

Supplementary Tables. Summary of included papers for childhood SEP and ACEs search (Supplementary Table 1a), and for childhood SEP and ACEs/maltreatment search (Supplementary Table 1b)

Key to statistical abbreviations used in the Tables: OR – odds ratio; r – correlation coefficient; CIs – confidence intervals; HR – hazard ratio; RR – relative risk; SE – standard error; χ^2 – chi square

Supplementary Table 1a. Childhood SEP and ACEs

Author & year	Country	Quality assessment criteria ⁱ & overall study quality	Population	Individual/ecological study	Data source	Sample size	Childhood SEP measure(s); age when measured ⁱⁱ	Childhood adversity outcome measure(s); age when measured ⁱⁱ	Summary of key results
Ahmed et al 2015 ¹	Malaysia	1,2,3,5** (Medium)	Schoolchildren aged 10-12 years 52% male, 48% female; 45% Malay, 36% Chinese, 19% Indian	Individual	Cross-sectional survey Data collected 2011	3,509	Parental employment, 10-point socio-economic 'comfort score'; 10-12 years	Maltreatment: physical abuse, emotional abuse, neglect (all by parent), and physical abuse (by teacher); 10-12 years (questions on lifetime exposure) Adversity measures taken from various instruments ⁱⁱⁱ	Pupils in highest socio-economic group ('comfort score' of 10) at less risk of 2+ kinds of abuse than those with score of <8: adjusted ORs of 0.69 (95% CI 0.51-0.92)

ⁱ Quality assessment criteria - 1: representative; 2: individual/household level exposure; 3: individual level exposure; 4: not over-adjusted; 5*: sample size 200-1000; 5**: sample size >1000; 6: maltreatment not reported by perpetrator. Numbers shown denote satisfied criteria (and therefore points allocated).

ⁱⁱ Note that data were collected prospectively unless otherwise stated.

ⁱⁱⁱ Includes: International Society for the Prevention of Child Abuse and Neglect (ISPCAN) Child Abuse Screening Tool Children's Version, the Child Exposure to Domestic Violence Scale, and 'others'

Author & year	Country	Quality assessment criteria ⁱ & overall study quality	Population	Individual/ ecological study	Data source	Sample size	Childhood SEP measure(s); age when measured ⁱⁱ	Childhood adversity outcome measure(s); age when measured ⁱⁱ	Summary of key results
Anderson et al 2017 ²	England	2,3,4,5**,6 (High)	Pregnant women No ethnic breakdown reported	Individual	Longitudinal cohort Data collected between 1991 and 1995	2,221	Father's occupation; 26 years (mean) (retrospectively reported)	'Psychosocial adversity': maternal lack of care and maternal overprotection, maladaptive family functioning, parental mental illness, sexual abuse, and non-sexual abuse; 28-30 years (retrospectively reported) Adversity measures developed within bespoke questionnaire	No meaningful difference in the distribution of total 'psychosocial adversity' between manual and non-manual SEP groups
Baglivio et al 2015 ³	USA	1,2,3,4,5**,6 (High)	Juvenile offenders No gender or ethnic breakdown reported	Individual	Administrative records Data collected between 2007 and 2012)	59,342	Individual measure of parental employment problem history, and area measures of poverty, median income, unemployment, education, receipt of public assistance; 18	ACEs: parental separation/ divorce, psychological abuse, physical abuse, sexual abuse, emotional neglect, physical neglect, household violence, living with household members	Individual parental employment history and neighbourhood disadvantage 'significantly' (p<0.01) correlated with total ACEs score

Author & year	Country	Quality assessment criteria ⁱ & overall study quality	Population	Individual/ ecological study	Data source	Sample size	Childhood SEP measure(s); age when measured ⁱⁱ	Childhood adversity outcome measure(s); age when measured ⁱⁱ	Summary of key results
							years	who were substance abusers, household mental illness, household member with history of incarceration; 18 years Adversity measures derived from 'PACT': the Positive Achievement Change Tool	
Doidge et al 2017 ⁴	Australia	2,3,4,5**,6 (High)	Infants, followed up for 27 years No gender or ethnic breakdown reported	Individual	Longitudinal birth cohort Data collected between 1983 and 2005/06	2,443	Parental education, parental occupation, housing tenure (all prospectively recorded by parents), and assessment of childhood poverty (retrospectively recorded by cohort members); 8 months or less for parental education & occupation; 9-16 years for parental	Maltreatment: emotional abuse, neglect, physical abuse, sexual abuse, witnessing domestic violence; 23-24 years Adversity measures developed within bespoke questionnaire	6 out of 7 of the SEP measures associated with increased risk of any maltreatment: childhood poverty (unadjusted OR 3.02), paternal unemployment (2.30), housing tenure (2.48), paternal occupation (1.54), maternal

