

Adoption & Fostering

Is foster caring associated with an earlier transition to adulthood for caregivers' own children? ONS Longitudinal Study

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Abstract

This study investigates whether existing children in a fostering household differ from young people in non-caregiving households in the timing of their transitions to key adult roles, known to affect later health and life chances. Using data from the ONS Longitudinal Study, we pooled records from census years 1971-2001 and linked them to follow-up records from 1981-2011. We identified 2656 children living with a foster child and compared their profiles on the “big five” transitions to roles of adulthood — finishing school; leaving home; finding work and becoming financially independent; getting married; and having children — with those of other children without a foster child in the household (N=209,453). We fitted logistic and multinomial models that controlled for childhood socioeconomic and demographic confounders to estimate the proportion achieving the five roles in early adulthood. A modest but reliably higher proportion of caregivers’ children achieved the transition to adulthood. There was some evidence that caregivers’ children might cope better with the transition to adulthood if they were older than the foster child or were female. The findings suggest that supporting foster parents with delaying their children’s transition to adulthood could become part of the role of supervising social workers.

Keywords

Fostering; caregivers’ children; life course; transition; young adult

Introduction

On 31st March 2022 there were 82,170 (70 children per 10,000 of the population) looked after children in England, a rise from 47,590 in 1994. Approximately three-quarters of these children were placed with 43,710 different foster families (National Statistics, 2022). Many of the caregivers have children of their own but statistics on how many foster families are in this situation are lacking. Nevertheless, there has been a growing body of evidence on the impact of caring on the children of caregivers. Most of the findings are based on small scale unrepresentative qualitative research (Höjer et al., 2013; Thompson and McPherson, 2011; Twigg and Swan, 2007). Yet the evidence is remarkably consistent with reports of both positive and negative impacts on caregivers' children in the foster home, depending on the outcomes examined.

Benefits for caregivers' children include appreciating their families (Poland and Groze, 1993; Clare et al., 2006; Noble-Carr et al., 2014); feeling part of a team (Sutton and Stack, 2013; Clare et al., 2006); making new friends (Sutton and Stack, 2013; Clare et al., 2006; Noble-Carr et al., 2014; Watson and Jones, 2002); becoming more caring and empathetic (Younes and Harp, 2007; Sutton and Stack, 2013; Heidburrt, 1995; Clare et al., 2006; Höjer, 2007; Martin, 1993; Moslehuddin, 1999; Targowska et al., 2016; Watson and Jones, 2002); understanding other's misfortunes (Heidburrt, 1995; Clare et al., 2006); fun and shared activities (Sutton and Stack, 2013; Heidburrt, 1995; Targowska et al., 2016; Noble-Carr et al., 2014); learning parenting skills (Noble-Carr et al., 2014; Targowska et al., 2016); and learning to take responsibility (Younes and Harp, 2007; Poland and Groze, 1993; Clare et al., 2006; Moslehuddin, 1999).

Commonly cited challenges are having to share belongings, space and parent's time (Younes and Harp, 2007; Poland and Groze, 1993; Heidburrt, 1995; Watson and Jones, 2002; Clare et al., 2006; Höjer, 2007; Höjer et al., 2013; Martin, 1993; Moslehuddin, 1999; Noble-Carr et al., 2014); dealing with negative behaviours, such as stealing and lying (Watson and Jones, 2002; Clare et al., 2006; Höjer, 2007; Moslehuddin, 1999; Noble-Carr et al., 2014; Targowska et al., 2016); loss of innocence (Clare et al., 2006; Höjer, 2007); increased responsibility (Clare et al., 2006; Höjer, 2007; Targowska et al., 2016); avoiding adding to parental burden (Clare et al., 2006; Höjer et al., 2013); coping when placements end (Younes and Harp, 2007; Sutton and Stack, 2013; Poland and Groze, 1993; Watson and Jones, 2002; Clare et al., 2006; Höjer et al., 2013; Noble-Carr et al., 2014); meeting expectations of parents (Younes and Harp, 2007; Clare et al., 2006); family conflicts and tensions (Höjer, 2007; Noble-Carr et al., 2014); and loss of privacy (Younes and Harp, 2007; Moslehuddin, 1999; Noble-Carr et al., 2014; Targowska et al., 2016).

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3 From the findings on childhood outcomes, it is possible that transitions to adulthood might also be
4 affected by the experience of sharing their home with foster children. The transition to adulthood is
5 the process of moving from adolescent dependency on parents to adult independence and was
6 traditionally, until more recent years, a process completed during the late teens to late 20s. It
7 involves the social and demographic passage from the educational system to the labour market and
8 from the parental home to one's own home; the transition to parenthood, with the birth of the first
9 child, is ordinarily defined as the final stage of the transition to adulthood process (Billari, 2001).
10 "Off-time" transitions to adulthood, both early and late, can lead to later physical and mental health
11 problems and lasting difficulties for success in later life (Schoon, 2015; Furstenberg, 2005). Earlier
12 factors such as cognition and schooling, parenting quality, behaviour and socioeconomic position
13 have been linked to the timing of the transition to adulthood (Masten et al., 2004; Roisman et al.,
14 2004). Several researchers noted that caregivers' children learnt responsibility and good parenting
15 practices by observing a parent's interactions with a foster child (Younes and Harp, 2007; Poland and
16 Groze, 1993; Clare et al., 2006; Moslehuddin, 1999), although there have been warnings that this
17 might lead to premature growing up, potentially distorting their development into adults (Duffy,
18 2013; Martin, 1993). If their experiences lead to a premature adulthood, then one could hypothesise
19 that caregivers' children make the transitions to adulthood at an earlier age than other children. On
20 the other hand, with greater maturity, caregivers' children might make more responsible choices
21 about education, work and family formation, potentially delaying the timing of transitions to
22 adulthood. In addition, the negative impacts on caregivers' children, such as a loss of privacy and
23 parental time and attention, might have a negative impact on their schooling with the consequence
24 of lower academic qualifications.

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40 Some reviews on caregivers' children have commented on age and sex differences in the impact of
41 sharing their home with a foster child. Generally, the research shows that older children cope best
42 (Moslehuddin, 1999; Höjer et al., 2013). Placements were more likely to break down or cause more
43 problems for the family when a caregiver's child was younger than the looked-after child(ren) (Höjer
44 et al., 2013). Similarly, girls have been found to be more affected than boys and fostering worked
45 better when the caregiver's child and the foster child were the same sex (Moslehuddin, 1999;
46 Serbinski and Shlonsky, 2014). There have been calls for more research on age and sex (Höjer et al.,
47 2013; Heidburrt, 1995; Sutton and Stack, 2013; Twigg and Swan, 2007) although specific details of
48 the research needs are sketchy. It is an open question whether absolute or relative age and sex
49 influence transitions to adulthood for caregivers' children.

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58 Several methodological themes also emerge about gaps in the literature: First, convenience samples
59 are almost always used and the extent that this may bias conclusions is unknown; second, even basic
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3 demographic data are scarce, as suggested by the lack of statistics on caregivers' children mentioned
4 above; third, there is a dearth of evidence on the longer-term impact on caregivers' children, with
5 the suggestion that longitudinal research on transitions to adulthood would be beneficial. Finally,
6 this overview has drawn on international literature. Given international differences in the practice of
7 foster care, including the national configurations of child protection, family services and community
8 caring and the professionalisation, support and training of caregivers, a national focus could be
9 particularly helpful for informing policy in Britain.

