

Neighborhood Collective Efficacy and Protective Effects on Child Maltreatment: A Systematic Literature Review

ABSTRACT

Research within the community-based child protection approach has used the neighborhood collective efficacy theory of social disorganization to focus on investigating the social conditions and processes that facilitate residents' ability to intervene or protect children from parental maltreatment. However, much of the research into the protective effects of neighborhood collective efficacy on child maltreatment has yielded mixed results. In a review of empirical studies published between 2008 and 2019, we investigated the sources of these mixed findings and the pathways through which neighborhood collective efficacy could protect children from parental maltreatment. Following the PRISMA guidelines for systematic literature reviews yielded 21 empirical research articles on the subject that were critically examined in line with the theoretical underpinning and research questions. Evidence suggests both direct and sequential pathways in which increased social cohesion and informal social control (ISC) protect against parents' maltreatment behaviors. Higher levels of neighborhood social cohesion were found to be a potential primary preventive strategy against risk factors for maltreatment. The use of ISC measures from the traditional collective efficacy scale account for the mixed findings and limited research on the direct and indirect forms of ISC. Moreover, the transactional processes posited by collective efficacy theory that link neighborhood social cohesion to ISC have yet to be examined and confirmed with respect to child maltreatment. Studies addressing these theoretical and methodological gaps are encouraged, in particular, studies examining ISC dimensions using item-measures of specific residents' actions within child maltreatment behaviors. The results provide

implications for community-based child protection practice, in terms of promoting cultural norms and values that foster social cohesion and facilitate ISC interventions within neighborhoods.

Keywords: collective efficacy, social cohesion, informal social control, child maltreatment, community-based child protection, social ties, systematic review.

What is known about this topic

- Collective efficacy could promote neighbors' intervention against parents' maltreatment behaviors.
- There has been a call to coordinate and situate the collective efficacy theory within child maltreatment research and develop pathways for research that support social work intervention.

What this paper adds

- We highlight intervention and primary preventive pathways (two each), in which collective efficacy through its sub concepts; social cohesion and informal social control, impact parents' maltreatment behaviors.
- Effects of neighborhood collective efficacy should be enhanced when informal social control is examined within residents' actual actions or reactions to observed maltreatment behaviors.
- A general framework has been developed, extrapolating the collective efficacy theory to child maltreatment and stressors that can impede the intervention approach.

Introduction

Over the years, systems and approaches to protect children from maltreatment have evolved after the publication of *The Battered Child Syndrome* by Kempe and colleagues (1962). To date, there has been a continuing shift from a focus on statutory child protection to family and community-based protection systems (Connolly, 2012; Gilbert, 2012; Holland, 2014). Archetypical of the factors influencing the systemic changes are the questions ‘What is the best way to protect children from maltreatment?’ and ‘What is the most effective mechanism to intervene in maltreatment situations?’ Recent evidence from several developed countries, including the UK, USA and Australia, have focused on enhancing the involvement of community and neighbors in addressing and safeguarding children from abuse and neglect (Coulton et al., 2007; Holland et al., 2011; McLeigh, 2013; Parton, 2014). In arguing for community-based child protection orientation, Holland (2014) and Melton (2013) contend that only neighbors, friends, families and the general public can effectively intervene and prevent maltreatment situations from worsening. This is because being in the same environment enhances effects of residents’ decision to intervene in observed child maltreatment as they consider themselves as part of the community regulated by shared norms and values (Melton, 2005). This orientation has informed contemporary child maltreatment research in investigating the protective effects of neighborhood collective efficacy on parents’ maltreatment behaviors.

Sampson and colleagues’(1997, 2002) collective efficacy theory of control explains the process by which social cohesion emanating from social ties and reciprocal neighborhood processes influences ISC efforts among residents when they observe adverse circumstances (such as crime and delinquent behaviors). Following this theoretical orientation, contemporary community-based child maltreatment research has examined the protective effects of

neighborhood collective efficacy on parents' maltreatment behaviors. However, research results within child maltreatment on the protective effects of neighborhood collective efficacy have been marred by conflicting research findings. Thus, this study analyzes relevant current research to understand how the collective efficacy theory is applied within child maltreatment and to unravel the causes of the mixed findings.

Guiding Review Questions

The following research questions guided the review:

1. How is the collective efficacy theory applied in child maltreatment research?
2. In what pathways do the collective efficacy measures (ISC and social cohesion) facilitate intervention or protect against parents' child maltreatment behaviors?
3. Which maltreatment subtypes are examined within the collective efficacy dimension of maltreatment prevention?

Tenets of the Traditional Social Disorganization Theory

Based on their research on crime rates in Chicago neighborhoods, Shaw and McKay (1942) concluded that social control measures are weakened in socially disorganized neighborhoods, where there are high rates of residential turnover and racial/ethnic heterogeneity. In such disorganized neighborhoods, ISC efforts are weakened due to residents' differences and unclear social norms. This theoretical position informed much of the research into neighborhood crime perpetration and the establishment of neighborhood control measures during the 1960s and 1970s. The focus on collective neighborhood features and the macro outlook of the theory was heavily criticized as being unable to explain contemporary crime-related social problems. However, the theory was reinvigorated in the 1980s with contributions from Sampson et al. (1997, 1999) and Bursik and Grasmick (2002). Bursik's (1988) contribution led to the development of the systemic

model of social disorganization and Sampson's contribution led to what we call today, collective efficacy theory. Their contributions addressed the criticisms of traditional social disorganization theory, especially the macro-outlook, by providing evidence about how individual-level interactions could influence crime prevention at the neighborhood level through increases in ISC.

Collective Efficacy Theory

Sampson's and colleagues' (1997) milestone study found a negative association between ISC and homicides, after controlling for the neighborhood structural factors Shaw and McKay (1942) argued caused crime, namely: level of poverty concentration, racial differences, prior homicide incidence and residential mobility. They concluded that neighborhood structural factors and neighborhood disorders are initiators of collective actions of control in the form of ISC intervention. Social cohesion and ISC are the two main concepts underpinning collective efficacy theory. The theory holds that in a neighborhood where there is a higher level of social cohesion and mutual trust, residents will willingly undertake ISC by intervening in neighborhood disturbances to ensure social order (Sampson et al., 2002; 2013). ISC interventions will be less forthcoming in neighborhoods where norms are unclear and the level of trust among members is low. These theoretical postulations were empirically examined and supported in several research studies led by Sampson on crime and neighborhood control efforts (Sampson et al., 1997, 1999, 2002).

ISC underscores the actions and willingness of residents to intervene in addressing neighborhood social problems. Also noteworthy is the critical role of neighborhood transactional process, including collective engagements and participation which fosters social cohesion and trust among neighbors. Warner (2014) therefore argues that social cohesion and mutual trust are necessary conditions central to collective efficacy and ISC intervention. Sampson and colleagues'

(1997) argument that their collective efficacy theory can be utilized and applied to all issues affecting the wellbeing of society provides some justification for its application in child maltreatment research. Also, the fact that most maltreatment behaviors are criminalized by national legislation lends some support to the adaptation of crime-related theories within maltreatment research. Moreover, the focus of the model on social process and behavioral change renders its application in other social science disciplines cogent.

ISC Dimensions in the Collective Efficacy Theory

Collective efficacy theory presents two forms of ISC intervention (direct and indirect intervention), denoting how neighbors intervene in response to deviant behaviors (Gau, 2014; Warner, 2014; Warner et al., 2010). Direct ISC intervention involves directly intervening to address observed inappropriate behaviors within neighborhoods (Warner, 2014; Warner et al., 2010). Residents' direct ISC efforts are dependent on the observed inappropriate behaviors and decision on what action will serve the common good of society (Sampson, 2006). Within child maltreatment, residents may directly intervene by calming parents down (Emery et al., 2015b) or providing necessary support, such as food, in cases of neglect. The direct intervention component of ISC mimics the earlier writings of the social control theory, which talks about developing the capacity of organizations to control and solve their own problems (Janowitz, 1975). Greenberg, Rohe, and Williams (1988) found the direct form of ISC intervention to be commonly practiced when the intervention involves making contact with the offender. The goal of direct intervention is to protect victims, clarify norms to the offenders and protect against future crimes (Warner, 2007).

