Testing if Social Services Prevent Fatal Child Maltreatment Among a Sample of Children Previously Known to Child Protective Services

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Abstract

The purpose of this article was to examine the potential impact of child welfare services on the risk for fatal child maltreatment. This was conducted using a subsample of children who were identified as "prior victims" in the National Child Abuse and Neglect Data System from 2008 to 2012. At the multivariate level, the analyses show that case management services act to protect children from death as do family support services, family preservation services, and foster care, but that the results vary by type of maltreatment experienced. The author recommends that before strong conclusions are drawn, additional research in this area is warranted.

In 2013, 1,520 children or 2.04 per 100,000 children in the United States died as a result of abuse or neglect (U.S. Department of Health & Human Services, 2015). Research has focused on child and family characteristics that are associated with risk and protective factors for child maltreatment fatalities (CMFs; Anderson, Ambrosino, Valentine, & Lauderdale, 1983; Schnitzer & Ewigman, 2008; Stiffman, Schnitzer, Adam, Kruse, & Ewigman, 2002), and a recent examination used social science theory to predict and explain CMFs (Douglas, 2015). There is only a small body of research that has examined the use of social services (Douglas, 2013; Douglas, 2014; Chance & Scannapieco, 2002) among CMF victims, but none of that research has used multivariate analyses, which would allow researchers to consider multiple factors at once in order to determine those which are most important and influential. The field of child welfare knowledge could be expanded by research which focuses on the unique role that services play in potentially lowering the risk for CMFs, using data sets with a large sample and appropriate statistical techniques. This article addresses some of these gaps.

CMFs

A CMF is defined as the "death of a child as a result of abuse and neglect, because either an injury resulting from the abuse and neglect was the cause of death, or abuse and neglect were contributing factors to the cause of death" (U.S. Department of Health & Human Services, 2015, p. 107). Data from the U.S. Department of Health & Human Services show that children die from different types of maltreatment. In 2013, 71.4.0% of victims experienced neglect and 46.8% experienced physical abuse; this sums to more than 100% because victims can experience both abuse and neglect (U.S. Department of Health & Human Services, 2015). A small body of research shows that fatality victims who die from physical abuse versus neglect vary with regard to victim and family characteristics (Douglas, 2014; Damashek, Nelson, & Bonner, 2013). Because research on non-fatal maltreatment also shows that abuse and neglect spring from different child and family risk factors (Stith et al., 2009), the statistical models employed in this article will test the influence of social services on risk for fatality by the type of maltreatment.

Victims of fatal child abuse or neglect are very young. CMFs result from a wide variety of inflicted and uninflected behaviors on the part of caretakers. This can include actively killing a child through beatings, a shaking injury, or suffocation, or passively killing a child by not providing necessary medical treatment, leaving a newborn unattended, or not providing necessary supervision for children (National Child Abuse and Neglect Data System [NCANDS], 2000). In 2013, 46.5% of CMF victims in the United States were less than 1 year old and 73.9% were less than 3 years old

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(U.S. Department of Health & Human Services, 2015). Males tend to be the victims of CMFs slightly more often than females, but that difference is rarely statistically significant (Lucas et al., 2002). African American/Black children tend to be more at risk for fatal maltreatment (Herman-Giddens, Smith, Mittal, Carlson, & Butts, 2003; Kunz & Bahr, 1996), which is consistent with nonfatal child maltreatment (Knott & Donovan, 2010). Birth and step/substitute parents are most often the perpetrators of CMFs. In 2013, only 17% of fatalities were perpetrated by individuals without a parental relationship to the child. Those most often responsible for children's deaths are mothers (27.7%), followed by mothers and fathers together (24.6%), and then fathers acting alone (12.4%; U.S. Department of Health & Human Services, 2015). Perpetrators are also generally in early adulthood (Chance & Scannapieco, 2002; Herman-Giddens et al., 2003).

The Social/Economic Stress Model of Child Maltreatment

The most common theory of nonfatal child maltreatment is the social/economic stress model, which emerged in the 1970s (Gelles, 1973). This model explains that social/economic stressors, such as poverty, racism, low education, housing difficulties, domestic violence, and so forth, take a toll on families and place children at an increased risk for maltreatment (Jaffe, Campbell, Hamilton, & Juodis, 2012; Stith et al., 2009; World Health Organization, 2001). Research using varying methodology shows a strong link between poverty and being at an increased risk for nonfatal maltreatment (Merritt, 2009; Slack, Holl, McDaniel, Yoo, & Bolger, 2004), and one study found that many elements of the social/economic stress model were related to CMFs (Douglas, 2015). The social/economic stress model still is the foundation for the modern-day child welfare and social service system. This approach suggests that when families receive supportive services, it will alleviate their stress and the risk for child maltreatment declines (Delsordo & Leavitt, 1974; Gelles, 1973).

