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Maltreatment following Reunification: Predictors of Subsequent Child Protective Services Contact after Children Return Home¹

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Abstract

Objective—This study examined risk of maltreatment among children exiting foster care using a statewide sample of children reunified between 2001 and 2004 in Rhode Island. The objectives were: (1) to compare rates of maltreatment following parental reunification for youth in care as a result of maltreatment with those in care for other reasons; and (2) to assess the effects of child, family, and case characteristics on rates of re-maltreatment among children placed in foster care due to maltreatment.

Method—A longitudinal dataset of all reunified cases was matched with state records of substantiated Child Protective Service (CPS) investigations. Two Cox proportional hazards models were tested. The first model compared rates of subsequent maltreatment for two groups: children in foster care as a result of maltreatment, and those in care for other reasons. The second model investigated the effects of child, family, and case characteristics on re-maltreatment rates for those in care as a result of maltreatment.

Results—Children in foster care due to maltreatment were significantly more likely to be maltreated following reunification. Among children in foster care due to maltreatment, factors that raised risk for re-maltreatment included a previous foster care placement, exiting care from a non-relative foster home, and removal due to neglect. Older adolescents had lower rates of re-maltreatment than infants. Child neglect was the primary type of recurrent maltreatment that occurred following reunification.

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Conclusions—Supports are needed for families about to be reunified, particularly when the removal was prompted by incidents of abuse or neglect. Incidents of neglect are particularly likely and appropriate services should specifically target factors contributing to neglect. Cases involving youth with a history of repeated foster care placement or in which non-relative placements are utilized may need additional supports.

Keywords

reunification; maltreatment; child protection; Cox model

Child Protective Service (CPS) agencies have a primary mandate to protect children from, and prevent further occurrences of, maltreatment (i.e., abuse and neglect). Placement of children in foster care settings following instances of substantiated maltreatment is often an essential action in fulfilling that mandate – though such placements are intended to be time limited. United States Federal policy, such as the Adoption Assistance and Child Welfare Act of 1980 and the Adoption and Safe Families Act of 1997, establish guidelines for state CPS agencies that prioritize reunification of removed children to their biological parents, and if that is not possible or safe, the timely pursuit of other permanency options (e.g., adoption; Wulczyn, 2004). Consequently, the majority of removed children are reunified with a parent, relative, or guardian – many within one year of removal (Connell, Katz, Saunders, & Tebes, 2006; Courtney, 1994; Courtney & Wong, 1996; Wells & Guo, 1999; Wulczyn, 2004).

To date, few studies have examined the risk of subsequent maltreatment among children placed in foster care and later reunified with a parent. Significantly more research examines factors associated with re-maltreatment among children remaining in parental custody, or on placement experiences for youth entering foster care. In fact, we know of only three studies that address maltreatment following reunification (Fuller, 2005; Jones, 1998; Jonson-Reid, 2003). Of these studies, both Fuller (2005) and Jones (1998) employed relatively small samples and limited longitudinal follow-up periods (174 cases followed for 60 days and 445 cases followed for 9 months, respectively). An additional study by Drake and colleagues examined rates of re-maltreatment among a CPS population, some of whom had been placed in foster care services and subsequently reunified, but this subgroup represented less than 5 percent of the study sample (Drake, Jonson-Reid, & Sapokaite, 2006). The lack of longer term follow-up with larger samples is a significant gap in the literature, since maltreatment represents a significant pathway into the foster care system (Courtney & Wong, 1996; Wulczyn, Barth, Yuan, Harden, & Landsverk, 2005) and reunification is the primary outcome for children leaving foster care (Connell et al., 2006; Courtney & Wong, 1996). Maltreatment occurrence (or recurrence) following reunification suggests a critical failure of the CPS and foster care structures to ensure child safety. By identifying the risk factors associated with this phenomenon, agencies can better target prevention services toward the children and families that are at greatest risk, promoting enhanced child safety and more stable permanency outcomes for children exiting foster care.

Because so few studies have directly addressed this issue we turn to two related areas of research that may serve as guides – research on re-maltreatment among children remaining in the custody of their parents following a CPS investigation, and research on risk of reentry to foster care among children reunified with the parents after a foster care placement. The literature on recurrent maltreatment provides an indication of high-risk cases, albeit those determined by an investigation to be safe enough to remain in parental custody. The literature on reentry to foster care provides additional indication of risk factors following reunification, since maltreatment represents a significant pathway to reentry. However, many cases re-enter care for reasons other than maltreatment (e.g., child behavior problems,

parental inability to cope with the child), so factors associated with these outcomes may differ.