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15 This analysis asks the fundamental research question "do more caregivers' own children pass the key
16 milestones indicative of a transition to adulthood by the age of 30?" while addressing the
17 methodological concerns raised above. The largest longitudinal data resource in England and Wales
18 – the ONS Longitudinal Study (LS) – is broadly representative of the entire population and with
19 approximately 1 million people included over the 40 years of the study, it allows for robust research
20 into subgroups of the population such as caregivers' children. The design of the LS makes it possible
21 to provide trends in the basic social and demographic data that have been missing to date. With up
22 to 40 years follow-up data on children in the LS, we could chart, amongst other factors, the "big 5"
23 roles of a successful transition to adulthood: i) completing education; ii) leaving home; ii) getting on
24 in work and becoming financially independent; iv) getting married; and v) starting a family of one's
25 own (Settersten, 2007).

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34 In addition to addressing concerns about study design, the current study will address some of the
35 gaps in the research evidence on caregivers' children. It will first investigate whether markers of a
36 transition to adulthood for caregivers' children differ from those of children without a foster child in
37 the family. Furthermore, it will explore whether there are any differences in outcome for caregiver's
38 children depending on their own age or their age relative to that of the foster children in the family.
39 Finally, it asks if there are any differences in outcome for caregiver's children depending on their
40 own sex or their sex relative to that of any foster children in the family.

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Methods

Data

The Office for National Statistics Longitudinal Study (LS) is a 1% representative sample of the
population of England and Wales, drawn initially from respondents to the 1971 census who were
born on one of four dates in the calendar year (Shelton et al., 2018). New members – newly born or

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3 immigrants - are added to the LS if they have one of the same four birthdates. Similar 1% samples
4 have also been drawn from the 1981, 1991, 2001 and 2011 censuses. The LS has linked records for
5 each census after LS members are first sampled to create a longitudinal dataset (Office for National
6 Statistics, 2019). For further details see Lynch et al. (2015)). Census data are also collected on the LS
7 members' co-residents, but these are not linked and are cross-sectional only. LS members' data from
8 birth, death and cancer registers have been added to the LS since 1971.
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13 14 Data availability and project approval

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16 The Office for National Statistics Secure Research Service (SRS) gives accredited or approved
17 researchers secure access to de-identified, unpublished data in order to work on research projects
18 for the public good. The research project was approved by the Office for National Statistics Research
19 Accreditation Service (RAS).
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24 Further information is available at

25 <https://www.ons.gov.uk/aboutus/whatwedo/statistics/requestingstatistics/approvedresearchersche>
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30 Inclusion and exclusion criteria

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32 We identified 351,970 observations from 237,174 dependent children in the LS in the 1971-2001
33 censuses (i.e., members aged less than 18 years, not living independently, of single marital status,
34 and not a visitor in the household) and with outcome data when they were in early adulthood (18-29
35 years old). To reduce confounding due to unobserved data about one-parent and multigenerational
36 households, we dropped 50,362 observations from children in these situations, restricting the
37 sample to nuclear two-parent households. Note that the dependent children could be adopted
38 children with the same surname as the parents. Missing data on background covariates further
39 reduced the sample to 299,096 observations from 212,109 children. Of these, there were 3529
40 observations where they were living with one or more foster children.
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49 Outcomes

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51 Outcomes are taken from the 1981 to 2011 censuses. Outcomes cover the five key milestones in the
52 transition to adulthood as follows.
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55 *Completing education*

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57 Two variables measure successfully completing education – whether still in education and achieving
58 higher than NVQ2 level (e.g., GCSE) qualifications. From the census question on current employment
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3 status, we derived an indicator of still being in education (0 No; 1 Yes). Highest qualification level
4 was harmonised across census years into the following categories: ≥ 18 years qualifications (at least A
5 levels or NVQ level 3 equivalent) and < 18 years qualifications.
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8 9 *Leaving home*

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11 Using information on members of the household, we identified LS members who were not living
12 with either their mother or father. This is used to derive a binary variable (0 Living with parent(s); 1
13 Left home).
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16 17 *Getting on in work and becoming financially independent*

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19 Three variables assessed how the LS member was faring in the job market: in full-time or part-time
20 employment; occupational social class; and if long-term non-employed. A binary variable indicates
21 whether they were working on the census day (0 No; 1 Yes). Social class is an indicator of both
22 getting on in work and of financial independence, measured using the 3-category version of the
23 National Statistics Socioeconomic Classification (NS-SEC): Managerial/professional; Intermediate
24 occupations; Routine occupations (Rose and Pevalin, 2003). For those who were not currently
25 working, years since last worked or whether the individual has never worked is recorded at each
26 census. From this information, a binary long-term non-employed variable was derived (i.e., 0: < 10
27 years not in work; 1: ≥ 10 years not in work). A 2nd indicator of financial independence used
28 information on housing tenure and household membership (0 owner occupier, including those with
29 a mortgaged property; 1 renting; 2 still with parent(s); 3 other arrangement, such as “sofa-surfing”,
30 living in a caravan or a communal establishment).
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41 *Marriage*

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43 Marital status is defined as 0 currently legally married; 1 previously married (widowed, divorced) or
44 2 single.
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47 *Children*

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49 For women only, the LS is linked to Births Registration forms, from which the number of children and
50 age at birth of first child can be derived. The number of children was recoded to create a categorical
51 variable representing 0, 1-2, or 3+ children. Age at first child was used to derive a binary teenage
52 mother variable (0 No; 1: Yes).
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Covariates

Age and sex

Age in years and sex (0 male; 1 female) were taken from the census in which the LS child was identified. Indicator variables identify the LS child's "relative age" (0 neither, 1 younger, 2 older, 3 both younger and older foster children in the household) and "relative sex" (if foster children were 1 the same sex, 2 opposite sex, 3 both same and opposite sex to them).

Foreign background

Country of birth recorded whether LS children were born in the UK or elsewhere. Migration status indicated whether they were 1st generation, 2nd generation or $\geq 3^{\text{rd}}$ generation migrants. Ethnicity was grouped into 0 White; 1 Black; 2 South Asian; and 4 Other. Information on migration status and ethnicity is only available from 1991, so for LS children in the 1971 and 1981 censuses, migration status and ethnicity were extrapolated from their responses in later censuses.

Family social class

Mothers' and fathers' social class were measured using the 3-category version of the NS-SEC described above.

Family education

Mothers' and fathers' education level were binary variables indicating 18+ years qualifications or not.

Family employment

Mothers' and fathers' employment status are binary variables indicating if they were working or not.

Overcrowding

A binary variable identifies if the home is overcrowded, defined as ≥ 1.5 persons per room in the household.

Children in household

This variable is the total number of children less than 18 years old who were usually resident in the household.

Analysis

Childhood data from census years 1971 to 2001 were pooled and linked to follow-up records from 1981 to 2011. If LS members were less than 8 years old at the first observation, they could be observed again in childhood at the next census 10 years later, resulting in each child having 1-2 records. The background characteristics of the analytical sample and those excluded due to loss-to follow-up or item non-response are shown in online Supplementary table S1. The distribution of the variables in the complete case sample are very similar to that in the full data sample. The incomplete sample distributions show that most data were missing on migration status and that those excluded were more likely to be socioeconomically disadvantaged or from larger families. The socioeconomic and demographic characteristics of caregivers' children and non-caregivers' children were compared using independent samples t-tests or non-parametric equivalents, as appropriate. Logistic and multinomial models, as appropriate, were fitted to predict the transition to adulthood outcomes with cluster-robust standard errors estimated to allow for intra-child correlations. All models included the full set of socioeconomic and demographic covariates listed above. Interaction terms for care group with age and sex indicators were then estimated to test for modification by age, relative age, sex and relative sex. Marginal effects at the means are presented, representing the predicted probability of each outcome conditional on all other covariates being set to their mean value.