Social Services and the Prevention of Nonfatal Child Maltreatment

There is a rich literature which focuses on the efficacy of social service intervention in the prevention of nonfatal child maltreatment at the primary, secondary, and tertiary levels. The most common type of prevention services have been offered in families' homes, such as early home visitation services, where parents of new children receive in-home services about child development, parenting, the parent–child relationship, and other information, such as how to receive social welfare services, developing and maintaining healthy relationships, and the like (Guterman, 2001). The early literature on home visiting programs was very promising, showing that parents who received home visiting services were less likely to be the subject of a report to child protective services (Eckenrode, 2000; Green, Power, Steinbook, & Gaines, 1981; Guterman, 1999; Olds, Henderson, Chamberlin, & Tatelbaum, 1986). Today, there is

less evidence to support this with some exceptions (Lowell, Carter, Godoy, Paulicin, & Briggs-Gowan, 2011; Olds, Eckenrode, Henderson, & et al., 1997; Silovsky et al., 2011).

Parent education is another type of service that has been widely used in the child welfare profession. Positive Parenting Program, or Triple P, is one of the few programs that have found positive outcomes in parent and child behavior and that have been found to reduce the likelihood of physical abuse (Poole, Seal, & Taylor, 2014). This was the case even in a population-based study that provided parenting education at all levels of prevention to a random selection of 18 counties (Prinz, Sanders, Shapiro, Whitaker, & Lutzker, 2009). The results showed 340 fewer cases of substantiated child maltreatment, 240 fewer foster care placements, and 60 fewer injuries caused by child maltreatment injury, as determined by hospitals and emergency rooms—as compared with the counties without the intervention.

A final type of service includes parent training programs, such as parent–child interaction therapy (PCIT; Barnett, Rosenberg, Rosenberg, Osofsky, & Wolford, 2014; Willheim, 2013; Wright, 1986), which largely focuses on the way that parents interact with their children by building and strengthening the parent–child dyad (Funderburk & Elherg, 2011; Urquiza & McNeil, 1996). A number of studies have found a positive relationship between PCIT and reductions in being at risk for and in actual instances of child maltreatment, especially with regard to physical abuse (Chaffin, Funderburk, Bard, Valle, & Gurwitch, 2011; Chaffin et al., 2004; Timmer, Urquiza, Zebell, & McGrath, 2005), even years after treatment completion (Chaffin et al., 2004).

Social Services and Prevention of Fatal Child Maltreatment

The early literature on CMFs suggested that a lack of social services might be linked to fatalities because social work professionals may have missed an opportunity to take protective action for a child (Fein, 1979). The 2012 report of the Sacramento County (California) Child Death Review team posits a negative relationship between the funding of child maltreatment prevention programs and the rate of CMFs, but inadequate methodological controls prevent firm conclusions from being established (Sacramento County Child Death Review Team, 2012).

Only a small body of research exists with regard to understanding the services that families receive prior to a maltreatment fatality. A descriptive study which asked child welfare workers to recount the services that families received prior to a fatality showed that never more than one third of families were receiving services (Douglas, 2013). About one third of families completed parenting education and were receiving counseling or psychotherapy. A much smaller percentage, 14%, were receiving in-home services when the child died. Further 40% indicated that even though the parents were referred for services, they were not using them regularly. This study showed that there was no difference in use or receipt of services based

on age of the child. But, this same study found that there is some indication that receipt of services among fatality victims might differ depending on whether the child was experiencing abuse versus neglect (Douglas, 2014). Specifically, the study found that the parents of children who died from neglect were more likely to receive psychotherapy. There was also a trend indicating that neglectful parents may be more likely to be attending parenting education classes. Overall, neglectful parents might be more likely to have been referred but less likely to attend services. Thus, the current study will compare service use by the type of maltreatment experienced by victims.

Other research, using the NCANDS data, showed that children who die as a result of maltreatment come from families that were receiving fewer services in the areas of family support, foster care, court-appointed representative, case management, counseling, education and training, information and referral services, mental health services, and substance abuse services (Douglas & Mohn, 2014). This particular study was conducted using bivariate analyses only using only 1 year of NCANDS data. The current study will use multivariate analyses and 5 years of data from NCANDS.

