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Invited Review

Repeat reports among cases reported for child neglect: A scoping review

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ABSTRACT

Background: In the United States (US), child welfare policy prioritizes prevention of future harm (e.g., repeat reports) after a report of maltreatment. The majority of reports include some form of child neglect, but no prior review of the recurrence literature has focused on neglect.
Objective: This review sought to help guide future research, policy and practice by summarizing recurrence findings related to child neglect with attention to the broader ecological context in which maltreatment occurs.
Participants: The final review included 34 US studies of maltreatment recurrence. Twenty-eight studies compared child neglect with at least one other form of maltreatment and six studies examined recurrence among neglect cases.
Methods: Eleven online databases were searched to locate relevant empirical studies. This review attended specifically to contextualizing findings according to other modifiable factors as well as methodological variation. A scoping review approach was used to summarize findings.
Results: Of the 28 studies comparing neglect to other types of maltreatment, 14 found increased risk for neglect, 12 found no association, and two reported a lower risk. When significant, the effect size ranged from 10% to over three times higher risk for neglect. Poverty or material need was the most commonly included control (15 studies), with two thirds finding that lower resource families had higher risk.
Conclusion: Methodological variability across studies confounds current ability to guide practice or policy. More research is needed that can replicate and extend findings with comparable samples and model specifications that take into account the regional and policy context.

1. Introduction

According to the most recent national report, about 3.5 million children received an investigation or assessment for alleged maltreatment by child protective services (U.S. Department of Health and Human Services [US DHHS], 2019). A recent study estimates that 37.4% of US children are the subject of a child protective service (CPS) investigation before turning 18 (Kim, Wildeman, Jonson-Reid, & Drake, 2017). A key goal of the US CPS system is child safety which is often measured by the prevention of future maltreatment (Jonson-Reid & Drake, 2018). In addition to its import as an explicit goal of CPS involvement, research indicates that the risk of negative and costly outcomes for children increases with recurrent maltreatment (Jaffee & Maikovich-Fong, 2011; Jonson-

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Reid, Kohl, & Drake, 2012).

Understanding the prevalence of recurrent reports is confounded by variations in follow-up periods after a baseline report as well as the type of recurrence measured. Studies report ranges of 20% or less when using brief follow-up periods (e.g., Casanueva et al., 2015; Connell, Bergeron, Katz, Saunders, & Tebes, 2007; English, Marshall, Brummel, & Orme, 1999) to over 60% in a study following children for 7.5 years (Drake, Jonson-Reid, & Sapokaite, 2006). Recurrence rates also vary according to whether the outcome is limited to reports that are substantiated-slightly over 19% of reports nationally (US DHHS, 2019). Using substantiated recurrence as a primary measure of prevalence, however, is problematic given that research suggests that cases that go unsubstantiated may involve equal levels of risk (Drake, Jonson-Reid, Way, & Chung, 2003; Kohl, Jonson-Reid, & Drake, 2009).

Neglect is by far the most common cause for initial reports to CPS, with 75% of children identified as victims of maltreatment being neglected (US DHHS, 2019). It also comprises the majority of recurrent reports (Bae, Solomon, Gelles, & White, 2010; Fluke, Yuan, & Edwards, 1999; Jonson-Reid, Drake, Chung, & Way, 2003). Research consistently finds that neglect is associated with equally high risk of poor longer-term outcomes as other types of maltreatment (Dubowitz & Bennett, 2007; Fang, Brown, Florence, & Mercy, 2012; Gilbert et al., 2009; Jonson-Reid, Drake, & Kohl, 2009). Given its prevalence and associated poor outcomes, one can surmise that neglect is responsible for a large portion of both the systemic and personal costs of maltreatment.

It is therefore important that we understand the best means by which to prevent recurrence and whether or not that varies for children reported for neglect. While there are prior research summaries and reviews of recurrence, none have focused on child neglect (Helie & Bouchard, 2010; White, Hindley, & Jones, 2015). The most recent review was limited to studies through 2009 (White et al., 2015). The present scoping review summarizes what is known about the association of neglect with recurrence in the context of other modifiable factors within an ecological framework.

2. Background

While some research indicates a decline in substantiated physical and sexual abuse from the mid-1990s through 2009, child neglect rates have changed relatively little (Finkelhor & Jones, 2006; Finkelhor, Shattuck, Turner, & Hamby, 2014; Jud, Fegert, & Finkelhor, 2016). Child neglect, despite its contribution to individual and system costs and outcomes, continues to receive less research attention than other forms of maltreatment (Dubowitz & Bennett, 2007; Jud et al., 2016; Stoltenborgh, Bakermans-Kranenburg, & van IJzendoorn, 2013). Further, more attention has been paid to understanding maltreatment onset than to understanding how families flow in and out of the CPS system once reported (Institute of Medicine/National Research Council [IOM/NRC], 2014; Jonson-Reid et al., 2017).

Recurrent reporting and data sources. Much of the recurrence literature relies on administrative data records. While Jenkins and colleagues (2017) expressed some concern that recurrence as measure by official reports may be influenced by factors other than ongoing child safety issues, recurrence research indicates little variation in outcomes despite variation in data sources used. Maltreatment studies using administrative data (official reports) find similar increased risk of poor outcomes and injuries (Jonson-Reid et al., 2012; Thackeray, Minneci, Cooper, Groner, & Deans, 2016) as studies that rely upon caregiver reports (Jaffee & Maikovich-Fong, 2011), or maltreatment measured by case file review (English, Graham, Litrownik, Everson, & Bangdiwala, 2005).

Neglect. Prior findings regarding neglect and risk of recurrence are mixed. Some review articles have concluded that the risk for recurrence is greater for neglect cases, but many studies included in prior reviews did not control for maltreatment type (Carnochan, Rizik-Baer, & Austin, 2013; Helie & Bouchard, 2010; White et al., 2015). For example, in White and colleagues (2015) review only six of the 15 studies included analyzed maltreatment type, with neglect associated with increased recurrence in four of these studies.

Demographic characteristics. In contrast with the relative inattention to neglect, White and colleagues (2015) found greater attention to demographic characteristics. Fourteen studies controlled for age, with younger age typically predicting recurrence. Eleven studies examined the relationship between ethnic/racial group and recurrence with about equal numbers finding increased, decreased or no association. In 10 of 12 studies controlling for child gender, there was no association.

3. Theoretical framework

Child neglect occurs within a larger and intersecting context of individual, family, community and societal factors. Identifying what modifiable factors influence recurrence is key for proactive policy and program planning. As noted in White and colleagues (2015), recurrence studies often rely on an ecological framework that takes into account this larger context. Not all levels of the ecology, however, have received equal attention. Despite general acknowledgement of the variation in regional and state policies related to CPS involved families, it is not clear how often community or policy levels of influence are explored (Jenkins, Tilbury, Mazerolle, & Hayes, 2017; Wildeman & Waldfogel, 2014).

Theories, such as cumulative risk, stress and coping and/or attachment theories, may also inform studies of recurrence (e.g., Diener, Nievar, & Wright, 2003; McCubbin & Patterson, 1983; Solomon, Asberg, Peer, & Prince, 2016). Several caregiver level stressors have been found to be associated with maltreatment such as material needs, substance abuse, mental health, or intimate partner violence (IOM/NRC, 2014; Pelton, 2015). Having a caregiver who lacks parenting skills or has mental health or substance abuse concerns may also impact attachment. In White and colleagues' review (2015) caregiver mental health or substance abuse was tested in eight of 15 studies, with half showing increased risk and half no association. Presumably, child factors (e.g., temperament or special needs) may also create strain on parenting or the parent–child relationship, placing a child at greater risk of maltreatment (Chaffin et al., 2004; Dozier, 2003). The presence of child disability or mental health issues was tested in only a third of the studies in the White and colleagues review (2015). Similarly, a significant literature exists linking poverty to maltreatment occurrence (Pelton,

2015), but less is known about the role of material need in recurrence of maltreatment. Some measure of poverty was assessed in less than half of the studies reviewed and typically not associated with recurrence (White et al., 2015). Finally, community level effects are often mentioned in relation to onset or detection of maltreatment-often about supports or resources available (Coulton, Crampton, Irwin, Spilsbury, & Korbin, 2007). Community level effects were not mentioned in prior reviews (Helie & Bouchard, 2010; White et al., 2015). Of course, families involved with CPS may experience multiple stressors at varying levels of the ecology, and it is possible that cumulative stressors are more important than any single factor (Solomon et al., 2016). Services may offset some of these stressors, but we know less about the content and impact of services families receive following a report (Jonson-Reid et al., 2017). A CPS disposition decision and/or services following a report were included in six studies reviewed by White and colleagues (2015) with mixed findings.

4. Methodological concerns

About a decade ago, Helie and Bouchard's (2010) summary of maltreatment recurrence research concluded that there were several points of divergence in findings related to case characteristics and recurrence. They also highlighted difficulties in summarizing findings given the variation in definitions, sample composition and analytic approaches. White and colleagues (2015) also noted several issues with consistency of findings related to methodological variation-primarily concerning the baseline sample and measurement of the outcome. In contrast, there has been little attention to the role of model specification. The inclusion of controls for appropriate variables in the ecology, whether or not they are statistically significant, may have important influence on study findings. For example, the disproportionality of different racial and ethnic groups within the child welfare population remains a significant concern in child welfare research and policy. Research findings, however, are very different when studies include appropriate controls for poverty and/or nativity (e.g., Dettlaff, Earner, & Phillips, 2009; Putnam-Hornstein, Needell, King, & Johnson-Motoyama, 2013a; Putnam-Hornstein, Needell, & Rhodes, 2013b). In other words, one cannot understand the association between race/ethnicity and CPS involvement without considering these other factors. It is vitally important that findings with practically important implications for policy or practice be replicated in multiple studies that include comparable and theoretically important controls. To support this important goal, the present review attends to model specification as well as variation in sampling and conceptualization of recurrence.

The present review. Three questions were addressed in this review. First, “How is child neglect, compared to other forms of maltreatment, associated with recurrence?” Second, there was a related but methodological question, “In studies that examine the association of neglect and recurrence, what other factors across levels of the ecology are controlled for and/or associated with recurrence?” It is possible that findings regarding the relationship between child neglect and recurrence vary based on the variables controlled. Finally, because neglect encompasses a wide range of possible parental behaviors (e.g., lack of supervision, lack of provision of basic needs, medical neglect, etc.) the third question was “Among neglect reports, what predicts recurrence?”

5. Methods

The present review located and summarized epidemiological investigations of recurrent maltreatment that specifically analyzed neglect and included maltreatment type in multivariate analyses or excluded due to stated lack of significance. Because of the lack of specific attention to neglect in prior reviews, we adopted a broad range for the year of publication to assure we were capturing relevant work that might have been omitted from prior reviews as well as updated studies since 2009 (1998–2018). As suggested by Helie and Bouchard (2010), this review attends to methodological aspects of the studies that may influence results. Particular care was taken to describe the presence or absence of predictive constructs in the analytic models, as well as the actual magnitude of effects (when possible). While very small but statistically significant effects may be of theoretical or academic interest, they may not have practical application for policy or service with the present state of knowledge. This increases the density of information included in tables, but this contextualized information is key to assessing the strength and consistency of findings and identifying gaps for future research. When there is a wide range of independent and dependent variables in a developing literature stream, a more rigid systematic review or meta-analytic approach may be inappropriate (Arksey & O’Malley, 2005). Given the desire to be inclusive of variation across variables and methods to better guide future investigations, we chose a more flexible scoping review approach that does not require a final quantitative summary (Arksey & O’Malley, 2005; Dijkers, 2015).