The indirect form of ISC involves residents making contacts with outsiders, usually formal social control agents, to intervene in undesirable neighborhood behaviors (Warner et al., 2010). In

most cases, the police and professionals in formal organizations are called upon by neighbors. Warner (2014) observed that in neighborhoods where there are high hopes in the police, ISC in the form of indirect intervention may be successful because it provides legal backing to neighbors' intervention efforts. With respect to child maltreatment such actions may involve calling child protection authorities or child welfare professionals to safeguard maltreated children.

Also, central to the collective efficacy theory is that higher expectations of ISC among residents are deemed to deter the perpetration of violence and anti-social behaviors (Sampson, 2013). Thus, where ISC expectations are high, residents will be more likely to engage in desired behaviors in accordance with social norms and values, which means that they will be deterred from engaging in undesirable behaviors. This is known as the deterrent form of ISC (Gau, 2014; Warner, 2014). Warner (2014) argued that most theoretical measures of ISC somehow conform to this form of ISC because they measure residents' impression of the likelihood of intervention in low and high ISC conditions. It is evident that the collective efficacy model suggests comprehensive pathways to enhance ISC efforts within neighborhoods.

In line with the general exposition of collective efficacy theory, a framework explaining the central concepts and transaction process in which neighborhood social processes influence ISC efforts in child maltreatment has been developed (see Figure 1). The framework highlights the direct and indirect ISC intervention in connection with child abuse and neglect. The framework also introduces behavioral stressors that can impede neighborhood intervention in child maltreatment behaviors. These include neighborhood social factors or behaviors that inhibit positive interactions or prevent neighbors from intervening in response to observed or anticipated child maltreatment. In her study of communities in Wales, Holland (2014) found that false accusations and neighbors' feelings of guilt can inhibit ISC efforts. Similarly, Warner et al. (2010),

found accusations and hostility from recipients of ISC efforts to be obstructions to the ISC intervention.

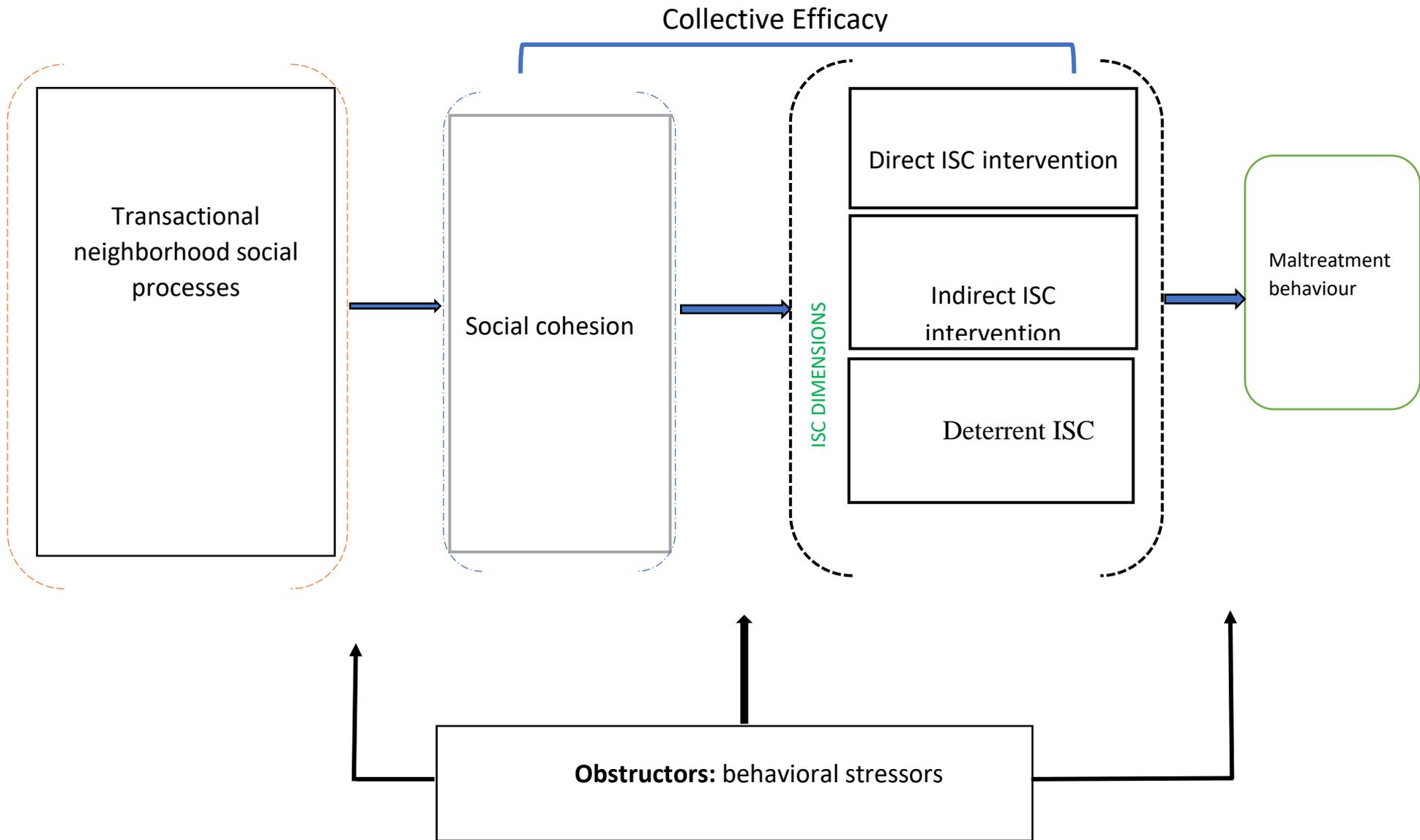


Figure 1: Framework showing the general transactional process of the collective efficacy theory in child maltreatment.

Methods

Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009) and suggestions from Rew (2011), a comprehensive literature search was conducted to synthesize research evidence on collective efficacy effects on child maltreatment. The PRISMA framework consolidated the entire review by guiding us on relevant information to report. This in turn helped to improve the transparency, replicability and robustness of evidence provided (Higgins & Green, 2008). The entire procedure involved: describing, appraising and synthesizing relevant research within the scope of the study. Details of the methodological procedure have been provided in the following subheadings.

Inclusion and Exclusion Criteria

Following the research aims and objectives, clearly defined inclusion and exclusion criteria were set out before the literature search commenced. Studies were included if they satisfied the following criteria:

- A) Article examined collective efficacy measures (ISC, and/or social cohesion) as interventions or preventive mechanisms for any subtype of child maltreatment.
- B) Articles reported findings from any/all the following key stakeholders in child maltreatment: parents, children, youth and community members.
- C) Articles are empirical research published only in academic peer-reviewed journals using the English language between 2008 to 2019.
- D) Articles reported empirical findings (quantitative or qualitative).

Articles that did not satisfy the above criteria (A-D) were excluded. Specifically, articles were excluded on the following bases:

- A) Not published in peer reviewed academic journals.

- B) Did not report findings on any of the collective efficacy measures (social cohesion and ISC) and effects on maltreatment subtypes.
- C) Articles reporting findings solely on neighborhood structural factors (poverty, residential instability, unemployment among others) were excluded.
- D) Systematic reviews, opinion papers, conference abstracts and articles with full text unavailable were excluded.

Because the focus of this review was on intervention efforts by ordinary citizens in neighborhoods and child maltreatment behaviors, studies involving professionals including teachers, police, health workers and child protection workers were excluded.

Search Strategy

Articles were obtained from the following key databases; PsycINFO, PubMed, CINAHL, and Web of Science. Also, specific journal searches was conducted in key child maltreatment research journals, including: Child maltreatment, Child Abuse & Neglect, Children and Youth Services Review, Child Abuse Review and the Journal of Community Psychology. Key words in combination with Boolean operators were used in the article search (See Table 1 on some key words used). Expert recommendations and ancestry searches supplemented the identification of articles (Cooper, 2016). To avoid the duplication of articles, York Dare database, Cochrane library and PROSPERO were searched to identify unpublished works and ongoing reviews.