Finally, research consistently shows that a smaller proportion of children are killed by foster parents than their natural, adoptive, or other substitute parents (U.S. Department of Health & Human Services, 2015). When children are removed from parents who are unsafe, their risk from that harm is immediately reduced. This raises the question of what other services might reduce the risk for CMFs outside of foster care. Thus, the analyses in this article will be conducted on all prior victims who were known to the child welfare system and a subsample of prior victims who did not receive foster care services.

Purpose of Study and Research Questions

This article begins to address the gaps in understanding the potential impact of social services on risk for CMF among a national sample of children who are known to child protective services. Roughly 50–70% of CMF victims are unknown to child welfare services at the time of their death (Anderson et al., 1983; Damashek et al., 2013). In such instances, the first report to child protective service would be to report the fatality; if there are no surviving siblings, very little information would be collected on the family and no services would have been provided. The purpose of this article is to use case information to predict when the delivery of a social service might reduce the potential for fatality. Thus, this article uses the NCANDS to focus on cases that were already known to child protective services prior to the fatality because those are the cases that already involve intervention. Analyses were also conducted separately on a subsample of children who were not placed in foster care as a way to understand the potential impact of social services on children who remain in households with caretakers substantiated for maltreatment. The analyses are considered exploratory because this is the first time that such analyses have been undertaken and a wide range of services that are traditionally offered to families working with the child

welfare system were examined. The following questions were addressed:

1. Are any of the traditional social services that are offered to families involved in the child welfare system associated with a reduction in the potential for a maltreatment fatality?
2. Are any of the traditional social services that are offered to families involved in the child welfare system and who do not have children in foster care associated with a reduction in the potential for a maltreatment fatality?
3. If so, do any of these associations vary by type of maltreatment?

Method

Data

NCANDS was used to address the questions posed in this article; this data set is the primary source of U.S. national information on abused and neglected children known to state child protective service agencies, their families, and the services that they receive. It is a national data collection system created in response to the requirements of the federal Child Abuse Prevention and Treatment Act (National Data Archive on Child Abuse and Neglect, n.d.). NCANDS is federally sponsored and information is collected annually for the purpose of tracking child maltreatment and the reporting of maltreatment in the United States. State participation is voluntary; the only requirement is that states' child welfare information system must closely align to the NCANDS data structure. Each year, state child welfare investigations or assessments of alleged child abuse/neglect that received a disposition, determination, or outcome are reported to the federal government. Additional information that is reported includes demographic characteristics of children and their perpetrators, types of maltreatment, investigation or assessment dispositions, child and parent characteristics/risk factors, and services provided. Since 2005, nearly every state in the Union has participated in the submission of their data. The child file that was used in this article contains child-level data of all investigated reports of child abuse and/or neglect to state child welfare service agencies. The quantity of data for each case varies considerably since some cases are screened out after an investigation, while others may remain open for years.

The NCANDS data set is publicly available and is housed at the National Data Archive on Child Abuse and Neglect at Cornell University. With few exceptions (such as age of victim/perpetrator), the data in the NCANDS file are dichotomous with $1 = yes$, $2 = no$. The data were recoded so that $1 = yes$, $0 = no$. In instances where a third option was available, "unable to determine," the data were coded as missing. It is noteworthy that in cases involving fatalities, the child and the parent identification numbers are masked as are the county and state identifiers. This is to protect the confidentiality of victims, parents, and surviving siblings. This makes it impossible to conduct analyses which account for the clustering of children

Table 1. Demographic and Descriptive Information of Independent Variables Among Children Who Were Previously Determined by Child Protective Services to be Victims.[a]

	Mean (SD)/%	
Variable	Total Sample of Victims (n = 442,751– 443,199)	CMF Victims (n = 662)
Child age	7.56 (4.76) years	3.51 (4.44)
Child sex—male	49.18	57.70
Child African American/Black	27.39	36.13
Child American Indian/Alaska Native	1.77	0.61
Child Asian	0.45	0.61
Child Caucasian	72.37	65.55
Child Hawaiian/Pacific Islander	0.25	0.15
Child Latino/a	21.79	20.67
Child lives with both parents	20.85	22.05
Child lives with single parent	25.76	17.46
Child lives with single parent and other adult	18.03	22.57
Child has physical disability/medical condition[b]	4.19	5.59
Victim of physical abuse	15.02	27.79
Victim of physical neglect[c]	58.32	44.56
Victim of medical neglect[c]	1.61	4.38
Perpetrator age	33.42 (9.81) years	31.14
Perpetrator sex—male	38.23	35.35
Domestic violence in home	29.15	18.73
Inadequate housing	42.25	51.51
Financial problems	45.05	53.17
Number of prior reports on family	1.83 (0.88)	1.72 (0.72)