Rates of Re-maltreatment among CPS Cases

Estimates of recurrent maltreatment among children remaining in parental custody range from 17 to 35 percent within a five year period, depending on whether recurrence is specified at the child or family level (DePanfilis & Zuravin, 1999; Fluke, Shusterman, Hollinshead, & Yuan, 2005). Drake et al. (2006) reported that nearly half (48%) of children were re-maltreated within three years, and that rates were higher among youth that experienced foster care placement – though the effects associated with placement were offset when interactions with substantiation and length of stay were factored into the model. Jonson-Reid (2003) reported that 14 percent of children reunified from foster care experienced a substantiated maltreatment episode within four-and-a half years of exiting foster care.

Predictors of Re-maltreatment

Studies have identified a range of child, family, and case characteristics associated with re-maltreatment among children known to CPS.

Child demographic characteristics

Younger children, particularly infants and preschool age children, are at greater risk of recurrent maltreatment (English, Marshall, Brummel, & Orme, 1999; Fluke, Yuan, & Edwards, 1999; Lipien & Forthofer, 2004). Younger children also appear to be at greater risk of maltreatment after reunification from foster care (Fuller, 2005; Jonson-Reid, 2003). With respect to research on foster care reentry, however, it appears that both infants and older children are at greatest risk (Courtney, 1995; Shaw, 2006; Wells & Guo, 1999). It is possible that re-entries to foster care may occur for reasons other than maltreatment (e.g., behavioral placements), and that such placements may be more likely for older children, so the comparability of age effects across these two lines of research is unclear.

Findings with respect to other child demographic characteristics are more equivocal. A number of studies report that Caucasian children are at greater risk of recurrent maltreatment than African American children (Fluke et al., 2005; Lipien & Forthofer, 2004). Other studies report no relation of race/ethnicity to re-maltreatment (Wolock, Sherman, Feldman, & Metzger, 2001). African American youth appear to be at greater risk of foster care reentry following reunification (Courtney, 1995; Jones, 1998; Shaw, 2006; Wells & Guo, 1999) and Hispanic children are less likely to reenter foster care (Terling, 1999). Gender has been found to have limited relation to risk of recurrent maltreatment (Lipien & Forthofer, 2004) or foster care reentry (Shaw, 2006; Wells & Guo, 1999).

Child mental health and physical disability

Child mental health problems or physical disabilities consistently have been linked with an increased risk of recurrent maltreatment (DePanfilis & Zuravin, 1999; Fluke et al., 2005; Fuller, 2005), and reentry to foster care (Courtney, 1995; Jones, 1998).

Family structure

The type of family structure in which a child is cared for (e.g., married couple, unmarried couple, single parent) has received some empirical support as a predictor of recurrent maltreatment events. Children living in single-parent homes appear to be at greater risk of recurrent maltreatment (Fuller, 2005; Fuller, Wells, & Cotton, 2001) and reentry to foster

care (Shaw, 2006; Wulczyn, 2004) – though some studies have not reported such effects (Wells & Guo, 2004; Wolock et al., 2001).

Type of maltreatment

Neglect consistently has been linked to increased risk of recurrent maltreatment compared to physical or sexual abuse (DePanfilis & Zuravin, 1999; Fluke et al., 2005; Fluke et al., 1999; Fuller et al., 2001; Lipien & Forthofer, 2004). The effects of maltreatment type on reentry to foster care are far less clear. Terling (1999) observed greater risk among physically abused children, while Wells and Guo (1999) observed lower risk among physically abused children. Jonson-Reid (2003) observed lower risk among neglected children, while Shaw (2006) observed lower risk among sexually abused children.

Prior history of foster care placement

The relationship of prior foster care placements to re-maltreatment appears to depend on the event outcome being examined. Fluke et al. (2005), for example, reported that prior foster care placement was associated with reduced risk for re-maltreatment among cases remaining in parental custody. Others report that a history of repeated foster care placements increased risk for re-maltreatment (Fuller, 2005) or reentry to foster care (Jonson-Reid, 2003) following reunification.

Length of foster care episode

Jonson-Reid (2003) found that children in foster care for less than two months were significantly more likely to have recurrent maltreatment and more than twice as likely to reenter foster care. Others have observed similar patterns for foster care reentry rates (e.g., Courtney, 1995; Shaw, 2006; Wells & Guo, 1999; Wulczyn, 2004). Interestingly, Fuller (2005) observed that extended foster care episodes (periods greater than three years) were associated with higher rates of recurrent maltreatment, though such stays are relatively uncommon in the general foster care population.

Placement setting

Lipien (2004) observed that foster placements with a relative were associated with lower risk of recurrent maltreatment than non-relative settings. Fuller (2005) observed the opposite effect and Jonson-Reid (2003) found no effect (though she did observe an increased risk for recurrent allegations of maltreatment). Relative foster placements are associated with lower risk of re-entry to care than other placement settings (Courtney, 1995; Frame, Berrick, & Brodowski, 2000; Shaw, 2006; Wells & Guo, 1999).

