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RESEARCH ARTICLE

Social care in childhood and adult outcomes: double whammy for minority children?

Amanda Sacker, a.sacker@ucl.ac.uk
University College London, UK

Emily T. Murray, emily.murray@essex.ac.uk
Essex University and University College London, UK

Barbara Maughan, barbara.maughan@kcl.ac.uk
King's College London, UK

Rebecca E. Lacey, rlacey@sgul.ac.uk
St George's University of London and University College London, UK

Background: Children in social care report poor outcomes in many aspects of their later lives. Less is known about differences by ethnicity.

Objective: We examined the health, socio-economic, family and living arrangements across the first three decades of adult life by the intersection of ethnicity (White, Black, South Asian) with social care.

Participants and setting: Linked census and life events data for a 1% sample of the population of England and Wales in the ONS Longitudinal Study. Participants were dependent children in 1971–2001 (analytic sample $n = 669,474$).

Methods: Categorical regression models compared health, socio-economic circumstances, living arrangements and relationships, controlling for country of birth, childhood census year, childhood and adult age in years, gender, and head of household social class, qualifications, employment status and marital status.

Results: Adverse adult outcomes following social care in childhood were conditional on the interaction of social care with ethnicity, mainly in the socio-economic domain. For some outcomes the White group had the poorest outcomes: for example, 15% lower probability of being employed than other White people (65% versus 80%). Black adults with a history of social care did not differ from other Black adults, except for the lowest probability of acquiring their own home, while care-experienced South Asian adults did not differ from other South Asian adults.

Conclusion: Minority ethnicity moderated the social care to adult outcomes relationship in both positive and negative ways. Overall, there was little evidence of intersectionality for Black children in social care affecting their life chances.

Key words ethnicity • child • social care • follow-up study • census

Key messages

- Child social care is linked to poor outcomes in many aspects of later life, but less is known about ethnic variation.
- Ethnicity moderated the impact of social care mainly for socio-economic outcomes and their downstream correlates.
- South Asian individuals fared better than Black people if they had been in social care.
- A history of social care affected White adults more than Black or South Asian children.

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Introduction

A child is placed in social care by the local authority (council) following a care order given by the court when there is evidence that the child is being harmed or in danger of being harmed by their situation or by their own or others' behaviour. The council is given Parental Authority to safeguard the welfare of the child in order for them to be safe and supported to stay well and healthy. The most common reasons for children entering social care are neglect (including emotional and basic needs), abuse (physical, emotional or sexual), family dysfunction (where parenting capacity is chronically inadequate), parent illness (physical and mental), and other difficulties such as parental incarceration or losing the family home (ONS, 2022). Less common in more recent years are abandonment (usually, soon after birth) and death of a parent. Older children may also need social care if they are exposed to criminal or sexual exploitation, or because of their own behaviour, such as running away, truancy or offending (FosterCare UK, nd).

There are well-known ethnic variations in social care placement numbers in the UK and elsewhere (Lu et al, 2004; Owen and Statham, 2009; Wijedasa, 2015; Mc Grath-Lone et al, 2016; Bywaters et al, 2017; Villagrana, 2017). Ethnic minority groups such as Black African and Caribbean are over-represented among children in social care (Wijedasa, 2015; Villagrana, 2017) and South Asian groups are under-represented (Lu et al, 2004).

Bywaters et al (2019) provide a thorough review of ethnic inequalities in child welfare. Their framework for theorising these inequalities separated data quality issues from demand and supply factors. Among data quality issues, compared with majority White population, the proportions of Black and South Asian children in social care may be artificially low due to more extensive use of private fostering arrangements such as kinship care which are unrecorded in official social care data (Selwyn and Nandy, 2014).

Alternatively, on the demand side, adverse socio-economic circumstances in which children live disproportionately affect minority children, although White families in disadvantaged neighbourhoods may be more likely than minority families to be living there because of more extensive additional difficulties. On the other hand, Black and South Asian families may opt to stay in places where they are more likely to receive support from family, friends and community organisations or where they are less likely

to face discrimination. Discrimination may also be a factor holding minority families back from moving to more advantaged neighbourhoods. Family and cultural factors may also have a role since Black children are more commonly brought up by a single parent, whereas South Asian parents tend to have larger family networks to help with childcare. However, Bywaters warns against making assumptions about a link between these factors and social service interventions. Some studies find Black children's over-representation can be explained by socio-economic deprivation (Bywaters et al, 2017), yet other studies highlight discrimination (Chand, 2008; Hunter, 2019). Bywaters and colleagues (2019) found evidence supporting both deprivation and discrimination.

Finally, on the supply side, institutional racism and social-worker bias might affect decisions about whether to take out a care order. When resources are stretched, rationing may disproportionately affect some populations more than others. Bias has been found to explain rates of Black children in social care (Chand, 2008; Bywaters et al, 2017). While barriers to equal access across ethnic groups have been identified, a counterargument is that some groups may be subject to greater surveillance than others because of expectations of different levels of danger to children. Both in the UK and US, an 'Asian paradox' has been noted: despite coming from more deprived backgrounds (a common predictor of social care), South Asian children are under-represented in care statistics (Lu et al, 2004; Bywaters et al, 2019). Whether this is due to bias or to private fostering arrangements by family is currently an open question. Placements in social care are also said to follow the 'Inverse Intervention Law', whereby interventions are more common for children living in less deprived areas than for children in more deprived areas (Bywaters et al, 2015; Elliott and Scourfield, 2020). Again, the impact this process might have on variation in ethnic rates of social care placements is unknown.

This study examines the evidence on ethnic variations for children living in the period 1971 to 2001. On 31 March 1971, 87,377 children were in the care of local authorities in England and Wales. Just over 40% were fostered, with the remainder in residential care (Meltzer et al, 2008). This represents a rate of ≈ 65 per 10,000 children under 16 years. On the same day in 2001 there were 62,831 in social care, a rate of ≈ 54 per 10,000 children. In 2022, the last year official statistics were published prior to writing, rates had increased again, with 89,350 children in care in England and Wales (≈ 72 per 10,000 children).

Several policy and practice changes affecting children in care have taken place between the 1970s and the turn of the century. The 1969 Children and Young Persons Act stipulated the duty of care of children under 17 years old by local authorities. In 1971, social work services and social care provision for children were unified in social services departments. The report from a subsequent inquiry (DHSS, 1974) highlighted a serious lack of coordination within child protection services and led to the setting up of local area child protection committees to coordinate decisions by agencies responsible for children's safety when at risk. Following this, being looked after by a local authority was enshrined in the United Kingdom Children Act 1989 when a court had granted an order to place a child in social care, or a council's children's services department had cared for the child for more than 24 hours. The 1989 Children Act legislated that local authorities had a duty to prepare children for leaving care, which came into effect in 1991. Finally, the Children Leaving Care Act 2000 laid down guidelines for better support during the transition to independent living.