Table 1: Word combinations and search strategy

Child* Abuse OR Neglect
AND
Neighborhood* intervention OR Prevention
Child* Abuse OR Neglect a

<p>AND</p> <p>Informal social control OR Social Cohesion</p>
<p>Child* Abuse AND Neglect</p> <p>AND</p> <p>Collective efficacy OR Social Capital</p>
<p>Child maltreatment</p> <p>AND</p> <p>Social support OR Neighborhood* Support</p>

Note: (*) is used to identify different ways the word maybe written.

Search Outcome and Screening

An uncontrolled and unlimited search from the databases yielded vast results of more than 3000 references. The uncontrolled search strategy provided initial ideas and basis to control the search. The search was controlled using the study inclusion period (2008-2019), empirical research, and the combination of key words. The limited search resulted in retrieving 2,192 articles from the databases and 17 from the ancestry and specific journal searches. These results were imported into the Zotero reference manager and duplicates of 907 references were removed. The remaining articles, together with the inclusion and exclusion criteria were shared with an independent reviewer for concurrent screening. First, title screening was performed followed by abstract review and strict application of the study inclusion and exclusion criteria. After thorough discussion among the researchers, the independent reviewer and the expert, 46 articles were left for full-text review. After the full-text review, 21 articles were included in the study.

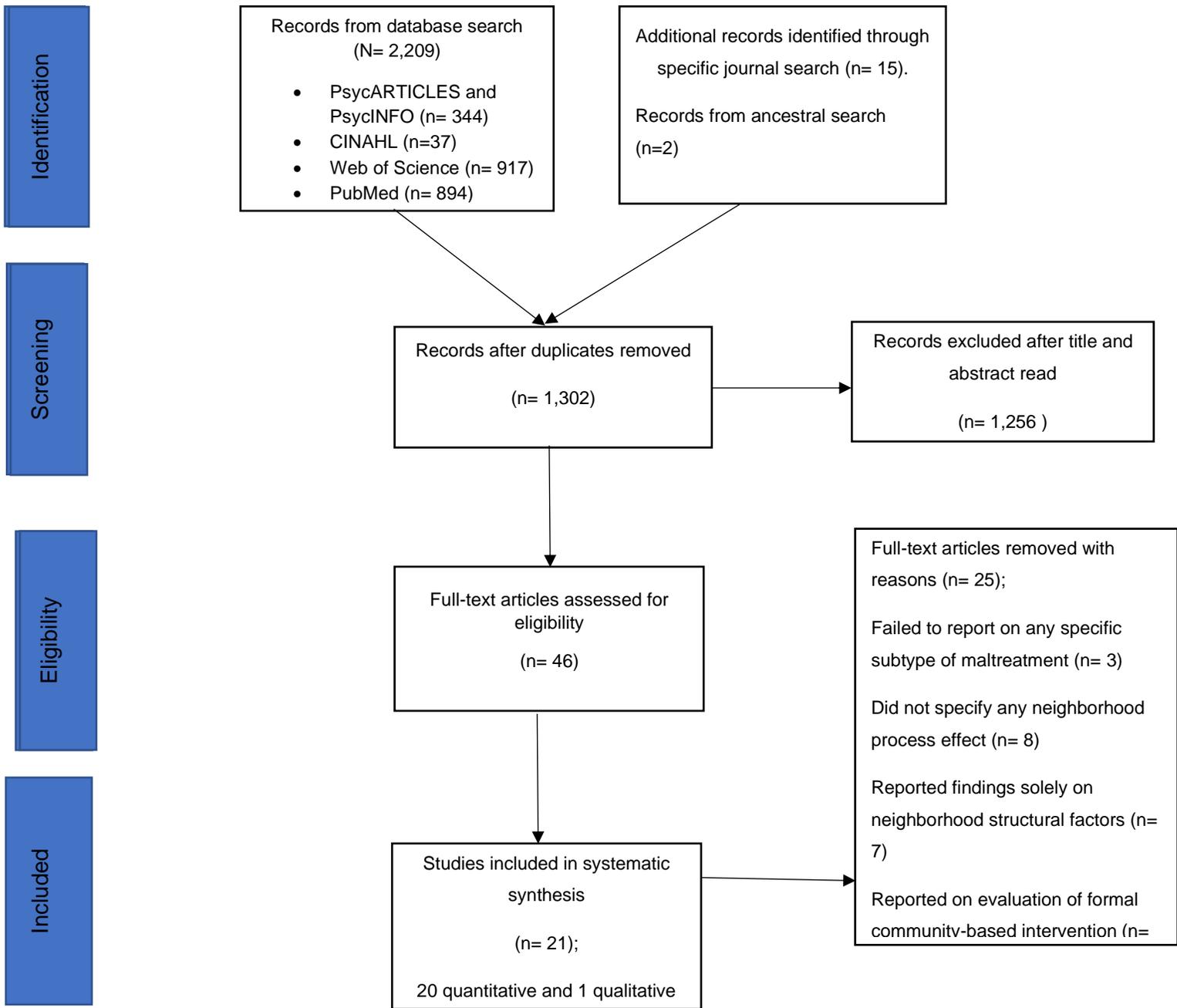


Figure 2. PRISMA flow diagram (Moher et al., 2009).

Quality Appraisal and Data Extraction

Quality of the included studies was assessed using the critical appraisal tool developed by the Center for Evidence-Based Management (Center for Evidence-Based Management, 2014), which has been employed in a recent study review reporting findings from mostly quantitative studies (Häggman-Laitila et al., 2019). The included studies scored satisfactory points on the 12-item checklist (See Appendix Table 2 and 3). To ensure robustness and minimize selection bias, the appraisal tool and included studies were validated by the independent reviewer. Further, a data extraction guideline was developed in consultation with a published literature review related to the subject (Coulton et al., 2007) to extract essential information from the included studies (See Table 4).

Table 4: Summary of Research Results on Collective Efficacy Effects on Child maltreatment

Author and year	Country/ Area	Sample/source of data	Study Participants	Measure & Design	Maltreatment subtype addressed	Collective efficacy component/ social processes examined	Intervention/preventive strategy examined or reported	Key findings
Emery et al., (2019)	Korea and Russia	202, cross-sectional vignette study	Parents	Random effect regression model	Physical abuse	ISC	The direct ISC efforts by neighbors deter parents who abuse their children from doing so.	ISC had a deterrent effect on actual perpetrators of abuse by reporting low likelihood of re-engagement in abusive behaviors, but it did not have a deterrent effect for those who did not commit child abuse.
Nawa et al., (2018)	Japan	4,291/ Adachi Child Health Impact of Living Difficulty (A-CHILD)	Mothers and caregivers	Multilevel analysis	Physical abuse	Social capital measured using, social cohesion	Increased neighborhood solidarity and social capital mitigate physical abuse incidence	The study found that community level social capital in the form of trust, social cohesion and mutual trust helped to reduce instances of child physical abuse, even in poor families.

McLeigh et al., (2018)	USA	483, neighborhood survey and administrative data from the South Carolina Office of Research and Statistic	Caregivers with children under 10 years of age.	Multiple regression models	Child abuse and neglect	Social cohesion	Enhanced social cohesion through collective activities and social network would prevent abuse and neglect even among poor families.	Social cohesion (including mutual trust, shared expectations) was identified to mediate poverty and abuse but not neglect.
Wolf et al, (2018)	USA	946/California speaks panel program (CALSPeAK S)	Adults in the general public	Weighted multivariate logistic regression/ Experimental vignette design	Physical abuse	Collective efficacy (social cohesion scale and ISC)	Indirect ISC efforts by reporting to the police or child protection authorities.	Neighborhood collective efficacy influenced direct intervention in child abuse, but neighbors were more willing to intervene and report abuse incidence observed in an unfamiliar neighborhood rather than their own.