Hypotheses

The purpose of this study is to examine whether children placed in foster care as a result of maltreatment are at greater risk for subsequent maltreatment following parental reunification. Further, among children placed in care as a result of maltreatment, this study examines whether key child, family, and case characteristics serve to increase risks of recurrent maltreatment following parental reunification. We hypothesize that children placed in foster care as a result of child maltreatment will be at greatest risk of re-maltreatment following reunification compared to children removed for other reasons (e.g., behavior problems). Based upon findings from previous studies of re-maltreatment among CPS cases and reentry among foster care cases we expect that the risk of re-maltreatment among maltreated children reunifying with parents following a period of foster care will be higher: (1) for infants and young children; (2) when the child has a disability or behavioral disorder; (3) among cases with a history of neglect; (4) among children leaving foster care from a

non-relative placement setting; (5) when foster care stays are brief, rather than moderate or extended; and (6) when a child is reunified to a single parent household.

Method

Site

The Rhode Island Department of Children, Youth, and Families (DCYF) is the state agency with statutory responsibility and authority concerning child protection for the state of Rhode Island. DCYF is responsible for conducting CPS investigations of suspected maltreatment, providing post-investigation services following such investigations if deemed necessary and appropriate, and providing a wide range of foster care services in cases where a child must be removed from parental custody. Foster care services encompass a range of settings, including family foster homes (both relative and non-relative households), group homes, institutional settings (e.g., psychiatric hospitalization and assessment settings), supervised apartments, and emergency shelter care. During the period of time under investigation, Rhode Island's foster care population remained relatively stable with exits from foster care ranging from approximately 1,650 to 1,750 children per year. Nearly two-thirds (62%) of exiting cases were reunified with a parent at discharge.

The outcome of interest is occurrence of substantiated child abuse or neglect following reunification with a parent. State statutes define child abuse and neglect as the physical or mental injury, sexual abuse or exploitation, negligent treatment, or maltreatment of a child under the age of eighteen (18) by a person who is responsible for the child's welfare (RIGL 40-11-2). Rhode Island CPS investigators operate within a two-tier system in which allegations may either be substantiated or unfounded.

Sample and Data

Department Caseworkers use the Rhode Island Children's Information System (RICHIST) to enter information related to the foster care placements and child protection investigations. Data on all foster care placements in Rhode Island ending in parental reunification between January 1, 2001 and September 30, 2004 were extracted from RICHIST for a total of 3,259 children. This sample period was chosen to overlap with available maltreatment data through the State's submissions to the National Child Abuse and Neglect Data System (NCANDS). Cases were eligible for inclusion in the sample if they experienced a reunification at any time during the sampling period; in cases where children experienced multiple episodes of foster care, the first exit was selected as the index episode. Because cases could enter at any time during the sampling period, we examined the distribution of possible observation periods among the sample. Median possible follow-up time was 23.7 months; the distribution was slightly kurtotic (-1.21), indicating no clear bias toward entry at any particular time during the sample window. Such a pattern is consistent with expectations for an arbitrary sampling period in such data.

Demographic and case characteristics are provided in Table 1. The first column provides demographic and case information for the full foster care sample; the second and third columns summarize this information for youth in foster care as a result of maltreatment and those in care for reasons other than maltreatment (e.g., child behavior, parental substance use), respectively. Consistent with the hypotheses specified above, the full sample was used to examine the effects of previous maltreatment history on overall rates of maltreatment following reunification, and the maltreatment sample was used to examine rates and predictors of maltreatment recurrence among youth reunifying with parents following foster care placement precipitated by a maltreatment event. As shown in the table, the maltreatment sample included a significantly higher percentage of females than the non-

maltreatment sample (48.3% vs. 41.9%), was significantly younger (8.2 years vs. 13.2 years), had significantly longer foster care stays prior to reunification (7.1 months vs. 3.3 months), were less likely to have a mental health diagnosis (6.2% vs. 10.8%), and experienced different types of foster care placements and family structures upon reunification.

Data Preparation and Coding

Prior to conducting analyses, a number of data elements were recoded for use in the present study. Demographic characteristics (e.g., age, gender, and race) were captured directly from RICHIST, as were: foster care entry reason, final placement setting, and reunification family structure. RICHIST captures a total of 15 potential reasons for entry to foster care. For cases involving maltreatment (i.e., neglect, physical abuse, sexual abuse), the specific type of maltreatment was coded. Sexual abuse was given precedence over other forms of maltreatment, and physical abuse was given precedence over neglect. All other foster care entry reasons were coded to reflect a “non maltreatment” entry reason.

A variable for the final foster care placement setting prior to reunification was collapsed into four broad categories to reflect relative foster homes, non-relative foster homes, group homes (including group homes, residential facilities, supervised apartment settings, and institutional placements such as a psychiatric facility), and emergency shelter placements.