Note. CMF = child maltreatment fatalities.
[a]The National Child Abuse and Neglect Data Set has a high level of missing data, especially with regard to parent information. The information displayed here is restricted to cases where information is present on several control variables: perpetrator age and sex, domestic violence in home, inadequate housing, financial problems, and child has physical disability/medical condition. [b]Combined two indicators to create this variable: Child has physical disability or child has medical condition that requires special medical care. [c]These two categories were combined to make one measure of "neglect."

from the same families or counties/states. The staff at the Archive at Cornell provided a data set which had multiple years' worth of data, which provided a larger number of fatalities. The data set for this set of analyses only contained prior victims, from the years 2008 to 2012, and did not include any duplicate cases between years.

Sample

The data file from the archive contained almost 4.6 million cases; data on the dependent variable, maltreatment fatality, were available for 4,588,713 cases, with 1,161 cases ending in maltreatment fatality. Like many large, social service data sets, NCANDS has missing data especially in the parent and family information. Therefore, descriptive information about the sample that is presented in Table 1 is derived from a restricted sample without missing data on the following

variables that were consistently used in the multivariate models: child physical disability/medical condition, perpetrator age, sex, domestic violence in home, inadequate housing, and financial problems. Using this restricted sample, the n ranged from 442,751 to 443,199 cases. The n for the multivariate analyses are noted in Tables 2 and 3. Descriptive statistics show that the children in this sample of prior victims were primary school aged, about half were male, about one quarter were African American, close to three quarters were White, and over one fifth were Latino/a. With regard to living arrangements, children were most likely to live in with a single parent but only slightly. Two thirds of perpetrators are female, and on average, they are in early middle adulthood. Over one quarter had domestic violence in their homes and close to half had inadequate housing or financial problems. Children's primary victimization was neglect (59.93%—combining neglect and medical neglect) as compared with physical abuse (15.02%).

Measures

The dependent variable, maltreatment fatality, is defined in NCANDS as

> The child died as a result of abuse or neglect, because either: (a) an injury resulting from the abuse or neglect was the cause of death; or (b) abuse and/or neglect were contributing factors to the cause of death. (U.S. Department of Health & Human Services, 2015, p. 98)

This single variable was used to determine a fatality outcome. The measure of "primary type of maltreatment" was used to determine whether a child had been the victim of physical abuse or neglect, and the measure of neglect was a combination of physical neglect and medical neglect.

The following independent variables were used in the models to predict fatal child maltreatment. Child, parent, and household characteristics were recorded at the time of the report. Services were recorded if they were "ever" received.

Child characteristics. The models included age, sex, and African American/Black. These variables were selected based on the standing literature and on the absence of large portions of missing data. The variable for child's race is African American/Black was used because this race is overrepresented in the child welfare population (Jimenez, 2006; Knott & Giwa, 2012). Additional child race or ethnicity variables were not included in the analyses because of concerns about missing data. A composite, dichotomous variable was included which captured if a child had a physical disability or a medical condition that required special medical care. Previous research shows that a disability places a child at risk for maltreatment (Connell, Bergeron, Katz, Saunders, & Tebes, 2007; Fluke, Shusterman, Hollinshead, & Yuan, 2008; Leeb, Bitsko, Merrick, & Armour, 2012).

Parent characteristics. The models included parent age and sex. These variables were selected based on the standing literature and on the absence of large portions of missing data.

Table 2. Summary Statistics of Parsimonious Rare Event Logistic Regression Models, Predicting Potential Impact of Social Services on Risk for Fatal Child Maltreatment.

