Office of the
First Minister and
Deputy First Minister

The consequences of childhood disadvantage in Northern Ireland at age 5

June 2010

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A report to the Northern Ireland Office of the First Minister and Deputy First Minister

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Executive Summary

1. This report presents an analysis of child outcomes at age 5 from the Millennium Cohort Study (MCS), a longitudinal study tracking children and their families who were born at the turn of the century, in terms of conditions and experiences which precede them as recorded at earlier sweeps of the survey. In particular the analyses aim to unpack the relationship between child poverty and child outcomes, examining how far the statistical link can be accounted for by background factors and modifiable behaviours. Running through the exercise is a search for any explanatory factor which may be particularly prevalent in Northern Ireland compared to other countries of the UK.

2. The Millennium Cohort Study is a longitudinal birth cohort study, tracking a cohort of 18, 818 children born in the UK in 2000/01. The longitudinal design of the study allows us to examine child development over time, and to assess outcomes at a given age in the light of circumstances and characteristics at earlier points in time. The MCS is a major resource for understanding the implications of the social conditions surrounding birth and early childhood for child outcomes.

3. At age 5, children in NI fared on average better than those in GB in terms of cognitive scores, educational assessments, behavioural assessments and general health. These differences between GB and NI were largely driven by poorer outcomes in England. Children in NI were more likely to be overweight than those in the other 3 UK countries.

4. NI households were more likely to be below the poverty line than those in GB, and NI respondents were also relatively disadvantaged in terms of social class and education

5. Respondents in NI rated their local neighbourhoods more highly than respondents in GB.

6. Health-related indicators among parents, such as smoking, breastfeeding and BMI were less favourable in NI than in GB.

7. NI households scored lower than GB households in terms of home-learning environment, but children in NI watched less television, and partners in NI were more involved in parenting than those in GB.

8. Up to the child reaching around age 3, NI respondents were less likely to use partners or nurseries for childcare than respondents in GB.

9. Our regression analyses showed that the predictors of each outcome were broadly similar within NI and GB, and found very few significant differences in

the strength of the relationships between outcomes and predictors in NI and GB.

10. The NI advantage in cognitive and educational outcomes is robust to modelling using a wide range of potential mediators and controls.

11. In the case of behavioural difficulties, the NI advantage is accounted for by including religion in the model. This variable reflects greater diversity in GB (including non-Christian religions) and a lower salience of religious identity (reflected in a substantial group professing no religion in GB). It cannot be interpreted as reflecting religiosity per se. Notably, there was no significant effect of Catholic or Protestant identity.

12. In the case of health, the difference between GB and NI is explained by the inclusion of a range of variables including ethnicity (in GB) and the perceived quality of the local neighbourhood.

13. The NI lead in overweight children is partially accounted for by the higher Body Mass Index (BMI) of NI parents.

14. Poverty is linked to all the outcomes considered in this report. However, the cognitive and educational outcomes are more strongly structured by poverty than the health and behavioural outcomes. Parental education and social class are particularly powerful predictors of educational and cognitive outcomes. Their impact however can only be partially accounted for despite the inclusion of a large number of potential mediators including rich information on parenting practices.

15. Girls are advantaged in terms of cognitive, educational and behavioural outcomes and general health, but are more likely than boys to be overweight at age 5.

16. Older siblings are negative for cognitive and educational outcomes, but positive in the case of behaviour and general health. The presence of both older and younger siblings is protective in the case of overweight.

17. Parents' longstanding illness and mental distress are linked to poorer cognitive, educational, and behavioural assessments and general health in the child.

18. Parents' Body Mass Index (BMI) is linked to the child's BMI, and also to the child's educational and behavioural scores.

19. Variables reflecting good parenting practices, regularity and a strong home learning environment predict positive cognitive, educational and behavioural outcomes. Fathers' involvement has explanatory power for cognitive and educational outcomes.

20. Overall, we can say that although poverty is relevant to an understanding of the full range of childhood outcomes considered here, both its impact, and the extent to which this can be explained by mediating factors, varies across outcomes. General health and BMI among children at age 5 are far less strongly socially patterned along dimensions of poverty and social disadvantage than cognitive and educational outcomes. Parental education and to a lesser extent social class are powerful predictors of cognitive and educational outcomes, and their impact can only be partially explained even by the large number of variables that we introduced in our modelling process including quite detailed information on parenting practices.

Chapter 1: Introduction

This report presents an analysis of child outcomes at age 5 in the Millennium Cohort Study in terms of conditions and experiences which precede them as recorded at earlier sweeps of the survey. In particular the analyses aim to unpack the relationship between child poverty and child outcomes, examining how far the statistical link can be accounted for by background factors and modifiable behaviours. Running through the exercise is a search for any explanatory factor which may be particularly prevalent in Northern Ireland compared to other countries of the UK, and to test whether the existence or strength of the relationships is different in Northern Ireland from the rest of the UK.

1.1 The Millennium Cohort Study (MCS)

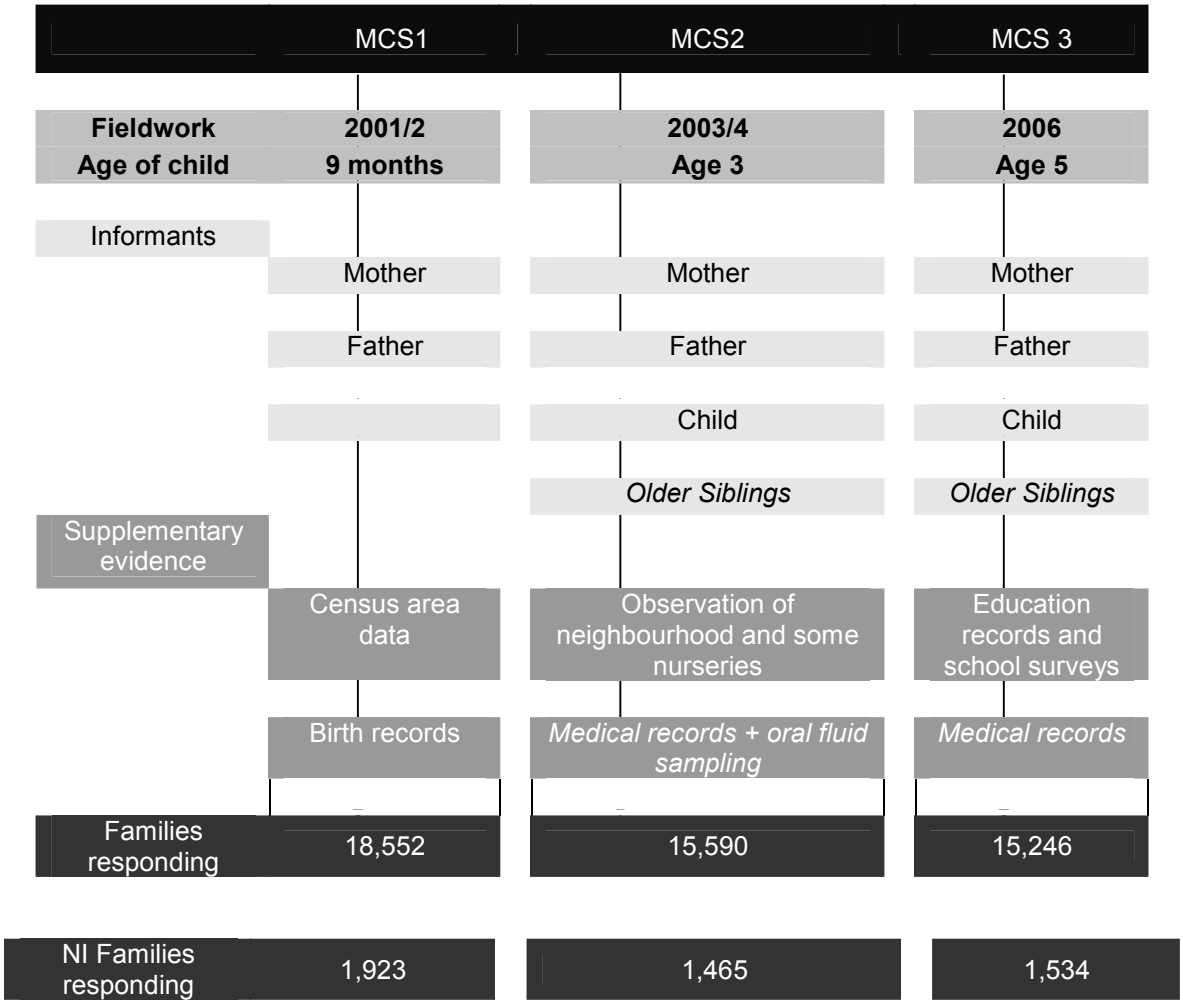
Understanding the social conditions surrounding the first five years of a child's life is fundamental to the study of the whole of the life course. The MCS provides an opportunity to answer major questions about the prospects of children born in 2000-1 concerning wealth and poverty, the quality of family life, and outcomes for children.

The evidence accumulated over the first five years of life for the MCS children is both longitudinal and multi-faceted. It allows us to assess the cumulative impact of disadvantage experienced in previous waves of the study. It also allows us to assess the impact of different forms and indicators of disadvantage across the various domains of the child's life. To what extent do the same indicators predict adverse outcomes in health and education for example, which would suggest a concentration of disadvantage across domains within the same families? And to what extent are the predictors of adverse outcomes domain specific?

The sample population for the study was drawn from all live births in the UK over 12 months from 1 September 2000 in England & Wales and 1 December 2000 in Scotland & Northern Ireland. The sample was selected from a random sample of electoral wards, disproportionately stratified to ensure adequate representation of all four UK countries, deprived areas and areas with high concentrations of Black and Asian families. The sample design of the MCS differs from that of its predecessors (The National Child Development Study 1958 and British Cohort Study 1970) in that it took a whole year's births, and covers the whole of the United Kingdom for the first time. The sample was drawn slightly later in Scotland and Northern Ireland so as not to coincide with other surveys being carried out on families with babies in these areas at the same time.

Figure 1.1 summarises the structure and content of the first 3 waves of the study (figure adapted from Joshi et. al. 2010, p.7).

Figure 1.1 Millennium Cohort Study: Content of first three waves at a glance



1.2 Evidence on Disadvantage and Child Outcomes

In constructing our analyses for this report, we have been able to draw on a wealth of evidence which has already been generated in previous analyses of the MCS data (Dex & Joshi 2005; Hansen et al 2010), as well as the wider literature on the links between social disadvantage and child outcomes.

The links between child poverty and other indicators of disadvantage have been investigated, and it is clear that education, ethnicity, and the structure, size and work status of the family, as well as the age of the mother, are strongly predictive of being poor, and also of remaining poor or moving into poverty over time (Bradshaw & Holmes 2010). Renting rather than owning a home is also implicated in this.

The links between socio-economic disadvantage and educational outcomes have been documented over many years(Feinstein 2003; Floud et al 1956; Halsey et al 1980). The link between demographic characteristics such as parental education and the child's educational outcomes is confirmed for the MCS children by Hansen(2010).

The links between financial hardship and cognitive and behavioural outcomes for the MCS children are described by Schoon et. al. (2010)

The link between inequalities in health and in wealth has been demonstrated by a great deal of evidence, including the work of Michael Marmot (2005). Health and Body Mass Index (BMI) have also been found to be socially patterned among the MCS children (Kelly & Bartley 2010).

The National Equality Panel (Hills 2010) has recently reported on the relationships between inequalities in people's economic circumstances and their other characteristics. It emphasised that economic inequalities are relatively high in the UK. It also emphasised the cumulative effect of inequalities across the lifecycle, and pointed out the difficulty of achieving equality of opportunity in the context of large inequalities of condition.

Within the Northern Irish context, the aim of tackling inequalities is a stated policy objective. The report 'Equality for All' (ECNI 2007) states that equality of opportunity is an entitlement, and that the persistence of inequalities diminishes us all. This report highlights inequalities within the areas of education, employment, health, housing and civic participation, and highlights the role of prejudice. Within education, the report cites evidence for the low attainment of Protestant boys on free school meals (OFMDFM 2001).Within the labour market, there is evidence that the labour market penalties previously experienced by Catholics have diminished. Gender differentials and labour market obstacles faced by mothers in particular, have been persistent, and are often exacerbated by the difficulty of obtaining suitable childcare.

The NI government has a ten year strategy for children and young people (2006-2016) (OFMDFM 2006). This strategy emphasises the health, well being and educational progress of young people, and points out the need for policy to be informed by rigorous research evidence in this area.

1.3 Analytical Strategy

We begin by providing a descriptive account of differences between the countries of the UK on selected indicators of child outcomes and variables which may predict them.

This formed the basis for a set of nested regression models analyzing child outcomes at age 5 in terms of predictors describing their family background during their early years, with financial poverty playing a pivotal role in the analysis. This provided the foundation for identifying those relationships which are different in Northern Ireland than the rest of UK, and those which are the same. We operationalised the notion of 'the penalty to disadvantage' as the estimate of the impact on a set of outcome measures of financial poverty, obtained in a series of models without, and then with adjustment for background conditions and mitigating circumstances and behaviours.

We analyzed outcomes at age 5 in terms of indicators taken at earlier sweeps, avoiding the possible ambiguity of explaining outcomes in terms of current circumstances which could be affected by reverse causation.
All analyses were appropriately weighted to account for the sample design, attrition and non-response and was carried out in STATA software.

1.3.1 Child Outcomes

We examine the following five indicators at MCS3 (at around age 5).

Cognitive
1. Combined British Ability Scales (BAS), derived from 3 BAS subscales, treated as standardised scores of percentiles.

Cognitive abilities at age five were measured in the MCS using three subscales of the British Ability Scales Second Edition (BAS II). These are Naming Vocabulary, Picture Similarities, and Pattern Construction. The three subscales are designed to capture core aspects of verbal ability, pictorial reasoning and spatial abilities (Elliott, 1996; Hill, 2005).

Behavioural
2. Total difficulties score, derived from four Strengths and Difficulties (SDQ) scales, treated as standardised scores of percentiles.

The behavioural development of the children is measured with the Strengths and Difficulties Questionnaire (SDQ). The SDQ is a behavioural screening questionnaire for 3 to 16-year-olds (Goodman, 1997, 2001; Goodman, Meltzer and Bailey, 1998). It consists of 25 items which generate scores for five subscales measuring: conduct problems; hyperactivity; emotional symptoms; peer problems; and pro-social behaviour. The child's behaviour is reported by a parent, normally the mother, in the computer assisted self-completion module of the questionnaire. For the following analysis an overall difficulties score was computed by summing replies to the 20 items in subscales indicating behaviour problems, i.e. conduct problems, hyperactivity, emotional symptoms, and peer problems.

Educational
3. Summary score derived from Foundation Stage Profile (FSP) and Devolved Administration Teacher Survey.

Within England, Foundation Stage Profiles are part of the regulatory and quality framework for the provision of learning, development and care for children between birth and the academic year in which they turn five (0-5). Foundation Stage Profile (FSP) scores are reported by teachers at the end of the first year of school, and collected by the Department for Children Schools and Families in state schools in England. Teachers receive specific training in making these assessments. For cohort members in England, these scores were linked to the survey data. In the other UK countries, equivalent scores were requested from teachers specifically for the MCS members, as they are not part of the policy framework outside England. There is a need for caution in comparing the scores in England to those in the other UK countries due to the different mode of data collection. The FSP score examined in this report sums six areas of learning: 1) personal, social and emotional

development; 2) communication, language and literacy; 3) mathematical development; 4) knowledge and understanding of the world; 5) physical development; and 6) creative development.

Child Health

4. Overweight (including obesity)
5. Child's general health (as reported by main respondent).

Children from the Millennium Cohort Study were weighed and measured by interviewers trained for this purpose. This provided an opportunity to examine the prevalence of overweight and obesity within this contemporary cohort of UK children. Body Mass Index (BMI; weight/height squared), a proxy for adiposity, is the most common measurement of body size at the population level. Childhood overweight and obesity is defined by the International Obesity Task Force cut-offs for BMI (Cole et al 2000). These cut-offs were based on data from six countries, including the UK, and the centiles are linked to the widely accepted adult cut-offs for overweight and obesity. Hence data can be compared internationally

The main respondent (typically the mother) reported on the general health of the child, rating it as excellent, very good, good, fair or poor. This provides a broad subjective indicator of the child's general health.

1.3.2 Predictors and controls

1. Disadvantage , Northern Ireland and child specific controls
    - N Ireland versus GB (also distinguishing England for Education)
    - Indicator of advantage/ disadvantage
    - Experience of income below poverty line at either of both of first two sweeps
    - Gender
    - Age at interview
    - Birthweight
    - Birth order

2. Social background controls
    - Ethnic group
    - Religion
    - Family structure
    - Number of younger sibs born up to age 5
    - Parents' educational level (highest of both parents and first 2 sweeps)
    - Parents' social class (highest of both parents and first 2 sweeps)
    - Parental employment
    - Parental longstanding illness
    - Parental mental health/life satisfaction

3. Neighbourhood characteristics
    - Sampled in a disadvantaged ward
    - Reported satisfaction with local area
    - Social capital indicator
    - Rural or urban
    - Moved home since sweep 1

- Housing tenure

4. Other potential moderating/mediating indicators
    - Parental smoking (in pregnancy and anyone in home later)
    - Breastfed
    - Indicators of parenting practices at sweeps 1 and 2, such as rules and regular mealtimes
    - The home learning environment
    - Fathers' involvement in parenting
    - Use of different types of childcare before and after age 3
    - Parental BMI

The full regression template is provided in appendix A1.

Modelling

The outcomes were modelled using linear regression for continuous variables and logistic regression for categorical variables.

We ran a set of nested models for each outcome, building up the following blocks of variables:

1. NI and disadvantage
2. Social background controls
3. Neighbourhood
4. Moderating/mediating indicators

Following the notion of a disadvantage penalty, the first model generates an estimate of a 'gross disadvantage penalty'. The coefficients of the family poverty indicator in the successive models will show how far this penalty can be attributed to the factors added in to the model at each stage. Hence the estimate in model 1 of the analysis of cognitive score, for example, quantifies the association of the score with family poverty before allowing for circumstances such as parental education. The second model will show how far poor children from a given educational and social background fare on this score. The third model incorporates the effect of area of residence (not so far accounted), and the fourth model of the disadvantage term shows how far it is 'mitigated' by other factors such as good parenting or the experience of non-parental child-care. The coefficients on the variables themselves will show how far these variables are directly associated with the outcome. Variables which are not significant at the 0.05 level are dropped from the model.

