Table 5. Quantitative Papers Investigating the link between Poverty and CAN

Individual and Family Level Associative Relationships					
Name	**Summary**	**Country**	**Definition of Poverty**	**Method**	**Results**
Overcrowded housing: One of a constellation of vulnerabilities for child sexual abuse (Cant et al. 2019)	This study investigated overcrowding as a potential socio-economic risk factor in child sexual abuse considering other socio-economic, child and parental factors.	Australia	Data to measure overcrowding was obtained from the Australian Bureau of Statistics Census of Population and Housing at an aggregated Collection District level for the census years within the birth cohort (1996, 2001, and 2006) in Western Australia. There is currently no single measure of housing utilization. However, the most widely adopted international indicator of overcrowding uses the Canadian National Occupancy Standard (CNOS). The CNOS assesses the bedroom requirements of a household based on the following criteria: There should be no more than two persons per bedroom; Children less than five	This study used de-identified linked data from health and child protection data collections for the cohort of children born in Western Australia from 1990 to 2009 (n = 524,478). Cox regression was used to estimate adjusted and unadjusted hazard ratios and 95% confidence intervals for time to first sexual abuse allegation and first substantiated allegation, relative to the level of overcrowding and controlling for other risk factors.	Cant et al. (2019) found higher levels of household overcrowding were associated with a 23%–46% increase in the risk of child sexual abuse allegations. Only the highest level of overcrowding was associated with a 40% increased risk of substantiated sexual abuse.

			years of age of different sexes may reasonably share a bedroom; Children five years of age or older of the opposite sex should have separate bedrooms; Single household members aged 18 years or older should have a separate bedroom as should parents or couples.		
Economic predictors of child maltreatment in an Australian population-based birth cohort (Doidge et al., 2017a)	This study sought to estimate the effects of economic factors on risk of child maltreatment after adjusting for other known influences using the Australian Temperament Project.	Australia	Economic factors included the occupation and highest completed level of education for mothers and fathers at baseline, the highest quality of housing reported by Wave 6 (7–8 years), unemployment by mothers or fathers at five waves during childhood, and the cohort member's retrospective perception of poverty while growing up, recorded at 23–24 years (Wave 14).	This study utilised the Australian Temperament Project, a population-based birth cohort of 2443 individuals and their parents, which includes over 15 waves of data collection since enrolment at the age of 4–8 months in 1983. They used logistic regression to estimate associations of childhood economic factors (parental education, occupation, and unemployment; type of housing; and retrospective perception of poverty) with retrospective reports of perceived child maltreatment (physical abuse, sexual abuse, emotional abuse, neglect, and witnessing of domestic violence), controlling for demographic factors, parental mental health and substance use,	Doidge et al. (2017a) found that, jointly, these multidimensional socio-economic factors were significant predictors of physical abuse, sexual abuse, and witnessing of domestic violence but not of emotional abuse or neglect. Poverty remained a strong predictor of most types of maltreatment even after controlling for other economic factors such as parental education, occupation, unemployment, and housing, although this was not the case for sexual abuse. Doidge et al. (2017a) estimated that 27% of all child

				and child health. They then used these estimates to approximate the proportions of child maltreatment population attributable fractions—that are theoretically preventable by addressing childhood economic disadvantage.	maltreatment was jointly attributable to economic factors.
Risk Factors for child maltreatment in an Australian population-based birth cohort (Doidge et al., 2017b)	This study examined a range of possible child, parent and family risk factors for child maltreatment in a prospective 27-year population-based birth cohort	Australia	Poverty was conceptualised through parent and family economic factors, which included the first reported levels of parental education and occupation, a combined measure of parental unemployment over childhood, the type of housing in early childhood, and retrospective self-report of poverty while growing up.	A cohort of 2443 infants were enrolled from a stratified random sample of local government areas that were selected to provide a sampling frame that would be representative of the Victorian state population in terms of geographic location and socioeconomic status. Questionnaires were distributed to the nurse and caregiver of every infant aged 4–8 months who attended an Infant Welfare Centre (now called 'Maternal & Child Health Centre') within a selected local government area during a two-week period in 1983. Distributions of demographic and socioeconomic characteristics in the cohort at baseline were consistent with census data. At the time of this analysis, 15 waves of follow-up questionnaires had been administered over 27 years to cohort members (8 waves from age 11), parents (every wave), and nurses (wave 1; information from	Doidge et al. (2017b) found that higher levels of economic disadvantage were strongly associated with increased risk of child maltreatment. Some differences were observed across types of maltreatment, but risk profiles were generally similar. In multivariate analyses, nine independent risk factors were identified, including some that are potentially modifiable, such as economic disadvantage. For example, the likelihood of any maltreatment because of being "At least 'somewhat' poor while growing up" was 3.02*** and having 'At least 2 points of parental unemployment" was 2.30***. These two variables were also

				teacher surveys was not used in this analysis). Variables used in this analysis are described below and grouped into conceptually distinct domains: indicators of child maltreatment, child health, child temperament, demographic characteristics (child or family), economic factors (parent or family), parental mental health and substance use, and social instability. Exposure to child maltreatment was assessed retrospectively in wave 14 (age 22–23 years) by cohort members' response to questions relating to physical abuse (severe enough to have effects lasting until the next day), sexual abuse (from either of two questions: one concerning sexual advances by family members, and one encompassing any non-consensual sexual experiences before age 16), emotional abuse (threats, humiliation, etc., separated into high-intensity and low-intensity indicators), neglect (subjectively determined by the cohort member) and witnessing of domestic violence (considered here as a form of psychological abuse).	significant for each type of abuse included within the study, respectively: high-intensity emotional abuse (2.64***; 2.22***), low-intensity emotional abuse (2.64***; 2.22***), neglect (2.43**, 1.83*), physical abuse (4.05***; 2.11***), sexual abuse (2.20***; 2.82***) and witnessing domestic violence (3.34***; 2.95***). Risk of maltreatment increased exponentially with the number of risk factors experienced. In the most disadvantaged 4.3% of the population (those with more than 10 risk factors for child maltreatment) 83.3% reported at least one type of maltreatment and 63.8% reported multiple types, compared with only 7.1% and 0.8% respectively in the 2.3% of people who had no identified risk factors (OR= 65.26 for any maltreatment and OR= 218.54 for multi-type maltreatment).

				Potential risk factors were collected prospectively during childhood or reported retrospectively. Associations were estimated using bivariate and multivariate logistic regressions and combined into cumulative risk scores.	
Recurrent involvement with the Quebec child protection system for reasons of neglect: A longitudinal clinical population study (Esposito et al., 2021)	This study examines when and for whom recurring conditions of neglect were most likely to occur for all children involved with child protection in the province of Quebec over a span of fifteen years.	Canada	A socioeconomic disadvantage covariate was constructed using data from Quebec's census dissemination areas (CDA). The CDA data was extracted from the 2011 National Household Survey and is the smallest unit of census population data available. Given the lack of family-level poverty information in the clinical-administrative child protection dataset and the importance of moderating for poverty in frequentist models on child neglect, the CDA-level data was used to provide the most finite available measurement for	This clinical population study uses a longitudinal research design that draws anonymized clinical administrative data from all of Quebec's child protection jurisdictions and Quebec data extracted from the 2011 National Household Survey (NHS). Most covariates used in this study were constructed using child protection clinical-administrative data. The clinical population studied consists of the entire child population (N = 76,176) aged 17 years or younger served for the first time within one of Quebec's child protection jurisdictions. Each member of the clinical population was defined as a child with ongoing child protection involvement whose first-ever child protection case was closed between April 1, 2002, and April 30, 2017. Recurrence of child protection intervention for reasons of all	Esposito et al. (2021) found that socioeconomic disadvantages were significant predictors of recurrence of maltreatment generally, and neglect in particular. For recurrence of maltreatment, at age 0-9 Adj HR were 1.074*** CI [1.053-1.096]; age 10-17 Adj HR=1.116*** CI [1.090-1.143]. For recurrence of neglect, at age 0-9 Adj HR were 1.100*** CI [1.067-1.134]; age 10-Adj HR= 17 1.189*** CI [1.132-1.249].

			socioeconomic vulnerabilities that children living in these areas experience. For example, this data provides the greatest amount of detail illustrating socioeconomic factors in a child's immediate surroundings, but also reaching beyond their family or household. The immediate surroundings can be imagined in geospatial terms such as an apartment block, cul-de-sac, or street, and behaves as a proxy family-level measure that does not allow for multi-level analysis.	forms of maltreatment and recurrence of child protection intervention for reasons of neglect are the dependent variables in this study. Recurrence of child protection involvement for reasons of maltreatment is a dictomous variable defined as a substantiated report and determination of a child's safety and/or development being compromised, leading to a second case opening for ongoing child protection involvement for any substantiated reason following the initial case closure. Recurrence of child protection intervention for reasons of neglect consists of a dictomous variable defined as a subsequent substantiated allegation leading to ongoing child protection involvement following initial case closure for reasons of either a) physical, material, or health neglect, b) emotional neglect, c) school neglect, or d) parent high-risk lifestyle. The follow-up period for the two models starts from the date of initial case closure to the date of: (1) substantiated child protection involvement for any reason (recurrence of maltreatment); and (2) substantiated child	

				protection involvement for reasons of neglect (including all sub-types listed above). For children who do not experience a recurrence, the follow-up period starts from the date of case closure to the end of the follow-up period — April 30, 2017, or the youth's 18th birthday, whichever came first.	
Screening for housing instability and homelessness among families undergoing child maltreatment investigation (Farrell et al., 2017a)	Farrell et al. (2017a) utilised a population survey to measure the level of housing instability and homelessness among families referred to the child welfare system for investigation in a 22-month period.	United States	Housing Instability and Homelessness	Child welfare personnel conducted the Quick Risks and Assets for Family Triage (QRAFT), a three-question screening tool intended to identify housing instability and homelessness. The QRAFT requires users to assess family housing history, current housing arrangement, and current housing condition, on a four-point scale from "asset/not a risk" to "severe risk." Project eligibility was based on (a) severe housing need combined with (b) substantial parent and (c) child concerns (e.g., behavioural health, substance abuse, domestic violence, delays in child development), thus targeting families with high acuity across domains. As cases moved through the Department for Children and Families (DCF) investigations unit immediately following	Farrell et al. (2017a) performed a chi-square test of independence to examine the relation between DCF case decision and housing difficulties as measured by housing condition, current housing, and housing history. The relation between these variables was significant and equivalent to a medium effect size [$X2(2, N= 6773)= 273.6$, $p < .01$, $\Phi= .20$]. Participants placed within the substantiated group were more likely to be identified as having significant or severe housing risks across all items. Farrell et al. (2017a) also examined whether the presence of domestic violence was related to

				maltreatment allegation, one of three main outcomes was determined: (a) unsubstantiated, (b) substantiated, or (c) referral to CT's Differential Response System (DRS) initiative, the Family Assessment Response (FAR). FAR cases do not meet criteria for child maltreatment according to statute, and are therefore diverted from child welfare involvement. Thus, there were three "decision groups" to be examined among the cases referred. The QRAFT was completed among 6828 families from the United States undergoing new child maltreatment investigations. Approximately 5.4% of families demonstrated significant to severe housing problems; approximately one-third exhibited moderate housing risk. Housing problems and homelessness were significantly associated with the outcome of child welfare investigations; among families with substantiated child welfare determinations, 21% demonstrated significant to severe housing risk, a significantly higher proportion than among families where the	placement within decision group. A chi-square test of independence indicated a significant relation between case decision and domestic violence status, equivalent to a medium effect size [$X2(2, N= 6754)= 321.4, p< .01, \Phi= .22$]; families placed within the substantiated group were more likely to report domestic violence.

				investigation outcome was unsubstantiated or differential response (i.e., voluntary services). Of significance to severe housing risk families, 15.7% later met eligibility criteria for a supportive housing intervention, suggesting that housing concerns combined with substantial parent and child functional difficulties.	
It's not "Just Poverty": Educational, social, and economic functioning among young adults exposed to childhood neglect, abuse and poverty (Font & Maguire-Jack, 2020a)	This study had two main objectives: to estimate the "added harm" of CPS-investigated neglect, net of poverty exposure (depth and duration), on high school completion, employment and earnings, incarceration, and teen parenthood; (2) To assess whether abuse is a stronger risk factor for adverse outcomes than neglect.	United States	This study used data from SNAP (food assistance). Families may also enrol in SNAP due to a temporary economic shock or prolonged economic need, and families enrolled in SNAP have different levels of need. If neglect cases were comprised of more chronic or more severe poverty, then those who were ever SNAP recipients would not be an adequate comparison group for this study. Thus, the authors created measures of duration and depth of poverty. Duration of poverty was equal to the percent of a subject's childhood months (ages 0–16) in which they received SNAP. Poverty depth was equal to the average percent of the	The current study leverages administrative data to identify the associations of poverty and neglect with a host of young adult outcomes. By measuring neglect and poverty longitudinally, Font and Maguire-Jack (2020) are able to construct comparison groups for neglected children that improve identification of neglect effects, compared to previous non-longitudinal studies. To address the co-occurrence of multiple forms of maltreatment, and to investigate whether abuse is more harmful than neglect, Font and Maguire-Jack (2020) compare four groups of children: those exposed to poverty but not maltreatment, those exposed to neglect but not abuse, those exposed to physical or sexual abuse but not neglect, and those exposed to a combination of abuse and neglect. They further consider whether the associations of abuse and neglect with young adult outcomes vary by duration or depth of poverty exposure during childhood. Lastly,	Table 1 contains a description of the full sample by group (no allegations of maltreatment [NM], alleged neglect only [NO], alleged abuse only [AO], alleged abuse and neglect [AN]). Youth in the NM and AO groups experienced a shorter duration of poverty (40 and 38% of childhood months) than those in the NO or AN groups (49 and 53 % of childhood months). NM youth had a higher estimated depth of poverty while receiving SNAP benefits than the maltreatment groups – NM youth received about 63% of the maximum benefit while on SNAP, versus 58% for NO youth, 60% for AN youth, and 52% for AO youth. Similarly, NO and AN youth were more likely to have mothers who received cash welfare in early childhood (NO youth: 76%, AN youth:

			maximum benefit that the subject's family received, conditional on receiving a benefit. The percent of maximum benefit was equal to the amount received in a month divided by the maximum benefit for their household size permitted under USDA rules, where a higher percentage indicates that the family had less income to contribute to their own food costs. Months in which no benefit was received were not included in the calculation of poverty depth.	they acknowledge that CPS involvement can itself impact children, net of the effects of maltreatment. The effects of CPS involvement, though estimated to be largely null could be positive or negative, and the impacts of CPS involvement are confounded by the severity of maltreatment, given that more severe maltreatment is more likely to result in intervention. Thus, they also conduct subsample analyses that exclude children who received a CPS intervention, in order to ascertain whether children with ostensibly lower risk CPS cases nevertheless experience more adverse outcomes in young adulthood than children from low-income families. This study used the Wisconsin Administrative Data Core, a linked longitudinal administrative dataset housed at the Institute for Research on Poverty at the University of Wisconsin-Madison, combined with records from the Wisconsin Department of Public Instruction (DPI) for the years 2005–2016. The Data Core includes individual-level administrative records from state-administered public social welfare program data systems, which have been linked across programs and over time. The final sample size was 29,154 individuals.	79%) than NM youth (64%) or AO youth (68%), and had mothers who were less frequently employed and had lower earnings. Within Font and Maguire-Jack's (2020) study, about ninety percent of their maltreatment sample (88% for Neglect only, 93% for Abuse and Neglect, 84% for Abuse only) received food assistance at some point prior to age 16, confirming that the CPS system is overwhelming comprised of children from low-income families. Moreover, the children that reach the attention of CPS spend more time in poverty than other children on public assistance. However, their study suggests that allegations of neglect matter beyond the effects of poverty, and that the process of reporting and screening for investigation is, on average, effectively capturing a distinctly at-risk subset of impoverished youth. Indeed, children identified as at risk of neglect have worse outcomes than impoverished children

				The CPS portion of the sample (n = 9278) was divided into two groups: those for whom the CPS system provided in-home services or petitioned the family court (n = 1477) and those whose allegations led to no intervention (n = 7801). Maltreatment types that were investigated or confirmed by CPS were used to create four categories: No alleged or confirmed maltreatment (NM), alleged or confirmed neglect only (NO), alleged or confirmed abuse only (AO), and alleged or confirmed abuse and neglect (AN).	across multiple domains, even at high levels of poverty. Within their study, it seems that alleged maltreatment that is either unable to be proven or is deemed insufficiently severe to warrant intervention is nevertheless a significant predictor of a host of outcomes – net of poverty and demographics. Font and Maguire-Jack found that outcomes among children with alleged or confirmed neglect were statistically significantly worse in all domains than impoverished children without maltreatment allegations, and similar to children with alleged or confirmed abuse. Overall, this study suggests that CPS allegations of neglect are distinct from poverty and an important risk factor for adverse outcomes in adulthood. Even among those exposed to long-term poverty, those who also have neglect allegations are less likely to graduate high school or to be regularly employed, are more likely to experience incarceration, and have lower earnings. Notably, these findings largely hold even when focusing only on

					"low-risk" CPS cases (those for which no intervention was provided). For many outcomes, there are no differences between those with neglect allegations and those with abuse allegations, although those with both abuse and neglect allegations are at highest risk of adverse outcomes. In sum, despite that childhood poverty and neglect are frequently comorbid, neglect has distinctly negative associations with youth outcomes, similar to abuse. Given that definitions of neglect are broad and administrative measures are simplistic, Font and Maguire-Jack (2020) conclude that they cannot determine what exactly children reported for neglect are experiencing that places them at increased risk. However, this study suggests that it is not poverty alone.
Food neglect and maltreatment re-report (Helton, 2016)	This study examines the time to re-report following the close of a maltreatment investigation for cases involving food neglect.	United States	Food insecurity - Defined as lacking physical and economic access to enough affordable and nutritious food. There were five categories of food neglect severity: mild ("no regular meals"), moderate	Data on families of children 0 to 17 involved in Child Protective Services (CPS) investigations from a merger of the 2010 cohort of the National Survey of Child and Adolescent Well-Being (NSCAWII) and the National Child Abuse and Neglect Data System (NCANDS) were used (n = 3580). The average age was 7. More than	After controlling for other types of maltreatment allegations and multiple covariates, families investigated for food neglect had a greater chance of being re-reported for a subsequent CPS investigation in a shorter length of time

