement were represented by moves to another foster placement, a more restrictive environment such as a psychiatric care or juvenile detention center, or child runaways.

The second aim of the current investigation was to examine the impact of the KEEP intervention within the context of children's placement history within the child welfare system.

Fisher, Burraston, and Pears (2005) examined the effectiveness of a version of MTFC designed for preschoolers (MTFC-P) on permanent placement outcomes for children in foster care. Their results indicated that children in MTFC-P had significantly fewer failed placements relative to children in the regular foster care comparison condition. Furthermore, they found the MTFC-P intervention served to moderate the relation between the prior number of placements and permanent placement failure. This outcome suggests that the intervention served to mitigate the risks associated with a history of multiple placements.

In the current study, we attempted to replicate and extend the work of Fisher et al. (2005) in an effectiveness trial conducted within the child welfare system in San Diego County. We examined (a) the effect of the number of prior foster care placements on exit rates (positive and negative), (b) whether participation in the KEEP foster parent-training intervention changed the likelihood of the child having either positive or negative placement changes, and (c) whether participation in the KEEP intervention moderated the effect of prior placements on the probability of positive or negative placement exits.

METHOD

Participants

Eligible study participants included all foster and kinship parents receiving a new placement of a child aged 5 to 12 years from the San Diego County

Department of Health and Human Services child welfare system between 1999 and 2004. In addition, to minimize selecting children in temporary shelters or emergency foster placements children had to have been in the new placement for at least 30 days, including children in their first foster home and those moved from another foster home. The inclusion of children with first placements and multiple previous placements increases the potential generalizability of the study findings to include all of those who populate the foster care system (excluding those in short-term shelter or emergency placements). The resulting sample comprised 700 foster families (34% kinship placements, 66% nonrelative placements). Families were randomly assigned to either the intervention or control (i.e., usual child welfare casework services) condition. State law requires all foster parents to participate in some form of parent training and support group each year to maintain their licenses. Foster parents participating in the KEEP intervention were permitted to use participation in this training to count toward their licensing requirements. During the course of the year, foster parents in the control condition also participated in some type of parent training and support group made available to them through usual child welfare services. Table 1 shows baseline demographic characteristics for intervention and control families. Comparisons revealed that children in the intervention group were more likely to be Spanish speaking, $\chi^2(1) = 13.88, p < .001$, than control group children (no other significant differences were found between intervention and control groups). The sample was ethnically diverse, comprising 21% African American, 33% Latino, 22% White, 22% mixed ethnic, 1% Asian American, and 1% Native American children.

Recruitment Methods

Recruitment was facilitated by data systems from the social service agency that were reviewed on a weekly basis to identify eligible children and foster families. The eligibility requirements were that (a) the child had been in either a kin or nonkin foster care placement for a minimum of 30 days, (b) the child was between the ages of 5 and 12 years, and (c) the child was not considered "medically fragile" (i.e., not severely physically or mentally handicapped). Exclusionary criteria were minimal because the current study was designed to be an effectiveness trial designed to map onto "real-world" child welfare system conditions. Once deemed eligible, families were randomly assigned to either the intervention or to the control condition. Foster parents received a brief

Table 1: Demographic Information for Foster Parents and Children

	<i>Foster Parent</i>		<i>Child</i>	
	<i>Intervention (n = 359)</i>	<i>Control (n = 341)</i>	<i>Intervention(n = 359)</i>	<i>Control (n = 341)</i>
Age at Baseline	49.86	47.29	8.88	8.72
Kin	32%	36%		
Nonkin	68%	64%		
Gender				
Female	94%	93%	50%	54%
Male	6%	7%	50%	46%
Ethnicity				
African American	27%	24%	23%	19%
Asian/Pacific Islander	4%	2%	1%	1%
White	21%	34%	20%	25%
Latino	41%	33%	35%	30%
Native American	1%	1%	1%	1%
Multi-ethnic	6%	6%	20%	24%
Primary language				
English	55%	65%	66%	79%*
Spanish	45%	35%	34%	21%

* $p < .05$.

overview of the project by phone. Of those contacted, 62% agreed to participate and 38% declined. Reasons for declining included too busy, too much work, and/or too many children (50%); not interested (43%); family health problems (2%); and concerns about participating in research (5%). Foster parents received a home interview, a detailed project description, consent information, a *Participant's Bill of Rights*, and an Institutional Review Board (IRB) approved consent form. Those interested in participating verified their willingness to participate by signing consent forms. The investigation was conducted in compliance with the University IRB, as verified through random site checks by the IRB administration. Participation in the KEEP intervention was voluntary. No solicitation or incentives were provided by the child welfare agency for families to participate in the study. See Chamberlain, Price, Landsverk, and Reid (in press) for further details on participant recruitment for this sample.

Intervention

Participants in the intervention group received 16 weeks of training, supervision, and support in behavior management methods. Intervention groups consisted of 3 to 10 foster parents and were conducted by a trained facilitator and cofacilitator team. Curriculum topics were designed to map

onto protective and risk factors that were been found in previous studies to be developmentally relevant malleable targets for change (Eddy & Chamberlain, 2000). The primary focus was on increasing use of positive reinforcement, consistent use of nonharsh discipline methods, such as brief time-outs or privilege removal over short time spans (e.g., no playing video games for 1 hr, no bicycle riding until after dinner), and teaching parents the importance of close monitoring of the youngster's whereabouts and peer associations. In addition, strategies for avoiding power struggles, managing peer relationships, and improving success at school were also included. Sessions were structured so that the curriculum content was integrated into group discussions, and primary concepts were illustrated via role-plays and videotaped recordings. Home practice assignments were given that related to the topics covered during sessions to assist parents in implementing the behavioral procedures taught in the group meeting. If foster parents missed a parent-training session, the material was delivered during a home visit (20% of the sessions). Such home visits have been found to be an effective means of increasing the dosage of the intervention for families who miss interventions sessions (Reid & Eddy, 1997).

Parenting groups were conducted in community recreation centers or churches. Several strategies

were used to maintain parent involvement, including (a) provision of child care, using qualified and licensed individuals so that parents could bring younger children and know that they were being given adequate care; (b) credit was given for the yearly licensing requirement for foster care; (c) parents were reimbursed US\$15.00 per session for traveling expenses; and (d) refreshments were provided. Attendance rates were high: 81% completed 80% or more of the group sessions (12+), and 75% completed 90% or more of the group sessions (14+).

The intervention was implemented by paraprofessionals who had no prior experience with the MTFC behavior management model or with other parent-mediated interventions. Rather, experience with group settings, interpersonal skills, motivation, and knowledge of children were given high priority in selecting interventionists. Interventionists were trained during a 5-day session and supervised weekly where videotapes of sessions were viewed and discussed.