6. Data sources for studies

Two strategies were used to identify potential studies. First, 11 online literature databases were searched including: Academic Search Premier, America History & Life, Communication Abstracts, Education Full Text, Family and Society, Google Scholar, PsychInfo, PubMed, Scopus, Social Work, and SocIndex databases. As the broadest index, the search began with Google Scholar with results then checked across other databases to attempt to locate all applicable studies. Peer-reviewed articles, dissertations, and prior reviews were included in the search. Second, the key words and references of selected reviews and studies were checked to identify additional articles that may have been missed in the online search.

Inclusion criteria. Overall inclusion criteria were set by the study team in meetings prior to the review. Because of the unique nature of CPS across countries, the present review was limited to research using US samples. There were significant policy changes in the 1970s and 1980s that established the guidelines that are relatively similar today in regard to reporting, safety, and efforts to preserve the family. We therefore excluded studies with baseline sampling frames prior to 1990. Additional inclusion criteria were as

follows. Child neglect had to be reported separately in multivariate models or tested but excluded from the final model due to lack of significance. Studies that examined recurrence among neglect cases were also included. Randomized trials of interventions where only group assignment is included in final analyses were excluded (e.g., Loman & Siegel, 2012). Studies had to report multivariate analyses, but we did not limit studies by analyses type. Studies included had to have sufficient sample size to be able to report stable multivariate estimates. While multivariate models can be conducted with fewer than 200 subjects, we chose a cutoff of 200 subjects at baseline as a reasonable minimum standard for a medium effect (Bujang, Sa'at, & Bakar, 2017; Field & Miles, 2010; VanVoorhis & Morgan, 2007).

Search process. The initial online search was done by a doctoral level research assistant (2nd author) supervised by the first and third authors. The study team collectively decided on the initial nomination of the search terms and inclusion criteria. Because Google Scholar provides a broad coverage across journals and disciplines, this was the first index searched using the advanced search mechanism. The words "maltreatment and (recurrence or re-referrals or repeated reports) returned n = 19,400 results. This was narrowed by adding exact phrase "child neglect" (n = 5060) and again by limiting to studies after 1998 (n = 4310). Adding at least one of the words "recidivism or predict or survival" limited results to 4090. A brief review indicated the search contained a number of manuals or handbooks, but we did not want to exclude reports that might have empirical information, so the search was limited to "not handbook." All 2000 results were scanned for overall inclusion criteria evident in the title or brief abstract and 54 retained for further examination. The foregoing description reflects a common search process, but it should be noted that some indexes have more capability add further limits on a given search.

The two most common reasons for excluding records from the online results were: (1) a study was analyzing an outcome of recurrence rather than predicting recurrence (e.g., delinquency following multiple reports), or (2) a study measured recidivism that was not maltreatment related (e.g., re-arrest by police). Other common documents not retained for the final review included: (1) conceptual or descriptive articles; (2) recurrence studies were not done in the United States, (3) books focused on child neglect generally; (4) studies of interventions that did not break out neglect when measuring outcomes; and, (5) articles assessing screening or risk assessment tools related to an initial report. When there was uncertainty, an article was reviewed with the study team and a final decision was made. The process was repeated across all databases. Once selected for review, references of full text articles were checked to identify additional studies. The repeated online search and citation review resulted in an additional 17 articles. This process resulted in a total of 71 articles and dissertations reviewed in entirety.

All manuscripts were reviewed by the first and second authors to assure inclusion criteria were completely met. Exclusion from the final review was made by consensus among the first four authors. Four reviews were included in the 71 articles, but only used as background sources and to look for additional studies (Carnochan et al., 2013; Helie & Bouchard, 2010; Hindley, Ramchandani, & Jones, 2006; White et al., 2015). Excluded studies at the time of full text review was related to the same inclusion criteria listed above: only bivariate statistics reported, insufficient sample size, samples collected prior to 1990 or outside the US (e.g., DePanfilis & Zuravin, 2002; Fluke et al., 1999; Fuller & Wells, 2003; Hélie, Poirier, & Turcotte, 2014). Other articles did not report findings in a way in which one could compare child neglect to other maltreatment types in final models (e.g., Halverson, Russell, & Kerwin, 2018; Maguire-Jack & Font, 2014; Palusci, 2011). Initially, studies of multiple repeat reports rather than just single recurrence were included (Bae, Solomon, & Gelles, 2009; Jonson-Reid, Chung, Way, & Jolley, 2010; Proctor et al., 2012; Zhang, Fuller, & Nieto, 2013). Upon further review, however, there were no two studies that operationalized the multiple recurrences outcome in the same way. This made it challenging to compare to each other or to the literature on single recurrence as an outcome. We include reference to them in the discussion, but ultimately chose to exclude them from the review summary and tables. This process resulted in a final sample of 34 studies of recurrence that met all inclusion criteria with 28 studies comparing neglect to other maltreatment types and six studies examining within type recurrence.

7. Post-hoc data source

Given the acknowledgment of the potential variation in child welfare policy across states and regions, the relative inattention to descriptions of or controls for policy context was surprising. To add value, we identified the set of studies for which a specific state or county within a state could be identified and conducted a search for key child protection policy variables relevant to reporting and system response including the state's definition of neglect and the proportion of cases that are screened out (not assessed or investigated). We also included the level of evidence to substantiate as some studies limited the baseline and/or outcome variables to substantiated cases. Because policies can shift over time, we searched archival information to obtain the information most closely related to the study baseline year. Information was extracted from the State Statutes Search of the Child Welfare Information Gateway (ND) as well as appendices from the annual *Child Maltreatment* reports available on-line from 1995 to 2016 (US DHHS, 2018). We summarized the overall neglect results according to these policy variables for 18 studies that sampled cases from six states to place results in a broader context.

8. Results

8.1. Recurrent reporting

Table 1 provides a summary of the study sample and approach (Column 2), time period (Column 3), analysis approach (Column 4), definition of and percent recurrence (when reported), (Column 5), and whether or not neglect was associated with increased or decreased risk (Column 6). The studies are further divided into three sections: (A) studies of re-reports after baseline reports that

Table 1
Summary of recurrence study methods and neglect finding.

Study	Sample/approach	Follow-up period	Method	Baseline and recurrence type % Recurrence if reported	Neglect significant + increased risk − decreased risk
A. Studies comparing neglect to other types of maltreatment					
Bae et al., 2010	7 county Florida admin data (1997–2002). Families with no prior report in past 12 months. *N* = 67,243	5.4 years	Survival Analysis	Multivariate Analyses Divided by: 1 - Any baseline to Unsub Recurrence 2 - Unsub baseline to Subst Recurrence 3 - Subst baseline to Unsubs Recurrence 21.1% Recurrence overall	+ + +
Bae et al., 2007	10 county Florida admin data (1997–2002). Families with no prior report in past 12 mos. *N* = 25,504	5.4 years	Survival Analyses	All reports at baseline Any Recurrence Substantiated Recurrence	+ +
Barth et al., 2006	NSCAW I (1999–2000). SA Caregivers with Children < 15 yrs. *N* = 837 no Tx vs. *N* = 280 Tx	18 months	Logistic Regression	All reports at baseline 22% Any Recurrence	N.S.
Casanueva et al., 2009	NSCAW I (1999–2000). Children < 15 yrs not in foster care w/ female caregivers/perpetrators. *N* = 1236	18 months	Logistic Regression	All reports at baseline 21% Any Recurrence	N.S.
Casanueva et al., 2015	NSCAW II with NCANDS data (2008–2009). Children < 15 yrs. *N* = 4715	36 months	Logistic Regression	All reports at baseline 21% Any Recurrence 6% Subst Recurrence	N.S. +
Cheng and Lo, 2015	NSCAW I (1999–2000). Children < 15 yrs not in foster care. *N* = 2368 parents	60 months	GEE	Substantiated Baseline 3.3% Subst Recurrence	-
Connell et al., 2007	Rhode Island NCANDS (2001–2004) Children < 18 yrs not in foster care *N* = 22,584.	3.75 years	Survival Analysis	All reports at baseline 40% Any Recurrence	+
Dakil et al., 2011	NSCAW I (1999–2000). Children < 15 yrs. *N* = 5501	5 years	Recursive Partitioning	Analyses Divided by Baseline Subst 56% Any Recurrence Unsub Baseline 38% Any Recurrence Subst Baseline	N.S. N.S.
Drake et al., 2006	2 county Missouri admin data (1993–1994). Low income children < 12 yrs. *N* = 4957	7.5 years	Survival Analyses	All reports at baseline 62.1% Any Recurrence	+
Eastman et al., 2016	California admin data (2006–2007). *N* = 23,871 infants	5 years	Latent Class Analysis	All baseline reports including screened out 60.7% Any Recurrence Four groups from low to high risk	N/A
Fuller and Nieto, 2009	Illinois admin data (1999–2004). Families with first reports and children < 18 yrs that were not open for services. *N* = 71,022	1 year	Survival Analysis	All reports at baseline 13% Any Recurrence	+
Fuller and Nieto, 2014	Illinois admin data (2008–2010). Two samples exclude foster care: *N* = 108,613 families. Match for service receipt *N* = 16,586 families.	2 years	Survival Analyses	All reports at baseline Any Recurrence	+Fail to Provide
Fuller and Zhang, 2017	Illinois admin data & caseworker survey (2010–2012). Children < 18 yrs *N* = 4868	12 months	Survival analysis	All reports-No Prior Substantiated Any recurrence Substantiated recurrence	+ Env & Med NEG + Env NEG
Helton, 2016	NSCAW II with NCANDS (2008–2009). Children < 18 yr with both Interview and NCANDS. *N* = 3580	1 year	Survival Analyses	All reports at baseline 12% Food Neglect; 8% Other type Any Recurrence	+ Food NEG − Housing NEG
Jedwab et al., 2017	LONGSCAN (1990–1995). Children < 4 yrs *N* = 378	Up to 18 yrs	Survival Analyses	Unsub reports at baseline 51% Substantiated Recurrence	N.S.
Jonson-Reid et al., 2010a	Missouri admin data (1993–1994). First reports Adult Perpetrators. *N* = 25,727	9–10 years.	Survival Analyses	All reports at baseline 46.6% Any Recurrence	N.S.

