Effect of a Parenting Intervention on Foster Care Reentry After Reunification Among Substance-Affected Families: A Quasi-Experimental Study

Becci A. Akin¹, Jody Brook¹, Margaret H. Lloyd¹, and Thomas P. McDonald¹

Abstract
Although parental substance abuse has been identified as a risk factor for poor foster care outcomes, current research on effective interventions is limited. A few studies have shown that parenting interventions improved parenting skills and family functioning and decreased time to reunification among children in foster care due to parental substance abuse. However, more research is needed to evaluate whether these interventions positively impact reentry rates. Using propensity score analyses to establish a matched comparison group, survival analyses evaluated the relationship between participation in a parenting intervention, the Strengthening Families Program (SFP), and reentry among a sample of 493 children previously reunified with their parents. The overall reentry rate was 20.9%. Analyses indicated that there was no difference in reentry rates between the SFP (23.7%) and comparison groups (18.6%). Significant predictors of reentry were child behavior problems, family poverty, and reunification between 15 and 18 months from removal.

Keywords
evidence-based treatment, intervention research, foster care, recidivism, substance abuse

Parental substance abuse is common among families with children in foster care. Estimates indicate that up to 79% of children in foster care are affected by parental substance abuse (Testa & Smith, 2009). Children from these families experience a host of poor child welfare outcomes. Compared to those without parental substance abuse, children who come from families with parental substance abuse are more likely to enter foster care (Zuravin & DePanfilis, 1997), remain in care longer (Vanderploeg et al., 2007), have less stability in foster care placements (Smith, Johnson, Pears, Fisher, & DeGarmo, 2007), and are less likely to exit care to reunification (Akin, Brook, & Lloyd, 2015; Brook, McDonald, Gregoire, Press, & Hindman, 2010; Lloyd & Akin, 2014). Prior research indicates that reunification failure among substance-affected families is related to noncompletion of substance abuse treatment (Choi, Huang, & Ryan, 2012) and ongoing functioning problems despite treatment (Barth, Gibbons, & Guo, 2006; Brook & McDonald, 2007). Recent advances in programming for substance-affected families have shown some promising strategies for promoting reunification, such as behavioral parent training (Brook, McDonald, & Yan, 2012), recovery coaches (Choi & Ryan, 2006; Ryan, Choi, Hong, Hernandez, & Larsson, 2008), and family dependency treatment courts (FDTC; Lloyd, 2015; Chuang, Moore, Barrett, & Young, 2012; Sloan, Gifford, Eldred, Acquah, & Blevins, 2013).

Yet, reunification is not a guarantee for enduring permanency. Even when families affected by substances achieve reunification, they are more likely to have their children reenter foster care (Brook & McDonald, 2009; Shaw, 2006). Foster care reentry is an especially salient issue for children from substance-affected families because of the competing demands between a parent needing time for treatment and children requiring timely responses for secure, stable, and healthy development (Green, Rockhill, & Burrus, 2008). Ensuring child safety and permanency within the time line specified by federal law is complicated for parents who need time and resources to receive substance abuse treatment (O’Flynn, 1999). Sending a child home before the parent has achieved sustainable recovery may place the child at risk for additional maltreatment and further instability.

Despite efforts to improve foster care outcomes among children affected by parental substance abuse, few studies report interventions’ effects on reentry for this specific target population. In fact, in the intervention research literature, reentry is

¹ School of Social Welfare, University of Kansas, Lawrence, KS, USA

Corresponding Author:
Becci A. Akin, School of Social Welfare, University of Kansas, Twente Hall, 1545 Lilac Lane, Lawrence, KS 66045, USA.
Email: beccia@ku.edu
generally understudied for the entire foster care population. Among prior studies that have investigated an intervention’s effect on reentry in the general foster care population, some promising strategies have included intensive family preservation services (Blythe & Jayaratne, 2002), shared family care (Price & Wichterman, 2003), multidimensional treatment foster care for preschoolers (Fisher, Burraston, & Pears, 2005), and supportive housing (Lenz-Rashid, 2013).

Turning specifically to research with foster care samples comprised primarily of parents affected by substance abuse, three prior studies were found to assess reentry into foster care after reunification. First, in a randomized study of 103 recently reunified families (children ages 5–12 years old and 92% of biological mothers with history of alcohol or drug abuse), researchers found that an in-home, postreunification parent training intervention did not have a significant main effect on reentry; however, they found that the intervention buffered the negative influence of child problem behaviors, which was associated with reentry (DeGarmo, Reid, Fetrow, Fisher, & Antoine, 2013). Second, in a quasi-experimental study of 250 reunified families (children mostly under age six and 100% of parents affected by substance abuse), analyses indicated that a comprehensive housing-based support program was associated with lower rates of foster care reentry (Rivera & Sullivan, 2015). Third, another group of researchers used propensity score matching (PSM) to investigate whether an FDTC was associated with reunification and reentry with a sample of 190 families. These findings showed that reunification was more likely but took longer among the FDTC participants and that reentry was significantly less likely (Chuang et al., 2012).

In sum, despite the importance of parental substance abuse as a risk factor for poor foster care outcomes and increasing efforts to address it, the current empirical evidence on intervention effectiveness remains limited. More research is needed to evaluate whether interventions positively influence reentry rates, especially among this population of children at high risk of reentry. The present study addressed this need by evaluating the association between the Strengthening Families Program (SFP) and reentry among families affected by parental substance abuse who had reunified from foster care by using a quasi-experimental design.