Children in social care are at higher risk of adverse outcomes later in life (Cheung and Buchanan, 1997; Buehler et al, 2000; Viner and Taylor, 2005; Cashmore and Paxman, 2006; Meltzer et al, 2008; Akister et al, 2010; Zlotnick et al, 2012; Botchway et al, 2014; Craine et al, 2014; Murray et al, 2020a; 2020b; Sacker et al, 2022). This includes outcomes such as poorer mental health (Cheung and Buchanan, 1997; Viner and Taylor, 2005; Cashmore and Paxman, 2006; Akister et al, 2010; Dregan and Gulliford, 2012) and physical health (Viner and Taylor, 2005; Cashmore and Paxman, 2006; Murray et al, 2020b), less education and lower qualifications (Buehler et al, 2000; Viner and Taylor, 2005; Cashmore and Paxman, 2006), less employment and more disadvantaged socio-economic position (Buehler et al, 2000; Viner and Taylor, 2005; Cashmore and Paxman, 2006), relationships and family formation differences (Buehler et al, 2000; Botchway et al, 2014; Craine et al, 2014) and poorer living conditions (Cashmore and Paxman, 2006). In addition, some studies find ethnic minority groups who have been in social care are at increased risk of adverse adult outcomes compared with the White majority care-experienced group (Barn et al, 2005; Dworsky et al, 2010; Harris et al, 2010; Garcia et al, 2012; Villagrana, 2017; Combs et al, 2018; Tessier et al, 2018; Prince et al, 2019; Watt and Kim, 2019).

However, there are difficulties in interpreting these findings. First, it is well known that there are ethnic inequalities in outcomes in adulthood more generally (Shiner and Modood, 2002; Nazroo, 2003; Hills, 2010; Barnard and Turner, 2011; Jivraj and Simpson, 2015; Platt, 2019). Most research on ethnic differences in outcomes after care has sampled care-experienced children only (Barn et al, 2005; Dworsky et al, 2010; Harris et al, 2010; Villegas et al, 2011; Garcia et al, 2012; Villegas and Pecora, 2012; Combs et al, 2018; Prince et al, 2019; Watt and Kim, 2019). Without a comparator group of children in parental care, confounding cannot be ruled out as an explanation for the excess risk to minority children in social care. Could the observed ethnic inequalities in outcomes associated with social care simply be a consequence of ethnic inequalities in general? Second, most research in this area is retrospective (Barn et al, 2005; Dworsky et al, 2010; Villagrana, 2017) or only follows up children for a few years (Tessier et al, 2018). Both designs have disadvantages that can affect reliability and hence their usefulness for policy. Third, many studies have small samples, are unrepresentative or collect qualitative data which tends to involve small non-random samples (Barn et al, 2005; Mantovani and Thomas, 2014; Combs et al, 2018). Again, reliability of findings is an issue. Fourth, almost all published studies relate to the US where ethnicity and race have different meanings and implications from those in the UK (Dworsky et al, 2010; Harris et al, 2010; Villegas et al, 2011; Garcia et al, 2012; Villegas and Pecora, 2012; Villagrana, 2017; Combs et al, 2018; Yi and Wildeman, 2018; Prince et al, 2019; Watt and Kim, 2019). We do not know if we can extrapolate their findings to the UK.

This study adds to the literature in several ways. First, by taking an intersectional approach (Crenshaw, 1989). Intersectionality theory originally developed understanding of ethnic and gender-based inequalities by arguing that Black African women, for example, are affected by mutually created ethnic and gendered influences, and that inequalities cannot be understood by treating ethnicity and gender as distinct subjects of analysis. We found no evidence of interactions between social care and gender influencing adult outcomes in previous work (Sacker et al, 2022). However, from an intersectional perspective, ethnicity and social care may interact (Rambajue and O'Connor, 2022), so that ethnicity changes the experiences of care,

and social care changes the experience of ethnicity. The two sources of inequality are not mutually exclusive categories. Inequality in adult outcomes evolves over time as ethnicity potentially influences both decisions about social care orders as well as experiences of care. In turn, the choices made by different ethnic groups as they transition to adulthood and beyond are affected by the constraints experienced by those living apart from their parents.

Taking the findings from the literature on ethnic inequalities in child social care orders and ethnic inequalities in adult outcomes following placement in social care, it is possible to make some predictions but without much conviction. In deprived neighbourhoods, White children may be exposed to more difficult circumstances than minority children, suggesting consequent adverse outcomes in adulthood being more likely. Alternatively, if the inverse care law holds then minority children could be in more difficult circumstances to receive a care order, suggesting consequent adverse outcomes in adulthood being more likely for them than for the White majority. On the other hand, if there is a social work bias leading to Black children in less difficult circumstances entering care, then Black children could have more positive adult outcomes than South Asian children. Finally, data quality influences related to study design could account for reports of poorer adult outcomes for minority children.

This work is based on data from a large representative study, namely the Office of National Statistics (ONS) Longitudinal Study (LS). The LS, started in 1971, contains linked census and life events data for a 1% sample of the population of England and Wales. This makes the LS the largest longitudinal study of these populations, with records on approximately 1 million people, collected over 40 years. Advantages of the LS are that in combination with the very large sample size, it has low levels of attrition, making it ideal for research into small and hard-to-reach subpopulations. Using these data, we hypothesise that adverse adult socio-demographic and health outcomes following an experience of social care will be conditional on the intersection of social care with ethnicity, although we make no predictions on how this intersectionality will play out.

Data

The LS was drawn initially from respondents to the 1971 England and Wales census who were born on one of four dates in the calendar year (Shelton et al, 2018). Similar 1% samples have also been drawn from the 1981–2011 decennial censuses. The ONS has linked records for each census after LS members were first sampled to create a longitudinal data set. Census data are also collected on LS members' co-residents, but these are cross-sectional only. LS members' data from birth, death and cancer registers have been added to the LS since 1971.

Inclusion and exclusion criteria

Dependent children were defined as aged <18 years, never married, and not living independently. Children not in their usual home on census day were excluded. For each census from 1971–2001, household grid and residence type data were used to classify dependent children as living with a parent or not. Those in non-parental care could have been living with an adult relative, with an unrelated family, or in residential care (children's home, place of detention) on census day. Those living

in other types of communal establishment (such as hotel, hostel or hospital) at the time of the census were excluded. We also excluded children living with an adult relative as research has shown that the vast majority of these children were living with a relative informally and not with a care order (Nandy et al, 2011). By contrast, children living with a non-relative were mainly fostered under a care order (McGrath and Ashley, 2021).

Main exposures

The main exposures were ethnicity, social care and their interaction.