Models were run for the whole of the UK. A dummy variable for Northern Ireland was used to test for interactions between Northern Ireland and other factors included in models 1-4. This approach allowed the investigation of whether there were significant differences in the pattern of effects between Northern Ireland and Great Britain (i.e. the UK excluding NI). This approach enables the examination of specific questions such as, for example, whether markers of disadvantage, such as low income, are more or less powerful in determining each outcome in Northern Ireland than in Britain?

While regression analysis is a powerful tool, we would nevertheless caution the reader regarding the possibility of misinterpretation or over-interpretation of the

output of the sort of models presented here. Given a large enough number of independent significance tests carried out at the 0.05 level, some spurious positive results are inevitable. It is also important to stress that, which variables emerge as being linked to the outcome, is a function of all the other variables which are included in the model. The modelling process, like any other form of analysis, is subject to the decisions of the analyst, which are always open to debate. The reader should also be wary of drawing causal implications from the findings, and should consider the possibility of non-causal and reverse-causal mechanisms. For example, a link between non-working mothers and children in poor health is more plausibly interpreted as being due to mothers leaving the labour market to care for a sick child than to the child's health being damaged by having a mother at home. Experienced readers of statistical analysis will be well aware of these provisos, which apply to all analyses of this sort, but as this report is aimed at a broad audience, we hope that this note of caution will not go amiss.

Chapter 2: Data Description

This section provides a descriptive analysis of the variables to be used in the subsequent regression analyses in particular, drawing attention to differences between Northern Ireland, the other UK countries, and Great Britain.

Where appropriate, detailed information on the derivation of variables and on scales used, are shown in the Appendix (A2).

2.1 Outcomes at Age 5

2.1.1 Test Scores

In terms of the British Ability Scale cognitive assessment, children in NI scored significantly higher than children in the three GB countries (scores in the three GB countries were not significantly different from each other (table 2.1)). Average scores were higher in NI across the quintile distribution of scores (table 2.2).

Table 2.1: Cognitive child assessment results (Combined British Ability Scale), MSC3

	Weighted Mean	95% CI
England	159.1	[158.5,159.6]
Wales	159.3	[158.3,160.3]
Scotland	160.8	[159.6,161.9]
NI	165.5	[164.0,166.9]
GB	159.3	[158.9,159.8]
UK	159.9	[159.5,160.4]
Observations	12858	

Notes: Combined BAS score includes picture similarity, naming vocabulary and pattern construction test results.

Table 2.2: Cognitive child assessment results (Combined British Ability Scale), quintiles, MSC3

	England	Wales	Scotland	NI	GB	UK
Highest 80%	181	177	179	186	180	180
60%	168	165	167	171	168	168
Median (50%)	163	160	163	165	162	163
40%	157	155	157	159	156	157
Lowest 20%	144	144	143	145	143	144
Observations	8087	1943	1551	1277	11581	12858

2.1.2 Educational Assessments

Children in Scotland, NI and Wales scored substantially and significantly higher than those in England on the summary score derived from Foundation Stage Profile (FSP) in England and the Devolved Administration Teacher Survey in Wales, Scotland and

Northern Ireland (Table 2.3). It is important however to bear in mind the different context in which these scores were constructed by teachers in England. Teachers in England have had specific training in administering these scores for all their pupils. The teacher survey ratings outside England were done in isolation, whereas teachers in England report the FSP scores for all of their pupils to the Local Education Authority, and the scores are used as a baseline for calculations of the 'value added' by the school. Therefore, teachers in England have an incentive to lower the scores they give to their pupils.

Table 2.3: Educational assessment scores, MCS3

	Weighted Mean	95% CI
England	86.9	[86.4,87.3]
Wales	93.5	[92.3,94.8]
Scotland	100.5	[99.4,101.6]
NI	95.6	[94.4,96.8]
GB	89.0	[88.6,89.4]
UK	89.6	[89.2,90.0]
Observations	**10184**	

Notes: summary score derived from Foundation Stage Profile (FSP) in England and Devolved Administration Teacher Survey in Wales, Scotland and Northern Ireland. Range 0-117.

2.1.3 Behavioural Assessment

Children in NI scored significantly lower on the scale of behavioural difficulties (i.e. their reported behaviour was better) than children in England and Wales (the difficulties scale is derived from the strengths and difficulties questionnaire – see Appendix A2).

Table 2.4: SDQ Total difficulties score at Wave 3 by GB and UK country

	Mean	**[95%CI]**
England	6.9	[6.8,7.0]
Wales	7.0	[6.7,7.2]
Scotland	6.5	[6.2,6.7]
NI	6.4	[6.1,6.7]
GB	6.8	[6.7,6.9]
UK	6.8	[6.7,6.9]
Observations	**10080**	

Notes: Behavioural adjustment of the children is measured with the Strengths and Difficulties Questionnaire (SDQ). The SDQ is a behavioural-screening questionnaire for 3 to 16-year olds (Goodman, 1997, 2001). It consists of 25 items generating an overall scale score as well as scores for five subscales measuring conduct problems, hyperactivity, emotional symptoms, peer problems and pro-social behaviour. Each subscale comprises five items. Each SDQ item has three possible answers which are assigned a value of 0, 1, or 2. The results in table 4 are for the overall total difficulties score (first 4 subscales range 0-40). Results for separate subscales are not in this report. See Appendix A2 for more information.

2.1.4 Child Health

Child health was less likely to be excellent in England (51.5%) than in the other UK countries, including NI (57.1%) (table 2.5).

Table 2.5: General level of health, age 5

	England	Wales	Scotland	NI	GB	UK
	percent	percent	percent	percent	percent	percent
Poor	0.5	0.7	0.3	0.9	0.5	0.5
fair	3.3	3.1	3.1	3.2	3.3	3.2
good	13.3	9.9	9.5	10.6	12.9	12.7
very good	31.5	28.6	28.3	28.3	31.2	30.9
excellent	51.5	57.8	58.8	57.1	52.1	52.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8164	1973	1570	1296	5623	13003
Weighted sample	7857	2116	1756	1679	11707	13423
Chi2 P-value	0.000				0.019	

There were no statistically significant differences between the UK countries in terms of longstanding illness (table 2.6).

Table 2.6: Longstanding illness, age 5

	England	Wales	Scotland	NI	GB	UK
	percent	percent	percent	percent	percent	percent
No	80.9	80.0	81.2	79.8	80.9	80.8
yes, non-limiting	13.8	13.4	13.1	13.0	13.6	13.6
yes, limiting	5.3	6.6	5.7	7.2	5.4	5.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8155	1973	1570	1295	11698	12993
Weighted sample	7848	2116	1756	1677	10780	13411
Chi2 P-value	0.345				0.108	

Overweight and obesity were both more prevalent among the NI children than in the other UK countries. 18.2% of NI cohort members were overweight (but not obese) and 6.8% obese, compared to 15.5% and 5.5% of GB children respectively.

Table 2.7: Body Mass Index (BMI), age 5

	England	Wales	Scotland	NI	GB	UK
	percent	percent	percent	percent	percent	percent
normal	79.3	76.6	79.3	75.1	79.0	79.0
overweight	15.3	17.9	14.9	18.2	15.5	15.5
obese	5.4	5.5	5.8	6.8	5.5	5.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8093	1950	1555	1284	11598	12882
Weighted sample	7790	2089	1737	1662	10694	13302
Chi2 P-value	0.017				0.004	

The definitions of overweight and obesity used in this chapter are those of the International Obesity Task Force (IOTF), which were also used in the analysis of MCS 2 (Cole et al., 2000). The value of the cut-offs used at exact age 5, were for

overweight, BMI= 17.42 and 17.12 for boys and girls respectively, 19.30 and 19.17 for obesity. These cut-offs were estimated to be on growth curves that would reach 25 and 30 at age 18. They were based on larger numbers of observations in reference populations than were available for evidence on children used to generate an alternative set of cut-offs, the UK Reference Population, as used by the Health Survey for England (Sullivan and Joshi (2008) "Millennium Cohort Study Third Survey: A User's Guide to Initial Findings").

A range of other indicators of child health were also considered however, on the whole, there were few differences between NI and GB (tables 2.8 to 2.17). Between the four countries of the UK, however, children in Wales tended to fare worst on the various measures of health examined.

Table 2.8: Ever had eyesight problems, age 5

	England	**Wales**	**Scotland**	**NI**	**GB**	**UK**
	percent	percent	percent	percent	percent	percent
yes	10.4	13.0	12.7	13.7	10.8	10.9
no	89.6	87.0	87.3	86.3	89.2	89.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8163	1970	1569	1296	11702	12998
Weighted sample	7855	2112	1754	1679	10786	13419
Chi2 P-value	0.007				0.034	

Table 2.9: Ever had hearing problems, age 5

	England	**Wales**	**Scotland**	**NI**	**GB**	**UK**
	percent	percent	percent	percent	percent	percent
yes	13.3	14.3	9.9	9.7	12.9	12.9
no	86.7	85.7	90.1	90.3	87.1	87.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8159	1968	1567	1295	11694	12989
Weighted sample	7852	2112	1752	1677	10782	13413
Chi2 P-value	0.000				0.003	

Table 2.10: Ever had wheezing, age 5

	England	**Wales**	**Scotland**	**NI**	**GB**	**UK**
	percent	percent	percent	percent	percent	percent
yes	29.5	34.7	27.6	30.3	29.5	29.6
no	70.5	65.3	72.4	69.7	70.5	70.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8163	1973	1570	1296	11706	13002
Weighted sample	7856	2116	1756	1679	10789	13422
Chi2 P-value	0.00				0.567	

Table 2.11: Ever had asthma, age 5

	England	Wales	Scotland	NI	GB	UK
	percent	percent	percent	percent	percent	percent
yes	14.6	16.7	12.4	16.7	14.5	14.6
no	85.4	83.3	87.6	83.3	85.5	85.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8135	1967	1563	1293	11665	12958
Weighted sample	7828	2112	1748	1675	10751	13375
Chi2 P-value	0.021				0.095	

Table 2.12: Ever had eczema, age 5

	England	Wales	Scotland	NI	GB	UK
	percent	percent	percent	percent	percent	percent
Yes	35.9	37.9	33.1	25.3	35.6	35.3
No	64.1	62.1	66.9	74.7	64.4	64.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8159	1973	1568	1296	11700	12996
Weighted sample	7851	2116	1754	1679	10781	13414
Chi2 P-value	0.000				0.000	

Table 2.13: Ever had hayfever, age 5

	England	Wales	Scotland	NI	GB	UK
	percent	percent	percent	percent	percent	percent
yes	10.4	12.1	9.9	9.8	10.5	10.4
no	89.6	87.9	90.1	90.2	89.5	89.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8124	1971	1559	1292	11654	12946
Weighted sample	7814	2113	1744	1673	10732	13353
Chi2 P-value	0.150				0.492	

Table 2.14: Taking regular medication, age 5

	England	Wales	Scotland	NI	GB	UK
	percent	percent	percent	percent	percent	percent
No	90.9	90.0	90.1	89.1	90.7	90.7
Yes	9.1	10.0	9.9	10.9	9.3	9.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8160	1972	1570	1296	11702	12998
Weighted sample	7854	2114	1756	1679	10786	13418
Chi2 P-value	0.235				0.105	

Table 2.15: Wets self during the day, age 5

	England	Wales	Scotland	NI	GB	UK
	percent	percent	percent	percent	percent	percent
No	91.6	93.3	93.7	93.1	91.8	91.9
Yes	8.4	6.7	6.3	6.9	8.2	8.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8165	1973	1570	1296	11708	13004
Weighted sample	7857	2116	1756	1679	10791	13424
Chi2 P-value	0.011				0.159	

Table 2.16: Wets self during the night, age 5

	England	Wales	Scotland	NI	GB	UK
	percent	percent	percent	percent	percent	percent
No	73.6	74.4	76.4	80.7	74.0	74.2
Yes	26.4	25.6	23.6	19.3	26.0	25.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8119	1964	1561	1291	11644	12935
Weighted sample	7816	2106	1747	1671	10735	13354
Chi2 P-value	0.000				0.000	

Table 2.17: Main respondent is concerned child is becoming overweight, age 5

	England	Wales	Scotland	NI	GB	UK
	percent	percent	percent	percent	percent	percent
unconcerned	71.9	72.7	76.2	73.4	72.4	72.4
A little concerned	19.4	17.7	17.1	15.1	18.9	18.9
concerned	3.5	3.8	2.8	5.0	3.5	3.5
fairly concerned	2.6	3.2	2.2	3.5	2.6	2.6
very concerned	2.6	2.6	1.8	3.1	2.6	2.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8158	1972	1570	1296	11700	12996
Weighted sample	7853	2114	1756	1679	10784	13417
Chi2 P-value	0.006				0.010	

2.1.5 Potential Predictor Variables for Child Outcomes

Disadvantage and child specific controls

NI households were substantially more likely to be below the poverty line at either wave 1 or wave 2 compared to households in the rest of GB (table 2.18).

Table 2.18: Income poverty at either wave 1 or 2

	England	Wales	Scotland	NI	GB	UK
Above at both waves	54.8	49.1	53.0	39.5	53.2	53.7
Below or above at one wave	28.9	28.7	31.7	40.7	29.8	29.7
Below at both waves	14.2	20.6	13.3	15.4	14.7	14.5
Missing data at both waves	2.1	1.6	2.0	4.4	2.3	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed Totals	8202	1980	1573	1299	11755	13054
Weighted Totals	7886	2123	1758	1683	10829	13469
Chi2 P-value	<0.001				<0.001	

The poverty line for equivalised net family income is set at 60% of the UK national median household income.

There were slightly more male than female cohort members, and this does not vary substantively across the four UK countries. (table 2.19).

Table 2.19: Gender

	England	**Wales**	**Scotland**	**NI**	**GB**	**UK**
Male	50.8	52.5	51.5	51.0	51.0	50.9
Female	49.2	47.5	48.5	49.0	49.0	49.1
Total	100.0	100.0	100.0	100.0	51.0	100.0
Observed Totals	8202	1980	1573	1299	11755	13054
Weighted Totals	7886	2123	1758	1683	10829	13469
Chi2 P-value	0.6				1.0	

Children's age at interview varied across the UK countries, with children in both NI and England being more likely to be aged 4 as opposed to 5 at interview compared to those in Wales and Scotland (most of these interviews were within a few months of their fifth birthday), although over three-quarters of children were aged 5 at interview in each country (table 2.20).

Table 2.20: Age at wave 3 interview

Age in years at wave 2	England	Wales	Scotland	NI	GB	UK
4	21.1	11.6	15.1	22.9	20.2	20.1
5*	78.9	88.4	84.9	77.1	79.8	79.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed Totals	8202	1980	1573	1299	11755	13054
Weighted Totals	7886	2123	1758	1683	10829	13469
Chi2 P-value	<0.001				<0.001	

*Notes: There were 16 cohort members who were 6 years old at wave 3 interview who have been included in the age 5 group. Age entered in months in some analyses.

Cohort members in NI were more likely to weigh over 4kg at birth than those in the GB countries (16.6% compared to 12.6% for GB) (table 2.21).

Table 2.21 Birth weight wave 2

Weight in Kg	England	Wales	Scotland	NI	GB	UK
<2	2.0	1.9	1.6	1.5	2.0	2.0
2-3	20.0	17.4	15.3	15.2	19.6	19.3
3-4	65.4	67.5	69.1	66.7	65.8	65.9
4+	12.6	13.2	14.0	16.6	12.6	12.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed Totals	8177	1978	1571	1295	11726	13021
Weighted Totals	7864	2122	1756	1677	10802	13435
Chi2 P-value	<0.001				<0.001	

Social Background Controls

The NI children had fewer younger siblings and more older siblings than cohort members in the other GB countries. However, NI mothers were not on average significantly younger at first birth than GB mothers, and the age distribution of NI mothers at wave 3 did not differ substantially from that of GB mothers. NI families had larger numbers of siblings (tables 2.22-2.24).

Table 2.22a: Number of younger siblings at wave 3

	England	Wales	Scotland	NI	GB	UK
None	58.3	61.1	60.1	55.4	58.4	58.4
1	35.2	32.7	34.4	37.7	35.1	35.1
2	6.0	5.6	5.4	6.2	6.0	6.0
3-4	0.6	0.6	0.2	0.7	0.5	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed Totals	8202	1980	1573	1299	11755	13054
Weighted Totals	7886	2123	1758	1683	10829	13469
Chi2 P-value	0.1				0.4	

Table 2.22b: Number of older siblings at wave 3

	England	Wales	Scotland	NI	GB	UK
None	41.3	41.0	42.6	37.6	42.1	41.3
1	36.4	37.1	37.0	32.0	36.2	36.3
2	14.8	14.2	14.6	18.5	14.7	14.9
3	5.1	5.4	4.2	9.2	4.9	5.2
4-12	2.3	2.2	1.6	2.8	2.2	2.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed Totals	8202	1980	1573	1299	11755	13054
Weighted Totals	7886	2123	1758	1683	10829	13469
Chi2 P-value	<0.001				<0.001	

Table 2.23: Total number of siblings at wave 3

	England	Wales	Scotland	NI	GB	UK
None	15.1	17.1	17.1	13.9	15.8	15.3
1	48.7	47.3	49.4	38.8	48.6	48.3
2	23.6	23.5	23.5	27.5	23.4	23.8
3	8.3	7.8	6.7	14.5	8.1	8.4
4-13	4.3	4.3	3.4	5.3	4.1	4.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed Totals	8202	1980	1573	1299	11755	13054
Weighted Totals	7886	2123	1758	1683	10829	13469
Chi2 P-value	<0.001				<0.001	

Table 2.24: Mother's age at first live birth

	Mean	95% CI
England	25.4	[25.3,25.6]
Wales	24.3	[24.1,24.6]
Scotland	26.2	[25.9,26.5]
NI	25.1	[24.8,25.4]
GB	25.3	[25.2,25.4]
UK	25.3	[25.2,25.4]
Observations	13054	

NI had fewer households where the partner was in work, and the mother was not in work than England (23.5% compared to 30.5%) (table 2.25).

Table 2.25: Family structure at wave 2

	England	Wales	Scotland	NI	GB	UK
Both in work	35.5	38.5	34.2	33.5	34.9	35.4
Main in Partner not in work	1.5	1.4	2.0	1.7	1.6	1.6
Partner in M main not in work	30.5	24.7	24.7	23.5	29.4	29.4
Both not in work	4.4	5.3	3.8	3.0	4.6	4.3
Lone parent in work	4.8	5.6	5.8	6.5	5.0	5.0
Lone parent not in work	10.5	12.6	9.2	10.7	10.9	10.5
Partner or Main non response	12.8	11.9	20.2	21.2	13.5	13.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed Totals	8200	1980	1572	1299	11752	13051
Weighted Totals	7883	2123	1757	1683	10825	13464
Chi2 P-value	<0.001				<0.001	

Ethnic minorities were concentrated in England, and over 99% of NI cohort members were white (table 2.26).

