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Child poverty and children entering care in England, 2015–20: a longitudinal ecological study at the local area level

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Summary

Background Children in care face adverse health outcomes throughout their life course compared with their peers. In England, over the past decade, the stark rise in the number of cared-for children has coincided with rising child poverty, a key risk factor for children entering care. We aimed to assess the contribution of recent trends in child poverty to trends in care entry.

Methods In this longitudinal, ecological study of 147 local authorities in England, we linked data from the Department for Work and Pensions and HM Revenue & Customs on the proportion of children younger than 16 years living in families with income less than 60% of the contemporary national median income, before housing costs, with Department for Education data on rates of children younger than 16 years entering care. Using within-between regression models, and controlling for employment trends, we estimated the association of changing child poverty rates with changing care entry rates within different areas. Our primary outcome was the annual rate of children younger than 16 years starting to be looked after by local authorities in England.

Findings Between 2015 and 2020, controlling for employment rates, a 1 percentage point increase in child poverty was associated with an additional five children entering care per 100,000 children (95% CI 2–8). We estimate that, over the study period, 8·1% of the total number of children under the age of 16 entering care (5·0–11·3) were linked to rising child poverty, equivalent to 10,351 (6,447–14,567) additional children.

Interpretation We report evidence that rising child poverty rates might be contributing to an increase in children entering care. Children’s exposure to poverty creates and compounds adversity, driving poor health and social outcomes in later life. National anti-poverty policies are key to tackling adverse trends in children’s care entry in England.

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Inequalities in child poverty might beget inequalities in children’s wellbeing and child protection outcomes. There is strong evidence of an association between adverse socioeconomic conditions and childhood adversities, including abuse and neglect and subsequent care entry. There is growing evidence from the USA that raising the income of families in poverty leads to a reduction in reported or substantiated child maltreatment rates. Internationally, qualitative research sheds light on how poverty can create need and draw child protection concerns. However, taken by itself, UK evidence is less robust. Although many UK studies report a link between socioeconomic conditions and child protection intervention rates, poor quality routine data, restricted statistical analyses, and a dearth of more up-to-date studies might obscure the strength of the broader evidence base and hinder policy action. The differential rise in child poverty across England because of changing welfare policies introduces the possibility of evaluating the effect on vulnerable children, and the places where they live, as a natural policy experiment. In this study, we aimed to assess the relationship between child poverty and care entry, and to assess the relationship between child poverty and progressively less acute statutory interventions, as follows: children made subject to a child protection plan, considered to be suffering, or likely to suffer, significant harm; and investigation-oriented statutory intervention.

Methods

Data sources and measures
We did a longitudinal, ecological study at the local authority level in England using panel data from 147 English upper-tier local authorities between March, 2014, and April, 2020. We refer to the financial year (April to March) by the latter year throughout. These data take us to the beginning of the first UK lockdown due to COVID-19 (March, 2020), and are unaffected by the changes that followed. Four local authorities were excluded from our analyses: City of London, Shropshire, Wiltshire, and the City of Westminster. Our sample is unaffected by the changes that followed. We refer to the financial year (April to March) by the latter year throughout. These data take us to the beginning of the first UK lockdown due to COVID-19 (March, 2020), and are unaffected by the changes that followed. Four local authorities were excluded from our analyses: City of London, Shropshire, Wiltshire, and the City of Westminster.

Added value of this study

This study contributes to the evidence base in England. To our knowledge, this is the first study to use longitudinal, routinely available data for the whole of England to assess whether areas that saw a greater rise in child poverty between 2015 and 2020 also saw a greater rise in the rate of children under 16 entering care. Using within-between regression models, which incorporate the strengths of both fixed and mixed effects approaches, we determined that, over the study period, a 1 percentage point increase in child poverty rates was associated with an additional five children entering care per 100 000 children (95% CI 2–8) in the same year.

Implications of all the available evidence

Shocks to families’ household income affects children’s experiences of adversity and their outcomes of interactions with child protection systems. Policies in the UK that restrict the eligibility and generosity of welfare benefits might have contributed to rising rates of costly and acute out-of-home care interventions, deepening place-based inequalities in health and wellbeing. The consequences for local authority finances extend beyond children’s social care to restrict funding for other health-promoting place-based public services. This study suggests that local authorities should embed poverty-informed policies in children’s services and beyond. However, national welfare policies are ultimately key to shifting population-level exposure to child poverty, an important socioeconomic determinant of care entry.