(*continued on next page*)

Table 1 (*continued*)

Study	Sample/approach	Follow-up period	Method	Baseline and recurrence type % Recurrence if reported	Neglect significant + increased risk − decreased risk
Kahn and Schwalbe, 2010	NSCAW I (1999–2000). Children < 15 yrs. $N = 5501$; $N = 3365$ Subst baseline	5 years	Discrete Time Model	Analyses Divided by baseline Subst 23.3% Any recurrence among all reports 21.8% Any recurrence among Subst baseline	N.S. N.S.
Kohl et al., 2009	NSCAW I (1999–2000). Children < 15 yrs. no prior reports or foster care $N = 1820$	36 months	Survival Analyses.	All reports at baseline 17.4% Any Recurrence 5.3% Subst Recurrence	N.S. N.S.
Lipien and Forthofer, 2004	Florida admin data (1998–1999). Children < 16 yrs no prior report in past 3 years. $N = 189{,}735$	5 years	Logistic Regression	All reports at baseline 26% Subst Recurrence	+
Loehman, 2015	Subset of LONGSCAN (1990–1995). Female caregivers with prior subst cases with children < age 4 $N = 219$	Up to 6 yrs	Logistic Regression	Subst baseline reports 22% Any Recurrence	N.S.
Putnam-Hornstein et al., 2015	California admin data (2006–2007). Infants with first report $N = 23{,}871$	5 years	Survival Analyses	All reports at baseline including screened out 50% or greater Any Recurrence (depending on initial disposition	+
Sledjeski et al., 2008	Connecticut county admin data (2003). Children < 18 yrs $N = 244$	18 months	Classification and Regression Tree Analysis	Subst baseline reports 30.7% Subst. Recurrence	N.S.
Thompson and Wiley, 2009	LONGSCAN (1990–1995). Infants from one city $N = 149$	10–15 yrs	Survival Analysis	All baseline reports 42.3% Any Recurrence	-
Yampolskaya and Banks, 2006	Florida admin data (1996–2003). Children < 18 yrs $N = 499{,}330$	1 year	Survival analysis	Subst or Indicated baseline reports 10–15% Subst. Recurrence (vary by base year)	N.S.
B. Studies of recurrence following reunification from foster care					
Connell et al., 2009	Rhode Island admin data (2001–2004). Children $N = 1208$	23.7 months	Survival analysis	30% Subst Recurrence	+
Fuller, 2005	Illinois case file review (1998–2001). Case control $N = 174$ families	60 days	Logistic regression	Subst Recurrence	N.S.
Jones, 1998	San Diego case file review (1990–1991). $N = 445$ children in 245 families	9 months	Logistic regression.	35% Any Recurrence	+ Gen NEG
Jonson-Reid, 2003	Missouri admin data (1993–1994). Exited foster care after a first report Children < 17 yrs $N = 1915$	4.5 years.	Survival analyses.	37% Any Recurrence 14% Subst recurrence	N.S. N.S.
C. Studies limiting analyses within type- results reported for neglect baseline					
Dorsey et al., 2008	NSCAW I (1999–2000). Children < 15 yrs reported for PHY or NEG. $N = 2139$	18 months	Logistic Regression	All baseline reports 20% Any Recurrence	N/A
Drake et al., 2003	Missouri Admin. Data (1993–1994). Children < 18 yrs first reports. $N = 33{,}555$	54 months	Survival analysis	All baseline reports 50.2% Any Recurrence 18.7% Subst Recurrence	N/A N/A
Jonson-Reid et al., 2009	Two counties Missouri admin data (1993–1994). Children < 12 yrs with first reports $N = 7313$	Up to 15 years	Logistic regression	All baseline reports 33% Any Recurrence for Non-AFDC at baseline; 66% Any Recurrence for AFDC at baseline	N/A
Kang, 2015	Illinois State admin data and survey (no dates). $N = 373$ caregivers in Alternative Response	6 months	Structural Equation Model	Exclude medical neglect or Supervisory Neg of children < 8 years 2% substantiated re-report	N/A
Kang et al., 2015	Illinois state admin data (2005). Children with first investigation $N = 16{,}707$	5–6 yrs	Survival Analyses	All baseline reports & Any Recurrence 7.5% for Medical NEG 14.8% for Lack Supervision 9.4% for Basic Needs + Other NEG 8.5% for Lack Supervision + Other NEG 13.6% for NEG with ABUSE	N/A

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Table 1 (*continued*)

Study	Sample/approach	Follow-up period	Method	Baseline and recurrence type % Recurrence if reported	Neglect significant + increased risk − decreased risk
Ortiz et al., 2008	Five states from NCANDS (2004–2005). Children in Alternative Response $N = 93,576$ children	1 year	Survival Analysis	All baseline reports & Any Recurrence 17% for Alternative Response 17% for Subst baseline 19% for Unsub baseline	N/A

Notes. LONGSCAN = Consortium of Longitudinal Studies of Child Abuse and Neglect; NSCAW = National Study of Child and Adolescent Wellbeing; NCANDS = National Child Abuse and Neglect Data System; Subst = Substantiated/Indicated; Unsub = unsubstantiated; Unless specified recurrence % =Substantiated and Unsubstantiated. ABUSE = physical and sexual combined; PHY = Physical abuse; SEX = Sexual abuse; PSYCH = emotional or psychological maltreatment; MULT = multiple; SA = Substance Abuse; IPV = Intimate Partner Violence

compare maltreatment types; (B) studies of re-reports following reunification from foster care; (C) studies of within type recurrence focusing on neglect cases at baseline. As noted in Column 2, several studies were state or county specific. The remaining studies included specific sites or combinations of sites from the Longitudinal Study of Child Abuse and Neglect (LONGSCAN, $n = 3$), data from the first National Study of Child and Adolescent Well-being (NSCAW I, $n = 7$), data from the second NSCAW study (NSCAW II, $n = 2$), and multi-state data from the National Child Abuse and Neglect data system (NCANDS, $n = 1$). The follow-up periods ranged from a low of 60 days for recurrence after foster care exit (Fuller, 2005) to 15 years for report recurrence among infants (Thompson & Wiley, 2009).

Dependent variable. Studies varied in their reliance on substantiated or all re-reports as the outcome variable. Seven studies reported results for substantiated and unsubstantiated re-reports separately (Bae, Solomon, & Gelles, 2007; Bae et al., 2010; Casanueva et al., 2015; Dakil, Sakai, Lin, & Flores, 2011; Drake et al., 2003; Jonson-Reid, 2003; Kohl et al., 2009). Eight studies modelled recurrence as substantiated re-reports only (Cheng & Lo, 2015; Connell et al., 2009; Fuller, 2005; Jedwab, Harrington, & Dubowitz, 2017; Kang, 2015; Lipien & Forthofer, 2004; Sledjeski, Dierker, Brigham, & Breslin, 2008; Yampolskaya & Banks, 2006). The remainder modelled any re-report. The range of percent recurrence was quite large from a low of 2% for substantiated recurrence across 5 years (Kang, 2015) to a high of 66% for any recurrence among families receiving public assistance over 14 years (Jonson-Reid et al., 2009).

Question 1: Is child neglect associated with recurrence? There were a great variety of ways in which maltreatment type was categorized. Some studies were limited to comparison of neglect with one or two other types (physical abuse and/or sexual abuse and/or any other; $n = 11$), others included subtypes of neglect compared to other types of maltreatment ($n = 5$), and others included neglect, physical and sexual abuse along with additional maltreatment types ($n = 12$). Table 1, Column 6 provides summary information on whether or not child neglect was significantly different from at least one other form of maltreatment and the direction of the association for all studies in section A and B. Thirteen studies reported that recurrence risk varied by at least one form of neglect; all but two found that neglect increased the risk of recurrence. There was no particular pattern among significant results according to how recurrence was measured, but studies using NSCAW I appeared less likely to find a significant association between neglect and recurrence. When significant and higher risk, effect sizes ranged from about 10% to over three times for neglect compared to at least one other form of maltreatment (see Table 2 below).

Question 2 "In studies that examine the association of neglect and recurrence, what other factors across levels of the ecology are controlled for and/or associated with recurrence?" Table 2 organizes studies comparing neglect to other maltreatment types according to variation in the baseline sample (sections A through D). Section A baseline samples include substantiated and unsubstantiated reports and exclude cases with prior reports; section B studies include substantiated and unsubstantiated reports but include cases with prior reports; section C studies are limited to specific subgroups of children or caregivers (e.g., substantiated only, specific child age, only female caregiver households, etc.); and section D studies are limited to cases reunified from foster care. The second column presents the unit of analysis (UOA) and variables tested in the model for each study. Significant results are provided according to whether variables measure constructs at the Child (column 3), Caregiver/Family (column 4), Maltreatment type/CPS response (column 5), and/or Community/Policy/Other (column 6) levels. All but three studies included in Table 2 used either logistic regression or survival analyses and effect sizes (Odds or Hazard Ratios) for significant variables are shown. Eastman and colleagues (2016) used Latent Class Analysis so variables shown are those reported as indicative of the high-risk class. Dakil and colleagues (2011) and Sledjeski and colleagues (2008) both used an analytic approach "splits" data into groups according to a computer algorithm that identifies large groupings of cases by recurrence. In this case, a variable is "significant" if it leads to a split but there is no effect size. When a study indicated the reference group for a multi-level categorical variable, this is labelled "ref" in the second column and results for that variable are compared to the reference.

Demographic characteristics. The most consistent findings across studies was that younger children (measured by years or categories) generally had increased risk of recurrence and child gender typically had no association. Summarizing findings regarding the relationship between ethnic or racial group and recurrence was complicated by the variation in groups included and means of labelling. For ease of presentation in Table 2, American Indian (AI) is used to refer to American Indian/Alaskan Native or Native American; Asian (AS) is used to refer to any Asian or Pacific Islander group; Black (BL) is used to refer to African American or Black; Latino (LAT) is used to refer to Hispanic or Latino. Three studies controlled for nativity (Eastman, Mitchell, & Putnam-Hornstein, 2016; Kahn & Schwalbe, 2010; Putnam-Hornstein, Simon, Eastman, & Magruder, 2015). Sixteen of the 28 studies (across data sources: NSCAW, LONGSCAN, and administrative data) found no significant associations between race/ethnicity and likelihood of recurrence. When differences by ethnicity/race were found, the results were mixed and varied by sample and outcome. For example, in a Florida study, Black children had higher rates of substantiated recurrence than White or Latino children (Bae et al., 2010). In that same study, Black children had a higher risk of unsubstantiated recurrence than Latino children but a lower risk than White children (Bae et al., 2010). Another study limited to children reunified from foster care found that non-white females had a lower risk of re-report (Jonson-Reid, 2003).

Nearly all studies included some measure of caregiver demographics and/or family composition, but as shown in Table 2 (Column 2), studies rarely included the same variables. Additionally, one study entered demographics as a part of a block of control variables rather than reporting separate values (Putnam-Hornstein et al., 2015). Family size as measured by number of children or dependents was analyzed in twelve of the 28 studies in Table 2 with larger families generally associated with higher risk. Six studies reported a lower risk when a child had two caregivers for at least one type of recurrence modelled, but four of these studies lacked controls for other family level risk factors (e.g., Bae et al., 2007, 2010; Fuller & Nieto, 2014; Fuller & Zhang, 2017).

Modifiable child or family risk. The majority of the studies included some measure of family and/or child risk in analyses, but only a few were measured frequently enough to offer a summary. Fifteen studies controlled for income, poverty or material need with

Table 2
Recurrence for neglect compared to other types: variables tested and significant associations by baseline sample type.