Care type

Care type was classified as 0: parental care or 1: in social care. The social care group comprised dependent children living in residential care or with a family to whom they were not related at the time of a census. We explored whether it was possible to analyse children in foster and residential care separately, but ONS rules on disclosure prevented publication of much of the disaggregated care type by ethnicity analyses.

Ethnicity

Information on ethnicity is only available from 1991, so for LS children in the 1971 and 1981 censuses, ethnicity was taken from later censuses. The wording on ethnicity changed in each census. The derived LS ethnicity data comprises 35 ethnic identities in 1991; 695 identities combined into 16 groups in 2001; and 760 identities combined into 18 groups in 2011. We reduced the number of groups to four: 0: White; 1: Black (African, Caribbean, Black British, mixed Black/other); 2: South Asian (Indian, Pakistani, Bangladeshi, mixed South Asian/other); and 4: Other. Because the Other category is so heterogeneous, we dropped this category from the analysis. A more detailed description of the derivation of ethnicity is given in Appendix 1.

Outcomes

The outcome variables cover the domains of health, socio-economic circumstances, living arrangements, and family formation/relationships. Health outcomes are taken from the 2001 and 2011 censuses and social outcomes from the 1981 to 2011 censuses.

Health

There are two indicators – self-rated health (SRH) and limiting long-term illness (LLTI). In 2001 the SRH question was, ‘over the last 12 months would you say, your health has on the whole been: good, fairly good or not good?’ In 2011, it was ‘How is your health in general?’ with values very good, good, fair, bad and very bad. Responses were dichotomised into 0: Good versus 1: Not good (values: fairly good / not good in 2001; fair / bad / very bad in 2011), to give proportions consistent with the distribution in other UK large-scale health surveys. The 2001 LLTI item asked if respondents had ‘a long term illness, health problem or disability which limits your daily activities or the work you can do’. In 2011, the question became, ‘Are your day-to-day activities limited because of a health problem or disability which

has lasted, or is expected to last, at least 12 months: yes – limited a lot, yes – limited a little, or no’. Responses were dichotomised into 0: Not limited versus 1: Limited.

Socio-economic circumstances

Socio-economic variables included educational level, long-term non-employment, current employment status and social class. Highest qualification level was harmonised across census years into the categories 0: ≥ 18 years qualifications (A levels or higher); and 1: < 18 years qualifications. Those who were ≥ 16 years old were asked if they were currently working and if not the number of years since they last worked (1991 census or if they had no paid work in the last ten years (2001–11)). From these responses, a variable indicated whether the individual was long-term non-employed (≥ 10 years, value 1) or not (value 0). Current employment status is a categorical variable indicating whether the person was working (0) unemployed (1), in education (2) or otherwise out of the labour force (3). Social class is measured using the three-category National Statistics Socio-economic Classification (NS-SEC): 0: Managerial/professional; 1: Intermediate occupations; 2: Routine occupations (Rose and Pevalin, 2003); plus 3: Not Known if the LS member did not give sufficient details to give them a social class.

Living arrangements

Housing tenure indicates whether the home is owner occupied (0), rented (1), or other (2). Overcrowding was defined as a ratio > 1.5 of the number of persons in the household to the number of rooms (0 versus 1, overcrowded). Living alone is derived from questions on household composition (0 no; 1 yes).

Relationships

Marital status is defined as legally married (0); divorced/widowed (1); or single (2). For women, the LS is linked to the Births Registration form, from which number of children and age at first child was taken. Number of children was recoded into 0, 1–2, and 3+ children. Age at first child was used to derive a binary teenage mother variable 0: no; 1: yes.

Covariates

Demographic variables

Country of birth, childhood census, childhood and adult age in years and gender (0 male; 1 female) were taken from the census in which a child was observed. Country of birth was collapsed into UK-born (0) and born outside the UK (1). Childhood censuses were coded 0: 1971; 1: 1981; 2: 1991; and 3: 2001.

Childhood socio-economic variables

Data on the socio-economic environment were only available for children in private households. For children in residential care, data were taken from the previous or subsequent census if a dependent child was living with a parent at that time. Otherwise, a ‘Missing’ category was assigned. Head of household (HoH) social class was measured using the three-category NS-SEC as before. Educational level identified whether the HoH had 18+ years qualifications or not. HoH employment indicated if they were currently in work (0) or not (1). HoH marital status was collapsed into three categories: legally married (0), divorced/widowed (1) or single (2).

Analysis

Data from census years 1971 to 2001 were pooled and matched with follow-up data from 1981 to 2011. LS members could have up to two observations from censuses in childhood and up to three observations in adulthood, resulting in a maximum of six records per LS member. The background characteristics of the analytic ($N = 669,474$) and full data samples are very similar (Appendix table A2.1). The characteristics of the analytical sample and those excluded due to loss to follow-up or item non-response show that most data were missing on HoH social class and that those excluded were more likely to be socio-economically disadvantaged.

The socio-demographic characteristics of children in parental care and social care by ethnic group were compared using independent samples t-tests or non-parametric equivalents. Regression models (logistic or multinomial, as appropriate) were fitted with standard errors adjusted for clustering of observations for each LS child. Standard regression models assume all observations are independent of each other while cluster-robust standard error estimates allow for intra-child correlations, thereby preventing incorrect conclusions being drawn due to over-precise estimates of the regression coefficients. A sample breakdown by ethnic group and social care is shown in Table 1. The number of observations varied across outcomes, but they were at or close to the maximum within follow-ups except for SRH and LLTI where availability was restricted to the most recent censuses. Models estimated the ethnicity by social care interaction controlling for all covariates listed above.

We report marginal effects (MEs) by ethnic group. For non-linear outcomes, MEs give the probability of the outcome for each LS member conditional on all other covariates at their mean values. Together with estimates of the marginal values, which tell us the difference in the probability of each outcome between those in social care compared with parental care by ethnic group, we assess (1) whether the association between social care and each outcome varies by ethnic group and (2) how the association between social care and each outcome differs by ethnic group.

All work was carried out using Stata version 17 (StataCorp, 2021).

Results

The socio-demographic characteristics of children in parental care and social care by ethnic group are given in Table 2. Black and South Asian children were more likely to have been in social care than White children, as were children born outside the UK. No gender imbalance was seen. Children in social care lived in households

Table 1: Maximum number (percentage) of childhood observations with follow-up data, ONS Longitudinal Study

	Parental care	Social care		Total
		Foster care	Residential care	
White	635,469 (99.53)	1,934 (0.30)	1,070 (0.17)	638,473 (95.37)
Black	10,926 (97.52)	174 (1.55)	104 (0.93)	11,204 (1.67)
South Asian	19,671 (99.36)	16 (0.08)	110 (0.56)	19,797 (2.96)
Total	666,066 (99.49)	2124 (0.32)	3,408 (0.51)	669,474 (100.00)

Note: Number varies for different adult outcomes.