Measures

Foster and kin parent-report of child demographic characteristics was assessed at study entry (baseline). Caregivers had known the target child for at least 30 days prior to the baseline assessment. Placement status was assessed at intervention termination, or earlier if the child had exited the current placement prior to the termination interview (2 to 11 months; $M = 5$, $SD = 1$ month). For the current study, child exits were defined as those occurring within 200 days, or approximately 6.5 months, of the baseline assessment. The end of this period represents the end of the completion of the scheduled study termination assessments.

Placement status outcome. Foster parents were asked at the termination assessment if the child had remained in the home or had moved, and assessors coded the timing and reason for these exits. Foster parents were asked about placement outcomes because of their accessibility and to the likelihood they would have direct knowledge of the nature of the placement exit. Because of the heavy workload of caseworkers, the child welfare agency preferred that we not rely on caseworkers for assessing outcomes. Administrative data, which relies on caseworker data entry, typically takes several months to update and become available from the child welfare agency. Thus, it was not practical to rely on this source of information in the current study. Two types of exits were coded: positive and negative exits. Positive exits were defined as any exit from the foster or kinship placement home that was made for a positive reason,

Table 2: Placement Status Descriptives for Control and Intervention Group Children

	Control	Intervention
Positive exit	9.1%	17.4%
Negative exit	14.3%	12.2%
No change	76.6%	70.4%
No. of prior placements (M , SD)	3.1, 2.9	2.9, 2.9

such as a reunion with biological parent or other relative or an adoption. Negative exits were defined by negative reasons for the child's exit from the home, such as being moved to another foster placement, a more restrictive environment such as a psychiatric care or juvenile detention center, or child runaways. Positive and negative exits were coded as either *yes* (happened) or *no* (did not happen) within the 200-day postbaseline follow-up period. See Table 2 for descriptives of positive and negative exits by group. Because of the exclusion of children likely to be in temporary shelters or emergency placements (in placement < 30 days) and to the limited period (6.5 months) for assessing placement changes, 70% or more of the sample did not experience a change in placement.

Predictor variables. The main predictors of child risk for placement disruption were (a) number of prior placements, which was assessed by child welfare case files of available life-time placements histories; and (b) group status (intervention or control), which was based on randomized group assignment within the study.

Control variables. Characteristics of the type of the relationship between parent and child and of the child that could influence placement status were examined as control variables. These variables were measured in the baseline parent interview and included kinship status (kin or nonkin foster parent), child age and gender, primary language spoken (English or Spanish), and number of days in the placement at baseline.

RESULTS

Overview

To address the primary aims of the current study we examined three questions. Does a foster child's number of prior placements affect his or her risk of making a positive or negative exit from the current placement? Does the foster parent training and support intervention increase the likelihood of either positive or negative placement changes? Does

TABLE 3: COX HAZARD REGRESSION RESULTS FOR POSITIVE AND NEGATIVE EXIT MODELS

Predictor	Positive Exits				Negative Exits			
	<i>expb</i>	<i>SE</i>	<i>Wald, df</i>	<i>p</i>	<i>expb</i>	<i>SE</i>	<i>Wald, df</i>	<i>p</i>
Kinship (kin vs. nonkin)	.60	.26	3.75, 1	.05	.31	.35	11.25, 1	.001
Child age	.94	.05	1.53, 1	.22	.97	.05	.41, 1	.52
Child gender (male vs. female)	.83	.23	.70, 1	.40	1.05	.23	.04, 1	.84
Primary language (English vs. Spanish)	1.34	.23	1.59, 1	.21	1.26	.25	.86, 1	.35
Days in Placement at Baseline	.99	.001	10.17, 1	.001	.99	.001	10.81, 1	.001
No. of prior placements	.94	.05	1.89, 1	.17	1.07	.03	4.27, 1	.04
Intervention group (intervention vs. control)	1.96	.24	7.52, 1	.006	.89	.24	.23, 1	.64
Group x Prior Placements					.88	.06	3.87, 1	.05

NOTE. Prior Placements and Group were centered to create the interaction term.

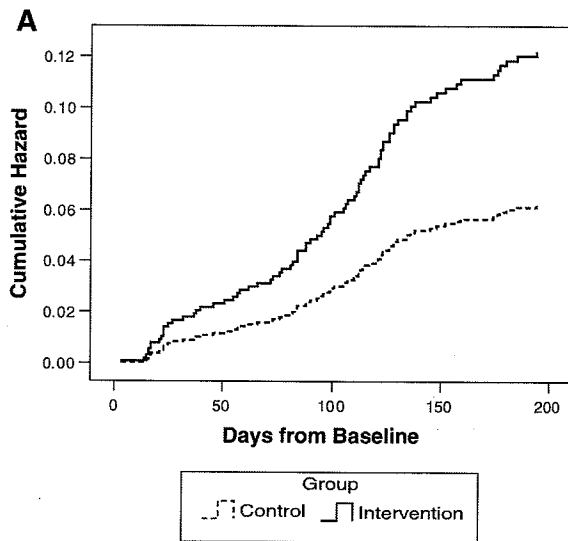


Figure 1A: Positive Exit Hazard Functions for Control and Intervention Group Foster Children

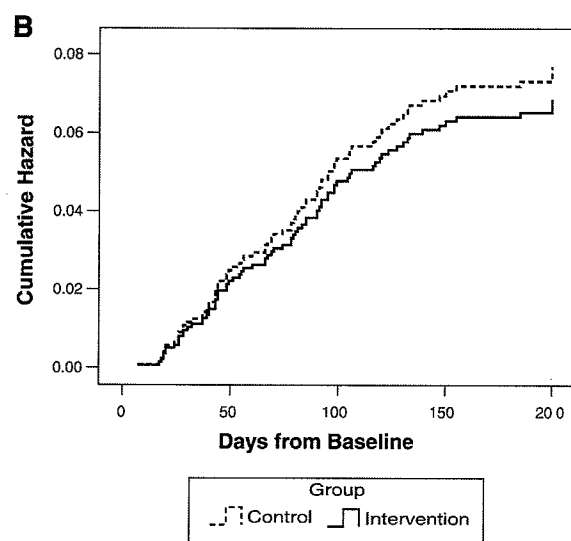


Figure 1B: Negative Exit Hazard Functions for Control and Intervention Group Foster Children

the foster parent training and support intervention moderate the effect of prior placements on child risk of positive or negative placement exits? These questions were addressed using a series of Cox hazard models to examine the effects of potential predictors on the length of time it takes for an event to occur. In the current study, the rate of positive or negative exits by intervention termination was the hazard rate being estimated. The foster child sample was assumed to be characterized by an average hazard rate, and individual children to differ from the average based on their risk characteristics. Besides the main study predictor variables—prior placements and intervention group—several other relationship and child characteristics that could influence exit risk were included as control variables in hazard

models. These variables were kinship status, age, gender, primary language, and number of days in the placement at the baseline assessment.