Finno-Velasquez et al., (2017)	USA	28/ SoCal Neighborhood and Child Welfare study	Community Key informants	Thematic content analysis	Child abuse and neglect	Social processes influencing reportage of maltreatment cases.	Neighbors intervention through reporting to child protection authorities	In areas with low reporting rate of maltreatment, participants perceived that neighbors helped each other in promoting accepted parenting practices and childcare. Also, in communities with strong relations and common interest among members, neighbors provide social support to mitigate parental stress and prevent issues of maltreatment.
Cao & Maguire-Jack (2016)	USA	3288/ Wave 3, Fragile Family and Child Wellbeing Study	Mothers	Structural equation model	Physical abuse, neglect and psychological aggression.	ISC, social cohesion, community participation and social disorder	Mothers' informal community participation helps to prevent mothers' maltreatment behavior through enhancement of internal control.	Mothers' informal community participation was indirectly associated with neglect, physical aggression and physical abuse, through the influence of mothers internal control. However, no direct relationship was found between mothers' community participation and all maltreatment subtypes.

Fujiwara et al., (2016)	Japan	1,277/cross-sectional survey	Women with 4-month old infants	Multiple logistic regression	Infant physical abuse	Social capital, measured by neighborhood trust and social support,	Mothers personal and social trust with neighbors' support parenting and prevent infant physical abuse.	The study found that community social capital (trust) and social network protect parents from physically abusing their infants.
Molnar et al., (2016)	USA	Illinois' child protection agency, 1995–2005. Sample size not reported	General reported cases of child maltreatment	Multilevel analysis	Neglect, physical abuse, sexual abuse and substance-exposed infants	Social cohesion and ISC, Intergenerational closure and social network	Increased neighborhood collective efficacy help to mitigate risk of neglect and physical abuse.	Even in the presence of neighborhood structural factors (poverty and social disorder), neighborhood collective efficacy was associated with neglect, physical abuse and substance exposed infants but not sexual abuse.
Maguire-Jack & Wang (2016)	USA	1045, cross-sectional data from families in Franklyn County, Ohio	Families	Structural equation modelling	Child neglect	Social cohesion and social support	High social cohesion reduced parenting stress and was found to mediate parents' neglectful behaviour.	The pathway analysis found neighborhood social cohesion to correlate with social support (higher) and lower parental stress and finally related to lower levels of neglect. Thus, higher level of social cohesion increased parents' social support

								from neighbors which reduced parenting stress and consequently reduced child neglect incidence.
Barnhart & Maguire-Jack (2016)	USA	1,158 / Wave 3 & 4, Fragile Family and Child Wellbeing Study	Single mothers	Structural equation modelling	Physical abuse and child neglect	Social cohesion and ISC	Enhancing social cohesion and reduced rate of maternal depression would protect single parents against parental child neglect and physical abuse.	The study found that ISC did not show any direct relationship with either physical abuse or neglect, but, social cohesion showed inverse relationship with both physical abuse and neglect. The inverse association was also mediated by maternal depression.
Maguire-Jack & Showalter (2016)	USA	896/Franklin county neighborhood services study.	Parents	Negative binomial regression	Physical abuse and child neglect	Social cohesion	Through social cohesion neighbors provide childcare support and emergency supports that protect children from neglect.	Neighborhood social cohesion was related with lower levels of neglect but not physical abuse and substance abuse.

Lavenda et al., (2016)	Israel	198	Parents	Factor analysis	Child abuse and neglect	Collective efficacy	Strengthening neighbors' sense of efficacy and child safety has been recommended for future examination to strengthen protective child maltreatment mechanisms.	In a specifically designed scale to measure collective efficacy and child maltreatment, this study found a significant effect of collective efficacy to be protective against parents' child maltreatment.
Cheung, (2016)	China	1956, cross-sectional survey among high school students in Shanghai	High school students	Structural equation modelling	Physical abuse	Neighbors social support	Reporting to legal authorities and punitive measures such as legal punishment for parents' physical abuse protect children from abuse.	In the presence of neighbors, fathers' legal punishment for physical abuse deterred mothers from abusing their children
Kim & Maguire-Jack (2015)	USA	2991/ 5-year core, Fragile Family and Child	Mother s	Nested logistic regression	Physical abuse, neglect and	Social cohesion, community	Learning positive parenting practices through community engagement and	High level of community involvement and positive perception of neighborhood social control were inversely

		Wellbeing Study			psychological aggression (emotional abuse)	participation and ISC	participation could mitigate risk of physical abuse and psychological aggression	related with psychological aggression.
Freisthler & Maguire-Jack (2015)	USA	2023/cross-sectional survey among parents in California cities	Parents	Multilevel models	Physical abuse	ISC and social disorder	The study found that even in neighborhoods with higher levels of physical disorder and poverty, increasing social cohesion can help reduce physical abuse.	High level of social disorder predicted higher rates of physical abuse, whilst higher levels of collective efficacy were related with lower rate of physical abuse.
Emery et al., (2015a)	Nepal	300/ Kathmandu Families and Neighborhoods Study (KFNS)	Families (married or partnered)	Logistic regression	Physical abuse	ISC	Punitive intervention such as reporting to agencies for parents to be punished.	The study found that neighbors' intervention to protect parental intimate partner violence (IPV) by calming the abuser also reduced children's likelihood of being physically abused.

			women)					
Wolf (2015)	USA	3023/ telephone survey in 50 California cities	Parents	Multilevel regression	Child physical abuse	Collective efficacy (ISC, social cohesion)	Increased social support among neighbors would be protective against parents abuse and neglectful behaviors.	Among the domains of social support, emotional support was inversely associated with physical abuse for both men and women, but the effect was stronger for women. While companionship support was positively associated with physical abuse for women but inversely related with men.
Emery et al., (2015b)	Vietnam	293/Hanoi Families and Neighborhood Study (HFNS)	Families	Random effect regression	Physical child abuse	ISC	ISC within families protect physical abuse and mothers externalizing behaviors.	The study found lower odds of physical abuse to be associated with protective ISC-CM. Whereas perceived collective efficacy and punitive ISC-CM was not associated with lower odds of severe physical abuse. The odd ratio showed that a unit increment in ISC-CM resulted in probability of very severe

								physical abuse occurring being two times less.
Emery et al., (2015c)	Seoul, Korea	541/ cross-sectional survey	Families	Random effect regression	Physical abuse	ISC	Neighbors' direct intervention to calm parents' physical abuse has the propensity to reduce the magnitude of children's injury.	Increased protective ISC intervention moderated severe physical abuse and children's injury.
Yonas et al (2010)	USA	Caregivers (N=861) and Youth (N=823)/ LONGSCAN	Caregivers and Youth	Generalized Estimating Equations (GEE)	Physical abuse and neglect.	Collective efficacy (social cohesion and ISC)	Increasing collective efficacy has the potential to reduce externalizing behaviors among youth who experienced maltreatment in their childhood	Collective efficacy moderated the relationship between earlier neglect and aggression in that such people had lower externalizing behaviour. It is worth noting that abuse model did not find this relationship significant.
Guterman et al., (2009)	USA	3,356/cross-sectional survey	Mothers	Structural equation modelling	Neglect and	Perception of neighborhood (social	Improving parents' internal control and enhancing their	Mothers personal control showed negative predictor of parenting stress. Thus, parents

		interviews among parents from 20 cities/year 3 of Fragile Family and Child Wellbeing Study			physical abuse	cohesion, ISC and social disorder)	positive perception of their neighborhoods will help eliminate the risk of parenting child abuse and neglect	with higher level of control of their own affairs had limited parenting stress. Also, negative perception of neighborhood processes indirectly predicted risk for both physical child abuse and neglect through mothers' lower sense of personal control.
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Characteristics and Summary of Included Studies

Twenty-one studies satisfying the eligibility criteria were included and their findings were synthesized to provide answers to the research questions. The majority (n=13) of these studies were conducted in the USA, followed by studies conducted in Asian countries, namely; Japan, Korea, China, Nepal and Vietnam. The evidence is skewed with limited studies from the global south. Rigorous quantitative techniques, including Structural Equation Modelling (SEM), and various regression techniques were employed, with majority reporting an acceptable coefficient (Cronbach $\alpha > 0.7$) of the scales adopted. A few of the American studies emanated from the national longitudinal study on Fragile Families and Child Wellbeing (FFCW) (Barnhart & Maguire-Jack, 2016; Cao & Maguire-Jack, 2016; Kim & Maguire-Jack, 2015; Guterman et al., 2009), and the majority of the remaining studies were cross-sectional surveys (Nawa et al., 2018; Fujiwara et al., 2016; Emery et al., 2015a, b, c; Freisthler & Maguire-Jack, 2015; Guterman et al., 2009). Participants for these studies were mostly mothers and caregivers, a few adults and community members (Wolf et al., 2018; Finno-Velasquez et al., 2017; Yonas et al., 2010). The common data collection techniques across the included studies were survey interviews and telephone or online surveys. Further evidence from the studies indicates that child physical abuse is the most examined subtype of maltreatment in relation to collective efficacy as an intervention or prevention mechanism. Various forms of physical abuse behaviors were examined in 18 of the total included studies, followed by neglect, which was reported in 12 studies.