In addition to child and case characteristics drawn directly from RICHIST, a number of covariates were created from state submissions to the Adoption and Foster Care Analysis and Reporting System (AFCARS), which are also extracted from RICHIST. These included prior history of foster care placements, child disability, and mental health status. Prior history of foster care placement was dichotomously coded to reflect whether the index placement in the present study had been preceded by other foster care placements. Child disability status was created as a dichotomous composite variable to reflect whether a child had been diagnosed with a disability including mental retardation, visual or hearing impairment, or a physical disability. Child emotional or behavioral diagnosis was dichotomously coded to reflect whether there was a record of the child being diagnosed with an emotional disturbance under the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 1994). This information was abstracted from caseworker reports on the RICHIST medical profile sheet.

Occurrence of substantiated maltreatment was obtained from State submissions to the National Child Abuse and Neglect Data System (NCANDS), also extracted from RICHIST. NCANDS files contain information on all completed CPS investigations in a given annual period (initially a calendar year, though the submission period was modified to October through September beginning in 2003 to coincide with other federal child welfare reporting requirements). The NCANDS is a voluntary Federal data collection program sponsored by the Children’s Bureau in the Administration on Children, Youth, and Families in the Department of Health and Human Services. For purposes of the present study, maltreatment data were limited to closed CPS investigations resulting in a finding of substantiated maltreatment that occurred subsequent to the date of foster care discharge and prior to any subsequent reentry to foster care. In a small number of cases (3%), maltreatment occurrence coincided with a reentry to foster care, but the record indicated that the reported incident precipitated removal while the investigation proceeded. For these cases, the maltreatment incident was retained for analyses. For an additional 3 percent of cases, a closed investigation resulting in substantiation was precipitated by a report that pre-dated reunification – such incidents were not counted as an event occurrence in the present analyses. These cases had a median length of stay in foster care of 0.2 months (less than 1 week).

Data Analysis

Child, family, and case characteristics associated with hazard of maltreatment occurrence following discharge from foster care were examined within a multivariate framework using Cox proportional hazards modeling (Allison, 1995). This analytic approach is useful for investigating likelihood of event occurrence and factors associated with increased (or decreased) risk in the presence of cases for which the event time is not known due to censoring (i.e., the occurrence or timing of the event under examination is not known for a portion of individuals in the study sample). In the present study, censoring could occur for one of two reasons: (1) a substantiated maltreatment investigation did not occur prior to the end of the observational period, or (2) the youth reentered foster care for reasons other than a new maltreatment incident prior to the end of the observational period. Cox regression models provide unbiased estimates of the effect of a particular characteristic on the likelihood of event occurrence that can be expressed in the form of a risk ratio. Risk ratios correspond to the relative change in the hazard rate of recurrence for a particular value of the variable (e.g., males) compared to the reference category for that variable (e.g., females). In the case of gender, for example, a risk ratio of 2.0 would indicate that males were twice as likely to experience re-maltreatment than females, while a risk ratio of 0.5 would indicate that males were half as likely to experience re-maltreatment.

An index event for each child exiting foster care was selected using the first episode ending during the observational period, and time to event (i.e., maltreatment or re-maltreatment) was defined as the amount of time from foster care discharge until a substantiated finding of maltreatment was recorded. For cases that censored because no record of substantiated maltreatment was recorded following discharge from foster care time was calculated based upon the end of the observational period (i.e., September 30, 2004). For cases that censored as a result of reentry to foster care time was calculated based upon the period from discharge to reentry.

Two Cox regression models were analyzed to examine the impact of hypothesized child, family, and case characteristics on the likelihood of maltreatment following discharge from foster care. The first model examined the risk of maltreatment following reunification among children in care following maltreatment compared to those in care for other reasons (e.g., child behavior problems). A second model, based upon only the sample of maltreated children placed in foster care examined child, family, and case characteristics hypothesized to increase the risk of recurrent maltreatment. A variance corrected approach was used to account for the possible correlation in episode outcomes for sibling groups removed within the same episode by adjusting the standard error through a 'robust standard error' estimation procedure (Allison, 1995). Requisite assumptions of Cox regression modeling (e.g., absence of time dependence among covariate effects) were checked through univariate tests, and no such violations were observed.

Results

Risk of Maltreatment among All Reunified Cases

The first Cox regression model examined whether children who were reunified with their family were more likely to be maltreated if they initially had been placed in foster care as a result of maltreatment. Table 2 provides a summary of those findings. As shown, including maltreatment as a reason for a child being in care significantly improved model fit over the baseline hazard model (chi-square = 69.7 (3), $p < 0.001$), thus supporting the initial hypothesis. Results indicate that rates of maltreatment following reunification were significantly higher for children in care due to neglect (Risk Ratio = 3.26, $p < 0.001$) or physical abuse (Risk Ratio = 1.61, $p < 0.001$) than for reasons other than maltreatment.