All analyses were estimated using Stata version 17 software (Stata Press, 2019).

Results

Table 1 shows the number of LS dependent children with outcome data at follow-up. In total there are 299,096 observations from the 212,109 children. Caregivers' children comprised 2,656 (1.25%) of the sample of LS dependent children.

Table 1. Maximum number¹ of observations for dependent children with data at follow-up, ONS Longitudinal Study.

	1 st Observation	2 nd Observation	Total
Dependent children	N	N	N

Non-caregivers' children	209,453	86,114	295,567
Caregivers' children	2,656	873	3,529
Total	212,109	86,987	299,096

¹ Number varies for different adult outcomes.

Compared with non-caregivers' children, caregivers' children were more likely to be a 1st or 2nd generation migrant to the UK and to belong to either a Black or South Asian minority group (table 2). They were slightly older on average and there were more children in the family, more commonly attributable to kinship care than having an unrelated foster child or natural siblings (data not shown). Their family was more often socioeconomically disadvantaged, with both parents being less well educated and less likely to be in work. On average, their fathers were in a less privileged social class while their mothers' social class was more frequently unknown – probably because they had been out of the labour market long-term.

Table 2. Sociodemographic characteristics of caregivers' (N=2,656) and non-caregivers' (N=209,453) children at 1st observation, ONS Longitudinal Study

	Non-caregivers' children		Caregivers' children		P ¹
	N	%	N	%	
Gender (%)					0.34
Male	104,156	49.73	1,296	48.80	
Female	105,297	50.27	1,360	51.20	
Country of birth (%)					<0.0005
UK	203,168	97.00	2,543	95.75	
Non-UK	6,285	3.00	113	4.25	
Migration status (%)					<0.0005
1 st generation	4,070	1.94	95	3.58	
2 nd generation	24,662	11.77	430	16.19	
≥3 rd generation	180,721	86.28	2,131	80.23	
Ethnicity (%)					<0.0005
White	185,235	88.44	2,146	80.80	
Black	2,996	1.43	72	2.71	

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South Asian	7,191	3.43	204	7.68	
Other	730	0.35	19	0.72	
Not known	13,301	6.35	215	8.09	
Overcrowded (%)					<0.0005
No	176,108	84.08	1,589	59.83	
Yes	33,345	15.92	1,067	40.17	
Father's marital status (%)					0.16
Married	204,858	97.81	2,595	97.70	
Previously married	1,574	0.75	14	0.53	
Single	3,021	1.44	47	1.77	
Father's social class (%)					<0.0005
Manager/professional	46,930	22.41	393	14.80	
Intermediate	51,748	24.71	586	22.06	
Routine	48,764	23.28	739	27.82	
Not known	62,011	29.61	938	35.32	
Father's education (%)					<0.0005
18+ qualifications	26,523	12.66	194	7.30	
<18 qualifications	182,930	87.34	2,462	92.70	
Father's employment status (%)					<0.0005
Employed	133,969	63.96	1,523	57.34	
Non-employed	75,484	36.04	1,133	42.66	
Mother's marital status (%)					0.53
Married	204,843	97.80	2,589	97.48	
Previously married	1,672	0.80	24	0.90	
Single	2,938	1.40	43	1.62	
Mother's social class (%)					<0.0005
Manager/professional	6,596	3.15	48	1.81	
Intermediate	8,427	4.02	79	2.97	
Routine	15,507	7.40	203	7.64	
Not known	178,923	85.42	2326	87.58	
Mother's education (%)					<0.0005
18+ qualifications	18,532	8.85	162	6.10	
<18 qualifications	190,921	91.15	2,494	93.90	
Mother's employment status (%)					0.11

Employed	24,284	11.59	281	10.58	
Non-employed	185,169	88.41	2,375	89.42	
	Mean	S.D.	Mean	S.D.	
Age (years)	7.58	0.01	8.23	0.09	<0.0005
Number children in household	1.47	0.00	2.45	0.03	<0.0005

¹ Probabilities based on Pearson χ^2 tests for categorical variables and independent t-tests for continuous variables

Column totals may not sum to 1 because of rounding.

S.D. Standard deviation

Based on the raw data, caregivers' children in early adulthood were less commonly well-educated and in work and more commonly married, in a less advantaged social class and living in rented accommodation. Women were more frequently teenage mothers with more children (Supplementary table S2). However, this does not consider any possible intergenerational transmission of disadvantage since, as reported above, caregiver families were more frequently socioeconomically disadvantaged.

Are the outcomes of caregivers' children different from those of non-caregivers' children?

The short answer to this question is "yes", although differences are small. Predicted probabilities are presented in table 3 (original model coefficients in Supplementary table S3) and show that the direction of differences for nine out of the eleven outcomes indicate that caregivers' children had an earlier transition than non-caregivers' children. However, 95% confidence intervals around point estimates for three of the nine outcomes were too wide to give convincing evidence about differences in the prevalence of achieving transitions to adulthood between children of caregivers and children without a foster child in the family.

Eighty-three percent of caregivers' children left school with few qualifications (95% CI: 81%, 84%) on average compared with 79% of non-caregivers' children (95% CI: 79%, 79%).

Three of the four markers of getting on in work and becoming financially independent showed differences between the two groups of children. The exception was that caregivers' children were less likely to be in work in early adulthood (69% vs. 72%) and more likely to be long-term non-

employed but see findings on sex differences below for more nuanced results. Given that caregivers' children entered the workplace with fewer qualifications, they were also more likely to be in a less advantaged social class: 21% (95% CI: 19%, 22%) were in the Managerial or professional class compared with 23% (95% CI: 22%, 23%) of children without a foster child in the family. The other marker of financial independence available in the data set was housing tenure. There was a tendency for caregivers' children to be less likely to be owner-occupiers, instead being more likely to be renting or to be in some other less secure "other" situation if they had left their parents' home. Marriage is one marker of having a long-term partner, with caregivers' children having a higher probability of being married before their 30s than non-caregivers' children (16% married vs. 14%). Finally, the parenthood variables indicate that women who had grown up with a cared-for child in the family were having children younger, although with only a suggestion of having more children before age 30: 6% were teenage mothers compared with 5% of the non-caregiver group and 1.6% of mothers had 3 or more children in early adulthood compared with 1.2% of the non-caregiver group.

Table 3. Predicted probabilities¹ for markers of the transition to adulthood of caregivers' and non-caregivers' children, ONS Longitudinal Study

	Non-caregivers' children	Caregivers' children	Difference
	Prob (95% CI)	Prob (95% CI)	p-value
Completing education			
< 18-year qualifications	0.79 (0.79, 0.79)	0.83 (0.81, 0.84)	<0.0005
In education	0.03 (0.03, 0.03)	0.03 (0.02, 0.03)	0.98
Leaving home			
Left parental home	0.80 (0.80, 0.80)	0.80 (0.79, 0.82)	0.54
Getting on in work and financial independence			
In employment	0.72 (0.71, 0.72)	0.69 (0.68, 0.71)	0.004
Social class			<0.0005
Managerial/professional	0.23 (0.22, 0.23)	0.21 (0.19, 0.22)	
Intermediate	0.31 (0.31, 0.31)	0.29 (0.28, 0.31)	
Routine	0.32 (0.32, 0.33)	0.34 (0.32, 0.35)	
Not known	0.14 (0.14, 0.14)	0.17 (0.15, 0.18)	