SFP is a parent and family skills training intervention that has been implemented across the country in child welfare settings, including with families affected by parental substance abuse. SFP is a 14-week manualized, curriculum-based program that was developed in the 1980s as a substance abuse prevention intervention for 10- to 14-year-olds. The SFP content is focused on three domains: parenting skills, child skills, and family skills (Kumpfer, Whiteside, Greene, & Allen, 2010). The parenting skills component is based on Patterson’s (1976) behavioral parenting model that includes focused education on the physical, mental, social, and emotional aspects of child development as well as teaching caregivers appropriate expectations for children at different ages and developmental stages. Further, Patterson’s model (and thus SFP) promotes positive reinforcement, use of limit setting, and noncorporal discipline. The children’s skills component is based on the social skills training program developed by Shure and Spivack (1982). This program focuses on social and emotional regulation, listening and speaking skills, peer pressure resistance, sharing emotions, alcohol and drug education, and problem-solving. Finally, the family skills component brings children and parents together with trained SFP group leaders. Family skills sessions are based on the work of Forehand and McMahon (1981), which proposed that parents need assistance with both empathy and enjoyment of their children; and thus, bringing parent and children together in a group setting with a trained facilitator assists in this process.

The original randomized controlled trial of SFP was conducted in the 1980s and found that participation improved parenting skills and reduced problematic child behaviors (DeMarsh & Kumpfer, 1986; Kumpfer & DeMarsh, 1986). Since that time, its scope and reach have expanded considerably, and the program has now been evaluated and demonstrated positive results with children from 3 to 16 years old (Kumpfer et al., 2010). Additionally, new randomized studies are underway to test the effectiveness of SFP with infants and toddlers (Mariscal, Liming, & McDonald, 2016). Earlier research on the effectiveness of SFP led to its status as an evidence-based intervention according to multiple federal agencies (e.g., the Office of Juvenile Justice and Delinquency Prevention Model Program Guide [http://www.ojjdp.gov/mpg/Program] and the National Registry of Evidence-Based Programs and Practices [www.nrepp.samhsa.gov]).

Recent studies have applied SFP in foster care settings and observed positive outcomes (Brook, McDonald, & Yan, 2012; Brook, Akin, Lloyd, & Yan, 2015; Brook, Akin, Lloyd, Bhattacharai, & McDonald, 2016; Brook, Akin, Lloyd, Johnson-Motoyama, & Yan, 2016). In a quasi-experimental study that used PSM, 214 children whose families participated in SFP were compared to matched comparison group of 423 children. This study observed that children who received SFP spent significantly less time in foster care compared to children in the matched comparison group (Brook, McDonald, & Yan, 2012). A similar sample from this study of children in foster care was used to investigate child, parent, and family outcomes, such as reductions in child problem behaviors and improvements in parenting abilities and family functioning. This research indicated that SFP made significant improvements in most child behavior measures and all parent and family functioning measures (Brook, Akin, Lloyd, Bhattacharai, & McDonald, 2016). Moreover, studies of SFP in foster care have also demonstrated a cost savings due to the increased likelihood of reunification (Brook, Akin, Lloyd, Johnson-Motoyama, & Yan, 2016). Despite these important and positive outcomes of SFP, no studies to date have documented the impact of SFP on reentry into foster care. Thus, it is unknown whether SFP participation is also associated with a reduced, or increased, likelihood of reentry. Given prior research that has demonstrated that expedited reunifications may contribute toward an increase in reentry rates (McDonald, Bryson, & Poerntr, 2006; Wulczyn, 2004), additional investigation is warranted.
In summary, this review of the literature documents two key findings: Parental substance abuse is a risk factor for a variety of child welfare outcomes, including reentry and little is known about the effect of interventions on reentry for this target population. Thus, the aim of this study is to investigate the association between SFP and reentry among substance-affected families that reunified from foster care. The study asked: (1) Did reentry rates differ between children whose families received SFP and children whose families received foster care services as usual? and (2) What were the predictors of reentry?

Method

Design

To address the research questions, the study used a quasi-experimental longitudinal design with a matched comparison group. All study participants were children who had reunified with their families and all were observed from the date of reunification until September 30, 2015. The observation period ranged from a maximum observation period of 7 years to a minimum observation period of 3 years, 3 months.

Participants

The present study is a substudy of a larger federal demonstration project of SFP for children in foster care with parental substance abuse. The present study’s sample comprised only those children from the larger study who exited to reunification, a sample of 493 children, of which 219 were in the intervention group and 274 were in the comparison group. The larger study was conducted from spring 2008 to spring 2012 in 10 sites across a Midwestern state. Intervention group participants (n = 357) were recruited in 10 cohorts over 48 consecutive months from all children in foster care during the study period. Families were recruited for the intervention by caseworkers if they (1) had a case plan goal of reunification and (2) were identified by the caseworker as affected by parental substance abuse. Because the state public child welfare agency would not agree to a randomized controlled trial, a matched comparison group of 892 children was established through PSM. Notably, children were not excluded from either group for having prior foster care removals.

Each case consisted of one caregiver and one focal child. In families with more than one child, the SFP instructions advised parents to select their child with the most behavior problems or the oldest child between ages 3 and 12. In cases where two parents participated, and two or more children participated, then each parent selected one child based on the behavior/age criteria as their focal child. Foster care data were collected from the state’s federally required data file, Adoption and Foster Care Reporting System (AFCARS), and used to track each focal child. Besides basic demographic and family characteristics, AFCARS also tracks relevant case characteristics such as number of removal episodes, reasons for removal, entry and exit dates, type of exit, and number of placements.