Rates of maltreatment following reunification did not differ for youth in care as a result of sexual abuse (Risk Ratio = 1.16, $p = 0.70$), though the risk ratio was in the hypothesized direction. Based upon these findings, only those children placed in care as a result of maltreatment were included in subsequent analyses examining risk factors associated with re-maltreatment among reunified children.

Risks of Re-maltreatment among Reunified Children in Foster Care for Maltreatment

Cox Proportional Hazard modeling was used to investigate the rate of recurrent maltreatment among the maltreatment sample ($n = 1,208$), and to examine the relation of child and case characteristics hypothesized to influence rates of re-maltreatment. Figure 1 provides an estimate of the cumulative survival function depicting the rate of re-maltreatment. Survival rates indicate that the risk during the first year appears relatively constant, with 8% of cases experiencing a new substantiated incident of maltreatment by 6-months, and 16% of cases by 12-months. After this period, the rate begins to decline. At 24-months approximately 23% of cases have experienced a new maltreatment incident, and at 36-months approximately 30% of cases have experienced a new maltreatment incident.

The results of the Cox model are provided in Table 3. The inclusion of covariates in this model significantly improved model fit over that of the baseline hazard model (chi-square = 53.8 (21), $p < 0.001$). A number of significant risk and protective factors emerged in the multivariate analyses. Among child demographic characteristics, age was found to be a significant factor (chi-square = 14.6 (4), $p < 0.01$). Compared to infants (age 0 to 1 year), there was a statistically significant decrease in risk among older adolescents (age 16 to 20 years; Risk Ratio = 0.14, $p = 0.01$). Significant effects were not observed for gender, race or ethnicity, child disability status, or mental health diagnostic status.

A number of case characteristics also demonstrated significant effects with respect to rates of re-maltreatment. Children with a history of repeated placements in foster care prior to the most recent event were significantly more likely to be re-maltreated following reunification (Risk Ratio = 2.06, $p < 0.01$). A trend-level effect was observed for type of maltreatment resulting in foster placement (chi-square = 5.54 (2), $p = 0.06$). Compared to youth placed in foster care for child neglect, those placed in foster care for physical abuse had significantly lower rates of re-maltreatment following reunification (Risk Ratio = 0.58, $p = 0.05$), though differences among neglect and sexual abuse did not differ statistically. Final placement prior to reunification had a significant effect on re-maltreatment as well (chi-square = 10.60 (3), $p = 0.01$). Compared to youth exiting care from a relative foster home setting, youth exiting from a non-relative foster home had significantly higher rates of re-maltreatment (Risk Ratio = 1.94, $p = 0.01$). Contrary to hypotheses, rates of re-maltreatment did not differ by length of stay in foster care prior to reunification or by the type of parental household to which youth were reunified.

Subsequent Maltreatment Characteristics

As a follow-up analysis, we examined the types of re-maltreatment that were substantiated following reunification. The majority of re-maltreatment incidents involved neglect (81.0%), followed by physical abuse (13.7%), sexual abuse (3.5%), and emotional abuse (1.8%). This represents a dramatic increase in rates of neglect for subsequent incidents following the index maltreatment event that resulted in foster care placement for the sample.

Discussion

The results of this study provide further evidence that a significant portion of children exiting foster care to reunification are at risk for subsequent maltreatment, particularly if

placement in foster care was precipitated by maltreatment (i.e., neglect or physical abuse). Compared to children placed in foster care for non-maltreatment reasons, risk nearly doubled for children placed in foster care as a result of physical abuse and more than tripled for children placed in foster care as a result of neglect. Among children placed in foster care due to maltreatment, the risk for re-maltreatment was highest during the first 12-months following reunification and then began to decline over time. Within three years, nearly one-third (30%) of cases experienced a new incident of substantiated maltreatment. Since official substantiation of recurrent maltreatment represents a high standard of the incidence of abuse or neglect, the actual rates of maltreatment experienced are likely higher.

The analysis of risk factors associated with re-maltreatment among those children in care for abuse or neglect revealed that foster care experiences continue to play a major role in risk following reunification. In particular, history of prior foster care placements and type of foster care placement before reunification were strongly related to risk; history of prior foster care placements more than doubled the risk of re-maltreatment. This finding is consistent with results from Jonson-Reid (2003) in which prior placements were found to increase risk for reentry.