Results

The Protective Effect of Social Cohesion on Child Maltreatment

In most of the included studies, collective efficacy was examined through direct relationships between the measures of neighborhood social cohesion and parents' maltreatment

behaviors (McLeigh et al., 2018; Barnhart & Maguire-Jack; 2016; Maguire-Jack & Showalter, 2016; Maguire-Jack & Wang, 2016). Using specific generalized linear models such as nested logistic regression, negative binomial regression and direct effects in Structural Equation Models, inverse relationships between the social cohesion measures and maltreatment behaviors were interpreted as denoting the existence of protective effects (McLeigh et al., 2018; Fujiwara et al., 2016; Maguire-Showalter, 2016; Maguire-Jack & Wang, 2016). Thus, an increase in social cohesion within neighborhoods might result in preventing parents from maltreating their children. For example, in two studies (by; Barnhart & Maguire-Jack., 2016; Maguire-Jack & Showalter, 2016), a high rate of social cohesion was associated with lower rates of basic needs neglect. Within these studies, social cohesion was deemed to have a positive influence on parents which prevented maltreatment behaviors. However, social cohesion was not found to be associated with parents' neglectful behaviors in a cross-sectional study among families in Ohio (Maguire-Jack & Wang, 2016).

Also, because the social cohesion measures included items on trust and mutual expectations from neighbors, some studies (Kim & Maguire Jack, 2016; Lavenda et al., 2016) employed the pooled measures of collective efficacy by Sampson to examine parents' perception on the level of trust and social cohesion in their neighborhoods. The inverse association of the pooled effects is interpreted as a protective effect of social cohesion against parents' proclivity to maltreat their children. Similarly, Cao & Maguire-Jack (2016) and Guterman et al., (2009) included measures of social disorder to determine parents' positive or negative perceptions of their neighborhood cohesion and how it related to maltreatment behaviors. Mothers' negative perceptions of their neighborhood cohesion were associated with higher incidence of psychological aggression (Cao & Maguire-Jack, 2016) but Guterman's study did not find any association with neglect. This

evidence strengthens the conceptualization of social cohesion as both a product of neighborhood social processes and a precursor that initiates collective parenting and neighborhood engagement.

Evident in the second path of Figure 3, the direct examination of the protective effects of social cohesion against undesirable behaviors supports collective efficacy theory. Nonetheless, the studies failed to extend ways in which the higher social cohesion influenced ISC efforts by directly intervening in observed abuse, which is the crux of the collective efficacy theory. In some instances, higher social cohesion within neighborhoods may influence residents to shield their neighbors by avoiding reporting severe maltreatment behaviors to formal child protection agents (Wolf et al., 2018). The mixed findings in some studies confirm these setbacks. Using nested logistic and Poisson regression models, social cohesion was not directly associated with physical abuse (Maguire-Jack & Showalter, 2016; Wolf, 2015) and any other subtype of maltreatment behavior in Kim & Maguire-Jacks' (2015) study.

The Protective Effects of ISC on Child Maltreatment

Deterrent ISC Protective Effect

The final path of the applied collective efficacy framework (see Figure 3) was reported in studies that examined the association between ISC and parents' maltreatment behaviors using the ISC components of the traditional measures of collective efficacy by Sampson and colleagues (1997) (Barnhart & Maguire-Jack, 2016; Freisthler & Maguire-Jack, 2015; Kim & Maguire-Jack, 2015; Wolf 2015; Yonas et al., al 2010) and other modified scales (Emery et al., 2019; Lavenda, 2016; Emery et al., 2015a, b, c). Using the traditional measure of ISC, neighbors' perceived ISC was found to correlate with lower incidence of child physical abuse and neglect (Freisthler and Maguire-Jack, 2015; Kim and Maguire-Jack, 2015). This suggests that higher expectations of ISC efforts from neighbors may deter parents from abusing or neglecting their children. On the

contrary, studies from similar contexts (Barnhart & Maguire-Jack, 2016; Wolf, 2015) did not find any significant direct association between ISC and child neglect and physical abuse. Similarly, neighbors' perceived ISC mediated the relationship between neglect and externalizing behaviors among young adults who experienced earlier neglect (Yonas et al., 2010). However, the mediating effect of ISC and externalizing behaviours in sexual and child abuse was not significant.

Emery et al., (2015b, 2015c) attributed the source of these mixed results to the items measuring ISC on the traditional scale by Sampson. They argued that the traditional measures of ISC were originally designed to examine ISC efforts in public spheres, such as street crime. However, most child maltreatment incidence happens within the family milieu. Also, in line with the dimensions of ISC, the traditional ISC measures fail to account for the kind of ISC efforts; thus, the way and manner neighbors intervene when they observed undesirable behaviors. In response, they developed a modified measure of ISC, dubbed ISC-CM scale, which addresses the above limitations. Following the logic of their scale, neighbors' direct intervention (Direct ISC) in physical abuse incidence deterred actual perpetrators from engaging in abusive behaviors (Emery et al., 2019). However, their findings were not significant for parents who did not actually abuse their children. This suggests that false accusation may not deter parents from abusing their children. Rather, punishing mothers for abusing their children may deter fathers from abusing their children (Cheung, 2016). The evidence suggests that neighbors willing to report abuse within their neighborhoods should have adequate evidence so as to avoid hostilities associated with wrong accusations. Findings from Cheung's (2016) study should be interpreted with caution as they sought the views of students on the potential deterrent effects of parents' abusive behaviors and neighbors support, without using any established ISC scale.

Direct and Indirect ISC Protective Effect

The ISC-CM scale specifically examines the actions of neighbors when they observe maltreatment situations. These include direct involvement to calm parents and provide support to the victim (Direct ISC) or report parents to the police or child welfare officers (Indirect ISC) for punitive actions. The direct form of ISC, which Emery and colleagues (2015b) described as a protective form of ISC-CM was found to be associated with less severe child physical abuse and moderated the relationship between very severe physical abuse and child externalizing behaviors. These findings were confirmed in a subsequent study among parents in Seoul (Korea) (Emery et al., 2015c), where the protective form of ISC-CM moderated the relationship between very severe physical abuse and child injuries. However, their punitive measure of ISC-CM showed no significant relationship with physical child abuse (Emery et al., 2015b). Suggesting that punitive measures, such as punishment for abusive parents, do not predict the odds of physical abuse occurrence. The findings may be explained by the reluctance of neighbors to report abusive behaviors due to sympathy for the victim and fear of social reprisal (Wolf et al., 2018).

Collective Efficacy Protective Effects on Risk Factors of Child Maltreatment

In employing sophisticated multivariate techniques such as SEM, pathway analysis and mediation/moderation models, few of the reviewed studies examined common risk factors such as parental stress, internal locus of control, psychological distress and maternal depression as mediating variables explaining the relationship between collective efficacy factors and subtypes of maltreatment (Nawa et al., 2018; Barnhart and Maguire-Jack 2016; Cao & Maguire-Jack, 2016; Maguire-Jack & Wang, 2016; Kim & Maguire-Jack 2015; Guterman et al., 2009). Barnhart and Maguire-Jack (2016) found maternal depression to mediate the relationship between social cohesion in both physical abuse and neglect behaviors. Similarly, risk of child neglect and abuse

is high when mothers' negative perceptions of their neighborhood processes are mediated by parental stress and internal control (Cao & Maguire-Jack, 2016; Guterman et al., 2009). Thus, parents with positive perceptions of the level of trust and social cohesion have higher levels of control of their affairs, limited parenting stress and thus, will be less likely to abuse their children. Fujiwara et al., (2016) observed that in neighborhoods with strong social cohesion, information on good caregiving and childrearing practices would be easy to disseminate among parents to ensure compliance to neighborhood norms on childcare practices. However, these transactional neighborhood activities could be hampered in communities with individualistic cultural beliefs (Emery et al., 2015b). The findings support the theoretical position on the potential benefits of neighbors' involvement in collective neighborhood activities and the impact of collective efficacy on parenting practices.