Question 1: Effect of Prior Placements on Exit Rates

The number of prior placements had no effect on the hazard function for positive exits; however, it did prove a significant predictor of hazard for negative exits such that each additional prior placement increased the hazard of disruption by 6%. Of the control variables, kinship status and days in the placement at baseline related significantly to positive and negative exit hazard functions; children in kinship placements and those who had been in the placement longer were less likely to make either a positive or negative exit during the intervention period.

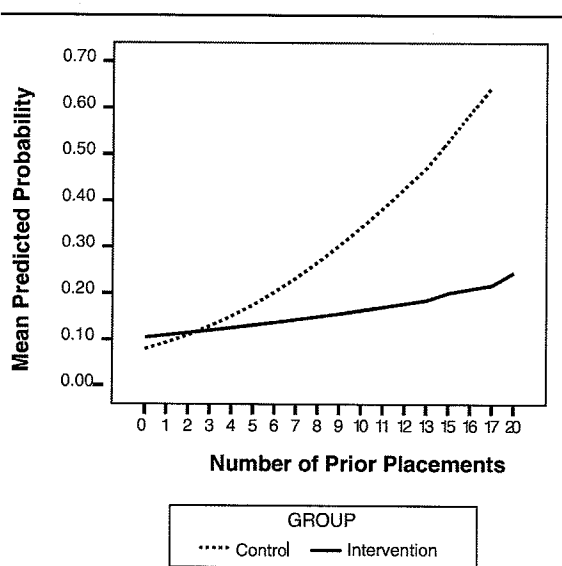


Figure 2: Predicted Probability of Negative Exit by Prior Placements and Intervention Group

Question 2: Effect of Intervention Group on Exit Rates

Adding the intervention group variable to the positive exit hazard model resulted in a significant improvement in model fit, $\Delta\chi^2(1) = 8.03, p = .005$. As shown in Table 3, being in the intervention group nearly doubled the likelihood that the child would achieve a positive exit by the end of the intervention period (see Figure 1a for control and intervention positive exit hazard functions). Adding the main effect of Intervention Group on negative exit hazard rates did not produce a significant change in model fit, $\Delta\chi^2(1) = 1.12, ns$, suggesting similar overall rates of negative placement disruption for the two groups (see Figure 1b for control and intervention negative exit hazard functions).

Question 3: Effect of Intervention x Prior Placements on Exit Rates

In a third step of model testing, an Intervention Group x Prior Placements interaction effect was added; this step was nonsignificant for positive exit hazard, $\Delta\chi^2(1) = .00, ns$; however, it proved significant for negative exit hazard, $\Delta\chi^2(1) = 3.95, p = .047$ (see Table 3 for the full negative exit model). Follow-up analyses to decompose the interaction effect indicated that though number of prior placements significantly predicted a higher negative exit hazard rate in the control group (a 15% increase in risk for each additional placement), the effect of Prior Placements was nonsignificant in the intervention

group. In other words, the foster parent intervention mitigated the negative risk-enhancing effect of a history of multiple placements. Figure 2 shows the predicted probability of a negative exit during the intervention period as a function of prior placements for intervention and control children.

DISCUSSION

Given the psychosocial and financial costs associated with negative disruptions in foster care placements, further delineation of the risk factors associated with such disruptions and identification of interventions effective in reducing these disruptions are imperatives for the child welfare system. The findings from the current investigation address these important issues in that the number of prior placements was found to be predictive of negative exits from the current placement, and the foster parent training and support intervention increased the chances of a positive change in placement and mitigated the negative risk-enhancing effect of a history of multiple placements.

The first question examined in the current investigation addressed whether the number of prior placements a child experiences affected his or her risk of making a positive or negative exit from the current placement. The results indicated that although the number of prior placements was not predictive of positive exits, it did prove a significant predictor of negative exits, such that each additional prior placement increased the risk of disruption by 6%. Thus, a child's placement history increased his or her risk for having a negative change of placement. This finding is consistent with research indicating that placement instability is associated with risk for future placement disruptions (Newton et al., 2000) and risk for reentry into foster care for children who have been discharged (Courtney, 1995; Wells & Guo, 1999). One of the processes that may be contributing to this relation is the bidirectional relation between placement instability and child behavior problems. As noted earlier, there is an established link between externalizing behavior problems and placement disruptions (e.g., Chamberlain et al., 2006; Leathers, 2006; Newton et al., 2000). Not only have externalizing behavior problems been found to increase the probability of a placement disruption (Chamberlain et al., 2006; Leathers, 2006; Newton et al., 2000), but also high levels of placement disruptions have been found to contribute to an increase in behavior problems (Newton et al., 2000). The continuing cycle of the

placement instability may be, in part, attributable to maintenance and exacerbation of child behavior problems.

The findings from the hazard analyses addressing the first question also revealed that children in kinship placements and those who had been in the placement longer were less likely to experience either a positive or a negative exit during the intervention period. Both of these findings are consistent with prior research. Chamberlain et al. (2006) found that children placed with relatives were less likely to change placements than children placed with non-relatives. There is also evidence that placement disruptions are most likely to occur early rather than later in a placement (e.g., Smith, Stormshack, Chamberlain, & Bridges, 2001). Thus, it appears that placement with a relative and finding a placement that is conducive to early placement stability may help to prevent later placement disruptions.

The second question examined in this investigation addressed whether the foster parent intervention influenced the likelihood of either positive or negative change in placement. The results of the hazard analyses indicated that participation in the foster parent training and support intervention was predictive of positive but not negative changes of placement for the full sample (including children with from 0 to 20 previous placements). More specifically, children in the KEEP intervention group were nearly twice as likely to experience a positive exit by the end of the intervention period as children in the control group. For the purposes of the current investigation, positive exits were defined as any exit from the foster or kinship placement home that was made for a positive reason, such as a reunion with biological parent or other relative or an adoption. Thus, the children in the intervention group had a greater likelihood of transitioning into the types of placements deemed desirable by child welfare agencies, namely, returning to the child to their biological parents, placing them in the home of a relative, or finding a suitable family for adoption. Findings from a recent investigation by Chamberlain, Price, Leve, et al. (2007) may shed some light on one possible explanation for this pattern of findings. In this study, the effectiveness of KEEP intervention in reducing child behavior problems was examined. The findings revealed significant reductions in the behavior problems of the children in the intervention, but not control group. These reductions were found to be associated with an increased use of behavior management strategies. Furthermore, the reductions in behavior problems were to levels (on average, fewer

than six behaviors per day) that could be considered manageable by most foster and kin caregivers (see Chamberlain et al., 2006). In the current study, it is possible that participation in the KEEP intervention increased foster parent competencies in managing child behavior problems leading to reductions in child behavior problems, which in turn contributed to the likelihood that children would transition back to their biological parents, move to the home of a relative, or be adopted. This interpretation is consistent with the findings revealed by Landsverk et al. (1996) whereby children with externalizing behavior problems were one half as likely to be reunified with their biological parents as children without externalizing behavior problems. These authors suggest that one explanation for their findings is that child behavioral functioning played an important role in the reunification decision. Caseworkers may have reasoned that the risks of a poor outcome for reunification are greater when parenting and family problems are combined with child behavior problems, and that the probability of a positive outcome is greater when child behavior problems are at a level that can be managed by parents. Similarly, child behavioral functioning may also play an important role in adoption decisions as well, with fewer child behavior problems being viewed by caseworkers as increasing the likelihood of a more successful adoption.