Similarly, youth exiting care from a non-relative foster home placement were nearly twice as likely to be re-maltreated as those exiting from a relative foster home placement. Jonson-Reid (2003) observed a similar (though not as strong) effect associated with non-relative homes and re-allegation to CPS, though this effect did not hold for re-substantiation. The Jonson-Reid analyses included cases that exited care to a relative, rather than restricting the sample to those youth exiting to parental reunification, and reported that such placements were associated with decreased risk of subsequent CPS contact – which may account for the slight difference in findings from our study. One potential explanation for effects observed in this study is that non-relative placements are associated with more expedited reunification outcomes than relative placements (e.g., Connell et al., 2006; Courtney & Wong, 1996). These shorter lengths of stay may provide insufficient time to prepare the family and the child for reunification. Others have observed that kinship or relative placements are associated with greater planning and occurrence of parental visitation while in care (Davis, Landsverk, Newton, & Ganger, 1996). It may be that opportunities for contact while in foster care reduce the risk of maltreatment recurrence upon reunification, though this requires direct study in future research, since visitation, per se, was not found to be associated with reunification stability by Davis et al. (1996).

With respect to child age and maltreatment rates following reunification, our findings differ from previous related research. Jonson-Reid (2003) observed that children younger than 5 years old were most likely to be re-maltreated following reunification, and Fuller (2005) found higher re-maltreatment rates following reunification among infants. In this study, older adolescents, 16–20 years old, were found to be at a greatly reduced risk for re-maltreatment, likely due in part to aging out of the CPS system, but higher risk for re-maltreatment among infants was not supported. Our findings are consistent with others who have reported that older youth who remained in parental custody were less likely to experience maltreatment following an index maltreatment event (Fluke et al., 2005; Fluke et al., 1999).

The absence of effects observed for child disability, child behavioral disorder, single parent households, and length of stay in foster care prior to reunification, was not expected. Previous research with youth remaining in parental custody consistently has shown that child emotional and behavioral problems are associated with increased risk of re-maltreatment (DePanfilis & Zuravin, 1999; Fluke et al., 2005; Fuller, 2005), so it may be that foster placements provide a means for reducing risk. We do know, for example that

child disability status and the presence of emotional or behavioral diagnoses are associated with delays in reunification for youth placed in foster care (Connell et al., 2006). It may be that foster care placement and receipt of child and family services offset the effects of these risk factors, even though some studies have shown that service receipt is associated with higher rates of re-maltreatment (DePanfilis & Zuravin, 2002). Measurement of the variables for child disability and mental health diagnosis could contribute to the lack of significant findings. For example, DePanfilis and Zuravin found that a construct of “child vulnerability” was related to increased risk for recurrent maltreatment, but that construct was composed of the presence of mental health problems along with two additional indicators of vulnerability. The current study relied on caseworker-reported data in the foster care administrative record, which may under-represent the actual presence or severity of potential conditions. Findings with respect to family structure have been only inconsistently demonstrated in previous studies (Fuller et al., 2001; Wells & Guo, 2004), so it may be that such effects are dependent on other contextual influences, as well.

A somewhat unanticipated result was the absence of any effect associated with length of stay in foster care as a predictor of re-maltreatment. Jonson-Reid (2003) observed that brief foster care stays were associated with higher risk of subsequent maltreatment. In contrast, Fuller (2005) observed higher risks associated with extended stays (i.e., longer than three years) – but the sample was quite small and the follow-up period was only 60 days. The present study found that length of stay was not significantly related to risk of re-maltreatment following reunification. The larger sample size and longer follow-up period in the present study suggests that the conflicting findings obtained from the limited research on remaltreatment following reunification may have been spurious.

Descriptive findings with respect to the nature of subsequent maltreatment incidents suggest that children exiting foster care are at particular risk of exposure to parental neglect. This should come as little surprise since neglect represents a primary pathway into foster care placement both for our sample and in other studies. However, the increased risk of subsequent neglect suggests that child welfare agencies must do more to address underlying and chronic conditions associated with neglect, such as poverty (Slack, Holl, McDaniel, Yoo, & Bolger, 2004). When benefits or entitlements are contingent on having child custody, foster care placement may place an added strain on low-income families. To address chronic precipitating conditions, such as poverty, that are associated with neglect, more comprehensive family-focused interventions are needed. DePanfilis and Dubowitz (2005) have demonstrated support for one such intervention, Family Connections, as a means to reduce recurrent neglect among families known to CPS.

The present study suggests that a unique conceptual framework may be needed in order to understand better the conditions that lead to re-maltreatment following reunification. Since so little previous research had been conducted on this topic, the empirical literature concerning re-maltreatment and reentry, respectively, was used to frame hypotheses. However, as noted in the summary of findings above, the study hypotheses were only partially supported. As expected, children who were previously neglected or abused were at higher risk of maltreatment following reunification. Further, children with a history of repeated foster care episodes or who were reunified from a non-relative placement, appeared to be at highest risk of re-maltreatment. Contrary to expectations drawn from these literatures, children with a disability or a behavioral disorder, infants, and those living in single parent households were not more likely to be re-maltreated following reunification. The mechanisms underlying maltreatment following reunification may be somewhat different from those resulting from other circumstances in which re-maltreatment occurs (i.e., for youth remaining in the care of their parents following a CPS investigation) or those underlying re-entry into foster care. The development of effective interventions to reduce

risk of re-maltreatment following reunification may require identifying its unique conceptual niche among other forms of re-maltreatment and foster care reentry.