Variable	B	SE	OR	95% Confidence Interval		Wald	*p*
Total sample, *n* = 245,082[a]							
Child age	−0.25	.02	0.78	0.75	0.81	−11.63	<.001
Child sex[b]	0.21	.10	1.23	1.01	1.50	2.11	.035
Child race—African American/Black[c]	0.29	.10	1.34	1.09	1.64	2.82	.005
Child physical disability/medical condition[c]	0.70	.27	2.01	1.18	3.42	2.55	.011
Perpetrator age	0.02	.01	1.02	1.01	1.03	3.05	.002
Domestic violence in home[c]	−1.39	.16	0.25	0.18	0.34	−8.74	<.001
Inadequate housing[c]	−1.34	.23	0.26	0.17	0.41	−5.72	<.001
Financial problems[c]	1.40	.24	4.07	2.56	6.46	5.95	<.001
Family support services[c]	−0.50	.25	0.61	0.37	0.99	−2.00	.046
Family preservation services[c]	−0.37	.22	0.69	0.45	1.06	−1.69	.092
Court appointed representative[c]	−1.00	.41	0.37	0.17	0.82	−2.46	.014
Case management services[c]	−1.39	.30	0.25	0.14	0.45	−4.58	<.001
Physical abuse victims, *n* = 49,591[d]							
Child age	−0.35	.03	0.71	0.66	0.75	−1.27	<.001
Perpetrator age	0.02	.01	1.02	1.01	1.03	2.76	.006
Domestic violence in home[c]	0.29	.17	1.34	0.96	1.86	1.71	.087
Family preservation services[c]	−1.02	.27	0.36	0.21	0.61	−3.74	<.001
Foster care services[c]	−0.44	.20	0.64	0.43	0.95	−2.24	.025
Transportation services[c]	1.00	.41	2.73	1.22	6.09	2.45	.014
Neglect victims, *n* = 870,478[e]							
Child age	−0.21	.03	0.81	0.77	0.85	−8.54	<.001
Child race—African American/Black[c]	0.24	.13	1.27	0.98	1.64	1.83	.067
Child physical disability/medical condition[c]	0.80	.28	2.22	1.29	3.82	2.88	.004
Family support services[c]	−0.64	.39	0.53	0.25	1.13	−1.64	.100
Foster care services[c]	−0.37	.21	0.69	0.46	1.04	−1.77	.077
Case management services[c]	0.44	.18	1.55	1.10	2.20	2.48	.013

Note. CMF = child maltreatment fatalities; OR = odds ratio.
[a]CMF cases predicted in this model = 429. [b]Child sex, where *male* = 1; *female* = 0. [c]Dummy variables, where *yes/present* = 1; *no/not present* = 0. [d]CMF cases predicted in this model = 165. [e]CMF cases predicted in this model = 292.

Household information. The models included information about whether domestic violence was present, which is an indicator of the level of risk in a household. Two variables captured a family's economic stability: inadequate housing and financial problems.

Services. The following variables from the NCANDS data set which measure services received were included in the models: family support services, family preservation services, foster care services, court-appointed representative, case management services, counseling services, employment services, family planning services, health services, home-based services, housing, information and referral services, mental health services, pregnancy and parenting services, substance abuse services, and transportation services. These variables were selected because they are part of the standard services that families involved with the child welfare system receive (Myers, 2011).

Analysis

The first analyses performed were bivariate, correlation analyses between the dependent and independent variables. The results of these analyses are not presented due to space but are available upon request from the author. The variables that had a statistically significant relationship ($p \leq .05$), or a trend toward significance ($p \leq .10$), to the dependent variable were retained for multivariate analyses. Rare event logistic regression, which is an add-on in the statistical program, Stata, was used to predict fatality. Logistic regression is appropriate because the dependent variable is binary, 0 or 1. Rare event logistic regression is used when the dependent variable occurs less than 5% of the time in the data set (King & Zeng, 2001). Even using the restricted sample described in Table 1, a CMF occurred 0.15% of the time in this data set, making rare event logistic regression an appropriate mode of analysis. In each regression analysis, nonsignificant variables were eliminated from the models one at a time. The final models, which are presented in Tables 2 and 3, contain variables with significant (or nearly significant) relationships to the dependent variable.

Results

Services Related to CMFs and by Type of Maltreatment and Age

The first set of analyses that are presented in Table 2 predict fatal child maltreatment regardless of the type of maltreatment.

Table 3. Summary Statistics of Parsimonious Rare Event Logistic Regression Models, Predicting Potential Impact of Social Services on Risk for Fatal Child Maltreatment Among Victims Not Placed in Foster Care.