Table 2.26: Cohort member's ethnicity by country

	England	Wales	Scotland	NI	GB	Total
White	85.6	97.0	97.9	99.4	86.5	87.7
Mixed	3.4	1.4	0.4	0.3	3.2	2.9
Indian	2.1	0.2	0.3	0.0	1.9	1.8
Pakistani and Bangladeshi	4.7	0.6	0.6	0.1	4.3	4.0
Black or black British	2.9	0.4	0.5	0.0	2.8	2.4
Other ethnic group (inc. Chinese)	1.3	0.3	0.2	0.1	1.3	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8176	1977	1572	1297	11725	13022
Weighted sample	7862	2119	1756	1680	10799	13432
Chi2 P-value	0.000				0.000	

The NI sample was fairly evenly split between Catholics (45.3%) and Protestants (43.1%), with only 7.8% saying they had no religion (as compared to 41.3% in GB) (table 2.27). The ‘other Christian’ category includes those who gave their religion as Christian without any indication of denomination. Unsurprisingly, few NI respondents fall into either this category or the ‘other religion’ category (table 2.27).

Table 2.27: Religion, main respondent

	England	Wales	Scotland	NI	GB	Total
protestant	30.6	26.8	30.3	43.1	29.9	30.8
Catholic	9.6	7.4	16.7	45.3	10.0	11.5
other Christian	10.4	11.2	7.0	3.6	10.1	9.8
other religion	9.5	1.9	1.3	0.3	8.8	8.1
no religion	39.9	52.6	44.7	7.8	41.3	39.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469
Chi2 P-value	0.000				0.000	

Compared to parents in GB, NI parents were less likely to be in professional or managerial social class positions and more likely to be in routine or semi-routine positions (table 2.28). NI parents were also the most likely in the UK to have no qualifications (table 2.29).

Table 2.28: Highest social class of parents across first 2 sweeps

	England	Wales	Scotland	NI	GB	UK
prof/managerial	54.4	50.2	54.3	44.5	53.2	53.7
intermediate	12.5	11.6	13.7	16.4	12.6	12.7
sm emp & s-emp	8.0	6.0	5.0	7.8	7.7	7.6
low support & technical	8.6	11.9	9.6	8.2	9.0	8.8
semi-routine & routine	16.6	20.2	17.4	23.1	17.6	17.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	7933	1914	1561	1263	11408	12671
Weighted sample	7681	2055	1739	1637	10541	13131
Chi2 P-value	0.000				0.000	

Table 2.29: Highest level of education of parents across first 2 sweeps

	England	Wales	Scotland	NI	GB	UK
no qualifications	7.2	7.9	5.4	9.7	7.8	7.2
overseas only	2.0	1.0	1.0	1.3	2.0	1.8
nvq1	5.6	7.0	3.2	5.9	5.8	5.5
nvq2	25.0	24.3	21.7	26.0	24.8	24.7
nvq3	15.4	17.9	23.1	16.6	16.3	16.3
nvq4	37.4	35.4	36.8	33.5	36.2	37.0
nvq5	7.4	6.5	8.8	7.0	7.2	7.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8201	1980	1572	1298	11753	13051
Weighted sample	7885	2123	1757	1682	10827	13466
Chi2 P-value	0.000				0.399	

NVQ Level 1 - equivalent to 5 GCSE's grade D to E; NVQ Level 2 - equivalent to 5 x GCSE A* to C; NVQ Level 3 - equivalent to 2 x A-Levels A* to C; NVQ Level 4 - equivalent to Degree; NVQ Level 5 - equivalent to Higher Degree

At wave 1 and 2, longstanding illness among both mothers and partners was less frequent in NI than in GB (tables 2.30-2.33).

Table 2.30: Limiting longstanding illness, main respondent sweep 1

	England	Wales	Scotland	NI	GB	Total
No	78.3	77.8	80.2	80.2	78.6	78.5
yes, non-limiting	12.6	11.3	11.4	8.8	12.3	12.3
yes, limiting	9.1	10.9	8.4	11.0	9.1	9.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8192	1979	1573	1296	11744	13040
Weighted sample	7878	2122	1758	1679	10820	13457
Chi2 P-value	0.001				0.001	

Table 2.31: Limiting longstanding illness, partner sweep 1

	England	Wales	Scotland	NI	GB	Total
No	78.9	79.0	81.6	83.0	79.1	79.3
yes, non-limiting	12.3	11.2	10.3	8.1	12.1	11.9
yes, limiting	8.8	9.8	8.1	8.9	8.8	8.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	6358	1468	1236	919	9062	9981
Weighted sample	6141	1568	1329	1162	8330	10381
Chi2 P-value	0.007				0.002	

Table 2.32: Longstanding illness, main respondent sweep 2

	England	Wales	Scotland	NI	GB	Total
no	78.8	76.6	75.6	80.8	78.5	78.4
yes	21.2	23.4	24.4	19.2	21.5	21.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8147	1972	1567	1287	11686	12973
Weighted sample	7836	2115	1752	1670	10765	13389
Chi2 P-value	0.011				0.115	

Notes: no question on whether it was limiting in sweep 2

Table 2.33 Longstanding illness, partner sweep 2

	England	Wales	Scotland	NI	GB	Total
no	78.6	77.4	79.1	82.7	78.6	78.7
yes	21.4	22.6	20.9	17.3	21.4	21.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	5837	1388	1054	816	8279	9095
Weighted sample	5683	1490	1144	1039	7661	9550
Chi2 P-value	0.039				0.004	

Notes: no question on whether it was limiting in sweep 2

There appeared to be no consistency in terms of patterns of diagnosed depression between countries across the two waves (tables 2.34-2.36). However, main respondents in NI were more likely to be receiving treatment for depression, and less likely to be depressed but not receiving treatment.

Table 2.34: Ever diagnosed with depression, main respondent sweep 1

	England	Wales	Scotland	NI	GB	Total
no depression	76.4	73.4	73.1	73.0	76.0	75.8
yes, no current treatment	15.8	17.0	16.4	13.9	15.8	15.8
yes, current treatment	7.9	9.6	10.5	13.1	8.2	8.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8196	1979	1572	1296	11747	13043
Weighted sample	7883	2122	1757	1679	10824	13463
Chi2 P-value	0.000				0.000	

Table 2.35: Ever diagnosed with depression, partner sweep 1

	England	Wales	Scotland	NI	GB	Total
no depression	90.8	89.7	90.7	93.5	90.7	90.8
yes, no current treatment	7.1	7.5	5.7	5.0	7.0	6.9
yes, current treatment	2.1	2.8	3.5	1.6	2.3	2.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	6357	1467	1236	919	9060	9979
Weighted sample	6141	1567	1329	1162	8330	10380
Chi2 P-value	0.013				0.010	

Table 2.36: Ever diagnosed with depression, main respondent sweep 2

	England	Wales	Scotland	NI	GB	Total
no depression	71.6	69.2	67.6	71.7	71.1	71.1
yes, no current treatment	21.0	22.1	21.6	16.8	21.1	20.9
yes, current treatment	7.4	8.7	10.8	11.5	7.8	8.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8147	1972	1567	1287	11686	12973
Weighted sample	7836	2115	1752	1670	10765	13389
Chi2 P-value	0.000				0.000	

Malaise scores (another indicator of depression) for mothers and partners at wave 1 did not differ significantly across the UK countries (tables 2.37-2.38).

Table 2.37: Malaise score - binary, main respondent sweep 1

	England	Wales	Scotland	NI	GB	Total
lower risk of depression/anxiety (0-3)	86.9	85.7	87.1	86.2	86.8	86.8
higher risk of depression/anxiety (4-9)	13.1	14.3	12.9	13.8	13.2	13.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	7867	1959	1515	1281	11341	12622
Weighted sample	7682	2103	1685	1659	10524	13117
Chi2 P-value	0.544				0.605	

Table 2.38: Malaise score - binary, partner sweep 1

	England	Wales	Scotland	NI	GB	Total
lower risk of depression/anxiety (0-3)	93.1	94.0	93.5	94.6	93.2	93.3
higher risk of depression/anxiety (4-9)	6.9	6.0	6.5	5.4	6.8	6.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	7867	1959	1515	1281	11341	12622
Weighted sample	7682	2103	1685	1659	10524	13117
Chi2 P-value	0.170				0.080	

The Kessler psychological distress scale, on the other hand, indicates higher levels of medium level distress and lower levels of low or no distress in England and Wales than in Scotland and Northern Ireland at wave 2 (tables 2.39-2.40).

Table 2.39: Kessler psychological distress scale, main respondent sweep 2

	England	Wales	Scotland	NI	GB	Total
No/low distress (0-3)	66.5	67.8	70.1	70.7	67.0	67.1
medium (4-12)	30.4	28.9	26.0	25.7	29.8	29.7
high (13-24)	3.1	3.2	3.9	3.6	3.2	3.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	6566	1734	1419	1090	9719	10809
Weighted sample	6678	1862	1577	1417	9178	11480
Chi2 P-value	0.024				0.029	

Table 2.40: Kessler psychological distress scale, partner sweep 2

	England	Wales	Scotland	NI	GB	Total
No/low distress (0-3)	69.5	71.2	74.4	73.4	70.0	70.1
medium (4-12)	28.9	27.1	24.0	26.1	28.4	28.3
high (13-24)	1.6	1.8	1.6	0.6	1.6	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	5154	1292	993	755	7439	8194
Weighted sample	5175	1388	1073	961	6984	8729
Chi2 P-value	0.016				0.028	

The Kessler scale consists of the sum of the scores for the following items:

1. how often feel depressed
2. how often feel hopeless
3. how often feel restless or fidgety
4. how often feel everything is an effort
5. how often feel worthless
6. how often feel nervous

Response categories and scores:

- all of the time=4
- most of the time=3
- some of the time=2
- little of the time=1
- none of the time=0

Life satisfaction does not vary significantly according to country (tables 2.41-2.44).

Table 2.41: Life satisfaction score - binary, main respondent sweep 1

	England	Wales	Scotland	NI	GB	Total
low satisfaction (1-6)	19.1	19.0	17.0	20.0	19.1	18.9
high satisfaction (7-10)	80.9	81.0	83.0	80.0	80.9	81.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	7904	1965	1526	1283	11395	12678
Weighted sample	7708	2109	1700	1663	10566	13167
Chi2 P-value	0.410				0.577	

Table 2.42: Life satisfaction score - binary, partner sweep 1

	England	Wales	Scotland	NI	GB	Total
low satisfaction (1-6)	15.2	15.6	14.6	13.3	15.3	15.1
high satisfaction (7-10)	84.8	84.4	85.4	86.7	84.7	84.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	6125	1453	1215	895	8793	9688
Weighted sample	6008	1548	1307	1129	8149	10162
Chi2 P-value	0.585				0.223	

Table 2.43: Life satisfaction score - binary, main respondent sweep 2

	England	Wales	Scotland	NI	GB	Total
low satisfaction (1-6)	18.1	17.9	17.6	14.8	18.3	17.9
high satisfaction (7-10)	81.9	82.1	82.4	85.2	81.7	82.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	7094	1859	1504	1191	10457	11648
Weighted sample	7160	1991	1678	1544	9849	12306
Chi2 P-value	0.073				0.010	

Table 2.44: Life satisfaction score - binary, partner sweep 2

	England	Wales	Scotland	NI	GB	Total
low satisfaction (1-6)	14.0	11.9	13.1	11.4	13.9	13.7
high satisfaction (7-10)	86.0	88.1	86.9	88.6	86.1	86.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	5476	1358	1039	793	7873	8666
Weighted sample	5458	1458	1127	1012	7371	9202
Chi2 P-value	0.140				0.099	

The differences in responses across countries for different indicators of mental well-being illustrate the socially constructed nature of these scales, and suggest that caution is required in interpreting the results.

Neighbourhood characteristics

Respondents in NI were much more likely to live in rural areas (41.1%) than those in GB (10.2%) (table 2.45). They were also somewhat less likely to have moved between waves 1 and 3 (52% in NI compared to 57.4% in GB) (table 2.46). Respondents in NI rated their local neighbourhoods at wave 2 more highly than respondents in GB (table 2.47). Over two-fifths (44.4%) of NI respondents said that the area was excellent for raising children, compared to 31.8% in GB. Over half (51.1%) of respondents in NI said they felt very safe in the area compared to 36.6% in GB (table 2.48).

Table 2.45: Rural Urban at Wave 2

Rural urban indicator*	England	Wales	Scotland	NI	GB	UK
1	82.2	69.1	60.4	48.5	79.7	78.3
2	8.8	15.3	18.9	10.4	10.1	10.1
3	9.0	15.7	20.6	41.1	10.2	11.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed Totals	8176	1979	1571	1297	11726	13023
Weighted Totals	7858	2122	1755	1681	10796	13427
Chi2 P-value	<0.001				<0.001	

Notes: * This indicator variable uses ONS 2005 rural urban morphology code for England and Wales. The Scottish executive urban rural classification 2005/2006 was used for Scotland; and for Northern Ireland the Northern Ireland urban rural status 2005 was used. The coding for each UK country was as follows: England and Wales: 1= Urban > 10k, 2=Town and fringe, 3=Village, hamlet & isolated dwellings. Northern Ireland: 1=Urban, 2= Mixed urban-rural, 3=Rural. Scotland: 1= Large or other urban areas, 2= Accessible or remote small towns, 3= Accessible or remote rural

Table 2.46: Moved at least once since waves 1 to 3

	England	Wales	Scotland	NI	GB	UK
Moved at least once	56.8	64.3	56.6	52.0	57.4	57.0
Never moved	43.2	35.7	43.4	48.0	42.6	43.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed Totals	8151	1974	1561	1293	11686	12979
Weighted Totals	7832	2118	1745	1677	10758	13380
Chi2 P-value	0.1				0.1	

Table 2.47: Reported good area to raise children at wave 2

	England	Wales	Scotland	NI	GB	UK
Excellent	31.2	34.1	39.7	44.4	31.8	32.6
Good	40.1	39.0	36.9	38.5	39.7	39.7
Average	20.2	19.4	17.3	12.3	20.1	19.6
Poor	5.3	4.8	3.6	2.6	5.2	5.1
Very poor	3.2	2.6	2.5	2.2	3.2	3.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed Totals	8116	1969	1566	1286	11651	12937
Weighted Totals	7813	2111	1752	1669	10734	13353
Chi2 P-value	<0.001				<0.001	

Table 2.48: How safe you feel in the area at wave 2

	England	Wales	Scotland	NI	GB	UK
Very safe	35.9	43.0	40.7	51.1	36.6	37.3
Fairly safe	51.5	46.1	49.3	43.2	51.0	50.7
Neither safe nor unsafe	6.5	5.7	5.9	2.3	6.5	6.3
Fairly unsafe	4.3	3.7	3.0	2.6	4.3	4.1
Very unsafe	1.7	1.5	1.2	0.9	1.7	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed Totals	8147	1972	1567	1287	11686	12973
Weighted Totals	7836	2115	1752	1670	10765	13389
Chi2 P-value	<0.001				<0.001	

Health related behaviours

Mothers in NI were considerably less likely than mothers in the GB countries to attempt to breastfeed (49% in NI did not breast feed at all compared to 30% in GB) (tables 2.49 and 2.50).

Table 2:49: Breastfeeding, MSC 1 (up to 4 months or more)

	England	Wales	Scotland	NI	GB	UK
not at all	27.0	36.1	35.9	49.0	30.0	29.1
up to 2 months	26.5	27.6	23.7	26.9	25.7	26.3
2-4months	17.0	13.5	13.4	10.9	16.1	16.3
4 months or more	29.5	22.8	27.0	13.2	28.2	28.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8186	1977	1572	1295	11735	13030
Weighted sample	7872	2121	1757	1677	10812	13447
Chi2 P-value		0.000			0.000	

Table 2.50: Breastfeeding, MSC 1 (up to 6 months or more)

	England	Wales	Scotland	NI	GB	UK
not at all	27.0	36.1	35.9	49.0	30.0	29.1
up to 3 months	32.2	32.4	28.0	30.7	31.0	31.7
3-6months	20.1	15.0	16.1	12.3	19.0	19.1
6 months or more	20.8	16.5	20.1	8.0	20.0	20.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8186	1977	1572	1295	11735	13030
Weighted sample	7872	2121	1757	1677	10812	13447
Chi2 P-value		0.000			0.000	

Levels of smoking in pregnancy in NI were higher than those in GB (17.5% compared to 14.8%) with the difference driven by lower levels in England (14%) (table 2.51).

Table 2.51: Smoking in pregnancy. Main respondent, MSC1

	England	Wales	Scotland	NI	GB	UK
missing data or n/a	8.5	10.0	8.8	10.9	8.7	8.7
No	77.5	71.1	73.4	71.5	76.5	76.6
Yes	14.0	18.9	17.8	17.5	14.8	14.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469
Chi2 P-value		0.000			0.015	

Both mothers and partners were more likely to smoke in NI than in GB (tables 2.52-2.53). Again, the difference is driven by higher levels of non-smoking in England.

Table 2.52: Smoking, main respondent, MSC2

	England	Wales	Scotland	NI	GB	UK
n/a or data missing	1.0	0.6	0.4	1.0	1.0	1.0
Does not smoke	72.0	65.3	68.8	69.0	71.0	71.2
1-10 a day	8.6	11.1	8.4	7.2	8.8	8.7
More than 10 a day	18.3	23.0	22.2	22.7	19.2	19.0
Smokes other tobacco products	0.1	0.0	0.2	0.0	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469
Chi2 P-value		0.000			0.050	

Table 2.53: Smoking, partner respondent, MSC2

	England	Wales	Scotland	NI	GB	UK
n/a or data missing	28.1	29.9	35.1	38.4	29.5	29.3
Does not smoke	49.5	47.2	43.6	44.9	48.3	48.6
1-10 a day	5.9	5.4	4.0	1.8	5.7	5.5
More than 10 a day	15.4	16.6	16.6	14.3	15.5	15.5
Smokes other tobacco products	1.1	0.9	0.6	0.6	1.0	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469
Chi2 P-value		0.000			0.000	

Mothers in NI were more likely to be overweight than mothers in GB, and fathers in NI were more likely to be obese than fathers in GB (tables 2.54-2.55).