The comparison group consisted of matched families with children in foster care with removal reasons that included parental substance abuse (alcohol use or drug use), who had reunification as a case plan goal and who were not referred to SFP. The comparison group was selected from a pool based on the following criteria: (1) children discharged due to emancipation were excluded; (2) children who were reunified prior to September 30, 2007, were excluded (because the project began on October 1, 2007); and (3) the eligibility age for SFP participation was younger than 15 at removal, so children were excluded unless they were younger than 19.5 but older than 1.8 years on March 31, 2012, to make sure that even on the earliest starting date for the demonstration project, the child was no older than 15 years old and no younger than 3 years old. Children in the comparison group received foster care services as usual, which in the current state comprised case management services provided by one of four private child welfare agencies. All reunified children and families, in both the SFP and comparison groups, were provided up to 1 year of aftercare services per the private agencies’ contracts.

Stata IC version 11.0 was used to conduct PSM (Guo & Fraser, 2014) to draw a comparison group from the pool of children meeting the study eligibility criteria. PSM is a family of statistical matching techniques developed to control for selection bias in quasi-experimental studies (Barth, Guo, & McCrae, 2008). Broadly speaking, PSM involves statistically modeling the selection process for assigning families to treatment and then using this model to match treatment children with the most similar children from the comparison pool. The propensity scores are typically generated using logistic regression and provide a one-dimensional value that statistically accounts for each case’s characteristics on selected covariates (Barth, Guo, et al., 2008). Matched cases then share key demographic and case characteristics (e.g., race/ethnicity, age, and gender) that are known to influence likelihood of service participation. The current study’s matching process involved two steps. First, a model including the following covariates was used to generate the propensity scores: (1) months in foster care since earliest removal date, (2) child’s age at time of study, (3) child’s sex, (4) dummy-coded race variables: White or Black, and (5) dummy-coded ethnicity variable: Hispanic. Once propensity scores were generated, matching involved identifying at least one statistically similar case in the comparison pool to each treatment case. In practice, matched cases do not always share identical propensity scores. The current standard in the field, called “nearest neighbor matching,” recommends identifying a matched comparison case whose propensity score falls within one quarter of one standard deviation (SD) of its paired treatment case (Rosenbaum & Rubin, 1985). Matching was conducted separately within each child welfare geographical region of the state to control for potential system and geographical differences. It should be noted that one of the potential drawbacks of PSM is the possibility that an influential factor is not available in the data set. These unobserved variables could mean that the groups are not similar on both observed and unobserved characteristics.

In some cases, siblings appeared in the data set. Instances where one sibling was an SFP focal child and another sibling who did not participate in SFP matched as a comparison case,
Table 1. Characteristics of Total Sample and Study Groups.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total N (% or Mean [SD])</th>
<th>Comparison n (% or Mean [SD])</th>
<th>SFP n (% or Mean [SD])</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child age at entry (years)</td>
<td>493 (6.3 [3.4])</td>
<td>274 (5.95 [3.7])</td>
<td>219 (6.74 [2.9])</td>
</tr>
<tr>
<td>Child’s gender, female</td>
<td>246 (49.9)</td>
<td>134 (48.9)</td>
<td>112 (51.1)</td>
</tr>
<tr>
<td>Child’s race/ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>76 (15.4)</td>
<td>37 (13.5)</td>
<td>39 (17.8)</td>
</tr>
<tr>
<td>Asian</td>
<td>1 (0.2)</td>
<td>1 (0.4)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>American Indian</td>
<td>12 (2.4)</td>
<td>7 (2.6)</td>
<td>5 (2.3)</td>
</tr>
<tr>
<td>Hawaiian/Pacific Islander</td>
<td>1 (0.2)</td>
<td>1 (0.4)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>White</td>
<td>430 (87.2)</td>
<td>244 (89.1)</td>
<td>186 (84.9)</td>
</tr>
<tr>
<td>Latino</td>
<td>40 (8.1)</td>
<td>20 (7.3)</td>
<td>20 (9.1)</td>
</tr>
<tr>
<td>Single parent</td>
<td>276 (56.0)</td>
<td>146 (53.3)</td>
<td>130 (59.4)</td>
</tr>
<tr>
<td>IV-eligible</td>
<td>93 (18.9)</td>
<td>52 (19.0)</td>
<td>41 (18.7)</td>
</tr>
<tr>
<td>Reason for removal (index removal)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical abuse</td>
<td>72 (14.6)</td>
<td>36 (13.1)</td>
<td>36 (16.4)</td>
</tr>
<tr>
<td>Neglect</td>
<td>181 (36.7)</td>
<td>106 (38.7)</td>
<td>75 (34.3)</td>
</tr>
<tr>
<td>Sexual abuse</td>
<td>20 (4.1)</td>
<td>8 (2.9)</td>
<td>12 (5.5)</td>
</tr>
<tr>
<td>Parent alcohol</td>
<td>72 (14.6)</td>
<td>42 (15.3)</td>
<td>30 (13.7)</td>
</tr>
<tr>
<td>Parent drugs</td>
<td>356 (72.2)</td>
<td>240 (87.6)</td>
<td>116 (53.0)</td>
</tr>
<tr>
<td>Child behavior</td>
<td>35 (7.1)</td>
<td>15 (5.5)</td>
<td>20 (9.1)</td>
</tr>
<tr>
<td>Parent incarceration</td>
<td>88 (17.9)</td>
<td>48 (17.5)</td>
<td>40 (18.3)</td>
</tr>
<tr>
<td>Housing</td>
<td>54 (11.0)</td>
<td>26 (9.5)</td>
<td>28 (12.8)</td>
</tr>
<tr>
<td>Had prior removals</td>
<td>51 (10.3)</td>
<td>26 (9.5)</td>
<td>25 (11.4)</td>
</tr>
<tr>
<td>No. of lifetime placements</td>
<td>493 (2.1 [1.6])</td>
<td>274 (2.0 [1.5])</td>
<td>219 (2.3 [1.6])</td>
</tr>
<tr>
<td>Time to reunification</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;15 Months</td>
<td>278 (56.4)</td>
<td>172 (62.3)</td>
<td>106 (48.4)</td>
</tr>
<tr>
<td>15–18 Months</td>
<td>58 (11.8)</td>
<td>29 (10.6)</td>
<td>29 (13.2)</td>
</tr>
<tr>
<td>&gt;18 Months</td>
<td>157 (31.9)</td>
<td>73 (26.6)</td>
<td>84 (38.4)</td>
</tr>
<tr>
<td>Reentry post reunification ≥ 1</td>
<td>103 (20.9)</td>
<td>51 (18.6)</td>
<td>52 (23.7)</td>
</tr>
</tbody>
</table>