5 years, from 2015 to 2020, these data offer reliable estimates of child poverty at the local authority level and highlight the vast inequalities across England. In 2020, before housing costs, Middlesbrough was facing child poverty rates of 39%, compared with 7% in Richmond upon Thames. Inequalities in child poverty might beget inequalities in children’s wellbeing and child protection outcomes. There is strong evidence of an association between adverse socioeconomic conditions and childhood adversities, including abuse and neglect and subsequent care entry. Bywaters and colleagues’ 2016 evidence review characterises poverty as a contributory causal factor in the aetiology of child abuse and neglect. There is growing evidence from the USA that raising the income of families in poverty leads to a reduction in reported or substantiated child maltreatment rates. Internationally, qualitative research sheds light on how poverty can create need and draw child protection concerns. However, taken by itself, UK evidence is less robust. Although many UK studies report a link between socioeconomic conditions and child protection intervention rates, poor quality routine data, restricted statistical analyses, and a dearth of more up-to-date studies might obscure the strength of the broader evidence base and hinder policy action.
London and the Isles of Scilly, due to their small population size, and Bournemouth, Christchurch and Poole, and Dorset, due to boundary changes that could not be reconciled across years.

Our primary outcome was the annual rate of children younger than 16 years starting to be looked after by local authorities in England (henceforth referred to as the sCLA rate). In England, a child looked after designation refers to a child whose care has been transferred to the local authority for more than 24 h. These children are typically accommodated in foster or residential children’s homes, or other residential settings, such as schools or secure units. When a child goes on to be adopted or reaches 18 years, they are no longer considered looked after; if the child returns home, they might cease to be looked after.16

We considered care entry rates, rather than overall care rates, because this outcome is likely to be more sensitive to changes at the level of underlying need. The total numbers of children looked after each year will be a function of the numbers entering care and the length of time children remain in care. The former factor is more likely to be influenced by population-wide socioeconomic trends, and the latter by a wider range of factors, including service-related factors that affect permanency planning for children. Data were sourced from the children looked after data return.1 For reasons of confidentiality, counts between one and five inclusive were suppressed in these data. Therefore, we randomly imputed an integer in this range (appendix p 3).

Secondary outcomes were the annual rate of children younger than 16 years subjected to a child protection plan (henceforth referred to as the sCPP rate) and beginning an episode of need (henceforth referred to as the sCIN rate), supplied by the UK Department for Education following Freedom of Information requests.17–19 Estimates for the total population of children younger than 16 years were derived from Office for National Statistics mid-year population estimates.20

Our main exposure was the proportion of children younger than 16 years living in families with income less than 60% of the contemporaneous national median income, before housing costs.20 We used new children in low-income families (CiLIF) statistics, compiled jointly by the DWP and HM Revenue and Customs (HMRC) using tax, tax credit, and benefits data. Previous estimates of local child poverty rates were either based on household income surveys with insufficient sample sizes for small areas or, as with previous CiLIF data, produced by HMRC alone using family tax credit and benefits data. The old CiLIF data were considered increasingly unreliable—they tended to overestimate out-of-work poverty, were incompatible with official Households Below Average Income (HBAI) survey estimates at the national level, and did not account for the roll-out of Universal Credit.19 By contrast the new CiLIF statistics reflect individual family-level income sources, are calibrated to HBAI estimates at the regional level and by work status, and cover Universal Credit claimants transitioning from tax credits. Further details of the methods can be found on the DWP website.21 In brief, children were identified from HMRC Child Benefit scans. Income was defined as gross personal income from welfare benefits, tax credits, employment, self-employment, or occupational pension, and was equivalised at the household level, adjusting for household size and composition, with an adult couple without children as the reference.12,22

In analyses, we controlled for trends in employment using Labour Force Survey data on local authority-level employment rates for the working age population between March, 2014, and April, 2020.23

Statistical analysis

We used scatter plots to visualise, within each local authority, the association between the absolute change in the child poverty rate and the absolute change in the sCLA rate, between March, 2014, and April, 2020. To visually assess the distribution of changes across England, we mapped changes in exposure and outcome. By use of linear within-between regression models—hybrid models that retain the strengths of both traditional random and fixed effects approaches—we then estimated the association between child poverty and sCLA rate within areas (for the model formula see appendix p 4). In the estimation of within-area effects, these models allowed us to control for time-invariant differences between areas, and national trends affecting all areas equally; we accounted for the correlation of observations within areas by including random intercepts.24 The within-area estimate is equivalent to the estimate derived in a fixed effects framework. The between-area estimates offer additional contextual information on the association between exposure and outcome. We controlled for employment rates, a potential confounder of the association between exposure and outcome. The final model was used to estimate the contribution of trends in child poverty to trends in sCLA rates. To gauge the practical significance of this contribution, we estimated the marginal difference between observed trends in sCLA rates, and trends that might have been expected had child poverty rates from 2015 remained stable, with employment trends unaltered. We estimated the financial costs associated with this difference (appendix pp 4–5) and compared within-area and between-area effects.