Study	Unit of Analysis (UOA), DV, Variable List. ref = reference grp[a]	Statistically Significant Variables w/Magnitude (Odds Ratios or Risk Ratios)			
		Child	Caregiver/Family	Maltreatment Type/CPS Response	Community/Policy/Other
A. Studies Using Data on both Substantiated and Unsubstantiated Baseline Reports that Exclude Cases with Prior Reports					
Bae et al., 2010	**UOA = Families** **Child:** Age (years), Gender, Ethnic [BL (ref), WH, LAT, OTH]; **Caregiver/Family:** Struct. [SNGMOM, SNGDAD, STEP, OTH REL, 2 bio parents (ref)]; # Dependents **Type**: NEG (ref), PHY, SEX; **CPS:** Report Source [LAW, EDUC, MED, SocSrv, Foster or Childcare, NonMand (ref)]; CPS Risk Level (low, med, hi); # of CPS contacts; Services [Court, CPS, OTH serve, NONE (ref)], # of months served	Model 1 – Any baseline to DV: Unsubstantiated Recurrence Age 0.98; LAT 0.87, WH 1.11, OTH 0.64	STEP 1.07, SNGMOM 1.23, SNGDAD 1.29, OTH REL 1.18; # dependents 1.20	**Type:** PHY 0.83, SEX 0.76; **CPS:** MED 0.79, LAW 0.78, FOST/CC 0.82; # CPS contacts 1.02; Court 1.16, CPS 1.13, OTH 1.10	None Tested
		Model 2 – Unsub baseline to DV: Substantiated Recurrence Age 0.96; LAT 0.72; OTH 0.64	SNGMOM 1.35, SNGDAD 1.23, OTH REL 1.24; # dep 1.18	**Type:** PHY 0.84, SEX 0.67; **CPS:** MED 0.73, LAW 0.63; CPS Risk level 1.09; Court 0.04; Months 0.99	None Tested
		Model 3 – Subst baseline to DV: Substantiated Recurrence Age 0.97; LAT 0.71, WH 0.91, OTH 0.56	STEP 1.23, SINGMOM 1.36, SNGDAD 1.27; # dep 1.17	**Type:** PHY 0.65, SEX 0.69; **CPS:** MED 1.17, LAW 1.56, EDUC 1.48, SocServ 1.32, Foster/CC 1.31; Risk level 1.12; #CPS contacts 1.04; Court 3.44, CPS 2.16, OTH 2.31; Months 1.01	None Tested
Bae et al., 2007	**UOA = Families** **Child:** Age (years), Gender, Ethnic [BL, WH, LAT, OTH (ref)]; **Caregiver/Family:**Struct.[OTH (ref), SNGPAR, Nonbio]; # dependents **Type:** NEG (ref), PHY, SEX, OTH, MULT; **CPS**: Report Source (MAND v NonMand), Subst., CPS risk level (low, med, hi), # CPS contacts, Service (court v OTH); # months investigated, # months served	Model 1 DV = Unsubstantiated Recurrence Age 0.98; BL 1.83, LAT 1.50, WH 2.24	SNGPAR 1.16, Nonbio 1.12; # dep 1.21	**Type:** SEX 0.84, MULT 1.11; **CPS:** Subst baseline 0.86; MAND 0.92; CPS Risk level 1.18; # CPS contacts 1.01; #Months 1.01	None Tested
		Model 2 DV = Substantiated Recurrence Age 0.94; Male 0.94	SNGPAR 1.24; Nonbio 1.14; # dep 1.18	**Type:** SEX 0.79, PHY 0.92; **CPS:** Subst baseline 1.29; CPS Risk level 1.14; #CPS contacts 1.02; # Months invest 1.03; Months 1.01	None Tested
Kohl et al., 2009	**UOA = Children < 15 yrs** **Child:** Age (years), Gender, Ethnic (WH v NonWH), Child Dev Problems; **Caregiver/Family:** HS Ed., MH, SA, Below poverty line **Type:** NEG, PHY (ref), SEX, OTH, UNK; **CPS:** Subst. or not	Model 1 DV = Any Recurrence Dev Prob 2.0	Below poverty 1.60	NS	None Tested
		Model 2 DV = Substantiated Recurrence Dev Prob 2.4	NS	NS	None Tested
Lipien and Forthofer, 2004	**UOA = Children < 16 yrs** **DV** = Substantiated Recur **Child:** Age (0–3 yrs. ref), Gender, Ethnic (WH v. NonWH) **Maltreatment Type:** NEG (ref), PHY, SEX, Threat, OTH; **CPS:** Disposition [Unsub.(ref), Subst., Indicate]; Service: [brief, In-home, kinship (KIN), non-relative FOST), None (ref)]	4–7 yr 0.85, 8–11 yr 0.79, 12–15 yr 0.77; Non-WH 0.88	None Tested	**Type:** PHY 0.74, SEX 0.69, Threat 0.91; **CPS:** Indicate 1.59; Subst 1.33; Brief 1.22, In-home 1.70, KIN 0.81	None Tested
B. Studies with Unsubstantiated and Substantiated Baseline Reports that Do Not Exclude Cases with Prior Reports					

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Table 2 (*continued*)

Study	Unit of Analysis (UOA), DV, Variable List. ref = reference grp[a]	Statistically Significant Variables w/Magnitude (Odds Ratios or Risk Ratios)			
		Child	Caregiver/Family	Maltreatment Type/CPS Response	Community/Policy/Other
Casanueva et al., 2015	**UOA = Children < 15 yrs** **Child:** Age (15–17 yrs. ref), Gender, Ethnic [BL, LAT, OTH, WH (ref)]; Dev. or Beh. Prob; **Caregiver/Family:** Age (50+ ref), Gender, Health, SA, ALC, MH, IPV, Low Soc. Support, Malt Hx; Family Type [bio fam, kin, or FOST (ref)], Stress **Maltreatment Type:** NEG (ref), PHY,SEX, OTH; **CPS:** Subst., Served, Prior CPS reports	Model 1 DV = Any Recurrence OTH 0.47	MH 1.61 Fam Stress 1.36; Low Soc. Support 1.55; IPV 1.48	**Type:** NS **CPS:** Served 0.71; Prior reports 1.49	None Tested
		Model 2 DV = Substantiated Recurrence OTH 0.24	MH 2.25, IPV 2.12	**Type:** PHY 0.48 **CPS:** Prior reports 2.38	None Tested
Connell et al., 2007	**UOA = Children < 18 yrs** **DV** = Any Recurrence **Child:** Age (< 1 yr ref), Gender, Ethnic [AI, AS, BL, WH (ref), LAT, Multiracial], Behav. Prob., Disability; **Caregiver/Family:** SA, Poverty, IPV **Type:** NEG (ref), PHY, SEX, MULT,OTH; **CPS:** Prior Subst., Current Subst, Served	11–15 yr 0.73, 16–18 yr 0.37, BL 0.80, HISP 0.83; Disable 1.33	SA 1.50, Poverty 3.26	**Type:** SEX 0.82 **CPS:** Prior Subst 1.09; Current Subst 0.61 Interactions: PHY * Current Subst 1.22; Served * Current Subst 1.30	None Tested
Dakil et al., 2011	**UOA = Children < 15 yrs** **DV** = Any Recurrence **Child:** Age groups [ref > 12.5 yr], Gender, Ethnic [BL, WH, LAT, OTH], Behav. Prob., Disability; Chronic Illness **Caregiver/Family:** Age [< 33 yrs], Struct.[SINGPAR v OTH], #Kids [5 +], Gender, HS, EMPLOYED, Health, SA, ALC, Innapp Disc, Unreal exp, MH, IPV, Low Soc. Support, Malt Hx, Inc < 20 K; **Type:** NEG (ref), PHY, SEX, OTH; **CPS:** Prior Report, Current Subst, Prior Subst, PERP Relationship, CPS Served, Refer to SA SERV, Refer to IPV SERV, Parenting classes	Model 1 DV = Any Recurrence Among Unsub Cases (Effect sizes N/A: Variables predicting Recur Split shown) Behav Prob	INC < 20 K	**NS**	NS
		Model 2 DV = Any Recurrence Among Subst Cases (Effect sizes N/A: Variables predicting Recur Split shown) < 12.5 yr, Behav Prob	Malt Hx, < 33.5 yrs, 5+ kids, MH	**NS**	NS
Fuller and Nieto, 2014	**UOA = Families (matched sample);** **DV** = Any Recurrence **Child:** Age (15–17 yr ref), Gender, Ethnic [BL, WH (ref), LAT, OTH] **Caregiver/Family:** Age; # caretakers (3 or more ref), # children v. 4+ (ref) **Type:** NEG: Supervision, NEG: Basic Needs, NEG: OTH, PHY, SEX, PSYCH, RISK, IPV, SA; **CPS:** Subst.; # Prior Reports (11+ ref); Report Source [NONMAND, LAW, MED, EDUC, CW, OTH SOC Srv, Family/Friends (ref)]; any in-home service; safety assess (unsafe or not) **Community:** Region (southern ref)	0–2 yr 2.1; BL 0.89, LAT 0.72, OTH 0.71	2 caretakers 0.89 1 child 0.72 2 children 0.81	**Type:** SEX 0.74, NEG: Basic Needs 1.26 **CPS:** LAW 0.77; Subst 3.4; No prior reports 0.31, 1–2 prior 0.66; Unsafe 1.17; Any service 1.83	Cook County 0.77 Northern 0.80
Helton, 2016	**UOA = Children < 18 yrs** **DV** = Any Recurrence **Child:** Age (years), Gender, Ethnic [BL, LAT, OTH, WH (ref)]; Special needs; **Caregiver/Family:** ALC, SA, MH, Malt Hx, Stress, Low Social Support, IPV, Material Need **Type:** NEG: Food, NEG: Medical, NEG: Housing, NEG: Clothing, NEG: Hygiene, NEG: Super; NEG: OTH, PHY, SEX, OTH, IPV, PSYCH, SA; **CPS:** Subst., Opened for Services, Prior CPS contact, FOST	NS	Low Soc Support 1.69, Active IPV 1.48	**Type:** NEG:Food 3.04, NEG: House 0.32, OTH 1.53 **CPS:** Prior Invest 1.63; Services 0.70	None Tested

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Table 2 (*continued*)