Note. Total sample, N = 493; comparison, n = 274; SFP, n = 219; Index removal refers to the child’s removal that corresponded with the SFP implementation. SFP = Strengthening Families Program; SD = standard deviation.

the comparison sibling was dropped from analysis (n = 36). All remaining sibling sets were included in the analysis (n = 42 SFP cases; n = 96 comparison cases), and a robust standard error estimate was used to address clustering.

Table 1 shows the sample characteristics. Girls and boys were evenly split in the sample. Most of the children (50.9%) were between the ages of 6 and 10, and the vast majority were White (87.2%). A little more than half of the parents (56.0%) were single parents. About one in five children (18.9%) were identified as eligible for IV-E, an indicator of significant family poverty as it is based on the child’s eligibility for Aid to Families with Dependent Children under the state’s plan as of July 16, 1996. Among the reasons for removal, the most common were parental drug abuse (72.2%) and neglect (36.7%). Because removal reason due to substance abuse was required for the comparison but not the SFP group, a larger proportion of the comparison group had removal due to parental drug use. The within- and between-group differences for the drug removal reason were tested in relation to reentry and found to be nonsignificant. Only 10.3% of the children had experienced a prior removal episode. On average, children in this sample had lived in two placement settings during their lifetime experiences of foster care (M = 2.1, SD = 4.6). With regard to time in foster care prior to reunification, most children exited to reunification in under 15 months (56.4%).

**Procedures**

The study protocol was approved by the institutional review board of the (University of Kansas). The researchers conducting this study are not affiliated with the program developer of the SFP intervention and have no direct or indirect financial or other interest in promoting or utilizing SFP beyond academic interest in testing evidence-based practices in child welfare. AFCARS data were collected for federal fiscal year 2007–2015. The AFCARS file provided data on all variables in the study except the receipt of SFP and the location and time frame for intervention receipt, which were tracked by the research team. The AFCARS and SFP participation data were linked with a unique child identifier.

**Intervention Features and Fidelity**

Several key features of SFP were important to this study. First, SFP was provided to families as a voluntary service to which they were referred by their caseworkers at varying times in the life of the case. The point in the case at which families received
services depended upon the timing of the caseworker referral, family availability, and the schedule of SFP group cycles. With regard to group size, SFP groups included, on average, 6.3 families. Consistent with program requirements, all SFP sessions began with a meal that was served family style, allowing parents and children opportunity for informal interactions. Transportation support was provided to parents and foster parents in the form of reimbursement for gasoline. Although foster parents did not participate in SFP groups, some provided transportation for children. Additionally, on-site child care was provided for any children who were not in the age range of the program criteria. Program completion was defined as the family attending 12 of 14 SFP sessions, and this sample only included families that completed the program. The overall retention rate was 78.6% (Lutra Group, 2012). No follow-up services were included as part of the SFP intervention.

As stated earlier, the SFP curriculum is structured and manualized, comprising three main components: parenting skills, child skills, and family skills. Each curriculum component was covered in detailed manuals provided to group leaders. In addition, parents and children received SFP handbooks that contained readings, homework assignments, and in-class exercises. Because the SFP curriculum was highly structured, facilitators were not required to have specialized degrees in counseling; however, SFP required completion of a 2- to 3-day training conducted by the program developer’s trainers. Facilitators were required to have a minimum of a bachelor’s degree in a human services related field.

Intervention fidelity was monitored through a contractual relationship with the program developer throughout the implementation and data collection period. Training in SFP was provided to each site and followed by monthly consultation calls with the program developer. Fidelity monitoring focused on five domains: environment/community context, target population characteristics, program characteristics, staffing, and adherence to curriculum. These data were collected with a combination of site self-report (i.e., questionnaires), program developer interviews with SFP staff and participant family members, and program developer observations during site visits. For each site, the staff reported on fidelity after the SFP group (i.e., weekly), the program developer conducted semiannual site visits and aggregated and reported fidelity scores annually.