			("caregiver does not ensure that food is available"), serious ("frequently missed meals"), severe ("poor nourishment to point that child fails to gain weight or grow as expected"), and grave ("poor nourishment to point that child has severe physical consequences").	half of the families had a history of CPS involvement, a third received CPS services, and one-in-ten families had their child place in out-of-home care following an investigation. Over half of families had been previously investigated prior to the index report, about a quarter of index investigations were substantiated or indicated, and about 30% of families received CPS services. A little less than one-in-ten families had their child removed from care because of the investigation. Few caregivers were identified as having an alcohol problem (5%), abusing substances (11%), or experiencing active domestic violence (12%) during the initial investigation. A quarter of families were identified as having low social support, half were experiencing high stress, and another quarter were having trouble paying for necessities. Fifteen percent of caregiver had a serious mental health problem, and almost one-in-four children were reported by the caseworker has having a special need. The dependent variable (maltreatment re-report) is	than families without an allegation of food neglect. 3% of children experienced food neglect, while the greatest percentage of children experienced supervision neglect (39%) followed by physical abuse and a substance abusing parent. Around 12% of families of children experiencing food neglect were re reported within 100 days of the index investigation, compared to 8% of families without food neglect. Within a year, about 34% of children experiencing food neglect were re reported compared to about 24% of families without food neglect. Three Cox regression models predicting time to re-report by maltreatment type while controlling for covariates were significant. Food neglect predicted a greater hazard of re report (HR= 3.04, 95% CI= 1.16–

				defined as the number of days from the close of an initial investigation to the date of an investigated re-report. The caseworker reported Limited Maltreatment Classification System (L-MCS) in NSCAW was used to describe any allegation of abuse or neglect at the time of the index investigation. Types of abuse and neglect alleged at the time of the index investigation were reported by CPS caseworker using definitions based on the L-MCS. Allegation type included physical abuse, sexual abuse, emotional abuse, supervision neglect, substance abusing parent, domestic violence exposure, or other, which included abandonment, educational neglect, exploitation, and children in need of services. Physical neglect allegations included food, medical, shelter, clothing, hygiene, or other physical neglect.	7.95). Shelter neglect (HR= 0.32, 95% CI= 0.13-0.79) and receiving CPS services (HR= 0.70, 95% CI =0.51-0.96) predicted a lower hazard of re report. Other types of maltreatment (HR= 1.53, 95% CI=1.01-2.31), having an investigation prior to the initial investigation (HR= 1.63, 95% CI= 1.19-2.22), having low social support (HR= 1.69, 95% CI= 1.29-2.23), and active domestic violence in the home (HR= 1.48, 95% CI= 1.01–2.17) all predicted a greater hazard of re-report. While only a small percentage of families had a food neglect allegation, problems adequately feeding a child – whether due to severe poverty, inattentiveness, or abusive negligence - placed a family at a higher risk of a future CPS investigation.
Household food insecurity and parent-to-child	This study sought to investigate whether household food insecurity will be associated with	United States	Household food insecurity was measured with 18 items that comprise	Helton et al. (2019) examined data drawn from the Fragile Families and Childhood	The presence of household food insecurity or a greater degree of household food insecurity

aggression (Helton et al., 2019)	more severe parent-to-child psychological and physical aggression.		the household food insecurity module. In the present study, they employed two different indicators of household food insecurity: food insecure status and food insecurity index. Considering the connection between household food insecurity and various indicators of socioeconomic status, including those measuring economic resources, household income was used as a covariate in analyses. They employed a measure of income that is divided into quintiles.	Wellbeing Study (FFCW) for the current stud (N= 2,330). The first measure of child maltreatment assessed the extent of psychological aggression in the home. These items are those that involve nonphysical acts of aggression by caregivers toward children who are demeaning and psychologically damaging. This was measured by using 5 items from the Conflict Tactics Scale (CTS). Physical aggression was also measured using the CTS.	was associated with increased rates of psychological, physical, and total aggression. Regardless of type, aggression scores increased by .077–.136 standard deviations with the presence of any household food insecurity. Likewise, a 1-point increase in household food insecurity index resulted in anywhere from .099 to .158 increase in psychological, physical, or total aggression scores. In terms of covariates, maternal education, African American, and Hispanic were the only consistently significant predictors of composite measures of parent-to child aggression (e.g., total aggression as the outcome: maternal education: B=. -.06, SE=. .01, b= -.11; African American: B= .1.13, SE= .17, b= .17; Hispanic: B= -.51, SE= .19, b= -.07).
Risk factors that predict longitudinal	They examined substantiated and unsubstantiated reports	United States	They created a dichotomous (yes/no) poverty variable that	They studied a subsample (N= 246,021, age: M = 5.31 years old, SD = 3.68 years) of the National	Poverty predicted initial substantiation status (RRR=1.50, β=0.41,

patterns of substantiated and unsubstantiated maltreatment reports (Holbrook & Hudziak, 2020)	to identify patterns of recurrence over a five-year period and identified family risk factors that predicted recurrence patterns.		indicated the presence of any of the following: financial problem (inability to provide sufficient financial resources to meet minimum needs), inadequate housing (substandard, overcrowded, unsafe, including homelessness), or public assistance (reception of any welfare or social services programs: i.e., Medicaid, SSI, food stamps, etc.).	Child Abuse and Neglect Data System from 2011-2015. Their measures included child, caregiver, and child protective services case characteristics obtained in 2011. They used latent class analysis to identify heterogeneous classes, then entered class membership as the outcome variable in a multinomial logistic regression to identify risk factors. Four latent classes emerged: (1) initial unsubstantiation and moderate recurrence, (2) initial unsubstantiation and low recurrence, (3) initial substantiation and moderate recurrence, and (4) initial substantiation and low recurrence.	SE=.02, p< .001) and long-term recurrence (RRR = 1.35, β=0.30, SE=.02, p < .001).
Development of a prediction model for child maltreatment recurrence in Japan: A historical cohort study using data from a child guidance centre (Horikawa et al., 2016)	This study sought to develop a prediction model for the first recurrence of child maltreatment within the first year after the initial report.	Japan	The authors use a 'Financial instability or poverty' variable, but do not define it specifically.	They used a historical cohort study containing administrative data from 716 incident cases of child maltreatment (physical abuse, psychological abuse, or neglect) not receiving support services, reported between April 1, 1996 through March 31, 2011 to Shiga Central Child Guidance Centre, Japan. Only cases of children under 18 years of age are registered in this database at the first report of maltreatment. In total, 23 items related to	According to the stepwise selection procedure, household financial instability or poverty (AOR= 1.64, 95% CI= 1.10−2.45) predicted recurrence of child maltreatment.

				characteristics of the child, the maltreatment, the offender, household, and other related factors were selected as predictive variables and analysed by multivariate logistic regression model for association with first recurrence of maltreatment.	
Mediating effects of parental psychological distress and individual-level social capital on the association between child poverty and maltreatment in Japan (Isumi et al., 2018)	This studied investigated whether they are mediation effects of parental psychological distress and individual-level social capital on the association between child poverty and maltreatment.	Japan	Child poverty was defined in this study as meeting one of these criteria: 1) household income less than 3 million yen; 2) deprivation of specific material items that children or the household requires, or 3) experience of being unable to pay for lifeline utilities.	This study used the Adachi Child Health Impact of Living Difficulty (A-CHILD) Study. A questionnaire was administered to all caregivers of first-grade children in every public elementary school in Adachi City between July and November 2015, and valid responses were used for analysis (N = 3944). Logistic and Poisson regression analyses were employed to examine the association between child poverty and maltreatment. Child maltreatment (physical abuse, neglect, and psychological abuse) was answered by parents through a 17-item child maltreatment scale developed in Japan (Tokunaga et al., 2000), which has good reliability (α = 0.77) (Watanabe et al., 2002), and the parent-to-child version of the Conflict Tactics Scale.	Living in poverty was significantly associated with all types of child maltreatment (any maltreatment: IRR= 1.29, 95% CI= 1.15–1.44; physical abuse: OR= 1.67, 95% CI= 1.36–2.05; neglect: OR= 1.67, 95% CI= 1.38–2.04; psychological abuse: IRR= 1.34, 95% CI= 1.18–1.51). These associations remained significant after adjustment for parental age and education in Model 1 (any maltreatment: IRR= 1.23, 95% CI= 1.10–1.38; physical abuse: OR= 1.43, 95% CI= 1.16–1.78; neglect: OR= 1.69, 95% CI= 1.38–2.08; psychological abuse: IRR= 1.27, 95% CI= 1.12–1.44). After controlling for parental psychological distress in Model 2, the

					associations of child poverty on any maltreatment, physical abuse, and psychological abuse became non-significant. Adjustment for parental psychological distress slightly attenuated the effect of poverty on neglect, although the association remained significant (OR= 1.44, 95% CI= 1.27–1.79). In Model 3, where individual level social capital was adjusted, positive associations were significantly found between child poverty and all types of maltreatment. Finally, no significant associations of child poverty on any maltreatment, physical abuse, and psychological abuse were observed when adjusted for both psychological distress and individual-level social capital in Model 4. On the other hand, children living in poverty were 1.41 times more likely to be neglected than those who were not living in poverty (95% CI= 1.14–1.75).

					Mediation analysis indicated that parental psychological distress mediated more than 60% of the association between child poverty on physical abuse and psychological abuse, while individual-level social capital mediated only 10% of the association with any type of maltreatment. In addition, structural equation modelling analysis revealed that the association was mediated by both parental psychological distress and social capital simultaneously. The findings suggest that supporting parental psychological distress may be an effective intervention to remedy the negative impact of child poverty on maltreatment.
Food insecurity and violence in the home: Investigating exposure to	The present study uses data from the Early Childhood Longitudinal Study–Birth Cohort to explore the link between	United States	Food insecurity; measured by the food security module.	Data for the present study are derived from the Early Childhood Longitudinal Study–Birth Cohort (ECLS-B). The ECLS-B is a longitudinal, nationally	The results suggest that the predicted probability of early childhood exposure to violence and/or victimization in the

violence and victimization among pre-school aged children (Jackson et al., 2018)	household food insecurity during the first three waves of data collection (i.e., the first few years of life) and witnessing or being the victim of violence in the home among very young children (~ age 4).			representative study of approximately 10,000 U.S. children and their caregivers (> 98% mothers) from birth to early childhood. The current study also employs data from a subsample of approximately 6,000 fathers who participated in the study by completing questionnaires concerning their relationship with the child, life history, and personality. Ultimately, approximately 5,100 households provided both maternal and paternal data at the first wave of data collection. ECLS-B researchers utilized a multistage, stratified sampled approach to obtain the data. Two binary items were created which assessed child exposure to violence and child violent victimization.	home is nearly 6 times (OR= 5.86*, 95% CI= 3.02-11.38] greater in persistently food-insecure households (i.e., households that are food insecure across all three waves) relative to food secure households.
Understanding and responding to chronic neglect: A mixed methods case record examination (Jones & Logan-Greene, 2016)	The aim of this retrospective case record review study was to examine risk and protective factors of chronic neglect and relevant CPS agency responses and practices.	United States	Individuals were deemed to be living in poverty based on notes indicating receipt of Medicaid, Supplemental Nutrition Assistance Program (food stamps), Temporary Assistance for Needy Families, lack of utilities, evictions, and housing instability).	This retrospective case record review study examined administrative child welfare records from one urban, diverse county in the North- east region of the United States. The sample consisted of CPS cases of families that had experienced "chronic neglect," which was defined as families with five or more screened-in reports of child maltreatment with each report including at least one allegation of neglect. The total final sample	Results demonstrated that children experiencing chronic neglect were living in poverty 92% of the time.

				for this study was 38 families that had five or more screened-in reports that each included at least one allegation of neglect. The number of cases ranged from 5 to 23, with an average of 9.2 (SD = 4.3). The age of the mothers at the time of the first case record in the sample ranged from 18 to 40 years old, with an average age of 27.3 (SD = 5.7). The average number of children in each family was 4.3 (SD = 2.2); 10.5% of the families had 7 or more children.	
Duration in poverty-related programs and number of child maltreatment reports: A multilevel negative binomial study (Kim & Drake, 2016)	This study examined the relationship of a family's duration in poverty related programs (i.e., Aid to Families with Dependent Children/Temporary Assistance for Needy Families and Medicaid) to the subject child's number of maltreatment reports while considering race and baseline neighbourhood poverty.	United States	involvement in poverty Individuals were involved in -related programs and represented childhood cumulative exposure to low family income. This variable was measured as the total number of calendar years, in which a case was open for either AFDC/TANF (1990 2009) or Medicaid (1989–2009) from birth to age 15. They also included a baseline neighbourhood poverty variable, which was measured	Children from a large Midwestern metropolitan area were followed through a linked cross-sector administrative database from birth to age 15. The sampling procedure used in the parent study allowed them to explore their main question twice, using two separate samples. The ''CAN'' sample included children with a known official child abuse or neglect report during early childhood, regardless of their poverty status. This sample was from the Missouri child welfare system. The sample included children satisfying the following criteria: (1) residing in St. Louis City or County; (2) having a first-time screened-in report for alleged neglect, physical abuse, or sexual abuse to the Missouri	The data showed a unique and significant contribution of duration in poverty-related programs to the number of maltreatment reports. The predicted number of maltreatment reports increased by between 2.5 and 3.7 times, as duration in poverty-related programs increased from 0 to 9 years. They did not find a significant association between child maltreatment reports and baseline neighbourhood poverty (AFDC: z= -006; CAN: z= 2.29)

			as the percentage of children below the federal poverty line for a census tract based on 1990 decennial census data.	CPS in 1993 and 1994; and (3) being under 6 years old at the time of the report. This sample had 3,343 families who were nested in 250 neighbourhoods (i.e., census tracts). The ''AFDC'' sample included poor children who had no known maltreatment report during early childhood. This sample included children who had a record of AFDC use but no official maltreatment reports prior to the sampling period (1993–1994). Due to the needs of the parent study, these children were selected from a larger pool of available children (i.e., AFDC records) and were matched to poor maltreated children on age, race, gender, and residential region (city/county). In this sample, 2,805 families were nested in 223 tracts. Generalized multilevel models were employed to account for the multilevel structure of the data (i.e., nesting of families within neighbourhoods).	
Longitudinal understanding of child maltreatment report risks (Kim et al., 2020)	This study aimed to examine CMR risks by child age, early childhood context, current/cumulative economic status (welfare	United States	The variable 'welfare receipt' was used to indicate low income.	Data analysed were drawn from a larger study based in St. Louis (City and County), Missouri (Jonson-Reid et al., 2009). The parent study linked multiple administrative data sets to trace	During follow-up, Kim et al. (2020) found CMR likelihoods were substantially higher for the CAN sample than for the AFDC sample. The

	receipt), race, and other risk factors with a longitudinal dataset.			children with a CMR or an AFDC case at time of sampling (1993-1994) to understand patterns of service use and outcomes. The present study had two separate samples having very different early childhood contexts: children with a CMR in early childhood (the Child Abuse and Neglect [CAN] sample) and children with AFDC but no CMR in early childhood (the AFDC sample). The CAN sample included 2,111 children having a CMR ≤ age 3, suggestive of a harmful early childhood context. The AFDC sample included 1,923 children having AFDC but no CMR ≤ age 3, suggestive of early childhood protective factors despite poverty.	age-CMR relationship was strongly negative for the CAN sample (OR= 0.87, 95% CI= 0.86–0.88). This relationship was weaker for the AFDC sample (OR= 0.92, 0.89–0.95) and became non-significant for children who exited welfare. Current welfare receipt remained a strong predictor of CMR likelihoods for both CAN (OR= 2.32, 1.98–2.71) and AFDC (OR= 2.08, 1.61–2.68) samples. Prior welfare receipt moderately increased CMR likelihoods among those not currently on welfare. Controlling for other risk factors, White children had the highest likelihood of CMR. Other child and parent level vulnerabilities also increased CMR risk over time.
An evaluation of seasonal variation of Nonaccidental fractures in children less than 1 year of age	The aim of this study was to identify seasonal variation in nonaccidental injury (NAI) in children <1 year of age.	United States	Socioeconomic data including having a poverty rate greater than the US average, income lower than US median, and having Medicaid.	A retrospective review of patients' medical records from a paediatric fracture registry was performed to identify patients that are less than 1 year of age at the time of presentation for a fracture	A poverty rate greater than the US average, income lower than US median, and having Medicaid were significantly associated with an increased

(Leaman et al., 2017)				between January 2010 and June 2012. Fifty patients who presented with a fracture to their institution between January 2010 and June 2012 were included in this study. The average age at presentation was 5.4 months (SD ±3.71 months).	likelihood for abuse related nonaccidental injuries during the summer period (p= .004, p< .001, and p< .001, respectively).
Examining the relationship between economic hardship and child maltreatment using data from the Ontario Incidence Study of Reported Child Abuse and Neglect-2013 (Lefebvre et al., 2017)	The purpose of this paper was to examine the relationship between economic hardship and maltreatment for families and children identified to the Ontario child protection system for a maltreatment concern.	Canada	Workers were asked to indicate if the household had run out of money for food, housing, and/or utilities in the last six months. From these variables, they derived our composite measure of economic hardship by noting whether a household was noted by the worker as experiencing any one of these conditions.	The present analyses were based on an unweighted sample of 3790 maltreatment-related investigations with full information on the variables of interest. Workers could identify up to three forms of investigated maltreatment from a list of 32 codes. For the primary maltreatment, workers were asked to indicate the maltreatment code that best characterized the investigation. Descriptive and bivariate chi square analyses were conducted in addition to a logistic regression predicting the substantiation of maltreatment.	In 9% of investigations, the household had run out of money for food, housing, and/or utilities in the past 6 months. Children in these households were more likely to have developmental concerns, academic difficulties, and caregivers with mental health concerns and substance use issues. Controlling for key clinical and case characteristics, children living in families facing economic hardship were almost 2 times more likely to be involved in a substantiated maltreatment investigation (OR= 1.91, p< 0.001).
Risk factors for child abuse, neglect, and exposure to intimate partner	This study aimed to identify risk factors for child abuse, neglect, and exposure to intimate partner violence (IPV)	Germany	The variable 'Social Welfare Receipt' was used to indicate low income.	This study used the KiD 0–3 national main study, a cross-sectional study on adversity in early childhood and parental access to support services,	Having a social welfare receipt significantly increased the likelihood of child abuse (OR= 1.65*, CI= 1.07-2.56), child

violence in early childhood: Findings in a representative cross-sectional sample in Germany (Liel et al., 2020)				conducted as part of a long-term policy program for early intervention services in Germany. 8063 families with infants and toddlers participated in the survey. An automatic variable selection process was used to test risk factors and logistic regression models were employed for each outcome.	neglect (OR= 6.55***, CI= 3.56-12.06) and Child exposure to IPV (OR= 6.74, CI= 4.75-9.56).
Unpacking the parallel effects of parental alcohol misuse and low income on risk of supervisory neglect (Lloyd & Kepple, 2017)	This study aimed to explore the direct and indirect effects of parent alcohol misuse and low family income on risk of supervisory neglect through mediating factors such as parent depressive symptoms and low social support.	United States	Poverty was captured within a 'low income' variable. Their survey asked respondents to place their household income in one of eight categories (Less than $10,000; $10,001-$20,000; $20,001-$40,000; up to More than $150,000). Given the number of categories, this was treated as a continuous variable.	The study used a sample of 2,990 parents of children under 13 years old who completed a listed telephone survey conducted in 50 mid-sized cities within California during 2009. Participant selection criteria included being a parent or guardian of a child 12 years of age or younger living with them at least 50% of the time. They used a structural equation model to estimate the direct and indirect effects of parent alcohol misuse (defined as heavy drinking frequency) and low family income on supervisory neglect toward a focal child, as well as the indirect effect via parental depressive symptoms and low social support. Mediation analysis to capture direct, indirect, and total effects of these two independent variables were also conducted.	Results revealed a significant direct and indirect effect of low family income on likelihood of supervisory Neglect (coefficient= 0.78*; 0.096***). Low income also exhibited an indirect effect via increased depressive symptoms and low social support (B= 0.037***). Parent low income and high frequency heavy drinking likely increases risks for supervisory neglect through distinct pathways.
The impact of housing instability	The present study aimed to expand upon existing	United States	Housing instability was used as a proxy for	Data for the present study came from the Fragile Families and	Results indicated housing instability has a small but

on child maltreatment: A causal investigation (Marcal, 2018)	evidence that establishes an associative relationship between housing instability and mothers' maltreatment behaviours.		poverty. Mothers reported whether they had difficulty affording rent, mortgage, or utility payments; had been evicted for non-payment of rent; had moved in with friends or family members to avoid becoming homeless; or spent time living in a homeless shelter or on the street. Although no standard definition of housing instability exists, similar indicators have been utilized in other studies of vulnerable families to capture a range of housing-related risk (Marcal, 2018; Ma, Gee, & Kushel, 2008; Park et al., 2004).	Child Well-being Study ("Fragile Families"). Fragile Families was a longitudinal study that followed a cohort of nearly 5,000 children born 1998 to 2000 in 20 large American cities. Participants were selected according to a stratified clustered sampling strategy that oversampled children born to unmarried parents ("fragile families"). Mothers were interviewed in hospitals shortly after giving birth. Follow-up interviews occurred at 1-, 3-, 5-, and 9-year intervals. The present study utilized data from the mother interviews at the baseline as well as 5- and 9-year interviews. The sample was limited to mothers who reported having primary custody of their children and with complete data on all study variables (N = 2,284). Mothers' maltreatment behaviours were assessed using a modified version of the Parent-Child Conflict Tactics Scale (CTSPC) available in the Fragile Families data set. The present study applies two propensity score analysis approaches—greedy matching and propensity score weighting—to data from the Fragile Families and Child Well-being Study to	significant effect on child maltreatment; being unstably housed increased a mother's predicted maltreatment behaviours by 0.80 behaviours (p< .001).