Author & year	Country	Quality assessment criteria ⁱ & overall study quality	Population	Individual/ecological study	Data source	Sample size	Childhood SEP measure(s); age when measured ⁱⁱ	Childhood adversity outcome measure(s); age when measured ⁱⁱ	Summary of key results
							unemployment; 3-8 years for tenure; 23-24 years for poverty assessment		occupation (1.33), and maternal education (1.63)
Mersky et al 2017 ⁵	USA	2,3,4,5**,6 (High)	Low income women (recipients of services from home-visiting programme) 33% White & non-Hispanic, 27% Black & non-Hispanic, 23% Hispanic, 8% American Indian & non-Hispanic, 9% other & non-Hispanic	Individual	Cross-sectional survey Data collected in 2014/15	1,241	Frequently occurring family financial problems; 24 years (mean) (range 16-46 years)	ACEs: 10 'conventional' ACEs (physical abuse, sexual abuse, emotional abuse, physical neglect, emotional neglect, parental alcohol/drug problem, parental mental illness, household domestic violence, parental incarceration, parental divorce or separation), plus 7 'expanded' ACEs (frequent family financial problems, family food insecurity, homelessness, parental absence, death of parent or sibling, frequent peer victimization, violent	'Frequent family financial problems' 'significantly' correlated with all 10 'conventional' ACEs

Author & year	Country	Quality assessment criteria ⁱ & overall study quality	Population	Individual/ecological study	Data source	Sample size	Childhood SEP measure(s); age when measured ⁱⁱ	Childhood adversity outcome measure(s); age when measured ⁱⁱ	Summary of key results
								crime victimization); 24 years (mean) (range 16-46 years) Adversity measures based on (1) US Centers for Disease Control's (CDC) ACEs questionnaire, and (2) bespoke questionnaire	
Soares et al 2016 ⁶	Brazil	1,2,3,5**,6 (High)	Children of mothers born in 1993 48% male, 52% female; 67% White, 23% non-White	Individual	Longitudinal birth cohort Data collected between 1993 and 2008	3,951	Household income, change in household income, maternal education, household unemployment; 0 years (birth) and 15 years for income; 0 years for maternal schooling; 11 and 15 years for unemployment	ACEs: physical abuse, sexual abuse, emotional neglect, physical neglect, domestic violence, parental separation, parental death; 15 years except for parental separation (15 and 18 years) and death (11, 15 and 18 years) Adversity measures were a subset of the	Greater risk of 4+ ACEs for: children of lowest (compared to highest) family income (adjusted ORs 2.4, 95% CI 1.4-3.9); lowest vs. highest category of maternal education (6.1, 2.5-14.8); always poor (compared to never poor) (3.5, 2.3-5.4)

Author & year	Country	Quality assessment criteria ⁱ & overall study quality	Population	Individual/ ecological study	Data source	Sample size	Childhood SEP measure(s); age when measured ⁱⁱ	Childhood adversity outcome measure(s); age when measured ⁱⁱ	Summary of key results
								CDC's ACEs questionnaire	

Supplementary Table 1b. Childhood SEP and ACEs/maltreatment

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
---------------	---------	-------------------------------------------------------------------	------------	-----------------------------	-------------	---------------------------------------------------	-----------------------------------------------------------	--------------------------------------------------------------------------	--------------------

^{iv} Quality assessment criteria - 1: representative; 2: individual/household level exposure; 3: individual level exposure; 4: not over-adjusted; 5*: sample size 200-1000; 5***: sample size >1000; 6: maltreatment not reported by perpetrator. Numbers shown denote satisfied criteria (and therefore points allocated).

^v Sample sizes are reported for all individual-based studies. Number of units of analysis (e.g. 50 U.S. States) are reported for area-based (i.e. ecological) studies.

^{vi} Note that data were collected prospectively unless otherwise stated.

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Beimers & Coulton 2011 ⁷	USA	2,3,5**,6 (Medium)	Female-headed low-income households with child aged 0-10 years who were exiting a social security programme No gender breakdown reported; 72% African-American, 20% White, 6% Hispanic	Individual	Linked administrative records Data collected between 1999 and 2002	18,023	Individual measures of education, employment, employment earnings, other social security payments, and area-based measure of impoverishment; 0-10 years	Maltreatment: physical, sexual, emotional abuse, or neglect; 0-10 years Adversity measure based on substantiated reports recorded on administrative child surveillance/protection system	A higher level of maternal educational attainment (adjusted HR 0.79, p=0.001), and higher employment earnings (0.98, p<0.001, per \$100 increase) was associated with a lower risk of maltreatment (although employment <i>per se</i> was not associated); contradictory findings were noted in relation to continued receipt of different social security payments

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Cherry & Wang 2016 ⁸	USA	1,3,6 (Low)	Children recorded in maltreatment reports Ecological study: no breakdown of individual gender or ethnicity reported	Ecological	Child maltreatment reporting system Data collected between 2000 and 2012	50 US states	Area (US state)-based employment rate and the share of children living in poverty in each state; 0-17 years	Maltreatment: physical, sexual, emotional abuse, or neglect; 0-17 years Adversity measure based on substantiated reports recorded on administrative child surveillance/protection system	In adjusted ^{vii} analyses, male employment rate inversely associated with maltreatment rate; however, child poverty rate also inversely associated with maltreatment rate

^{vii} Where results are reported here as being derived from “adjusted” analyses, the latter generally refers to the inclusion in models of other SEP-related measures which are likely to reduce the effect of the childhood SEP exposure measure of interest.