Standards for fidelity were established by the program developer and based on a 5-point scale where scores of 3.0 met program standards and scores above 3.75 exceeded program standards. For all 56 cycles measured during the project’s 5-year implementation, the intervention met or exceeded program standards set by the developer (Lutra Group, 2012). The overall mean fidelity score across domains was 3.96. Year 5 mean scores were between 4.0 and 4.5, demonstrating increased competency in delivering SFP over time. Environment and community context monitored the setting in which the services were delivered. Over the 5-year period, 61% (n = 34) of the groups were held in the agency offices, 36% (n = 20) were conducted at local churches, and 3% (n = 2) were held in other community settings. All groups were held in the early evenings, so that children could return home at a developmentally appropriate time. Target population was monitored to ensure that SFP was delivered to the desired population. Across the 5 years, the target population domain received a mean fidelity rating of 3.92, demonstrating consistency between desired and actual enrollment. The program characteristics domain included provision of meals and transportation support, adequate supplies and facilities, and appropriate graduation festivities. This fidelity domain scored a mean rating of 3.95 across the 5 years. Staffing tracked the number of SFP facilitators that delivered the content and their level of expertise. Each SFP session required five trained staff members in attendance: two per group (parent group and child group) and one site coordinator. The mean fidelity score for staffing was 3.75. Finally, adherence to the curriculum was measured via direct observation by the program developer, interviews with staff, and interviews with families during site visits. Curriculum fidelity scores exceeded program standards and continued to improve throughout the 5-year implementation of SFP (Lutra Group, 2012).

Variables

Outcome. The primary outcome of interest was reentry after reunification. This variable was defined as a dichotomous variable where 1 indicated that one or more reentries occurred after reunification from the index removal (i.e., the removal that occurred during the larger study and, thus, corresponded to the SFP implementation) and 0 indicated that no reentries were observed during the study period.

Covariates. Covariates were selected based on a review of the existing literature and available variables in the AFCARS data file. With the exception of the child’s age, all other covariates were treated as categorical variables including SFP participation (1 = SFP group, 0 = comparison group), child’s gender (1 = female, 0 = male), child’s race (1 = White, 0 = non-White), child’s ethnicity (1 = Latino, 0 = not Latino), IV-E eligibility (1 = eligible for IV-E payment, 0 = not eligible), and parent’s marital status (1 = single parent; 0 = two parents). The child’s reasons for removal were also coded as binary variables where 1 indicated that the variable was a reason for the child’s index removal into foster care (i.e., removal that occurred during the SFP implementation) and 0 indicated that it was not. Children could have up to six reasons for removal. To account for the influence of placement instability, each child’s lifetime number of placements prior to reentry were included as a continuous variable. Similarly, prior removals were included as a binary variable for which yes (1) indicated the child had one or more prior removals and no indicated none (0 prior removals). The prior removal variable was treated as dichotomous because only four children (0.8%) had more than one prior removals. Finally, a categorical variable was used to indicate the time frame during which the child reunified from foster care. This variable comprised three levels: reunification in
under 15 months (coded as 0), reunification in 15–18 months (coded as 1), and reunification in over 18 months (coded as 2). These categories were selected to reflect federal law, the Adoption and Safe Families Act (“ASFA,” 1997), and related state procedures (e.g., reviewing cases when they are about to meet the 15 of 22 rule).

Analysis

These analyses were conducted in Stata 13.1 (StataCorp, 2013). The likelihood of reentry after reunification was estimated with bivariate survival analysis and multivariate Cox proportional hazards models, adjusting for clustered data due to sibling groups and including relevant covariates. Survival analyses are appropriately applied to these data for two main reasons. First, survival analysis considers both whether and when an outcome occurred and, therefore, is an advantageous analytic strategy to use with time to event data (Box-Steensmeier & Jones, 2007). Second, survival analysis also accounts for observation of time to an event when some of the subjects have not yet experienced the event, which is known as censoring (Allison, 2004). The bivariate and multivariate models provide unadjusted and adjusted hazard ratios (HR), respectively. HRs are interpreted as follows: an HR significantly greater than 1 indicates an increased probability of reentry and an HR significantly lower than 1 designates a decreased probability of reentry. An HR equal to 1 shows that no difference was observed in the probability of reentry.

Results

Among the 493 reunified children, 103 (20.9%) reentered foster care after reunification during the study period, which was at least 3 years, 5 months postreunification for all children in the study (see Figure 1). To compare this sample’s reentry rates to federal data on reentry, the 12-month reentry was also calculated. The most recent federal report on child welfare outcomes indicates that the national median for reentry within 12 months was 12.0%, and this study’s state reentry within 12 months was 8.3% (U.S. Department of Health and Human Services, Administration for Children and Families, n.d.). The state’s 12-month reentry rate varied only slightly over time: 8.8% in 2010, 8.4% in 2011, 7.8% in 2012, and 8.3% in 2013. Among the current sample, 6.9% of the children (n = 34) entered foster care within 12 months. The rate was 7.3% for the SFP participants and 6.6% for the comparison group (χ² = 103, p = .748). Additionally, examining groups according to whether parental drug use was an indicated removal reason, 5.2% of SFP cases with parental drug use reentered within 12 months compared to 7.3% of SFP cases without drug use, 5.7% of comparison cases with drug use, and 11.4% of comparison cases without drug use (χ² = .214, p = .544).