Study	Unit of Analysis (UOA), DV, Variable List. ref = reference grp[a]	Statistically Significant Variables w/Magnitude (Odds Ratios or Risk Ratios)			
		Child	Caregiver/Family	Maltreatment Type/CPS Response	Community/Policy/Other
Kahn and Schwalbe, 2010	**UOA = Children < 15 yrs** **Child:** Age (months), Ethnic [BL, LAT, WH (ref), OTH], Gender, Dev delay, Health (high ref); **Caregiver/Family:** Age (< 35 yr ref), nativity, HS Ed., Employ, MH, SA, ALC, Cog. Delay, Crime Hx, Disability, Parent Skills, Health (hi ref), Malt Hx, Low Soc. Satis; # kids, Struct.[SNGMOM, SNGDAD, FOST, STEP, REL, Non-rel, 2Bio (ref)], IPV, Poverty (< 100% pov ref), Material needs (MATNEED) **Type:** NEG, PHY (ref), SEX, OTH; **CPS:** Risk [none (ref), low, mod, hi], Prior subst or serv, current subst (model 1), CPS level involve, Service (In-home, KIN, FOST); CPS spending per child **Community:** PSU size, county poverty	Model 1 Any Baseline Report to Any Recurrence Age 0.996; Dev Delay 1.42 Model 2-Substantiated Baseline to Any Recurrence BL 0.52; Dev Delay 1.74	low health 1.59; SA .57; Soc satis 0.79; IPV 1.35; FOST 2.88, SNGMOM 1.62, SNGDAD 3.03, STEP 2.09 low health 1.51; SA.62; Hx of malt 1.44, Soc satisfaction 0.79; 200%+ pov 0.52; MATNEED 1.42	**Type:** OTH 1.70 **CPS:** Risk Moderate 1.62; Current Subst 0.58; Prior Subst 1.79 **Type:** OTH 1.83 **CPS:** Risk Moderate 1.91; Prior Subst 1.82	Logged CPS $ per child 0.82 Time effect (quarter squared) 0.70 NS
C. Study Samples with Special Subsets of CPS Involved Families or children					
Barth et al., 2006	**UOA = Children < 15 yrs with Caregivers with SA (unmatched)** **DV** = Any Recurrence **Child**: Age (11+ yr ref) **Caregiver/Family:** Age (< 35 ref), Ethnic [AI, BL, LAT, WH (ref)], Married, HS Ed, MH, Crime Hx, Urban Residence, Poverty line (< 50% ref), Employed, Material need **Type:** NEG: Provide, NEG: Supervise, PHY (ref), SEX, OTH; **CPS:** Prior reports, Served **Drug Tx**: Self-report need, Risk assess need, Prior tx, Recv'd Tx	NS	MH 2.36; 100–150% 0.48 200% 0.33	**Type:** NS **CPS:** NS	Risk Assess need 0.50 Past Drug Tx 2.53
Casanueva et al., 2009	**UOA = Female Caregivers** **DV** = Any Recurrence **Child:** Age group, Special needs **Caregiver/Family:** Age (35+ ref), Ethnic [BL, LAT, WH (ref), OTH], HS Ed, Depression, ALC, Malt Hx, Poverty line, 4+ kids, Low Social Support, IPV **Type:** NEG: Provide, NEG: Supervise (ref), PHY	NS	Malt Hx 2.3; IPV 2.0	**Type:** NS	None tested
Cheng and Lo, 2015	**UOA = Parents with Subst Baseline** **DV** = Susbt Recurrence **Child:** Age (years), Gender, Chronic Problems **Caregiver/Family:** Ethnic [BL, LAT, OTH, WH (ref)]; Married, #kids, ALC, SubAb, Depression, Prescription Ab, #IPV, Income Cat 1–5), Engaged w/CPS **TYPE:** NEG, PHY,SEX (ref), OTH **CPS:** Prior subst reports, Time Served, Prior # Served, No Serv Need, Serv not obtained **Community:** Poor County or no (ref)	NS	ALC 4.51; Engage 0.64; Income 0.72	**Type:** NEG 0.53, OTH 0.47 **CPS:** No SERV need 0.50; Time Served 0.97; #Prior Serv 2.59	NS

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Table 2 (*continued*)

Study	Unit of Analysis (UOA), DV, Variable List. ref = reference grp[a]	Statistically Significant Variables w/Magnitude (Odds Ratios or Risk Ratios)			
		Child	Caregiver/Family	Maltreatment Type/CPS Response	Community/Policy/Other
Drake et al., 2006	**UOA = Child < 12 yrs, Low Income** **DV** = Any Recurrence **Child:** Age (years), Gender, Ethnic (WH or Non-WH); Medical risk infant **Caregiver/Family:** HS Ed, MH/SA Tx Prior or After; Kids (1,2,3 +), Exit AFDC Prior or After **Type**: NEG (ref), PHY,SEX, MULT; **CPS:** Subst.; 2 or more victims; Services [Refused, In-home (FCS), FPS (Family Preserve alone or with FCS), FOST, or None (ref)] **Community:** Census tract income (in 1000 s) **All above** + **Child services:** Spec Ed: SED; Spec Ed: OTH, MH/SA Tx, Juvenile Court Petition	Model 1 Children Ages Birth through 11 at Baseline Age 0.97; Non-WH 0.82; Interactions: Age*time 1.03; Med Risk*time 1.20 Model 2 Children ages 4–11 at Baseline Age 1.05; Non-WH 0.88 Interaction: Age*Time 0.99	HS 0.88; Prior MH/SA Tx 1.58; Kids 1.16; Exit AFDC Prior 0.88; Exit AFDC After 0.68 HS 0.90; MH/SA prior 1.51; # Kids 1.13; Exit AFDC baseline 0.69; Exit AFDC after 0.56	**Type:** PHY 0.85; SEX 0.74 **CPS:** Substantiate 1.29; 2+ Victims 1.22; FCS 0.71, FPS 1.44, FOST 2.46; Refused1.47 Interactions: Subst* FPS 0.55; Subst* FOST 0.48 **Type:** NS **CPS:** Subst 1.22; Mult kids 1.29; Services: FCS 0.56, FPS or combo 1.85, FOST 4.54, Refused Services 1.38 Interactions: Subst*FCS 0.43; Subst*FPS 0.43; Subst*FOST 0.37	Census Tract Income 0.99 **Non CPS Services:** MH/SA 2.06; Spec Ed: SED 1.49; Juv. Crt petition 0.61; Interactions: Spec Ed.:OTH*Time 1.62; Juvenile Crt*Time 1.02; **Community**: Income 0.99
Eastman et al., 2016	**UOA = Infants** **DV** = LCA Risk Any Recurrence **Child:** Gender, Birth Prob **Caregiver/Family:** Ethnic [AI, AS, BL, WH, US LAT, Foreign LAT] Maternal age [< 19, 20–24, 25–29, 30+], HS, Paternity UNK, Trimester PNC, Birth Payment **Type:** NEG, PHY, PSYCH, Sibling Abuse **CPS:** Prior family reports if 2+ kids; Disposition [screened out, unfound (ref), inconclusive, Subst + SERV, Subst + noServ]; Mand v NonMand	Any Recurrence (Effect sizes not possible: Variables Indicative of High Risk Class) Hi Birth Prob	Low Paternity Later PNC	**CPS:** Hi prior	
Fuller and Nieto, 2009	**UOA = Families w/o CPS Services** **DV** = Any Recurrence **Child:** Age (15–17 yr ref), Gender, Ethnic [BL, WH (ref), LAT] **Caregiver/Family:** Maternal perpetrator, # other kids (none ref) **Type:** NEG/OTH, PHY, SEX (ref); **CPS:** Subst.; # Allegations (2+ ref); Reporter [NonMand, LAW, MED, EDUC, CW, SocSrv (ref), Childcare]; **Community:** Cook County v. Oth	0–2 yr 1.70, 3–5 yr 1.7, 6–8 yr 1.6, 9–11 yr 1.4, 12–14 yr 1.5; BL 0.89, LAT 0.72, OTH 0.71	1 child 1.2, 2 children 1.2, 3+ children 1.3; Maternal perp 1.6	**Type:** PHY 1.10, NEG/OTH 1.20 **CPS:** Subst 1.7; 1 Allegation 0.81; NonMand 0.82, LAW 0.73, MED 0.90	Cook County 0.90

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Table 2 (*continued*)

Study	Unit of Analysis (UOA), DV, Variable List. ref = reference grp[a]	Statistically Significant Variables w/Magnitude (Odds Ratios or Risk Ratios)			
		Child	Caregiver/Family	Maltreatment Type/CPS Response	Community/Policy/Other
Fuller and Zhang, 2017	**UOA = Families w/o prior Sub Repts** **Emot. Abuse, Neglect or DV only** **Child (youngest):** Age (years), Ethnic [BL (ref), WH, LAT] **Caregiver/Family:** # kids, 0,1, or 2 parents (ref), engagement w/CPS **Type:** ENV NEG, SUPER NEG, IPV, MED NEG, PSYCH (ref) **CPS:** INV or ASSESS; # meetings; Case length; 1+ safety threat, SERV match or not 1–4, SERV match or not 5–7, none (ref); # barriers; SERV Type (material, SA, Health, MH, parenting, IPV, EDU, SocSup) **Community:** Cook (ref), Central, North, South	Model 1 Any Recurrence Age 0.97 WH 1.28 Model 2 Subst Recurrence Age 0.94	# Kids 1.22 1 PAR 1.32 Engaged 0.96 # Kids 1.16 Engaged 0.95	**Type:** ENV NEG 1.40, MED NEG 1.34 **CPS:** 1–4 matched 1.22, 1–4 unmatched 1.72 IPV Serv 0.57 **Type:** ENV NEG 1.55, **CPS:** 1 + safety 1.44; 1–4 matched 1.48	Central 1.29, South 1.55 Central 1.48
Jedwab et al., 2017	**UOA = Children < 4** **DV** = Subst. Recurrence **Child:** Age (years), Gender, Ethnic [WH v NonWH (ref)]; **Caregiver/Family:** Age (years), HS Ed., Employed, Married, Self-report health, SA, Depress symptoms, Social Support, IPV **Type:** NEG, PHY, SEX; **CPS:** Mand v NonMand, # of Malt Types	Age 0.84; WH 0.72	# Depress symptoms 1.02	**Type:** NS **CPS:** NS	None Tested
Jonson-Reid et al., 2010b	**UOA = First Time Perpetrators** **DV** = Any Recurrence **Child:** Age youngest child (years) **Caregiver/Family:** Age (years), Gender, WH or NonWH (ref), AFDC Prior or After, **Type:** NEG (ref), SEX, PHY; **CPS:** # victims, Subst, Services [Refused, In-home (FCS), FCS + family preserve (COMBO), FOST, none (ref)] **Community:** Mean tract income in 1000 s; urban; Mean % single parent	Age 1.02 Interactions Age*Time 1.00	Female 1.55, Age 0.98; WH 1.06; AFDC after 0.12 Interactions: AFDC*Time 1.03	**Type:** PHY 0.93, SEX 0.67 **CPS:** # victims 1.11; Services: refused 1.18, FCS 0.68, COMBO 0.33, FOST 0.14 Interactions: FCS time 1.01; COMBO time 1.02; FOST time 1.04	**Community:** Tract income 0.99 % single parent 1.41
Loehman, 2015	**UOA = Child w/Female Caregiver** **DV** = Any Recurrence **Child:** Under age 4 at first report, Gender, Ethnic (unclear), Disability; **Caregiver/Family:** Age, Ed. yr, ALC, Married, Depression, Soc. Support; Income Group, IPV **Type:** NEG (ref), PHY, SEX, PSYCH, NEG + ABUSE, OTH; **CPS**: Mult. Prior Reports	NS	**Model 1:** Depress 1.03 **Model 2:** Social Support 0.96	**Type:** NS **Model 1: CPS:** Mult prior 2.09 **Model 2: CPS:** Mult prior 2.19	None Tested
Putnam-Hornstein et al., 2015	**UOA = Infants** **DV** = Any Recurrence **Child:** Gender, Birthweight, Abnormality, Birth order **Caregiver/Family:** Age (years), Ethnic [AI, AS, BL, LAT, WH], Nativity for LAT, HS, Paternity established, Birth Payment **Type:** NEG (ref), PHY, PSYCH, Sibling Abuse; **CPS**: Prior family reports; Disposition [screened out, unfound (ref), inconclusive, Subst + SERV, Subst + noServ]; Mand v NonMand	Did not report they were entered as block controls as noted under table	Did not report they were entered as block controls as noted under table	**Type:** PHY 0.91; **CPS:** Screen-out 1.10, Inconclusive 1.12, Subst & No SERV 1.13, Subst + SERV1.19; Mand 1.30	None Tested