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Curenton et al 2009 ⁹	USA	2,3,4,6 (Low)	Three groups of 'primary caregivers' of children, one with substantiated cases of maltreatment 8% male, 92% female; 63% African-American, 29% European-American, 8% Hispanic/unknown	Individual	Questionnaire-based interview Dates of data collection not reported (presumed to be in 2000s)	92	Poverty status, employment, parental education (all reported by caregiver); 52 months (mean)	Maltreatment: child abuse or neglect; 52 months (mean) Adversity measure based on substantiated reports recorded on administrative child surveillance/protection system	In a very small study, the 'maltreatment' group had lower levels of parental educational attainment, but not the highest level of poverty; levels of employment were not 'significantly' different

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Doidge et al 2017 ¹⁰	Australia	2,3,4,5**,6 (High)	Infants, followed up over 27 years 52% male, 48% female; no ethnicity breakdown reported	Individual	Longitudinal birth cohort Data collected between 1983 and 2005/06	2,443	Parental education, parental occupation, housing tenure (all prospectively recorded by parents), and assessment of childhood poverty (retrospectively recorded by cohort members); 8 months or less for parental education & occupation; 9-16 years for parental unemployment; 3-8 years for tenure; 23-24 years for poverty assessment	Maltreatment: emotional abuse, neglect, physical abuse, sexual abuse, witnessing domestic violence; 23-24 years Adversity measures developed within bespoke questionnaire	All SEP measures associated with an increased risk of any maltreatment: lack of home ownership (unadjusted OR 2.52, p<0.01), maternal education (1.64, p<0.01), maternal occupation (1.43, p<0.05), paternal education (1.46, p<0.01), paternal occupation (1.57, p<0.01), parental unemployment (2.33, p<0.01), childhood poverty (2.94, p<0.01). A 'Dose-response' relationship between the number of economic risk factors and prevalence of maltreatment also observed.

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Eckenrode et al 2014 ¹¹	USA	1,3,4,6 (Low)	Children recorded in maltreatment reports Ecological study: no breakdown of gender or ethnicity reported	Ecological	Child maltreatment reporting system Data collected between 2005 and 2009	50 US states	Area-level child poverty rates; 0-17 years (presumed ^{viii})	Maltreatment: child abuse and neglect; 0-17 years (presumed) Adversity measure based on substantiated reports recorded on administrative child surveillance/protection system	Correlation between child poverty rates and maltreatment rates ($r=0.25$, $p<0.0001$)

^{viii} Here and elsewhere in this Table, 'presumed' indicates that the precise age was not reported; however, it can be presumed to be in this age range, given the data source.

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Euser et al 2010 ¹²	Netherlands	2,3,4,5*,6 (Medium)	Children recorded in maltreatment reports by 'sentinels' No breakdown of gender or ethnicity reported	Individual	Cross-sectional survey of 'sentinels' Data collected in 2005	858	Parental education, parental unemployment (reported by sentinels); 0-18 years	Maltreatment: sexual abuse, physical abuse, emotional abuse, physical neglect, educational neglect, emotional neglect, 'other forms of abuse' (reported by sentinels); 0-18 years Adversity measure based on reports from 'sentinels' (professionals in relevant occupations)	Compared to the wider population, families of maltreated children had lower levels of parental educational (χ^2 (2, N=743) = 1,422.3, $p < 0.01$), and over five times the unemployment rate (χ^2 (1, N=860) = 1,097.0, $p < 0.01$)

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Euser et al 2011 ¹³	Netherlands	2,3,4,5**,6 (High)	Children recorded in maltreatment reports by 'sentinels' No breakdown of gender or ethnicity reported	Individual	Cross-sectional survey of 'sentinels' Data collected in 2005	1,121	Parental education (reported by sentinels); 0-18 years	Maltreatment: sexual abuse, physical abuse, emotional abuse, physical neglect, educational neglect, emotional neglect, 'other forms of abuse' (reported by sentinels); 0-18 years Adversity measure based on reports from 'sentinels' (professionals in relevant occupations)	Compared to the wider population, families of maltreated children had lower levels of parental education (χ^2 (2, N=496) = 787.1, $p < 0.01$), with maltreated children more likely to live with 'very low educated' families (unadjusted RR: 6.26, 95% CI 5.16, 7.60)

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Euser et al 2013 ¹⁴	Netherlands	2,3,4,5**,6 (High) (both data sources)	Children recorded in different types of reports of maltreatment Survey of 'sentinels': no breakdown of gender or ethnicity reported Survey of schoolchildren: 52% male, 48% female; 87% Dutch, 4% Moroccan, 3% Turkish, 1% Surinamese, 1% Antillean, 3% other.	Individual	2 relevant sources: 1) cross-sectional survey of 'sentinels' 2) cross-sectional survey of schoolchildren Data collected in 2010	1) 1,127 2) 1,920	1) parental education, parental unemployment (reported by sentinels) 2) perceived family wealth and parental unemployment (combined) (reported by adolescents); 1): 0-18 years 2) 12-17 years	1) Maltreatment: sexual abuse, physical abuse, emotional abuse, physical neglect, educational/emotional neglect, 'other forms of abuse' (reported by sentinels) 2) Maltreatment: sexual abuse, physical abuse, 'other' (e.g. bullying) (reported by adolescents); 1): 0-18 years 2) 12-17 years Adversity measure based on (1) reports from 'sentinels' and (2) questions derived from various tools ^{ix}	1) Low parental educational status and parental unemployment associated with greater risk of maltreatment (unadjusted RRs of 9.3 and 6.4 respectively) 2) Parental unemployment associated with greater risk of maltreatment (unadjusted RR of 1.6)