Influence of Transactional Neighborhood Social Processes on Collective Efficacy

According to collective efficacy theory, social processes within neighborhoods that foster social cohesion and trust are prerequisites for ISC. As a result, few of the included studies examined specific transactional social processes within the neighborhoods to demonstrate their influence on maltreatment behaviors (Cao & Maguire-Jack, 2016; Molnar et al., 2016; Kim & Maguire-Jack, 2016). Parents' community participation was inversely associated with neglect (Cao & Maguire-Jack, 2016). However, the relationship was not significant in the case of physical abuse and aggression. In sharp contrast, Kim and Maguire-Jack (2015) found parents' community involvement to be inversely related to physical aggression. Evidence from interviews with community key informants revealed that, frequent interactions and involvement in community activities could source informational and concrete support, which will prevent neglectful behaviors (Finno-Velasquez et al., 2017). Through community activities parents may share their emotional

challenges and get support from neighbors (Kim & Maguire-Jack., 2015; Wolf, 2015). Mothers' non-participation in neighborhood activities was associated with increased likelihood of neglect by 60% and psychological aggression by 56% (Kim & Maguire-Jack, 2015). The evidence underscores the potential benefits of parents participation in shared neighborhood activities.

Additionally, an examination of reported child maltreatment cases to child welfare authorities in the State of Illinois (Molnar et al., 2016) found social network and intergenerational closure (parents' knowledge of their neighbors children and friends of their children) to be associated with lower rates of substantiated maltreatment incidence. The strength of these findings are reinforced by the fact that different social processes including: community participation, social engagements and intergenerational closure, were all found to be protective against different kinds of maltreatment behaviors (Molnar et al., 2016; Cao & Maguire-Jack, 2016; Kim & Maguire-Jack, 2015). Closely related to the transactional pathway posited by the general model of collective efficacy (Figure 1), parents' social engagements and participation moderated the impact of social cohesion and ISC on parents' psychological aggression (Kim & Maguire-Jack, 2015). Further research along this transactional pathway is required to ground the collective efficacy theory in child maltreatment and provide evidence to develop collective efficacy enhancement programs.

General Model: Collective Efficacy

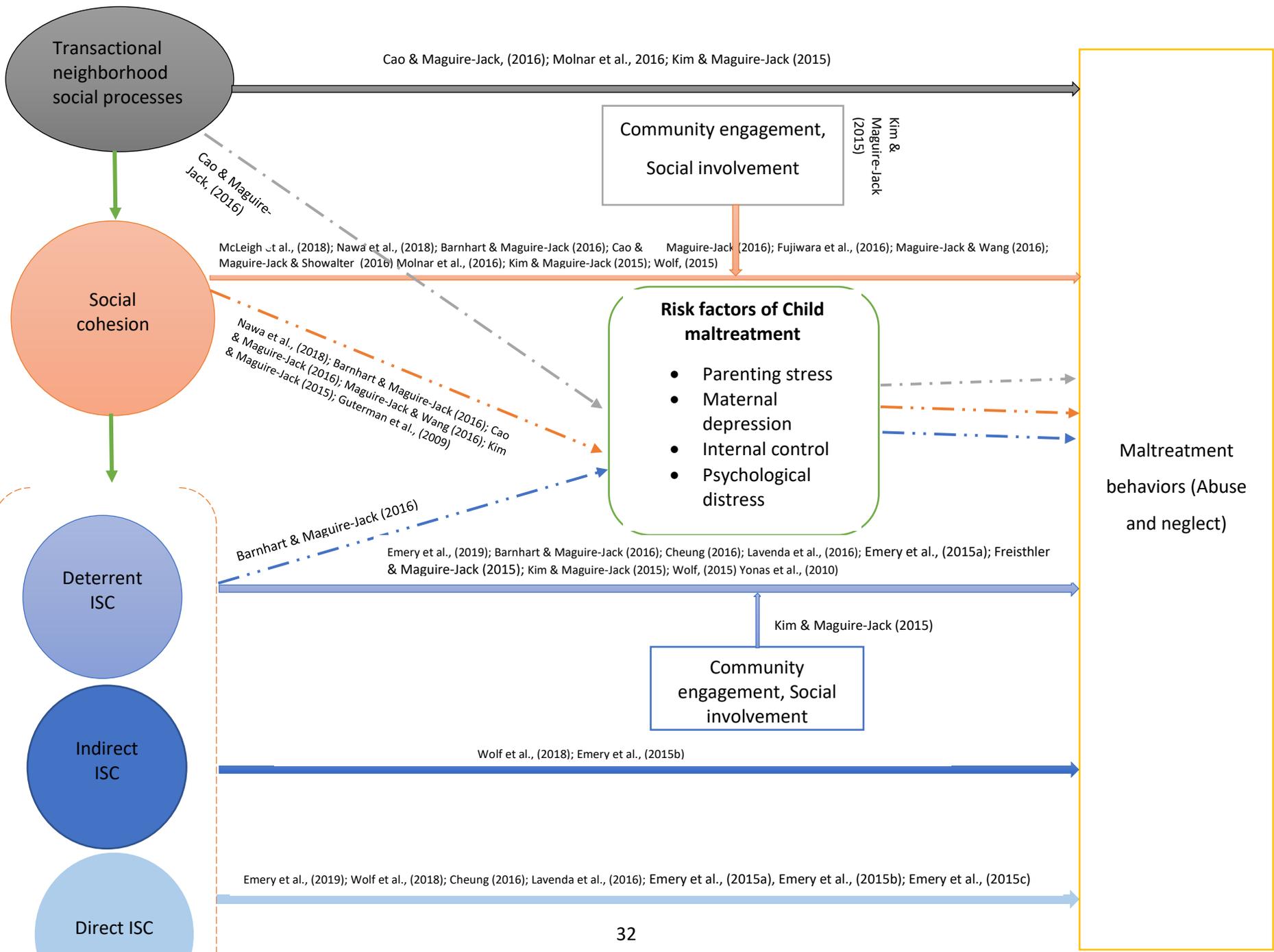


Figure 3: Applied framework showing pathways of collective efficacy protective effects on child maltreatment

Discussion

Focusing on neighbors' intervention and protection against parental maltreatment behaviors, this study synthesized research evidence about ways in which the contemporary collective efficacy theory is examined within child maltreatment research and how it provides protection against parents' maltreatment behaviors. While the collective efficacy theory and the language of the proposed general framework (Figure 1) advocates for a transactional and sequential examination of the collective efficacy concepts, evidence from the studies included showed a form of compartment application (see Figure 3). Compartment application (discussed below) is evident in the separate examination of social cohesion and ISC and their effects on child maltreatment. We discuss here the key dimensions of ISC and the collective efficacy theory and how they were applied within the studies included.

Direct and Indirect ISC intervention

Following the logic of ISC within collective efficacy theory, one would have argued that the likelihood of actions being taken by neighbors (direct and indirect) would have been the most examined aspect in the studies within the scope of child maltreatment. This is because it measures the potential control efforts or actions one would take when he/she observes abuse or neglectful incidence. However, the contrary was found. Only a few of the included studies (Wolf et al., 2018; Emery, 2015b, 2015c) examined actions of ISC, when residents observe abuse or neglect incidence in their neighborhood. In their punitive and protective measures of ISC, Emery and colleagues (2015b;2015c) found more support for neighbors' direct intervention in the form of intervening by calming parents and ensuring children's safety, than reporting for punitive measures to be meted

on parents. In samples drawn from Seoul, Korea and Hanoi, Vietnam, direct intervention was negatively associated with children's injury and other child externalizing behaviors. This result is possible because by intervening to calm parents found in the process of abusing their children, the magnitude of abuse injury is expected to be reduced, and parents may be advised to seek medical care for children. Residents reacting to social disorder or undesirable behaviors within neighborhoods are expected to calm parents and explain to them the accepted norms in society (Sampson et al., 2003). Such sage intervention efforts may influence offenders to legitimately accept their ISC efforts and advice (Wilkinson, 2007; Warner, 2014). The collective efficacy concept expects residents to limit their actions within the remit of what is socially accepted within society to ensure their actions are accepted.