The final question to be examined was, "Does the intervention moderate the effect of Prior Placements on child risk of positive/negative exit?" Whereas the results of the earlier hazard analysis indicated that participation in the foster parent training and support intervention was not predictive of negative changes of placement, the results of the next hazard analyses revealed a significant interaction between intervention group status and the prior number of placements in predicting negative disruptions. Although the number of prior placements significantly predicted a greater likelihood of negative disruptions in the control group (a 15% increase in risk for each additional placement), the effect of Prior Placements was nonsignificant in the intervention group. That is, the KEEP foster parent intervention mitigated the disruption risk-enhancing effect of a history of multiple placements. Similarly, Fisher et al. (2005) found that an intervention for preschool-aged children in foster care moderated the effects of prior foster placements on permanent placements with biological parents, with children in the control group more likely to experience a failed permanent placement compared to children in the intervention group.

Given the relation between child behavior problems and placement disruptions, it is possible that the children in the current investigation with a higher number of prior placements entered foster care with elevated levels of externalizing behavior problems. Exposure to foster parents who received the KEEP foster parent training intervention may have decreased the rates of behavior problems to a level manageable to most caregivers. This, in turn, may have led to a decreased risk for negative disruptions.

This pattern of findings is not surprising given the variability across respondents in prior placement histories, with some children being new to the foster care system and having no placement history and others having experienced multiple placements during their life course. Thus, it would be expected that the intervention would be most effective in decreasing negative outcomes (i.e., negative placements) among those with a greater number of prior placements. As Figure 1 indicates, participation in the KEEP intervention mitigated the disruption risk-enhancing effect of a history of multiple placements, especially for those with four ($n = 191$) or more prior placements. There was no observed effect for those with three ($n = 480$) or fewer prior placements. In contrast, for those in the control group, there was a steady increase in the probability for a negative exit associated with an increase in the prior number of placements. These findings are consistent with other studies of prevention-oriented interventions where the effects of the intervention are concentrated on those at greatest risk for negative outcomes (e.g., Fisher et al., 2005).

Study Limitations

One of the limitations of the current study is that the findings focus on only the first 6½ months following the baseline assessment. Thus, it was not possible to determine long-term effects of the intervention on placement changes or on the continued length of stay in the current placement. However, the first several months in a new placement appear to be critical to determining the degree of success of a placement. For examples, James (2004) found that placement changes due to behavioral issues are more likely to occur within the first 100 days of entering the foster care system. Second, the assessment of placement disruptions relied on a single source: substitute caregivers. It is possible that caregivers' recollections of the reasons for the placement changes may have differed somewhat from those of caseworkers. An avenue for future research would be to examine the degree of correspondence

between caregiver and caseworker perceptions of the nature of placement changes.

Policy Implications

The results from the current investigation have several implications for child welfare policy and practice. First, the results indicate that placement instability serves as an important risk factor for future placement disruptions and reinforces the importance of reducing placement disruptions for children who enter the foster care system. Along with elevated levels of child externalizing behavior problems, a history of placement instability could be used to identify children who are at risk for future placement disruptions and should be targeted for intervention.

Second, the findings from the current investigation suggest that intervention approaches based on the parent management training model, which focus on increasing parenting competencies in managing difficult behavior problems, may be effective in reducing child behavior problems and improving caregivers' skills in coping with these problems, and thereby reduce the likelihood of placement disruptions. The KEEP intervention model, which shares similarities with several evidence-based interventions aims at improving outcomes for children with behavioral and emotional problems (e.g., Fisher et al., 2005; Kazdin & Wassell, 2000), focuses on improving caregiver understanding and competencies in managing child behavior. Although most foster parent training protocols include some instruction in the management of difficult behaviors (see Grimm, 2003) this material typically represents only a small segment of the total curriculum, and these general training programs have been found to be ineffective in bringing about changes in child behavior problems (Puddy & Jackson, 2003). Consequently, foster and relative caregivers typically do not receive adequate information and instruction on behavior management techniques, let alone practice and feedback on their attempts to apply this knowledge to their ongoing interactions with the children in their care. Thus, the integration of parent-mediated interventions into regular foster parent training or as supplemental training for those caring for a child with challenging behavior problems could help to provide at-risk children with stable and safe environments essential for normal development and functioning. Implementation of such interventions could help to improve the overall quality of mental health care for children and their families and potentially help reduce financial costs associated with placement disruptions.

Unfortunately, we did not have the resources to conduct a cost-benefit analysis of the KEEP intervention. However, the costs associated with implementing the KEEP intervention (e.g., 16 weeks of parenting training, \$15.00 per person per week in travel costs, and child care) within a child welfare system are likely to be offset by the costs associated with addressing the consequences of externalizing behavior problems for a large proportion of the children in foster care. This would likely include costs associated with multiple placement disruptions, increased use of mental health services (Rubin et al., 2007), and the possibility of placements in residential care, which can be several thousand dollars per child each month. Providing evidence-based training in parent management techniques for all foster and kin parents could prove to be a cost-effective strategy for managing child behavior problems, reducing placement disruptions, and helping to maintain safe and stable placements for children in the care of child welfare agencies. This crucial issue needs to be addressed in future research.

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KEEP foster-parent training intervention: model description and effectiveness

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ABSTRACT

In this paper, we describe the development and history of the Keeping Foster Parents Trained and Supported (KEEP) foster-parent training intervention. KEEP intervention represents a modified version of the Multidimensional Treatment Foster Care intervention developed by interventionists at the Oregon Social Learning Center and is designed to provide training and support for children ages 5–11 in regular foster care. We also report on the initial findings from a programme of research focused on determining the effectiveness of the intervention. Thus far, the results indicate that the intervention is effective in reducing child behaviour problems and that the effects of the intervention are mediated through changes in parenting behaviour. There is also evidence that the KEEP foster-parent training intervention increases the chances of a positive change of placement (e.g. child reunited with biological parents) and mitigates the negative risk-enhancing effect of a history of multiple placements. We conclude with a discussion of unanswered questions and directions for future research.