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Freisthler 2004 ¹⁵	USA	1,3,5*,6 (Low)	Children recorded in maltreatment reports Ecological study: no breakdown of gender or ethnicity reported	Ecological	Social services administrative records Data collected in 2000	940 US 'census tracts'	Poverty rate, unemployment rate, vacant housing; 0-17 years (presumed)	Maltreatment: child abuse and neglect; 0-17 years (presumed) Adversity measure based on substantiated reports recorded on administrative child surveillance/protection system	Poverty rate and unemployment rate were both positively associated with rates of maltreatment (adjusted regression coefficients (SE) of 3.31 (0.55, p<0.001), and 6.78 (1.55, p<0.001) respectively)

^{ix} Dating Violence Questionnaire and Parent-Child Conflict Tactics Scales

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Freisthler et al 2007 ¹⁶	USA	1,3,5*,6 (Low)	Children recorded in maltreatment reports (stratified by ethnicity) Ecological study: no breakdown of gender or ethnicity reported	Ecological	Social services administrative records Data collected in 2000	940 US 'census tracts'	Poverty rate, unemployment rate, vacant housing; 0-17 years (presumed)	Maltreatment: child abuse and neglect; 0-17 years (presumed) Adversity measure based on substantiated reports recorded on administrative child surveillance/protection system	Poverty rate positively associated with rates of maltreatment in all three ethnic groups: Black (adjusted regression coefficient (SE) of 9.28 (1.54, p<0.001), Hispanic (2.15 (0.80, p<0.01)), and White (8.85 (1.34), p<0.001)); unemployment rate positively associated with maltreatment rate among Hispanic (6.15 (2.39, p<0.01)), but not Black and White groups

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Frioux et al 2014 ¹⁷	USA	1,3,4,6 (Low)	Children recorded in maltreatment reports Ecological study: no breakdown of gender or ethnicity reported	Ecological	Social services administrative records Data collected between 1990 and 2010	67 US counties	Unemployment rate and mortgage foreclosure rate; 0-17 years (presumed)	Maltreatment: physical abuse, sexual abuse, 'serious neglect'; 0-17 years (presumed) Adversity measure based on substantiated reports recorded on administrative child surveillance/protection system	Increases of 1% in unemployment and mortgage foreclosure rates were, respectively, associated with 2.4% (95% CIs 0.59-4.30, p<0.01) and 4.5% (1.14-7.94, p<0.01) increases in maltreatment rates

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Herrenkhol & Herrenkhol 2007 ¹⁸	USA	2,3,4,5*,6 (Medium)	Pre-school children, followed up for 16 years 54% male, 46% female; 81% White, 11% more than one race, 5% Black or African American, 3% Other	Individual	Longitudinal cohort Data collected between 1976/77 and 1990/02	457	Composite measure including parents' occupational status, educational level, family income and number of rooms in family house (reported by parents); 18 months to 6 years	Maltreatment: child abuse, neglect, sexual abuse, parental domestic violence (from different sources: parents, children, social services data); collected at different ages from different sources and data sweeps Adversity measure based on a variety of different data collection tools	Maltreatment shown to be correlated with the composite measure of socio-economic status ($r=-0.61$, $p<0.05$)

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Hosseinkhani et al 2016 ¹⁹	Iran	2,3,4,5**,6 (High)	Schoolchildren aged 9-14 years 52.5% male, 47.5% female; no breakdown of ethnicity reported	Individual	Cross-sectional survey Data collected in 2011	1,036	Economic status (derived from family wealth and property), parental education, employment (all reported by parents); 9-14 years	Maltreatment: physical, psychological and neglect; 9-14 years Adversity measure derived from two screening tools: International Society for the Prevention of Child Abuse and Neglect (ISPCAN) Child Maltreatment Screening Tool—Children's Version (ICAST-C); and the Juvenile Victimization Questionnaire	Economic status and parental education both associated with increased risk of any type of maltreatment. For example, unadjusted OR for poorest compared to richest was 4.85 (95% CI 3.01-7.82), and for highest education category compared to lowest was 0.30 (0.12-0.74); however, greater risk also associated with employed mothers compared to 'housewives'

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Johnson-Motoyama et al 2014 ²⁰	USA	1,2,3,5**,6 (High)	Hispanic infants born in California, USA Breakdown of gender not reported for the whole sample (but likely to be c. 51% male, 49% female, based on largest sub-samples); all of maternal Hispanic origin	Individual	Linkage of birth records to child protection services data Data collected between 2000 and 2006	1,909,155	Maternal education, health insurance type; birth to 1 year	Maltreatment: child abuse and neglect; birth to 1 year Adversity measure based on substantiated reports recorded on administrative child surveillance/protection system	Lower (vs. highest) educational level, and public (vs. private) health insurance, associated with increased risk of maltreatment e.g. for US-born mothers the adjusted RR for the former was 5.27 (95% CI 4.53-6.13), and for the latter 1.84 (1.77-1.90)