Independent Variable	B	SE	OR	95% Confidence Interval		Wald	p
Total sample, children not placed in foster care, n = 281,084[a]							
Child age	−0.27	.02	0.76	0.73	0.79	−13.57	<.001
Child Sex[b]	0.26	.09	1.30	1.09	1.55	2.94	.003
Child race—African American/Black[c]	0.30	.09	1.35	1.13	1.63	3.25	.001
Child physical disability/medical condition[c]	1.20	.19	3.33	2.29	4.85	6.31	<.001
Perpetrator age	0.01	.00	1.01	1.00	1.02	2.54	.011
Domestic violence in home[c]	−1.15	.13	0.32	0.25	0.40	−9.21	<.001
Financial problems[c]	0.46	.10	1.58	1.31	1.91	4.73	<.001
Case management services[c]	−0.95	.15	0.39	0.29	0.52	−6.41	<.001
Physical abuse victims, not placed in foster care, n = 52,266[d]							
Child age	−0.36	.03	0.70	0.65	0.74	−11.36	<.001
Child race—African American/Black[c]	0.30	.16	1.35	0.99	1.83	1.91	.056
Perpetrator age	0.02	.01	1.02	1.01	1.03	2.74	.006
Case management services[c]	−0.72	.18	0.48	0.34	0.69	−3.97	<.001
Neglect victims, not placed in foster care, n = 807,159[e]							
Child age	−0.24	.03	0.78	0.74	0.83	−8.99	<.001
Child race—African American/Black[c]	0.33	.13	1.39	1.07	1.81	2.45	.014
Child physical disability/medical condition[c]	1.51	.23	4.51	2.87	7.10	6.51	<.001
Domestic violence in home[c]	0.45	.19	1.57	1.08	2.27	2.36	.018

Note. CMF = child maltreatment fatalities; OR = odds ratio.
[a]CMF cases predicted in this model = 516. [b]Child sex, where *male* = 1; *female* = 0. [c]Dummy variables, where *yes/present* = 1; *no/not present* = 0. [d]CMF cases predicted in this model = 187. [e]CMF cases predicted in this model = 246.

The results indicate that receiving family support services, court-appointed representation, and case management services all significantly reduce the risk for fatality, with odds ratios (OR) ranging from .25–.69 (p ≤ .001–.046). There was also a trend toward significance for family preservation, with OR = .69, p = .092. Other variables that captured the child, parent, and family characteristics were significant in this model as well. Children's risk of fatality declines significantly with each additional year of age (OR = .78, p < .001). Males and African American/Black children are more likely to experience a CMF (OR = 1.23, p = .035; OR = 1.34, p = .005). Children with a physical disability or medical condition were twice as likely to die as children without such a condition (OR = 2.01, p = .011). Having family financial problems also raised a child's risk for CMF by a factor of 4 (OR = 4.07, p < .001). Having domestic violence present in the home and having inadequate housing both reduced the risk for CMF (OR = 0.25, p < .001; OR = .26, p < .001). Finally, the age of the perpetrator was statistically significant, but OR = 1.02; thus, the effect size was very small.

When the sample was restricted to just victims who experienced physical abuse, receiving family preservation and foster care services all reduced the risk for fatality, with OR = .36 (p < .001) and OR = .64 (p = .025), respectively. The receipt of transportation services increased a child's risk for CMF, with OR = 2.73, p = .014. As with the previous model, older children were less likely to experience a CMF (OR = .71, p < .001). There was a trend toward significance that the presence of domestic violence increased risk for fatality (OR = 1.34, p = .087). Finally, age of perpetrator was statistically significant, but OR = 1.02, making that relationship relatively unimportant again.

Among victims who only experienced neglect, there were no services that met the p = .05 criterion to reduce risk for fatality. Two services, family support (OR = .53, p = .100) and foster care (OR = .69, p = .077), showed a trend toward reducing fatalities. Families that received case management services were at an increased risk for fatality (OR = 1.55, p = .013). With regard to child characteristics, older children were less likely to die (OR = .81, p < .001), but children with a physical disability/medical condition had an increased risk for fatality (OR = 2.22, p = .004); there was also a trend significance that African American/Black neglect victims were more at risk for CMF (OR = 1.27, p = .067).

Services Provided to Children and Families Not Receiving Foster Care Services

Table 3 provides the summary statistics for the parsimonious rare events logistic regression analyses among children who did not receive foster care services. For all families, those who received case management services were much less likely to die from maltreatment (OR = .29, p < .001). No other services reduced risk for fatality. With regard to child and family characteristics, older children were less likely to die. Male victims were at an increased risk (OR = 1.30, p = .003) as were African American/Black children (OR = 1.35, p = .001) and children with a physical disability/medical condition (OR = 3.33, p < .001). As with previous models, the age of perpetrator was statistically significant, but OR = 1.02, making that relationship relatively unimportant.

For those children experiencing physical abuse, case management services was associated with a decreased risk of death ($OR = .48$, $p < .001$). With regard to child and perpetrator characteristics, older children were less likely to die from maltreatment ($OR = .70$, $p < .001$), and there was a trend toward significance that African American/Black children are more at risk for CMF ($OR = 1.35$, $p = .056$). As with previous models, the age of perpetrator was statistically significant, but $OR = 1.01$, making that relationship relatively unimportant.