	Non-caregivers' children	Caregivers' children	Difference
Long-term non-employed	0.006 (0.006, 0.007)	0.008 (0.006, 0.009)	0.033
Housing tenure			0.14
Owner occupier	0.53 (0.53, 0.54)	0.52 (0.51, 0.54)	
Renting	0.33 (0.32, 0.33)	0.34 (0.32, 0.35)	
Still with parents	0.10 (0.10, 0.11)	0.10 (0.09, 0.11)	
Other arrangement	0.04 (0.04, 0.04)	0.04 (0.03, 0.05)	
Partnership			
Currently or formerly married	0.14 (0.14, 0.15)	0.16 (0.15, 0.17)	0.0051
Living alone	0.04 (0.04, 0.04)	0.04 (0.03, 0.05)	0.57
Parenthood²			
Teenage mother	0.05 (0.04, 0.05)	0.06 (0.05, 0.07)	0.004
Number of children			0.094
0 children	0.77 (0.77, 0.77)	0.75 (0.73, 0.77)	
1 - 2 children	0.22 (0.21, 0.22)	0.23 (0.21, 0.25)	
≥ 3 children	0.01 (0.01, 0.01)	0.02 (0.01, 0.02)	

¹ Predicted probabilities (adjusted marginal effects) are estimated at the mean of child's census cohort, gender, age in childhood and adulthood, ethnicity, migration status, born outside UK; father's qualifications, marital status, employment status, social class; mother's qualifications, marital status, employment status, social class; household overcrowding and number of children from logistic and multinomial regression models.

² Women only

Association between covariates and children's educational qualifications

We employed the same set of covariates throughout but their relationship with the different outcomes varies. We focus on qualifications since chronologically, completing school education successfully is most commonly the first milestone in the transition to adulthood, and we have shown that the probability of 18-year qualifications or higher is reduced for caregivers' children. Odds ratios for all the covariates are given in Supplementary table S4.

Starting with cohort differences, the demographic change in educational levels is clear with the numbers of children leaving school with few qualifications decreasing every decade since 1971. Conditional on the census year that children were observed, children were incrementally less likely

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3 to have 18-year qualifications the older they were. Also conditional on census year, in adulthood
4 they were incrementally more likely to have 18-year qualifications the older they were when
5 observed. Gender differences are apparent with girls having a higher probability of achieving 18-year
6 qualifications than boys. There was an educational gradient by migration status, with 1st generation
7 children predicted to gain better qualifications than those whose families had lived in the UK for
8 longer. There was no difference between Black and White children's qualification level, while all
9 other ethnic groups were predicted to have higher levels than White children.
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15 Both mothers' and fathers' socioeconomic and demographic covariates predicted educational levels.
16 Fathers' qualification levels, social class and employment status provided evidence of the inter-
17 generational continuity in disadvantage. Fathers' social class and employment status had a stronger
18 relationship with their child's qualifications than mothers' social class and employment status,
19 whereas mothers' qualifications had a stronger relationship than fathers' qualifications. Children
20 living with a single parent were also less likely to gain 18-year qualifications compared with having
21 married parents. Finally, household overcrowding and size were more weakly associated with a
22 reduced likelihood of 18-year qualifications or higher.
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30 Do any differences depend on the age of caregivers' children? 31

32 Overall, there were few differences by age of a caregiver's child. (Supplementary table S5). Four
33 interactions between age and being a caregiver's child were found. These were for being in
34 education, in employment, social class and housing tenure. Focussing on the effect of age on being
35 in education, younger caregivers' children were more likely to be in education in early adulthood
36 than other young children, but older caregivers' children were less likely to be in education in early
37 adulthood than non-caregivers' children of the same age (See figure 1). Older caregivers' children
38 were also less likely to be employed or to be still living with their parents in early adulthood than
39 non-caregivers' children of the same age. By contrast social class differences did vary with age in
40 childhood: older children in fostering families were more likely to have an unknown social class in
41 early adulthood than younger children. A social class could not be assigned if the individual was in
42 education or out of work. This suggests that the social class interaction was a consequence of being
43 out of work rather than being in education, since older caregivers' children were less likely to be in
44 education in early adulthood.
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Are there differences if caregivers' own children are older or younger than foster child(ren)?

There was support for the age of caregivers' children relative to the age of foster children in the family influencing adult outcomes (Supplementary table S6), not always consistent with an earlier transition to adulthood. Differences were found for markers of leaving home, getting on in work and financial independence, and partnership.

Eighty-three percent of those who had experience of living with younger foster children had left home by early adulthood compared with 80% of those without experience of foster care in the family. In line with this finding, children who were older than the fostered children were less likely to be living at home when their housing situation was further disaggregated.

All children whose parents fostered had lower qualifications by early adulthood than those without such experience. But only when foster children were younger were they less commonly in work or with a more disadvantaged social class when they were working.

Caregivers' female children living with a younger foster child had a higher probability of later being a teenage mother compared with non-caregivers' female children (7.0% teenage mothers vs. 4.6%), which was not seen for those with older foster children in the family. Women who had had younger foster children only in the family were also more likely to have large families (1.9% with 3+ children vs. 1.2%). However, women who were older than any foster children were equally as likely to have had large families on average, but with much larger variability rendering it unwise to draw any conclusions.

Do any differences depend on the sex of caregivers' children?

Supplementary table S7 shows the full findings for the interactions between sex and caregiver status. Consistent with the higher probability of being a teenage mother and having more children reported above (table 3), women who had been in a caregiver household had a lower probability of being in work and a higher probability of a 'not known' social class, suggesting they were more likely to be homemakers.

There was no suggestion that male caregivers' children differ from other male children in the probability of becoming a homeowner or being in rented accommodation, but female caregivers' children had a lower probability of home ownership in early adulthood than other female children (50% vs. 53%) and a higher probability of renting (39% vs. 36%).

Are there differences if caregivers' own children are the same or a different sex to foster child(ren)?

There were some indications of the transition to adulthood differing depending on the sex of the caregiver's child relative to that of any foster children in the household (Supplementary table S8). When the caregiver's child was the same sex as the foster children, they fared similarly in adulthood to non-caregivers' children regarding educational qualifications and social class, whereas the presence of opposite sex foster children was associated with poorer qualifications and less chance of achieving a more advantageous social class.

The results also implied differences for being in employment and parenthood, but the estimated probabilities do not present a consistent unambiguous picture. For example, women with experience of same sex foster children had more children than women without such experience, with same sex foster children increased the chances of having 1 or 2 children in early adulthood, while opposite sex foster children increased the chances of having 3 or more children. By contrast, the chances of being a teenage mother were only increased for women with experience of same sex foster children.

Experience of fostering also led to differences in being in work in early adulthood, although point estimates were only reliably lower than non-caregivers' children when there were foster children of both sexes in the family. By contrast, long-term nonemployment was only indicated for those who had lived with a foster child of the opposite sex, this finding being more consistent with the larger family size reported above for women in the same group.