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Lee & Goerge 1999 ²¹	USA	1,3,4,5**,6 (High)	Children recorded in maltreatment reports (compared to total child population) No gender breakdown reported; 67% White, 22% Black, 9% Hispanic, 2% Other	Individual	Linked database of social services administrative records and birth registration data Data collected between 1982 and 1994	1,257,149	Area (US county and neighbourhood) based child poverty rate; 2-8 years	Maltreatment: child abuse (sexual or other) and neglect; 0-5 years Adversity measure based on substantiated reports recorded on administrative child surveillance/protection system	Lower prevalence of maltreatment (21.6%) among those living in least poor neighbourhood (defined as <10% children in poverty) compared to neighbourhood with: 10-20% children in poverty (27.3%); 20-40% (24.9%); 40+% (26.2%)

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Lo et al 2017 ²²	China (Hong Kong)	1,2,3,4,5* (Medium)	Chinese-speaking mothers who were aged under 24 years at birth of first child No breakdown of gender of the children reported; all mothers described as 'Chinese'	Individual	Cross-sectional survey Data collected in 2015	392	Household income (below poverty line), receipt of social security payments, maternal unemployment, maternal education; 2.7 years (mean)	Maltreatment: physical abuse and neglect (reported by mothers); 2.7 years (mean) Adversity measure based on the Parent-Child Conflict Tactics Scale (CTS-PC)	Increased risk of maltreatment among those in receipt of social security payments (adjusted OR 2.06 (95% CIs 1.15-3.71) for whole sample, 3.74 (1.68-8.30) for sub-sample of mothers aged 18 years or below), and those in low income household (2.08 (1.12-3.89) where mother aged 18 years or below), but not in relation to maternal education or maternal unemployment variables

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Mersky et al 2009 ²³	USA	1,2,3,5**,6 (High)	Children from low-income, ethnic minority families attending public kindergarten 50% male, 50% female; 93% Black	Individual	Longitudinal cohort Data collected between 1985/86 and 1998	1,411	Maternal education, receipt of low-income based social security payments, living in a poor neighbourhood; 0 years (maternal education, residence in neighbourhood) and 8 years (social security)	Maltreatment: abuse/neglect reported in social services and justice system reports; 6-17 years Adversity measure based on reports in above administrative recording systems (social services and justice)	Maternal education and receipt of low-income based social security payments (but not residence in poor neighbourhood) were 'significantly correlated' with various maltreatment outcomes. Results were more mixed in analyses that adjusted for multiple sociodemographic factors, although social security receipt was associated with 'multiple maltreatment outcomes'.

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Nguyen 2013 ²⁴	USA	1,4,6 (Low)	Children recorded in maltreatment reports Ecological study: no breakdown of individual gender or ethnicity reported	Ecological	Social services administrative records Data collected between 2005 and 2012	58 US counties	Unemployment rate (plus additional measures used in sub-analysis of one single county: unemployment, labour force, median house price, foreclosure rate, social security receipt); 0-17 years	Maltreatment: rate of 'out-of-home' or foster care cases per 1,000 children (rate of 'open child protective services' cases per 1,000 children for single-county sub-analysis); 0-17 years Adversity measure based on substantiated reports recorded on administrative child surveillance/protection system (leading to foster care or 'out of home' care)	No relationship between unemployment and maltreatment rates in the majority of counties; in the additional single-county analyses, increases in unemployment and median house price were associated with decreases in maltreatment rates; uptake of social security benefit associated with a decrease in maltreatment.

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
O'Donnell et al 2010 ²⁵	Australia	1,3,4,5 ^{**} ,6 (High)	All children born in Western Australia 1990-2005 51% male, 49% female; 94% non-Aboriginal, 6% Aboriginal	Individual	Linked administrative data Data collected between 1990 and 2005	397,345	Area-based socio-economic deprivation index; 0-17 years (presumed)	Maltreatment: (neglect or abuse); 0-17 years (presumed) Adversity measure based on substantiated reports recorded on administrative child surveillance/protection system	Those in the most disadvantaged category were at greater risk of maltreatment than those in the least disadvantaged category: e.g. unadjusted HR 14.52 (95% CI 8.16-25.85) for non-Aboriginal children

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
O'Donnell et al 2010 ²⁶	Australia	1,3,6 (Low)	All children born in Western Australia 1980-2005 51% male, 49% female; 96% non-Aboriginal, 4% Aboriginal	Individual	Linked administrative data Data collected between 1981 and 2005	630,062	Area-based socio-economic deprivation index; 0-17 years	Maltreatment: admission to hospital for a maltreatment-related cause (defined by ICD codes relating to abuse and neglect); 0-17 years Adversity measure based on hospital admission data	Those in most disadvantaged category was at greater risk of maltreatment than those in the least disadvantaged category: adjusted OR 18.59 (95% CI 9.15-37.76)