Table 2.54: Mother's Body Mass Index (BMI), MSC2

	England	Wales	Scotland	NI	GB	UK
Underweight (<18.5)	3.3	3.6	2.4	2.4	3.3	3.2
Normal weight (18.5-24.9)	56.0	54.5	58.8	52.8	56.1	56.0
Overweight (25-29.9)	25.7	25.7	24.2	30.9	25.6	25.8
Obesity (30 or greater)	15.0	16.1	14.5	13.8	15.0	15.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	7830	1926	1528	1268	11284	12552
Weighted sample	7608	2063	1702	1640	10441	13007
Chi2 P-value		0.007			0.001	

Table 2.55: Father's Body Mass Index (BMI), MSC2

	England	Wales	Scotland	NI	GB	UK
Underweight (<18.5)	0.8	0.9	1.0	1.3	0.9	0.9
Normal weight (18.5-24.9)	38.7	34.4	37.8	32.3	38.4	38.2
Overweight (25-29.9)	45.2	47.2	46.6	47.8	45.4	45.5
Obesity (30 or greater)	15.2	17.4	14.7	18.6	15.3	15.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	6301	1476	1238	919	9015	9934
Weighted sample	6122	1573	1333	1163	8309	10358
Chi2 P-value		0.001			0.001	

Parenting

There was no substantial difference between GB and NI in terms of regular bedtimes (table 2.56).

Table 2.56: Regular bedtimes for a child, main respondent, MSC2

	England	Wales	Scotland	NI	GB	UK
not applicable	0.6	0.4	0.3	0.8	0.6	0.6
never or almost never	6.9	9.7	5.3	8.3	7.0	6.9
sometimes	13.0	11.1	11.9	12.3	13.1	12.8
usually	38.1	33.8	41.5	39.4	38.1	38.2
always	41.5	45.0	40.9	39.3	41.3	41.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469
Chi2 P-value		0.000			0.261	

Children in NI were more likely than those in GB to always have regular mealtimes (table 2.57).

Table 2.57: Regular mealtimes for a child, main respondent, MSC2

	England	Wales	Scotland	NI	GB	UK
not applicable	0.6	0.4	0.3	0.8	0.6	0.6
never or almost never	1.9	3.1	1.2	1.0	1.9	1.9
sometimes	6.9	6.9	4.2	5.2	6.8	6.6
usually	44.3	38.9	47.3	39.4	44.2	44.1
always	46.3	50.8	47.0	53.6	46.5	46.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469
Chi2 P-value		0.000			0.000	

Mothers in NI were more likely to smack than GB mothers (25.4% never smack in NI compared to 29.5% in GB). There were no substantial differences in shouting (tables 2.58-2.59).

Table 2.58: Smack a child if he/she is being naughty, main respondent, MCS2

	England	Wales	Scotland	NI	GB	UK
not applicable	8.7	5.5	4.0	7.6	8.5	8.1
never	29.4	33.3	30.8	25.4	29.5	29.6
rarely	47.1	47.3	51.7	50.2	47.3	47.6
once a month	4.9	4.0	3.8	4.5	4.8	4.7
once a week or more	7.8	6.9	7.6	10.2	7.7	7.8
daily	0.8	0.7	1.1	1.0	0.9	0.8
can't say	1.3	2.3	1.1	1.2	1.4	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469
Chi2 P-value		0.000			0.047	

Table 2.59: Shout at a child if he/she is being naughty, main respondent, MCS2

	England	Wales	Scotland	NI	GB	UK
not applicable	8.7	5.6	4.0	7.6	8.5	8.1
never	2.5	3.4	2.5	3.3	2.6	2.6
rarely	27.5	28.7	34.6	30.9	28.1	28.3
once a month	7.6	6.1	6.0	5.8	7.3	7.3
once a week or more	36.2	35.9	35.5	33.8	35.7	36.0
daily	15.7	18.0	15.5	17.7	15.9	15.8
can't say	1.8	2.2	2.0	0.9	1.9	1.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469
Chi2 P-value		0.000			0.086	

Mothers in NI were less likely to say that they had lots of rules (24.2% compared to 30.3% in GB). They were also less likely to say that rules were strictly enforced (38.6% compared to 48.7%) (tables 2.60-2.61).

Table 2.60: Family has many rules, main respondent, MSC2

	England	Wales	Scotland	NI	GB	UK
not applicable	0.6	0.4	0.3	0.8	0.6	0.6
lots of rules	30.4	29.0	31.8	24.2	30.3	30.3
not many rules	42.9	44.2	37.5	42.3	42.8	42.5
it varies	26.0	26.4	30.4	32.7	26.3	26.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469
Chi2 P-value		0.000			0.002	

Table 2.61: Rules in the family are strictly applied, main respondent, MSC2

	England	Wales	Scotland	NI	GB	UK
not applicable	0.6	0.4	0.3	0.8	0.6	0.6
strictly enforced	49.6	46.6	45.4	38.6	48.7	48.6
not very strictly enforced	23.7	24.0	26.1	26.3	24.5	24.1
it varies	26.1	29.0	28.2	34.4	26.3	26.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469
Chi2 P-value		0.000			0.000	

There was no significant difference between NI and GB in terms of the PIANTA parent-child relationship scale (table 2.62). However, NI responses scored lower in terms in the parent-child conflict scale, with English respondents giving responses indicating significantly higher levels of conflict (table 2.63). NI mothers had lower scores than English mothers on the parenting practices scale (table 2.64): lower scores on the scale indicate more positive parenting practices/beliefs.

Table 2.62: PIANTA the parent–child relationship scale, main respondent, MSC2

	Weighted Mean	95% CI
England	33.6	[33.5,33.6]
Wales	33.4	[33.3,33.5]
Scotland	33.6	[33.5,33.7]
NI	33.4	[33.3,33.6]
GB	33.6	[33.5,33.6]
UK	33.5	[33.5,33.6]
Observations (un-weighted)	11050	

Notes: 7 items from the Pianta scale (15 items) (Pianta, 1992) answered by the main respondent (for example, 'I share an affectionate, warm relationship with my child'; 'if upset, my child will seek comfort from me'. Responses were summed, with a high score indicating a better relationship. Range 7-35.

Table 2.63: PIANTA the parent–child conflicts scale, main respondent, MSC2

	Weighted Mean	95% CI
England	16.2	[16.1,16.3]
Wales	15.5	[15.3,15.8]
Scotland	15.6	[15.3,15.9]
NI	15.1	[14.8,15.5]
GB	16.0	[15.9,16.1]
UK	15.9	[15.8,16.0]
Observations (un-weighted)	11297	

Notes: 7 items from the Pianta scale (15 items) (Pianta, 1992) answered by the main respondent (for example, 'My child remains angry or is resistant after being disciplined' or 'dealing with my child drains my energy'. Responses were summed, with a high score indicating more conflict in a relationship. Range 7-35.

Table 2.64: Parenting practices, main respondent, MSC1

	Weighted Mean	95% CI
England	5.4	[5.4,5.4]
Wales	5.3	[5.3,5.4]
Scotland	5.2	[5.1,5.3]
NI	5.2	[5.2,5.3]
GB	5.4	[5.3,5.4]
UK	5.4	[5.3,5.4]
Observations (un-weighted)	12573	

Notes: Parenting practices scale is constructed by summing up parenting beliefs, such as 'talking, even to a young baby, is important" or 'cuddling is important'. Reverse scale, higher score shows less agreement with the statements. Range 4-24

Children in NI were substantially less likely (13.9%) to watch more than three hours of television a day than children in GB (17.3%) (table 2.65).

Table 2.65: Hours a day a child watches TV or videos, main respondent, MSC2

	England	Wales	Scotland	NI	GB	UK
N/a or data missing	0.6	0.4	0.3	0.8	0.6	0.6
Not at all	1.1	1.1	0.8	1.3	1.1	1.1
Up to one hour	21.9	20.3	23.0	24.6	21.7	22.0
More than 1 hour, less than 3 hours	59.4	57.3	61.6	59.4	59.3	59.5
More than 3 hours	17.0	21.0	14.3	13.9	17.3	16.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469
Chi2 P-value		0.001			0.066	

Rates of reading to the child every day were very similar in NI, England and Wales, but higher in Scotland (table 2.66). Ever taking children to the library was somewhat less common in NI than in GB, with parents in Wales being the most likely to take children to the library (table 2.67).

Table 2.66: Reading to a child, main respondent, MCS2

	England	Wales	Scotland	NI	GB	UK
not applicable	0.6	0.4	0.3	0.8	0.6	0.6
every day	59.8	58.7	64.7	59.3	59.5	60.1
several times a week	18.9	17.8	18.7	18.5	19.0	18.8
once or twice a week	14.0	15.0	12.1	14.5	14.2	14.0
once or twice a month	2.5	4.1	1.9	2.0	2.5	2.5
less often	1.6	2.2	1.7	2.7	1.7	1.7
not at all	2.5	1.9	0.7	2.2	2.4	2.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469
Chi2 P-value		0.000			0.305	

Table 2.67: Taking a child to a library, main respondent, MCS2

	England	Wales	Scotland	NI	GB	UK
not applicable	0.6	0.4	0.3	0.8	0.6	0.6
not at all	56.6	62.7	53.4	60.9	57.3	56.8
on special occasions	9.1	11.0	11.1	8.6	9.2	9.3
once a month	18.1	15.7	18.2	16.8	17.7	17.9
once a fortnight	8.0	6.7	8.8	6.5	7.9	8.0
or, once a week	7.7	3.6	8.1	6.4	7.3	7.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469
Chi2 P-value		0.000			0.240	

Parents in NI and Scotland were more likely than those in Wales and England to help their child to learn a physical activity (table 2.68).

Table 2.68: Help a child learn a sport, dance or physical activity, main respondent, MSC2

	England	Wales	Scotland	NI	GB	UK
not applicable	0.6	0.4	0.3	0.8	0.6	0.6
yes	78.7	78.8	83.7	82.9	78.9	79.3
no	20.7	20.8	16.0	16.3	20.5	20.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469
Chi2 P-value		0.009			0.061	

The cohort child had eaten with family members at least once in the past week on over 97% of cases in all of the four countries (table 2.69).

Table 2.69: A child has eaten with family members at least once in the past week, main respondent, MCS2

	England	Wales	Scotland	NI	GB	UK
not applicable	0.6	0.4	0.3	0.8	0.6	0.6
yes	98.0	97.1	99.0	98.1	98.0	98.0
no	1.4	2.5	0.6	1.1	1.4	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469
Chi2 P-value		0.000			0.428	

Table 2.70: Partners' involvement into parenting, partner respondent, MCS1

	Weighted Mean	95% CI
England	12.9	[12.8,13.0]
Wales	12.1	[11.9,12.3]
Scotland	11.9	[11.7,12.1]
NI	12.2	[11.9,12.4]
GB	12.7	[12.6,12.7]
UK	12.6	[12.5,12.7]
Observations (un-weighted)	9963	

Notes: This scale was created by summing partner respondent's frequency of different activities with a baby, such as 'looking after a baby on his own', 'feeding a baby' or 'changing a nappy'. Reverse scale, higher scores show less frequent activities. Range 4-24.

Partners in NI were significantly more involved in parenting than those in England (tables 2.70-2.71). There were no significant differences between the countries in terms of equal sharing of housework (table 2.72).

Table 2.71: Partners' involvement in parenting, partner respondent, MCS2

	Weighted Mean	95% CI
England	13.2	[13.1,13.2]
Wales	13.3	[13.2,13.4]
Scotland	13.6	[13.5,13.7]
NI	13.4	[13.2,13.5]
GB	13.2	[13.2,13.3]
UK	13.2	[13.2,13.3]
Observations (un-weighted)	8870	

Notes: This scale was created by summing partner respondent's frequency of different activities with a child, such as 'looking after a child on his own', 'playing with a child' or 'reading to a child'. Higher scores show more frequent activities. Range 4-24.

Table 2.72: Housework equal sharing, main respondent, MSC1

	Weighted Mean	95% CI
England	1.8	[1.8,1.9]
Wales	1.9	[1.9,2.0]
Scotland	2.0	[1.9,2.1]
NI	1.9	[1.8,2.0]
GB	1.9	[1.9,1.9]
UK	1.9	[1.9,1.9]
Observations (un-weighted)	10320	

Notes: This scale was created by using main respondent responses to the questions about housework, such as cleaning, ironing, cooking, DIY, paying bills etc. Responses were equal sharing between partners was expressed were summed up. Higher score shows more equality. Range 0-7.

Table 2.73: Childcare, main respondent, MCS1

	England	Wales	Scotland	NI	GB	UK (Total)
Partner	24.8	29.0	26.2	20.8	25.2	25.0
Grandparents	30.2	36.9	34.5	33.8	31.1	31.1
Other relatives	7.6	8.3	9.6	8.8	8.0	7.9
Non-relatives	4.5	2.7	3.1	3.0	4.2	4.2
Informal	**49.0**	**54.6**	**52.3**	**51.5**	**49.6**	**49.7**
Childminder	9.6	8.1	10.1	13.7	9.4	9.7
Day nursery	11.8	15.5	12.2	8.3	11.7	11.8
Other	0.4	0.3	0.2	0.1	0.3	0.3
Formal	**20.3**	**21.8**	**21.8**	**21.7**	**20.0**	**20.5**
Any non-maternal childcare	62.7	66.8	67.0	65.9	63.0	63.4
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469

Notes: % in columns do not add up to 100% because of simultaneous episodes of the childcare

At MCS1 NI respondents were less likely to use partners for childcare than those in the rest of GB (20.8% compared with 25.2% in GB) (table 2.73). NI respondents were also more likely to use childminders and less likely to use day nurseries than GB respondents. Between MCS1 and MCS2, mothers in NI were substantially less likely than GB parents to use partners (7.9% compared to 13.3%), day nurseries (17.4% compared to 34.8%) or nursery schools (9.7% compared to 19.0%) (table 2.74).

However, for those children in childcare, hours spent in each form of childcare were higher in NI than in GB (table 2.75).

Table 2.74: Childcare, main respondent, between MSC1 and MCS2

	England	Wales	Scotland	NI	GB	UK (Total)
Partner	13.6	13.6	12.1	7.9	13.3	13.2
Grandparents	19.3	25.5	23.8	21.0	20.0	20.1
Other relatives	3.4	4.5	5.9	5.3	3.7	3.7
Non-relatives	2.1	1.8	2.4	1.8	2.1	2.1
Informal	34.6	39.0	38.9	33.9	35.1	35.2
Childminder	9.9	7.6	11.1	13.0	9.7	10.0
Day nursery	34.9	39.7	34.3	17.4	34.8	34.5
Other	0.7	0.7	0.6	0.2	0.6	0.6
Nursery school	17.9	17.1	29.9	9.7	19.0	18.7
Playgroup	16.8	26.3	19.6	12.4	17.3	17.3
Formal	45.6	50.5	53.3	35.0	46.2	46.1
Any childcare	54.5	57.7	60.4	52.9	55.5	55.8
Observed sample	8202	1980	1573	1299	11755	13054
Weighted sample	7886	2123	1758	1683	10829	13469

Notes: % in columns do not add up to 100% because of simultaneous episodes of the childcare

Table 2.75: Childcare length in hours per week, main respondent, MCS1

	Average hrs/wk of care by partner	Average hrs/wk of care by grandparents	Average hrs/wk of care by other relative	Average hrs/wk of care by non-relative	Average hrs/wk of care by childminder	Average hrs/wk of care by day nursery
England	19.8 [18.9,20.7]	19.1 [18.4,19.8]	20.9 [19.1,22.7]	18.7 [15.9,21.4]	26.3 [25.2,27.4]	25.9 [25.1,26.8]
Wales	21.3 [19.5,23.0]	19.0 [18.0,20.1]	19.8 [15.8,23.7]	17.6 [11.8,23.3]	27.3 [24.5,30.0]	25.2 [23.8,26.7]
Scotland	21.5 [19.4,23.5]	20.2 [19.0,21.4]	23.3 [20.3,26.3]	20.8 [16.0,25.6]	24.6 [22.5,26.7]	24.4 [22.9,26.0]
NI	24.3 [21.8,26.7]	24.2 [22.7,25.7]	25.0 [21.9,28.2]	26.2 [20.8,31.5]	29.1 [27.5,30.8]	28.9 [26.4,31.5]
GB	20.2 [19.5,21.0]	19.3 [18.7,19.8]	21.2 [19.8,22.6]	18.9 [16.6,21.1]	26.2 [25.2,27.1]	25.5 [24.9,26.2]
UK	20.5 [19.8,21.3]	19.8 [19.3,20.3]	21.8 [20.5,23.1]	19.6 [17.5,21.8]	26.7 [25.9,27.6]	25.8 [25.1,26.4]

2.1.5 Regression Analyses

The regression models presented in Chapters 3 – 7 below, follow the template outlined in Appendix A1. Variables have been omitted if they prove non-significant at the 0.05 level. Occasionally, the treatment of particular variables diverged from the template in minor ways (e.g. the number of categories in a categorical variable). This occurred when the treatment of the variable specified in the template led to a non-significant result, but an alternative specification yielded a significant result. It also

occurred if a more refined specification of a variable more fully captured an effect or aided the interpretation of a result.

Where any significant interactions between GB/NI and other variables were found, these were included in model 4. Coefficients on the interaction between GB and the variable in question show how much the estimate in GB exceeded or fell short of the main effect. All the main effects in the model refer to Northern Ireland, whether or not there is an interaction. To the extent that they differ from estimates based on the sample from Northern Ireland only, they have gained precision form the larger sample, but differences also arose due to different model specifications.

The full regression models are included in Appendix A3. In the main text, graphs are presented summarising the coefficients in the final model of each regression. To ease interpretation, we also present frequencies of the outcome variables according to poverty status in NI and GB.

Chapter 3: Cognitive Outcomes

Cognitive abilities at age five were measured in the MCS using three subscales of the British Ability Scales Second Edition (BAS II). These are Naming Vocabulary, Picture Similarities, and Pattern Construction. The three subscales are designed to capture core aspects of verbal ability, pictorial reasoning and spatial abilities (Elliott, 1996; Hill, 2005).

Table 3.1 shows the mean cognitive scores according to poverty status in NI and GB. The table presents standardised scores (T scores) of the British Ability Scale (BAS) score, ranging from 60-240, with a mean score of 160 and standard deviation of 23.8.

Scores are higher in NI than GB across the three poverty status categories, but the gap between GB and NI is larger in the case of families who experienced poverty at one or both waves.

Table 3.1 Cognitive child assessment results (Combined British Ability Scale), MSC3

	GB		NI	
	Weighted Mean	95% CI	Weighted Mean	95% CI
Not Poor Above 60% median at both waves	165.8	[165.2,166.3]	169.9	[167.6,172.2]
Transient Poor Below or above 60% median at one wave	154.7	[153.9,155.5]	164.7	[162.5,167.0]
Poor Below 60% median at both waves	148.9	[147.9,150.0]	156.1	[152.4,159.9]
Missing data at both waves	151.8	[148.8,154.9]	167.0	[160.2,173.7]

In model 1 (Appendix A3), which includes the variables for region (NI and GB), income poverty, sex and birth weight, we can see that there is a negative GB intercept compared to Northern Ireland, reflecting higher cognitive scores in NI. Throughout the UK, poverty (especially when this was experienced at both waves) is strongly linked to lower cognitive scores, and children with low birth weights are also disadvantaged in terms of cognitive scores. Girls have higher cognitive scores than boys.