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Table 2 (*continued*)

Study	Unit of Analysis (UOA), DV, Variable List. ref = reference grp[a]	Statistically Significant Variables w/Magnitude (Odds Ratios or Risk Ratios)			
		Child	Caregiver/Family	Maltreatment Type/CPS Response	Community/Policy/Other
Sledjeski et al., 2008	**UOA = Children < 18 yrs** **DV** = Subst Recurrence **Child:** Gender, Ethnic[AS, BL, LAT, WH, OTH], Risk Assess [age, visibility, disability, fear caretaker] **Caregiver/Family:** Age (years), # Kids, Struct. [SNGPAR, Married, Blended, OTH], Risk Assess [PERP Access, Disability, SA, Low Parent skills, Lack Attach, Malt Hx, Assault Hx, Parental PERP, IPV, Social Support, Home safety, Housing, Financial stability] **Type:** NEG Only, Abuse Only, MULT; **CPS**: PERP gender, Prior Subs., Risk Assess [INV cooperate, Plan Cooperate]	Effect sizes N/A: Variables predicting Recur Split shown Child Visibility Logistic Regression Model Visibility 2.4	IPV PERP ACCESS 2.3, Disability 1.8, Low parent skills 2.3, No attach 2.4, Assault Hx 1.8, IPV 2.1, Social Support 1.9	**CPS:** Prior Subst Rept; Plan Cooperate **TYPE:** Severe NEG 2.0 **CPS:** Prior Subst Rept 4.1	
Thompson and Wiley, 2009	**UOA = Infants** **DV** = Any Recurrence **Child:** Age (months), Gender, Ethnic [BL, OTH (ref)], Fussy Temperament, Beh. Prob. **Caregiver/Family:** HS Ed., Depression, SA, MH, Harsh parenting; Income > 10 K **Type:** NEG without SA (ref), ABUSE, SA; **CPS:** Subst.	Age 0.97	HS Ed. 0.58	**Type:** Abuse 5.00 **CPS:** Subst. 2.04	None Tested
Yamapol-skaya and Banks, 2006	**UOA = Children < 18 yrs** **DV** = Subst Recurrence **Child:** Age (years), Gender, Ethnic (minority status or not) **Caregiver/Family:** Drug and ALC use **Type:** Absent Parent v OTH (ref), MULT **CPS:** Prior reports, #Months case open	Age 0.97, Male 0.96, Minority 0.89	Drug & ALC 0.98	**Type:** MULT 1.32, Parent Absence 1.70 **CPS:** Prior reports 1.33; #Months case open: 0.99	None tested
D. Recurrence After Exit from Foster Care					
Connell et al., 2009	**UOA = Children** **DV** = Substantiated Recurrence **Child:** Age (< 1 yr ref), Gender, Ethnic [BL, WH, LAT, OTH], DSM Diagnosis, Disability; **Caregiver/Family:** Struct. [SNGMOM (ref), SNGDAD, Married, Unmarried] **Type**: NEG (ref), PHY, SEX; **CPS:** Prior FOST, Length of stay, Placement type [FOST, KIN (ref), GROUP, OTH]	16+ yrs 0.14	NS	**Type:** PHY 0.58; **CPS:** Prior FOST 2.06; FOST 1.94	None Tested
Fuller, 2005	**UOA = Families** **DV** = Case Control Subst. **Child:** Age (12+ yr ref), **Caregiver/Family:** MH, Struct. [SNGPAR w sibs returned; SNGPAR + OTH w/sib; 2 parents w/sibs (ref)]; # children (< 4 ref) **Type (not sig in bivariates):** NEG, ABUSE, OTH; **CPS:** Length of stay (< 3 yr ref), Placement Type [FOST, KIN, GROUP (ref), OTH], # Placements (< 4 ref)	0–1 yr 104.4, 1–5 yr 17.2; 6–11 yr 4.40	MH 8.9 4+ children 3.1 SINGPAR w/sibs returned 4.8	**Type:** NS **CPS:** 5+ placements 11.3; 3+ yrs in care 8.2; KIN 9.6	None Tested

(*continued on next page*)

Table 2 (*continued*)

Study	Unit of Analysis (UOA), DV, Variable List. ref = reference grp[a]	Statistically Significant Variables w/Magnitude (Odds Ratios or Risk Ratios)			
		Child	Caregiver/Family	Maltreatment Type/CPS Response	Community/Policy/Other
Jones, 1998	**UOA = Children** **DV** = Any Recurrence **Child:** Age (years), Gender, Ethnic [NonWh v WH (ref)], Sum of [Health, MH, School, Sleeping, Dev. or Phys. Disab.]; **Caregiver/Family:** Scale Sum: (Crime, Health or MH, SA, Childhood Hx of Malt., Disability), Struct. [SNGPAR, TWOPAR, OTH], Employed, Welfare, No income, #Stressful events prior to reunify (all or negative only) **Type**: NEG (yes or no); **CPS:** Mand **Environment:** Dangerous Home & Community, Housing, SA Exposure	Prob Sum 1.25	No income 2.94, # Neg events (0–5) 1.58, Receive welfare 2.49	**Type:** NEG 2.23 **CPS:** NS	Inadequate housing 2.72
Jonson-Reid, 2003	**UOA = Children < 17 yrs** **Child:** Age (0–4 yrs ref), Gender, Ethnicity [WH (ref) v NonWH] **Caregiver/Family:** Parental perpetrator, Welfare receipt **Type:** NEG vs. OTH; **CPS:** In-home services, Placement type [FOST (ref), KIN, GROUP, OTH], Exit reason [reun (ref), adopt/guard, OTH], # placements, Months in care (3 + ref) **Community:** Census tract income	Model 1 Any Recurrence 5–10 yr 0.73; 11–13 yr 0.60, 14–16 yr 0.59 Interactions: Female* NonWH 0.71 11–13 yr* NonWh 1.58 5–10*Time 1.01 14 + *Time 0.95 Model 2 Substantiated Recurrence 5–10 yr 0.73 Interaction: 5–10*Time 1.03	NS Welfare 1.62	**Type:** NS **CPS:** Kin 0.82; 0–2 mo in care 1.29; (Adopt/Kin/Guardian) 0.58 **Type:** NS **CPS:** OTH 0.63; 0–2 mo in care 1.38; Adopt/Guard 0.47	NS NS

[a] For studies with models of different DV results are broken into row subheadings. Abbreviations: Gender is limited to male or female designations in all studies. Subst = Substantiated/Indicated; Unsub = unsubstantiated; PHY = Physical abuse; SEX = Sexual abuse; PSYCH = emotional/psychological abuse; MULT = multiple types; BL = Black; WH = White; LAT = Latinx; AS = Asian, AI = American Indian; HA/PI = Hawaii/Pacific Islander; CPS = Child Protective Services; MH = Mental Health; SA = Subst. Abuse; IPV = Intimate Partner Violence; HS = high school; SIBS = Siblings; SNGMOM = single mother, SNGDAD = single father, STEP = step/adoptive parent, OTH REL = non parent caretaker; Tx = Treatment; Hx = history; FOST = foster care; KIN = kinship care; Group = group care; Nonmand = non-mandated reporter; Mand =mandated reporter; MED = Medical; SocSrv = social services; EDUC = educational; LAW = Court or Law Enforce; Serv = services; # = number; OTH = Other.

two thirds reporting increased risk related to fewer resources. Among the ten studies that included a measure of intimate partner violence, half found an increased risk and the remainder no significant association. Fifteen studies tested some measure of caregiver mental health (or depressive symptoms) alone, substance abuse or alcohol abuse alone or some combination and findings were mixed. Of the thirteen studies that included caregiver mental health as a separate variable, five found increased risk and the rest were not significant. Nine of the 15 studies testing caregiver substance or alcohol abuse reported no association, three increased risk (Cheng & Lo, 2015; Connell et al., 2007; Drake et al., 2006), and two a lowered risk (Kahn & Schwalbe, 2010; Yampolskaya & Banks, 2006). Over half (n = 16) of the studies measured some form of child developmental delay, special behavioral, or health needs with seven indicating an association with higher risk.

Prior or Baseline CPS. Among the 20 studies in Table 2 sections B through D that clearly included cases with prior reports at baseline, fourteen studies controlled for prior CPS contact or prior foster care and ten found that prior CPS history (either reports or prior services) predicted higher risk of recurrence. Among the eight studies that controlled for baseline report source, findings were inconsistent. Four studies dichotomized reporter source into mandated compared to non-mandated reporters and only one found that baseline reports by mandated reporters were more likely to recur (Eastman et al., 2016; Jedwab et al., 2017; Jones, 1998; Putnam-Hornstein et al., 2015). The remainder included specific categories of mandated reporters compared to one or more categories of non-mandated reporters and findings varied by whether recurrence was limited to substantiated reports as well as the particular reference group selected (Bae et al., 2007, 2010; Fuller & Nieto, 2009, 2014).

Modifiable CPS response. The way a case is closed (disposition) or service receipt following a report or return from foster care may be modifiable through changes in funding, policy, and/or screening practices. Most studies that examined report disposition at baseline categorized cases as substantiated or not. A few studies controlled for additional categories such as alternative response, caregiver refusal of services, a midlevel decision point (indicated), or screened out cases (Drake et al., 2006; Eastman et al., 2016; Jonson-Reid, Emery, Drake, & Stahlschmidt, 2010; Lipien & Forthofer, 2004; Putnam-Hornstein et al., 2015). Seven studies found substantiation was not association with recurrence (Casanueva, Martin, & Runyan, 2009; Casanueva et al., 2015; Eastman et al., 2016; Helton, 2016; Jonson-Reid, Chung, et al., 2010; Kahn & Schwalbe, 2010; Kohl et al., 2009). Five studies found increased risk for substantiated cases with effects ranging from a 13% to more than three times (Fuller & Nieto, 2009, 2014; Lipien & Forthofer, 2004; Putnam-Hornstein et al., 2015; Thompson & Wiley, 2009). Other studies found recurrence risk related to substantiation varied by service receipt, type of recurrence, or type of maltreatment (Bae et al., 2007; Connell et al., 2009; Drake et al., 2003, 2006).