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Palusci & Vandervort 2014 ²⁷	USA	1,3,5*,6 (Low)	Children recorded in maltreatment reports Ecological study: no breakdown of gender or ethnicity reported	Ecological	Child maltreatment reporting system Data collected in 2000	213 US Counties	Unemployment rate, education completion rate, child poverty rate; 0-17 years	Maltreatment: physical abuse, sexual abuse, neglect, medical neglect, psychological maltreatment; 0-17 years Adversity measure based on substantiated reports recorded on administrative child surveillance/protection system	Child poverty rate associated with increased maltreatment rates (adjusted coefficient 0.90, p<0.01); however, there was no association with unemployment or education completion rates

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Putnam-Hornstein et al 2013 ²⁸	USA	1,2,3,4,5**,6 (High)	All children born in California in 2002 51% male, 49% female; 31% White, 51% Latino, 6% Black, 12% Asian/Pacific Islander	Individual	Linkage of birth records to child protection services data Data collected between 2002 and 2007	531,035	Maternal education; at birth	Maltreatment: child abuse and neglect; 0-4 years Adversity measure based on substantiated reports recorded on administrative child surveillance/protection system	Those with lower levels of maternal education at greater risk of maltreatment e.g. unadjusted RR for lowest compared to highest category: 6.28 (95% CI 5.98-6.59)

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Raissian & Bullinger 2017 ²⁹	USA	1,3,6 (Low)	Children recorded in maltreatment reports Ecological study: no breakdown of individual gender or ethnicity reported	Ecological	Child maltreatment reporting system Data collected between 2004 and 2013	44 US states	State minimum wage; 0-17 years	Maltreatment: child abuse and neglect; 0-17 years Adversity measure based on substantiated reports recorded on administrative child surveillance/protection system	Although higher minimum wage levels were associated with lower maltreatment rates for all age groups, none of the estimates were precise or large enough to be clearly different from null effects

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Schick et al 2016 ³⁰	Switzerland	1,2,3,4,5**,6 (High)	Children aged 13-20 years 52% male, 48% female; no breakdown of ethnicity reported	Individual	Cross-sectional survey Data collected between 2009 and 2010	6,787	Parental education and unemployment; 15 years (mean) (range 13-20 years)	Maltreatment: physical abuse, sexual abuse, psychological/emotional abuse, neglect, 'family abduction' (reported by child); 15 years (mean) (range 13-20 years) Adversity measure based on Child Self-Report Version of the Juvenile Victimization Questionnaire (JVQ)	Low parental education (unadjusted OR 1.75, 95% CIs 1.44-2.13), maternal unemployment (1.66, 1.11-2.48) and paternal unemployment (1.80, 1.22-2.65) were associated with increased risk of any maltreatment

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Schuck 2005 ³¹	USA	1,3,6 (Low)	Children recorded in maltreatment reports Ecological study: no breakdown of gender or ethnicity reported	Ecological	Social services administrative records Data collected between 1998 and 2001	67 US Counties	Census tract poverty rates; 0-17 years	Maltreatment: child abuse and neglect; 0-17 years Adversity measure based on substantiated reports recorded on administrative child surveillance/protection system	Observed association between the percentage of female-headed families in poverty with rates of maltreatment: adjusted coefficients (SE) of 1.09 (0.48, p<0.05) and 4.78 (1.62, p<0.01) for Black and White families respectively
Sidebotham et al 2001 ³²	England	1,2,3,5**,6 (High)	Children born in 1991-1992 52% male, 48% female; 95% White, 5% non-White ^x	Individual	Longitudinal cohort Data collected between 1991 and 1998	14,138	Parental education; 0-3 years	Maltreatment: entered onto child protection register for reasons of physical injury, neglect, sexual	Children of mothers with, respectively, lower and higher educational levels at greater (adjusted OR 2.61, 95% CIs 1.48-4.58) and lesser (0.18, 0.05-

^x Although no breakdown of gender or ethnicity is reported in this paper, these figures are reported in a different paper based on the same cohort.

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
								abuse, emotional abuse; 0-5 years Adversity measure based on child protection register data	0.60) risk of maltreatment registration compared to 'middle' level; similar results for paternal education (low education: 3.58, 1.66-7.73; high education: 0.13, 0.03-0.63)
Sidebotham et al 2002 ³³	England	1,2,3,4,5**,6 (High)	Children born in 1991-1992 52% male, 48% female; 95% White, 5% non-White	Individual	Longitudinal cohort Data collected between 1991 and 1998	14,256	Parental occupational social class, paternal unemployment, housing tenure, overcrowding, car use; 0-3 years	Maltreatment: entered onto child protection register for reasons of physical injury, neglect, sexual abuse, emotional abuse; 0-5 years Adversity measure based on child	All four SEP variables associated with increased risk of maltreatment registration: unadjusted OR for paternal unemployment 6.00, 95% CI 3.83-9.41; council housing 26.82, 12.79-56.24 and 'other rented' housing 9.74, 4.17-22.77; overcrowding 7.42, 4.49-12.24;