Table 2: Childhood sample characteristics by care type and ethnic group: ONS Longitudinal Study

	Parental care			Social care		
	White	Black	South Asian	White	Black	South Asian
N	212,553	4,586	8,638	1,001	121	59
Obs	635,469	10,926	19,671	3,004	278	126
UK-born (%)						
Yes	0.98	0.90	0.75	0.97	0.91	0.54
No	0.02	0.10	0.25	0.03	0.09	0.46
Gender (%)						
Male	0.49	0.45	0.50	0.47	0.48	0.60
Female	0.51	0.55	0.50	0.53	0.52	0.40
Census cohort (%)						
1971	0.44	0.37	0.20	0.39	0.51	0.26
1981	0.33	0.32	0.36	0.37	0.31	0.36
1991	0.17	0.20	0.31	0.21	0.14	0.30
2001	0.06	0.11	0.13	0.04	0.04	0.08 ²
HoH social class (%)						
Managerial/professional	0.30	0.18	0.21	0.16	0.14	0.10
Intermediate	0.34	0.32	0.28	0.22	0.16	0.14
Routine	0.36	0.50	0.51	0.26	0.32	0.63
N/A ¹	0.00	0.00	0.00	0.36	0.37	0.13
HoH qualifications (%)						
≥ 18-year qualifications	0.15	0.13	0.15	0.08	0.09	0.08
< 18-year qualifications	0.85	0.87	0.85	0.57	0.54	0.80
N/A ²	0.00	0.00	0.00	0.36	0.37	0.12 ²
HoH employment (%)						
In work	0.93	0.87	0.85	0.55	0.55	0.68
Unemployed	0.04	0.07	0.10	0.05	0.04 ³	0.12
OLF	0.03	0.06	0.05	0.04	0.05	0.08 ²
N/A ¹	0.00	0.00	0.00	0.36	0.37	0.12
HoH marital status (%)						
Married	0.93	0.78	0.97	0.49	0.41	0.73
Divorced/widowed	0.05	0.08	0.02	0.07	0.08	0.07 ²
Single	0.01	0.14	0.01	0.08	0.14	0.08
N/A ¹	0.00	0.00	0.00	0.36	0.37	0.12
Mean childhood age	9.69	9.52	9.55	11.5	9.97	11.14

Notes:

Sample characteristics are summarised across all observations.

Obs: observations; HoH: head of household; OLF: out of the labour force (for example, homemaker/carer; permanently sick, other).

¹Cell count zero by design.

²Cell count < 10; column percentages recalculated after replacing cell count = 10 to prevent disclosure.

where the HoH was more likely to have fewer qualifications, be in the Routine than the Managerial/Professional social class and be non-employed and unmarried (either single or divorced/widowed).

Comparisons of the prevalence of adult outcomes by ethnicity and care type show no difference in SRH by ethnic group in the social care group (Appendix table A2.2). There was a suggestion that Black adults who had lived in parental care in childhood were more likely to report poor SRH than Whites or South Asians in parental care. By contrast, although differences in long-term illness among the parental care category mirrored those for SRH, White care-experienced adults reported more LLTI than the ethnic minorities. On average, White adults had the lowest qualifications irrespective of care type but there was no consistent pattern for the minority groups. The White group was less likely to be in work if they had been in social care, but the ethnic minority social care groups were not, despite lower employment rates in general. Black adults were less commonly owner-occupiers regardless of care type and South Asians people were more often living in overcrowded accommodation and least often living alone in adulthood. Black adults were more often single irrespective of care type and South Asian women were least likely to be teenage mothers.

The marginal effects from the regression models are presented next. The original regression coefficients are given in Appendix table A2.3 together with full details of the marginal values, Δ , in Appendix table A2.4.

Health

The association between social care and the health measures varied by ethnic group, with greater evidence for SRH than for LLTI. All LS members who had been observed in parental care had a similar predicted probability of poor SRH in adulthood (Table 3), but a history of social care was associated with an 11–12% increase in poor SRH for the White and South Asian groups but not for the Black group. There was also a similar probability of LLTI for all ethnic group members who had been in parental care, but only the White social care group had a higher probability of LLTI than the White parental care group ($\Delta = 0.08$, 95% confidence interval (CI) 0.06, 0.09).

Socio-economic circumstances

The evidence for intersectionality between social care and ethnicity was strongest for the markers of socio-economic circumstances in adulthood. For those who had been observed in parental care, the White group had the highest probability of poor qualifications, followed by the Black group and then the South Asian group: White 71% (95% CI 71%, 11%); Black 67% (65%, 68%); South Asian 56% (55%, 57%). But for those who had been in social care, the Black group had the lowest rates of poor qualifications, with the White and South Asian groups having similar but higher rates. Thus, social care appeared to impact qualifications most among the South Asian group, followed by the White group, with no predicted impact for the Black group (see Figure 1).

There was ethnic variation in predicted employment rates in adulthood for those who had been in parental care (Figure 2). The White group was most likely to be employed, followed by the two minority groups: White 80% (95% CI 80%, 81%); Black 73% (72%, 74%); South Asian 71% (70%, 71%). White adults appeared to be most affected by experiences of social care, with a 15% reduced chance of being employed, a 5% increase in the probability of unemployment and a 2% increase in

Table 3: Predicted probability of adult outcomes by care type and ethnicity group: ONS Longitudinal Study