There were no services that were associated with a decrease or an increase in risk for death among children experiencing neglect. A number of child and family characteristics were significantly related to the dependent variable. Older children were less likely to die ($OR = .78$, $p < .001$). But among children experiencing neglect, those who were African American/Black ($OR = 1.39$, $p = .014$) had a physical disability/medical condition ($OR = 4.51$, $p < .001$) or who had domestic violence in the home were more likely to die ($OR = 1.57$, $p = .018$).

Discussion

The purpose of this study was to investigate whether social services that are traditionally offered to families working with the child welfare system are related to a reduction in risk for fatal child maltreatment. Additionally, this article explored whether these relationships might vary by maltreatment type. The most consistent finding is that case management services reduce the risk for death by child abuse or neglect, although this was not true across the board.

Services That Reduce Risk of Maltreatment Fatality

There were six models examined in this study; and the results show that in three of these models, case management services reduced risk of CMF. Three different types of services, family support, family preservation, and foster care, were significantly related to a reduction in CMFs in two of the six models. Court-appointed representation was related to a reduction in CMFs in one of the six models. These findings suggest that core components of traditional child welfare services are related to reductions in CMFs. At the same time, of the 16 social services that were explored, 11 did not predict reductions in fatalities. It is especially noteworthy than none of the services examined were related to reductions in deaths among victims of neglect.

Case management services were negatively and significantly related to reductions in CMFs in three of the six models examined (in the total sample, among all victims not in foster care, and specifically, among physical abuse victims who were not placed in foster care). Children were 60–75% less likely to die if they received case management services. The NCANDS codebook defines case management services as "Services or activities for the arrangement, coordination, and monitoring of services to meet the needs of children and their families" (National Data Archive on Child Abuse and Neglect, 2011, p. 32). It is notable that no other type of service that was examined reduced the risk of fatalities among children who were not placed in foster care. Case management services are considered a staple of U.S. child welfare services (Myers, 2011; Zell, 2006). The conceptualization of case management services, in general, has changed over the past several decades, moving from that of someone who brokers services for clients, to one that integrates a clinical perspective and utilizes different theoretical orientations (Chamberlain & Rapp, 1991). Today, case managers in child welfare practice have largely shifted toward the strength-based orientation of social work practice (Bundy-Fazioli, Briar-Lawson, & Hardiman, 2009; Kemp, Marcenko, Lyons, & Kruzich, 2014; Lietz, 2011; Lietz & Rounds, 2009; Mapp, 2002), although there is limited evidence that it is an effective social work practice technique (Staudt, Howard, & Drake, 2001), especially as it pertains to child welfare practice. Future research could examine the efficacy of different case management approaches, as it relates to reducing risk for fatal child maltreatment. Finally, in one instance, among victims of neglect, case management services increased the risk for fatality. These findings further highlight the importance of future research that examines the role of case management services with regard to CMFs.

Children who came from families that received family support services were less likely to experience a CMF. This was true in the model for the whole sample; there was only a trend toward significance among neglect victims, with a relatively high *p* value at .10. According to the NCANDS codebook, family support services connect families to resources in the community and aim to reduce isolation (National Data Archive on Child Abuse and Neglect, 2011). Children may be less likely to die when receiving these services because their family service needs are being appropriately met or because they are more visible in the community. Research shows that families who receive such services rate them positively, and they mention forming a collaborative relationship with their support worker and not feeling judged (Hardy & Darlington, 2008; Mason, 2012). Efforts to establish the efficacy of family support services have been limited (Sanders & Roach, 2007). More research is needed to determine the important role that family support services play in preventing CMFs.

Other social services that were important in lowering the risk for fatalities were foster care and family preservation, which are at opposite ends of the spectrum, but 26% of the sample received both family preservation and foster care services at some point in their involvement with child welfare services, although obviously not at the same time. The children in the NCANDS data file were 30–40% less likely to die if they received foster care services, and physical abuse victims were 64% less likely to die when family preservation services were used. There is a long-standing scientific and ideological debate regarding whether in-home child welfare services are sufficient to keep children safe from harm or whether child safety is best achieved when children are removed from the care of their parents (Curran & Pfeiffer, 2008; Gelles, 1996). That debate (Bagdasaryan, 2005; Gelles,

2001; Spaid & Fraser, 1991), which more recently includes differential response (Conley, 2007; Conley & Berrick, 2010; Marshall, Charles, Kendrick, & Pakalniskiene, 2010), provides evidence on both ends of the spectrum. The set of analyses presented in this article further that debate by showing support for both types of services being linked to reductions in maltreatment fatality.