Discussion

Summary of principal findings

Our primary research question asked whether caregivers' own children pass the transition to adulthood milestones earlier than non-caregivers' children. Based on the big five roles of adult functioning, we found that the findings for four roles indicated an earlier transition to adulthood for caregivers' children. The only role for which we did not find support in the data was that of leaving home. However, unlike the other roles, we only had one indicator for leaving home whereas we had multiple markers for the other roles. It is also worth noting that the strength of the evidence from markers of the same role often differed although they were consistent in direction. In addition, even when evidence was stronger, for example in the case of employment, average differences in the

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3 probability of the outcomes between foster carers' children and other children were modest, in the
4 order of 2-3 percentage points.
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7 Results in relation to other studies 8 9

10 We are not aware of any other studies that have examined the transition to adulthood in relation to
11 caregivers' children. Nevertheless, some observations on the consistency of the findings with those
12 observed during childhood are possible. First, researchers have found that carers' children learn
13 about responsibility and good parenting practices (Younes and Harp, 2007; Poland and Groze, 1993;
14 Clare et al., 2006; Moslehuddin, 1999), leading others to hypothesise that this could result in
15 premature growing up (Duffy, 2013; Martin, 1993). By contrast, we hypothesised that these same
16 childhood experiences could result in a delayed transition to adulthood. The evidence in this study is
17 consistent with the former rather than the latter interpretation. However, it is possible that one of
18 the negative experiences in childhood – that of loss of parental attention – was the mechanism
19 leading to lower academic qualifications. Qualifications are the gateway to socioeconomic success
20 and other life chances in adulthood, as we observed in the LS, with caregivers' children being less
21 likely to be in work and consequently less likely to achieve a managerial or professional social class.
22 These findings are not consistent with a maturity hypothesis. Although we found no evidence of
23 caregivers' child by census year interactions (i.e., period effects, data not shown), economic
24 conditions when starting work can affect those with fewer and those with more qualifications (von
25 Wachter, 2020), so these findings may not pertain to more recent generations of caregivers'
26 children.
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39 Previous research found age-related difficulties with sharing their home with a foster child with
40 older children coping best (Moslehuddin, 1999; Höjer et al., 2013). Our research found older
41 caregivers' children were less likely to be in education in early adulthood (Figure 1), which would
42 tend to contradict the childhood findings. However, previous research has also found that
43 caregivers' children cope better if older than the foster child (Höjer et al., 2013), which could
44 confound any relationship found for the age of caregivers' children and adult outcomes. Examining
45 our results based on absolute age and age relative to the foster child showed no association with age
46 in the unadjusted data, nor with relative age in models taking account of confounding. This suggests
47 a cautious approach to the findings for absolute age is indicated with replication recommended.
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55 We also hypothesised that because caregivers' daughters were found to be more affected than sons
56 and when the foster child was the opposite sex to their son or daughter (Moslehuddin, 1999;
57 Serbinski and Shlonsky, 2014), we would see moderation by the child's sex and their sex relative to
58 the foster child. Consistent with Moslehuddin (1999), we found some limited moderation suggesting
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3 that daughters could be more affected later in life as well as during fostering in childhood.
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5 Unfortunately, we only had information on women's fertility and cannot comment on parenthood
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7 for caregivers' sons. By contrast, evidence supporting the hypothesis that caregivers' sons and
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9 daughters are less affected when foster children are of the opposite sex was very limited and the
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11 overall conclusion must be that it was equivocal at best.

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13 Our choice of covariates was guided by the literature on predictors of being placed in social care
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15 and/or our adult outcomes. Some salient potential covariates, such as household income, were not
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17 available in the LS. Also, our estimates of relationships between the covariates and educational
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19 qualifications are conditional on all the other covariates. As such, it is difficult to compare the model
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21 estimates with those from other studies. Neither can we assume that the same findings will be
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23 found for the relationships between the covariates and our other adult outcomes. Nevertheless, a
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25 general observation is that the covariates should have removed a significant proportion of
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27 demographic and socioeconomic confounding of differences in adult functioning between foster
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29 carers' children and other children.

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Strengths and limitations

This longitudinal study had repeated prospective data on family arrangements in childhood, linked to demographic and socioeconomic indicators during the first 12 years of adult life. Coupled with the data being nationally representative, this allowed us to investigate evidence on whether caregivers' own children have an earlier transition to adulthood than non-caregivers' children. We could also investigate temporal changes in these indicators, in terms of both period and age. This would have been impossible using a dataset with shorter follow-up. The use of the LS also allowed us to model differences by their sex and the sex of the foster children, relative to their own, 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. For example, without accounting for confounding, stronger conclusions might have been made, since 9 of 11 markers differed for caregivers' children (table S2) whereas modelling that included confounding covariates found that only 6 of the 11 markers differed (table 3).

In common with most previous research, we could not differentiate between biological sex and self-identified gender. Questions about gender were first introduced into the census in 2021 for those aged 16 or over, precluding any exploration of gendered effects. Similarly, questions on civil partnerships, but not private cohabitation arrangements, were only introduced in the 2011 census, restricting the analysis to legal marital status.

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3 Our findings are based on data from 1971 to 2011. A consequence of the 2008 Great Recession has
4 been a tendency for the transition to adulthood milestones to be delayed. It is therefore possible
5 that our findings will not be replicated using 2021 data. Another example of a period effect is how
6 foster parents may have reported their employment status. While in earlier censuses a caregiving
7 parent might have self-identified as non-employed, in more recent censuses there is more emphasis
8 on fostering as a career with caregivers registered as self-employed.
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11 A disadvantage of census data is that they are only available every 10 years. Therefore, we were not
12 able to identify the age when children were placed in the family, nor for how long. Also, we were
13 unable to separately identify adopted children whose experiences may differ from those of
14 biological children (Sehmi et al., 2020). As in any longitudinal study, sample attrition occurred, albeit
15 at lower levels than reported elsewhere (Cameron et al., 2018; Viner and Taylor, 2005). There were
16 indications that loss to follow-up was greater in the non-parental care group, suggesting that some
17 bias may have been introduced into the estimates. Finally, as in any study using routine self-reported
18 data, we cannot rule out measurement error or residual confounding due to socioeconomic
19 circumstances.
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22 Implications and future research

23 From our data (Supplementary table S9), it appears that by mid-adulthood, any impact of an earlier
24 transition disappears. By their 40s, no differences in social outcomes between carers' children and
25 non-carers' children were seen. There was a suggestion of poorer self-rated health for foster carers'
26 children, which was not corroborated by the findings for limiting long-term illness. It is possible that
27 health differences could be revealed in older age. Also, other measures of outcomes in mid-
28 adulthood might reveal longer term economic scarring from early achievement of transition
29 milestones. We recommend that social work education and training could include knowledge and
30 skills development relevant to foster carers' own children, including the risk of an early transition to
31 adulthood.
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33 Supervising social workers provide both supervision and support to adult foster carers, and act as an
34 intermediary between the fostering household and the foster child's social worker. A notable
35 omission in job specifications is to support the pre-existing children in a household when a child is
36 placed with them. More explicitly, supporting foster parents to keep their children in education for
37 longer could become part of the role of supervising social workers, who might explore with foster
38 carers what barriers are preventing their own children from staying in school, and what is prompting
39 them to want to leave school and go out to work. The role of a supervising social worker could also
40 be extended to supporting children of foster parents, especially during their adolescence. Time to
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3 talk with and support adolescent children could be built into the social worker's visits to the family.
4 This would entail fostering services providing caseload management that ensures that supervising
5 social workers have the time to work directly with foster carers' children.
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9 These findings also have relevance for the recruitment of foster carers. There could be a reluctance
10 for parents with families to consider fostering, due to concerns about the potential impact on their
11 own children. Our research can inform potential foster carers of the small risk of an earlier transition
12 to adulthood and give them reassurance that current evidence of longer-term risk of adverse health
13 and social consequences does not suggest any harm.
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18 The current research suggests that a broader investigation of foster carers' households is warranted.
19 Several new areas of research are suggested by the findings, including investigating the processes
20 leading to an earlier transition to adulthood. Does the benefit of maturity or the challenge of sharing
21 their home drive the earlier transition? Is there support for the hypothesis that it is not the age of
22 caregivers' children that is important, but that caregivers' children cope better if older than the
23 foster child? Can future research corroborate our suggestion that daughters in fostering households
24 are more affected than sons? Our focus was on the children of caregivers, and we did not address
25 whether children needing foster care fare better or worse if placed with a foster parent who has
26 children of their own. Finally, recent social changes have altered the process of the transition to
27 adulthood, with young people staying in education for longer, less able to be financially independent
28 of their parents and leave home, different attitudes to parenthood and marriage and recognition
29 and acceptance of alternative lifestyles. These changes suggest replication with more up-to-date
30 data might reveal new findings on the varying pathways taken by young adults with and without
31 experience of growing up with foster children.
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41 42 Conclusion