Table 2 shows the bivariate survival analyses on reentry after reunification, which indicated that the difference in reentry rates for SFP participants (23.7%) and the comparison group (18.6%) was not statistically significant (HR = 4.19, p = .413). Two variables were observed to demonstrate statistically significant differences at a bivariate level: IV-E eligibility (HR = 2.51, p < .001) and time to reunification between 15 and 18 months (HR = 1.95, p = .021). Table 2 also presents the multivariate Cox regression model, which showed that, while controlling for a range of child and case characteristics, significant predictors of reentry after reunification included removal due to child behavior (HR = 2.09, p = .019), IV-E eligibility (HR = 2.49, p < .001), and if a child exited to reunification between their 15th and 18th month in foster care (in comparison to children who exited to reunification in under 15 months; HR = 4.95, p = .022). As in the unadjusted model, participation in SFP was not associated with reentry in the multivariate model (HR = 4.12, p = .656).

Given the bivariate differences between the SFP and comparison groups on removal due to parental drug use and the presence of siblings, sensitivity testing included multivariate modeling with interactions between these variables and group membership. Separate Cox regression models were estimated to test each interaction. Neither term was statistically significant (removal due to drug use x SFP group; HR = 2.33, p = .087; sibling dummy variable x SFP group; HR = 4.75, p = .284).

Discussion

Earlier research indicated that among a sample of children affected by parental substance abuse, those children whose families participated in SFP were more likely to exit foster care to reunification (Brook, McDonald, & Yan, 2012). While these findings are promising, no previous studies have extended these analyses to reentry after reunification. Reunification findings warrant caution because some research has shown that faster reunification can be associated with increased likelihood of reentry, thus raising concerns about the lasting impact of interventions that return children home too quickly. Importantly, although this study’s quasi-experimental design requires some caution, the findings showed no significant association between SFP participation and reentry for either an increase or decrease in the likelihood of reentry following reunification. Randomized studies will be needed in the future to confirm SFP’s effect on reunification and reentry.
Table 2. Bivariate and Multivariate Cox Regression: Risk of Reentry Into Foster Care After Reunification.

<table>
<thead>
<tr>
<th></th>
<th>Unadjusted Hazard Ratio</th>
<th>p</th>
<th>Lower</th>
<th>Upper</th>
<th>Adjusted Hazard Ratio</th>
<th>p</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFP group</td>
<td>1.19</td>
<td>0.413</td>
<td>0.78</td>
<td>1.81</td>
<td>1.12</td>
<td>0.569</td>
<td>0.68</td>
<td>1.85</td>
</tr>
<tr>
<td>Age at entry</td>
<td>0.98</td>
<td>0.548</td>
<td>0.93</td>
<td>1.04</td>
<td>0.96</td>
<td>0.283</td>
<td>0.90</td>
<td>1.03</td>
</tr>
<tr>
<td>White</td>
<td>1.42</td>
<td>0.339</td>
<td>0.69</td>
<td>2.93</td>
<td>1.47</td>
<td>0.344</td>
<td>0.66</td>
<td>3.27</td>
</tr>
<tr>
<td>Latino</td>
<td>1.08</td>
<td>0.842</td>
<td>0.51</td>
<td>2.28</td>
<td>0.98</td>
<td>0.896</td>
<td>0.39</td>
<td>2.26</td>
</tr>
<tr>
<td>Female</td>
<td>1.01</td>
<td>0.940</td>
<td>0.69</td>
<td>1.49</td>
<td>0.99</td>
<td>0.978</td>
<td>0.67</td>
<td>1.48</td>
</tr>
<tr>
<td>RR, physical abuse</td>
<td>1.02</td>
<td>0.952</td>
<td>0.55</td>
<td>1.90</td>
<td>0.99</td>
<td>0.980</td>
<td>0.52</td>
<td>1.88</td>
</tr>
<tr>
<td>RR, neglect</td>
<td>0.92</td>
<td>0.712</td>
<td>0.60</td>
<td>1.42</td>
<td>0.88</td>
<td>0.567</td>
<td>0.57</td>
<td>1.37</td>
</tr>
<tr>
<td>RR, sexual abuse</td>
<td>0.89</td>
<td>0.825</td>
<td>0.33</td>
<td>2.44</td>
<td>0.83</td>
<td>0.753</td>
<td>0.26</td>
<td>2.62</td>
</tr>
<tr>
<td>RR, child behavior</td>
<td>1.69</td>
<td>0.803</td>
<td>0.93</td>
<td>3.06</td>
<td>2.09</td>
<td>0.269</td>
<td>1.13</td>
<td>3.90</td>
</tr>
<tr>
<td>RR, housing</td>
<td>0.56</td>
<td>0.940</td>
<td>0.58</td>
<td>2.14</td>
<td>1.23</td>
<td>0.542</td>
<td>0.63</td>
<td>2.40</td>
</tr>
<tr>
<td>RR, incarceration</td>
<td>0.75</td>
<td>0.295</td>
<td>0.43</td>
<td>1.29</td>
<td>0.76</td>
<td>0.369</td>
<td>0.42</td>
<td>1.38</td>
</tr>
<tr>
<td>RR, parent alcohol</td>
<td>1.05</td>
<td>0.870</td>
<td>0.58</td>
<td>1.91</td>
<td>1.11</td>
<td>0.754</td>
<td>0.58</td>
<td>2.11</td>
</tr>
<tr>
<td>RR, parent drugs</td>
<td>0.88</td>
<td>0.573</td>
<td>0.56</td>
<td>1.38</td>
<td>0.93</td>
<td>0.791</td>
<td>0.52</td>
<td>1.65</td>
</tr>
<tr>
<td>IV-E eligible</td>
<td>2.51</td>
<td>0.000</td>
<td>1.60</td>
<td>3.94</td>
<td>2.49</td>
<td>0.000</td>
<td>1.57</td>
<td>3.95</td>
</tr>
<tr>
<td>Single parent</td>
<td>0.94</td>
<td>0.769</td>
<td>0.62</td>
<td>1.43</td>
<td>0.92</td>
<td>0.724</td>
<td>0.57</td>
<td>1.48</td>
</tr>
<tr>
<td>Prior removal</td>
<td>1.44</td>
<td>0.256</td>
<td>0.77</td>
<td>2.68</td>
<td>1.27</td>
<td>0.569</td>
<td>0.56</td>
<td>2.90</td>
</tr>
<tr>
<td>No. of placements</td>
<td>1.04</td>
<td>0.502</td>
<td>0.93</td>
<td>1.16</td>
<td>1.01</td>
<td>0.875</td>
<td>0.86</td>
<td>1.91</td>
</tr>
<tr>
<td>Time to reunification (reference group, &lt; 15 months)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15–18 Months</td>
<td>1.95</td>
<td>0.021</td>
<td>1.10</td>
<td>3.43</td>
<td>1.95</td>
<td>0.022</td>
<td>1.10</td>
<td>3.47</td>
</tr>
<tr>
<td>&gt; 18 Months</td>
<td>1.09</td>
<td>0.713</td>
<td>0.68</td>
<td>1.75</td>
<td>1.07</td>
<td>0.778</td>
<td>0.66</td>
<td>1.76</td>
</tr>
</tbody>
</table>