Children in the entire sample who received court-appointed representation were about 60% less likely to experience a CMF in their family. In 2013, about one fifth of children involved with the child welfare system in the United States received court-appointed representation (U.S. Department of Health & Human Services, 2015), which could include having an attorney or a guardian *ad litem*. The results of this article are consistent with previous research which suggests that guardians *ad litem* help to promote positive outcomes for children in the child welfare system (Abramson, 1991; Corr & Danner, 2014; Litzelfelner, 2000; Poertner & Press, 1990).

Child, Perpetrator, and Family Risk Factors

There was considerable consistency in the results regarding which children are most at risk for fatality: children who are younger, who are African American/Black, and who have a disability. This confirms previous research which shows that young children are most at risk for fatalities (Klevens & Leeb, 2010; Palusci & Covington, 2014; Paulozzi, 2002) and that Blacks are overrepresented in the child welfare population and among children who die from abuse or neglect (Herman-Giddens et al., 2003; Stiffman et al., 2002; U.S. Department of Health & Human Services, 2013). The child welfare profession acknowledges the risk that domestic violence presents to the safety and well-being of children (Antle et al., 2007; Coohey, 2007; Kohl, Barth, Hazen, & Landsverk, 2005; Morrison & Wasoff, 2012; Pfleiderer, 2007). Some research has even explored the potential impact of living with domestic violence on child homicide (Jaffe et al., 2012), but the findings of this study were inconclusive in that regard. In some instances, having domestic violence present in the home increased risk for death and in others, it decreased risk for death, presumably, because services were set in place. That said, future research should examine the relationship between domestic violence and risk for CMF and the role that services play in intervening and reducing risk for CMF.

With regard to child disability status, one descriptive study found that of children who died of maltreatment deaths, 17% had a disability or chronic illness (Palusci & Covington, 2014). That said, other research found that disability status was not a predictor of CMF (Douglas & Mohn, 2014; Chance & Scannapieco, 2002), even though it has been related to nonfatal child maltreatment (Connell et al., 2007; Fluke et al., 2008; Leeb et al., 2012). The findings of the analyses presented here found that children who have a physical disability or a medical condition are more likely to become CMF victims. Future research should confirm these findings.

Limitations

There are several limitations to this set of analyses. First, the data set has a large amount of missing data, which is a common problem in social service-type data sets (Bellamy, 2008). Despite this, there have been calls from leaders in the field for more researchers to use NCANDS data (Berliner & Finkelhor, 2014). Second, the NCANDS data are not particularly sensitive. The data are dichotomous and do not provide for any variation in the degree to which families might receive services. For example, a parent who is receiving counseling might attend monthly, while another parent might attend weekly. Third, the sample was limited to cases that were known to child protective agencies prior to the child's death, which is a subsample of children who die, which means that many CMF victims are not represented in this sample. Nevertheless, children whose families are working with their child welfare agencies and who are in a position to take protective action are represented in this study. Fourth, several variables of the CMF victims are masked in the NCANDS data. This includes state, county, and other variables which would make it possible to conduct clustered analyses. This is an inherent limitation of the NCANDS data set, but it is prepared thus to protect the confidentiality of the deceased and his or her surviving family members. Fifth, this set of analyses did not examine the receipt of multiple services by a child/family. This is largely due to the amount of missing data in the data set and concerns that the cell sizes would become too small to be statistically valid. This is an area for future research. Despite these limitations, the NCANDS data set provides child welfare researchers with the largest data set of child welfare–involved cases that ended in fatality and allows for the comparison with nonfatal cases, which is a contribution to the literature in and of itself.

Conclusion

This article explored the efficacy of traditional child welfare services in the prevention of CMFs. It is the first such study to use a large, multivariate data set to examine whether and which social services act to reduce risk for CMFs. Future research should be conducted on this same topic, also with large data sets, but with measures that offer more sensitivity in terms of child and family characteristics, presenting problems, and services received and which can also examine the efficacy of those services differentially on physical abuse victims versus neglect victims. This is especially important since the results of this study show that none of the services provided helped to reduce the risk for death among victims of neglect. Social services, such as counseling, substance abuse treatment, housing services, and so forth, are difficult to capture with blunt measures where there is likely to be significant variation in the type of service, frequency, and duration. This may explain why these services were not related to reductions in risk for CMFs. The strongest conclusion of this first set of analyses is that case management services, family support services, foster care, and family preservation services protect physical abuse victims

from the risk for CMFs. These are core elements of child welfare services, past and present, and this article provides justification for why these services, in some level and measure, should be continued and deemed effective.

Declaration of Conflicting Interests

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