Model 2, which includes the variables in model 1 but also a range of social background variables, shows the effect of ethnicity. Black, Pakistani and Bangladeshi children achieving the lowest scores on the cognitive tests, as has been established in previous work. Family and work status are also significant, with children of workless families scoring lower on the cognitive tests compared to two-parent

families who are both in work. The negative coefficient is larger for two-parent workless households than for lone workless parents. That is, the negative relationship of adult worklessness to child cognitive scores is stronger for couples than for lone parents.

Older mothers are associated with higher cognitive scores. The more older siblings a child has (i.e. the lower in the birth order the child is), the lower the cognitive scores. In the case of younger siblings, only large numbers (3+) show a significantly negative relationship with cognitive scores.

Parents' qualifications are the most powerful predictor of children's cognitive scores, and parental social class also has a substantial effect. Parental depression when the child was aged three, as measured on the Kessler scale is also significant, with higher distress scores for parents linked to lower cognitive scores for children. The inclusion of these social background variables in model 2 substantially mediates the impact of poverty, that is, controlling for these other variables lessens the 'raw' unadjusted impact of income poverty on child cognitive scores. However of note is the finding that the Northern Ireland lead, captured in the negative GB coefficient, is barely reduced in this model.

Model 3 introduces housing and area level characteristics. There is a small negative coefficient for social housing which indicates that living in social housing is predictive of lower cognitive scores, and a small positive coefficient for living in a village which indicates that living in a village is slightly predictive of higher cognitive scores.

Model 4 introduces other potential moderating and mediating indicators. Breastfeeding, and at age 3, strict rules, regular bedtimes and regular mealtimes and the score for the PIANTA measurement of warm parenting are all linked positively to cognitive scores. Reading, library visits fathers' involvement and the home learning environment scale are also all positive. There is a small positive coefficient for formal childcare up to age 3.

The negative GB coefficient remains highly significant throughout models 1 to 4, and therefore the cognitive lead in Northern Ireland has clearly not been accounted for in our models. In other words, controlling for a broad range of social background variables does not substantially account for the difference in child cognitive scores between NI and GB. There are a number of possible reasons for this finding. Firstly, the cognitive score measures could have been collected differently in NI and GB and the underlying difference relates to measurement bias. However, we have no particular reason to suspect this, given that the cognitive tests were administered by trained interviewers in each country. A second possibility is that the difference is driven by some other factor or factors which have not been collected within the survey or relate to factors which are not amenable to measurement within a household survey context. For example, differences in early years provision could be implicated here. Alternatively, societal factors such as the level of inequality in the country, or wider community and family support for child-raising would be examples of dimensions which are not readily picked up by household and individual level analysis.

Table 3.2 shows the statistically significant variables in model 4, ranked in order of strength as measured by the Wald statistic. This shows the importance of reading to the child, alongside parental warmth, taking the child to the library, and the Home Learning Environment. The child's sex is also important. Bear in mind that the strength of the Wald statistic is determined by the choice of variables in the model. Variables with a relatively low Wald statistic are not necessarily unimportant, but may rather have had their effects mediated by other variables in the model, as described in the modelling process above. It would be misleading to read these figures in isolation.

Table 3.2: Wald statistic ranking for model 4, cognitive outcomes.

Wald	
52.5	Reading to the child
52.13	Sex
38.76	PIANTA warmth
31.04	Taking the child to the library
20.69	Home learning environment
17.96	GB/NI
17.6	Father's involvement
17.49	Ethnicity
14.19	Birth Weight
10.54	Breastfeeding
10.3	Mother's age at first birth
9.41	Number of older siblings
9.26	Parents' education
8.07	Regular bedtimes
7.48	Regular mealtimes
5.56	Parents' social class
4.48	Labour market status
4.07	Urban/rural
2.97	Number of younger siblings
2.66	Strict rules
2.37	Childcare

Cognitive Outcomes: NI Data Separately

The four regression models were run separately with just NI data to enable the examination of the impact of the variables specifically on children in NI (Appendix A3).

A smaller number of variables proved significant in NI compared to the full UK model, which is to be expected due to the smaller sample size. Poverty is significant in model 1, but becomes non-significant when other social background controls are included in model 2. Birth weight and the child's sex are also significant.

In model 2, we see that older mothers are linked to higher test scores, and larger numbers of older siblings are negatively related to cognitive scores. As in the UK model, parents' qualifications are the most powerful predictor of children's test scores. The Kessler measure of psychological distress is also significant.

None of the area level or housing variables introduced in model 3 proved significant in Northern Ireland. Model 4 shows a significant positive effect for the PIANTA measure of warm parenting.

In effect then, income poverty as a significant explanatory variable for child cognitive scores in NI entirely disappears when other social background variables are included. Caution should be exercised in interpreting this result given the strong relationship between income poverty and many of the additional variables examined. For example, educational level or labour market status is strongly correlated with income poverty and income poverty can often be seen, and used, as a shorthand summary variable for these other facets of disadvantage.

Nevertheless, there is no significant impact of income poverty on child cognitive scores above and beyond the explanatory strength of the additional variables examined which means that the models, and the variables included with them, are sufficiently strong to account for impact of income poverty and its relationship to child cognitive scores.

Chapter 4: Foundation Stage Profiles (FSP)

Within England, Foundation Stage Profiles are part of the regulatory and quality framework for the provision of learning, development and care for children between birth and the academic year in which they turn five (0-5). Foundation Stage Profile (FSP) scores are reported by teachers at the end of the first year of school, and collected by the Department for Children Schools and Families in state schools in England. Teachers receive specific training in making these assessments. For cohort members in England, these scores were linked to the survey data. In the other UK countries, equivalent scores were requested from teachers specifically for the MCS members, as they are not part of the policy framework outside England. There is a need for caution in comparing the scores in England to those in the other UK countries due to the different mode of data collection. The FSP score examined in this report sums six areas of learning: 1) personal, social and emotional development; 2) communication, language and literacy; 3) mathematical development; 4) knowledge and understanding of the world; 5) physical development; and 6) creative development.

Table 4.1 shows the mean FSP scores according to poverty status in GB and NI. The FSP scores have a range from 0-117. Scores in NI are higher than those in GB across the board, but the gap is greater for children who have experienced poverty in one or both waves of the study.

Table 4.1: Educational assessment scores, MCS3

	GB		NI	
	Weighted Mean	95% CI	Weighted Mean	95% CI
Not Poor Above 60% median at both waves	94.0	[93.5,94.5]	99.0	[97.3,100.7]
Transient Poverty Below or above 60% median at one wave	86.0	[85.3,86.7]	95.1	[93.1,97.0]
Poor Below 60% median at both waves	80.7	[79.7,81.7]	88.0	[84.4,91.5]
Missing data at both waves	85.9	[83.0,88.7]	96.0	[91.8,100.3]

Model 1 (Appendix A3), which includes the variables for region (NI and GB), income poverty, sex and birth weight shows that all other UK countries had substantially higher FSP scores than England. The lead over England may simply reflect the different mode of data collection as discussed earlier. The coefficients for Northern Ireland (9.0) and Scotland (10.7) are about twice the size of the Welsh coefficient (5.3). There is a substantial negative effect of poverty, amounting to a 13.2 point disadvantage for those who had experienced poverty at two waves. Girls scored higher than boys by 5.5 points. Low birth weights were linked to lower scores.

Model 2 introduces the social background controls. Pakistani and Bangladeshi pupils received lower scores than whites. Children from workless households received lower scores than children with two working parents. Parents' education was highly significant, with the lowest scores for children whose parents had no qualifications or only NVQ level1 qualifications. Social class was also highly significant, with negative coefficients for all other social classes compared to the professional and managerial classes. The age of the mother was positive (i.e. the children of older mothers received higher scores). Having younger siblings was somewhat negative, but this is mainly in the case of large numbers of younger siblings (3 or more), which was of course rare for children of this young age. Older siblings are associated with a consistently negative FSP, especially in the case of large numbers of older siblings.

Psychological distress of the main respondent and risk of depression of the partner both independently predict lower Foundation Stage Profile scores, as did longstanding illness of the main respondent.

The variables included in model 2 reduce the coefficients for income poverty, but this variable remains significant in this model. The positive coefficients for Northern Ireland, Scotland and Wales are only marginally reduced in this model.

Model 3 introduces the area level and housing variables. Ethnic wards (all of which were in England) and non-disadvantaged wards were associated with positive FSP scores compared to disadvantaged wards. This is surprising given that ethnic wards were also disadvantaged, and that individual ethnicity and family disadvantage are included in the model. The negative effect of rental accommodation is approximately the same for both private and social renting. The introduction of these variables does not substantially change the country coefficients, but does somewhat reduce the coefficients for poverty.

Model 4 which introduces other potential moderating and mediating indicators shows that breastfeeding is linked to higher FSP scores. A lack of regular bedtimes and mealtimes at age 3 are linked to lower scores. The PIANTA warmth scale and the home learning environment are also positively linked to FSP scores. Reading to the child daily and taking the child to the library, as well as father's involvement with childcare are all positive in relation to FSP scores. Obesity among mothers is linked to lower FSP scores. This could reflect a range of factors including household nutrition, mothers' capacity for active play and parenting, or even teacher bias.

Interactions between Northern Ireland/Great Britain and other variables were tested in this model, but most were not significant. Having 3 or more older siblings had a significant negative interaction with GB. Once this effect is controlled for, the main effect for this parameter reflects the effect in NI only, and this is positive. However, this is based on very small numbers (9 cases only in NI). There is also a significant (at the 0.05 level) negative interaction between parental qualifications at NVQ level 2 (which is GCSE level) and GB, which shows that this qualification level is negative in GB but positive in NI (the comparison is NVQ4 which is degree level).

The positive NI, Scotland and Wales effects are not reduced in this model, and the effect of poverty is only marginally reduced.

Table 4.2 shows the statistically significant variables in model 4, ranked in order of strength as measured by the Wald statistic. The child's age and sex are the most powerful variables in this model, followed by country. These are followed by a set of parenting variables: regular bed times, Home Learning Environment, PIANTA warmth and library visits.

Table 4.2: Wald statistic ranking for model 4, FSP.

364.24	Child's age
245.69	Sex
67.23	Country
36.96	Regular bed times
30.66	Home learning environment
28.73	PIANTA warmth
23.35	Library
9.69	Birth weight
7.75	Housing tenure
7.32	Mother longstanding illness
6.86	Age at first birth
6.1	Older siblings
4.97	Parents' education
4.58	Regular meal times
4.55	Father's involvement
4.44	Younger siblings
4.43	Labour market status
4.24	Parents' social class
4.16	Poverty
4.06	Breastfeeding
3.99	Ward
3.5	Reading
3.12	Partner malaise
2.31	Mother's BMI
1.68	Ethnic group

Foundation Stage Profiles: NI Data Separately

The four regression models were run separately with just NI data to enable the examination of the impact of the variables specifically on children in NI (Appendix A3).

A smaller number of variables proved significant in NI compared to the full UK model, which is to be expected due to the smaller sample size. Poverty is significant in model 1 and associated with lower FSP scores, but becomes non-significant when other social background controls are included in model 2. The child's sex is also significant in Model 1 with female children scoring higher.

Model 2 shows that mothers' age at first birth is positively associated with FSP scores. There is a positive effect of a large number of younger siblings in Northern Ireland. This is interesting, as it is in contrast to a negative effect of this variable in England, but, as noted above, the numbers concerned are very small. Parental education and social class are highly significant.

None of the area or housing variables in model 3 were significant in NI, so this model is omitted. Model 4 shows that breastfeeding and fathers' involvement are both significantly and positively related to FSP scores.

Chapter 5: Behavioural Difficulties

The behavioural development of the children is measured with the Strengths and Difficulties Questionnaire (SDQ). The SDQ is a behavioural screening questionnaire for 3 to 16-year-olds (Goodman, 1997, 2001; Goodman, Meltzer and Bailey, 1998). It consists of 25 items which generate scores for five subscales measuring: conduct problems; hyperactivity; emotional symptoms; peer problems; and pro-social behaviour. The child's behaviour is reported by a parent, normally the mother, in the computer assisted self-completion module of the questionnaire. For the following analysis an overall difficulties score was computed by summing replies to the 20 items in subscales indicating behaviour problems, i.e. conduct problems, hyperactivity, emotional symptoms, and peer problems.

Table 5.1 shows the mean SDQ scores in GB and NI according to poverty status. Scores run from 0-40, where 17 is the threshold for clinical screening. Scores in GB are roughly half a point higher than those in NI across the poverty status categories. Higher scores reflect a greater number of reported difficulties.

Table 5.1: SDQ Scores

Experience of income poverty at either of both of first two sweeps	**GB**		**NI**	
	Weighted Mean	95% CI	Weighted Mean	95% CI
Not Poor Above 60% median at both waves	6.5	[6.3,6.6]	6.0	[5.6,6.5]
Transient Poverty Below or above 60% median at one wave	8.0	[7.8,8.2]	7.5	[7.0,7.9]
Poor Below 60% median at both waves	9.6	[9.3,9.9]	9.0	[8.2,9.8]
Missing data at both waves	8.0	[7.3,8.7]	7.0	[5.7,8.2]
Unweighted Sample	11102		1240	

Model 1 (Appendix A3) which includes the variables for region (NI and GB), income poverty, sex and birth weight shows that poverty is linked to higher difficulty scores, with coefficients of 1.4 for poverty at one wave and 2.9 for poverty at two waves. Girls have lower difficulty scores than boys by about 1 point. Higher birth weights are linked to lower scores, and older children have fewer difficulties than younger children.

In model 2, which includes the variables in model 1 but also a range of social background variables, poverty becomes insignificant, as its effects are accounted for by the other variables in the model. Religion is significant in this model, although there is no difference between Protestants and Catholics. 'Other religion' and 'no religion' are significantly linked to higher difficulty scores. Older mothers are linked to fewer difficulties. The presence of older siblings is also linked to fewer difficulties. Children in workless households have higher difficulty scores. Parents' social class and education have relatively substantial effects. Longstanding illness and distress

on the Kessler scale are linked to greater difficulties, and higher life satisfaction is linked to fewer difficulties.

Model 3 which includes housing and area level characteristics shows that, of the area and housing variables, only the respondent's perception of whether the area is a good area for bringing up children is significant with areas perceived to be less than excellent linked to increased behavioural difficulties (the coefficient for poor/very poor compared to excellent is 1.3).

Model 4, which includes other potential moderating and mediating indicators shows that several parenting outcomes are linked to behavioural difficulties. Breastfeeding is linked to fewer difficulties. Moderate TV viewing at 3 is linked to fewer difficulties than high levels of TV viewing (more than three hours a day). Failure to take the child to the library is linked to higher difficulty scores, whereas frequent reading to the child, also measured at age 3, predicts lower difficulty scores. Children who did not have regular mealtimes had greater difficulties. The children of mothers who smoked during pregnancy had higher difficulty scores. Mothers' Body Mass Index (BMI) was also significant, with heavier mothers more likely to have higher difficulty scores.

There are significant interactions between GB and mothers' BMI, and GB and child's age. The benefit of age is stronger in GB, while the impact of BMI is stronger in NI. Note that the high NI coefficient in this regression is purely driven by the inclusion of interaction terms, and should not be interpreted.

Table 5.2 shows the variables in model 4 (but with interaction terms excluded from the model to ease interpretation) ranked in order of the size of the Wald statistic. The child's sex has by far the strongest effect on this measure, followed by the psychological distress of the parent, then regular mealtimes for the child. Overall, this table highlights the salience of variables reflecting parents' well-being and health behaviours for this outcome.

Table 5.2: SDQ Model 4 (without interaction terms), variables ranked according to strength of Wald statistic.

Wald	
111.33	Sex
35.65	Kessler psychological distress
25.66	Regular mealtimes
18.69	Mother's BMI
16.89	Child's Age
14.84	Parent's life satisfaction
12.82	Library
9.72	TV
8.97	Parents' longstanding illness
8.39	Good area to bring up children
7.72	Mother's age at first birth
7.69	Breastfeeding
6.84	Older siblings
6.66	Smoking during pregnancy
6.56	Parents' social class
6.1	Reading to the child
5.75	Birthweight
4.49	Parents' education
4.18	GB/NI
2.84	Parental labour market status

Behavioural Difficulties (SDQ): NI Data Separately

The four regression models were run separately with just NI data to enable the examination of the impact of the variables specifically on children in NI (Appendix A3).

Model 1 shows the impact of poverty and of the child's sex in the smaller NI sample with experience of poverty associated with increased behavioural difficulties and with females having lower behavioural difficulties. Unlike with the UK data, birthweight is not statistically significant in this model. Model 2 shows that parental social class and education are also significant in NI, as well as parental longstanding illness and distress on the Kessler scale. In model 3, whereas the UK model included the perception of the local area as a good place to raise children, the NI model finds results more sensitive to the perception of the safety of the area. In model 4, a higher BMI and lower frequency of reading to the child are significantly predictive of increased behavioural difficulties.

Chapter 6: Child General Health

Table 6.1 shows the difference in general health according to poverty status in NI and GB. There is little difference in the rate of less than excellent health among children in families who were above the poverty line at both waves in GB and NI, but children who were in poverty at one or both waves in NI were more likely to be in excellent health than those in GB.

Table 6.1: Child General health, age 5

	NI			GB		
	excellent	less than excellent		excellent	less than excellent	
	weighted (%)	weighted (%)	Total (%)	weighted (%)	weighted (%)	Total (%)
Not Poor Above 60% median at both waves	56.0	44.0	100.0	53.4	46.6	100.0
Transient Poverty Below or above 60% median at one wave	54.6	45.4	100.0	43.8	56.2	100.0
Poor Below 60% median at both waves	48.1	51.9	100.0	37.7	62.3	100.0
Missing data at both waves	47.3	52.7	100.0	39.5	60.5	100.0
Total	53.9	46.1	100.0	47.9	52.1	100.0
Weighted sample	676	620		5,583	6,122	
chi2 p-value	0.180			0.000		

Model 1 (Appendix A3), which includes the variables for region (NI and GB), income poverty, sex and birth weight shows that the general health of the child appears better in Northern Ireland, in that less than excellent reported general health is more commonly reported in GB than in NI. The effect sizes are reported as odds ratios. The odds of less than excellent health in GB were 1.3 times those in NI. Poverty is linked to worse health. Children in poverty at one wave had 1.4 times the odds of less than excellent health than those who had not been in poverty in either wave, and children in poverty at both waves had 1.8 times the odds of less than excellent health. Girls' health is reported to be better than that of boys.