With respect to indirect interventions, ISC efforts are initiated by neighbors who call on formal agents to intervene. The study found that residents were more likely to intervene indirectly by reporting abusive incidence in unfamiliar neighborhoods than their own (Wolf et al., 2018). Their findings quibble with the logic of the collective efficacy theory regarding the preconditions of social cohesion and trust among neighbors. Social cohesion and trust within neighborhoods are necessary conditions specified by the collective efficacy theory that provide context and assurance for residents' ISC intervention efforts. However, it is possible that residents had little faith in formal agents in their neighborhoods compared to unfamiliar neighborhoods. Existing evidence suggest a low reporting rate of maltreatment cases among non-mandatory reporters (such as neighbors and friends), due to the fear of having children removed from birth parents (William, 2017; Walsh & Jones, 2016) or having little faith in formal child protection organizations (Sawrikar, 2019). Warner (2014) reported that in neighborhoods where there are high hopes in formal agents, ISC control in the form of indirect intervention would be successful because it

provides legal backing to neighbors' intervention efforts. Congruent with previous study findings, participants' resistance to intervene in maltreatment within their own neighborhoods may be attributed to the fear of retaliation or the fear that the children may experience worse forms of violence (Williams, 2017; Bensley et al.2004).

Similarly, the strong social cohesion and ties among neighbors in the familiar neighborhood condition may have influenced their decision not to report the observed abusive behaviors. This confirms previous findings on the adverse effects of family cohesion especially among ethnic minorities, where collectivist culture and family reputation are valued over child welfare (Sawrikar, 2019). In ethnic minority communities, residents refrain from reporting child maltreatment cases because reporting is seen as betrayal of family culture and being in child protection is conceived as a problem that stains families' image and jeopardizes families' cohesion (Sawrikar, 2019). Warner (2007) reports that social ties may not increase the likelihood of indirect intervention compared to direct intervention. Thus, social cohesion may not be all that necessary when the ISC effort involves reporting to formal agents of social control (Burchfield, 2009; Morenoff et al., 2001; Silver & Miller, 2004; Warner, 2003). In designing collective efficacy enhancement programs, the evidence suggests the need to consider possible negative outcomes of having strong cohesive communities.

Deterrent effects of ISC

Evident in the final path of the applied framework (Figure 3), is the deterrent effect. Deterrent effects within collective efficacy theory were highlighted by Warner (2014) who argued that increased surveillance among neighbors leads to neighbors' higher expectations for ISC efforts, which deter undesirable behaviors. The reason behind this is that neighbors view each other as watchdogs who could intervene in instances of undesirable behaviors. Studies reporting

this conception of deterrence (Barnhart & Maguire-Jack, 2016; Freisthler & Maguire-Jack, 2015; Kim & Maguire-Jack, 2015; Wolf 2015; Yonas et al., 2010) reported mixed findings. However, a similar definition of deterrent was reported in this review by Emery and colleagues (2019). In a cross-country vignette study among parents in Korea and Russia, Emery and colleagues (2019) found a deterrent effect among actual perpetrators of abuse in reporting low likelihood of re-engaging in abusive behaviors. The results confirm the logic behind the indirect ISC intervention which results in punitive measures in the form of punishment to the perpetrators. Such punishments are aimed at deterring the perpetrators from further indulgence in abusive behaviors and other partners who may witness the punishment process (Cheung, 2016). It is expected that the punitive measures will instill feelings of self-shame among parents and ensure they abide by social norms and desist from further maltreatment behaviors (Ross, 2009).

Primary prevention approach of Social Cohesion

This theoretical position was evident in studies that examined the neighborhood social cohesion dimension of the theory instead of ISC. Several studies reported higher rates of social cohesion deterred parents from maltreating their children (McLeigh et al., 2018; Barnhart & Maguire-Jack; 2016; Maguire-Jack & Showalter, 2016; Maguire-Jack & Wang, 2016). They argued that higher social cohesion within neighborhoods provided context where parents could discuss parenting stress and challenges, which prevents them from abusing their children. This exposition may explain why the majority of the studies examined ways in which social cohesion could be mediated by risk factors of parental maltreatment, such as parenting stress and maternal depression (Nawa et al., 2018; Barnhart and Maguire-Jack 2016; Cao & Maguire-Jack, 2016; Maguire-Jack & Wang, 2016; Kim & Maguire-Jack 2015; Guterman et al., 2009). The evidence demonstrates the manifold dimensions that collective efficacy could be developed to prevent or

curb parents' maltreatment behaviors, even though such an interpretation is not entirely evident within collective efficacy theory (Browning et al., 2004; Carr, 2003; Morenoff et al., 2001). Within an applied discipline such as social work, this kind of primary prevention and proactive examination is needed as researchers prioritize evidence that supports primary preventive measures and eliminate risk factors (Holland, 2014; Parton, 2006), as opposed to reactive intervention. Even though the collective efficacy theory provides some focus on primary prevention, it envisages that through the deterrent effects of the high likelihood of residents engaging in ISC efforts, but not through social cohesion.

Relating the Study to the General Collective Efficacy Framework: Directions for Further Research

Evidence from the included studies (Figure 3) compared with logic of the collective efficacy theory and general framework (Figure 1) shows a compartmentalized application and examination of the collective efficacy theory within child maltreatment. The direct pathway examinations evident in Figure 3, conceptualize the collective efficacy concepts (social cohesion and ISC) as separate constructs which have independent protective effects on child maltreatment behaviors. This kind of protective conceptualization of the collective efficacy concepts assumes that existing communities are already socially cohesive and strong in exercising collective control. Whilst achieving such ideal cohesive and protective communities is the ultimate goal, most communities are unable to exercise collective control requiring the development of collective efficacy enhancement programs (Kimbrough-Melton & Melton 2015). Such programs should be built on the logic of the transactional collective efficacy model (Figure 1) by creating avenues for parental engagement to enhance social cohesion and influence ISC. That said, cultural nuances should be carefully considered in developing collective communities because social cohesion has

been reported to inhibit the exercise of ISC within ethnic minority communities, due to the fear of family breakdown and social stigma (Sawrikar, 2019) or retaliation (Wolf et al., 2018; Williams, 2017). These cultural inhibitors should be considered in promoting collective efficacy practices or programs.

Undoubtedly, collective efficacy theory highlights the central concept of ISC. Yet, very few studies within child maltreatment research (Emery et al., 2019, Wolf et al., 2018; Emery et al., 2015a, b, c) have laid emphasis on the expected ISC efforts. Even within these studies, ISC efforts were limited to their effects on physical abuse incidence, to the neglect of other forms of maltreatment such as neglect. Therefore, studies should examine ISC efforts within issues of child neglect to extend knowledge on the application of this concept. In line with the collective efficacy theory and the hypothetical mechanism set forth in the general framework, we advocate for a pathway examination that draws the transactional link of how social cohesion mediate or moderate ISC efforts (direct and indirect) on parents' maltreatment behaviors. Along the same line of thought, studies that examine specific ISC efforts and not just likelihood of ISC are specifically encouraged within other contexts, as the few existing studies are limited to Asian countries (Emery et al., 2019, Emery et al., 2015a, b, c). Research studies using the qualitative interview approach are also needed to understand residents' in-depth views about cultural factors influencing ISC efforts and why residents would engage in ISC intervention. Such qualitative studies could explore behavioral factors that can impede or promote ISC efforts within neighborhoods. Further, research exploring child protection workers' views on neighborhood collective efficacy are needed to supplement existing research, which mostly focuses on residents' views. Gross-Manos et al., (2019) found neighborhood residents and child protection workers have varied opinions on

neighborhood collective efficacy and social disorder, which has implications for collective efficacy enhancement within neighborhoods.