				move toward a causal explanation of child maltreatment behaviours among mothers in low-income households.	
Explaining the Economic Disparity Gap in the Rate of Substantiated Child Maltreatment in Canada (Rothwell et al., 2018)	The purpose of this study was to understand the prevalence of economic hardship in the child welfare system and explain the economic disparity gap.	Canada	Poverty was defined in terms of economic hardship. Economic hardship was defined as a household failing to meet the family's nutritional, clothing, shelter, and medical needs due to lack of money.	They used the Canadian Incidence Study of Reported Child Abuse and Neglect, 2008 (CIS 2008) that collected worker reported data on investigations (n = 15,980) from 112 Canadian child welfare sites. Children included in the study were under the age of sixteen years with a mean age of 7.4 years. Substantiated maltreatment was defined as: "An allegation of maltreatment is considered substantiated if the balance of evidence indicated that the primary form of maltreatment has occurred." Maltreatment included physical abuse, emotional abuse, exposure to IPV and neglect.	The rate of maltreatment substantiation was greater for children in families with economic hardship (80%) compared to children without economic hardship (51%). The unadjusted risk ratio (RR) for substantiated maltreatment was 1.49 (reference group = children not experiencing economic hardship), 95% CI= 1.46-1.52]; regression-adjusted RR= 1.21, CI= 1.16–1.24]. The unadjusted RR for substantiated physical abuse, emotional abuse, exposure to IPV and neglect, respectively, were 1.41, CI= 1.31–1.52]; 1.62, CI= 1.48-1.76]; 1.16, CI=1.13-1.19]; 1.63, CI= 1.58-1.69] and regression-adjusted RR, respectively, was 0.91 CI= .72–1.10]; 1.34, CI= 1.27=-1.55]; 1.16, CI=

					1.10-1.21; 1.41, CI= 1.34-1.48. Of the 29-percentage point economic disparity gap in substantiated maltreatment, decomposition analysis showed that 69% (i.e., equivalent to 20 percentage points) was explained by differences in covariates. Caregiver risk factors such as substance use, mental health, and social/historical factors such as having been a victim of domestic violence or past placement in foster care, accounted for most of that difference.
The within poverty differences in the occurrence of physical neglect (Shanahan et al., 2017)	This secondary data analysis examined the risk and protective factor(s) associated with physical neglect within a sample of impoverished children.	United States	An income-to-needs ratio was constructed to measure family poverty. There are eleven categories in the LONGSCAN income measure which range from <$5000/year to >$50,000/year. The midpoint of each income bracket was used. Income was	They conducted a secondary analysis of a subset of the data from the Longitudinal Studies of Child Abuse and Neglect (LONGSCAN), a national consortium of longitudinal studies of child maltreatment. There were 697 children in the LONGSCAN sample who met the eligibility criteria for the current study. A physical neglect indicator was constructed from a systematic review of CPS records	Children in poverty whose caregivers have depression are 2.03 times as likely to experience physical neglect as impoverished children whose caregivers are not depressed (95% CI= 1.25-3.30; p= 0.004). Furthermore, children in poverty living with higher neighbourhood quality are 0.74 times as likely to

			divided by the appropriate U.S. poverty income guideline for that family size and the year of data collection in order to calculate the income-to needs ratio. The income information, as well as family size information, collected through self-report at the first LONGSCAN assessment was used to generate the income-to-needs ratio. The income-to needs ratio was included in the analysis as a continuous variable. This included children who lived in poverty, as well as those who are near poverty. Therefore, the children included in the analysis had an income-to-needs ratio that was equal to or <1.99.	and from About My Parents (a youth self-report measure of neglect). They conducted a multivariate logistic regression analysis to examine the associations among maternal age, child gender, caregiver depression, caregiver history of maltreatment, income-to-needs ratio, number of children in the home, marital status, neighbourhood quality, and physical neglect. Social support was explored as a potential moderator.	experience physical neglect as children in poverty who live in lower quality neighbourhoods (95% CI= 0.57-0.96; p= 0.03). Finally, children in poverty whose caregivers reported experiencing child maltreatment were 1.81 times as likely to experience physical neglect as children in poverty whose mothers did not have a history of child maltreatment (95% CI= 1.17-2.81; p= 0.008). No other significant relationships were found.
Predicting child protective service (CPS) involvement among low-	Slack et al. (2017) examined combinations of income-tested welfare benefits and earnings, as	United States	Receipt of the Special Supplemental Nutrition Assistance	Slack et al. (2017) used data from the Family Support Study (FSS), a survey of Women, Infant, and Children (WIC) recipients across	Slack et al. (2017) found that parents in the Work Only group and the Work and Welfare group were

income U.S. families with young children receiving nutritional assistance (Slack et al., 2017b)	they relate to the likelihood of child maltreatment investigations among low-income families with young children participating in a nutritional assistance program in one U.S. state (Wisconsin).		Program for Women, Infants, and Children (WIC) Program	the state of Wisconsin. The FSS was linked with longitudinal state administrative data that include child welfare involvement, public benefits receipt, child support payments, and earnings. FSS survey data were collected during the last two months of 2010 and the first two months of 2011. A total of 22 WIC offices from across the state participated in the study, as well as WIC recipients participating in a home visiting program in the city of Milwaukee. A total of 1065 survey packets were completed. The FSS survey included measures of parenting, social support, parental depression, and indicators of economic hardship, as well as family structure and sociodemographic variables known to be (positively or negatively) associated with the risk of either child maltreatment or involvement in the CPS system. Analyses also controlled for housing instability (more than one housing move in the past year) and for belonging to the group of home visiting program participants, who may have differed in both measured and unmeasured ways from the	less likely to be investigated by CPS as compared with the Welfare Only reference group. The finding were marginally significant ($p < 0.10$) for the Work and Welfare group. The Welfare only group (OR= 4.34, $p < 0.05$) and the NoWork/NoWelfare group (OR= 5.12, $p < 0.10$) had a greater risk of CPS involvement than the Work only group, and the Welfare only group was more likely (OR= 1.84, $p < 0.10$) than the Welfare and Work group to have CPS involvement. Housing instability and having a child under the age of two were associated with an increased risk of CPS involvement, whereas having any post-secondary education was associated with a marginally statistically significant decreased risk. Slack et al. (2017) found no statistically significant associations of self-reported depressive symptoms, parenting stress, or social support

				respondents recruited from WIC Program offices. Parenting stress was measured with an eight-item scale, consisting of items such as "My children seem to be 'on my nerves' most of the time", "I often feel tired, worn out, or exhausted from raising my family", and "I feel good about my parenting abilities" (reverse-coded). Social support is an 11-item scale, consisting of items such as "There are people in my life who encourage and support me in meeting my goals", and "I do not know many people who I can talk to about my problems." Depressive symptomatology was measured using the CES-D. Data on income and benefit receipt and amounts in the FSS sample was derived from the 2010 Multi-System Person File (MSPF) longitudinal administrative database created and maintained by the Institute for Research on Poverty (IRP) at the University of Wisconsin-Madison. FSS sample members were linked to the MSPF by IRP programmers using identifying information (e.g., names, birthdates, children's names).	with CPS involvement. Lastly, logged annual individual income was associated with an increased risk of CPS involvement. The Nagelkerke r-square statistic is 31.5%.

				The MSPF provided information on the receipt and amounts of a range of income sources, including earnings from work, Temporary Assistance for Needy Families (TANF), Supplemental Nutrition Assistance Program (SNAP), childcare subsidies, unemployment insurance (UI) benefits, Supplemental Security Income (SSI), Social Security Disability benefits (SSDI), and child support. A continuous variable approximating total income was constructed by summing the 2010 totals of each of these income sources. Additionally, four dichotomous variables were created that reflect combinations of earnings and welfare receipt. First, respondents with an average of at least $50 per month in combined TANF and SNAP benefits were coded as receiving "welfare" in 2010; respondents with an average of $50 per month in earnings were coded as having worked in 2010. The combinations of these two variables yielded four dichotomous measures reflecting NoWork/NoWelfare, Welfare only, Work only, and Work and Welfare, combined. An additional	

				fifth dichotomous variable was constructed reflecting the receipt of any SSI or SSDI benefits for the primary caregiver or household children. This variable was included in analyses to control for chronic health conditions that may affect caregiving abilities and demands. The dependent variable for Slack et al.'s (2017) analyses was having an investigated child maltreatment report in the 18 months following the survey interview. Chi-square tests (for dichotomous predictors) and one-way ANOVAs (for continuous scale variables and for income) were run to test for differences in sample characteristics across welfare and work categories. Logistic regression analysis was used to predict the binary outcome of CPS involvement.	
Predictors of basic needs and supervisory neglect: Evidence from the Illinois Families Study (Yang & Maguire-Jack, 2016)	The current study uses data from the Illinois Families Study to run fixed effects logistic regression models to estimate the predictors of two distinct forms of neglect: basic needs (failure to provide	United States	Poverty was captured within several economic variables (income, unemployment, and TANF receipt)	The current study used data from the Illinois Families Study (IFS), a longitudinal panel study of TANF recipients in Illinois. The final sample was composed of 814 mothers, with 3033 mother wave observations.	In the basic needs neglect focused logistic regression models, they found that TANF receipt was associated with greater odds of being investigated for basic needs neglect (OR=

	adequate food, clothing, or shelter) and supervisory (failure to provide adequate supervision).				8.61**, SE= 6.85). They did not find an association with the other poverty-related variables of income (OR= 2.07, SE= 1.10) and unemployment (OR= 1.29, SE= 1.33). When considering supervisory neglect, no poverty variables were associated with likelihood of being investigated.
Neighbourhood Level Associative Relationships					
Name	**Summary**	**Country**	**Definition of Poverty**	**Method**	**Results**
Characteristics of Neighbourhoods where emergency medical services encounter children at risk for maltreatment (Bressler et al., 2019)	The objective of this study was to determine if neighbourhood rates of paediatric Emergency Medical Services (EMS) encounters correlate with rates of child maltreatment reporting and if there are neighbourhood-level risk factors for EMS encountering children with maltreatment reports.	United States	A set of financial income thresholds set by the Office of Management and Budget that vary by family size and composition were used to determine who is in poverty. If the total income for a family falls below the relevant poverty threshold, then they are considered in poverty.	They conducted a retrospective cohort study using the electronic medical records of children ages <18 years who had Columbus Division of Fire EMS encounters between 2011 and 2015. They used Nationwide Children's Hospital electronic medical records to identify child maltreatment reports. A total of 44,002 EMS encounters and 4,298 maltreatment reports were included in the study.	This study showed that poverty was independently associated with high EMS utilization as a result of maltreatment. The Spearman correlation coefficient relating heal rates of EMS encounters to rates of maltreatment reports within census tracts was 0.72 (95% CI= 0.65–0.77).
Understanding trends in neighbourhood child	This study examines how changes in the social and economic structure of neighbourhoods relate to	United States	They included the following variables for each census tract: poverty rate was the	This is a three-wave panel study (1990, 2000, 2010) of neighbourhoods in all of Cuyahoga County, which includes	The study finds that increases in vacant housing (coef.= 0.73***, SE= 0.09), single parent

maltreatment rates: A three-wave panel study 1990-2010 (Coulton et al., 2018)	changes in child maltreatment report rates over an extended period.		percentage of persons in households with income below the poverty thresholds; female headed households is the percentage of households with children that have female heads; public assistance is the percentage of households with public assistance income (AFDC in 1990 and TANF afterwards); unemployment rate is unemployed persons as a percentage of the civilian labour force; vacant housing is the percentage of housing units that are vacant; owner-occupied housing is the percentage of occupied housing units that are occupied by a homeowner.	the city of Cleveland. As a proxy for neighbourhood, they used the census tract as the unit of analysis (N = 475). The panel study design allowed them to partition the changes in child maltreatment report rates into a portion associated with how the levels of socio-economic risk factors have changed over time, and a portion related to how the relative importance of those factors in explaining maltreatment report rates has changed over time. Through the application of fixed effects panel models, the analysis is also able to control for unmeasured time invariant characteristics of neighbourhoods that may be a source of bias in cross-sectional studies. Child maltreatment reports were obtained from the Department of Children and Family Services. All reports that were the subject of an investigation were included.	families (coef.= 0.24***, SE= 0.06) and unemployment rates (coef.= 0.28**, SE= 0.09) are strongly associated with increases in child maltreatment report rates. However, controlling for all other variables, neighbourhoods that became poorer between 1990 and 2010 did not demonstrate increases in maltreatment report rates during that time (coef.= -0.18*, SE= 0.08). Furthermore, although poverty rates were predictive of cross-sectional variation in child maltreatment, increases in neighbourhood poverty became less associated with increases in child maltreatment report rates over time.
Community poverty and child abuse fatalities in the United States (Farrell et al., 2017b)	This paper's objective was to evaluate the association between county poverty concentration and rates of fatal child abuse.	United States	Population and poverty statistics were obtained from US Census data. County poverty concentration,	This was a retrospective, cross-sectional analysis of child abuse fatalities in US children 0 to 4 years of age from 1999 to 2014 by using the Centres for Disease Control and Prevention	From 1999 to 2014, 11,149 children 0 to 4 years old died of child abuse; 45% (5053) were <1 year old, 56% (6283) were boys, and 58%

			defined as percent of the population living below the federally defined poverty threshold, was categorized into discrete subgroups (0%–4.9%, 5%–9.9%, 10%–14.9%, 15%-19.9%, and ≥20%) based on previously published studies. The federal poverty threshold for a family of 4 was $17,029 in 1999 and was $24,250 in 2014.	Compressed Mortality Files. National child abuse fatality rates were calculated for each category of community poverty concentration. Multivariate negative binomial regression modelling assessed the relationship between county poverty concentration and child abuse fatalities.	(6480) were white. The overall rate of fatal child abuse was 3.5 per 100 000 children 0 to 4 years old. In the multivariate model, counties with the highest poverty concentration had >3 times the rate of child abuse fatalities compared with counties with the lowest poverty concentration (adjusted incidence rate ratio, 3.03; 95% CI= 2.4–3.79).
Neighbourhood inequality in the prevalence of reported and substantiated child maltreatment (Fong, 2019)	The objective of this paper was to estimate the prevalence of CPS reports during early childhood and substantiated investigations during childhood for children living in different types of neighbourhoods.	United States	The 2011–2015 American Community Survey (ACS) provided data on the characteristics of the relevant sample census tracts – specifically, the proportion of families with incomes below the poverty line.	This study examines alleged child maltreatment reported to and investigated by state officials, drawing on administrative records of CPS reports from 1997 through 2015 from the Connecticut Department of Children and Families. This study used synthetic cohort life tables to estimate the cumulative risk of CPS reports before age five and substantiated CPS investigations before age 18, by neighbourhood poverty rate and neighbourhood racial composition.	The analysis reveals substantial stratification in the prevalence of CPS contact by the demographic characteristics of children's residential neighbourhoods. For example, while 7% of children in low poverty neighbourhoods (under 10% poor) experience a substantiated CPS investigation at some point during childhood at 2014 and 2015 rates, this risk more than doubles to 17% for their peers in moderate-poverty

					neighbourhoods (10 20% poor) and more than triples to 26% for their peers in high-poverty neighbourhoods (over 20% poor).
Community characteristics associated with seeking medical evaluation for suspected child sexual abuse in Greater Houston (Greeley et al., 2016)	This study demonstrated zip code level characteristics which were associated with an increased rate of children seeking care for suspected CSA.	United States	Eighteen community level variables for each for each zip code, encompassing social, economic, housing, and demographic characteristics, including a 'family below the poverty line' variable. These were obtained from American Community Survey available at United States Census Bureau's website.	There was a total incidence rate of medical evaluations for suspected CSA of 5.9/1000 children. They abstracted the medical charts of 1982 (86 %) children who sought a medical evaluation for suspected CSA at three main medical systems in the Greater Houston area for 2009. They evaluated 18 community level variables from the American Community Survey for the 396 zip codes these children lived in. The mean number of cases per Greater Houston zip code was 2.77 (range 0–27), with 62 % of zip codes not having a case at any of the three sites surveyed.	Zip codes with a higher than Houston average rate of unemployed labour (RR= 1.36*, 95% CI= 1.03-1.79) with high family poverty rate (RR= 0.71*, 95% CI= 0.53-0.94), were associated with an increased rate of children seeking care for suspected CSA.
Child maltreatment risk as a function of poverty and race/ethnicity in the USA (Kim & Drake, 2018)	This study estimates, using national data, total and type-specific official maltreatment risks while simultaneously considering environmental poverty and race.	United States	Child poverty data were obtained from the 2009-13 American Community Survey (ACS) 5-year estimates (i.e., per-year average).	National official maltreatment data (2009–13) was linked to census data. They used additive mixed models to estimate rates of official maltreatment (i.e., total, neglect, physical abuse and sexual abuse) as a function of county-level child poverty rates. This study presented reports (i.e., screened-in referrals for CPS investigation or assessment) and confirmed reports (i.e.,	With increasing county child poverty rates, total and type-specific official maltreatment rates increased. At the 25% county child poverty level, the total maltreatment report rate was 6.91% (95% CI: 6.43%–7.40%) for Whites, 6.30% (5.50%–7.11%) for Blacks and 3.32% (2.88%–

				substantiated or indicated reports by CPS).	3.76%) for Hispanics. At lower child poverty levels (<15%), Whites trended to have lower official maltreatment rates than others. Whereas there are 54.84% of White counties (housing 62.22% of White children) at these low poverty levels, there are too few Black counties (5.42% of Black counties housing 2.84% of Black children) and Hispanic counties (4.75% of Hispanic counties housing 2.04% of Hispanic children) to make valid comparisons.
Intersections of individual and neighbourhood disadvantage: Implications for child maltreatment (Maguire-Jack et al., 2017a)	The current study investigates whether there are interactive effects of individual and neighbourhood poverty on the risk of child maltreatment	United States	On the individual level, poverty was approximated by high material hardship. A total of seven items were used to indicate material hardship (utility shutoff, non-payment or partial payment of rent or mortgage, use of a food pantry, moving in with other people due to financial problems, staying in a shelter or place not intended for habitation, lack of	Structural equation modelling was used to analyse data from 946 parents at Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) clinics in Franklin County, Ohio. They used the Parent-Child Conflict Tactic Scales (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998) to approximate three types of maltreatment: neglect (five items), physical assaults (13 items), and psychological aggression (five items).	Compared with non-poor parents in low-poverty neighbourhoods, individual poverty in the absence of neighbourhood poverty predicted a 2.5-fold increase in the odds of high (above 90th percentile) neglect and a nearly 2-fold increase in the odds of any neglect. Parents who are non-poor but living in high-poverty neighbourhoods also had substantially higher odds of high neglect and any

			access to medical care, and borrowing money from friends or relatives to pay bills) and a respondent was coded as poor if they endorse two or more items. Neighbourhood poverty was then measured as a dichotomous indicator of whether the 30% of households in the respondent's zip code are below the federal poverty line, according to the U.S. Census.		neglect. Parents who were both poor and in high-poverty neighbourhoods were estimated to have 3.7 times higher odds of high neglect and 3.0 times higher odds of any neglect as compared with those with neither poverty condition. For both high neglect and any neglect, each of the three poverty conditions are only statistically different in their risks of neglect when compared with the reference group. That is, a parent who is poor in a low-poverty neighbourhood is no more or less likely to neglect than a poor or non-poor parent in a high-poverty neighbourhood. Turning to physical assaults, Maguire-Jack and Font (2017a) find that individual poverty, irrespective of neighbourhood poverty, was associated with large increases in the odds of high physical assaults (OR =2.9) and any physical assault (OR = 1.7),

					compared both with no poverty and neighbourhood poverty only. The effects of individual poverty in the absence of neighbourhood poverty were similar in size to the effects of combined individual and neighbourhood poverty, confirming that neighbourhood poverty is not significantly contributing to physical assault risk. For high psychological aggression, they found that being poor in a low-Poverty neighbourhood is statistically significantly different from all other groups. That is, poor parents who live in low poverty neighbourhoods are more likely to be highly psychologically aggressive than are all non-poor parents and poor parents living in high-poverty neighbourhoods. However, for any psychological aggression, they found that the

					estimated effect for individual poverty alone is equal in size to that for combined individual and neighbourhood poverty. For any psychological aggression, both individual poverty conditions (with or without neighbourhood poverty) predict higher odds of psychological aggression than neighbourhood poverty alone. These findings suggest that both individual poverty status and neighbourhood poverty matter for child maltreatment and that there does not appear to be a compounding effect of being both poor and in a poor neighbourhood, nor is there a protective effect when poor but living in a non poor neighbourhood.
Community and Individual Risk Factors for Physical Child Abuse and Child Neglect:	The current study sought to understand the ways in which individual- and neighbourhood-level risk and protective	United States	They investigated individual poverty status, unemployment, and residential instability. To measure poverty,	They used a three-level hierarchical linear model (families nested within census tracts and nested within cities) to estimate the relationships between physical child abuse and child	They found that neighbourhood-level disadvantage was especially detrimental for families in poverty and that neighbourhood-level