Over 70 percent of studies controlled for CPS services or foster care in some manner, but findings were mixed and difficult to compare. Studies varied according to whether services were any compared to none, broken out by different forms of CPS services, or included services outside CPS. Eight studies found decreased risk associated with in-home services, time served, or money spent on cases although this sometimes varied by recurrence type or substantiation status (Bae et al., 2010; Casanueva et al., 2015; Cheng & Lo, 2015; Drake et al., 2006; Helton, 2016; Jonson-Reid, Emery, et al., 2010; Kahn & Schwalbe, 2010; Yampolskaya & Banks, 2006). Six studies found increased risk associated with either specific types of recurrence, specific types of CPS services, or by substantiation status at baseline (Bae et al., 2010; Connell et al., 2007; Drake et al., 2006; Fuller and Nieto, 2014; Lipien & Forthofer, 2004; Putnam-Hornstein et al., 2015). Three of the four studies of recurrence after foster care (Table 2, Section D) indicated some effect of placement type, length of stay or number of placements but there was no consistency in variables included across studies.

Community/policy/other services variables. Only ten studies examined some type of community characteristic; three simply controlled for a given county or region in the sample (Fuller & Nieto, 2009, 2014; Fuller & Zhang, 2017). One study reported increased risk associated with poor housing conditions (Jones, 1998). Three others found increased risk associated with poverty at the census tract level, but all were done in the same state (Drake et al., 2003, 2006; Jonson-Reid et al., 2009; Jonson-Reid, Chung, et al., 2010). Two studies found no community effects (Jonson-Reid, 2003; Kahn & Schwalbe, 2010). One study included a policy variable, reporting that increased CPS spending per case decreased risk of an unsubstantiated re-report (Kahn & Schwalbe, 2010). Four studies controlled for screening for or receipt of some form of adult or child services outside CPS, but variation in types of service and whether services were for children or caregivers made them difficult to compare (Barth, Gibbons, & Guo, 2006; Dakil et al., 2011; Drake et al., 2006; Fuller & Zhang, 2017).

Given the discussion in the literature about the potential importance of variation in state and regional policies, the near complete lack of attention to policy context in existing studies was surprising. Because there were a number of studies (n = 18) located within a single identified state (n = 6 states), a brief post-hoc assessment of key policies related to reporting, screening and dispositions was conducted (see Table 3). While it is technically possible to identify the seven or eight largest states comprising the majority of NSCAW samples, findings were not broken out in this way in these studies. Column three of Table 3 presents the overall finding regarding neglect, with subsequent columns presenting the percentage of reports that the state screened in, the level of evidence to substantiate a case, and a paraphrased summary of the neglect definition. There was no readily apparent pattern in neglect findings according to higher or lower screen out rates or level of evidence for substantiation. There were, however, variations in neglect definitions that may have bearing on the composition of a given study sample. For example, infants born substance-exposed was included as a type of neglect for Illinois, but not in Missouri. Rhode Island includes sex trafficking as a form of neglect and Connecticut includes a reference to denying a child “moral care.” It is unknown what proportion of neglect cases might belong to unique subgroups.

Question 3: Among neglect reports, what predicts recurrence? Six studies were identified that conducted multivariate analyses among children reported for child neglect (see Table 4). Kang (2015) employed a structural equation model approach so findings for significant paths to recurrence are shown. Similar to “between type” maltreatment studies, younger children reported for neglect were at higher risk of recurrence. Only four studies captured modifiable child or family level risks. One study tested family level but not child level risk factors and found that low social support predicted recurrence (Dorsey, Mustillo, Farmer, & Elbogen, 2008). Kang (2015) found that perceived caregiver stress was associated with recurrence. Two studies found that an indicator of child disability

Table 3
Studies comparing recurrence risk for neglect and other maltreatment by state policy context.

State(s)	Study	Neglect finding	Policy context for reporting by region		
			% Reports screened out near baseline[a]	Level of evidence to substantiate[b]	Elements of neglect definition from state statutes
CA	Eastman et al., 2016	Neglect in 3 of 4 risk classes	31.5%	Preponderance	Suffer or is at risk of serious physical harm or illness due to: Failure to supervise and protect; Failure to provide adequate food, clothing, shelter, or medical treatment; Inability of the caregiver to provide due to caregiver mental illness, developmental disability, or substance abuse; Sibling maltreated and another child is at substantial future risk.
	Putnam-Hornstein et al., 2015	NEG > PHY			
	Jones, 1998	N.S.	Not avail	1994 Credible	
CT	Sledjeski et al., 2008	NS	Not avail	Credible	'Neglected' for reason other than poverty: abandoned, denied physical, educational, emotional, or moral care; environment is injurious to well-being; has been abused
FL	Bae et al., 2007	NEG > ABUSE	32%	Preponderance	Failure to Provide: necessary food, clothing, shelter, or medical treatment; Child's environment causes the child's physical, mental, or emotional health to be significantly impaired or at risk of significant impairment.
	Bae et al., 2010	NEG > ABUSEMULT > NEG	19.8%		
	Lipien and Forthofer, 2004	NEG > ABUSE	48%		
	Yampolskaya and Banks, 2006	N.S.	40%		
IL	Fuller, 2005	N.S.	In 2010 0%	Credible	Child is: not receiving necessary food or medical treatment; not receiving adequate clothing and shelter. The environment creates a likelihood of harm to the child's health, physical well-being, or welfare due to blatant disregard of caregiver. Caregiver refuses to allow home after out of home crisis care and makes no other formal arrangement. Newborn tests positive for a controlled substance
	Fuller and Nieto, 2014	Failure to Provide NEG +			
	Fuller and Nieto, 2009	NEG > SEX AB			
	Fuller and Zhang, 2017	NEG > PSYCH			
	Thompson and Wiley, 2009	ABUSE > NEG			
MO	Drake et al., 2006	NEG > ABUSE	In 1996 52.6%	Credible in 1994 2004 on Preponderance	Caregiver failure to provide proper or necessary support; education as required by law; nutrition; or medical, surgical, or any other care necessary for the child's well-being.
	Jonson-Reid et al., 2010a	NEG > ABUSE			
	Jonson-Reid, 2003	N.S.			
RI	Connell et al., 2007	NEG > SEX AB	45.6%	Preponderance	For reasons other than being poor child is abandoned, denied proper physical, educational, emotional, or moral care and attention; is permitted to live under conditions injurious to their well-being. A child or youth who is homeless; whose home cannot provide the specialized care that the physical or mental condition of the child requires; child is a victim of trafficking.
	Connell et al., 2009	NEG > PHY AB			

[a] Child Maltreatment Annual Reports Closest to Study Baseline Available.
[b] Child Maltreatment Annual Reports except Connecticut taken from: https://www.cga.ct.gov/2006/rpt/2006-R-0517.htm.

Table 4
Within type neglect studies: variables tested and significant associations.

Study	Variables tested in model(s). comparison (comp) group noted if applicable[a]	Statistically significant variables w/magnitude (odds ratios or risk ratios)			
		Child	Caregiver/Family	CPS response	Community, policy, other
Dorsey et al., 2008	**UOA: Children < 15 yrs** **DV** = Any recurrence **Child:** Age (years), Gender **Caregiver/Family:** Age (< 35 ref), Ethnic [BL, LAT, WH (ref), OTH], Married, MH or SA, Malt Hx, Parenting Skills, Stress, Poverty, # in household, IPV, Low Social Support **CPS:** Prior Report	N.S	Low Social Support 1.93	Prior report 2.56	None tested
Drake et al., 2003	**UOA: Children < 18 yrs** **Child:** Age (years), Gender, Ethnic [WH (ref) or NonWH] **Caregiver/Family:** Parental perpetrator **CPS:** Subst.; # victims on report, Serv[In-home Serv (FCS), Family Preservation (FPS), FCS& FPS, FOST, none (ref)] **Community:** Income in Census Tract (in 1000 s)	Model 1 DV = Any Recurrence Age 0.95; NonWH 0.95; Female 1.04	Parent perp 1.43	# victims 1.06; Subst 2.48; FCS 0.85, FPS 0.69, FCS & FPS 0.72, FOST 0.74 Interactions Subst*FCS 0.41; Subst*FCS/FPS 0.41; Subst*FPS 0.64; Subst*FOST 0.58; Time*Subst 0.98; Time*FPS 1.02; Time* Subst*FPS 1.03	Tract Income 0.99
		Model 2 DV = Subst Recurrence Age 0.96; Female 1.10	Parent perpetrator 1.61	Subst 2.83; FCS 0.77, FOST 0.72 Interactions Time*#victims 1.002; Subst*FCS 0.61, Subst*FPS 0.54, Subst*FCS/FPS 0.49, Subst*Foster 0.51; Time*FCS 1.01; Time*FPS 1.02; Time*sub*FPS 0.99	Tract Income 0.98 Interactions Time*Income 1.00
Jonson-Reid et al., 2009	**UOA: Children < 12 yrs** **DV** = Any recurrence **Child:** Age (years), Gender, Ethnic [WH (ref) v Non-WH], Dev Disability **Caregiver/Family:** HS Ed, Mother < 20 yrs, MH Tx, SA Tx, AFDC Receipt **CPS:** Mandated; Severe Harm **Community**: Median tract income in 1000 s	Age 0.95, Dev Dis. 1.26	No HS 1.47, MH Tx 1.71, SA Tx 1.69, No AFDC 0.49	NS	Tract income 0.99
Kang, 2015	**UOA: Caregivers** **DV** = Subst Recurrence **Caregiver/Family:** Age (years), Ethnic [BL, WH, OTH], # Kids, Income, Perceived Match[Need and Services], Stress **CPS:** Assess or Inv, Emotional Support, # Concrete Services, # Clinical Services		Path from Perceived Match with Perceived Stress (Perceived stress then associated with Recurrence)	Path from Emotional Support to Perceived Match	None tested

(*continued on next page*)

Table 4 (*continued*)

Study	Variables tested in model(s). comparison (comp) group noted if applicable[a]	Statistically significant variables w/magnitude (odds ratios or risk ratios)			
		Child	Caregiver/Family	CPS response	Community, policy, other
Kang et al., 2015	**UOA: Children < 18 yrs** **DV** = Any Recurrence **Child:** Age (years), Gender, Ethnic [BL, LAT, OTH, WH (ref)] **Caregiver/Family:** Age (years), Parent, # children **CPS:** Subst; Serve[In-home, FOST, both, none (ref)]	Model 1 Among Children Reported for Medical Neglect			
		NS	NS	Subst 5.76; In-home 3.01; Both 4.80	Not Tested
		Model 2 Among Children Reported for Supervisory Neglect			
		BL 0.67	NS	Subst 4.31; In-home 2.81; Both 2.06	Not Tested
		Model 3 Among Children Reported for Failure to Provide and Other Neg			
		Age 0.95; BL 0.66	# children 1.06	Subst 6.15; In-home 3.13; Both 4.18	Not Tested
		Model 4 Among Children Reported for Supervisory Neglect and Other Neg			
		Age 0.98	Parent 2.24; # children 1.05	Subst 5.49; In-home 3.38, FOST 2.43, Both 3.60	Not Tested
		Model 5 Among Children Reported for Both Abuse and Neglect			
		BL 0.50	NS	Subst 5.41; In-home 2.03	Not Tested
Ortiz et al., 2008	**UOA: Children < 18 yrs** **DV** = Any recurrence **Child:** Age (0–3 ref), Gender, Ethnic [AI, AS/HA/PI, BL, LAT, OTH, UNK, WH (ref)], Disability **CPS:** Prior victim, Reporter [MED, EDUC, LAW, FOST/childcare, Social Service/MH (ref), Nonmand], Invest vs. Alt response, Subst, Post-inv Serv, FOST	4–7, 0.94, 8–11, 0.81, 12–15, 0.70, 16+ 0.38; AS 0.64, BL 0.84, LAT 0.94, OTH 1.37, UNK 0.65; Fem. 1.04; Disable 1.26	Not Tested	Prior subst 1.50; current subst 0.84; MED 0.92, LAW 0.88, EDUC 1.24, NonMand 1.15; ALT Response 0.92; Served 1.59, FOST 0.93; Interactions: Alt Resp*FOST 1.50; Unsub*FOST 2.02	