We repeated this analysis for each of our secondary outcomes, sCPP, and sCIN rates. We also did robustness tests: using alternative measures of the exposure; fitting Poisson models as an alternative modelling approach; excluding each high leverage observation in turn; and controlling for the additional potential confounder of local authority spend per child on preventive children’s services (appendix pp 5–7).

All models were estimated using the lme4 package in R, version 4.0.1.25
Role of the funding source
The funders of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report.

Results
Summary statistics are presented in the appendix (p 8). Our exploratory scatterplots showed positive associations between the change in the proportion of children living in relative poverty before housing costs, and the change in each of our outcomes, within local authorities, over the whole study period between 2015 and 2020 (figure 1). The association between child poverty and intervention rate appeared more pronounced for children being made subject to a child protection plan. The plots revealed three observations with particularly large change scores. One local authority, Middlesbrough, saw a rise in child poverty of 14·9 percentage points over the study period. Hartlepool and Redcar and Cleveland saw an unusually steep rise in rates of care entry and children being made subject to a child protection plan, respectively (appendix p 9).

The maps in figure 2 show the geographical distribution of changes in child poverty and care entry rates over the study period. These images highlight a double burden of rising rates in the northeast of England, but also in parts of the northwest, the Midlands, and some coastal areas.

Our models support these findings—model estimates are summarised in tables 1 and 2 (for full model output see the appendix p 10). Our main model showed that, between 2015 and 2020, within English local authorities and after controlling for employment rates, a 1 percentage point increase in the child poverty rate was associated with an additional five per 100,000 children entering care in the same year (95% CI 2·–8·). We estimate that 10,351 additional children became looked after over the study period than would have been expected had 2015 child poverty levels remained constant (95% CI 6447–14,567). This finding is equivalent to 8·–1% of the total number of children under the age of 16 entering care over the period (95% CI 5·0–11·3), at an estimated cost of £1·4 billion (0·8 billion–2·0 billion; appendix p 4).

Table 2 presents both the within-area and between-area estimates of our hybrid models. The estimates are congruent—across all outcomes, the association with child poverty was evident across time and place, both within local authorities over time, and between local authorities on average.

The results of our robustness tests validated our main findings (appendix pp 6–7). For our two more acute outcomes, care entry and child protection plan initiation, the association with poverty was robust to the specification of poverty type (appendix p 11). However, for our less acute child in need intervention, the use of after-housing-cost child poverty data nullified the within-area association;
therefore, our findings for this outcome are more tentative. Poisson models yielded similar results to our main linear models and highlight the greater relative increase in children beginning a child protection plan relative to our other outcomes, controlling for employment rates (appendix p 11). Rerunning our analyses, removing, in turn, each observation that might be influential, led to slightly attenuated point estimates in some cases, but did not meaningfully change our inferences (appendix pp 11–12). Controlling for the additional potential confounder of local authority prevention spend did not alter our findings (appendix p 12).

Discussion

Between 2015 and 2020, across England, after controlling for employment rates, local authorities that saw a greater rise in child poverty had greater increases in the rate of children entering care, the most drastic state intervention into the lives of children and families. These same local authorities also had greater increases in rates of children becoming subject to a child protection plan and beginning an episode of need. Our estimates of the additional numbers of children experiencing intervention—estimates that convey the magnitude of the problem of rising child poverty—are large and relevant to practice. We estimate that the rise in child poverty from 2015, largely the consequence of cuts to welfare benefits, was associated with an additional 10,351 children entering care, 22,945 children being placed on a child protection plan, and 51,736 children beginning an episode of need between 2015 and 2020. These increases have disproportionately affected more deprived local authorities that are less able to manage them, deepening inequalities. The congruent within-area and between-area estimates strengthen our confidence in the findings and suggest that, beyond the study period, deep, long-standing inequalities in intervention rates across the country might be largely attributable to enduring differences in

Figure 2: Maps of England showing the percentage point increase in the proportion of children in relative poverty, and the change in care entry rates per 100,000 children, within local authorities, over the period 2015–20