Variations by Poverty Status (Maguire-Jack & Font, 2017b)	factors affect physical child abuse and child neglect and whether these factors differed for families based on their individual poverty status.		participants were asked to provide their annual income from several ranges beginning with less than "US$10,000" and ending with "more than US$150,000." They first took the midpoint of the range and then calculated the ratio of income to family size. Family size was determined by summing the number of children residing in the home with 1 if the respondent reported that he or she was not married and 2 if the respondent reported that he or she was married. They then determined whether the family's income would have fallen within 200% of the federal poverty guideline for 2009, and dummy coded the variable. Full time work was a dichotomous measure, equal to 0 if the parent indicated working less than full	neglect and neighbourhood structural factors, neighbourhood processes, and individual characteristics. They compared these relationships between lower and higher income families in a sample of approximately 3,000 families from 50 cities in the State of California. Physical abuse and neglect were measured by parent self-report of maltreatment behaviours in reference to a focal child, which was identified as the child with the most recent birthday. Physical abuse was measured using 9 items from the physical assault's subscale of the Conflict Tactics Scale Parent-to-Child version (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). For child neglect, the survey included a subset of questions from the Multidimensional Neglect Behaviour Scale (MNBS; Kantor, Holt, & Straus, 2004). The neighbourhood structural characteristics included were the poverty rate, percentage of neighbourhood population that moved in the past 5 years, unemployment rate, percentage of neighbourhood population that was Black, and percentage of neighbourhood population that	protective processes (social) were not associated with physical child abuse and child neglect for impoverished families, but that they had a protective effect for higher income families. Specifically, the lower income group was more likely to report any corporal punishment (49% vs. 44%) and physical neglect (61% vs. 56%). The lower income group also had higher levels of severe assault (23% vs. 19%) and supervision neglect (50% vs. 46%), but these differences were only marginally significant (p< .10). They found a statistically significant difference in the associations between neighbourhood poverty and corporal punishment for the two income groups. Residing in a high-poverty neighbourhood was associated with higher odds of corporal punishment use among

			time and 1 otherwise. Residential instability was a dichotomous measure equal to 1 if the parent had lived in the neighbourhood for less than 5 years and 1 otherwise. This cut point was chosen to reflect the neighbourhood-level instability measure available from the census.	was Hispanic (all data were obtained from the 2011–2015 American Community Survey). Neighbourhood poverty was dichotomized at 20% because prior research has indicated important nonlinearities in the associations between neighbourhood poverty and a range of social–behavioural outcomes (Maguire-Jack & Font, 2017; U.S. Department of Housing and Urban Development, 2011). They also considered two social process variables: reciprocated exchange and neighbourhood informal social control. These two scales were created using modified scales created for the Project for Human Development in Chicago Neighbourhoods (Sampson et al., 1997, 1999).	lower income families but not among higher income families. The trends for physical abuse were similar but not statistically significant. They also found that neighbourhood turnover was associated with increased odds of corporal punishment and severe assault among lower income families. Perceived informal social control at the individual level decreased the odds of corporal punishment and physical abuse among higher income families only. No statistically significant associations between reciprocated exchange and maltreatment were found for any of the types. No individual or neighbourhood socioeconomic measures were significantly predictive of physical neglect. In relation to supervision neglect, the only predictive socioeconomic attribute was neighbourhood turnover, which was

					associated with lower odds of supervision neglect among lower income families only.
Social cohesion and informal social control as mediators between neighbourhood poverty and child maltreatment (Maguire-Jack et al., 2021b)	The current study examined the direct and indirect effects of neighbourhood poverty on the likelihood of being maltreated at age 5. Two neighbourhood social processes, social cohesion and informal social control, were examined as mediators.	United States	Neighbourhood poverty was available from the U.S. Census Bureau and was continuously measured against the percentage of families within the census tract of the primary caregiver who had incomes below the federal poverty level.	This study used structural equation modelling and data from 4,898 children in the Fragile Families and Child Wellbeing Study (as described above). The three dependent variables of interest were child physical assault, psychological aggression, and neglect. These were measured using the Parent–Child Conflict Tactics Scale (CTS-PC Straus et al., 1997) of the primary caregiver when children were age 5. Here, neighbourhood social cohesion refers to the trust and bonds between neighbours, while informal social control refers to the ability of neighbours to rely on each other to intervene in social problems. Each subscale is measured on a Likert scale, with the social control scale consisting of five questions and the social cohesion scale consisting of four.	Neighbourhood poverty was not directly related to physical assault, psychological aggression, or neglect. However, it was indirectly related to all three maltreatment types through its impact on neighbourhood social cohesion and social control. Neighbourhood poverty was indirectly related to physical assault (β= .01, p< .05), psychological aggression (β= .02, p < .001), and neglect (β= .01, p < .05). For physical assault and psychological aggression, the effect of neighbourhood poverty was mediated by social cohesion. For neglect, the effect of neighbourhood poverty was mediated by informal social control. Neighbourhood poverty at age 1 was associated with lower levels of social cohesion (β= 0.22, p <.001) and lower levels of

					informal social control (β= .17, p< .001).
Neighbourhood poverty and child abuse and neglect: The mediating role of social cohesion (Mcleigh et al., 2018)	This article explores the relationship between neighbourhood poverty and child abuse and neglect rates in a diverse set of neighbourhoods in South Carolina.	United States	Poverty rates were obtained from the 2000 Census for each block group included in the study.	This study used data collected from a survey administered to a random sample of caregivers with children under the age of 10 (n = 483), substantiated reports of child abuse and neglect, and Census block group data, this study investigates the possibility that neighbourhood social cohesion (i.e., mutual trust and shared expectations among neighbours), mediates the relationship between neighbourhood poverty and child abuse and neglect rates. Child Protective Services (CPS) data was obtained from the South Carolina Integrated Data System (South Carolina Office of Research and Statistics 2009). Rates of founded cases of abuse and of neglect were assembled in the same time frame as for the neighbourhood survey, i.e., 2000–2003. The rates were calculated per 1000 for children under the age of 10 and for the same census block groups in which survey respondents resided.	Rates of abuse were found to be associated with poverty (r= 0.17, p< .001), and so were rates of neglect (r= 0.18, p< .001). Multiple regression analyses were then conducted to assess the proposed mediation models. Social cohesion was found to mediate the association between neighbourhood-level poverty and abuse rates but not neglect rates. The direct effect of poverty on rates of abuse (path c) was positively significant (B= 0.005, SE = 0.001, p< .001). Total effect (path c') indicated a reduction in strength and significance of direct effect when including the mediator, i.e., social cohesion (B= 0.004, SE= 0.004, p= .005). The effect of poverty on social cohesion (path a) was negatively significant (B= −0.0004, SE = 0.0001, p< .01) and so was the effect

					of social cohesion on child maltreatment (path b; B= −2.271, SE= 0.768, p= .003). Results of the mediation analysis confirmed the mediating role of social cohesion in the association between poverty and abuse (B= 0.001; 95% CI= 0.0004-0.0018]), while controlling for participants' age, marital status, ethnicity, and parental efficacy. The direct effect of poverty on rates of neglect (path c) was also positively significant (B= 0.005, SE= 0.001, p< .001). Total effect (path c') indicated a very small reduction in strength of direct effect when including the mediator, i.e., social cohesion (B= 0.004, SE= 0.004, p< .001). The effect of poverty on social cohesion (path a) was negatively significant (B= −0.0004, SE= 0.0001, p < .01) but the effect of social cohesion on neglect was insignificant (path b; B= −0.475, SE= 0.647, p= .463). The mediation analysis indicated that

					social cohesion did not mediate the association between poverty and neglect.
Connecting child maltreatment risk with crime and neighbourhood disadvantage across time and place: A Bayesian spatiotemporal analysis (Morris et al., 2019)	The present study examined how neighbourhood disadvantage and crime were associated with risk of substantiated child maltreatment using annual data from 2008 to 2016 for zip codes in Davidson County, TN.	United States	Neighbourhood disadvantage data including the percentages of families living in poverty, unemployment rate, and percentage of vacant housing were created from the U.S. Census estimates, which are provided at the census block group level. The block group data were aggregated up to the zip code level, with values weighted based on the captured census block population, because block groups are not perfectly nested within zip codes.	Substantiated child maltreatment data for victims aged 18 years and younger were obtained from the State of Tennessee Department of Children's Services. Primary outcomes were substantiated cases of overall child maltreatment, child sexual abuse, child physical abuse, and child neglect. Overall maltreatment included the following: sexual abuse, physical abuse, psychological harm, abandonment, abuse-related deaths, drug-exposed child, drug-exposed infant, educational neglect, environmental neglect, lack of supervision, medical maltreatment, neglect-related death, and nutritional neglect. Child neglect was computed by summing across the following: Abandonment, drug-exposed child, drug-exposed infant, educational neglect, environmental neglect, lack of supervision, medical maltreatment, neglect-related death, and nutritional neglect. Substantiations were selected to estimate the cases of child	Autoregressive models revealed that higher percentages of families in poverty (M= 0.16, SD= 0.10, 95% CI=-.003-.035]) and higher percentage of vacant housing (M= 0.16, SD= 0.013, 95% CI= -.008-.043]) were uniquely associated with higher risk of overall child maltreatment. The unemployment rate was not associated with overall child maltreatment risk. Results revealed that higher percentages of families in poverty (M= 0.18, SD= 0.011, 95% CI=-.016-.040]) and higher percentages of vacant housing (M= 0.025, SD= 0.016, 95% CI= -.005-.057]) were associated with higher risk of sexual abuse. Unemployment rates were not associated with sexual abuse.

				maltreatment that were verified to have occurred.	Higher percentages of families in poverty were associated with higher rates of physical abuse (M= 0.034, SD= 0.013, 95% CI= .009-.058]). Neither unemployment rates nor vacant housing were associated with physical abuse. Higher percentages of families in poverty (M= 0.031, SD= 0.014, 95% CI= .003=.058), higher unemployment rate (M= 0.023, SD= 0.013, 95% CI=-.002-.051), and higher percentages of vacant housing (M= 0.033, SD= 0.022, 95% CI=-.010-.076) were associated with higher rates of child neglect.
Quasi-Experimental Studies					
Name	**Summary**	**Country**	**Definition of Poverty**	**Method**	**Results**
Impact of Short Lifetime Limits on Child Neglect (Albert & King, 2017)	This study sought to determine the relative impact of TANF's shorter than 60-month time limits on Arizona's child neglect caseload.	United States	Receipt of Temporary Assistance for Needy Families Program (TANF)	Child neglect data were obtained from Cornell University (2015). Cornell University re- ceives the data from the U.S. Children's Bureau and stores Child Abuse and Neglect (NDACAN) data for every state over time. The number of children in Arizona found to be neglected by the	This paper shows that there was a strong inverse relationship between child neglect and the decrease in the number of families receiving cash assistance from TANF. During the period that Arizona altered its lifetime

				court is the dependent variable for the present study. The present study develops and uses a linear model from January 2005 to December 2013, the term for which child neglect data were available. The idea underlying the model is that over the study period, month-to-month changes in the child neglect caseload occur in response to changes in external.	TANF policies, from July 2009 to the end December 2012, the number of children who were found to be substantiated child neglect cases in the state of Arizona increased from 313 to 836, an increase of 213%. Key findings reveal that all else constant, under the presence of a 36-month time limit there was an increase of 190 children substantiated for neglect in the state of Arizona per month ($p < .001$). The corresponding figure under the 24-month lifetime limit was 461 cases per month ($p < .001$).
Income and child maltreatment in unmarried families: evidence from the earned income tax credit (Berger et al., 2017)	This study estimates the associations of income with both (self-reported) child protective services involvement and parenting behaviours that proxy for child abuse and neglect risk among unmarried families.	United States	Poverty measures were based on household income. Their primary strategy follows the instrumental variables approach employed by Dahl and Lochner (2012), which leverages variation between states and over time in the generosity of the total state and federal	Their data was drawn from FFCW, a longitudinal cohort study of 4,898 children born between 1998 and 2000, in 20 U.S. cities with populations greater than 200,000. FFCW sampled nonmarital births with a 3:1 ratio to marital births. As such, FFCW parents are disproportionately likely to be low-income, have limited educational attainment, be of minority race/ethnicity, be unmarried, and become involved with CPS, relative to the U.S.	Berger et al. (2016) suggests a causal link between income and both child neglect and CPS involvement, at least among single-mother and possibly larger families, which benefit most from the EITC. Results suggest that an exogenous increase in income is associated with reductions in behaviourally

			earned income tax credit for which a family is eligible to identify exogenous variation in family income.	population. Families were interviewed at the birth of the focal child and when the child was age 1, 3, 5, and 9. They use observations from the age 3, 5, and 9 interviews, which results in a possible sample of 14,694 family-wave observations of 4,898 families. They operationalize child maltreatment both via behaviourally approximated measures of child abuse and neglect, and with mothers' self-reports that they had been investigated by CPS. The behaviourally approximated measures included subsets of the Parent–Child Conflict Tactic Scales (Straus et al. 1998). Their measure of abuse includes 5 indicators of physical violence and emotional aggression, representing the number of times in the past 12 months that the mother: (1) shook the focal child; (2) hit the child with an object; (3) called the child stupid, dumb, or other names; (4) threatened to kick the child out of the home; and (5) swore at the child. In our primary specification, the child abuse indicator is equal to one if the sum of these items falls in the	approximated child neglect and CPS involvement, particularly among low-income single mother families. For example, regression results for single-mother (non-cohabiting) families and for families with two or more children at the age 3 observation (baseline). Their estimates support the hypothesis that the benefits of the EITC are most prominent for single-mother and larger families. Indeed, the link between income and both behaviourally-approximated neglect and CPS involvement is particularly strong for these groups. Specifically, it is negative and at least marginally significant for all of the IV models for single mothers and several of the IV models for families with multiple children. In terms of effect size, they find, for example, a $1,000 increase in income to be associated with roughly a

				top quartile of values for the FFCW sample; zero otherwise. Child neglect consists of parental actions or inactions that place a child in situations or environments in which there is a foreseeable risk of harm because of inadequate supervision, food, shelter, medical care, emotional support, or other material or psychological necessities. They assessed neglect via 11 indicators: (1) the child witnessed domestic violence; (2) the mother reported being too drunk or high to care for the child; (3) the mother reported using hard drugs; (4) the mother reported currently using non prescribed drugs several days per week or more; (5) the mother reported earning income from illegal activities such as drug sales or prostitution; (6) the mother reported leaving the child unsupervised (alone) when she should not have; (7) the mother was unable to ensure that the child received the food he or she needed; (8) the mother was unable to get the child to the doctor or hospital when needed; (9) the family's electricity or heat was shut off for non-payment; (10) the family experienced	1.0 to 1.2 percentage point (3% to 4%) decrease in behaviourally-approximated neglect and a .58 to .70 percentage point (8% to 10%) decrease in CPS involvement among low-income single-mother families.

				homelessness; and (11) the family experienced housing-related doubling up for financial reasons. They coded child neglect equal to one if the sum of the 11 items falls in the top quartile of FFCW sample values, and zero otherwise. For both abuse and neglect, they estimated supplemental analyses using greater than one-half of a standard deviation (SD) above the sample mean as a maltreatment threshold, as well as a z-scored transformation of the continuous measures. They also had mothers' reports that their family was investigated by CPS. At ages 5 and 9, the focal child's primary caregiver (generally the mother) was asked whether the family had been contacted by CPS since the focal child's birth (in the age 5 interview) or since the prior interview (in the age 9 interview). Mothers who answered in the affirmative were asked to provide the date of their most recent CPS contact.	
The impact of unemployment on child maltreatment in the United States	The authors ask whether unemployment causes child maltreatment	United States	They focus on the annual unemployment rate at a county level, using data from the Local	They use a 'Bartik Instrument' (Bartik (1991), It has been used many times in the labour economics literature), and has been used recently in papers on	Benefit Duration is negative and statistically significant at the 10% level, which demonstrates that extending the

(Brown & De Cao, 2017)			Area Unemployment Statistics (LAUS) produced by the Bureau of Labour Statistics (BLS). The BLS calculates unemployment rates using information collected in the Current Population Survey, Current Employment Statistics survey, and state Unemployment Insurance systems.	violence against women. They instrument for the county-level unemployment rate using a predicted county-level unemployment rate, which combines national-level unemployment rates across industries with differences in the initial industrial structure across counties. This instrument isolates a measure of local labour demand that is unrelated to local labour supply. It therefore allows us to separate demand-driven unemployment rate shocks from supply-driven shocks that could be correlated with unobservables that are also related to child maltreatment. They use a dataset which contains every reported incident of child abuse and neglect made to state Child Protective Services in nearly every state in the U.S. for the years 2004-12. This dataset comes from the National Child Abuse and Neglect Data System (NCANDS), produced by the National Data Archive on Child Abuse and Neglect (NDACAN). They focus on reports of neglect, physical, sexual and emotional abuse. For each child maltreatment report, they observe the gender, age and ethnic group of the perpetrator	duration of benefits is indeed associated with a smaller effect of unemployment on neglect. The size of the effect is large. A one percentage point increase in the unemployment rate at the 25th percentile of the 2008-12 distribution of the duration of benefits (55 weeks) leads to a 21 percent increase in neglect, whilst at the 75th percentile (87 weeks) it leads to only a 14 percent increase. In the county with the median prevalence of neglect, this difference equates to 37 fewer cases of neglect per year in response to a one percentage point increase in the unemployment rate. At the maximum duration of benefits of ninety-nine weeks, a one percentage point increase in the unemployment rate still leads to an 11 percent increase in neglect. This result is also stronger when Brown considers discrete measures of the duration of

				and victim, the report date, the type of maltreatment alleged, the county of the report and the outcome of the investigation. The median number of states reporting in each year is 49 (including D.C.), and the lowest is 45 in 2004. Their analysis focuses on a final sample of 2,803 counties from forty-six states. This dataset covers the whole of the U.S., and contains referrals to the Child Protective Services and not self-reported measures of child maltreatment which are collected in the Fragile Families and Child Wellbeing Study and used in Berger et al. (2016), for example.	unemployment benefits. Comparing the coefficient on Unemployment Rate to the coefficient on Unemployment Rate, Brown et al. (2017) reports that there is a greater mitigating effect of unemployment benefits in the more generous compared to the less generous states. This difference is statistically significant at the 5% level, with a p-value of 0.03 for the associated Wald test for the difference between these two coefficients. Furthermore, in the absence of safety nets, if unemployment persists then income may stay persistently below the level required to meet a child's basic needs. In that case, unemployment may cause repeated neglect. Brown et al. (2017), sought to investigate this question, finding that unemployment has a statistically significant effect on first time, second time and third

					time cases of neglect at least at the 5% level. The point estimates of the effect of unemployment on second time and third time cases of neglect are, respectively, more than double and more than three times the size of the effect on first time cases. The largest effects of unemployment are on repeat cases of child neglect.
Economic instability and child maltreatment risk: Evidence from state administrative data (Cai, 2021)	This paper investigates the link between earnings instability and CPS involvement. Specifically, it examines whether adequate access to safety net programs mitigates the likelihood of child welfare involvement (due to maltreatment) when families encounter negative earnings shocks.	United States	Administrative records of these families' earnings, social benefits received, and other demographic characteristics were obtained through the Wisconsin Administrative Data Core housed at the Institute for Research on Poverty at the University of Wisconsin- Madison. Earnings instability was conceptualized using several dimensions: magnitude, direction, and frequency.	The study used quarterly administrative data from a sample of at-risk families for CPS involvement in Wisconsin (N= 2429). Event history analysis was employed to estimate the relationship between earnings instability and subsequent child maltreatment investigations.	Experiencing a negative earnings shock of 30% or more increases the likelihood of CPS involvement by approximately 18%. The effect diminishes and becomes nonsignificant when an earnings decline is compensated by benefit receipt. Each additional earnings drop is associated with a 15% greater likelihood of CPS involvement. Each consecutive quarter with stable income is associated with 5% lower probability of a CPS report. The results are more pronounced for