	Parental care			Social care			P ¹
	White	Black	South Asian	White	Black	South Asian	
Poor self-rated health	0.14 (0.14, 0.14)	0.17 (0.16, 0.18)	0.15 (0.14, 0.15)	0.25 (0.23, 0.27)	0.18 (0.11, 0.25)	0.26 (0.17, 0.36)	0.017
Limiting long-term illness	0.07 (0.07, 0.07)	0.07 (0.07, 0.08)	0.06 (0.06, 0.07)	0.14 (0.13, 0.16)	0.10 (0.06, 0.14)	0.10 (0.05, 0.15)	0.058
< 18-year qualifications	0.71 (0.71, 0.71)	0.67 (0.65, 0.68)	0.56 (0.55, 0.57)	0.84 (0.83, 0.86)	0.69 (0.60, 0.77)	0.80 (0.71, 0.88)	0.0014
Employment status							<0.00005
Employed	0.80 (0.80, 0.81)	0.73 (0.72, 0.74)	0.71 (0.70, 0.71)	0.65 (0.63, 0.68)	0.75 (0.69, 0.82)	0.64 (0.53, 0.74)	
Unemployed	0.05 (0.05, 0.05)	0.10 (0.09, 0.10)	0.07 (0.06, 0.07)	0.10 (0.09, 0.11)	0.06 (0.03, 0.09)	0.12 (0.06, 0.19)	
In education	0.03 (0.03, 0.03)	0.05 (0.04, 0.05)	0.06 (0.06, 0.06)	0.06 (0.05, 0.07)	0.06 (0.03, 0.09)	0.05 (0.01, 0.08)	
Other	0.11 (0.11, 0.11)	0.11 (0.11, 0.11)	0.11 (0.11, 0.11)	0.19 (0.17, 0.20)	0.13 (0.08, 0.17)	0.19 (0.11, 0.27)	
Long-term non-employed	0.02 (0.02, 0.02)	0.02 (0.02, 0.02)	0.03 (0.03, 0.03)	0.04 (0.03, 0.04)	0.02 (0.01, 0.03)	0.03 (0.00, 0.06)	0.058
Social class							<0.00005
Managerial/professional	0.31 (0.31, 0.31)	0.31 (0.30, 0.33)	0.39 (0.38, 0.40)	0.26 (0.24, 0.28)	0.25 (0.19, 0.32)	0.37 (0.28, 0.46)	
Intermediate/technical	0.31 (0.30, 0.31)	0.31 (0.29, 0.32)	0.28 (0.27, 0.29)	0.26 (0.24, 0.28)	0.25 (0.19, 0.32)	0.37 (0.28, 0.46)	
Routine occupations	0.31 (0.31, 0.31)	0.25 (0.23, 0.26)	0.18 (0.18, 0.19)	0.42 (0.39, 0.44)	0.32 (0.25, 0.40)	0.26 (0.17, 0.34)	
Not known	0.07 (0.07, 0.08)	0.14 (0.13, 0.14)	0.15 (0.14, 0.15)	0.14 (0.13, 0.14)	0.12 (0.07, 0.16)	0.16 (0.08, 0.24)	
Housing tenure							0.17
Owner-occupier	0.70 (0.70, 0.71)	0.59 (0.58, 0.61)	0.85 (0.84, 0.86)	0.55 (0.52, 0.58)	0.50 (0.40, 0.60)	0.76 (0.68, 0.84)	
Renting	0.27 (0.27, 0.28)	0.38 (0.37, 0.40)	0.13 (0.12, 0.14)	0.40 (0.37, 0.43)	0.44 (0.35, 0.54)	0.22 (0.14, 0.30)	

(Continued)

Table 3: Continued

	Parental care			Social care			P ¹
Other	0.02 (0.02, 0.02)	0.02 (0.02, 0.03)	0.02 (0.02, 0.02)	0.05 (0.04, 0.06)	0.06 (0.03, 0.09)	0.01 (0.00, 0.04)	
Overcrowding	0.02 (0.02, 0.02)	0.04 (0.04, 0.05)	0.09 (0.08, 0.10)	0.04 (0.04, 0.05)	0.03 (0.01, 0.05)	0.14 (0.08, 0.20)	0.060
Lives alone	0.01 (0.01, 0.01)	0.02 (0.02, 0.03)	0.02 (0.01, 0.02)	0.03 (0.03, 0.04)	0.04 (0.02, 0.06)	0.01 (0.00, 0.02)	0.14
Marital status							0.054
Currently married	0.41 (0.41, 0.42)	0.16 (0.15, 0.17)	0.60 (0.59, 0.61)	0.39 (0.36, 0.42)	0.21 (0.13, 0.29)	0.72 (0.62, 0.81)	
Previously married	0.04 (0.04, 0.04)	0.02 (0.01, 0.02)	0.03 (0.03, 0.04)	0.06 (0.05, 0.07)	0.02 (0.01, 0.04)	0.06 (0.02, 0.11)	
Single	0.55 (0.54, 0.55)	0.82 (0.81, 0.84)	0.37 (0.35, 0.38)	0.55 (0.52, 0.58)	0.77 (0.68, 0.86)	0.22 (0.13, 0.31)	
Teenage mother ²	0.05 (0.05, 0.05)	0.05 (0.05, 0.06)	0.02 (0.01, 0.02)	0.06 (0.05, 0.08)	0.02 (0.00, 0.04)	0.04 (0.00, 0.09)	0.071
Number of children ²							0.13
None	0.53 (0.52, 0.53)	0.64 (0.62, 0.66)	0.62 (0.60, 0.63)	0.81 (0.78, 0.84)	0.95 (0.91, 0.98)	0.83 (0.69, 0.98)	
1–2 children	0.40 (0.40, 0.40)	0.30 (0.28, 0.32)	0.30 (0.29, 0.31)	0.15 (0.13, 0.17)	0.04 (0.01, 0.07)	0.13 (0.02, 0.24)	
3+ children	0.08 (0.07, 0.08)	0.05 (0.05, 0.06)	0.09 (0.08, 0.09)	0.04 (0.03, 0.05)	0.01 (0.00, 0.02)	0.04 (0.00, 0.09)	

Notes:

Predicted probability from logistic and multinomial regression models at mean values of country of birth, childhood census year, childhood and adult age in years, gender, and head of household social class, qualifications, employment status and marital status, averaged over adult census years.

¹Wald tests of significance of care group by ethnicity interaction.

²Women only.

long-term non-employment. There was also a suggestion that the South Asian group had a lower probability of being employed ($\Delta = -7\%$, 95% CI -17% , 3%) and a higher probability of unemployment ($\Delta = 6\%$, 95% CI -1% , 12%). The Black group had similar predicted rates of employment irrespective of parental or social care. This resulted in the Black group having the highest probability of being employed compared with other groups with a history of social care. However, the Black group had a lower probability of unemployment following social care ($\Delta = -4\%$, 95% CI -7% , -1%).

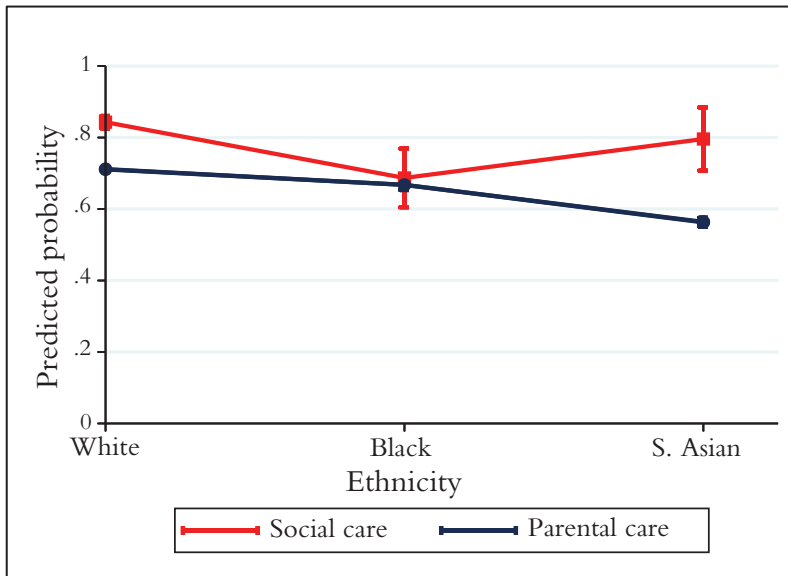
Differences in the association of social care by ethnicity with qualifications and employment also played out in their relationship with social class. For those observed