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45 This study set out to discover whether foster caring is associated with variations in the process of
46 achieving the transition to adulthood for caregivers' own children. The results, although modest,
47 support the hypothesis of an earlier transition. Social workers' awareness of the impact of fostering
48 on caregivers' own children could mitigate these negative effects for the family. Based on the 2022
49 figures for fostering households and estimates of the number of own children within them
50 (McDermid et al., 2012; National Statistics, 2022), the findings have implications for some 58,000
51 caregivers' children.
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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 datasets which may not exactly reproduce National Statistics aggregates.

The derivation of 1971 and 1981 NSSEC & Goldthorpe classes is provided in Bukodi and Neuburger (2009) "Data Note. Job and occupational histories for the NSHD 1946 Birth Cohort" 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.

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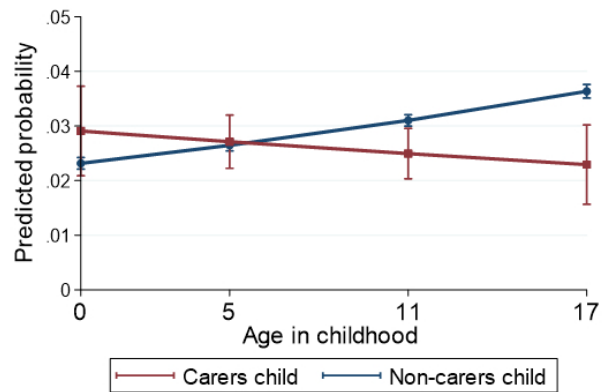
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For Peer Review

Figure 1. Probability of being in education in early adulthood by age in childhood for caregivers' and non-caregivers' children



Source: ONS Longitudinal Study

Predicted probabilities are estimated at the mean of all covariates (child's census cohort, gender, age in childhood and adulthood, ethnicity, migration status, born outside UK; father's qualifications, marital status, employment status, social class; mother's qualifications, marital status, employment status, social class; household overcrowding; number of children) from a logistic regression model for being in education or not.

190x275mm (96 x 96 DPI)

Supplementary table S1. Characteristics of dependent children using all available (full) data compared with those in the complete data sample and those with incomplete data on one or more variables, ONS Longitudinal Study

	Full data		Complete data		Incomplete data	
	Observations = 301,608		Observations = 299,096		Observations = 2,512 ¹	
	Observations	%	Observations	%	Observations	%
Foster children in household						
No	298,044	98.82	295,567	98.82	2,477	98.61
Yes	3,564	1.18	3,529	1.18	35	1.39
Gender (%)						
Male	149,865	49.69	148,583	49.68	1,282	51.04
Female	151,743	50.31	150,513	50.32	1,230	48.96
Country of birth (%)						
UK	294,019	97.48	291,577	97.49	2,442	97.21
Non-UK	7,589	2.52	7,519	2.51	70	2.79
Migration status (%) ²						
1 st generation	4,701	1.57	4,695	1.57	xx	xx.xx
2 nd generation	34,249	11.45	34,235	11.45	xx	xx.xx
≥3 rd generation	260,215	86.98	260,166	86.98	49	71.01
Ethnicity (%) ²						
White	269,545	89.37	267,404	89.4	2,141	85.23
Black	4,005	1.33	3,987	1.33	18	0.72
South Asian	10,067	3.34	10,049	3.36	18	0.72
Other	1,051	0.35	1,041	0.35	10	0.40
Not known	16,940	5.62	16,615	5.56	325	12.94
Overcrowded						
No	259,286	85.97	257,425	86.07	1,861	74.08
Yes	42,322	14.03	41,671	13.93	651	25.92
Father's marital status ²						
Married	295,224	97.88	292,717	97.87	2,5xx	xx.xx
Previously married	2,453	0.81	2,451	0.82	xx	xx.xx
Single	3,931	1.30	3,928	1.31	xx	xx.xx
Father's social class						

	Full data		Complete data		Incomplete data	
	Observations = 301,608		Observations = 299,096		Observations = 2,512 ¹	
Manager/professional	78,222	25.94	77,957	26.06	265	10.55
Intermediate	81,184	26.92	80,749	27.00	435	17.32
Routine	72,854	24.16	72,318	24.18	536	21.35
Not known	69,347	22.99	68,072	22.76	1,275	50.78
Father's education						
18+ qualifications	45,363	15.04	45,245	15.13	118	4.77
<18 qualifications	256,208	84.96	253,851	84.87	2,357	95.23
Father's employment status						
Employed	201,039	66.66	199,864	66.82	1,175	46.78
Non-employed	100,569	33.34	99,232	33.18	1,337	53.22
Mother's marital status ²						
Married	219,748	98.29	292,701	97.86	2,5xx	xx.xx
Previously married	1,291	0.58	2,739	0.92	xx	xx.xx
Single	2,536	1.13	3,656	1.22	xx	xx.xx
Mother's social class						
Manager/professional	14,641	4.85	14,584	4.88	57	2.27
Intermediate	16,931	5.61	16,836	5.63	95	3.78
Routine	26,033	8.63	25,795	8.62	238	9.47
Not known	244,003	80.9	241,881	80.87	2,122	84.47
Mother's education						
18+ qualifications	31,700	10.51	31,649	10.58	382	15.21
<18 qualifications	269,873	89.49	267,447	89.42	2,130	84.79
Mother's employment status						
Employed	36,297	12.03	35,915	12.01	411	15.17
Non-employed	265,311	87.97	263,181	87.99	2,298	84.83
	Mean	S.E.	Mean	S.E.	Mean	S.E.
Child's age	9.39	0.01	9.40	0.01	8.37	0.09
Number children in household	1.41	0.002	1.41	0.002	1.79	0.03

¹ Note that count totals for individual variables will be \leq total incomplete observations depending on whether data are missing for that variable or not

² Cell counts < 10 and their associated percentages have been suppressed to prevent disclosure, as have the 2 least significant figures for cells which allow calculation of other cell counts <10.