Note: Total sample, N = 493; comparison, n = 274; SFP, n = 219; number of reentries observed =403; censored cases =-80.1%; RR = reason for removal; CI = confidence interval; adjusted Cox regression model, χ² =-39.83, df =-19, p =-.003. SFP = Strengthening Families Program.

While a few studies have shown that an intervention reduced the likelihood of reentry within 12–18 months (Chuang et al., 2012; DeGarmo et al., 2013; Rivera & Sullivan, 2015), the current study offers novel findings due to a longer observation period. We observed reentry for a minimum of 5 years, 5 months after reunification and found that children and families who participated in SFP and reunified were no more or less likely to experience reentry than the reunified children in the comparison group. Although the reentry rates among the SFP participants were not lower, a prior study showed that the time to reunification was significantly shorter (Brook, McDonald, & Yan, 2012). Thus, these collective findings indicate that SFP participation was associated with reduced time in foster care, yet SFP participation was not associated with compromising future stability and long-term permanence. While the observation of similar reentry rates between SFP and the comparison group is encouraging, future applications of SFP in foster care could benefit from investigating whether supplemental components would improve reentry rates. For example, further study could explore whether SFP booster sessions offered postreunification would enable lower reentry rates. Also, as SFP is paired with other programs such as FDT (Brook, Akin, Lloyd, & Yan, 2015), researchers should examine whether effects on reentry rates are bolstered by these program modifications.

While we found that SFP participation was not associated with reentry after reunification, we identified three factors that accounted for an increased risk of reentry. These factors included removal due to child behavior problems, family poverty, and exiting to reunification between the 15th and 18th month from removal. Furthermore, our analyses indicated relatively strong associations for each of these factors. That is, all three of the factors increased the likelihood of reentry by about 200%.

The findings on child behavior are largely consistent with prior research which has demonstrated that children’s emotional and behavioral problems, even when measured in different ways, were associated with an increased probability for reentry (Barth, Weigensberg, Fisher, Fetrow, & Green, 2008; Courtney, Piliavin, & Wright, 1997; Festinger, 1996; Jones, 1998). Although SFP has been shown to improve emotional and behavioral problems in children in foster care as measured by parent reports (Brook, Akin, Lloyd, Bhattacharai, & McDonald, 2016), the variable used in this study to indicate these problems represents caseworkers’ reports not parent reports (i.e., caseworkers reporting removal was due to child behavior problems). It is possible that the subgroup identified by caseworkers as having emotional and behavioral problems is children with the most noticeable, easily identified, and severe disorders. Moreover, other researchers have found that a parenting intervention reduced reentry only when child behavior problems were buffered by the parent’s use of encouragement skills (DeGarmo et al., 2013). Future research on SFP should consider the association between parent’s use of new parenting skills, child problem behaviors, and reentry. In addition, our findings suggest that the combined presence of parental substance abuse and child behavior problems may be particularly troublesome and could require additional supports for this subgroup of children and their parents. The field would benefit from future research that would more precisely identify the time points for which additional services are needed as well as the optimal duration of these services.
This study also found that a proxy for significant family poverty (i.e., IV-E eligibility) was related to an increased risk of reentry after reunification. Like the finding on child behavior problems, this finding on family poverty is also in accord with several existing studies that have shown various measures of low socioeconomic status as related to reentry (Courtney, 1995; Jones, 1998; Jonson-Reid, 2003; Shaw, 2006). More research is needed to understand the financial obstacles experienced by these families postreunification and how those needs contributed to the child’s reentry into foster care. In brief, this finding may suggest that, to avoid foster care reentry, families with very low incomes require longer term concrete supports or other services to alleviate these socioeconomic disadvantages.