					physical abuse (1.39**) than neglect (1.13).
The effects of socioeconomic vulnerability, psychosocial services, and social service spending on family reunification: A multilevel longitudinal analysis (Esposito et al., 2017a)	The present population-based longitudinal multilevel study examines the extent to which jurisdictional variations in socioeconomic vulnerability, psychosocial services, and social services spending impact the likelihood of reunification, after controlling for individual-level risk factors and jurisdictional latent differences in delivery of child protection services.	Canada	An index was created for 'children in socioeconomic vulnerability'. The index was created using data from the 2006 Canadian Census and the 2011 National Household Survey, as well as administrative data from the Ministère du Travail, de l'Emploi et de la Solidarité Sociale on the proportion of families with children receiving social assistance payments as a last-resort source of revenue. For each of the two years, the index included six indicators: (1) total population aged 15 years and over that are inactive or unemployed; (2) total population aged 15 years and over that do not possess a secondary school diploma; (3) median income of individuals 15 years and over; (4)	This study uses a multilevel longitudinal research design that draws data from three sources: (1) longitudinal administrative data from Quebec's child protection agencies; (2) 2006 and 2011 Canadian Census data; and (3) intra-province health and social services data. The final data set included all children (N = 39,882) placed in out-of-home care for the first time between 1 April 2002 and 31 March 2013 and followed from their initial out-of-home placement. *Reason for placement* consisted of the following dichotomous constructs: (1) psychological and emotional abuse, which includes rejection, denigration, exposure to intimate partner violence, and exploitation; (2) physical, material, and health neglect, which includes physical neglect, medical neglect, school neglect, and material deprivation; (3) parent high-risk lifestyle, which represents parents' lifestyle resulting in a failure to supervise or protect the child, including abandonment due to parental absence, substance abuse, refusal to assure child care, and	Statistically significant correlations were found between jurisdictional reunification and second-level measures. At the bivariate level, 20.7% (r= −0.455, p< 0.001) of the variation in jurisdictional reunification is explained by the density of families with children in socioeconomic vulnerability, 11.2% (r= −0.336, p< 0.001) by social services spending per child capita, and 3.3% (r= −0.183, p< 0.001) by the rate of psychosocial service consultations, respectively. Jurisdictions with a higher percentage of families with children in socioeconomic vulnerability, a higher rate of psychosocial service consultation, and social services spending also have lower rates of reunification. Higher per capita spending for social services was also related to a higher rate of psychosocial service consultations, as 26.5%

			median family income; and (5) median household income. For the sixth indicator, we calculated the rate of families receiving social assistance as a last-resort source of revenue for 2006 and 2011, and then used a log base 10 transformation to normalize all data.	risk of neglect; (4) confirmed and risk of physical abuse; (5) confirmed and risk of sexual abuse; (6) behavioural problems such as harming behaviour, violence towards self and others, child substance abuse, school behavioural problems, runaway behaviour, and destruction of property.	(r= 0.515, p< 0.001) of the variation in psychosocial consultations is explained by the level of spending per child capita in social services. The correlation between families with children in socioeconomic vulnerability, psychosocial consultations, and social services spending was statistically and positively associated. Jurisdictions with a higher percentage of families with children in socioeconomic vulnerability also have a higher rates of psychosocial service consultations (r = 0.280, p< 0.001) and social services spending (r= 0.293, p< 0.001)—a possible reflection of increased need. This also raised the question of whether the raised spending was sufficient for the higher level of need - it may have been raised but not enough. For children aged 0-4 the most influential factors predicting a decreased

					likelihood of family reunification were: children placed because of their parents' high-risk lifestyle (B= −0.597, *t*= −5.706); and children reported by hospital staff (B= −0.522, *t*= −5.096). Controlling for higher social services spending, psychosocial services increased the likelihood of reunification while socioeconomic vulnerabilities decreased the likelihood of reunification. Combined, 24.0% of the variation in territorial reunification is explained by differences in socioeconomic vulnerability, psychosocial service consultations, and social services spending. The most influential factor predicting a decreased likelihood of family reunification for placed children 5 to 11 years old was physical, material, school, and health neglect (Beta= −0.682, *t*= −9.281). Analysing each second-

					level measure independently, the concentration of families with children in socioeconomic vulnerability, and social services spending were significant predictors of decreased reunification, whereas psychosocial service consultations were not statistically significant. All variables were significant predictors of reunification in the final model. Controlling for higher social services spending, psychosocial services increased the likelihood of reunification while socioeconomic vulnerabilities decreased the likelihood of reunification. Combined, 12.5% of the variation in jurisdictional reunification is explained by differences in socioeconomic vulnerabilities, psychosocial service consultations and social services spending.

					For children aged 12 to 17, the most influential factor predicting a decreased likelihood of family reunification for placed children 12 to 17 years parents' high-risk lifestyle (B= −0.390, *t*= −6.854), child protection agency (B= −0.265, *t*= −5.727). Analysing each second-level measure independently, the concentration of families with children in socioeconomic vulnerability and social services spending were significant predictors of decreased reunification, whereas psychosocial service consultations was not statistically significant. While psychosocial service consultation remains non-significant in the final model, socioeconomic vulnerabilities and social services spending decreased the likelihood of reunification. Combined, 21.4% of the variation in territorial reunification was

					explained by differences in socioeconomic vulnerabilities, psychosocial service consultations, and social services spending.
Out-of-home placement and regional variations in poverty and health and social services spending: A multilevel analysis (Esposito et al., 2017b)	This paper examined the extent to which regional variations in poverty and health and social services spending impact the risk of placement, because of maltreatment, after controlling for individual-level risk factors and regional latent differences in delivery of child protection services.	Canada	The measure of neighbourhood socioeconomic disadvantage assigned to each sample member includes six socioeconomic indicators (see Esposito et al., 2013). For each of the census dissemination areas, they coded the (1) total population age 15 years and over who are unemployed or not in the labour force; (2) median income for population age 15 years and over; (3) total persons in a private household living alone; (4) total population 15 years and over who were separated, divorced or widowed; (5) family median income; and (6) median household income. The	This study used a multilevel longitudinal research design that draws data from four sources: (1) longitudinal administrative data from Quebec's child protection agencies (Esposito, Trocmé, Chabot, Duret & Gaumont, 2015; Esposito, Trocmé, Chabot, Coughlin, Gaumont & Gobeil, 2015); (2) social assistance and family low-income data from the Quebec Institute of Statistics (QIS); (3) Canadian Census data; and, (4) intra-province health and social services spending data from the Ministry of Health and Social Services (MHSS). The clinical population studied consists of all children (N = 122,466) investigated for maltreatment for the first time between April 1, 2002, and March 31, 2010, and were followed for a minimum of 18 months from their initial child maltreatment investigation. Ages ranged from 0-17 and were split into: 0-4 years (n= 35,923), 5-11 (n= 45,386), 12-17 (n=41,157).	Esposito et al. (2017b) found within multilevel hazard results indicate that poverty, controlling for health and social services spending, contributes to the increased risk of placement because of maltreatment. Specifically, poverty and health and social services spending account for 57.1% of the variation in regional placement for younger children <5 years of age and 38.1% for children ages 5 to 11 years. Children living in more socioeconomically disadvantaged neighbourhoods were at a significantly increased risk of placement at all ages (age 0-4: B= 0.191, t= 3.92; 5-11: B= 0.316, t= 9.90; age 12-17: B= 0.064, t= 4.81).

			socioeconomic disadvantage is intended as a proxy for family income, given that family level information on income was not available for the study. The index was normalized and linked with the child protection clinical administrative data based on the children's postal codes at initial maltreatment investigation, reflecting the socioeconomic disadvantage estimates of the immediate neighbourhood surrounding—ranging from 400 to 700 persons—of the clinical population of children served by child protection. The index has a minimum score for children investigated by child protection of −3.37 representing the lowest socioeconomic risk and a maximum	The reason for investigation consists of the following dichotomous constructs: (1) psychological and emotional abuse, which includes rejection, denigration, exposure to intimate partner violence and exploitation; (2) physical, material and health neglect, which includes physical neglect, medical neglect, and material deprivation; (3) parent high-risk lifestyle, which represents parents' lifestyle resulting in a failure to supervise or protect the child, including abandonment due to parental absence, substance abuse, refusal to assure child care, and risk of neglect; (4) school truancy and school neglect, which includes failure to attend school or failure to ensure that the child attends school; (5) physical abuse; (6) sexual abuse; (7) behavioural problems such as harming behaviour, violence towards self and others, child substance abuse, school behavioural problems, runaway behaviour, and destruction of property; (8) risk of sexual abuse; and, (9) risk of physical abuse.	

			score of 3.51 representing the highest socioeconomic risk. The index has a mean score of 0.2898 (s.d. 0.9203) and median of 0.2931.		
Effect of the earned income tax credit on hospital admissions for paediatric abusive head trauma, 1995-2013 (Klevens et al., 2017)	This study examined whether states' earned income tax credits (EITCs) are associated with state rates of hospital admissions for abusive head trauma among children aged <2 years.	United States	The federal EITC, introduced in 1975, provides income support to low-income workers, especially those with children, and has been shown to increase employment, especially among single parents, and reduce poverty among the working poor. Individuals receiving EITC were deemed as low-income/poor.	This study used the source—hospital admissions for nonfatal AHT among children aged <2 years to examine the association between EITCs and child abuse. The final sample consisted of 380 observations (where an observation was a state-year pair) from 27 states during 1995-2013. They conducted difference-in difference analyses (i.e., pre- and post-differences in intervention vs control groups) of annual rates of states' hospital admissions attributed to abusive head trauma among children aged <2 years (i.e., using aggregate data). They conducted analyses in 14 states with, and 13 states without, an EITC from 1995 to 2013, differentiating refundable EITCs (ie, tax filer gets money even if taxes are not owed) from non-refundable EITCs (ie, tax filer gets credit only for any tax owed), controlling for state rates of child poverty, unemployment, high school	Klevens et al. (2017) found that a refundable EITC was associated with a decrease of 3.1 abusive head trauma admissions per 100,000 population in children aged <2 years after controlling for confounders (p= .08), but a non-refundable EITC was not associated with a decrease (p= .49). Tax refunds ranged from $108 to $1014 and $165 to $1648 for a single parent working full-time at minimum wage with 1 child or 2 children, respectively. The findings of Klevens et al. (2017) with others suggest that policies such as the EITC that increase household income may prevent serious abusive head trauma.

				graduation, and percentage of non-Latino white people.	
'Association of state-level earned income tax credits with rates of reported child maltreatment, 2004-2017 (Kovski et al., 2021)	This study used variations in the presence and generosity of supplementary EITCs offered at the state level and administrative child maltreatment data from the National Child Abuse and Neglect Data System (NCANDS) to examine the effect of EITC policies on state-level rates of child maltreatment from 2004 through 2017.	United States	This study used two variables to capture state EITC policies: 1) a binary variable for whether a state had a refundable EITC in a given year (i.e., presence) and 2) a continuous variable for the percentage of the federal EITC a state offered in a given year (i.e., generosity). In 2017, 26 states offered an EITC credit that supplemented the federal credit; 22 of which were fully refundable. Among the states that offered a refundable EITC in 2017, on average, states offered a credit equal to 18% of the federal credit. In 2017, state EITCs ranged in generosity from 3.5% in Louisiana to 40% in the District of Columbia. Over the study period, the majority of state EITC changes involved	The authors combined multiple data sources to create a state panel dataset. Child maltreatment data was obtained from the National Child Abuse and Neglect Data System (NCANDS) Child File. NCANDS is a dataset compiled by the U.S. Department of Health and Human Services, Administration for Children and Families. NCANDS includes all screened-in reports of child maltreatment (reports that met agency criteria to warrant further investigation) to state and local child protective service agencies across the United States. Reports of suspected child maltreatment are made by both mandatory and voluntary reporters. Mandatory reporters are required by law to report suspected child maltreatment and are typically professionals who have frequent contact with children, such as social workers, law enforcement officers, teachers and school personnel, and physicians and other health care workers. Voluntary reporters are all persons who report suspected	Two-way fixed effects models indicated that a 10 percentage point increase in the generosity of refundable state EITC benefits was associated with 241 fewer reports of neglect per 100,000 children (95% Confidence Interval CI [-449, -33]). An increase in EITC generosity was associated with fewer reports of neglect both among children ages 0–5 (-324 per 100,000; 95% CI [-582, -65]) and children ages 6–17 (-201 per 100,000; 95% CI [-387, -15]). Findings also suggested associations between the EITC and reductions in other types of maltreatment (physical abuse, emotional abuse); however, those did not gain statistical significance.

			newly enacted or expanded EITCs; only a few states changed from non-refundable to refundable or reduced the benefit level. Eleven states introduced a new refundable EITC and 16 states altered the generosity of an existing refundable EITC over the study period. On average, among states with a change in a refundable EITC, benefits increased by 9 percentage points, as a percentage of the federal EITC, between 2004 and 2017.	child maltreatment without requirement to do so by law. The NCANDS Child File contains a record for each child maltreatment report, including the state and year in which the report was made, the age of the child, and the type of maltreatment alleged (e.g. neglect, physical abuse, emotional abuse, and sexual abuse). In total, their main analytic panel dataset contained 689 state-year observations assembled from 42,682,675 reports of alleged maltreatment made in 50 states and the District of Columbia between 2004 and 2017, the most recent year of complete data available. Their analysis considered several child maltreatment outcomes of interest. They first constructed, for each state, the annual overall child maltreatment report rate. They then constructed the annual child maltreatment report rate by one of the four types of maltreatment (neglect, physical abuse, emotional abuse, and sexual abuse). Importantly, indicators of maltreatment type were not mutually exclusive because reports often involved	

				multiple types of maltreatment. These outcome measures included all screened-in reports of child maltreatment (reports that met agency criteria to warrant further investigation), regardless of substantiation status (whether the case met an evidentiary threshold for maltreatment according to state law). Lastly, for each of these outcomes, the authors constructed age-specific rates for two child age groups: children ages 0–5 and children ages 6–17. Annual state-level child population data were obtained from the U.S. Census and used to construct rates per 100,000 children.	
Caution! Men not at work: Gender-specific labor market conditions and child maltreatment (Lindo et al., 2018)	Lindo et al. (2018) examined the effect of labour market conditions—measured through unemployment, mass layoffs and predicted employment—on child maltreatment using county-level data from California. Using these indicators, they separately estimated the effects of overall and gender-specific economic shocks.	United States	Lindo et al. (2018) consider several different economic indicators in their analyses They begin with the county unemployment rate, which is the measure most commonly used in studies examining the link between economic conditions and health in the United States. This variable, which they obtain from the	Lindo et al.'s (2018) data on child maltreatment are state child welfare administrative data, obtained from the California Child Welfare Indicators Project. The data cover the period 1998–2012. Their analysis focuses on the number of children age 0–17 involved in substantiated cases of maltreatment in each county and year, which they calculated as the sum of abuse reports (physical, sexual, or emotional) and neglect reports (severe or general), though they also present results separately for abuse and neglect.	Lindo et al. (2018) begins by considering county unemployment rates as the measure of economic conditions, finding no evidence of a statistically significant association between unemployment rates and abuse and neglect rates. Lindo et al. (2018) then considers the effect of the share of adults aged 18–64 involved in a mass-layoff event. While this variable is correlated with the

			Bureau of Labor Statistics (BLS), reflects both short- and long-run unemployment as well as movements in and out of the labor force, and is intended to proxy for the overall state of the economy.	They combine these maltreatment counts with population counts from the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program in order to create rates of maltreatment, abuse, and neglect per 1000 children, which they use as the outcome variables in their analyses. They also use these SEER population counts to construct demographic control variables: the fractions of the population in each of four race/ethnicity groups and the fractions of the population in each of eight age groups. Lindo et al. (2018) consider several different economic indicators in their analyses, they begin with the county unemployment rate, which is the measure most commonly used in studies examining the link between economic conditions and health in the United States. This variable, which they obtain from the Bureau of Labor Statistics (BLS), reflects both short- and long-run unemployment as well as movements in and out of the	unemployment rate, it reflects sudden exogenous shocks to employment that are likely to be driven by demand-side factors. Lindo et al.'s (2018) results indicate that mass layoffs are associated with an increase in child maltreatment, though the statistical significance of the estimate is not robust to the inclusion of county-specific linear time trends. Lindo et al. (2018) further consider the effects of predicted employment rates and predicted employment growth rates, which are constructed by interacting the distribution of employment across (or within) counties in a base period (1990) with state-wide industry employment (or employment growth) rates. Lindo et al. (2018) finds no statistically significant effect of predicted employment rates on child

				labor force, and is intended to proxy for the overall state of the economy. Lindo et al. (2018) used area level panel data and regression models that control for area fixed effects, area-specific trends, and year fixed effects. In their setting, "areas" are California counties; year fixed effects control for any annual statewide shocks, nationwide shocks, or worldwide shocks that affect California counties in the same manner; county fixed effects control for systematic differences across California counties; and county-specific linear trends control for systematic differences across counties in the way their characteristics are trending between 1998 and 2012. Though many county-year control variables could be constructed by interpolating Census data (e.g., education levels), their inclusion would be redundant given Lindo et al.'s (2018)inclusion of these county-specific linear trends.	maltreatment. In contrast, when considering predicted rate of employment growth, Lindo et al. (2018) finds statistically significant effects which imply that a one percentage-point increase in the predicted rate of employment growth, or approximately 41% of the sample standard deviation in that variable, decreases substantiated child maltreatment by 1.1 to 1.6%. In summary, Lindo et al.'s initial analyses provide only modest evidence of effects of local economic conditions on child maltreatment. Lindo et al. (2018) finds that the unemployment rate is only weakly related to maltreatment rates, both in an economic and statistical sense. When they focus on labour market indicators that are more likely to be demand driven, they find some evidence that improvements in local

					economic conditions reduce child maltreatment; however, even this evidence is somewhat inconclusive because the magnitudes of the coefficients are small and the statistical significance of the estimates is sensitive to the use of different variables to proxy for economic conditions and to choices about which control variables to include. Lindo et al. (2018) go on to focus on the measures of economic conditions that can be constructed separately by gender, the only study we found to conduct analyses in this way. Lindo et al. (2018) found that, when allowing for different effects of economic shocks that disproportionately affect males and females, the pattern of results is quite interesting. Across all three sets of plausibly exogenous gender-specific explanatory variables, the estimates

					suggest that male employment reduces rates of child maltreatment while female employment increases rates of child maltreatment. The similarity of the patterns across analyses is especially striking because different sources of variation in economic conditions are identifying the effects in each panel. For example, Lindo et al.'s (2018) estimates imply that a one-percentage-point increase in the male mass layoff rate, holding the female mass layoff rate constant, increases the maltreatment rate by 4.7 to 13%. The magnitude of the coefficient is attenuated with the inclusion of additional control variables across columns but remains positive and statistically significant at the ten-percent level. Lindo et al.'s (2018) estimates also imply that a one-percentage-point increase in the female

					mass layoff rate decreases maltreatment reports by up to 9.3%, though these effects are not statistically significant in three of the four specifications. When considering predicted employment rates, the estimated effects of male and female are also opposite-signed. In this case, both are statistically significant and they are significantly different from one another. Moreover, these estimates are stable across all four economic specifications. They imply that a one percentage-point increase in the predicted employment rate for men, holding the predicted female employment rate constant, decreases child maltreatment by 7.2 to 8.4%. Meanwhile, they imply that a one percentage-point increase in the predicted employment rate for women increases child

					maltreatment 7.7 to 11.9%. Finally, in relation to predicted employment growth across genders, Lindo et al. (2018) found significant negative effects of increases in the male predicted employment growth rate, paired with statistically insignificant estimates of the opposite sign for the effect of female predicted employment growth rates. In order to consider whether gender-specific employment levels have different effects from gender-specific flows into and out of employment, Lindo et al. (2018) simultaneously considers the effects of predicted employment levels and mass layoff rates and predicted employment levels and predicted employment growth. Results from these models closely resemble those from the previous models that included these