in parental care, the South Asian group was predicted to have the highest probability (38%) of being in the most advantaged professional and managerial social class in adulthood, whereas the White and Black groups had a 31% probability of being in the most advantaged social class in adulthood. Social care was associated with a more disadvantaged social class for the White and South Asian groups although it appears that the impact was greater for the White group than the South Asian group: the White group became over-represented in the Routine social class while the South Asian group had an increased probability of being in the Intermediate social class (see Figure 3 for details). Social care was not associated with social class within the Black group.

Living arrangements

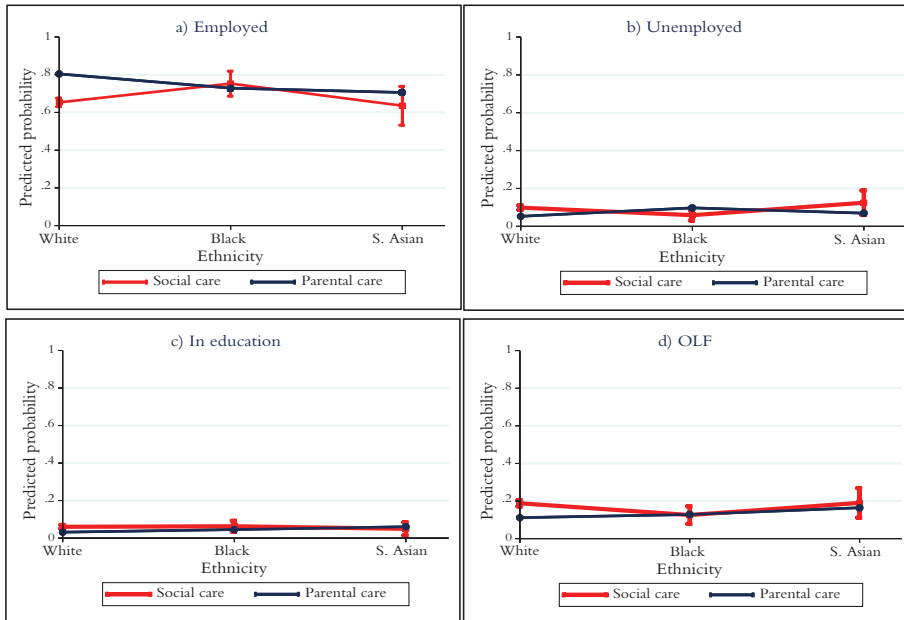
Despite there being little support for an overall interaction of care type with ethnic group associated with living arrangements, there are still some interesting observations to make. Parental care was associated with only a 59% predicted probability of homeownership for the Black group, but higher rates were predicted for the other ethnic groups: South Asian 85% (84%, 86%) and White 70% (70%, 71%). Social care was associated with a reduction of homeownership, especially for the White group ($\Delta = -0.15$ (-0.18, -0.13)) and less so for the South Asian group ($\Delta = -0.09$ (-0.17, -0.01)). Despite there being no statistical support for the negative relationship of social care, the Black group still had the lowest probability of owning their own

Figure 1: Predicted probability of less than 18 year qualifications by care type and ethnicity group: ONS Longitudinal Study



Notes: Predicted probability from logistic regression model at mean values of country of birth, childhood census year, childhood and adult age in years, gender, and head of household social class, qualifications, employment status and marital status, averaged over adult census years.

Figure 2: Predicted probability of employment status categories by care type and ethnicity group: ONS Longitudinal Study



Notes: Predicted probability from multinomial regression model at mean values of country of birth, childhood census year, childhood and adult age in years, gender, and head of household social class, qualifications, employment status and marital status, averaged over adult census years.

home. Social care was linked to an increased probability of renting or living in other less-secure accommodation for the White group and an increase in renting but not other options for the South Asian group. Unexpectedly, there appears to be a subsection of the Black group where social care was linked to an excess of other less-secure living arrangements.

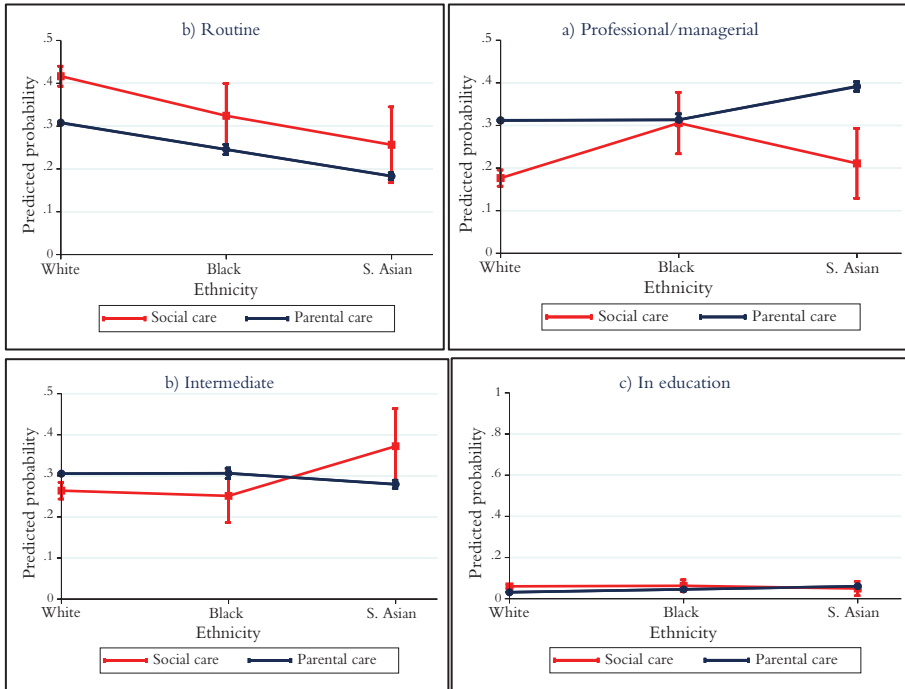
There was a hint that overcrowding was related to the joint impact of care type and ethnicity. The South Asian group had the highest predicted probability of overcrowding following parental care ($\Delta = 9\%$) and the largest increase in probability following social care ($\Delta = 5\%$). Despite the small estimate of the increase in overcrowding after social care among the White group ($\Delta = 1\%$), the size of the White group enabled this estimate to be measured with precision.