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
								protection register data	non-car user 9.65, 6.14-15.16
Sidebotham et al 2006 ³⁴	England	1,2,3,4,5**,6 (High)	Children born in 1991-1992 52% male, 48% female; 95% White, 5% non-White ^{xi}	Individual	Longitudinal cohort Data collected between 1991 and 1998	14,256	Parental education, paternal unemployment, housing tenure, overcrowding, car use, mother employed; 0-3 years	Maltreatment: entered onto child protection register for reasons of physical injury, neglect, sexual abuse, emotional abuse; 0-5 years Adversity measure based on child protection register data	Higher risk of maltreatment registration associated with education and deprivation: unadjusted ORs for low parental education 6.65, 95% CI 3.68-12.01, and for any of the 4 deprivation measures (paternal unemployment, tenure, overcrowding, car use) 28.24, 8.84-90.22; maternal employment also associated with decreased risk (0.29, 0.16-0.50)

^{xi} Although no breakdown of gender or ethnicity is reported in this paper, these figures are reported in a different paper based on the same cohort.

Author & year	Country	Quality assessment criteria & overall study quality ^{iv}	Population	Individual/ecological study	Data source	Sample size/no. of units of analysis ^v	Childhood SEP measure(s); age when measured ^{vi}	Childhood adversity outcome measure(s); age when measured ^{vii}	Summary of results
Sulimani-Aidan & Benbenishty 2013 ³⁵	Israel	1,4,5*,6 (Low)	Children recorded in maltreatment reports Ecological study: no breakdown of individual gender or ethnicity reported; however, the local authority areas were described as 67% Jewish and 33% Arab	Ecological	Child maltreatment reporting system Data collected between 2008 and 2009	231 local authority areas	Area-based socio-economic index, average income, unemployment rate, educational attainment rate; 0-17 years	Maltreatment: physical abuse, sexual abuse, neglect; 0-17 years Adversity measure based on substantiated reports recorded on administrative child surveillance/protection system	In Jewish settlements, correlations were observed between maltreatment and both the unemployment rate ($r^2 = -0.51$, $p < 0.01$), and educational attainment rate ($r^2 = 0.14$, $p < 0.05$), but there were no clear associations observed between maltreatment and average income or socio-economic index, or in the analyses of these data for Arab settlements

References for paper listed in supplementary tables

- ¹ Ahmed A., Wan-Yuen C., Marret M.J. et al. Child Maltreatment Experience among Primary School Children: A Large Scale Survey in Selangor State, Malaysia. *PLoS One* 2015; 10(3)
- ² Anderson E.L., Heron J., Ben-Shlomo Y. et al. Adversity in childhood and measures of aging in midlife: Findings from a cohort of British women. *Psychology & Aging* 2017; 32(6): 521-530
- ³ Baglivio M.T., Wolff K.T., Epps N., Nelson R. Predicting adverse childhood experiences: The importance of neighborhood context in youth trauma among delinquent youth. *Crime & Delinquency* 2017; 63(2): 166-188
- ⁴ Doidge J.C., Higgins D.J., Delfabbro P., Segal L. Risk factors for child maltreatment in an Australian population-based birth cohort. *Child abuse & neglect* 2017; 64: 47-60
- ⁵ Mersky J.P., Janczewski C.E., Topitzes J. Rethinking the measurement of adversity: Moving toward second-generation research on adverse childhood experiences. *Child maltreatment* 2017; 22(1): 58-68
- ⁶ Soares A.L., Howe L.D., Matijasevich A. et al. Adverse childhood experiences: Prevalence and related factors in adolescents of a Brazilian birth cohort. *Child Abuse Negl.* 2016; 51: 21-30
- ⁷ Beimers D., Coulton C.J. Do employment and type of exit influence child maltreatment among families leaving Temporary Assistance for Needy Families? *Children and Youth Services Review* 2011; 33(7): 1112-1119
- ⁸ Cherry R., Wang C. The link between male employment and child maltreatment in the U.S., 2000-2012. *Children and Youth Services Review* 2016; 66: 117-122
- ⁹ Curenton S.M., McWey L.M., Bolen M.G. Distinguishing maltreating versus nonmaltreating at-risk families: Implications for foster care and early childhood education interventions. *Families in Society* 2009; 90(2): 176-182
- ¹⁰ Doidge J.C., Higgins D.J., Delfabbro P. et al. Economic predictors of child maltreatment in an Australian population-based birth cohort. *Children and Youth Services Review* 2017; 72: 14-25
- ¹¹ Eckenrode J., Smith E.G., McCarthy M.E., Dineen M. Income inequality and child maltreatment in the United States. *Pediatrics* 2014; 133(3): 454-61
- ¹² Euser E.M., van Ijzendoorn M.H., Prinzie P., Bakermans-Kranenburg M. Prevalence of child maltreatment in The Netherlands. *Child maltreatment* 2010; 15(1): 5-17
- ¹³ Euser E.M., van Ijzendoorn M.H., Prinzie P., Bakermans-Kranenburg M. Elevated child maltreatment rates in immigrant families and the role of socioeconomic differences. *Child maltreatment* 2011; 16(1): 63-73