The present study has several limitations, primarily resulting from the reliance on administrative data. Although use of such data has become increasingly common within child welfare research, there are known limitations to its use (Drake & Jonson-Reid, 1999; English, Brandford, & Coghlan, 2000). Because administrative data sources are typically not developed to carry out research studies, data may be limited in scope and critical factors thought to be associated with maltreatment recurrence may not be available or accurately captured. In addition, administrative data systems are subject to missing or mis-entered data, particularly because such information often is entered by caseworkers who are balancing a number of competing demands on their time. More detailed information about both the child and family-of-origin were not available and may have helped to explain the relation of child characteristics and placement experiences to re-maltreatment rates. The limitation of using administrative data notwithstanding, the use of a statewide cohort over an extended follow-up period adds to the limited number of studies examining maltreatment risks following reunification – particularly since previous studies have employed relatively small samples and limited follow-up periods.

An additional limitation of the study relates to the generalizability of findings to other settings and populations. Our sample was drawn from statewide records for foster care youth in a particular geographic region (a small New England state). Policies and practices regarding foster care placement, parental reunification, and decision making within the CPS investigation process differ from state-to-state. Such differences may also have an impact on patterns of re-maltreatment following reunification. Further research is needed to determine whether differences in state policies exert such an influence in order to inform our understanding of the generalizability of state-specific findings. In addition, the factors contributing to re-maltreatment in this sample were found for children exiting foster care placements to parental reunification; any generalization to other populations of children involved with CPS or experiencing other permanency-related outcomes (e.g., guardianship, adoption, placement with a relative) should be made with caution.

Our findings offer a number of important implications both for child welfare practice and future research. First, the increased risk among children placed in foster care as a result of maltreatment suggests that particular attention be devoted to services for these parents and families prior to reunification. Further, because risk for re-maltreatment appears to remain relatively high during the first year, there may be a particular need to support high risk families following reunification. Cases that have a history of repeated foster care placements would clearly represent one such risk group; cases in which neglect was involved also represent such a group, especially since recurrent neglect appears to be a particular risk among subsequent incidents. More research also is needed to identify strategies that reduce maltreatment risk among children placed in non-relative placements – whether this is through increased opportunities for visitation or utilization of effective family reunification support services. Finally, future research should incorporate more extensive child and family indicators of risk and protection, and explore potential interactions between these characteristics and demographic or placement experiences in predicting the risk of maltreatment recurrence.

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Practice Implications

This study suggests that services should be developed to minimize the risk for recurrent maltreatment following reunification. Services would be most useful for high-risk cases prior to reunification and during the first year following reunification. Understanding the risks associated with maltreatment will help guide development of appropriate interventions.

Figure 1.
Cumulative survival for re-maltreatment among maltreatment foster care sample following reunification.

Table 1
Demographic and case characteristics of children exiting foster care to reunification.

Variable	Full Foster Care Sample		Maltreatment Sample		Non-Maltreatment Sample		Significant Difference
	N	%	N	%	N	%	
Gender							
Male	1783	54.7	616	51.0	1167	56.9	**
Female	1443	44.3	584	48.3	859	41.9	**
Missing	33	1.0	8	0.7	25	1.2	
Age							
Mean (s.d.)	11.3 years (5.7 years)		8.2 years (5.5 years)		13.2 years (4.9 years)		**
0-1	329	10.1	197	16.3	132	6.4	**
2-5	458	14.1	316	26.2	142	6.9	**
6-10	413	12.7	265	21.9	148	7.2	**
11-15	1297	39.8	294	24.3	1003	48.9	**
16-21	729	22.4	128	10.6	601	29.3	**
Missing	33	1.0	8	0.7	25	1.2	
Race/Ethnicity							
White	1882	57.7	684	56.6	1198	58.4	
Black	554	17.0	203	16.8	351	17.1	
Hispanic	523	16.0	205	17.0	318	15.5	
Other	209	6.4	89	7.4	120	5.9	
Missing	91	2.8	27	2.2	64	3.1	
Child Risk Factors							
Disability	476	14.6	164	13.6	312	15.2	
Mental Health Diag.	297	9.1	75	6.2	222	10.8	**
Prior History of Foster Care							
Yes	606	18.6	215	17.8	391	19.1	**
No	2312	70.9	941	77.9	1371	66.8	**
Missing	341	10.5	52	4.3	289	14.1	**
Foster Care Entry Reason							
Neglect	757	23.2	757	62.7	n/a	n/a	n/a
Physical abuse	362	11.1	362	29.9	n/a	n/a	n/a
Sexual abuse	89	2.7	89	7.4	n/a	n/a	n/a
No Maltreatment	2051	62.9	n/a	n/a	2051	100.0	n/a
Length of Stay (LOS)							
Median LOS	5.0 months		7.1 months		3.3 months		**