Data for the local authorities of City of London, Isles of Scilly, Dorset, and Bournemouth, Christchurch and Poole are not shown. Data show total change from 2015 to 2020.
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### Table 2: Summary of regression coefficients for the within-area and between-area change in primary and secondary outcomes associated with a change in the child poverty rate

|                                      | Within-local authority annual change in the rate per 100,000 children for a 1 percentage point increase in child poverty, controlling for employment rates ($\beta_w; 95\% CI$) | Between-local authority mean change in the rate per 100,000 children for a 1 percentage point increase in average child poverty rates between local authorities, controlling for employment rates ($\beta_b; 95\% CI$) |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Children starting to be looked after  | $5.2 (2.2–8.3)$                                                                                                                 | $8.9 (4.9–12.8)$                                                                                                               |
| Children made subject to a child protection plan | $19.3 (12.4–26.3)$                                                                                                               | $18.0 (10.2–25.8)$                                                                                                               |
| Children beginning an episode of need | $52.2 (13.6–90.8)$                                                                                                               | $38.8 (3.4–74.3)$                                                                                                               |

For full model output see the appendix (p 10).

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child poverty rates. This possibility bears further investigation using linked, individual-level data.

Our analysis adds to growing quantitative evidence of the contributory causal nature of the relationship between child poverty and children's social care involvement, much of it from the USA.\(^{13}\) Notwithstanding the different country contexts, our findings echo US ecological area-level analyses of the association between changing economic indicators and substantiated maltreatment incidents.\(^{24}\) The findings are consistent with quasi-experimental evidence showing the impact of exogenous shocks to household income on a range of child welfare outcomes.\(^{25-29}\) Few datasets allow linkage of data on income and children looked after at the individual level. The Danish DANLIFE cohort is an example of such linkage and shows higher rates of foster care in families with low socioeconomic conditions, at the individual level.\(^{30}\) Similar data linkage efforts are underway in the UK and elsewhere.

Intentional or incidental, policies that move children into poverty might trigger cascading inequalities through child protection systems and beyond, as poverty clusters with the very childhood adversities it produces.\(^{11}\) giving rise to further inequalities in health, life, and death.\(^{7}\) This, in turn, has consequences for the most deprived places and communities. Places that have the double burden of increased child poverty and increased numbers of children requiring intervention must shoulder the wider societal costs of children's impaired life chances, in education, physical and mental health, criminal justice, and economic contexts.\(^{15}\) Given the widening scope of children's services activity in England—of the cohort of children born in 2010, more than one in five were referred to children's services before the age of five— the magnitude of this public health challenge is likely to be vast.

In the shorter term, the huge costs to local authorities of caring for these children entail opportunity costs within and beyond children's services. Central government funding to local authorities was £29 billion lower in 2020 than in 2010, equivalent to a 77% fall in revenues per person. Budgets are finite and increasingly devoted to acute social care services.\(^{12}\) Waning local authority investment in other place-based public services that promote health and wellbeing could further deepen geographical inequalities, impeding the UK Government's bid to level-up places that have historically been left behind, as part of the pandemic recovery effort.\(^{12}\)

The mechanisms by which income affects social care outcomes are increasingly clear. Explanatory models, such as the family stress, investment and social models, describe how poverty might affect children directly, through material hardship, and indirectly, through the effect on family functioning.\(^{21}\) Although the supply of child protection services might play a role in producing and replicating inequalities, there is strong evidence that poverty acts at the level of underlying need.\(^{11}\) A systematic review of the effect of household income on children's outcomes in Organisation for Economic Co-operation and Development countries identified concrete evidence for a number of theorised causal pathways. In particular, this review identified a causal effect of income on known risk factors for child protection interventions, including maternal mental health, parenting, and home environment.\(^{11}\) These findings support the plausibility of causal models to investigate the effect of poverty on children’s care entry.\(^{12}\) Moreover, the authors of the review note the larger effect sizes in experimental and quasi-experimental approaches compared with fixed effects approaches, suggesting that our own findings might be conservative.\(^{11}\)

To our knowledge, this is the first study in England to assess the relationship between child poverty and statutory child welfare interventions using longitudinal within-between models, and data for the whole of England. The study was made possible by the publication of higher quality local authority-level official child poverty data, spanning the 5 years from 2015 to 2020. These data improve on previous local area estimates of child poverty by pooling data from the DWP and HMRC to capture both in-work and out-of-work poverty.

Our study has several limitations. First, the lack of individual-level data on the socioeconomic conditions of child welfare-involved families led us to use an ecological design, and we cannot tease apart phenomena at the level of the individual, household, and wider community. Our focus on aggregate effects nevertheless reflects the need for place-based approaches to reducing health inequalities. Second, the new child poverty data were only available for a 5-year time span. Our analytical approach makes use of the variation in exposure between areas to assess the contribution to changing intervention rates within areas, and the time period is therefore appropriate. However, the analysis should be repeated as more data become available.