					economic measures independently, with a few notable differences. For example, the coefficients on male predicted employment growth rates become smaller and are no longer statistically significant when Lindo et al. (2018) simultaneously considers the effects of predicted employment levels. The coefficients on predicted levels of female employment are also similar, with statistically significant effects in the opposite direction from the male effects. Notably, controlling for the female predicted employment rate causes the coefficient on female layoffs to shrink in magnitude so that they are no longer statistically significant in any specification and are not statistically distinguishable from the male coefficients. However, considered together, the results from this set of analyses provide robust evidence that levels of male employment reduce child

					maltreatment and that levels of female employment increase child maltreatment. There is also robust evidence that male layoffs are associated with increases child maltreatment. There is little evidence that female flows into and out of employment (from predicted employment growth and mass layoffs, respectively) contemporaneously affect maltreatment rates. Lindo et al. (2018) further investigated gender-specific shocks, mental health and substance misuse. Overall, Lindo et al. (2018) found mixed evidence that hospitalizations and deaths for accidental overdoses and suicide shift in response to the gender specific measures of economic conditions used in their main analyses. Their models that control for county and year fixed effects suggest no clear

					relationship between gender specific economic conditions and adult self-harm and overdoses. This is true both for overall and gender specific suicides and overdoses. Lindo et al. (2018) only find evidence that gender-specific economic conditions have a significant relationship with suicides and overdoses in models controlling for county-specific linear trends. In each of these models, they found that higher predicted male employment reduces overall, male, and female suicides and overdoses, while predicted female employment has the opposite estimated effect. Estimated effects of gender-specific flows into and out of employment are never statistically significant. This is in contrast to their main results, which indicated that gender-specific measures of predicted employment have significant effects on child maltreatment whether or

					not one controls for county-specific trends, and which also indicated statistically significant effects of male mass layoffs. Nonetheless, Lindo et al. (2018) interpret the results as providing some evidence that impacts of economic shocks on parents' mental health and substance abuse could be a potential mechanism underlying some of their main findings. Lastly, Lindo et al. (2018) considers the effects of economic conditions of CAN by child age. Lindo et al.'s (2018) estimates show that the associations between both male and female predicted employment rates and maltreatment decrease with child age. In particular, a one-percentage-point increase in the male predicted employment rate is associated with a 8.8% increase in maltreatment among children aged 0–5, or an

					additional 1 substantiated report per 1000 children in that age group, compared with a 5% increase in maltreatment among children aged 12–17, which is an increase of only 0.3 substantiated reports per 1000 children in that age group. Similarly, the estimated increase in maltreatment resulting from of a one-percentage-point increase in the female predicted employment rate is 10.3% for children ages 0–5 and 7.1% for children ages 12–17. Overall, these results offer some suggestive evidence that the larger changes in time spent with young children following shocks to parental employment may translate into larger effects on maltreatment. Interestingly, the estimated effects of male layoffs do not follow the same pattern, and are actually largest for teens. This suggests that mechanisms other than changes in time use might

					play a more important role following layoffs.
Preventive benefits of U.S. childcare subsidies in supervisory child neglect (Maguire-Jack et al., 2019)	The current study explores the complex relationships between U.S. child-care subsidies and neglect.	United States	Whether individuals were income-eligible for child-care subsidy. They used the Child Care and Development Fund Reports to Congress to determine income eligibility for the subsidy by state.	The study used data from the longitudinal birth cohort study—Fragile Families and Child Wellbeing (FFCW)—to examine the relationships between child-care subsidies and self-reported neglect. The FFCW study began following a birth cohort of children born during 1998–2000 primarily to unmarried parents. The children and their parents have been followed in subsequent waves when the child was 1, 3, 5 and 9 years of age. At each wave, data were collected regarding a host of social circumstances including the children's and families' socioeconomic situation, parenting and child behaviours, and interactions with social support networks and the greater community. The current study used a sample of mothers who participated in the third wave of the FFCW study, when the focal child was approximately 3 years old. Cases were selected if the mother was eligible for child-care subsidy (N = 2,250) and had full information on the study variables (N = 1,179). Neglect was assessed by five maternal self-report items originating from the Parent-Child Conflict Tactics	Using negative binomial regression (See Table 3) examining the relationships among mothers who were income-eligible for childcare subsidy, they found that childcare subsidy was associated with lower levels of self-reported supervisory neglect, assessed as leaving a child home alone when the mother thought the child should be with an adult, indicating an important role of subsidy in the lives of low-income families. Interestingly, self-reported neglect overall was not significant, and nor were any other individual components of neglect (see Table 3).

				Scales (CTS-PC): being 'so caught up in own problems that they (parents) did not show love to child', 'left the child home alone but thought adult supervision was needed', 'not able to make sure the child got the food he/she needed', 'were not able to take the child to the doctor or hospital when needed', and 'were so drunk/high that they had a problem taking care of child'.	
Income instability and child maltreatment: Exploring associations and mechanisms (Monahan, 2020)	Income instability is an aspect of having a low-income that likely has unique implications for child maltreatment. The unpredictable nature of frequent changes in economic resources may add additional stress and strain to families already experiencing significant financial stress, which could increase risk for abuse and neglect. This study examines the association of income instability and child maltreatment in a sample of low-income families deflected from Child Protective Services.	United States	The current study measured earnings and benefit amounts every three months.	The data for this study comes from Project GAIN, a randomized control trial (RCT) conducted in Milwaukee County, Wisconsin for families at-risk of CPS involvement. In the RCT, families were randomized to the study if they had an investigation opened to CPS, but the case was not moved to ongoing services because maltreatment was not substantiated. These are families likely in need of services, but not meeting the legal threshold for maltreatment, and such deflected families are highly likely to have a repeat CPS investigation and future substantiated case. A cohort of the Project GAIN sample participated in an in-depth baseline and follow-up survey (N = 727). The different categories of maltreatment included in this	Findings indicate income instability, measured using quarterly earnings and benefit data from the year before completion of the baseline survey, significantly increased risk for child maltreatment, beyond the influence of income level. The odds ratios suggest that an increase in the cumulative variation (CV) for income instability from 0 to 1 (which is equivalent of a change from no variation in income to variation equal to the mean) would almost triple the odds of a referral in the next six months (OR= 2.73, 2.93, p< 0.001). For CPS referrals within the

				study were: neglect, physical abuse, emotional abuse, and sexual abuse.	following year, an increase in the CV of income instability from 0 to 1 is associated with a 96% increased chance of any referral and an 81% increased chance of a caregiver referral. A key limitation is that the measure of instability includes both increases and falls in income and is unable to distinguish between these factors. The association of instability with CPS referrals in the next six months was most robust, suggesting an approximate tripling of the odds of referral for every one-unit increase in instability. This suggests a large added risk for proximal child maltreatment when experiencing significant increases in income instability.
Money matters: Does the minimum wage affect child maltreatment rates? (Raissian & Bullinger, 2017)	They use child maltreatment reports from the National Child Abuse and Neglect Data System: Child File from 2004 to 2013 to investigate the	United States	They used reports produced by the National Conference of State Legislatures (NCSL) to obtain each state's nominal hourly minimum wage. The	The present analysis utilized a state panel data set, which was created by culling multiple data sources. Child abuse data came from the National Child Abuse and Neglect Data System (NCANDS): Child File. NCANDS	They found that increases in the minimum wage led to a decline in overall child maltreatment reports, particularly neglect reports. Specifically, a $1 increase in the minimum

	relationship between changes in a state's minimum wage and changes in child maltreatment rates.		NCSL also provided information regarding the effective date of minimum wage increases. They used data from the University of Kentucky's Poverty Research Centre to obtain the federal minimum wage (University of Kentucky Centre for Poverty Research, 2014). Because employers of workers covered by the federal law are not exempted by state minimum wage laws, and because coverage of the federal law is nearly complete, they used the higher of the federal and state minimum wage for each state and quarter, as is common in the literature (Neumark & Wascher, 2001, 2002; Neumark et al., 2005). They then converted the higher, nominal minimum wage into 2005 dollars using the Consumer	data sets are produced annually and the unit of analysis in the files are screened-in child maltreatment referrals, hereafter referred to as reports. Each report contains basic demographic information on the child being reported to CPS, the type of maltreatment alleged in the report (i.e., neglect, physical abuse, sexual abuse, etc.), and the disposition of the report (i.e., substantiated, unsubstantiated, etc.). They had a panel with 1916 observations with which to conduct our analysis, investigating maltreatment rates in 3 age categories: young children (ages 0–5), school-aged children (ages 6–12), and adolescents (ages 13–17).	wage implies a statistically significant 9.6% decline in neglect reports. This decline is concentrated among young children (ages 0–5) and school-aged children (ages 6–12); the effect diminishes among adolescents and is not significant.

			Price Index published by the Bureau of Labour Statistics.		
Impact of the United States federal child tax credit on childhood injuries and behaviour problems. (Rostad et al., 2019)	This study used data from a longitudinal study with a nationally representative sample of mothers and their biological children to examine the influence of the federal CTC on child well-being. They hypothesized that changes in the CTC (i.e., when the policy was initiated [1998], when it became refundable [2002–2008], and when the refund threshold was lowered [2009–2014]) would be associated with reductions in children's injuries requiring medical attention, a potential indicator of CAN.	United States	Receipt of Child Tax Credit. Specifically, married mothers who reported a household income of $110,000 or less and had at least one child 17 years and younger, and single mothers who reported a household income of $75,000 or less.	This study used data from two surveys conducted in the US, the National Longitudinal Survey of Youth 1979 (NLSY79) and the NLSY79 Young Adult survey to determine whether the U.S. Federal Child Tax Credit (CTC), a socioeconomic policy that provides tax relief to low- and middle-income families to offset the costs of raising children, is associated with child well-being, as indicated by whether the child had injuries requiring medical attention. This study included 11,521 children.	Fixed-effects models, accounting for year and state of residence, detected a lower likelihood of injuries requiring medical attention (OR= 0.58, 95% CI= 0.40-0.86]) among children with mothers eligible to receive a CTC, but only when it was partially refundable (i.e., mothers could receive a tax refund for a portion of the CTC that exceeds their tax liability) for families making as little as $3000 a year.
Reducing the number of children entering foster care: effects of state earned income tax credits (Rostad et al., 2020)	They used variations in the adoption and refund status of state-level Earned Income Tax Credit (EITC), a socioeconomic policy intended to reduce poverty, to examine their effect on foster care entry rates.	United States	Earned Income Tax Credit receipt	Rostad et al. (2020) argues that foster care caseloads are an indicator of child maltreatment. Data were obtained to understand the impact of state-level EITCs on foster care entries. State-level foster care entry rates (number of children entering foster care per 1,000 children under 18 years per state), provided by the Adoption and	Fixed-effects models, accounting for year- and state-fixed effects, demonstrated that a refundable EITC was associated with an 11% decrease in foster care entries compared to states without a state-level EITC after controlling for child poverty rate, racial/ethnic

				Foster Care Analysis and Reporting System (AFCARS) for 2000–2016, and as reported by the Kids Count Data Centre (Child Trends, 2018), comprised the outcome of interest. Covariates, including state-level child poverty rate, percentage of non-Hispanic White population, percentage of the population between 25 and 65 years who graduated high school, and states' annual unemployment rate, were compiled from the U.S. Census Bureau (2017) and the U.S. Bureau of Labour Statistics (2016) for each year from 2000 to 2016. The final study data set consisted of annual numbers from each state for a total of 867 observations from 50 states and the District of Columbia during 2000–2016.	composition, education, and unemployment. This translates to a reduction of nearly 50 children (relative to the average number of foster care entries of non-EITC states: 450/100,000 children) entering foster care per 100,000 children per state on average (calculated using AFCARS data 2000–2016 as reported in Kids Count Data Centre). In other words, based on 2017 data, if states without any EITC adopted a refundable EITC, our analyses suggest that 668 fewer children might enter foster care per state per year on average, given a population of approximately 1.35 million children on average per state without EITCs (U.S. Census Bureau, Population Division, 2017). However, their estimate did not change after controlling for socioeconomic factors,

					which were not statistically significant in these models (Child Poverty: IRR= 1.01, 95% CI= 1.00-1.03]. They also did not find a significant effect for non-refundable EITCs on foster care entries (IRR= 0.91, 95% CI= 0.78-1.05]).
Income inequality and child maltreatment risk during economic recession (Schenck-Fontaine & Gassman-Pines 2020)	This study investigates the association of economic downturn to maltreatment in 48 of the 50 U.S. states from 2004 to 2013. Since the effects of economic recessions are not equally distributed in society, this study also examines whether the association between macroeconomic recessions (measured using large-scale involuntary job losses) and child maltreatment reports differs by the level of income inequality in states.	United States	Economic downturn in the form of involuntary job loss and income equality	Child maltreatment reports data came from the National Child Abuse and Neglect Data System (NCANDS): Child File. The data included in the following analyses are from January 2004 to March 2013, the most recent month for which job loss data are available. While the majority of states have consistently submitted their data since 2004, Oregon and North Dakota did not begin submitting data until 2012 and are, therefore, excluded from these analyses. Moreover, fourteen states did not submit data in some years, but submitted data for at least 7 of the 10 years and were, therefore, included in the analyses. In total, data from 48 states were included in the analysis. Data from Washington, DC, were excluded. Data for each screened-in report includes information about the type of maltreatment reported (i.e.,	An increase in state-wide job losses was not significantly related to the overall rate of reports screened in for investigation or the rate of screened-in reports that were substantiated, suggesting that the overall rate of screened-in reports and substantiation rate remained stable in response to job losses. However, an increase in state-wide job losses was significantly associated with an increase in the rate of physical abuse. Specifically, in the three months following a 1% point increase in the percent of the working-age population affected by job losses, there was a 3.9% (IRR= 1.039)

				neglect, physical abuse, sexual abuse, other abuse, and no abuse) and the disposition of the report (i.e., substantiated or unsubstantiated). Each report may include up to four different types of maltreatment. To calculate the total rate of referrals, the rates of physical abuse, neglect, and sexual abuse referrals, and substantiation rate, the authors aggregated the data to construct a state-month panel dataset and calculated rates per 1,000 children using population data from the U.S. Census. To test the effects of economic downturns on child maltreatment reports by type and disposition, this study used state-wide job losses as a proxy for economic downturns. Data on job losses came from the Bureau of Labor Statistics' (BLS) Mass Layoff Statistics and are available at the state level. The job loss data contain monthly information about job losses at the state-level due to mass business closings and layoffs and exclude employment separations initiated by the workers for each state through the first quarter of 2013. Mass closings and mass layoffs are defined as those closings or	increase in the rate of physical abuse reports ($p < 0.05$). Four to six months after job losses, there was a 5.5% (IRR= 1.055) increase in the rate of physical abuse reports ($p < 0.01$). Job losses were not associated with a change in the rate of reports of neglect or sexual abuse.

				layoffs that affect 50 or more workers and last longer than thirty days. Because forced job losses are likely not anticipated by workers and communities within the state, they are more likely to reflect exclusively exogenous changes in the economy than the more commonly used unemployment rate, which reflects changes both in the economy and in other phenomena that could independently affect child maltreatment. Economic change in a state is measured by scaling the total number of workers affected by job losses in the state by the number of working-age adults (age 25 to 64) in the state. To identify whether child maltreatment behaviour is more sensitive to job losses in communities with high levels of income inequality prior to the study period, Schenck-Fontaine & Gassman-Pines (2020) used the 2003 state-level Gini coefficient as calculated based on Internal Revenue Service statistics. To identify states with especially high levels of inequality, they used cut-off points as follows: States were considered to have high inequality if their Gini	

				coefficient fell above the 75th percentile, which was 0.60 in 2003, and low inequality if their 2003 Gini coefficient fell below the 25th percentile, which was 0.55 in 2003.	
The great recession and risk for child abuse and neglect (Schneider et al., 2017)	Schneider et al. (2017) examined the association between the Great Recession and four measures of the risk for maternal child abuse and neglect: (1) maternal physical aggression; (2) maternal psychological aggression; (3) physical neglect by mothers; and (4) supervisory/exposure neglect by mothers.	United States	Interview dates were linked to two macroeconomic measures of the Great Recession: the national Consumer Sentiment Index and the local unemployment rate.	The primary aim of Schneider et al.'s (2017) study was to examine the links between the Great Recession and the risk for CAN. This was accomplished by analyzing two separate, but related, measures of macroeconomic shocks associated with the Great Recession: the national Consumer Sentiment Index; and the local unemployment rate. These measures are particularly apt given that the Great Recession was characterized by widespread uncertainty as well as high unemployment. One of the unique contributions of this study is their ability to simultaneously estimate associations with both of these exogenous economic shocks. The CSI is likely a strong measure of the uncertainty that people felt during the Great Recession about both the national economy and their own personal finances, while local unemployment rates measure both the likelihood that a given person will be unemployed as well	Their first model shows that a one-point increase in CSI (reverse-coded, so indicating lower confidence) is associated with a 4% increase in the odds of frequent physical aggression ($p < 0.05$) and a one-point increase in the unemployment rate is associated with a 15% increase in the odds of frequent physical aggression ($p < 0.05$). Schneider et al. (2017) similarly finds that a one-point increase in CSI is associated with a 2% increase in the odds of frequent psychological aggression ($p < 0.05$) and a one-point increase in the unemployment rate is associated with a 12% increase in the odds of frequent psychological aggression ($p < 0.01$). Schneider et al. (2017) then repeats these

				as the broader pernicious effects of job loss during the Great Recession. Additionally, Schneider et al. (2017) were able to further parse the associations between the Great Recession and parenting by controlling for past parenting behaviors, further isolating the links with the economic indicators.	analyses, replacing abuse with two measures of neglect, physical neglect and supervisory/exposure neglect. Schneider et al. (2017) demonstrates that a one-point increase in CSI is associated with a 1% decrease in the odds of physical neglect ($p < 0.10$) and that a one-point increase in the unemployment rate is associated with a 4% decrease in the odds of mothers' physical neglect ($p < 0.05$). Turning to supervisory/exposure neglect, they do not find statistically significant associations between CSI and mothers' supervisory/exposure neglect, but they do find that a one-point increase in the unemployment rate is associated with 3% decrease in the odds of mothers' supervisory neglect ($p < 0.01$). Interestingly, Schneider et al. (2017) also assesses whether the associations between the Great Recession and mothers'

					risk for child abuse and neglect vary depending on whether a father is present and the type of relationship he has with the mother. The potential moderating role of mothers' relationship status emerges most clearly with respect to physically aggressive parenting. Schneider et al. (2017) demonstrates that a larger association between CSI and high frequency physical aggression is found for mothers who are married to or cohabiting with a social father (23% increase in the odds, p< 0.001) as opposed to mothers who are married to or cohabiting with the focal child's biological father (3% increase in the odds of frequent physical aggression, n.s.) or single mothers (n.s.). The association between CSI and mothers' physical aggression is significantly different for social father households compared to biological father present (p< 0.05) and single

					mother households (p< 0.01). Turning to the unemployment rate, Schneider et al. (2017) finds somewhat different results, with higher odds of mothers' physical aggression associated with households where the mother is married to or cohabiting with the biological father (but not statistically different). Turning to high frequency psychological aggression, They find higher odds of psychological aggression among single mothers (as compared to the married/cohabiting mothers and social father present groups), a 4% increase in the odds of mothers' psychological aggression for each one-point increase in CSI (p< 0.10), and a 15% increase in the odds for each one-point increase in the unemployment rate (p< 0.10); however, these associations do not differ significantly across the different marital status

					groups. Overall, they do not find notable differences in the effects of CSI or unemployment rates by marital status for either type of neglect. Finally, Schneider et al. (2017) examined the role of a number of potential mediators, determining whether individual-level measures of economic hardship and mental health problems explain some of the association between their macroeconomic measures and the risk for CAN. Overall, they found no evidence that individual-level experiences of hardship or mental health problems mediate the associations between the Great Recession and mothers' risk of CAN. Although the odds ratio for maternal depression is large and significant in all their models, it does not appear to explain the main findings. Similarly, although income measured at the age 9