Social care had no discernible differences by ethnicity relating to living alone.

Relationships

There was only weak support for an interaction of care type with ethnic group associated with later relationships. The point estimates suggest that ethnicity might moderate the relationship of social care with later marital status. Care-experienced White adults were less likely to marry than their same-group peers whereas care-experienced Black and South Asian adults were more commonly married (Black: $\Delta = 5\%$ (-3% , 13%), South Asian: $\Delta = 12\%$ (2% , 21%)).

Figure 3: Predicted probability of social class categories by care type and ethnicity group: ONS Longitudinal Study



Notes: Predicted probability from multinomial regression model at mean values of country of birth, childhood census year, childhood and adult age in years, gender, and head of household social class, qualifications, employment status and marital status, averaged over adult census years.

Teenage motherhood in the 1970s to the end of the 20th century was low, increasing for those exposed to social care among the White and South Asian groups and reducing for the Black group. Nevertheless, the test for an interaction between care type and ethnicity did not indicate intersectionality, neither was it indicated for fecundity, with independent associations for ethnicity and care type with number of children.

Discussion

Summary of principal findings

Our hypothesis was that adverse adult socio-demographic and health outcomes following an experience of social care would be conditional on the interaction of social care with ethnicity. This was partially supported. From 12 models, we found strong evidence of intersectionality for four outcomes (SRH, qualifications, employment status, social class) and weak suggestive evidence for a further five outcomes (LLTI, long-term non-employment, overcrowding, marital status, teenage motherhood) indicating that ethnicity did not universally moderate the impact of a history of social care on adult outcomes. Neither was the pattern of moderation consistent across outcomes.

Instead, the results show a far more nuanced picture than the hypothesis would suggest. First, moderation of the impact of social care by ethnicity was almost exclusively found in the socio-economic domain or in downstream outcomes to socio-economic position. Second, the relationship between social care and ethnicity differed across the ethnic groups that we studied: a general observation was that South Asian social care-experienced individuals fared better than Black people who had been in social care. Third, it appeared that White children were more likely to be affected by experiences of social care than Black or South Asian children.

Results in relation to other studies

Most research on ethnicity and social care comes from US samples. Black Americans experience similar levels of intended or unintentional discrimination as Black people in the UK with respect to their adult employment prospects (Quillian et al, 2019). By contrast, the Black–White pay differential was 24.4% per hour in favour of White adults in 2019, while the UK pay differential in the same year was less than 4% (Li and Heath, 2020; Wilson and Darity, 2022). Black employees in the UK are more likely to be in zero-hours or temporary work (TUC, 2017), which is predominantly classified in the Routine social class.

Asians in the US fare much better than in the UK. Our South Asian group is somewhat heterogeneous, with the Pakistani and Bangladeshi populations more socio-economically deprived than the Indian population, whereas South Asians are unrepresented as a unique group in almost all US studies that typically separate Black and Hispanic groups. Asians, if separately identified, include people from both South and East Asia. This may explain differences in Asian peoples' employment trajectories in the US and South Asian peoples' trajectories in the UK, but it does not help us understand the Asian care placement paradox observed in both countries. Pakistani and Bangladeshi people are far more commonly self-employed than both Black and White adults (TUC, 2016), and included in the Intermediate/technical social class whereas the Indian community is over-represented in the professional and managerial social class.

Our first finding was that moderation of the impact of social care by ethnicity was almost exclusively found in the socio-economic domain or in downstream outcomes to socio-economic position. A lack of differences in the health domain by ethnicity–social care intersections was found in the US (Dworsky et al, 2010; Harris et al, 2010; Villegas et al, 2011; Villegas and Pecora, 2012; Villagrana, 2017), whereas we found evidence of intersectionality. We did not find any literature on marriage to compare with our findings of a tendency for White adults to be more likely to divorce if they had been in social care. A previous study reported that Black women who had been in social care had fewer children than White women with the same childhood experience (Combs et al, 2018), whereas we show that this difference could be attributed to independent associations with ethnicity and social care and not to their interaction. Similarly, the assumption that Black women in social care are most at risk of having children at a younger age in the UK and US (Dworsky et al, 2010; Mantovani and Thomas, 2014; Combs et al, 2018) was not upheld in our analysis: when a longer-term perspective is taken and a comparison with the general population of women is made, Black mothers were more often, and South Asian women less often, teenage mothers independent of care in childhood. Once

this was considered, women were no more likely to be teenage mothers after social care in childhood and again there was no evidence of intersectionality. However, the rate of teenage pregnancies has declined over time (Shroobree, 2009) and women who were observed in early censuses may be driving these findings.

Our second finding was that Black social care-experienced adults fared worse than South Asian individuals who had been in social care. This was also seen in a mixed-methods study by Barn and colleagues (2005) of life following social care in England. In the quantitative arm, Black young adults had lower qualifications than their South Asian counterparts and were more likely to be unemployed and living alone. When comparisons are possible with a general population sample, the finding that Black young adults were more likely to return to further education following social care was not a reflection of 'bouncing back' but a common experience for Black adults regardless of their care in childhood.

Third, White adults in their 20s were more likely to be affected by experiences of social care than minority children in terms of their qualifications. This was also highlighted in a study from the US and another from the UK (Barn et al, 2005; Dworsky et al, 2010). However, not all studies found the same White disadvantage in employment and social class reported here, with some reporting no difference across ethnic groups (Watt and Kim, 2019), and others that there was a White advantage following a history of social care (Dworsky et al, 2010). Location, sampling and methodology might account for these contrasting findings.

Fourth, Black children in social care had more similar outcomes to other Black children in most domains of adult functioning compared with the within-South Asian group differences in outcomes. We could find no other studies of Black experiences of social care in a general population sample to support this inference although a recent review from the US concluded that there was no evidence that social care leads to worse outcomes for Black care-leavers when an adequate study design is employed (Barth et al, 2020).

Strengths and limitations

This longitudinal study had repeated prospective data on social care experiences, health and social outcomes, and covariates across four decades. Coupled with the data being nationally representative, this allowed us to investigate whether adults who had a history of social care had different outcomes up to 30 years later from individuals in parental care. We could estimate differences throughout early to mid-adulthood when LS members were in their 20s, 30s and 40s. This would have been impossible using a data set with shorter follow-up. The use of the LS also allowed us to model social care by ethnicity, something impossible with smaller sample sizes. Using longitudinally linked census data reduced loss to follow-up, and the availability of covariate data improved the precision of, and reduced potential confounding in, our results.

We previously noted some limitations of earlier studies, namely (1) a lack of a comparator group in parental care; (2) use of retrospective data; (3) a short follow-up into adulthood; (4) small sample size; and (5) a non-UK study location. We have addressed these limitations in this work. Random allocation to differing care types is not possible on ethical grounds, so causal interpretations of findings in this area, including our own, must inevitably be approached with caution.