Third, our within-between models might be subject to residual confounding by omitted time-varying variables that affect both exposure and outcome; we were also unable to consider causal lags without substantial loss of power. However, we can conceive of no other variables that are likely to affect both area-level child poverty and care entry that are not also likely to be important...
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mediators of the relationship of interest. This consideration, in combination with the strength of the associations, the consistency of within-area and between-area estimates, and of our estimates with the international literature, and the plausibility of the relationship given the known impact of child poverty on family-level risk factors for care entry, are suggestive of a causal effect.36

Finally, the data have shortcomings. We used the best available UK estimates, which capture families’ main income streams. However, the child poverty data measure gross income, rather than net income, and exclude some kinds of income, for example, income from investments. Moreover, in child poverty statistics, a young person aged 16–19 years is considered a child if they are in full-time, non-advanced education. Children and young people aged 16 and over, who are not in full-time education, are not counted. Changes to eligibility criteria for child tax credits mean that the relevant denominator cannot be accurately specified. As a result, Office for National Statistics mid-year population estimates are used to derive a child poverty rate, dictating the pragmatic exclusion of children over the age of 15 years. We have constrained the age range of our outcomes accordingly, excluding from our purview a group of children who represent an increasing proportion of children entering care.37

Our results have substantial policy implications. Despite the importance of child poverty as a risk factor for becoming looked after, there remain obstacles to its recognition. Research into the place of poverty in UK practice identifies both social workers’ reluctance to stigmatise poverty by making the link with child maltreatment, and, counter-intuitively, the persistence of an underclass discourse that is itself stigmatising.35 Describing poverty as the “wallpaper of practice: too big to tackle and too familiar to notice”,36 Morris and colleagues advocate for the use of poverty-aware social work paradigms.

Our findings complement this assessment. For the two more acute outcomes—care entry and child protection plan initiation—an association with child poverty was evident, regardless of the measure of child poverty used, suggesting that support needs tied to changing socioeconomic conditions often result in the most intrusive interventions. However, for the less acute child-in-need status, robustness tests were less conclusive. Changing socioeconomic conditions do not as reliably or consistently result in more upstream, family-oriented interventions—such as those intended to accompany child-in-need status. Children’s needs are likely to increase with increasing child poverty. But the provision of child-in-need services might not, supporting concerns about an underfunded, risk-averse child protection system, increasingly focused on acute, investigatory statutory interventions at the expense of prevention and family support.36 These findings underscore the need for an approach to child protection that explicitly addresses the socioeconomic conditions of families’ lives.

There are emerging signs of a paradigm shift across the UK, efforts to “strip the wallpaper of practice”.37 Local area policy makers could redouble these efforts by embedding poverty-informed policies in children’s services and multiagency partnerships. However, and particularly in the context of constrained resources and decision making environments in local authorities, shifting population-level exposure to the risk factor of child poverty requires a national policy effort.

At the national level, there has been a tendency to obscure the reality of trends in child poverty, and a reluctance to acknowledge the relationship between poverty and care entry. The word poverty does not appear in the UK Department for Education’s 2016 strategy for children’s social care or other key reports.38–40 These reports acknowledge a correlation between deprivation and use of child protection interventions but go no further. Our study presents evidence that rising child poverty is contributing to care entry and other statutory interventions. National efforts to reverse adverse trends in care entry, interrupt spiralling corporate parenting costs, and reduce inequalities, should prioritise poverty alleviation. Policy makers might begin by setting ambitious, achievable child poverty targets. Increasing the generosity of welfare support to families with children would probably have a rapid and lasting impact. In the UK, restoring the £20 Universal Credit uplift (appendix pp 4–5), extending the same uplift to those on legacy benefits, and reversing cuts to welfare benefits, including the two-child limit and lowered benefit cap, would lift millions of children out of poverty.41 These policy proposals would dovetail with the UK Government’s own levelling-up post-pandemic recovery agenda, disproportionately benefiting the most deprived communities. Meanwhile, increasing central government funding to local authorities, with funding proportional to need, would support a shift away from reactive, acute intervention, towards preventive support. Although our analysis presents a grim picture, child poverty is a modifiable risk factor for care entry, which is highly amenable to policy intervention, where there is political will.

Contributors

DLB is lead author and guarantor. DT-R is senior author. DLB, DT-R, and BB conceived of the study. DLB planned the analysis. DLB and AA acquired the data. DLB did the analysis, with support from all authors. DLB and DKS accessed and verified the underlying data, and all authors had access. DLB led the drafting and revision of the manuscript; all authors reviewed and revised drafts and approved the final version for submission.

Declaration of interests

We declare no competing interests.

Data sharing

All data used in this study are publicly available.

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