Model 2 which include the variables in model 1 but also a range of social background variables, shows that children of Indian, Pakistani and Bangladeshi ethnic origin have worse reported health than whites. Health outcomes are poorer when the partner is in work, but the main respondent (typically the mother) is not, compared to both parents being in work. This is surprising, but could possibly reflect mothers opting to stay at home when their child is in poor health, or the inability of parents to find suitable formal care that could effectively cater for the needs of their child. The

children of older mothers are less likely to have less than excellent reported health. Children with three older siblings have better reported health compared to children with no older siblings. Low levels of parental qualifications are linked to reported poorer health. Parental malaise, psychological distress (Kessler scores for both the main respondent and the partner) and longstanding illness are all linked to poorer reported health for the child (most likely reflecting the worry of having a child who is unwell). The impact of poverty is entirely accounted for by the other social background variables included in this model, and the Northern Ireland advantage is substantially reduced.

In model 3, which includes housing and area level characteristics, whether the area is perceived to be good for bringing up children is strongly linked to the child's general health. This variable, which is more favourable in NI, mediates the remaining Northern Ireland advantage.

Model 4 which introduces other potential moderating and mediating indicators shows that breastfeeding is linked to better reported health, as are regular bed times and meal times. Higher scores on the PIANTA scale of warmth are linked to better health, while the PIANTA conflict scale is linked to worse health.

There is an interaction between living in an area that the respondent perceives to be poor for bringing up children and GB. This suggests that the negative impact on reported child health of living in a poor area for bringing up children is stronger in GB than in NI. There is an interaction between childcare and GB. Formal childcare up to age 3 is linked to better child health in NI but not in GB. There is also an interaction between GB and the PIANTA warmth scale. Parental warmth is significant in GB but not in NI. Note that the high NI coefficient in this regression is purely driven by the inclusion of interaction terms, and should not be interpreted.

Table 6.2 shows the statistically significant variables in model 4, ranked in terms of the strength of the Wald statistic. In this model, parents' longstanding illness is the strongest predictor of child health.

Table 6.2: Child Health Model 4 (without interaction terms), variables ranked according to strength of Wald statistic.

Wald	
40.78	Parents' longstanding illness
19.95	Regular bedtimes
11.41	PIANTA warmth
10.14	Regular mealtimes
9.09	Good area to bring up children
9.07	Sex
9.00	Ethnic group
7.89	PIANTA conflict
7.36	Kessler psychological distress (main)
4.16	Kessler (partner)
3.81	Birthweight
3.71	Malaise
3.22	Breastfeeding
3.21	Age of mother at first birth
2.93	Older siblings
2.65	Labour market status
2.63	Parents' education
2.61	GB/NI

General Health: NI Data Separately

The four regression models were run separately with just NI data to enable the examination of the impact of the variables specifically on children in NI (Appendix A3).

A limited number of variables were significant in the Northern Ireland regressions. None of the variables in model 1 proved significant. In model 2, compared to two working parents, most other family labour market positions were linked to worse health outcomes, especially two non-working parents. Longstanding illness on the part of the main respondent was linked to poorer health on the part of the child. In model 3, a good area to bring up children is marginally significant, but goes out in model 4. Regular bed times and reading are significant, and formal childcare is strongly linked to better health.

Chapter 7: Overweight and obesity

Children from the Millennium Cohort Study were weighed and measured by interviewers trained for this purpose. This provided an opportunity to examine the prevalence of overweight and obesity within this contemporary cohort of UK children. Body Mass Index (BMI; weight/height squared), a proxy for adiposity, is the most common measurement of body size at the population level. Childhood overweight and obesity is defined by the International Obesity Task Force cut-offs for BMI (Cole et al 2000). These cut-offs were based on data from six countries, including the UK, and the centiles are linked to the widely accepted adult cut-offs for overweight and obesity. Hence data can be compared internationally

Table 7.1 shows the difference in overweight (including obesity) according to poverty status in NI and GB. There is little difference in the rate of overweight among children in families who were above the poverty line at both waves in GB and NI, but children who were in poverty at one or both waves in NI were more likely to be overweight than those in GB.

Table 7.1: Overweight, age 5

	NI			GB		
	Not overweight	Overweight		Not overweight	Overweight	
	weighted (%)	weighted (%)	Total (%)	weighted (%)	weighted (%)	Total (%)
Above 60% median at both waves	78.6	21.4	100.0	79.6	20.4	100.0
Below or above 60% median at one wave	72.3	27.7	100.0	79.1	20.9	100.0
Below 60% median at both waves	72.3	27.7	100.0	76.7	23.3	100.0
Missing data at both waves	78.7	21.3	100.0	77.7	22.3	100.0
Total	75.1	24.9	100.0	79.0	21.0	100.0
Weighted sample	965	319		9,140	2,458	
chi2 p-value	0.127			0.092		

Model 1 (Appendix A3), which includes the variables for region (NI and GB), income poverty, sex and birth weight, shows that children in NI are more likely to be overweight than those in the rest of the UK. The odds of being overweight in GB are 0.8 those in NI, that is the odds of being overweight in GB are lower. This model also shows a link between living in poverty at both waves and being overweight with the odds 1.3 greater compared to the odds of those who were not in poverty at either wave. Girls are more likely to be overweight than boys with an odds ratio of 1.4, and children with high birth weights are more likely to be overweight. Those with birthweights of 4kg or more had 3.7 times the odds of being overweight compared to the lightest babies (2kg or less).

The introduction of additional social background variables in model 2 fully accounts for the association of overweight with poverty, but the difference between NI and GB is actually somewhat increased in this model. Black children are more likely to be overweight than whites. The presence of both older and younger siblings reduces the risk of overweight compared to an only child. The lower social class groups have a higher risk of overweight compared to the managerial and professional class.

Model 3 shows that living in an area that is perceived to be only average or worse for bringing up children is linked to a higher risk of overweight. Children who live in a semi-rural area are less likely to be overweight than those who live in the city, but, perhaps surprisingly those who live in rural areas are not significantly different from city dwellers (perhaps the car-dependence of rural dwellers counteracts the greater availability of green spaces). Those who did not change their address in the first three waves of the study were less likely to be overweight than those who moved at least once.

Model 4, which includes other potential moderating and mediating indicators, shows that both mothers' smoking during pregnancy and partners' smoking are linked to higher rates of overweight among children. This is likely to be due to lower awareness and motivation regarding healthy lifestyles among parents who smoke. Among the parenting variables, taking the child to the library regularly is (surprisingly) moderately linked to an increased risk of overweight. The most powerful predictors of whether the child is overweight are the mother's and partner's Body Mass Index (BMI). This is unsurprising, as the diet and lifestyles of the parents affect the child. These variables account for the effect of social class on the child's BMI. The lower risk of overweight in GB is reduced in this model, but remains significant. There were no significant interactions between NI and the other variables in this model.

Table 7.2 shows model 4 (excluding interactions) in terms of the ranked Wald statistics for statistically significant variables. The child's sex is the largest single predictor, but both parents' BMIs have independent powerful effects.

Table 7.2: Overweight Model 4 (without interaction terms), variables ranked according to strength of Wald statistic.

Wald	
43.92	Sex
39.09	Father's BMI
33.74	Mother's BMI
13.48	Smoked during pregnancy
5.61	Birthweight
5.27	Younger siblings
5.1	NI/GB
4.71	Partner smoked
4.43	Library
4.17	Older siblings
3.91	Moved home
3.44	Ethnic group
3.33	Urban/rural
3.22	Good area to bring up children

Overweight: NI Data Separately

The four regression models were run separately with just NI data to enable the examination of the impact of the variables specifically on children in NI (Appendix A3).

Model 1 shows the relationship of poverty and birth weight to overweight. In this instance, transient poverty rather than being poor at both waves, was associated with increased odds of overweight. Greater odds of overweight, was also significantly associated with children who were heavier than 4kg at birth. Model 2 shows the protective effect of older siblings associated, as it is with lower odds of overweight. Model 3 confirms the negative impact of living in an area which is perceived to be average or worse for bringing up children in increasing the odds of overweight. Model 4 shows that the main respondent's smoking behaviour is linked to increased odds of overweight, as is 'no childcare', that is, the main respondent, typically the mother, is not using any additional childcare. The effects of mothers' and fathers' BMI are confirmed in that overweight parents are associated with increased odds of their children being overweight.

Summary

Children in Northern Ireland fared better than those in GB in terms of cognitive and educational outcomes, behavioural difficulties and general health. This difference between NI and GB is largely driven by the negative impact of England. Although England is more affluent than NI, it is also a highly urbanised, diverse and unequal society.

Although our regressions account for some of these factors, the NI advantage remained robust in the case of cognitive and educational outcomes. In the case of behavioural difficulties, the inclusion of religion in the model mediates the difference between NI and GB, where there are more non-Christian religions as well as parents professing no religion. In the case of general health, the inclusion of a range of social background controls, including ethnicity, as well as a variable indicating whether the local area is perceived as good for bringing up children, accounts for the difference between GB and NI. Children in NI fared worse than those in GB on only one outcome – the tendency to be overweight. The difference between NI and GB is partially accounted for by the Body Mass Index (BMI) of the parents, but this in a sense just pushes the problem back a generation. However, it does suggest that policies designed to tackle childhood overweight and obesity will need to encourage healthy lifestyles within the family, rather than just focussing on school meals and school activities.

There were few significant interactions between NI and other variables in our models, suggesting that the predictors of these outcomes are broadly the same in NI and GB, although the NI specific models contain fewer significant variables, due to the smaller sample. There was no impact of religion on any of our outcomes in NI, controlling for the other variables in model 2.

Poverty is linked to all the outcomes that we have considered. In the cases of general health, overweight and behavioural difficulties, the effect of poverty is explained when more refined measures of social background are introduced in model 2. However, the cognitive and educational outcomes are more strongly structured by poverty. The effect of poverty on cognitive outcomes is only fully mediated in the final model, while the effect of poverty on foundation stage profiles remains significant even in the final model which includes parenting practices.

Low birth weights are predictive of worse educational, cognitive, behavioural and general health outcomes, but high birth weights also predict being overweight at age five.

Girls are more likely to be overweight than boys. However, girls fare better than boys in terms of general health, cognitive scores, Foundation Stage Profiles, and Behavioural Difficulties (SDQ) scores.

Social class and parental education had particularly powerful effects in predicting the cognitive and educational outcomes, and also consistently predicted behavioural difficulties. General health and BMI are not as socially patterned. Controlling for the

other variables in model 2, social class is not a predictor of general health and parental education does not predict the child's BMI. Alongside social class and education, family work status predicts cognitive, educational and behavioural outcomes, with children from workless families being disadvantaged. However, this variable does not predict overweight, and, in the case of general health, it is children from families where the mother is at home while the partner works who are in worse health.

Older mothers are generally linked to positive educational, cognitive and behavioural outcomes for their children, but being an older mother is not linked to children's general health or overweight.

A child having older siblings has strongly negative impacts for cognitive and educational outcomes, but is protective in the case of behavioural difficulties, and somewhat protective for general health. In the case of overweight, the presence of both older and younger siblings is protective.

Parental longstanding illness and mental distress (measured by the Kessler and or malaise scales) were linked to all of the outcomes we considered, with the exception of BMI. The parents' BMIs were the most powerful predictors of the child's BMI. Parents' smoking was also linked to this outcome. Mothers' BMI was also linked to children's educational (FSP) scores and behavioural difficulties (SDQ) scores.

Some housing and area level variables were significant for all the outcomes we considered. In the case of cognitive and educational outcomes, housing tenure was significant. The perceived suitability of the local area for bringing up children was relevant for the behavioural, general health and BMI outcomes. It is interesting, however, that area level deprivation, as captured in our stratum variable, did not explain any additional variability in child outcomes once family level characteristics were taken into account.

Although the precise parenting variables which were statistically significant varied between the different models, variables reflecting good parenting practices, regularity, and a strong home learning environment predicted positive cognitive, educational and behavioural outcomes. Fathers' extent of involvement in child care was demonstrated to have explanatory power for cognitive and educational outcomes. For other outcomes, any impact of fathers' involvement may have been swamped by the inclusion of correlated factors. Breast feeding predicts positive outcomes across all the outcomes except for BMI.

Overall, we can say that although poverty is relevant to an understanding of the full range of childhood outcomes considered here, both its impact, and the extent to which this can be explained by mediating factors, varies across outcomes. General health and BMI among children at age 5 are less strongly socially patterned along dimensions of poverty and social disadvantage than cognitive and educational outcomes. Parental education and to a lesser extent social class are powerful predictors of cognitive and educational outcomes, and their impact can only be partially explained even by the large number of variables that we introduced in our

modelling process including quite detailed information on parenting practices. That is, parental behavioural patterns which may be commonly perceived as being the main predictors of child outcomes are not sufficient to explain the effects of social disadvantage. This supports research which argues that, while parenting is important, a policy focus on parenting alone is insufficient to tackle the impacts of social inequalities on children (Kiernan and Mensah 2010). It may also be naïve for policymakers to believe that parenting practices can be addressed in isolation, given the links between living conditions, well-being and parenting practices. Some parenting practices, such as providing a strong Home Learning Environment, also draw on parental cultural capital which is itself an unequally distributed resource.

This report has confirmed that inequalities, and particularly cognitive and educational inequalities, emerge very early in life. However, we also know that gaps between socio-economic groups widen through the school years (Feinstein 2003), and that inequalities in parental socio-economic status have implications throughout life, from educational attainment and participation, to labour market opportunities, to help in getting onto the housing ladder, and the reproduction and increase of inequalities of wealth through direct inheritance (Hills 2010). This suggests that interventions directed at the early years may be necessary but not sufficient to tackle inequalities. Hills' thorough report of the evidence underscores the importance of early years policies, but also the need to reduce child poverty, and the importance of raising both basic skills levels (including literacy and numeracy) and participation in further and higher education for young people from disadvantaged backgrounds.

Given the powerful intergenerational transmission of inequalities, inequalities affecting adults have an impact on children. Therefore, in considering the social policy decisions which may have an impact on inequalities for young people, there is a need to think outside of the obvious categories of early years and educational policy, important as these are. All policies affecting the distribution of income and wealth are relevant here.

We are aware of the need for caution in drawing policy conclusions, as policy conclusions cannot follow directly from research evidence. However, we offer the following tentative suggestions.

Cognitive and educational outcomes

- Parents' educational qualifications are a powerful predictor of children's educational outcomes, and especially of their cognitive scores. This confirms the powerful intergenerational transmission of educational attainment. Parental educational attainment in a given generation should not necessarily be treated as a given – investment in adult education could potentially have positive effects for children.
- The fact that parental psychological distress is relevant here suggests that investment in mental health provision may have positive effects for children. Factors leading to psychological distress for parents include poverty (Petterson and Burke Albers 2001).
- Parenting is important, but especially parental behaviour regarding books, libraries and reading, which suggests that policies aimed at encouraging

library use and reading to children at home are important. These parenting practices partly explain the importance of parental education.
- Fathers' involvement is relevant, which supports policies aimed at encouraging this, such as paternity leave.
- Formal child care is positively linked to cognitive scores, while workless households are negative. The provision of good quality childcare is both positive in itself, and allows mothers to take up paid work.

Behaviour (SDQ)

- Several indicators of parental psychological and physical health and health behaviours emerged as significant predictors of the child's SDQ score. Parental psychological distress was the most important of these, and longstanding illness or disability, smoking during pregnancy and high BMI were also all negative, while high life satisfaction and breastfeeding were positive. This suggests that promoting physical and mental wellbeing among parents could have positive effects for children as parental wellbeing feeds into better child behaviour.
- Parenting behaviours were also relevant, including reading (as for cognitive and educational outcomes). Regular mealtimes were also relevant, suggesting a further link between healthy lifestyles within the family and child behaviour, which would support a policy focus on this.
- In common with educational and cognitive outcomes, children in workless households were disadvantaged in terms of SDQ scores, which supports policies aimed at supporting parental working.
- Being in a good area to bring up children is also relevant, suggesting that initiatives to improve the quality of neighbourhoods in this regard could be valuable.

Health

- Young children's general health, as reported by the main respondent, is generally good, but poverty is a predictor of less than excellent reported health at age 5. It is particularly difficult to unpack the relationships between variables, as variables that we have treated as predictors in our modelling process (such as parental psychological distress) may actually be driven by the outcome variable of child health. Evidence from past cohorts suggests that poor childhood health has lasting implications for children's later occupational status, and this is one of the mechanisms through which the intergenerational transmission of inequality occurs (Case et. al. 2005). Therefore, policies aimed at improving child health may have wide-ranging benefits.

Overweight

- Poverty is a predictor of overweight among children, but it would be quite wrong to suggest that this problem only affects the poor. In Northern Ireland, 28% of children who had experienced poverty at either both or one wave were overweight at age 5, compared to 21% of those who were not poor at either wave. Clearly, interventions to tackle this problem cannot be targeted only at poor families.

- Both mother's and father's BMI are powerful predictors of the child's BMI. This suggests that it is essential for policy to tackle diet and exercise within the family. Policies aimed at promoting healthy lifestyles among adults are likely to have positive effects for children.

In conclusion, we have attempted to unpack the effects of poverty, and the mechanisms through which childhood disadvantage affects children. This is a complex task, as the various dimensions of disadvantage are powerfully interrelated (Ermisch 2008; Duncan and Brooks-Gunn 1997). Parents' social class and educational status are linked to family size, structure and the age of the mother, as well as to parenting behaviours, physical and mental health, and to the type of neighbourhood. The potential causal pathways between these variables are many. A positive angle on this is that policy interventions addressed at any one of these factors may have positive spill-overs for the others.

We also need to remember the limitations of individual and household-level analysis for understanding inequalities which are also driven by social structures which do not feature in our models. Comparative research suggests that educational inequalities are smaller, and social mobility higher in those societies which have lower levels of overall inequality of income and wealth (Shavit and Blossfeld 1993). Therefore, redistributive economic policies may be more effective than policies aimed directly at addressing parenting practices for example, if our aim is to tackle inequality.