In common with most previous research, ethnicity was only measured crudely despite our large sample. We were unable to distinguish between Black African and Black Caribbean children, or between Indian, Bangladeshi, and Pakistani children, and other evidence suggests that findings may well vary across these groups. It is also possible that the experiences of mixed White and minority ethnic groups could differ. We have assumed that their identity and life experiences will be more like those of the minority group than the White majority but acknowledge that this may no longer be the case today.

A major disadvantage of using the LS is a lack of data on reason(s) for social care, and family characteristics prior to children being placed in social care, which are both likely to correlate with adult functioning and selection into social care. Factors influencing selection into different types of social care could affect the interpretation of the findings. Overall, children will have been placed in residential care only if they were unable to have been placed elsewhere, usually because their health or behaviour precluded placement in a family setting. Informal kinship care is more normative for some ethnic minorities than the White majority. Placement in kinship care may have been excluded as an option due to concerns about parental and wider family circumstances. Thus, selection into kinship care suggests children might already have had a better environment for positive social development. Unfortunately, even with the larger sample size that the LS provides, splitting the data by ethnicity and social care type resulted in cell sizes that substantially reduced the power to detect ethnic variation (data not shown).

Another disadvantage of census data is that they are only available every ten years. Therefore, we were not able to identify the age when children were placed in social care, nor for how long. Also, we were unable to identify children with and without local authority care orders which might alter the experience of social care. As in any longitudinal study, sample attrition occurred, albeit at lower levels than reported elsewhere (Viner and Taylor, 2005; Cameron et al, 2018). There were indications that loss to follow-up was greater in the social care group, suggesting that some bias may have been introduced into the estimates. Finally, as in any study using routine self-reported data, we cannot rule out measurement error.

Implications and future research

Given the evidence on a White disadvantage rather than a Black or South Asian disadvantage, new and existing policies promoting good outcomes for care-experienced adults should be universally provided for all children who have been in social care and not targeted at specific minority ethnic groups. Not only would this provide support to care-experienced adults, but it would also go some way to redressing the additive disadvantage of ethnicity and social care on life chances. For example, we recommend extending the Staying Put programme for foster children to older teenagers who have been placed in semi-independent and independent settings. For those who have been in residential care, the Staying Close arrangements aim to enable young people to live near their former care home but are not yet implemented nationally. We have shown evidence that inequalities between care-leavers and the general population are widespread and long-lasting, as are inequalities within cared-for groups. This should be monitored and acted on as a priority, since without the evidence from a monitoring system of the long-term difficulties social care-leavers face, there is no impetus to change policy.

At the time of writing, there is a government commitment to improving outcomes for care-leavers, without any resources ring-fenced to underpin improvements. Local councils face increasing pressures on their budgets, not least from adult social care, so without intervention, care-experienced adults may continue to be overlooked. The results also suggest that policies aimed at improving qualifications among those in social care will have downstream benefits on employment and social mobility, especially for White and South Asian ethnic groups, which can be factored into any cost-benefit analysis of proposed interventions.

There are also several important implications for research. We urge researchers on life after social care to include children who have not been in care in their sampling frames. This seems most critical for qualitative work since this methodology predominates in the field. Qualitative studies are needed to understand why South Asian care-leavers are more affected by their experiences in the long term than Black care-leavers when compared with their same-ethnicity peer group.

Factors affecting placement type by ethnicity also need to be featured more prominently in research. Even with larger samples than usual in this type of research, we still lacked the power to investigate ethnicity by placement type interactions. We also need more fine-grained measures of ethnic group, again requiring larger samples for a thorough analysis. The socio-economic environment of Indian families is more advantaged than that of Bangladeshi and Pakistani families in the UK, suggesting that relative care will not affect children in the same way across all South Asian families. Similarly, the migration histories of Black African and Caribbean people to the UK differ, affecting their social location, which could also lead to differential outcomes after social care.

We used male and female sex as a proxy for gender identity. We did not examine the intersection between social care, ethnicity and gender since we had previously found no intersection between social care and gender. Further empirical work on LGBTQ young people in social care is indicated, especially since differences in rates of placement in social care according to ethnic by gender identities have been observed (Grooms, 2020).

To explore causality, future research needs to link social care histories with adult follow-up data. At this stage, we are only able to suggest that social care fails to ameliorate completely the influence of difficulties in the family situation or of their own behaviour. This could include information such as reasons for being in care, health and behaviour on entering care, age and timings of care, and reunification spells. Finally, replication is recommended to confirm the reliability of our findings.

Conclusion

We started this study with the premise that ethnic minority children in social care would suffer a double whammy from their experience, affecting their lives in the long term. In one sense, we did find this in that ethnicity and social care had additive associations with adult outcomes. However, we also uncovered the complexity of these relationships, with minority ethnicity moderating the social care to adult outcomes relationship in both positive and negative ways. We challenge much of the previous work that made similar a priori assumptions about ethnicity and social care and relied on sampling children in social care only for their evidence.

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This work contains statistical data from ONS which is Crown Copyright. The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research data sets which may not exactly reproduce National Statistics aggregates.

The derivation of 1971 and 1981 NSSEC & Goldthorpe classes is provided in Bukodi and Neuburger, 'Data Note. Job and occupational histories for the NSHD 1946 Birth Cohort' (2009) as part of the ESRC Gender Network Grant, Project 1 'Changing occupational careers of men and women', Reference: RES-225-25-2001. The code was kindly provided by Erzsebet Bukodi and adapted for use in the LS by Buscha and Sturgis as part of the ESRC grant 'Inter-cohort Trends in Intergenerational Mobility in England and Wales: income, status, and class (InTIME)', Reference: ES/K003259/1.

Data availability statement

The authors take responsibility for the integrity of the data and the accuracy of the analysis. The Office for National Statistics Secure Research Service (SRS) gives accredited or approved researchers secure access to de-identified, unpublished data in order to work on research projects for the public good. Further information is available at: <https://www.ons.gov.uk/aboutus/whatwedo/statistics/requestingstatistics/approvedresearcherscheme>.

Statement on human and animal experimentation and informed consent

The research project was approved by the Office for National Statistics Research Accreditation Service (accreditation number RAS 31612). The authors confirm compliance with the principles of the Declaration of Helsinki. Informed consent from census respondents is not possible, but the authors confirm that they had no direct contact with census participants, and they complied with the Office for National Statistics Secure Research Service (SRS) Five Safes Framework which includes the SRS pre-publication clearance of all research outputs to ensure that data subjects cannot be identified unintentionally.

Conflict of interest

The authors declare that there is no conflict of interest.

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