INTRODUCTION

The primary aim of this paper was to describe the development and history of the Keeping Foster Parents Trained and Supported (KEEP) foster-parent training intervention. The mental health needs of children in foster care are described, with a special attention to the prevalence and significance of externalizing behaviour problems. Next, the evolution of the KEEP foster-parent training intervention model from its roots in Multidimensional Treatment Foster Care (MFTC) is reviewed along with recent findings on the effectiveness of the intervention. We conclude with a discussion of possible directions for future research.

BEHAVIOUR PROBLEMS OF CHILDREN IN FOSTER CARE

According to recent estimates, over 500 000 children are in the US foster care system according to the Adoption and Foster Care Analysis and Reporting

System (US Department of Health and Human Services 2006). These children are vulnerable to a variety of mental health problems. The results of several studies indicate that, when compared with other children, children in foster care evidence higher levels of emotional and behaviour problems (e.g. Landsverk & Garland 1999; Kortenkamp & Ehrle 2002). This is not surprising, given that the vast majority of children and youth placed into foster care have experienced some form of maltreatment. The experiences associated with maltreatment have been linked to a wide range of mental health and adjustment problems (Cicchetti & Valentino 2006). In addition, children entering foster care often experience socially and economically impoverished environments (Garland *et al.* 2000). The mental health problems evidence by children in foster care can lead to further maladaptive outcomes including failed placements, difficulties in peer relationships, educational problems, involvement with the juvenile justice system, substance use and eventual participation in health-risking behaviours.

Among the various problems evidenced by children in foster care, externalizing behaviour problems (e.g. aggressive, disruptive and oppositional behaviours) are particularly salient and problematic. Data from the National Survey of Child and Adolescent Well-Being study reveal that a high proportion (43% based on teacher report, 50% based on parent report) of children in foster care evidence some form of externalizing behaviour problems (National Survey of Child and Adolescent Well-Being Group 2003). Findings from other studies reveal that the levels of antisocial behaviour for children receiving child welfare services are statistically indistinguishable from children in intensive mental health treatment programmes in terms of child disruptive behaviour (Trupin *et al.* 1993). Similarly, in their examination of the mental-health of Canadian children in foster care in comparison to those in the community and clinical samples, Stein *et al.* (1996) found that both the foster and clinical samples exhibited significantly more externalizing problems than the children in the community sample. Symptom scores for the foster and clinical groups were very similar. Adding to the degree of impact of these findings is a body of research indicating that the risk for lifetime problems with antisocial behaviour is also especially high for children with early onset of behaviour problems (e.g. Patterson *et al.* 1989). Consequently, many youth in foster care develop serious conduct problems, including being arrested for violent crimes (Smith & Thornberry 1995; Maxfield & Widom 1996).

RELATION BETWEEN BEHAVIOUR PROBLEMS AND PLACEMENT DISRUPTIONS

One of the most frequently cited explanations for a failed foster placement is the inability of the foster-parent(s) to manage child behaviour problems (Holland & Gorey 2004; James 2004; Brown & Bednar 2006). Supporting this finding is evidence indicating a linkage between behaviour problems and changes in foster care placements. Using a longitudinal design, Newton *et al.* (2000) found that externalizing behaviour problems, as assessed by the Child Behaviour Checklist (CBCL, Achenbach 1991), was the strongest predictor of placement changes for a sample of 415 youth in San Diego County. Additionally, with a sample of 246 children in foster and kinship care, Chamberlain *et al.* (2006) found that for each increase in the number of behaviour problems above 6 in a 24-hour period, as assessed by the Parent

Daily Report (PDR), there was a 17% increase in the risk for a negative change of placement within the next 12 months. Furthermore, Newton *et al.* (2000) also found that placement histories characterized by multiple placements contributed to an increase in internalizing and externalizing behaviour of children in foster care. Thus, children who enter foster care displaying high levels of behaviour problems have an increased likelihood of experiencing a change in placement, which, in turn, further increases the risk for continued and even escalating behaviour problems.

Child behaviour problems may also interfere with efforts to reunify children in foster care with their biological parents. Children with externalizing behaviour problems have been found to be one-half as likely to be reunified as children without problems, even after controlling for background characteristics and type of maltreatment (Landsverk *et al.* 1996). Not surprisingly, children with behaviour problems have been shown to experience longer lengths of stay in foster care (Lawder *et al.* 1986). Caseworkers may consider that the risks of a poor outcome to reunification are higher when parent and family problems are combined with child behaviour problems, thus swaying their judgements to either delay reunification or even recommend against reunification.

Compounding the challenges for foster and kin parents in managing child behaviour problems is that most of foster-parents have the responsibility for caring for more than one child (e.g. Chamberlain *et al.* 2006). There is evidence for a relation between the number of children in the home and placement disruptions, especially for those who evidence higher levels of behaviour problems (Chamberlain *et al.* 2006). Furthermore, there is evidence of a relation between behaviour problems of youth and the number of children in the home. In a study of youth in the group foster care setting, Moore *et al.* (1994) found that, on average, there was one more problem behaviour per youth per day for each youth added to a foster care home. Together, these findings suggest that foster and kin families who care for more than one child, which is the majority of families, face the challenge of multiple children who may display elevated levels of behaviour problems, thereby increasing burden and stress on foster and kin parents and, consequently, the risk for placement disruptions.

In addition to changes in placement increasing the risk for child behaviour problems, placement changes can also result in economic costs to child welfare agencies. In a series of focus group sessions conducted with caseworkers and caseworker supervisors in San

Diego County, it was estimated that each placement change required an average of over 25 hours of case-work and support staff time to process the change of placement, including time in identifying and placing a child in a new setting, staff meetings, court reports and accompanying paperwork (Price 2007, unpublished data). Using administrative child welfare data linked to Medicaid claims, Rubin *et al.* (2004) found that multiple placements and episodic foster care increased the predicted probability of high mental-health service use.

CURRENT STATUS OF FOSTER-PARENT TRAINING

The deleterious effects of multiple placements on children have long been a concern of child welfare personnel and various health care providers. Legislative initiatives such as the Child Welfare Act and Adoption and Safe Families Act have led to an increased emphasis on shorter lengths of stay in foster care and greater placement stability. The US Department of Health and Human Services now monitors the number of changes of placement recorded for children in foster care as part of the national outcomes standards (US Department of Health and Human Services 2006). These changes have resulted in renewed attempts on the part of Child Welfare Agencies to reduce the number of placement changes a child experiences. The question now facing agency personnel is how best to accomplish this daunting task. One approach that has been suggested is to provide foster-parents with the training and support that would enable them to understand and manage the behavioural challenges of the children entrusted to their care (Grimm 2003; Chamberlain *et al.* in press).