- ¹⁴ Euser S, Alink L.R.A., Pannebakker F., Vogels T., Bakermans-Kranenburg M., van IJzendoorn M. The prevalence of child maltreatment in the Netherlands across a 5-year period. *Child abuse & neglect* 2013; 37(10): 841-51
- ¹⁵ Freisthler B. A spatial analysis of social disorganization, alcohol access, and rates of child maltreatment in neighborhoods. *Children and Youth Services Review* 2004; 26(9): 803-819
- ¹⁶ Freisthler B., Bruce E., Needell B. Understanding the Geospatial Relationship of Neighborhood Characteristics and Rates of Maltreatment for Black, Hispanic, and White Children. *Social work* 2007; 52(1): 7-16
- ¹⁷ Frioux S., Wood J.N., Fakeye O., Luan X., Localio R., Rubin D.M. Longitudinal association of county-level economic indicators and child maltreatment incidents. *Maternal and child health journal* 2014; 18(9): 2202-8
- ¹⁸ Herrenkohl T.I., Herrenkohl R.C. Examining the overlap and prediction of multiple forms of child maltreatment, stressors, and socioeconomic status: A longitudinal analysis of youth outcomes. *Journal of Family Violence* 2007; 22(7): 553-562
- ¹⁹ Hosseinkhani Z., Nedjat S., Aflatouni A., Mahram M., Majdzadeh R. Socioeconomic inequality and child maltreatment in Iranian schoolchildren. *Eastern Mediterranean health journal* 2016; 21(11): 819-27
- ²⁰ Johnson-Motoyama M., Putnam-Hornstein E., Dettlaff A.J., Zhao K., Finno-Velasquez M., Needell B. Disparities in reported and substantiated infant maltreatment by maternal Hispanic origin and nativity: a birth cohort study. *Maternal and child health journal* 2015; 19(5): 958-68
- ²¹ Lee B.J., Goerge R.M. Poverty, early childbearing and child maltreatment: A multinomial analysis. *Children and Youth Services Review* 1999; 21(43747): 755-780
- ²² Lo C.K.M., Tung K.T.S., Chan K.L., Yip P.S.F. Lau J.T.F. et al. Risk factors for child physical abuse and neglect among Chinese young mothers. *Child abuse & neglect* 2017; 67: 193-206
- ²³ Mersky J.P., Berger L.M., Reynolds A.J. Gromoske A.N. Risk factors for child and adolescent maltreatment: A longitudinal investigation of a cohort of inner-city youth. *Child maltreatment* 2009; 14(1): 73-88
- ²⁴ Nguyen L.H. The relationship between unemployment and child maltreatment: A county-level perspective in California. *Children and Youth Services Review* 2013; 35(9): 1543-1555
- ²⁵ O'Donnell M., Nassar N., Leonard H., Jacoby P., Mathews R. et al. Characteristics of non-Aboriginal and Aboriginal children and families with substantiated child maltreatment: a population-based study. *International journal of epidemiology* 2010; 39(3): 921-8
- ²⁶ O'Donnell M., Nassar N., Leonard H., Mathews R., Patterson Y., Stanley F. Monitoring child abuse and neglect at a population level: patterns of hospital admissions for maltreatment and assault. *Child abuse & neglect* 2010; 34(11): 823-32

- ²⁷ Palusci V.J., Vandervort F.E. Universal reporting laws and child maltreatment report rates in large U.S. counties. *Children and Youth Services Review* 2014; 38: 20-28
- ²⁸ Putnam-Hornstein E., Needell B., King B. Johnson-Motoyama M. Racial and ethnic disparities: a population-based examination of risk factors for involvement with child protective services. *Child abuse & neglect* 2013; 37(1): 33-46
- ²⁹ Raissian K.M., Bullinger L.R. Money matters: Does the minimum wage affect child maltreatment rates? *Children and Youth Services Review* 2017; 72: 60-70
- ³⁰ Schick M., Schonbucher V., Landolt M.A., Schnyder U., Xu W. et al. Child Maltreatment and Migration: A Population-Based Study Among Immigrant and Native Adolescents in Switzerland. *Child maltreatment* 2016; 21(1): 3-15
- ³¹ Schuck A.M. Explaining Black-White Disparity in Maltreatment: Poverty, Female-Headed Families, and Urbanization. *Journal of Marriage and Family* 2005; 67(3): 543-551
- ³² Sidebotham P., Golding J., The ALSPAC Study Team. Child maltreatment in the "children of the nineties" a longitudinal study of parental risk factors. *Child abuse & neglect* 2001; 25(9): 1177-200
- ³³ Sidebotham P., Heron J., Golding J., The ALSPAC study team. Child maltreatment in the "Children of the Nineties:" deprivation, class, and social networks in a UK sample. *Child abuse & neglect* 2002; 26(12): 1243-59
- ³⁴ Sidebotham P., Heron J., The ALSPAC Study Team. Child maltreatment in the "children of the nineties": a cohort study of risk factors. *Child abuse & neglect* 2006; 30(5): 497-522
- ³⁵ Sulimani-Aidan Y., Benbenishty R. Child maltreatment reports in Israel: the intersection between community socioeconomic characteristics and ethnicity. *The American Journal of Orthopsychiatry* 2013; 83(1): 29-36