Methodological Shortfalls

The mixed findings and limited research findings on the direct and indirect measures of ISC within child maltreatment is attributed to the use of the traditional measures of ISC by Sampson and colleagues (1997). Their traditional scale fails to examine the actual actions of residents in ISC. Instead, it focuses on the likelihood of ISC intervention (Gau, 2014; Warner, 2007, 2014; Wickes et al., 2017). The scale also fails to consider what residents themselves will do when faced with these undesirable social disorders. Criticisms and limitations of the traditional ISC scale are attributed to the root of the theory and the measurement scale; the criminology discipline. This was justified by Sampson as he argued that their scale measured the likelihood of individual response to inappropriate behaviors, which is prioritized in the behavioral sciences as it is required for inappropriate behaviors to happen before intervention can be made. Therefore, adapting the scale within applied social work and child maltreatment research may result in item-construct and validity challenges due to differences in social phenomenon and disciplinary positions. Therefore, we recommend measuring ISC efforts from the actual actions of residents as found in Emery et als' (2015b) ISC-CM scale as necessary steps to adapt the theory within social work.

Recommendation for Child Protection Practice

Results from this study offer some important suggestions to enhance community-based child protection and maltreatment prevention.

- Collective efficacy enhancement programs should be developed to promote neighborhood residents protective and intervention efforts in child maltreatment issues.
- Community engagement and participation programs such as social clubs should be established to foster neighborhood cohesion and facilitate the teaching and sharing of parenting norms and practices.
- Community cultural norms and values needs to be reshaped to facilitate ISC efforts within child maltreatment. Also, residents need to be educated on appropriate means to intervene in observed maltreatment incidence.
- Community programs should promote indirect ISC efforts by educating residents on maltreatment reporting procedures and assure residents of the legal backing for reporting maltreatment behaviors within their neighborhoods.
- Collective efficacy enhancement programs should be concerned with the negative behavioral and cultural factors, such as feelings of guilt and retaliations which can impede ISC measures within neighborhoods.

Limitations

This study is the first empirical review to examine research on the neighborhood collective efficacy and protective effects within child maltreatment research. Previous related literature has only examined neighborhood factors and how it contributes to parents' maltreatment behaviors (Coulton et al., 2007). The narrow focus of this review on collective efficacy may provide some limitations, especially for other neighborhood measures that are not captured within the theory. Also, this review presented narrative evidence from quantitative studies with only one qualitative study. It is essential to acknowledge that this was not a predetermined criterion, instead, this was

the evidence remaining after a detailed screening process. In line with published systematic reviews within this field (Coulton et al., 2007; van Dijken et al., 2016; West et al., 2019), the database search was limited to four databases in addition to specific journal search. It is important to acknowledge that though an exhaustive search was performed, it is possible to miss out on a few articles in other databases. Further, the fact that most of these studies (n=13) were conducted in the USA offers some limitation not only to the current review but to the general research on the collective efficacy and child maltreatment. Further studies are needed from different contexts and participants, to extend knowledge on this vital topic.

Conclusion

Neighborhood intervention captured within the broader community-based approaches of child maltreatment has been identified as contributing significantly to the prevention of child maltreatment (Coulton et al., 2007; McLeigh et al., 2018). However, it is unclear how neighborhood collective efficacy and ISC efforts within the larger neighborhood research are applied in child maltreatment research as well as the different subtypes of child maltreatment it is associated with. This systematic literature review, the first of its kind, has synthesized evidence from studies examining collective efficacy protective effects against parental maltreatment behaviors. The review underscores the various pathways ISC efforts could be useful in designing neighborhood-based intervention programs to prevent child maltreatment. The review ends with a plea for child maltreatment researchers to deconstruct and imbue the ISC concept within child maltreatment.

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**Table 2: Quality Appraisal of the included studies using checklist from the Center for Evidence-Based Management
(quantitative studies)**

Quality Appraisal Questions	Emery et al., (2019)	Nawa et al., (2018)	McLeigh et al., (2018)	Wolf et al, (2018)	Cao & Maguire-Jack (2016)	Fujiwara et al., (2016)	Molnar et al., (2016)	Maguire-Jack & Wang (2016)	Barnhart & Maguire-Jack (2016)	Maguire-Jack & Showalter (2016)
1. Did the study address a clearly focused question / issue?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2. Is the research method (study design) appropriate for answering the research question?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3. Is the method of selection of	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

the subjects (employees, teams, divisions, organizations) clearly described?										
4. Could the way the sample was obtained introduce (selection) bias ?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5. Was the sample of subjects representative , with regard to the population to which the findings will be referred?	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Can't tell	Yes
6. Was the sample size based on pre-study	No	No	Yes	No	No	No	No	No	No	No

considerations of statistical power?										
7. Was a satisfactory response rate achieved?	No	Yes	Yes	Yes	Can't tell	Yes	Can't tell	Yes	Can't tell	Yes
8. Are the measurements (questionnaires) likely to be valid and reliable?	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes
9. Was the statistical significance assessed?	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Can't tell
10. Are confidence intervals given for the main results?	No	Yes	No	Yes	No	Yes	Yes	No	No	No
11. Could there be confounding factors that haven't been	Can't tell	Can't tell	Yes	No	Can't tell	No	Yes	Can't tell	No	No

accounted for?										
12. Can the results be applied to your organization?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Total No of “Yes”	8	10	11	9	8	7	10	9	7	8
Quality Appraisal Questions	Lavenda et al., (2016)	Cheung, (2016)	Kim & Maguire-Jack (2015)	Freisthler & Maguire-Jack (2015)	Emery et al., (2015a)	Wolf (2015)	Emery et al., (2015b)	Emery et al., (2015c)	Yonas et al (2010)	Guterman et al., (2009)
1. Did the study address a clearly focused question / issue?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2. Is the research method (study design) appropriate for	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

answering the research question?										
3.Is the method of selection of the subjects (employees, teams, divisions, organizations) clearly described?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4. Could the way the sample was obtained introduce (selection)bias ?	Yes	No	Yes	Yes	No	Yes	No	Can't tell	No	Yes
5. Was the sample of subjects representative , with regard to the population to which the	No	Yes	Can't tell	Yes	Yes	Yes	Yes	Yes	Yes	Yes

findings will be referred?										
6. Was the sample size based on pre-study considerations of statistical power?	No	No	No	No	Yes	No	Yes	No	No	No
7. Was a satisfactory response rate achieved?	Yes	Can't tell	Can't tell	No	Yes	No	Yes	Yes	Yes	Can't tell
8. Are the measurements (questionnaires) likely to be valid and reliable?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9. Was the statistical significance assessed?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10. Are confidence intervals given for the main results?	No	No	No	No	No	Yes	No	No	Yes	No

11. Could there be confounding factors that haven't been accounted for?	Can't tell	Can't tell	No	Yes	Can't tell	No	Can't tell	Can't tell	Can't tell	Yes
12. Can the results be applied to your organization?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Total No of "Yes"	8	7	7	9	9	9	9	8	9	9

Table 3: Quality Appraisal of the included studies using checklist from the Center for Evidence-Based Management (qualitative study)

Study	Quality Appraisal Questions									
	1. Did the study address a clearly focused question / issue?	2. Is the research method (study design) appropriate for answering the research question?	3. Was the context clearly described?	4. How was the fieldwork undertaken? Was it described in detail? Are the methods	5. Could the evidence (fieldwork notes, interview transcripts,	6. Are the procedures for data analysis reliable and theoretically	7. Was the analysis repeated by more than one researcher to	8. Are the results credible, and if so, are they relevant for practice?	9. Are the conclusions drawn justified by the results?	Are the findings of the study transferable to other settings?

				for collecting data clearly described?	recordings, documentary analysis, etc.) be inspected independently by others?	justified? Are quality control measures used?	ensure reliability?			
Finno-Velasquez et al., (2017)	Yes	Yes	Yes	Semi-structured interviews were conducted. Yes	Yes	Yes, Triangulation and frequent debriefing methods were used.	Yes	Yes	Yes	No

Legend and caption of figure 1

Figure 1: Framework showing the general transactional process of the collective efficacy theory in child maltreatment.

Legend

1.  Strong and direct effect
2.  Effect of behavioral stressors

Caption of figure 2

Figure 2. PRISMA flow diagram (Moher et al., 2009).

Caption of figure 3

Figure 3: Applied framework showing pathways of collective efficacy protective effects on child maltreatment