Appendix A1: Regression Template

1. Disadvantage , Northern Ireland and child specific controls
    - N Ireland versus GB (also distinguishing England for Education)
    - Indicator of advantage/ disadvantage: Income poverty waves 1 and 2 (1=poor at both waves/ 2=poor at one wave/ poor at neither wave).
    - Gender
    - Age in months at interview wave 3
    - Birthweight (<2/2-3/3-4/4+ kg)

2. Social background controls
    - Ethnic group (6 groups)[we include this variable in order to investigate whether including ethnicity makes a difference, or whether stratum variable is sufficient to account for higher levels of minority groups in England].
    - Religion (main respondent, 5 categories: Protestant/Catholic/other Christian/ other religion/ no religion)
    - Family structure and parental employment combined variable (both employed/ m not p employed/ p not m employed/ both not employed/ lone employed/ lone not employed)
    - Mother's age at first birth
    - Number of younger sibs born up to age 5 (0/1/2/3-4)
    - Number of older sibs (0/1/2/3/4-12)
    - Parents' educational level (highest of both parents and first 2 sweeps)
    - Parents' social class (highest of both parents and first 2 sweeps)
    - Parental longstanding illness (none/longstanding/longstanding and limiting waves 1 and 2)
    - Parental mental health (malaise and Kessler) and life satisfaction

3. Neighbourhood characteristics
    - Ward type wave 1: disadvantaged/ ethnic/ non-disadvantaged
    - Reported satisfaction with local area wave 2:
        - Good area to raise children (0= excellent, good/ 1= average, poor, very poor)
        - How safe do you feel (0= very safe, fairly safe/ 1= neither safe nor unsafe, fairly unsafe, very unsafe)
    - Rural or urban (urban/ semi-urban/ rural)

- Moved home between W1 and W3 (moved at least once/ never moved)
- Housing tenure (private rent/ social rent/ owner occupier)

4. Other potential moderating/mediating indicators
    - Parental smoking: in pregnancy: yes/no; MCS2 main and partner yes/no.
    - Breastfed (not/ 3 months/ 6 months/ more)
    - Indicators of parenting practices at sweeps 1 and 2:
        - Regular bedtimes (0=always, usually/ 1= never, sometimes)
        - Regular mealtimes (0= always, usually/ 1=never, sometimes)
        - Smacking (0=never, rarely/ 1=once a month or more).
        - Shouting (0= never, rarely, once a month/ 1=once a week or daily)
        - Rules (0= not many rules, it varies/ 1= lots of rules)
        - Strict rules (0=not very strict, it varies/ 1= strictly enforced).
        - PIANTA parent-child relationship scale
        - PIANTA parent-child conflicts scale
    - The home learning environment (sweep 2):
        - Home learning environment scale
        - TV viewing (1= more than 3 hours/ 0= less than 3 hours)
        - Reading to child (1= daily/ 0= less than daily)
        - Taking child to library (0= not at all/ 1= ever)
        - Help child to learn sport/dance (0=no/ 1=yes)
    - Fathers' involvement in parenting (scales MCS1 and 2)
    - Use of different types of childcare MCS1 (0=none/ 1= family/ 2=other informal/ 3=formal).
    - Parental BMI category (mother and partner): (underweight/ normal/ overweight/ obese)

Appendix A2: Detailed Information on Derivation of Variables and Scales

Strengths and Difficulties Questionnaire (SDQ)

For the next section please answer on the basis of your child's behaviour over the last six months. For each question, please say whether the statement is not true, somewhat true or certainly true of your child.

(1) Not true
(2) Somewhat true
(3) Certainly true

[Lchildact] shows concern for other people's feelings
[Lchildact] is restless, overactive and cannot stay still for long
[Lchildact] often complains of headaches, stomach-aches or sickness
[Lchildact] is happy to share with other children (treats, toys, pencils etc..)
[Lchildact] often has temper tantrums or hot tempers
[Lchildact] tends to play alone, is rather solitary
[Lchildact] generally obeys, usually does what adults ask
[Lchildact] has many worries, often seems worried
[Lchildact] is helpful if someone is hurt, upset or feeling ill
[Lchildact] can't sit still, is constantly fidgeting or squirming
[Lchildact] has at least one good friend
[Lchildact] often fights with other children or bullies them
[Lchildact] is often unhappy, tearful, or downhearted
[Lchildact] is generally liked by other children
[Lchildact] is easily distracted, attention wanders
[Lchildact] is nervous or clingy in new situations, easily loses confidence
[Lchildact] is kind to younger children
[Lchildact] often argues with adults
[Lchildact] is picked on or bullied by other children
[Lchildact] often volunteers to help others (parents, teachers, other children)
[Lchildact] can stop and think things over before acting
[Lchildact] can be spiteful towards others
[Lchildact] gets on better with adults than with other children
[Lchildact] has many fears, is easily scared
[Lchildact] sees tasks through to the end, has good attention span

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A Research Note. *Journal of Child Psychology and Psychiatry, 38*, 581-586.

Goodman, R. (2001). Psychometric properties of the Strengths and Difficulties Questionnaire (SDQ) *Journal of the American Academy of Child and Adolescent Psychiatry, 40*(1337-1345).

Malaise scale

1. tired most of time
2. often miserable or depressed
3. often worried about things
4. often gets in violent rage
5. suddenly scared for no good reason
6. easily upset or irritated
7. constantly keyed up or jittery
8. every little thing gets on nerves
9. heart often races like mad

Response categories and score

- yes=1
- no=0

Baby parenting practices

baby_parenting (reverse scale).
Range 4-20. Cronbach's Alpha = 0.666

Response scale

1 strongly agree
2 agree
3 neither agree nor disagree
4 disagree
5 strongly disagree

- it is important to develop a regular pattern of feeding and sleeping with a baby.
- babies need to be stimulated if they are to develop well.
- talking, even to a young baby, is important.
- cuddling a baby is very important.

PIANTA

Response scale

1 Definitely does not apply
2 Not really
3 Neutral
4 Applies sometimes
5 Definitely applies

PIANTA_conflict Range 7-35. Cronbach's Alpha = 0.787

- My child and I always seem to be struggling with each other.
- My child easily becomes angry at me.
- My child remains angry or is resistant after being disciplined.
- Dealing with my child drains my energy.
- When my child is in a bad mood, I know we're in for a long and difficult day.
- My child's feelings toward me can be unpredictable or can change suddenly.
- My child is sneaky or manipulative with me.

PIANTA_warmth Range 7-35. Cronbach's Alpha = 0.668

- I share an affectionate, warm relationship with my child.
- If upset, my child will seek comfort from me.
- My child values his/her relationship with me.
- When I praise my child, he/she beams with pride.
- My child spontaneously shares information about himself/herself.
- It is easy to be in tune with what my child is feeling.
- My child openly shares his/her feelings and experiences with me.

Home Learning environment (HLE)

HLE, Range 0-28. Cronbach's Alpha = 0.63

Response scale

0 Not at all
1 Occasionally or less than once a week
2 1 - 2 days per week
3 3 times a week
4 4 times a week
5 5 times a week
6 6 times a week
7 7 times a week/constantly

- how often help to learn the ABC or the alphabet
- how often try to teach numbers or counting
- how often try to teach any songs, poems or nursery rhymes
- how often paint or draws at home

Partner's involvement, MCS1

f_inv_sw1 (reverse scale), Range 3-18. Cronbach's Alpha = 0.62

Response scale

1 More than once a day
2 Once a day
3 A few times a week
4 Once or twice a week
5 Less than once a week
6 Never

- how often looks after his baby on his own
- how often changes a nappy
- how often feeds baby
- how often gets up at night for a baby

Partner's involvement, MCS2

f_inv_sw2, Range 4-25. Cronbach's Alpha = 0.63

Response scale

1 Not at all
2 Less than once a week
3 Once or twice a week

4 A few times a week
5 Once a day
6 More than once a day

- reads to baby (scale A)
- plays with baby (scale A)
- gets him/her ready for bed or put him/her to bed (scale A)

housework_eq, Range 0-7. Cronbach's Alpha = 0.58

Response scale
0 Main respondent or partner or someone else
1 We share more or less equally

- who cooks meals
- who cleans
- laundry, ironing
- household repairs, DIY
- looks after the household money and pays bills
- who stays with children when they are ill
- who looks after children in general

Appendix A3: Regressions

Cognitive outcomes - United Kingdom

Predictor variable		Model 1	Model 2	Model 3	Model 4
GB	Northern Ireland	0	0	0	0
	Great Britain	-5.879***	-5.004***	-4.086***	-5.051***
Poverty between wave 1 and 2	Above 60% median at both waves	0	0	0	
	Below or above 60% median at one wave	-9.240***	-1.756**	-1.663**	
	Below 60% median at both waves	-15.44***	-1.661*	-1.318	
	Missing data at both waves	-10.35***	-0.0884	-0.333	
cohort member sex	Male	0	0	0	0
	Female	3.684***	3.743***	3.777***	3.169***
Cohort member's Birth weight	<2 Kg	-10.40***	-8.296***	-8.133***	-7.818***
	2-3 Kg	-4.169***	-2.865***	-2.832***	-2.412***
	3-4 Kg	0	0	0	0
	4+ Kg	0.534	0.127	0.145	0.153
Ethnicity (of the cohort member)	Ethnicity White (ref)		0	0	0
	Ethnicity N/A		-4.400*	-4.576*	-3.599
	Mixed		-6.131*	-5.537*	-6.918**
	Indian		-3.949*	-3.918*	-3.290
	Pakistani or Bangladeshi		-12.16***	-12.53***	-10.59***
	Black or Black British		-8.095***	-7.295***	-6.701***
	Other ethnic group		-3.740	-3.446	-2.158
Parental combined labour market status at wave 2	Both parents in work		0	0	0
	Main in Partner not in work		0.715	0.863	0.106
	Partner in main not in work		0.168	-0.0437	0.433
	Both not in work		-4.846***	-4.445**	-4.093***
	Lone parent in work		0.871	1.599	1.381
	Lone parent not in work		-2.815**	-2.052	-2.426
	Partner or main non response		0.481	0.416	1.032
Age of natural mother at first birth	Age at first birth		0.301***	0.263***	0.172**
Number of cohort childs' younger siblings at wave 3	Cohort member is only child		0		0
	1		-0.848		-1.146*
	2		-1.031		-1.483
	3-4		-6.178*		-5.010
Number of cohort childs' older siblings at wave 3	Cohort member is only child		0	0	0
	1		-2.112***	-1.845***	-1.951***
	2		-3.061***	-2.815***	-2.733***
	3		-5.434***	-5.227***	-5.122***
	4-12		-7.736***	-7.477***	-6.955***
Parents' highest level of education across wave 1 and 2	No qualifications		0	0	0
	Overseas only		0.012	-0.030	-0.671
	NVQ1		0.434	0.379	0.013
	NVQ2		4.319***	4.174***	2.370*
	NVQ3		4.944***	4.669***	2.188
	NVQ4		9.091***	8.634***	5.108***
	NVQ5		11.82***	11.23***	7.126***
Highest level of parental social class across wave 1 and 2	prof/manag		0	0	0
	intermediate		-2.948***	-2.833***	-2.439***
	sm emp & s-emp		-3.097**	-3.057**	-2.398*
	low sup & tech		-5.112***	-4.814***	-3.600***
	semi-rou & routine		-4.880***	-4.487***	-3.124***
	long-term unemployed/never		-5.324**	-5.203**	-3.336

Predictor variable		Model 1	Model 2	Model 3	Model 4
	worked, not stated/inad desc non applicable				
Kessler psychological distress (of the main respondent at wave 2)	no or low distress (0-3)		0	0	
	medium (4-12)		-0.0545	0.0580	
	high (13-24)		-4.046**	-3.767*	
	Missing data		-4.136***	-4.017***	
House tenure at wave 2	Mortgage			0	0
	own			1.288	0.884
	Rent LA or HA			-2.128**	-1.862*
	Rent privately			-1.419	-1.519
	Other			-1.357	-1.268
Rural/urban	Urban			0	0
	Rural/urban missing data			10.32**	10.61**
	Town and fringe			0.639	0.301
	Village			2.088*	1.819*
Breastfeeding	Not at all				0
	Up to 3 months				1.609**
	3-6months				3.687***
	6 months or more				3.022***
Whether cohort child has regular bedtimes (at wave 2)	never or almost never				-1.616**
	sometimes, usually, always				0
Whether cohort child has regular meal times (at wave 2)	never or almost never				-2.532**
	sometimes, usually, always				0
Rules in the family at wave 2	few rules and not strict				0
	many strict rules				1.500*
	many rules, but not strict				1.079
	few rules, but strict				1.391*
PIANTA scale warmth in relationship with a mother (at wave 2)					0.690***
					-6.871***
Home Learning environment (HLE) at wave 2	HLE scale				0.181***
	Missing data				36.71***
How often do you read to the child (at wave 2)?	Less often than daily				0
	Every day				1.555**
	Missing data				-30.92***
Anyone at home take child to the library (at wave 2)?	No				0
	Yes				2.623***
Father's involvement at wave 2	Father's involvement scale				0.489***
	missing data				-0.503
Childcare up to age 3	none				0
	family				0.319
	other informal				-1.284
	formal				1.643*
	missing data				0.823
	Constant	171.1***	166.8***	166.1***	131.9***
	Weighted analysis sample	12876	12872	12872	12868

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Cognitive outcomes, Northern Ireland

Predictor variable		Model 1	Model 2	Model 3	Model 4
Poverty between wave 1 and 2	Above 60% median at both waves	0			
	Below or above 60% median at one wave	-4.485*			
	Below 60% median at both waves	-12.59***			
	Missing data at both waves	-3.497			
cohort member sex	Male	0	0	0	
	Female	3.080*	3.136*	3.452*	
Cohort member's Birth weight	<2 Kg	-6.874	-2.147	-2.625	-2.896
	2-3 Kg	-4.885**	-4.900*	-5.014**	-4.808**
	3-4 Kg	0	0	0	0
	4+ Kg	-1.005	-1.513	-0.960	-1.518
Parental combined labour market status at wave 2	Both parents in work		0		
	Main in Partner not in work		-3.331		
	Partner in main not in work		1.486		
	Both not in work		-9.180*		
	Lone parent in work		0.417		
	Lone parent not in work		-0.126		
	Partner or main non response		2.462		
Age of natural mother at first birth	Age at first birth		0.506**	0.460**	0.411*
Number of cohort childs' older siblings at wave 3	Cohort member is only child		0	0	0
	1		-4.144	-4.614	-3.834
	2		-4.897*	-5.582*	-4.821*
	3		-7.100*	-7.860**	-6.717*
	4-12		-5.413	-5.935	-3.316
Parents' highest level of education across wave 1 and 2	No qualifications		-9.929***	-9.786***	-6.367*
	Overseas only		0.962	-0.0102	2.800
	NVQ1		-12.03***	-11.27***	-8.641**
	NVQ2		-3.910*	-3.626	-1.996
	NVQ3		-5.907**	-5.621**	-5.545**
	NVQ4		0	0	0
	NVQ5		1.030	1.125	0.372
Kessler psychological distress (of the main respondent at wave 2)	no or low distress (0-3)		0		
	medium (4-12)		-4.204*		
	high (13-24)		-6.312		
	Missing data		-7.336***		
House tenure at wave 2	Mortgage			0	0
	own			5.512	5.804*
	Rent LA or HA			-5.474*	-5.311*
	Rent privately			-4.637	-4.327
	Other			-0.0677	-0.797
PIANTA scale warmth in relationship with a mother (at wave 2)	PIANTA scale				0.869*
	missing data				-9.053***
How often do you read to the child (at wave 2)?	Less often than daily				0
	Every day				4.128*
	missing data				12.31
	Constant	169.1***	160.7***	160.9***	131.8***
	Weighted analysis sample	1287	1286	1286	1286

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Educational outcomes, United Kingdom

Predictor variable		Model 1	Model 2	Model 3	Model 4
Country	England (ref)				
	Wales	5.255***	4.734***	4.948***	4.933***
	Scotland	10.72***	9.681***	9.832***	9.018***
	Northern Ireland	9.039***	8.123***	8.036***	7.383***
Poverty between wave 1 and 2	Above 60% median at both waves	0	0	0	0
	Below or above 60% median at one wave	-7.596***	-2.076***	-1.637***	-1.377**
	Below 60% median at both waves	-13.24***	-2.753***	-1.738*	-1.362
	Missing data at both waves	-6.917***	-0.381	-0.301	0.378
cohort member sex	Male	0	0	0	0
	Female	5.499***	5.537***	5.559***	5.040***
Cohort member's age at wave 3 in months		1.316***	1.337***	1.340***	1.361***
Cohort member's Birth weight	<2 Kg	-5.598**	-4.767**	-4.728**	-4.662**
	2-3 Kg	-3.090***	-2.411***	-2.419***	-2.191***
	3-4 Kg	0	0	0	0
	4+ Kg	0.749	0.329	0.256	0.235
Ethnicity (of the cohort member)	Ethnicity White (ref)		0	0	0
	Ethnicity N/A		-4.285*	-4.547*	-3.315
	Mixed		-1.047	-0.907	-1.609
	Indian		-0.158	-1.281	-0.332
	Pakistani or Bangladeshi		-4.911**	-6.316***	-4.512**
	Black or Black British		-1.203	-0.936	0.403
	Other ethnic group		-0.384	-0.581	0.512
Parental combined labour market status at wave 2	Both parents in work		0	0	0
	Main in Partner not in work		-2.232	-1.660	-1.922
	Partner in main not in work		-0.680	-0.606	-0.580
	Both not in work		-6.362***	-5.182***	-5.015***
	Lone parent in work		-1.862	-1.153	-0.136
	Lone parent not in work		-3.723***	-2.807**	-1.984
	Partner or main non response		-1.287	-1.125	0.0471
Age of natural mother at first birth	Age at first birth		0.225***	0.150**	0.115*
Number of cohort childs' younger siblings at wave 3	Cohort member is only child		0	0	0
	1		0.906*	0.850*	0.742
	2		-0.144	-0.293	-0.421
	3-4		-7.709**	-7.720**	-6.281*
Number of cohort childs' older siblings at wave 3	Cohort member is only child		0	0	0
	1		-1.178*	-1.364**	-1.237**
	2		-2.722***	-3.012***	-2.593***
	3		-2.875**	-3.289***	-2.585**
	4-12		-6.088***	-6.341***	-5.477***
Parents' highest level of education across wave 1 and 2	No qualifications		0	0	0
	Overseas only		1.903	1.755	1.233
	NVQ1		-1.432	-1.438	-1.906*
	NVQ2		2.316**	2.244*	0.678
	NVQ3		3.097**	2.898**	0.743
	NVQ4		5.207***	4.783***	2.146*
	NVQ5		6.658***	6.274***	3.348**
Highest level of parental social class across wave 1 and 2	prof/manag		0	0	0
	intermediate		-1.951**	-1.799**	-1.558*
	sm emp & s-emp		-2.848***	-2.573***	-2.129**
	low sup & tech		-4.163***	-3.732***	-2.733***
	semi-rou & routine		-3.475***	-3.022***	-2.112**