Variable	Full Foster Care Sample		Maltreatment Sample		Non-Maltreatment Sample		Significant Difference	
	N	%	N	%	N	%		
Final Placement Setting in Foster Care	Brief (< 3 months)	1394	42.8	388	27.8	1006	49.0	**
	Moderate (3–18 months.)	1341	41.1	543	40.5	798	38.9	**
	Extended (> 18 months.)	524	16.1	277	22.9	247	12.0	**
Reunification Family Structure	Relative foster	660	20.3	402	33.3	258	12.6	**
	Non-relative foster	803	24.6	470	38.9	333	16.2	**
	Group home	1256	38.5	169	14.0	1087	53.0	**
	Emergency shelter	540	16.6	167	13.8	373	18.2	**
Reunification Family Structure	Single mother	1979	60.7	757	62.7	1222	59.6	*
	Single father	390	12.0	182	15.1	208	10.1	**
	Married couple	713	21.9	179	14.8	534	26.0	**
	Unmarried couple	177	5.4	90	7.5	87	4.2	*

* p<0.05;

** p<0.01.

Table 2
Cox regression model for substantiated maltreatment following reunification (full foster care reunification sample).

Variable	B	Std. error	Risk Ratio	95% CI	
				Lower	Upper
Foster Care Entry Reason					
No maltreatment ^a	-	-	-	-	-
Neglect	1.18	0.11	3.26**	2.61	4.07
Physical abuse	0.48	0.17	1.61**	1.16	2.24
Sexual abuse	0.15	0.39	1.16	0.54	2.47
Event/censored values:					
Event:	369				
Censored:	2,890				
Total:	3,259				
% Censored:	88.7%				
Test of null hypothesis (all parameters=0)					
	Without covariates	With covariates	Model Chi-square	df	p
-2 log L	5,528.2	5,421.2	69.7	3	<0.001

* p< 0.05;
** p< 0.01.
^aReference category

Table 3

Cox regression model for substantiated re-maltreatment following reunification for children initially removed due to maltreatment.

Variable	B	Std. error	Risk Ratio	95% CI	
				Lower	Upper
Age					
0–1 ^a	-	-	-	-	-
2–5	0.27	0.26	1.31	0.79	2.15
6–10	-0.37	0.32	0.69	0.37	1.29
11–15	0.00	0.35	1.00	0.50	1.99
16–20	-1.97	0.78	0.14**	0.03	0.65
Gender					
Female ^a	-	-	-	-	-
Male	-0.17	0.18	0.84	0.59	1.20
Race/Ethnicity					
Caucasian ^a	-	-	-	-	-
African-American	-0.25	0.36	0.78	0.39	1.58
Hispanic	-0.31	0.29	0.73	0.42	1.29
Other	0.39	0.41	1.48	0.66	3.34
Child Disability ^b	-0.19	0.36	0.83	0.41	1.69
Child DSM-Diagnosis ^b	-0.31	1.37	0.73	0.05	10.60
Prior History of Foster Care ^b	0.72	0.26	2.06**	1.23	3.34
Foster Care Entry Reason					
Neglect ^a	-	-	-	-	-
Physical abuse	-0.55	0.27	0.58*	0.34	0.99
Sexual abuse	-0.73	0.46	0.48	0.19	1.19
Length of Stay					
Brief (< 3 months) ^a	-	-	-	-	-
Moderate (3–18 months)	0.08	0.32	1.08	0.58	2.03
Extended (> 18 months)	0.39	0.37	1.48	0.72	3.05
Final Placement Setting					

Variable	B	Std. error	Risk Ratio	95% CI	
				Lower	Upper
Relative foster care ^a	-	-	-	-	-
Non-relative foster care	0.66	0.27	1.94**	1.15	3.29
Group home	-0.17	0.49	0.85	0.33	2.21
Emergency shelter	0.14	0.45	1.15	0.48	2.76
Reunification Family Structure					
Single mother ^a	-	-	-	-	-
Single father	0.24	0.32	1.27	0.67	2.39
Unmarried couple	0.18	0.41	1.19	0.53	2.66
Married couple	-0.37	0.29	0.69	0.39	1.21

Event/censored values:

Event:	179
Censored:	894
Total:	1073
% Censored:	83.3%

Test of null hypothesis (all parameters=0)

	Without covariates	With covariates	Model Chi-square	df	p
-2 log L	2,300.6	2,200.9	53.8	21	<0.001

^t p<0.10;

* p<0.05;

** p<0.01.

^aReference category

^bFor Child Disability, Child Mental Health Diagnosis, and Prior History of Foster Care the reference category is "none."