In contrast to the consistency between our findings on child behavior problems and family poverty and the existing research, this study’s finding on the timing of reunification is largely unique. Most other studies have indicated that shorter stays in foster care prior to reunification are associated with an increased risk for reentry (Berrick, 1998; Courtney, 1995; Courtney et al., 1997; Frame, Berrick, & Brodowski, 2000; Jonson-Reid, 2003; McDonald et al., 2006; Westat & Chapin Hall Center for Children, 2001). One exception to this is a recent study found that risk for reentry increased among children who reunified between 8 and 18 months (Lee, Jonson-Reid, & Drake, 2012). The present study found that children who exited between 15 and 18 months from removal were the most likely to reenter while controlling for all the variables in the model. Although these findings are somewhat surprising, we speculate that the timing of reunification was heavily influenced by federal law, ASFA. ASFA requires that states hold a permanency hearing 12 months after a child enters foster care and that the state file a petition to terminate parental rights for a child that has been in foster care for 15 of the most recent 22 months (Vesneski, 2011). This study’s findings on the timing of failed reunifications could suggest that courts generally preferred to avoid termination of parental rights and, with the pressure of the 15/22 rule, decided to reunify some families that may have not been fully ready for lasting reunification. Given similar findings in this study and one other study (Lee et al., 2012), future investigations should more fully examine how the timing of reunification influences reentry rates. Additionally, due to the influence of state interpretation and application of ASFA, more extensive state-by-state analyses could uncover additional knowledge for understanding successful and failed reunifications.

**Strengths and Limitations**

The current study has several noteworthy strengths. First, the longitudinal design allowed for a relatively long observation period, a minimum of 3 1/2 years. Although federal measures of reentry are defined as the child reentering foster care within 12 months, longer range stability and permanence seem relevant and worthy of additional study. This study provided that longer view. Second, by conducting survival analyses, the present study optimized the use of data from all study participants including those that had not reentered foster care. Survival analysis is the most appropriate statistical technique for understanding whether and when reentry occurs. An additional study strength was our use of a number of relevant covariates to examine their relationship to reentry. In addition to expanding the knowledge base on the effectiveness of parenting interventions, this study extends the current literature by identifying predictors of reentry and how they fit within the current literature.

Limitations should also be considered. The study’s quasi-experimental research design is not equivalent to an experimental study design. None of the study’s findings should be interpreted as causal, and all findings should be viewed as tentative, requiring future investigation and replication. Although PSM was used to enhance the study’s rigor and minimize selection bias, it only adjusts for observed variables. We cannot know with certainty whether potential differences in the intervention and comparison groups were equalized by the matching process. It is unknown whether the PSM accurately modeled the caseworker referral process to SFP. In general, evidence is lacking on the factors that influence caseworkers’ decisions to refer parents to evidence-based parenting interventions (Whitaker, Rogers-Brown, Cowart-Osborne, Self-Brown, & Lutzker, 2015). Studies on child welfare worker decisions have shown that the referral process is complex and influenced by multiple factors at multiple levels, such as the individual client (child, parent, and family), caseworker, organizational, and community (Baumann, Dalgleish, Fluke, & Kern, 2014; Fuller & Nieto, 2014). In the present study, caseworkers were located in private, community-based agencies that were responsible for delivering all foster care services to children in the state. No data were available to model these workers’ referrals to SFP. Potentially relevant factors, and other unobserved differences, could bias the study’s results. Some unobserved variables include substance abuse severity, parental mental health status, parental ambivalence toward child, and a clinical measure of the child’s mental health status. This study’s results should be considered tentative until future studies employ a randomized design to alleviate possible selection bias and thereby strengthen the evidence on the effects of SFP on reunification and reentry.

Additionally, the use of administrative child welfare data constrains the analyses to those variables being collected through routine practices. These analyses may have omitted variables that are important to understanding reentry after reunification and were not accounted for. For example, we lacked a measure of substance abuse treatment and, therefore, do not know whether parents’ receipt of treatment affected reunification or reentry outcomes. Moreover, most of the variables included as covariates were collected at baseline and do not capture the dynamic nature of some possibly related factors (e.g., family income and employment). Likewise, these analyses did not include any dosage variables to test whether a dosage effect was at play. An absence of data on participants that did not complete a minimum of 12 of 14 sessions of SFP limited the sample to those who completed SFP and prohibited
the use of intent-to-treat (ITT) analyses. Thus, the study findings cannot fully address the potential for SFP to impact its target population (i.e., children in foster care affected by parental substance abuse). Overall, future research would be advanced by studies designed with randomization, ITT designs, and additional primary data collection to evaluate whether participation in SFP is associated with lasting permanence among children affected by parental substance abuse.

Conclusion

Despite the limitations, this study adds to the knowledge base by examining the relationship between a parenting intervention and long-term child welfare outcomes among a high-risk population of children. Although the study findings suggest that SFP neither increased nor decreased the risk of reentry for children from families affected by substance abuse, this may be viewed positively in light of a prior study that showed SFP was associated with a greater likelihood for decreased time to reunification among this same group of children. That is, this study found that the reduced time to reunification among SFP participants was not associated with an increased (or decreased) likelihood in reentry. Future research on SFP in foster care settings should investigate whether booster sessions or other additional program components would decrease reentry for children most at risk of returning to foster care.

Beyond the findings on the SFP intervention, this study also suggests that, to sustain reunification, postreunification supports should target families’ socioeconomic needs as well as chronic child behavior problems. Further, attention may also be needed to consider how policy can be leveraged to maximize the potential for lasting permanence and avoidance of reentries. Finally, this study adds to a growing literature that suggests promise for evidence-based parenting interventions’ associations with intermediate and long-term child welfare outcomes. Future studies with randomized designs are necessary to confirm these effects and solidify the much-needed evidence for the field.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References