					survey is significant, it too does not explain the association between Schneider et al's (2017) macroeconomic measures and physical neglect. These findings suggest that the macroeconomy itself can directly affect mothers' parenting, likely as a result of the increased economic uncertainty captured by the CSI and local unemployment rates.
Association between Temporary Assistance for Needy Families (TANF) and child maltreatment among a cohort of fragile families (Spencer et al., 2021)	The aim of this study was to understand Temporary Assistance for Needy Families (TANF's) impact on the mother's perpetration of child maltreatment and whether the effect differs across African American and White mothers.	United States	State-level TANF policy exposures include the TANF-to-Poverty Ratio (TPR), maximum cash benefits, time limits, sanctions, diversion payments, and family caps.	Participants were 2457 primary caregiving mothers participating in waves 3 (2001– 2003), 4 (2003–2006), and 5 (2007–2010) of the U.S.-based Fragile Families and Child Wellbeing birth cohort study. They used a difference-in-differences study design to estimate overall and race-specific effects of TANF policies on caregivers' self-report of child neglect and physical and psychological maltreatment measured by the Child-Parent Conflict Tactics Scale.	This study found a $100 increase in TANF benefits was associated with a reduction of 1.8 reported physical abuse events (Beta= − 1.80, 95% CI=−3.29-−0.31)). Imposing a time limit on TANF receipt was associated with an increase of 2.3 reported physical abuse events (Beta = 2.27, 95% CI= 0.04-4.50). No significant differences were found for African American mothers versus White mothers.
The effect of lowering welfare payment ceilings	This study used Danish registry data and a 2004 policy shock to estimate	Denmark	They used a substantial decrease in welfare	The authors used Danish administrative data which are provided through a longstanding	This study by Wildeman and Fallesen (2016) indicated that a decrease

on children's risk of out-of-home placement (Wildeman & Fallesen, 2017)	how much a roughly $400 decrease in monthly income among women who lacked unemployment insurance and had been long-term recipients of welfare benefits would affect their children's risk of out-of-home placement		generosity—a monthly reduction in disposable income of 30% for those who were on a specific form of welfare for six consecutive months or more to investigate its impact on children's risk of out-of-home placement.	agreement with Statistics Denmark. Their primary analytic sample consisted of Danish mothers who did not have unemployment insurance and, hence, would be most affected by the decrease in welfare generosity that they study. They drew a 10% random longitudinal sample of all Danish children 0 to 17 years of age. Their final sample of mothers who were not eligible for unemployment insurance was 70,818; their final sample of mothers who were eligible for un-employment insurance was 134,144.	in welfare payments increased children's risk of out-of-home placement by 1.5 percentage points in any given year, representing an increase of 25% in the annual risk of out-of-home placement. The results also indicate that in a similar group of welfare recipients who were not affected by the policy shock, there was only a negligible increase in the risk of out-of-home placement, further buttressing the case for causal effects. Mothers who were not eligible for unemployment insurance were more likely to have their children placed in out-of-home care, with 5.6% of these children being placed in out-of-home care in any year, compared to only 1.1% of children whose mothers did receive unemployment insurance. Mothers who were not eligible for unemployment insurance were also more likely to be considered 'high

					dependency', as 32.9% of mothers who were not eligible received benefits for at least six consecutive months in any given year. Taken together, this article shows that substantial changes in the economic conditions of the poorest families can have a substantial effect on the probability that their children will be placed in out-of-home care.
Studies of Inequalities					
Name	**Summary**	**Country**	**Definition of Poverty**	**Method**	**Results**
Trends in inequalities in children looked after in England between 2004 and 2019: A local area ecological analysis (Bennett et al., 2020a)	This paper assessed trends in inequalities in Children Looked After (CLA) in England between 2004 and 2019, after controlling for unemployment, a marker of recession and risk factor for child maltreatment.	United Kingdom	Level of income deprivation was based on the 2010 Indices of Multiple Deprivation. This is a non-overlapping count of individuals who, because of low earnings, qualify for means-tested benefits, as a proportion of the total population. Slope indices of inequalities were estimated using longitudinal segmented mixed-	They undertook a longitudinal, local area ecological analysis of rates of children being looked after in England, including 150 upper-tier Local Authorities between 2004-2019 (n= 30,000). Their primary outcome was children looked after by Local Councils. Secondary outcomes included wider populations of children known to children's social services – Referrals, Children in Need, and those on Child Protection Plans.	Since 2008, there has been a precipitous rise in CLA rates and a marked widening of inequalities. Unemployment was associated with rising CLA rates: for each percentage point increase in unemployment rate, an estimated additional 9 children per 100 000 per year (95% CI= 6-11) became looked after the following year. However, inequalities increased independently of the effect of unemployment.

			effects models, controlling for unemployment.		Between 2007 and 2019, after controlling for unemployment, the gap between the most and least deprived areas increased by 15 children per 100 000 per year (95% CI= 4-26) relative to the 2004–2006 trend. The dramatic increase in the rate of children starting to be looked after has been greater in poorer areas and in areas more deeply affected by recession. But trends in unemployment do not explain the decade-long rise in inequalities, suggesting that other socioeconomic factors, including rising child poverty and reduced spending on children's services, may be fuelling inequalities.
Out of sight, out of mind, Ethnic inequalities in child protection and out-of-home care intervention rates (Bywaters et al. 2017)	This paper examines the interlocking roles of ethnicity and deprivation in producing inequities in the proportion of children who are subject to state child protection interventions.	United Kingdom	Bywaters et al. (2017a) analysed the relationships between rates of intervention and deprivation using age-based population counts from the 2011 Census and 2010 Index of Multiple Deprivation scores (IMD). The IMD is a	Thirteen local authorities (LAs) in the English West Midlands region provided data on all children who were either on a child protection plan or in out-of-home care on 31 March 2012, the census date for annual returns by LAs to the Department for Education which are the basis for official statistics. The LAs, covering urban and rural areas, were responsible for nearly	Children from ethnic minority categories were much more likely than 'White' children to be living in disadvantaged areas and this must be taken into account when examining intervention rates. Controlling for deprivation and examining small

			broad measure of deprivation encompassing seven key dimensions and thirty- eight indicators. To estimate MSOA deprivation ranks, a population weighted average of LSOA scores was calculated for every MSOA in England. These were then divided into deciles or quintiles ranked in terms of IMD and the MSOAs in their sample located accordingly.	1.2 million children aged from birth to seventeen, 10.5 per cent of all children in England, 10.6 per cent of all children on a CPP and 11.3 per cent of all LAC on the census date.	subgroups of the broad ethnic categories radically alters the simple understanding that 'Black' children are overrepresented compared to White amongst children in out-of-home care, while 'Asian' children are under-represented. While this study could not explain these patterns, it reinforces the importance of both socio-economic circumstances and ethnicity for understanding inequities in intervention rates.
Inequalities in English child protection practice under austerity: a universal challenge? (Bywaters et al., 2018)	This article focuses on the relationship between economic inequality and out-of-home care and child protection interventions.	England	Index of Multiple Deprivation scores (IMD; 2015)	The design involved administrative data linkage between three data sets: data about individual children obtained from LAs based on the annual children in need and LAC returns required by the Department for Education; population data about the numbers of children aged 0-17 living in England, at different levels of geography, using publicly available data from the Census 2011 and mid-year population estimates for summer 2014; and Index of Multiple	The analysis evidences a strong relationship between deprivation and intervention rates and large inequalities between ethnic categories. Bywaters et al. (2017b) found that the distribution of the child population between neighbourhoods was strongly patterned by the deprivation of the LAs concerned. Over half of all children in the high deprivation LAs came from the most deprived

				Deprivation scores (2015) at different levels of geography.	20% of neighbourhoods in England (quintile 5), but few in quintile 1, a position reversed for the low deprivation LAs where fewer than one child in 20 lived in the most deprived neighbourhoods. Four high deprivation LAs had no child living in one of the least deprived 10% (decile) of neighbourhoods nationally, and two low deprivation LAs had no children in the most deprived decile. Family socio-economic circumstances, as measured by neighbourhood deprivation, were strongly correlated with the proportion of children who were either on CPP or LAC on March 31, 2015. Children in the most deprived decile were around 13 times more likely to be on a CPP and 11 times more likely to be LAC than a child in the least deprived decile (Chart 2). One child in 36 in the most deprived 10% of neighbourhoods were

					either on a CPP or LAC on the census day; but only one child in 426 in the least deprived neighbourhoods. Overall, in an almost identical pattern for CPP and LAC across the total sample, over 50% of children subject to these interventions were from families in the most deprived 20% of neighbourhoods, whereas only 5% were from the least deprived 20%. There is further evidence of the inverse intervention law (Bywaters et al., 2015): For any given level of neighbourhood deprivation, higher rates of child welfare interventions are found in LAs that are less deprived overall. These patterns are taking place in the context of cuts in spending on English children's services between 2010–2011 and 2014–2015 that have been greatest in more deprived LAs.

Paradoxical evidence on ethnic inequities in child welfare: towards a research agenda (Bywaters et al. 2019b)	This study aimed to compare developments in theory and evidence about ethnic disparities in the USA with findings from the Child Welfare Inequalities Project in England	England	Index of Multiple Deprivation (IMD; 2015)	The quantitative element of the programme involved the analysis of basic data (age, gender and ethnicity) about children who were either on a child protection plan (n= 6310) or who were in out-of-home care (n= 8090), i.e., 'children looked after' in English legal terminology, on March 31st 2015. A child is placed on a child protection plan following an assessment and multi-agency decision making process where there is considered to be a substantiated risk to their health or development. The individual socio-economic circumstances of children were not available (see below) so, as a proxy measure, the IMD score for the small neighbourhood in which they lived was used. In the case of looked after children, the neighbourhood from which the child was admitted to care was used. These small neighbourhoods, middle layer super output areas or MSOAs, contained average populations of around 7500 of whom roughly 20% were aged 0-17. IMD scores for all MSOAs in England were ranked and divided into quintiles, from the least deprived twenty percent of MSOAs nationally, quintile 1, to the most deprived	While some ethnic populations were experiencing much more difficult average socio-economic circumstances than others (using deprivation scores for small neighbourhoods as a proxy measure of family SEC), such factors were only a partial explanation for differential intervention rates between ethnic groups. Overall, large differences in intervention rates were found between ethnic categories and sub categories which also confounded simply attributing disparities to either cultural differences, such as family patterns, or to individual or institutionalised discrimination.

				twenty percent nationally, quintile 5. Child welfare interventions were analysed as rates per 10,000 children.	
Child welfare inequalities in the four nations of the UK (Bywaters et al. 2020)	The research presented in this article aimed to begin the task of detailing and understanding inequalities in intervention rates by examining differences in the proportions of children on CP plans or registers, or who were 'looked after' in out-of -home care, between and within the four countries of the United Kingdom (UK): England, Northern Ireland, Scotland and Wales.	United Kingdom	The authors developed a UK-wide deprivation index following the methodology outlined by Payne and Abel (2012). This enabled them to group all UK neighbourhoods in deciles from the least deprived 10% of neighbourhoods to the most deprived.	This study combined administrative data of three kinds: about individual children subject to state children's services interventions, about the deprivation level of the neighbourhood and the area in which the children lived and about the child population of neighbourhoods and areas which enabled the calculation of rates of intervention. In Northern Ireland and Wales, data were requested on 100% of children who were on the Child Protection Register or who were looked after on 31 March 2015, the census date. In England, data were collected from a representative sample of 18 LAs for the same date, including all 10 regions, and a spread of high, mid and low deprivation LAs. In Scotland, data from 31 July 2015 (the Scottish census date for children's services data) were sought from 10 LAs responsible for over half of all Scotland's children, including all the largest LAs by population. After data cleaning, this gave us data on over 12,000 children on Protection Plans or Registers (CP)	This study found that children's chances of receiving a child protection intervention were related to family socio-economic circumstances, measured by neighbourhood deprivation, within all four countries. Within each country there is a very strong positive association, probably exponential rather than linear, between the level of neighbourhood deprivation and the proportion of children who are CLA or CP (Tables 4 and 5). This relationship is very strong and statistically significant in each country (Spearman's rank correlations at decile level: in all countries rs >0.95, $p<0.001$). There was a strong social gradient which was significantly steeper in some countries than

				and over 24,000 children looked after (CLA), more than 10% of all such children in the UK.	others. Ethnicity was another important factor underlying inequalities. While inequalities in patterns of intervention between the four countries were considerable, they did not mirror relative levels of deprivation in the child population.
Child welfare inequalities in a time of risking numbers of children entering out-of-home care (Elliott, 2020)	This study investigates the scale of child welfare inequalities in terms of the likelihood of being placed in out-of-home care and by considering inequalities over time. The study is an analysis of longitudinal administrative data on children 'looked after' with a specific focus on children entering care in the two years that followed the death of Peter Connelly in 2007, a period that saw a rapid increase in numbers of children entering care.	United Kingdom	The Welsh Index of Multiple Deprivation (WIMD). The WIMD, the Welsh Government's official measure of relative deprivation, is made up of eight separate domains: income, employment, health, education, access to services, community safety, physical environment, and housing, with each domain compiled from a range of different indicators. These domains are used to calculate an overall deprivation score for each of the 1909 lower super output areas (LSOAs) in Wales and it is these overall scores	The overall analysis used routinely collected administrative data on children placed in out-of-home care ('looked-after' children) over a six-year period. The child-level data used are based on the information about children 'looked-after' collected by each Welsh local authority. The overall six years of data produced a sample of almost 9,000 children and young people (n= 8853). Due to levels of missing home postcode data, these cases were drawn from 18 of the 22 Welsh local authorities. Two collection years, however, provide the predominant focus of this analysis, covering the period from 1 April 2008 to the 31 March 2010 and representing almost 3000 cases (n= 2957). These data were linked to both population data to enable the calculation of rates per 10,000 of the child	There is a 'social gradient' present within the overall rates of children entering care, with children in the most deprived neighbourhoods almost twelve times more likely to enter care than those in the least deprived. A child living in decile 1, the 10 per cent of most deprived neighbourhoods in Wales, is almost twelve times (11.8) more likely to become 'looked after' than their peers living in the least deprived neighbourhoods (decile 10). Such inequalities are compounded further in times of rapidly increasing entries to care with children entering care being disproportionately drawn from the poorest

			that are used within this analysis to compare deprivation levels between 'neighbourhoods.	population and, using the Welsh Index of Multiple Deprivation (WIMD) (Stats Wales, 2014a), to sociodemographic characteristics at the level of small area geographies (Lower Super Output Areas) relating to the neighbourhoods from which children entered care.	neighbourhoods, illustrated by a 42-per cent increase in rates between the two years in the most deprived neighbourhoods whilst rates in the least deprived neighbourhoods fell or remained the same.
Identifying and understanding the link between system conditions and welfare inequalities in children's social care services (Hood et al. 2020a)	This two-year study aimed to establish whether and in what way system conditions in CSC were contributing to welfare inequalities, and on the basis of the knowledge gained to suggest the kind of system change needed to reduce those inequalities.	England	Index of Multiple Deprivation (IMD; 2015)	The research used a convergent mixed methods design in order to explore a range of factors in the organisational and institutional context of statutory children's social care in England and their potential link to welfare inequalities. In this section, we report upon the quantitative analyses. Hood et al. (2020a) conducted two *quantitative studies, one of national data returns for CSC* and one of child-level administrative data in six local authorities. For their first study, Hood et al. (2020a) carried out a quantitative analysis of performance indicators, Ofsted ratings, and contextual variables (e.g. deprivation rates, ethnicity, workforce data) for all LAs in England. It aimed to find out how demand fluctuated between LAs with different levels of overall deprivation, how LAs managed this demand, and whether	From their quantitative analysis, the authors highlighted that rates of CP interventions, care proceedings and care orders rose every year from 2014-17, while rates of referrals and CIN remained largely unchanged. The same period saw implementation of the continuous child and family assessment, coinciding with an increase in assessment rates and a higher proportion of referrals receiving an assessment. National trends point to continued escalation in the use of CP interventions by LAs since 2009, particularly Section 47 inquiries and case conferences. Although overall rates of CP plans

				characteristic patterns of intervention were evident in the aggregated data. For their second study, Hood et al. (2020a) carried out a quantitative analysis of all children referred to statutory social care services in six local authorities over a four-year period. The analysis focused on associations between system variables, deprivation indicators, intervention pathways and outcomes for children. It aimed to find out whether children with certain characteristics (e.g. age, gender, ethnicity, deprivation) tended to receive certain types of intervention, and whether this contributed to the inequalities observed for children as a whole.	have risen, CP plans as a proportion of case conferences have fallen over this period. Rates of care proceedings increased while rates of accommodation under Section 20 decreased during 2014-17, both continuing trends observed since 2009. Correlation analysis provided evidence for three interconnected mechanisms of demand management: screening, rationing and workforce churn. Screening refers to the tendency for LAs to either escalate (screen in) or filter (screen out) cases at different thresholds, in response to levels of demand. Overall, higher demand was associated with more screening out, particularly at referral and assessment, and shorter timeframes of work for children in need and children on CP plans. Higher demand at particular thresholds was associated both with more screening in at that threshold but with more

					screening out at the threshold that immediately followed. Such feedback loops allowed the system to respond not only to external but also internal variations in demand as cases progressed through the system. *Rationing* refers to the tendency for LAs with higher levels of demand to spend less on the children they work with. LAs with more referrals and CIN had lower levels of expenditure per CIN. These LAs also had higher rates of CIN per social worker, higher caseloads, were more likely to close cases early and less likely to work longer term with children. *Workforce churn* arose from the rationing response to high levels of demand, and refers to the tendency for LAs with higher rates of CIN per social worker to have higher rates of agency workers, turnover and vacancies.
The social gradient in English child	This study builds on the existing evidence base on	England	The domain for income deprivation	The research was designed as a quantitative analysis of	The results of this report show in detail how

welfare services: an analysis of the national children's social care datasets (Hood et al., 2021)	child welfare inequalities. It tests the results obtained from earlier studies of LA samples on a national all-England dataset, providing a comprehensive picture of the social gradient in CSC and the phenomenon of inverse intervention.		was expressed as the proportion of the population in each LSOA experiencing deprivation relating to low income. It includes individuals on income support, income-based jobseekers' allowance, and income-based employment and support allowance. LSOAs that have different proportions of income deprived families can be compared with one another. Similarly, the employment deprivation domain measures the proportion of working age adults in each LSOA who are unable to work due to unemployment, sickness or disability, or caring responsibilities. LSOAs that have different proportions of working age adults unemployed can also be compared with one another. In this study,	secondary data from the CIN Census. This report focuses on episode-based and person-based rates from the 2018/19 census return. Overall, their data covered 300,000 referrals, 186,000 CIN episodes (starting during the year), and 34,000 CP Plans (starting during the year) for children aged 5 to 15. Each child can experience multiple CSC episodes in a single year; for example, the number of children referred during the year was 260,000. The rates per 10,000 children aged 5 to 15 were calculated at different levels of aggregation (LSOA, MSOA, and LA), using the 2019 mid-year population estimates published by ONS (ONS, 2019). LSOA codes were used to link the individual case-level data to Index of Multiple Deprivation (IMD) scores. IMD is calculated as a weighted score for LSOAs, which are based on seven domains: income deprivation (22.5%); employment deprivation (22.5%); education, skills and training deprivation (13.5%); health deprivation and disability (13.5%); crime (9.3%); barriers to housing and services (9.3%); and living environment deprivation (9.3%) (DHCLG, 2016). LSOAs vary in size and	socioeconomic inequality shapes and determines who is more or less likely to receive a referral or statutory CSC intervention. For example, they demonstrate that a child living in a deprived part of an affluent LA is more likely to receive a social care intervention than a child living in an equally deprived part of a less affluent LA. The findings also identify some of the circumstances and contextual effects that attenuate or exacerbate these differences. In other words, they show how socioeconomic inequality shapes the interaction between demand and provision, and how this is affected by other variables, such as the circumstances and needs of children, the demographics of children, the characteristics of local neighbourhoods, and the characteristics of areas for which LAs are responsible. To a large extent, social inequalities

			the socio-economic circumstances of children's families were measured using IMD scores for LSOAs. The social gradient in CSC refers to the association between socioeconomic status (measured using IMD scores) and rates of statutory CSC interventions.	population but on average each is comprised of approximately 1,500 individuals and 650 households. On average each LSOA comprised 230 children aged 5 to 15 (ONS, 2019).	were found to be embedded in demand for child welfare services, yet the provision of a service also seemed to make them worse. See Tables 1-19 and Figures 1-8 for specific reporting.
Child protection inequalities in Aotearoa New Zealand: Social gradient and the 'inverse intervention law' (Keddell et al., 2019)	This article studies the relationships between substantiated child protection system contact and small area-level deprivation.	New Zealand	Deprivation, for all children in this study (i.e., in the 2014 ERP and aged less than 17 years old as at June 30th 2014), was assessed using a national index derived from census data. This small area based deprivation measure (NZDep) is based on nine variables related to deprivation: income, home ownership, employment, qualifications, family structure, housing, access to transport and communications.	The analysis utilised a population-based retrospective sample of Aotearoa, NZ children. Using a national linked dataset (June 2016 refresh) all children in the 2014 ERP that had been born within July 1997–June 2014 (i.e., aged less than 17 years old as at June 30th 2014) were selected. Anonymised person-level links were used to flag children from within this sample that had the outcomes of interest in the 2013/2014 year. To be considered as having a substantiation for the purposes of this study, children needed to have a substantiation occurring within July 1st, 2013, and June 30th 2014 that was recorded as "Emotionally abused by",	This study found a marked relationship between deprivation and system contact, and significant differences between regions for all three outcomes of interest. Within the 1,016,928 children, 13,851 had had at least one substantiation of interest in the 2013/2014 calendar year which equates to a rate of 1373 per 100,000. For comparison the rate of Family group conferences (FGC) and Placement was 660 and 304 per 100,000 respectively.