Supplementary table S2. Markers of the transition to adulthood for caregivers' and non-caregivers' children, ONS Longitudinal Study

	Caregivers' children	Non-caregivers' children	p
Completing education (%)			
< 18-year qualifications	83.55	74.40	< 0.0005
In education	5.27	5.53	0.57
Leaving home (%)			
Left parental home	82.22	79.45	0.006
Getting on in work (%)			
In employment	64.80	69.89	< 0.0005
Social class			< 0.0005
Managerial/professional	17.81	23.29	
Intermediate	27.31	27.31	
Routine	34.64	30.82	
Not known	20.23	17.02	
Long-term non-employed	5.18	2.62	< 0.0005
Financially independent (%)			
Housing tenure			< 0.0005
Owner occupier	47.71	52.80	
Renting	37.16	32.07	
Still with parents	11.15	11.38	
Other arrangement	3.98	3.74	
Partnership (%)			
Currently or formerly married	30.46	23.22	< 0.0005
Living alone	4.03	4.30	0.49
Parenthood (%)			
Teenage mother	11.25	6.54	< 0.0005
Number of children (women only)			< 0.0005
0 children	60.96	71.11	
1 - 2 children	33.60	25.92	
≥ 3 children	5.44	2.97	

Probabilities based on Pearson χ^2 tests for categorical variables and independent t-tests for continuous variables

Supplementary table S3. Odds ratios for early adult outcomes regressed on being a caregiver's child (reference non-caregivers' children), ONS Longitudinal Study

	Estimate	95% CI	p
Completing education			
< 18-year qualifications	1.02	1.00, 1.04	0.14
In education	0.96	0.93, 0.99	0.01
Leaving home			
Left parental home	1.02	1.00, 1.05	0.11
Getting on in work			
In employment	0.98	0.97, 1.00	0.0044
Social class			0.01
Managerial/professional	1.00 (Reference)		
Intermediate	1.00	0.98, 1.02	
Routine	1.01	0.99, 1.03	
Not known	1.03	1.01, 1.05	
Long-term non-employed	0.98	0.94, 1.01	0.19
Financially independent			
Housing tenure			0.026
Owner occupier	1.00 (Reference)		
Renting	1.00	0.98, 1.01	
Still with parents	0.97	0.95, 0.99	
Other arrangement	1.18	0.82, 1.71	
Partnership			
Currently or formerly married	1.14	1.04, 1.24	0.005
Living alone	1.00	0.96, 1.03	0.84
Parenthood			
Teenage mother	1.02	0.99, 1.06	0.17
Number of children (women only)			0.72
0 children	1.00 (Reference)		
1 - 2 children	1.01	0.99, 1.03	
≥ 3 children	1.01	0.99, 1.03	

Estimated from logistic and multinomial models controlling for child's census cohort, gender, age in childhood and adulthood, ethnicity, migration status, born outside UK; father's qualifications, marital status, employment status, social class; mother's qualifications, marital status, employment status, social class.

Supplementary table S4. Odds ratios for early adult outcomes regressed on covariates in the educational qualifications model, ONS Longitudinal Study

	Estimate	95% CI	p
Child covariates			
Cohort			
1971	1.00 (Reference)		
1981	0.72	0.70, 0.74	<0.0005
1998	0.22	0.21, 0.23	<0.0005
2001	0.08	0.08, 0.09	<0.0005
Female	0.84	0.82, 0.86	<0.0005
Born outside UK	1.03	0.92, 1.15	0.61
Child age	1.09	1.09, 1.10	<0.0005
Migration status			
1 st generation	1.00 (Reference)		
2 nd generation	1.18	1.02, 1.37	0.03
3 rd generation	1.55	1.34, 1.79	<0.0005
Ethnicity			
White	1.00 (Reference)		
Black	1.05	0.95, 1.17	0.34
South Asian	0.53	0.50, 0.57	<0.0005
Other	0.45	0.37, 0.55	<0.0005
Not known	0.81	0.77, 0.86	<0.0005
Adult age	0.77	0.76, 0.77	<0.0005
Father covariates			
Social class			
Managerial/professional	1.00 (Reference)		
Intermediate/ technical	1.54	1.50, 1.58	<0.0005
Routine	2.27	2.20, 2.35	<0.0005
Other	1.68	1.59, 1.78	<0.0005
< 18+ qualifications	1.82	1.77, 1.88	<0.0005
Marital status			
Married	1.00 (Reference)		
Single	1.43	1.18, 1.73	<0.0005
Formerly married	1.19	0.99, 1.44	0.06

	Estimate	95% CI	p
Employment status			
Employed	1.00 (Reference)		
Unemployed	1.49	1.41, 1.56	<0.0005
Out of the labour force	1.09	1.04, 1.14	<0.0005
Mother covariates			
Social class			
Managerial/professional	1.00 (Reference)		
Intermediate/ technical	1.06	1.00, 1.12	0.05
Routine	1.71	1.62, 1.81	<0.0005
Other	1.59	1.49, 1.71	<0.0005
< 18+ qualifications	1.99	1.92, 2.06	<0.0005
Marital status			
Married	1.00 (Reference)		
Single	1.21	1.00, 1.46	0.05
Formerly married	1.04	0.86, 1.26	0.67
Employment status			
Employed	1.00 (Reference)		
Unemployed	1.19	1.02, 1.37	0.02
Out of the labour force	1.06	1.00, 1.12	0.04
Household covariates			
Overcrowding	1.19	1.02, 1.37	0.02
Number of children in household	1.06	1.00, 1.12	0.04

Estimated from logistic and multinomial models controlling for being a caregivers' child or not.

Odds ratios > 1 imply an increased likelihood of achieving lower than 18-year qualifications.

Supplementary table S5. Odds ratios for early adult outcomes regressed on the interaction between childhood age and being a caregiver's child (reference non-caregivers' children), ONS Longitudinal Study

	Estimate	95% CI	p
Completing education			
< 18-year qualifications	1.02	1.00, 1.04	0.14
In education	0.96	0.93, 0.99	0.01
Leaving home			
Left parental home	1.02	1.00, 1.05	0.11
Getting on in work			
In employment	0.98	0.97, 1.00	0.0044
Social class			0.01
Managerial/professional	1.00 (Reference)		
Intermediate	1.00	0.98, 1.02	
Routine	1.01	0.99, 1.03	
Not known	1.03	1.01, 1.05	
Long-term non-employed	0.98	0.94, 1.01	0.19
Financially independent			
Housing tenure			0.026
Owner occupier	1.00 (Reference)		
Renting	1.00	0.98, 1.01	
Still with parents	0.97	0.95, 0.99	
Other arrangement	1.18	0.82, 1.71	
Partnership			
Currently or formerly married	1.01	0.99, 1.02	0.63
Living alone	1.00	0.96, 1.03	0.84
Parenthood			
Teenage mother	1.02	0.99, 1.06	0.17
Number of children (women only)			0.72
0 children	1.00 (Reference)		
1 - 2 children	1.01	0.99, 1.03	
≥ 3 children	1.01	0.99, 1.03	

1 Estimated from logistic and multinomial models controlling for child's census cohort, gender, age in
2 childhood and adulthood, ethnicity, migration status, born outside UK; father's qualifications, marital status,
3 employment status, social class; mother's qualifications, marital status, employment status, social class.
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Supplementary table S6. Odds ratios (95% confidence intervals) for early adult outcomes regressed on childhood age relative to foster children's age (reference non-caregivers' children), ONS Longitudinal Study