[a] For studies with models of different DV results are broken into row subheadings. Abbreviations: Gender is limited to male or female designations in all studies. Subst = Substantiated/Indicated; Unsub = unsubstantiated; BL = Black; WH = White; LAT = Latinx; AS = Asian, AI = American Indian; HA/PI = Hawaii/Pacific Islander; CPS = Child Protective Services; MH = Mental Health; SA = Subst. Abuse; IPV = Intimate Partner Violence; HS = highschool; SIBS = Siblings; Tx = Treatment; Hx = history; FOST = foster care; KIN = kinship care; Group = group care; Nonmand = non-mandated reporter; Mand =mandated reporter; MED = Medical; SocSrv = social services; EDUC = educational; LAW = Court or Law Enforce; # = number; OTH = Other.

was associated with higher risk of recurrence (Jonson-Reid et al., 2009; Ortiz, Shusterman, & Fluke, 2008). Similar to studies comparing neglect to other forms of maltreatment, findings regarding baseline substantiation status and recurrence were mixed (Drake et al., 2003; Kang, Bae, & Fuller, 2015). Only one of the six studies explored recurrence by subtypes of neglect (Kang et al., 2015).

9. Discussion

The majority of the US CPS caseload involves allegations of neglect, which makes understanding the trajectory for these cases of critical import (US DHHS, 2019). Safety, often measured by maltreatment recurrence, is one of the primary goals of CPS response to reports (Jonson-Reid & Drake, 2018). About half of the studies comparing child neglect with other maltreatment types found that neglect increased the risk of recurrent reporting, but the range in effect sizes reported make it difficult to assess the practical impact of maltreatment type. Further, the degree of variability in the samples, model specification, and measurement of recurrence makes it difficult to draw conclusions about the relative importance of neglect in the context of other individual, family, community, and CPS response factors. Relatively few studies analyzed recurrence among neglect cases and the variation across studies made it difficult to suggest particular trends.

It was surprising that, despite the common use of the ecological model in child maltreatment research, so few studies described or tested community or policy related variables. While our post-hoc analyses failed to identify a pattern in neglect findings according to screen out rates or evidence needed for substantiation, this examination was limited to six states because of the available studies. It is possible that having a greater number of states would have uncovered policy relevant patterns.

Non-modifiable factors. Of the child and caregiver demographic characteristics measured, only child age and gender were measured frequently and had relatively consistent associations with recurrence. Consistent with prior reviews, gender typically had no association and younger children had greater risk (Helie & Bouchard, 2010; White et al., 2015). Given the significant attention to racial disproportionality and the intersection with poverty in child welfare research, it was also surprising that so few studies included measures of both (Child Welfare Information Gateway, 2016; Fluke, Harden, Jenkins, & Ruehrdanz, 2011). In nearly half of the studies reviewed, race/ethnic designation was not significant and the relative magnitude of increased or decreased risk varied across the remaining studies. Further, very few studies were able to break out racial/ethnic categories beyond White, Black and Latino groups. Similarly, few studies were able to report on nativity, despite concerns about changing demographics and possible differences in CPS experiences by immigrant status (Dettlaff et al., 2009). Purposive regional sampling is necessary to capture sufficient subpopulation numbers in future studies to build a better understanding of understudied ethnic groups like American Indian, Asian and/or immigrant populations. All other micro-level child and caregiver demographics had inconsistent associations with the outcomes and/or were too rarely included to draw conclusions.

CPS responses are designed to improve family function and generally target the primary caregiver (e.g., parenting supports, referrals for IPV, etc.). This made the lack of attention to caregiver demographics concerning. While demographics are not modifiable, it is important to understand whether there are subgroup differences in response to services to inform practice and policy (Jonson-Reid et al., 2017). When family demographics were controlled, the lack of consistent inclusion of key variables complicated interpretation. For example, while some studies indicate single parent families had increased risk, many of those studies failed to other key variables like family size, income or availability of social support. This makes it difficult to know if the family structure is a unique factor in recurrence or if it is more of a proxy for poverty or otherwise low resource households.

Modifiable factors following a report are of particular interest to both theory development and for informing practice and policy. Generally, theories suggest that families facing extreme or cumulative stressors may be more at risk of poor outcomes. However, only a little over half of the studies of recurrence measured caregiver and/or child risk factors. Particularly striking was the lack of attention to poverty and material needs given the longstanding and generally well-accepted relationship of poverty to maltreatment (Pelton, 2015). Similarly, though caregiver MH or SA problems are often cited as risk factors for maltreatment, their relation to recurrence has received much less attention (IOM/NRC, 2014). Further even in literature focused on initiation of maltreating behaviors, the empirical evidence for a causal role of MH and SA is relatively scant (Jonson-Reid et al., in press). There was no consistent association between these caregiver risk factors and recurrence among studies that included these as variables. It is not clear if this is due to the methodological variability between studies, an unmeasured confound with access to treatment, or other factor. One study of caregivers with known SA history, attempted to tease out the impact of SA treatment and found that prior treatment was associated with increased risk, but assessment for current need was associated with a decreased risk (Barth et al., 2006). It is possible that when services are received for some type of caregiver impairment prior to CPS contact that a report is reflective of lack of quality of care or treatment compliance and therefore services are more of a proxy for impaired caregiving (Drake et al., 2006). As families with CPS contact have needs that require services outside the child welfare system, it is important that we understand more about what caregivers receive before and after a maltreatment allegation.

There was also little attention to potential interactions or cumulative risk measures (e.g., Jones, 1998). It may be that the accumulation of barriers and risks is of greater import than any one factor or it may be that some factors are potent either alone or in combination with other factors (Loman, 2006; Solomon et al., 2016). Only a few studies in the present review along with some of the work on multiple recurrences not included used a more person-centered analytic approach that can identify clusters of risk or used a measure of cumulative risk (e.g. Chaffin, Bard, Hecht, & Silovsky, 2011; Eastman et al., 2016; Eastman, Putnam-Hornstein, Magruder, Mitchell, & Courtney, 2017; Jones, 1998; Proctor et al., 2012). There is insufficient literature to suggest how such models may better inform policy or practice compared to traditional variable based approaches. Likewise, there was relatively little attention to protective factors (e.g., social support, compliance with services, employment) requiring more work in this area.

CPS response. Hypothetically the eligibility for and approach to CPS services after a report are modifiable, but a family's CPS history at the time of a report is not. Among studies not limited to first reports, prior reports generally increased the risk of recurrence. What is less well known is how the characteristics of those with and without prior reports may vary in important ways that might better inform intervention for first time compared to returning families (Loman, 2006). Analytic approaches that can identify status at or change across time points or system contacts are needed (e.g., Chaffin et al., 2011; Jonson-Reid, Chung, et al., 2010).

Child welfare services typically include less intensive case management approaches, intensive in-home services for the families deemed at high risk of entry into care, and foster care (Jonson-Reid et al., 2017). Hypothetically, the risk of recurrence may vary for families receiving differing forms or combinations of forms of services or families that do or do not comply with service plans (Smith, 2008). While several articles controlled for services, few were able to distinguish between types of services provided and even fewer captured whether families were complying with or had barriers to accessing to services (e.g., Cheng & Lo, 2015; Dakil et al., 2011; Drake et al., 2006; Sledjeski et al., 2008). This makes it difficult to assess the inconsistency in findings regarding CPS services. Further, in some states services are limited by case dispositions like substantiation, which means that analyses must be similarly broken out (e.g., Putnam-Hornstein et al., 2015). A few authors have posited and sought to examine the perceived match between services and needs but there are two few studies to draw conclusions (Fuller & Zhang, 2017; Kang, 2015). Clearly more work is required to examine services within and outside CPS in relation to eligibility, level of participation, and other factors.

Community influence. Very few studies explored community level factors like poverty, safety or availability of resources. Community measures remain largely confined to studies of maltreatment occurrence or onset and even then remain limited (Coulton et al., 2007). Access and coverage in poor neighborhoods likely confound the effectiveness of CPS response given the strong reliance on case management rather than direct service provision (Fluke et al., 2011). Further, there may be psychological dimensions of a community that are of import to understanding how families may respond to CPS after an allegation, but only one study attempted to measure perceptions of the neighborhood (Jones, 1998). There may also be effects of other types of violence or community risk exposure that are associated with recurring maltreatment, but current literature is limited to predicting first occurrence (e.g., Daley et al., 2016). There are significant gaps in our understanding of how community factors impact maltreating behaviors over time and CPS system trajectories.

Policy. The absence of attention to policy level predictors of recurrence was striking given the frequent mention of the significant variation in regional approaches to child welfare and the potential importance of policy change over time (Jenkins et al., 2017; Jonson-Reid et al., 2017; Wildeman & Waldfogel, 2014). Only one study included a policy level variable (i.e., child welfare spending per child; Kahn & Schwalbe, 2010). Future studies should at least include discussion of the policy context for the particular sample. In multi-state studies, researchers should be encouraged to test variations in policy and/or economic context similar to Klevens, Barnett, Florence, and Moore (2015) approach in their study of maltreatment prevalence.

10. Conclusion

Consistent with prior reviews of maltreatment recurrence overall (Helie & Bouchard, 2010; White et al., 2015), wide variation in sampling, model specification and analytic approach is a barrier to understanding the relationship of neglect to recurrence. While Carnochan and colleagues (2013) provide a nice review of evidence for intervention programs to prevent recurrence, it remains unclear how one would select the correct program for a given population and policy context based on the present state of knowledge. A mismatch between the program and the population at risk or the resources available for implementation, may result in null or even negative outcomes. The availability of longitudinal data in electronic archives should make a comparison of findings across differing policy environments and population dynamics over time increasingly feasible (Jonson-Reid & Drake, 2018; Putnam-Hornstein et al., 2013a; Putnam-Hornstein et al., 2013b).

It is concerning that we know so little about recurrent reports when neglect is the most common form of maltreatment to which CPS responds. It is hoped that the present review provides sufficient context for both researchers and policy decision makers to assess the current state of knowledge. To improve our ability to target preventive intervention, future research should attempt to both replicate prior models with similar samples and model specifications as well as extend our knowledge regarding understudied factors at the child, family, community, services and policy levels.

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