				"Neglected by", "Physically abused by" or "Sexually abused by". The remaining categories of substantiations ("Behavioural/Relationship Difficulties", "Self-Harm", "Suicidal", "Self-Harm/Suicidal", "Not found" and "Unknown") were not included as they do not represent direct child abuse. Since multiple substantiations per child are possible, the incident-level data was reorganised to select children who had had at least one substantiation of interest within the 2013/2014 year.	Children in the least deprived NZDep1 have a rate of 174 per 100,000 child-years for having at least one substantiation, while children in NZDep10 have a rate of 3673 per 100,000. At the point of having at least one FGC, this rate is 54 per 100,000 child-years for children in NZDep1 increasing sharply to 1890 per 100,000 for children in the most deprived areas (NZDep10). Compared to children living in the least deprived quintile of small areas, children in the most deprived quintile had, on average, 13 times the rate of substantiation, 18 times the rate of a family group conference, and 6 times their chance of placement in foster care. There was limited evidence for the 'inverse intervention law' that proposes that children in similarly deprived small areas have higher rates of child protection system contact if they live in less

					deprived regions (larger areas). The pattern of placements showed the strongest support for this law, with children in similarly deprived small areas having, on average, almost twice the rate of placement if they lived in less deprived regions compared to more deprived regions.
Child Abuse-related deaths, child mortality (0-4 Years) and income inequality in the USA and other developed nations 1989-91 v 2013-15: Speaking Truth to Power (Pritchard et al., 2020)	This population-based study analysing CARD and CMR for children aged from new-born to four years old between 1989–91 and 2013–15 to identify any relative child neglect in the USA and 20 other developed nations (ODN).	21 developed nations	Relative poverty was measured using the World Bank income inequality ratio which is the gap between the top and bottom ten per cent of incomes (World Bank, 2018). The benefit of using this ratio is that it is country-specific, thereby reflecting the relative positions of poorer families within that society, which avoids the blurring that occurs when averages are used.	World Health Organization data were used for CARD, CMR and undetermined deaths (UnD), a possible source of unreported CARD, juxtaposed against World Bank income inequality data. The comparative baseline years were the 1989–91 average, compared with the three-index year average of 2013–15, which are the latest available WHO international data, updated June 2018 (WHO, 2018). The baseline year of 1989 coincides with the latest International Classification of Diseases 10th Edition (WHO, 2016), which is used by the WHO (2018) in its annual statistics. Each nation is compared against itself based upon the baseline and index years, and thus can serve as its own control over the period for the three types of mortality.	Interestingly, despite there being a positive correlation between high CMR and wide income inequality (R= 0.5338, p< 0.01), indicating that higher CMR are statistically associated with relative poverty, there were no significant correlations between income inequality and rates of under-fives (0–4 years) CARD (Rho = 0.1519, not significant) nor with rates of under-fives (0–4 years) UnD (Rho = 0.2214, not significant), which might be counter intuitive but suggests a different dynamic interaction between poverty and children

					dying from CARD and UnD.
Income inequality and child maltreatment risk during economic recession (Schenck-Fontaine & Gassman-Pines, 2020)	Schenck-Fontaine & Gassman-Pines (2020) also investigated whether the previously discussed associations between job losses and screened-in reports are larger in states in the USA with a relatively high level of income inequality to identify another potential reason for the regional variation in effects	United States	-	Schenck-Fontaine & Gassman-Pines (2020) used the 2003 state-level Gini coefficient based on Internal Revenue Service statistics. States were considered to have high inequality if their Gini coefficient fell above the 75th percentile, which was 0.60 in 2003, and low inequality if their 2003 Gini coefficient fell below the 25th percentile, which was 0.55 in 2003.	State-wide job losses were differentially associated with child maltreatment rates based on the pre-existing level of income inequality in the state. State-wide job losses were associated with a significant increase in the overall referral rate in both low- and high-inequality states. However, the job losses were associated with an earlier increase in the overall referral rate in low-inequality states than in high inequality states. In low-inequality states, a 1% point increase in the percent of the working-age population affected by job losses was associated with a 20.6% (IRR= 1.206) increase in the overall referral rate relative to the base rate 1 to 3 months after the job losses occurred ($p < 0.01$). There was no change in the overall referral rate at that time in high-

					inequality states and this difference between states was significant (p< 0.01). In high-inequality states, a 1% point increase in the percent of the working-age population affected by job losses was associated with a 2.4% (IRR= 1.024) increase in the overall referral rate relative to the base rate 3 to 4 months after the job losses occurred (p< 0.01). An increase in job losses was not associated with a change in the substantiation rate in either low- or high-inequality states. Schenck-Fontaine & Gassman-Pines (2020) also found differences between US states in the association between job losses and child maltreatment reports by type of maltreatment. In both low- and high-inequality states, job losses were associated with an increase in the rate of physical abuse, but this association was larger in low-inequality states. In

					low-inequality states, a 1% point increase in the percent affected by job losses was associated with a 16.6% (IRR = 1.166) increase in the rate of physical abuse reports in the 1 to 3 months after job losses occurred ($p < 0.01$), but only a 3.0% (IRR= 1.030) increase in high-inequality states ($p < 0.01$). This difference between states was significant ($p < 0.01$). Though there were no further delayed associations in low-inequality states, job losses were also associated with a 2.3% (IRR< 0.023) increase in the rate of physical abuse reports in the 4 to 6 months after job losses occurred in high-inequality states ($p < 0.05$). This difference between states, however, was not significant. A similar pattern emerged for reports of neglect. In low-inequality states, a 1 percentage point increase in the percent affected by job losses was associated

					with a 24.6% (IRR= 1.246) increase in the rate of neglect reports in the 1 to 3 months after job losses occurred (p< 0.01), but no there was no significant association in high-inequality states at that time. This difference between states was significant (p< 0.01). Though there were no further delayed associations in low-inequality states, job losses were also associated with a 2.3% (IRR< 0.023) increase in the rate of neglect reports in the 4 to 6 months after job losses occurred in high inequality states (p< 0.05), but this difference between states was not significant. There were no significant associations between job losses and reports of sexual abuse in low- or high-inequality states.
Cuts both ways: ethnicity, poverty, and the social gradient in child welfare interventions	This article presents the findings of a quantitative intersectional analysis of child welfare interventions within small area ethnic populations in	United Kingdom	Index of Multiple Deprivation.	They use multilevel negative binomial regression models to predict rates of children in need, children on child protection plans, and children in State care in ethnic group populations in	There are significant differences in child protection practice between ethnic groups, but these are complex and differ both based on the

(Webb et al., 2020a)	England. Recent research has highlighted that White British children, on average, have higher rates of intervention than children from other ethnic groups in poorer neighbourhoods and lower rates in more affluent neighbourhoods. This raises the question of whether structural associations between poverty and child welfare interventions apply equally to children from all backgrounds, or whether recent research into socioeconomic child welfare inequalities is largely capturing differences between ethnic groups.			geographical areas with average populations of 7,200 children and adults. There are 152 local authorities in England with responsibility for providing children's services. Following the usual convention of excluding two very small LAs, the City of London and the Isles of Scilly, the remaining 150 have an average child population (age 0-17) of just under 80,000 with a range from around 8,000 to over 330,000. Children's services data was secured for all children referred to social services in a sample of local authorities including details about age, gender, ethnicity, 'child in need' status (CIN), child protection plan (CPP) status, and child looked after (CLA) status, at 31st March 2015.	intensity of child protection intervention and level of deprivation. At average levels of deprivation 5 (CIN) or 6 (CPP/CLA) ethnic minority populations had significantly different levels of child welfare interventions when compared to White British MSOA populations, but there were no simplistic universal patterns. Indian, Mixed Heritage (Other), and Mixed White & Black Caribbean ethnic populations had intervention rates that differed significantly from White British populations across all three types of intervention. Asian Pakistani rates differed significantly for child protection plan interventions and for rates of children taken into care. Black Caribbean populations had significantly different CIN and CLA intervention rates. Asian Bangladeshi and Black African populations had

					significantly different CIN rates only and Mixed White/Black African populations had significantly different CPP rates only. Only two ethnic minority populations did not differ significantly from the White British population in any type of intervention: Black Other and Mixed Heritage White & Asian. At average levels of deprivation, Indian MSOA populations had significantly lower rates across all three types of intervention. All else being equal, Indian populations had CIN incidence rates that were around 30.7 per cent of the predicted White British rate. CPP rates were 27.8 per cent of the White British rate, and predicted CLA rates were only around 13.3 per cent of the White British rate. By contrast, rates for Mixed Other and Mixed White/Black Caribbean populations were significantly higher for all types of intervention. This was particularly

					pronounced for the Mixed Heritage (Other) category, which had CIN rates approximately 3 times higher than the equivalent White British population; CPP rates approximately 2.8 times higher; and CLA rates approximately 2.6 times higher, holding all else constant. For Mixed White & Black Caribbean populations the rates were 1.3, 1.8 and 1.4 times higher than the White British rates for CIN, CPP, and CLA respectively. Pakistani populations had significantly lower child protection plan and children looked after rates, but not significantly different children in need rates. For Pakistani populations, CPP rates were only around 37 per cent of the White British rates and CLA rates were only 33 per cent of the White British population rates. Black Caribbean populations had significantly higher CIN and CLA rates, at around 1.5 and 1.9 times the

					White British rate respectively. Lastly, three ethnic populations differed significantly on only one type of intervention. Bangladeshi MSOA populations had CIN rates that were around 69 per cent of the White British rate. CIN rates for Black African populations were around 1.2 times higher. Mixed Heritage White & Black African populations had CPP rates that were around 1.6 times higher holding all else equal. At low levels of neighbourhood deprivation, eight ethnic groups had significant CIN and CLA incidence rate ratios and seven had significant CPP incidence rate ratios. Seven of the eight significant CIN and CLA IRRs and six of the seven CPP IRRs were greater than one, indicating higher incidence of interventions for those ethnic groups in low deprivation MSOAs than White British

					populations, all else being equal. For example, in low deprivation MSOAs there were four times (IRR = 3.98) higher rates for Black Caribbean children in care than White children, per 10,000 of their respective population. At high levels of deprivation, the direction of the IRRs for all but Mixed Heritage (Other) child populations was reversed. All the eight significant IRRs for CIN, six of the seven IRRs for CPP, and seven of the eight significant IRRs for CLA were less than one, indicating a lower incidence rate relative to the rate for White British child populations.
Untangling child welfare inequalities and the 'Inverse Intervention Law' in England (Webb et al., 2020b)	This study aimed to provide additional evidence from multilevel models that the socioeconomic social gradient and 'Inverse Intervention Law' in children's services interventions are statistically significant after controlling for possible confounding	United Kingdom	Lower super output area (LSOA)-level data was used, including 2015 Index of Multiple Deprivation (IMD) score and estimates of child population size and ethnic density (2011 Census adjusted for LSOA-level population growth). IMD consists of several	Overall, the data covered 52,179 Children in Need; 6716 children on child protection plans, and 8865 children looked after within 4115 LSOAs with each LSOA consisting of between around 470 and 1000 households. This figure equates to approximately 12 per cent of the total population of children on protection plans or looked after in England.	They find strong evidence supporting the existence of a steep socioeconomic social gradient in child welfare interventions. LSOA-level deprivation score was the single strongest predictor of intervention rates across all three levels of intervention. In all three types of intervention,

	spatial and population effects.		domains of deprivation, weighted as follows: income deprivation (22.5%); employment deprivation (22.5%); education, skills and training deprivation (13.5%); health deprivation and disability (13.5%); crime (9.3%); barriers to housing and services (9.3%); living environment deprivation (9.3%).		LSOA-level deprivation was statistically significant at the 0.1 per cent level. As LSOA-level deprivation increases, the rates of Children in Need, children on Child Protection Plans, and Children Looked After all increase. The relationship between deprivation and intervention was strongest when looking at Child Protection Plans (B= 0.5542) and Children Looked After (B= 0.5293) and weakest in relation to Children in Need (B= 0.4392). However, all three coefficients represent large changes in the rates of intervention. An increase of one standard deviation in LSOA IMD score was associated with a 55 percent increase in the expected Children in Need rate in the LSOA (eb= 1.551), a 74 per cent increase in the expected Child Protection Plan rate (eb= 1.741), and a 70 per cent increase in the expected Children Looked After rate (eb= 1.698).

					In a high deprivation local authority, the social gradient for CIN rates was roughly 44 per cent, meaning that an increase of one standard deviation in neighbourhood deprivation was associated with a 44 percent increase in CIN rate. In a low deprivation local authority an equivalent increase in neighbourhood level deprivation would be associated with a 67.2 per cent increase in the neighbourhood CIN rate. For CLA rates the change in the social gradient was more pronounced for different LA contexts. High deprivation local authorities had social gradients of 49 per cent and low deprivation local authorities had social gradients of 94 per cent. In other words, equivalent changes in neighbourhood deprivation were associated with almost doubled CLA rates in low deprivation authorities

					but only 1.5 times increase in high deprivation authorities. In local authorities with high income inequality an increase of one standard deviation in neighbourhood deprivation was associated with a 75 per cent increase in CIN rate, a 106 percent increase in CPP rates, and a 101 percent increase in CLA rate. By contrast, local authorities with low-income inequality had much weaker associations between neighbourhood deprivation and interventions. Increases in neighbourhood deprivation in low-income inequality authorities were associated with a 37.8 per cent increase in CIN rates, a 47.5 per cent increase in CPP rates, and a 43.5 percent increase in CLA rates. Higher local authority level deprivation and lower income inequality was associated with weaker associations between

					neighbourhood deprivation and intervention rates. This suggests that poverty may be less of a determining factor in state intervention in authorities that are more equal and where deprivation is more visible. Furthermore, combinations of different LA contexts show that in cases where deprivation is high and income inequality is low, one would expect the social gradient to be as low as 26–40 per cent depending on the type of intervention. In the opposite context, where deprivation is low and income inequality is high, one would expect social gradients between 88 percent and 129 per cent. Local authority context appears to substantially change the relationship between deprivation and child welfare interventions, and in some comparisons, this is quite pronounced. At the extremes, one would

					expect a low deprivation, high income inequality local authority to have a social gradient around five times stronger (129 per cent increase) than the social gradient in a high deprivation, low-income inequality local authority (25.8 percent increase).
Income Inequality & Child Welfare Interventions in England and Wales (Webb et al., 2021)	This study investigated whether there was evidence of a relationship between income inequality and child maltreatment, whether this relationship was non-linear and whether this relationship varied dependent on the level of poverty.	England and Wales	Commercial income data were used for Gini coefficient estimation	Administrative data on child protection (CP) in 172 English and Welsh local authorities between 2013 and 2018 were combined with data on deprivation, ethnic density and education from publicly available data sources.	There was a significant non-linear relationship between income inequality and state care rates in England and Wales. Predicted state care rates were higher as income inequality increased, up until around average levels where the effect flattens. However, there was no significant relationship for models predicting CP plan/register rates. Income inequality, income deprivation, ethnic density and higher education were able to explain around 75% of the variance in English and Welsh state care rates.
So close yet so different: Neighbourhood	This study examines the relationship between neighborhood-level	United States	Poverty was conceptualized in terms of	A population-based cohort of 4,898 children born in large US cities was sampled in 1998-2000	Low-income was associated with higher risks of neglect and CPS

inequality and child maltreatment (Zhang et al., 2021a)	inequality and child maltreatment risk, paying particular attention to the cross-level interactions between neighborhood inequality and family income.		Neighbourhood inequality and family income levels.	(within the FFCWS) and followed up at ages 1, 3, 5, and 9. A set of regression models was analyzed to estimate the associations of family income, neighborhood inequality (operationalized as terciles of the Gini coefficient), and the interaction of these with child maltreatment risk, operationalized as physical abuse, psychological abuse, neglect, CPS involvement, and spanking. Neighborhood inequality was measured at each wave of the survey at childbirth and years 1, 3, 5, and 9, based on the Gini coefficient or index. They calculated Gini coefficients for 2,631 sampled census tracts based on proportions of families with income among nine categories ranging from "less than $10,000" to "$150,000 and higher". The Gini coefficients of their sampled neighborhoods ranged from 0 to 0.64, with higher values indicating higher levels of inequality. They further categorized the Gini coefficients into three equal groupings that they referred to as low-, med-, and high-inequality (with cutoffs of less than 0.35, 0.35 to 0.41, and above 0.41, respectively) to	involvement, but not physical abuse, psychological abuse, or spanking. Among low-income families, higher neighborhood inequality was associated with lower likelihood of spanking. Among higher-income families, higher neighborhood inequality levels were associated with higher risks of physical abuse, yet lower risks of psychological abuse. The authors conclude that results may suggest that the effect of low-income itself is more important than the neighborhood context.

				indicate the inequality levels of sampled neighborhoods. In terms of family income, mothers were asked to provide an exact dollar amount of their family income at childbirth and years 1, 3, 5, and 9. If they could not, they were asked to provide a range. Families' "low-income" status was defined as household income below 200% of the federal poverty level (FPL). For ease of comparison, the authors refer to the remaining sample as "higher-income," though they acknowledge that income above 200 % of FPL, a threshold of approximately $44,000 for a family of three, should not be considered "high-income." Child maltreatment was operationalized via parents' self-reports of parenting behaviors and child protective services (CPS) involvement as a proxy of child maltreatment risk. Parents reported their physically abusive, psychologically abusive, and neglectful parenting behaviors towards the focal child at ages 3, 5, and 9, based on the Parent-Child Conflict Tactics Scale. They measured CPS involvement based on mothers' self-reports of	

				whether CPS contacted the family since the prior interview at the 5-year and 9-year in-home assessment, respectively. They also considered a rich set of child, maternal, and neighborhood factors that may confound the relationship between neighborhood inequality, family income, and child maltreatment . Child-level characteristics include gender (only available as male or female). Maternal factors measured at the time of the focal child's birth include age, educational level (i.e., less than high school, high school, some college or equivalence, and bachelor's degree or above), marital status (i.e., married or not), and race-ethnicity (i.e., non-Hispanic White, non-Hispanic Black, Hispanic, and other). Neighborhood characteristics, measured at the census-tract level at each wave of the data corresponding to the measures of maltreatment, neighborhood inequality, and family income, include the percent of non-Hispanic Black, percent of Hispanic, percent of families with incomes below the federal poverty level, and percent of	

				households using public assistance. They also included neighbourhood median household income to show neighbourhood characteristics by inequality level in the descriptive analysis, but did not include this variable in regression models as it is highly correlated with neighbourhood poverty rate.	

N= 67