US federal policy requires that prospective foster-parents be trained in the appropriate knowledge and skills in order to meet the needs of the child in their care, and, if necessary, training is to continue after placement (Foster Care Independence Act of 1999, H. R. 3443). However, this policy provides only general guidelines for training content and does not specify the implementation procedures. Nationwide, there is tremendous variation in the type of pre-service training offered, the duration of the training and the requirements for continued in-service training (Grimm 2003). While many states utilize materials specifically designed for training foster-parents such as the Model Approach to Partnerships in Parenting Group Selection (MAPP/GPS, Mayers-Passtor 1987) and Participation of Foster and/or Adoptive Families

and the Foster Parent Resources for Information, Development, and Education (Child Welfare League of America 2003), other states use an amalgamation of materials put together by administrative staff, ensuring wide-ranging variability in course content across child welfare agencies. The number of hours required for training also varies across state agencies, with some states requiring as few as 6 hours of pre-service training and others requiring as many as 30 hours (Grimm 2003).

Although most foster-parent training protocols include some instruction in the management of challenging behaviour problems, this material represents only a small segment of the total curriculum. Consequently, foster and relative caregivers are not likely to be provided with adequate information and instruction on behaviour management techniques, let alone practice and feedback on their attempts to apply this knowledge to their ongoing interactions with the children in their custody. To date, very little research has been conducted on the effectiveness of any of these programmes in actually reducing behaviour problems in children in foster care, and the findings that do exist reveal that these programmes are not effective in reducing child behaviour problems (Puddy & Jackson 2003).

Ideally, children entering foster care who display challenging levels of behaviours would be matched with caregivers who have training and experience in addressing difficult behaviour problems. However, because of the shortage of foster-parents nationwide, placements are often made based on the availability of foster-parents rather than on an appropriate fit between the background, experience and skills of foster-parents and the needs of the child. Furthermore, given the high proportion of children in foster care evidencing behaviour problems, it is likely that most foster-parents will encounter a child with challenging behaviour problems. Therefore, it would be of value to child welfare agencies if all substitute caregivers received training in the basics of managing challenging child behaviour problems.

Fortunately, there is a body of research supporting the effectiveness of several treatments in addressing disruptive behaviours, especially those utilizing a Parent Management Training model (Kazdin & Wassell 2000; Patterson 2005). One such approach, developed at the Oregon Social Learning Center (OSLC) in Eugene, Oregon, is MTFC, which was specifically designed for use in foster family settings. The findings from a number of studies reveal the effectiveness of the MTFC model among youth with severe emotional and

behaviour problems (Chamberlain & Reid 1991, 1994; Eddy & Chamberlain 2000; Leve & Chamberlain 2004; Chamberlain *et al.* 2007).

DEVELOPMENTAL HISTORY OF THE KEEP FOSTER-PARENT TRAINING INTERVENTION

MTFC studies

In the early 1980s, based on the basic tenants of social learning theory and two decades of empirical research with troubled families and youth, OSLC researchers began testing a parent-mediated intervention model with youth displaying severe emotional and behavioural problems and severe delinquency, which eventually led to the development of the MTFC model. The basic MTFC model involves placing one youth in a well-trained and supervised foster home. Close consultation, training and support of foster and kin parents form the cornerstone of the model. Foster-parents receive over 20 hours of pre-service training. Programme supervisors with small caseloads (10 families each) maintain daily contact with MTFC parents to collect data on youth adjustment and to provide ongoing consultation, support and crisis intervention. Basic components of the MTFC model include: (a) daily phone contact with MTFC parents to collect data on youth and to provide ongoing consultation, support and crisis intervention; (b) weekly foster-parent group meetings focused on supervision, training in parenting practices and support; (c) an MTFC parent-implemented individualized daily point and level programme for the youth; (d) individual skill management strategies; (e) close monitoring of school attendance, performance and homework completion; (f) case management to co-ordinate interventions in the MTFC, family peer and school settings; (g) 24/7 on-call programme staff availability to MTFC parents; and (h) psychiatric consultation as needed.

The findings from a number of studies reveal the effectiveness of the MTFC model among youth with severe emotional and behaviour problems (Chamberlain & Reid 1991, 1994; Eddy & Chamberlain 2000; Leve & Chamberlain 2004). The cumulative impact of MTFC led it to be chosen as one of 10 'Blueprint for Violence Prevention' programmes by the Center for the Study and Prevention of Violence at the University of Colorado, the Centers of Disease Control and the Office of Juvenile Justice and Delinquency Prevention (Mihalic *et al.* 2001). More

recently, the Oregon MTFC model was highlighted in two surgeon's general reports on children's mental-health services and youth violence (US Department of Health and Human Services 1999, 2000). In a series of evaluations of the cost-effectiveness of violence prevention programmes and other approaches to reducing criminal and at-risk behaviour in youth, the Washington State Institute for Public Policy (Aos *et al.* 1999) found that the OSLC MTFC programme was among the approaches that resulted in the greatest savings to tax payers. This savings was the result of a decrease in the arrest and incarceration rates for the high-risk youth in the programme.

Applications of MTFC to regular foster care

As an extension of this line of research, Chamberlain *et al.* (1992) examined whether it was feasible and useful to utilize components of the MTFC model with 'regular' foster and kinship families, with the goal of reducing child behaviour problems and disruptions in placements and increasing foster-parent retention. In this study, foster-parents receiving new placements in three Oregon Counties were randomly assigned to one of three conditions: parenting training using MTFC components, payment and assessments only, and assessments only. In the parent-training condition, foster-parents participated in weekly training and support meetings led by an experienced MTFC para-professional. They also received twice-weekly calls using the PDR. Compared with the group receiving a payment and the assessment-only control group, families in the parent-training group evidenced significantly greater decreases in child behaviour problems and fewer failed placements because of child behaviour or emotional problems. There was also significantly less foster-parent attrition among families in the parent-training condition.

In the next phase of this research, the modified MTFC model for regular foster-parents was subjected to a randomized effectiveness trial with an ethnically diverse sample of foster and kin families with children ages 5–12 years in San Diego County, California. This study was conducted in collaboration with the Child and Adolescent Services Research Center, and the San Diego County Health and Human Services Agency. In this study, 700 foster/kin parents in San Diego County with a 5- to 12-year-old foster child in their home (for at least a period of 1 month) were randomly assigned to intervention or control conditions. Relative caregivers made up 38.5% of the sample.