	Carer's child older than foster child(ren)	Foster child(ren) older than carer's child	Both	p
Completing education				
< 18-year qualifications	1.24 (1.03, 1.48)	1.26 (1.06, 1.51)	1.27 (1.07, 1.51)	0.0002
In education	0.83 (0.60, 1.14)	0.99 (0.76, 1.28)	1.15 (0.89, 1.49)	0.49
Leaving home				
Left parental home	1.23 (1.03, 1.46)	0.80 (0.64, 1.01)	1.00 (0.83, 1.21)	0.03
Getting on in work				
In employment	0.867 (0.761, 0.987)	0.916 (0.795, 1.055)	0.906 (0.805, 1.021)	0.036
Social class				
				0.0008
Managerial/professional	1.00 (Reference)	1.00 (Reference)	1.00 (Reference)	
Intermediate	1.17 (0.99, 1.39)	0.96 (0.79, 1.17)	0.98 (0.83, 1.17)	
Routine	1.24 (1.05, 1.47)	1.10 (0.91, 1.34)	1.06 (0.90, 1.24)	
Not known	1.58 (1.29, 1.94)	1.06 (0.85, 1.32)	1.22 (1.01, 1.47)	
Long-term non-employed	1.32 (0.93, 1.83)	1.452 (1.05, 2.01)	1.02 (0.76, 1.39)	0.058
Financially independent				
Housing tenure				
				0.008
Owner occupier	1.00 (Reference)	1.00 (Reference)	1.00 (Reference)	
Renting	1.11 (0.97, 1.26)	0.99 (0.86, 1.15)	1.06 (0.94, 1.20)	
Still with parents	0.80 (0.66, 0.96)	1.23 (0.99, 1.54)	1.01 (0.84, 1.23)	
Other arrangement	1.10 (0.77, 1.56)	1.25 (0.92, 1.71)	1.16 (0.87, 1.55)	
Partnership				
Currently/ formerly married	0.86 (0.75, 0.98)	1.00 (0.82, 1.21)	0.84 (0.73, 0.97)	0.016
Living alone	1.56 (1.22, 2.01)	1.39 (1.01, 1.90)	1.00 (0.78, 1.28)	0.36
Parenthood (women only)				
Teenage mother	1.56 (1.22, 2.01)	1.39 (1.01, 1.90)	1.00 (0.78, 1.28)	0.0009
Number of children				
				0.015
0 children	1.00 (Reference)	1.00 (Reference)	1.00 (Reference)	
1 - 2 children	1.17 (0.98, 1.40)	1.05 (0.84, 1.31)	1.05 (0.88, 1.25)	
≥ 3 children	1.59 (1.14, 2.22)	1.66 (0.99, 2.80)	0.85 (0.57, 1.26)	

Estimated from logistic and multinomial models controlling for child's census cohort, gender, age in childhood and adulthood, ethnicity, migration status, born outside UK; father's qualifications, marital status, employment status, social class; mother's qualifications, marital status, employment status, social class.

Supplementary table S7. Odds ratios for early adult outcomes regressed on the interaction between being a caregiver's child (reference non-caregivers' children) and sex (reference male), ONS Longitudinal Study

	Estimate	95% CI	p
Completing education (%)			
< 18-year qualifications	1.14	0.93, 1.40	0.22
In education	0.94	0.68, 1.29	0.70
Leaving home (%)			
Left parental home	1.20	0.96, 1.50	0.12
Getting on in work (%)			
In employment	0.86	0.74, 1.00	0.05
Social class			
Managerial/professional	1.000 (Reference)		0.0034
Intermediate	0.88	0.71, 1.09	
Routine	1.00	0.82, 1.23	
Not known	1.33	1.04, 1.69	
Long-term non-employed	1.33	0.87, 2.03	0.19
Financially independent (%)			
Housing tenure			
Owner occupier	1.000 (Reference)		0.049
Renting	1.18	1.01, 1.38	
Still with parents	0.88	0.70, 1.11	
Other arrangement	1.18	0.82, 1.71	
Partnership (%)			
Currently or formerly married	1.14	0.95, 1.35	0.16
Living alone	1.00	0.71, 1.42	0.99

Estimated from logistic and multinomial models controlling for child's census cohort, gender, age in childhood and adulthood, ethnicity, migration status, born outside UK; father's qualifications, marital status, employment status, social class; mother's qualifications, marital status, employment status, social class.

Supplementary table S8. Odds ratio (95% confidence interval) for early adult outcomes regressed on sex relative to foster children's sex (reference non-caregivers' children), ONS Longitudinal Study

	Same sex	Opposite sex	Both same and opposite	p
Completing education				
< 18-year qualifications	1.20 (1.00, 1.45)	1.42 (1.17, 1.73)	1.21 (1.03, 1.41)	0.0001
In education	0.80 (0.58, 1.11)	1.19 (0.89, 1.57)	1.02 (0.80, 1.29)	0.36
Leaving home				
Left parental home	1.09 (0.89, 1.33)	1.16 (0.93, 1.45)	0.93 (0.79, 1.10)	0.38
Getting on in work				
In employment	0.96 (0.83, 1.11)	0.88 (0.76, 1.02)	0.87 (0.78, 0.97)	0.026
Social class				<0.0005
Managerial/professional	1.000 (Reference)	1.000 (Reference)	1.000 (Reference)	
Intermediate	0.97 (0.80, 1.17)	1.10 (0.89, 1.35)	1.10 (0.94, 1.29)	
Routine	1.18 (0.98, 1.42)	1.35 (1.10, 1.65)	1.03 (0.89, 1.20)	
Not known	1.07 (0.85, 1.34)	1.54 (1.22, 1.95)	1.30 (1.09, 1.54)	
Long-term non-employed	1.24 (0.85, 1.81)	1.48 (1.04, 2.12)	1.11 (0.85, 1.45)	0.09
Financially independent				
Housing tenure				0.28
Owner occupier	1.000 (Reference)	1.000 (Reference)	1.000 (Reference)	
Renting	1.03 (0.89, 1.19)	1.13 (0.97, 1.32)	1.05 (0.94, 1.17)	
Still with parents	0.93 (0.75, 1.14)	0.87 (0.69, 1.08)	1.09 (0.92, 1.29)	
Other arrangement	1.23 (0.89, 1.70)	1.24 (0.87, 1.78)	1.10 (0.83, 1.45)	
Partnership				
Currently/ formerly married	0.82 (0.70, 0.97)	0.99 (0.83, 1.19)	0.86 (0.75, 0.97)	0.012
Living alone	1.10 (0.81, 1.50)	1.00 (0.70, 1.44)	1.05 (0.82, 1.35)	0.92
Parenthood (women only)				
Teenage mother	1.38 (1.00, 1.90)	1.27 (0.92, 1.76)	1.21 (0.98, 1.51)	0.031
Number of children				0.012
0 children	1.000 (Reference)	1.000 (Reference)	1.000 (Reference)	
1 - 2 children	1.25 (1.01, 1.54)	1.03 (0.83, 1.29)	1.04 (0.89, 1.22)	
≥ 3 children	1.42 (0.87, 2.33)	1.98 (1.31, 3.00)	0.93 (0.66, 1.30)	

Estimated from logistic and multinomial models controlling for child's census cohort, gender, age in childhood and adulthood, ethnicity, migration status, born outside UK; father's qualifications, marital status, employment status, social class; mother's qualifications, marital status, employment status, social class.

Supplementary table S9. Odds ratio (95% confidence interval) for mid-adult¹ outcomes regressed on being a caregiver's child (reference non-caregivers' children), ONS Longitudinal Study

	Estimate	95% CI	p
Health			
Poor self-rated health	1.11	0.99, 1.24	0.07
Limiting long-term illness	1.09	0.96, 1.24	0.18
Getting on in work			
In employment	0.92	0.82, 1.04	0.17
Social class			0.89
Managerial/professional	1.00 (Reference)		
Intermediate	1.02	0.91, 1.15	
Routine	0.99	0.88, 1.11	
Not known	1.06	0.85, 1.32	
Long-term non-employed	1.09	0.90, 1.32	
Financially independent			
Housing tenure			0.19
Owner occupier	1.00 (Reference)		
Renting	1.05	0.95, 1.17	
Other arrangement	1.22	0.97, 1.53	
Partnership			
Marital status			0.55
Currently married	1.00 (Reference)		
Formerly married	0.97	0.85, 1.10	
Single	1.05	0.94, 1.18	

¹ Age 40-49 years old

Estimated from logistic and multinomial models controlling for child's census cohort, gender, age in childhood and adulthood, ethnicity, migration status, born outside UK; father's qualifications, marital status, employment status, social class; mother's qualifications, marital status, employment status, social class.