Prior to initiating the intervention, focus groups were conducted with African-American and Latino foster and kinship parents and separately with caseworkers to identify ways that the intervention could be adapted to address issues related to cultural and community relevancy. Focus groups expressed strong support for the notion of using a parent-mediated intervention to improve child behaviour. Several suggestions relating to language use and framing of issues (e.g. discipline and reinforcement) were incorporated into the curriculum (Chamberlain *et al.* in press). Another revision incorporating cultural adaptations was made at the end of the first year of the intervention.

Curriculum topics for the parent training were designed to map on to protective and risk factors that have been found in previous studies to be developmentally relevant malleable targets for change (Eddy & Chamberlain 2000). The primary focus was on the increasing use of positive reinforcement, consistent use of non-harsh discipline methods, such as brief timeouts or privilege removal over short time spans (e.g. no playing video games for 1 hour, no bicycle riding until after dinner), and teaching parents the importance of close monitoring of the youngster's whereabouts and peer associations. In addition, strategies for avoiding power struggles, managing peer relationships and improving success at school were also included. Sessions were structured so that the curriculum content was integrated into group discussions, and primary concepts were illustrated via role plays and video recordings. The curriculum was designed to be delivered over a 16-week period by well-trained and supervised paraprofessionals. Home practice assignments were related to the topics covered during sessions to assist parents in implementing the behavioural procedures taught in the group meeting. If foster-parents missed a parent training session, the material was delivered during a home visit (20% of the sessions). Home visits have been found to be an effective means of increasing the dosage of the intervention for families who miss interventions sessions (Reid & Eddy 1997). The final version of the intervention was entitled 'KEEP - Keeping Foster and Kin Parents Trained and Supported'.

The San Diego-based effectiveness trial (funded by the National Institute of Mental Health) was designed to test both the impact of the parent training and support services on selected outcomes and the effects of the level of involvement of the original intervention developers (OSLC staff) on those outcomes. In the first phase of the study (years 1 and 2), the interven-

tion was delivered by paraprofessional staff in San Diego who were trained and supervised weekly by the original developers at OSLC. Interventionists videotaped all group sessions and sent the tapes to OSLC staff for review. OSLC staff provided weekly telephone supervision with the San Diego facilitators and supervisor. In the second phase of the study (years 3 and 4), the first cohort of San Diego interventionists trained and supervised a second cohort of San Diego interventionists. The OSLC team supervised Cohort 1 San Diego interventionists but had no direct contact with the Cohort 2 San Diego interventionists. This particular approach to testing the effectiveness of the intervention as it moved away from the intervention developers was referred to as the 'Cascading Dissemination' model (see Chamberlain *et al.* in press).

SUMMARY OF FINDINGS FROM THE EFFECTIVENESS TRIAL

In the first series of analyses of the data, we examined the impact of the intervention on child behaviour problems. Child behaviour problems were measured at baseline and termination (5 months later) by using the PDR Checklist (Chamberlain & Reid 1987), a 30-item measure of child behaviour problems delivered by telephone to parents on a series of consecutive or closely spaced days (1-3 days apart). The average PDR score from three randomly selected days over a 2-week period prior to the intervention was used to represent behaviour problems at baseline, and the average PDR score taken from three randomly selected days over a 2-week period after the completion of the intervention was used to represent behaviour problems at termination. The results revealed no significant differences between intervention and control groups on child behavior problems at baseline. However, at treatment termination, foster- and kin parents in the KEEP intervention condition reported significantly fewer child behaviour problems than those in the control condition ($M = 5.0$ and 4.1 , respectively, $P < 0.05$). Furthermore, there was no decrement in the treatment effect when the developers of the intervention pulled back and had staff trained in the first half of the study provide training and supervision for those trained in the second half (Chamberlain *et al.* in press). These findings suggest that, when adequately trained, delivery of the intervention can remain effective as the implementation of intervention is moved away from the original interveniton developers.

Next, we examined whether changes in parenting practices mediated the effects of the intervention on

changes in child behaviour problems (Chamberlain *et al.* 2008). As in the prior analyses, child behaviour problems were measured at baseline and termination (5 months later) by using the PDR. The amount of positive reinforcement and discipline used in the home by foster- and kin parents each day was computed by aggregating foster-parent responses to standardized questions during a 2-hour pre- and post-treatment foster-parent interviews, and foster-parent reports of the use of the reinforcement and discipline on the PDR. To assess the proportion of daily positive reinforcement used by foster and kin parents, we computed a ratio of total daily positive reinforcement to total daily positive reinforcement plus discipline. By using these measures, the findings indicated that, compared with the control group, participation in the intervention group increased parental use of positive reinforcement relative to discipline and that that increased proportion of positive reinforcement was related to decreased child behaviour problems. Furthermore, this effect was strongest for children with higher levels of initial behaviour problems. Thus, the intervention was effective in increasing positive parenting skills and in reducing child behaviour problems, especially among those children creating the greatest challenges to foster-parents.

Next, we examined the effects of the intervention on changes in placement (Price *et al.* 2008). Changes in placement were assessed via foster- and kin parent reports of placement changes during the 6.5-month period following the baseline assessment. Two types of changes (exits) were coded: positive and negative exits. Positive exits were defined as any exit from the foster or kinship placement home that was made for a positive reason, such as a reunion with biological parent, placement with a relative or an adoption. Negative exits were defined by negative reasons for the child's exit from the home, such as being moved to another foster placement, being placed in a more restrictive environment, such as a psychiatric care or juvenile detention centre, or child runaways. In order to understand the context of these changes, each child's placement history was assessed via child welfare administrative data. The results of hazard analyses revealed that the number of prior placements was predictive of negative exits from a current foster placement (e.g. foster-parent requested that the child be removed from the home), such that each additional prior placement increased the risk of a negative exit by 6%. In addition, the results of the hazard analyses indicated that participation in the KEEP foster-parent training and support intervention was predictive of

positive changes of placement for the full sample (including children with 0–20 previous placements). More specifically, children in the KEEP intervention group were nearly twice as likely to experience a positive exit (e.g. reunification with biological parent or adoption) by the end of the intervention period as children in the control group. Finally, the results of the next hazard analysis revealed a significant interaction between intervention group status and the prior number of placements in predicting negative exits. While the number of prior placements significantly predicted a greater likelihood of negative exits in the control group (a 15% increase in risk for each additional placement), the effect of prior placements was non-significant in the intervention group. That is, the KEEP foster-parent intervention mitigated the disruption risk-enhancing effect of a history of multiple placements.

In addition to examining the overall effectiveness of the KEEP intervention, we also examined factors that might account for differential effectiveness of the intervention (Degarmo *et al.* in press). One of the factors hypothesized to contribute to differential effectiveness, especially in group-based interventions such as KEEP, is the level of participant (caregiver) engagement (Hogue *et al.* 2006). Group engagement was assessed via group facilitators' ratings of foster-parents' behaviour during the parenting sessions. Foster-parent engagement was operationalized as a composite score representing group facilitators' ratings of (a) parent's level of participation, (b) openness to the intervention ideas, (c) satisfaction with the intervention methods, (d) whether the caregiver was supported by the group or confronted by the group and (e) their completion of homework practice. Facilitators completed these ratings at the end of each group session. In these analyses, we examined whether variance in group engagement would moderate the effect of potential risk factors such as children's pre-treatment behaviour problems, prior placement history of placement disruptions, ethnic match of foster-parent, age and sex in predicting change in children's problem behaviours and the probability of a negative placement. Caregiver risk factors hypothesized to be moderated by group context included kinship status, race-ethnicity and ethnic match of group leaders. The analyses revealed that caregiver engagement moderated the number of prior placements on increases in child problem behaviours and moderated risk for negative placement disruptions for Hispanics. Another finding was that the ethnic match of caregiver-group leader reduced problem behaviours.

Finally, as an extension of the Cascading Dissemination model, we recently conducted a pilot study to examine the feasibility of implementing the KEEP intervention when delivered by a community provider rather than a university or research centre intervention team and to determine whether the KEEP intervention remains effective in reducing child behaviour problems. For the purposes of this study, a group of paraprofessional personnel from a community service provider in San Diego were trained in the KEEP intervention model and were closely supervised by trained and experienced KEEP interventionists. Supervisors viewed videotapes of the weekly group sessions and provided interventionists with weekly feedback and direction. Supervisors were trained and facilitated parenting groups during the original KEEP intervention. The OSLC intervention developers oversaw all training activities and viewed selected videotapes of the new KEEP community-based interventionists. However, there was no direct contact between the original developers of the intervention from OSLC and the community-based KEEP interventionists.

This pilot study included 86 families who received the KEEP intervention from the community-based intervention team. As in the original effectiveness trial, child behaviour problems were assessed via the PDR administered three times across a 2-week period at baseline and then again 4 months later at termination. The average number of child behaviour problems reported by foster and kin parents at baseline was 5.9. This baseline score is consistent with the baseline PDR scores from the original KEEP intervention study. In contrast, at termination, the average number of behaviour problems reported by caregivers was only 3.6. These scores were then compared with the baseline and termination scores of a subsample of the control group from the original KEEP effectiveness study that were from the same geographical regions as the families participating in the community service-led parenting groups. For this geographically matched segment of the original KEEP study control group, the average baseline score was 5.3, and the average termination score was 5.0. The results of repeated measures analysis of variance revealed a significant group by time interaction. That is, the reduction in parent-reported child behaviour problems was significant for the community-led KEEP intervention group but not for the KEEP study control group. These findings provide preliminary indication that the KEEP intervention can continue to be effective in reducing child behaviour problems when being delivered by

community service contractor personnel, provided there is adequate training and supervision.

UNANSWERED QUESTIONS AND DIRECTION FOR FUTURE RESEARCH

The findings on the outcomes of the KEEP intervention have been encouraging, resulting in interest being generated in both the USA and UK in implementing the intervention within child welfare systems. However, there are several important questions needed to be addressed. First, do the effects of the KEEP intervention generalize to other children in the home? In the research conducted thus far, behavioural and placement outcomes were assessed on the child who was identified as the focal child – the age-eligible child in the home who was the focus of the parent activities and outcome assessments. It is often assumed that, once parents acquire a particular set of parenting strategies, they will utilize those strategies with other children in their care and continue to do so over time. Unfortunately, this assumption has rarely been tested. The extent to which foster- and kin parents retain and generalize the behaviour management strategies they learn through training is not well known. The findings from a few studies suggest that generalization of newly acquired parenting skills to other children in the home can and often does occur (Arnold *et al.* 1975; Humphreys *et al.* 1978; Brestan *et al.* 1997; Brotman *et al.* 2005).

Another unanswered question is whether foster-parents will continue to use their skills over time. From the vantage point of a child welfare agency, one of the desirable outcomes of any parent training would be enduring changes in foster- and kin parent child rearing practices, which would not only bring about reductions in the behaviour problems of children currently in their care but also enable them to manage the behaviour problems of children who come into their care at a later point in time. Such effects have been referred to as *delayed diffusion* effects (Seitz & Apfel 1994). To date, there have been few studies of delayed diffusion effects of parent-based interventions. Seitz and Apfel examined whether an intervention provided to parents of firstborn children produced delayed benefits to later-born children. The intervention, entitled the Yale Child Welfare Project, was an intensive family support programme to improve school adjustment (as measured by absenteeism, promotion or retention in grade and need for special services) of children in impoverished families.

In a 10-year follow-up, the results indicated that not only did firstborn children but also siblings born after the intervention programme ended benefit from the intervention. Klein *et al.* (1977) found similar delayed effects of an intervention. As a result of a short-term behavioural family systems treatment for court-referred delinquent youth, not only did the targeted delinquent youth evidence lower recidivism rates relative to controls but their younger nonadjudicated siblings had fewer court contacts several years after treatment as well. However, it is unknown whether delayed effects result from parent training interventions designed to help parents manage difficult behaviour problems.

Following the outcome of the research on the generalization of effects of the intervention, the logical next step would be to measure and examine the relative benefits and costs associated with the KEEP intervention as it is implemented in a community setting. This research would help to delineate the relative cost/benefit of the KEEP intervention on placement disruptions, participation in higher levels of care (e.g. residential facilities), educational services (e.g. special education), family burden/time, delinquency and health system costs. Knowing whether the effects of the KEEP intervention generalize across children in the same home and to other children who enter the home at a later point in time will contribute to our understanding of the range of the effects of the intervention, which will be critical information for determining the relative costs and benefits of the intervention.

Finally, prior to wide-scale implementation, it is important to know whether the KEEP intervention can be delivered by community agency personnel in the manner in which it was intended and that will result in positive outcomes. Continued success of the implementation and dissemination of the KEEP intervention will be facilitated by developing methods of assessing and reporting intervention process variables. Included in this work should be efforts to develop reliable and valid measures of supervision and treatment fidelity that can readily be used by the child welfare system and service provider organizations implementing the KEEP intervention, which, in turn, will help to determine whether the KEEP intervention can be implemented by community-based providers in a way that preserves the fidelity of the intervention process. Although the findings from the pilot of the community implementation of the KEEP intervention described earlier were encouraging, the fidelity of the intervention and

the impact of levels of treatment fidelity on key outcomes in a large-scale implementation trial need to be systematically examined.

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