Predictor variable		Model 1	Model 2	Model 3	Model 4
	long-term unemployed/never worked, not stated/inad desc non applicable		-4.372**	-4.015*	-2.358
Kessler psychological distress (of the main respondent at wave 2)	no or low distress (0-3)		0	0	
	medium (4-12)		-0.710	-0.561	
	high (13-24)		-3.284**	-2.908*	
	Missing data		-2.845***	-2.636***	
Longstanding illness/disability (main respondent at wave 2)	Yes		-1.267**	-1.176*	-1.221**
	No		0	0	0
Malaise risk of depression (partner at wave 1)	low risk of depression		0	0	0
	high risk of depression		-2.166**	-2.085**	-1.686*
	missing data		0.0385	0.283	0.134
	Ward - disadvantaged (ref)			0	0
	Advantaged			1.746*	1.458*
	Ethnic			3.376*	3.558*
House tenure at wave 2	Mortgage			0	0
	own			-0.912	-1.039
	Rent LA or HA			-3.238***	-2.963***
	Rent privately			-3.226***	-3.284***
	Other			-2.232	-1.874
Breastfeeding	Not at all				0
	Up to 3 months				0.873*
	3-6months				1.934***
	6 months or more				1.247*
Whether cohort child has regular bedtimes (at wave 2)	never or almost never				-2.962***
	sometimes, usually, always				0
Whether cohort child has regular meal times (at wave 2)	never or almost never				-1.607*
	sometimes, usually, always				0
PIANTA scale warmth in relationship with a mother (at wave 2)	PIANTA scale				0.500***
	Missing data				-5.340***
Home Learning environment (HLE) at wave 2	HLE scale				0.188***
	Missing data				9.828***
How often do you read to the child (at wave 2)?	Less often than daily				0
	Every day				0.904*
	Missing data				-3.734
Anyone at home take child to the library (at wave 2)?	No				0
	Yes				1.683***
Father's involvement at wave 2	Father's involvement scale				0.224*
	missing data				-1.237
Mother's BMI at wave 2	normal				0
	underweight				-0.689
	overweight				-0.767
	obese				-1.275*
	missing data				-1.538
Parental highest qualifications interaction with country	NVQ2 X NI				4.285***
	NVQ3 X Wales				3.385**
	Constant	8.683	5.005	5.760	-21.99***
	Weighted analysis sample	10091	10088	10088	10084

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Educational outcomes, Northern Ireland

Predictor variable		Model 1	Model 2	Model 4
Poverty between wave 1 and 2	Above 60% median at both waves	0		
	Below or above 60% median at one wave	-4.255**		
	Below 60% median at both waves	-12.11***		
	Missing data at both waves	-3.605		
cohort member sex	Male	0	0	0
	Female	5.580***	5.481***	5.578***
Age of natural mother at first birth	Age at first birth		0.312*	
Number of cohort childs' younger siblings at wave 3	Cohort member is only child		0	0
	1		0.728	0.056
	2		-4.064	-4.945
	3-4		7.725*	7.691**
Parents' highest level of education across wave 1 and 2	No qualifications		-10.69**	-9.679**
	Overseas only		-2.946	-1.174
	NVQ1		-11.89***	-11.35**
	NVQ2		1.418	2.054
	NVQ3		-0.320	0.054
	NVQ4		0	0
	NVQ5		2.574	1.844
Highest level of parental social class across wave 1 and 2	prof/manag		0	0
	intermediate		-6.665**	-6.723**
	sm emp & s-emp		-7.216**	-7.051**
	low sup & tech		-1.847	-1.983
	semi-rou & routine		-6.805***	-7.398***
	long-term unemployed/never worked, not stated/inad desc non applicable		-3.237	-4.322
Breastfeeding	Not at all			-1.280
	Up to 3 months			0
	3-6months			4.409**
	6 months or more			2.628
Father's involvement at wave 2	Father's involvement scale			1.005**
	missing data			-0.891
	Constant	96.40***	89.15***	84.03***
	Weighted analysis sample	895	894	890

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Total behavioural difficulties score (SDQ) - United Kingdom

Predictor variable		Model 1	Model 2	Model 3	Model 4
GB	Northern Ireland	0	0	0	0
	Great Britain	0.502**	0.189	0.0735	9.303**
Poverty between wave 1 and 2	Above 60% median at both waves	0			
	Below or above 60% median at one wave	1.448***			
	Below 60% median at both waves	2.940***			
	Missing data at both waves	1.132**			
cohort member sex	Male	0	0	0	0
	Female	-1.011***	-0.971***	-0.957***	-0.924***
Cohort member's age at wave 3	Age in months	-0.0700***	-0.0728***	-0.0731***	0.0531
Cohort member's Birth weight	<2 Kg	0.758	0.484	0.490	0.416
	2-3 Kg	0	0	0	0
	3-4 Kg	-0.681***	-0.396**	-0.376**	-0.324*
	4+ Kg	-0.988***	-0.535***	-0.510**	-0.424**
Religion (of the main respondent)	Protestant		0	0	0
	Catholic		-0.0815	-0.124	-0.155
	Other Christian		-0.0785	-0.110	-0.0646
	Other religion		0.696**	0.668**	0.653**
	No religion		0.314**	0.285*	0.189
Parental combined labour market status at wave 2	Both parents in work		0	0	0
	Main in Partner not in work		0.0582	0.0332	0.0198
	Partner in main not in work		0.0930	0.0955	0.153
	Both not in work		0.974**	0.891**	0.857**
	Lone parent in work		0.251	0.245	0.285
	Lone parent not in work		0.742**	0.662**	0.768***
	Partner or main non response		-0.0487	-0.0533	0.0370
Age of natural mother at first birth	Age at first birth		-0.0543***	-0.0448***	-0.0264*
Number of cohort childs' older siblings at wave 3	Cohort member is only child		0	0	0
	1		-0.287**	-0.239*	-0.241*
	2		-0.584***	-0.555***	-0.614***
	3		-0.509	-0.495	-0.582*
	4		-0.956**	-0.942**	-1.162***
Parents' highest level of education across wave 1 and 2	No qualifications		0	0	0
	Overseas only		0.236	0.206	0.131
	NVQ1		-0.934*	-0.923*	-0.820*
	NVQ2		-1.254***	-1.214***	-0.963***
	NVQ3		-1.447***	-1.399***	-1.013**
	NVQ4		-1.760***	-1.654***	-1.082***
	NVQ5		-2.256***	-2.141***	-1.437***
Highest level of parental social class across wave 1 and 2	prof/manag		0	0	0
	intermediate		0.159	0.132	0.0509
	sm emp & s-emp		0.387	0.378	0.282
	low sup & tech		0.885***	0.804***	0.561**
	semi-rou & routine		1.145***	1.071***	0.863***
	long-term unemployed/never worked, not stated/inad desc non applicable		2.478***	2.407***	2.154***
Longstanding	None		0	0	0

Predictor variable		Model 1	Model 2	Model 3	Model 4
illness or disability at wave 2	Yes		0.485***	0.462***	0.376**
Kessler psychological distress (of the main respondent at wave 2)	no or low distress (0-3)		0	0	0
	medium (4-12)		1.545***	1.493***	1.413***
	high (13-24)		3.207***	3.117***	2.889***
	Not able to do self completion or (refused- 72 Cases), Self-completion administered by interviewer/ Can't say in at-least one item/ Missing data		1.438***	1.376***	1.241***
Satisfaction with life (main respondent) at wave 2	Low satisfaction (1-6)		0	0	0
	High satisfaction (7-10)		-0.974***	-0.889***	-0.794***
	Not able to do self completion or refusal		-0.761*	-0.696*	-0.733*
Main good area to bring up children at wave 2	Excellent			0	0
	Good			0.310**	0.218*
	Average			0.753***	0.558***
	Poor / Very poor			1.284***	1.053***
Breastfeeding	Not at all				0
	Up to 3 months				0.0264
	3-6months				-0.388**
	6 months or more				-0.532***
Main hours a day child watches tv/videos at wave 2	not at all/ up to one hour				0
	more than 1 hour, less than 3 hours				-0.344**
	or, more than 3 hours				0.171
Anyone at home take child to the library (at wave 2)?	Yes				0
	No				0.346***
How often do you read to the child (at wave 2)?	every day				0
	several times a week				0.170
	once or twice a week				0.613***
	once or twice a month/ less often				0.848**
	not at all				1.800***
Mothers BMI at wave 2					0.0876***
Smoking during pregnancy	No				-0.435**
	Yes				0
	missing data or n/a				0.112
Whether cohort child has regular meal times (at wave 2)	never or almost never/ sometimes				1.494***
	usually				0.512***
	always				0
NI and mothers' BMI interaction	GB*mothers' BMI				-0.0516*
NI and cohort child's age	GB*age in months				0.128*
	Constant	11.39***	14.88***	14.29***	3.458
	Weighted analysis sample	12324.0	12324.0	12324.0	12324.0
	Un-weighted sample	11818	11818	11818	11818

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Total behavioural difficulties score (SDQ) - Northern Ireland

		Model 1	Model 2	Model 3	Model 4
Poverty between wave 1 and 2	Above 60% median at both waves	0			
	Below or above 60% median at one wave	1.505***			
	Below 60% median at both waves	2.927***			
	Missing data at both waves	0.845			
cohort member sex	Male	0	0	0	0
	Female	-0.977**	-0.939***	-0.971***	-0.820**
Longstanding illness or disability at wave 2	No		0	0	
	Yes		0.747*	0.655*	
highest level of parental social class, waves 1 and 2	prof/manag		0	0	0
	intermediate		0.419	0.295	0.174
	sm emp & s-emp		0.912*	0.976*	0.704
	low sup & tech		1.544**	1.373**	1.122*
	semi-rou & routine		1.336**	1.157**	1.012*
	long-term unemployed/never worked, not stated/inad desc non applicable		0.552	-0.0154	0.0677
Kessler psychological distress (of the main respondent at wave 2)	no or low distress (0-3)		0	0	0
	medium (4-12)		2.195***	2.146***	2.192***
	high (13-24)		6.553***	6.163***	6.158***
	Not able to do self completion or (refused- 72 Cases) / Self-completion administered by interviewer / Can't say in at-least one item		2.585***	2.552***	2.403***
Parents' highest level of education across 2 first waves	No qualifications		1.959***	2.030***	1.512**
	NVQ1 or overseas only		1.715**	1.610**	1.306*
	NVQ2		0.941**	0.914**	0.674
	NVQ3		0.0681	0.0554	0.0120
	NVQ4 or NVQ5		0	0	0
main how safe feel in area at wave 2	Very safe/ Fairly safe			0	0
	Neither safe nor unsafe/ Fairly unsafe/ Very unsafe			2.921***	2.948***
How often do you read to the child (main respondent at wave 2)	every day/ several times a week				0
	once or twice a week/ once or twice a month/ less often /not at all				1.662***
Mothers' BMI at wave 2					0.0765**
	Constant	6.476***	5.200***	5.184***	3.196***
	Weighted analysis sample	1554.4	1554.4	1554.4	1554.4
	Un-weighted sample	1197	1197	1197	1197

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Child general health: Less than excellent general health (UK)

Predictor variable		Model 1		Model 2		Model 3		Model 4	
GB	Northern Ireland	0		0		0		0	
	Great Britain	1.313	***	1.168	*	1.129		26.726	***
Poverty between wave 1 and 2	Above 60% median at both waves	0							
	Below or above 60% median at one wave	1.414	***						
	Below 60% median at both waves	1.832	***						
	Missing data at both waves	1.631	**						
Cohort member's sex	Male	0		0		0		0	
	Female	0.852	***	0.855	***	0.855	***	0.868	**
Cohort member's birth weight	<2kg							0	
	2-3kg							1.996	
	3-4kg							2.096	
	4+kg							1.872	
Cohort member's ethnic group	White			0		0		0	
	Mixed			1.143		1.111		1.096	
	Indian			1.717	***	1.717	***	1.705	***
	Pakistani and Bangladeshi			2.319	***	2.298	***	2.243	***
	Black or black British			1.103		1.049		1.003	
	Other ethnic group			1.343		1.310		1.267	
	Missing			1.108		1.138		0.915	
Parental combined labour market status at wave 2	Both parents in work			0		0		0	
	Main in, Partner not			1.111		1.127		1.094	
	Partner in main not			1.169	**	1.178	**	1.161	**
	Both not in work			1.214		1.216		1.172	
	Lone parent in work			1.114		1.100		1.139	
	Lone parent not in work			1.262	*	1.254	*	1.255	*
	Partner/main non-response			1.025		1.011		1.008	
Age of mother at first birth	Age at first birth			0.987	**	0.989	*	0.993	
Number of cohort child's older siblings at wave 3	None			0		0		0	
	One			0.975		0.991		1.005	
	Two			0.901		0.910		0.925	
	Three			0.708	***	0.722	**	0.719	**
	Four+			1.005		1.031		1.020	
Parents' highest level of education across wave 1 and 2	No qualifications			1.262	*	1.224	*	1.143	
	Oversees only			1.288		1.229		1.140	
	NVQ1			1.448	**	1.382	**	1.273	*
	NVQ2			1.153	*	1.115		1.061	
	NVQ3			1.071		1.048		1.024	
	NVQ4			0		0		0	
	NVQ5			0.773	**	0.781	**	0.799	*
Malaise score (risk of depression/anxiety), main respondent	Low risk			0		0		0	
	Higher risk			1.261	***	1.248	***	1.201	**
	Missing			1.050		1.045		1.015	
Longstanding illness	None			0		0		0	

Predictor variable		Model 1		Model 2		Model 3		Model 4	
/disability at wave 2	Yes			1.408	***	1.404	***	1.399	***
Kessler psychological distress, of main respondent at wave 2	No or low distres (0-3)			0		0		0	
	Medium (4-12)			1.311	***	1.293	***	1.214	***
	High (13-24)			1.517	**	1.548	**	1.386	*
	Missing			1.426	***	1.388	***	1.301	**
Kessler psychological distress, partner at wave 2	No or low distres (0-3)			0		0		0	
	Medium (4-12)			1.215	***	1.205	***	1.195	***
	High (13-24)			1.327		1.341		1.241	
	Missing			1.109		1.120		1.097	
Good area to bring up children, main respondent at wave 2	Excellent					0		0	
	Good					1.315	***	1.299	***
	Average					1.378	***	1.339	***
	Poor					1.407	**	1.400	**
	Very poor					0.931		0.873	
	Missing					1.531		1.658	*
Breastfeeding	Not at all							0.936	
	Up to 3 months							0	
	3-6 months							0.882	*
	6 months+							0.955	
	Missing							17.396	**
Whether cohort child has regular bedtimes, wave 2	Always or usually							0	
	Never or sometimes							1.265	***
Whether cohort child has regular mealtimes, wave 2	Always or usually							0	
	Never or sometimes							1.291	**
PIANTA warmth score	PIANTA warmth							0.958	***
PIANTA conflict score	PIANTA conflict							1.012	**
PIANTA warmth - missing	PIANTA warmth - missing							1.033	
PIANTA conflict - missing	PIANTA conflict - missing							0.994	
NI and cohort member's weight interaction	<2kg*GB							0	
	2-3kg*GB							0.309	*
	3-4kg*GB							0.288	*
	4+kg*GB							0.287	*
NI and Good area to bring up children interaction	Excellent*GB							0	
	Good*GB							1.173	
	Average*GB							1.368	
	Poor*GB							2.963	**
	Very poor*GB							0.821	
	Missing*GB							1.989	
Type of childcare at wave 2	Family							0	
	No childcare							0.984	

Predictor variable		Model 1		Model 2		Model 3		Model 4	
	Other - informal							0.827	
	Formal							0.631	**
	Missing							1.176	
NI and type of childcare interaction	Family*GB							0	
	No childcare*GB							1.006	
	Other - informal*GB							1.176	
	Formal*GB							1.481	*
	Missing*GB							0.920	
NI and PIANTA warmth interaction	GB*PIANTA warmth							0.937	*
	Weighted sample	13405		13405		13405		13405	
	Unweighted sample	12988		12988		12988		12,988	

* p < 0.05, ** p < 0.01, *** p < 0.001

Child general health: Less than excellent general health (NI)

Predictor variable		Model 1		Model 2		Model 3		Model 4	
Parental combined labour	Both parents in work			0.000		0.000			
market status, wave 2	Main in Partner not in work			1.983	*	2.039	*		
	Partner in main not			1.462	*	1.451	*		
	Both not in work			2.974	**	2.992	**		
	Lone parent in work			1.067		1.033			
	Lone parent not in work			1.551	*	1.509	*		
	Partner/main non response			1.099		1.100			
Longstanding illness/ disability at wave 2	None			0		0		0	
	Yes			1.496	**	1.500	**	1.480	**
Good area to bring up	Excellent					0			
children, main	Good					1.258	*		
respondent at wave 2	Average					1.219			
	Poor					0.725			
	Very poor					1.289			
	Missing					0.942			
Whether cohort child has regular mealtimes, wave 2	Always or usually							0	
	Never or sometimes							1.448	*
Bed time reading to cohort member, wave 2	Daily							0	
	Less than daily							1.353	*
Childcare at wave 2	Family							0	
	No childcare							1.053	
	Other - informal							0.741	
	Formal							0.575	***
	Missing							1.249	
	Weighted analysis sample			1679		1679		1679	
	Unweighted analysis sample			1296		1296		1296	

* p < 0.05, ** p < 0.01, *** p < 0.001

Overweight (UK)

Predictor variable		Model 1		Model 2		Model 3		Model 4	
GB	Northern Ireland	0		0		0		0	
	Great Britain	0.838	**	0.810	**	0.799	**	0.847	*
Poverty between wave 1 and 2	Above 60% median at both waves	0							
	Below/above 60% median at one wave	1.097							
	Below 60% median at both waves	1.291	***						
	Missing data at both waves	1.120							
Cohort member's sex	Male	0		0		0		0	
	Female	1.362	***	1.370	***	1.375	***	1.398	***
Cohort member's birth weight	<2kg	0		0		0		0	
	2-3kg	1.371		1.468		1.465		1.550	
	3-4kg	2.062	**	2.249	***	2.272	***	2.369	***
	4+kg	3.714	***	4.100	***	4.188	***	4.363	***
Cohort member's ethnic group	White			0		0		0	
	Mixed			1.243		1.208		1.234	
	Indian			1.022		0.998		1.195	
	Pakistani and Bangladeshi			1.008		0.974		1.156	
	Black or black British			2.217	***	2.129	***	2.022	***
	Other ethnic group			0.617		0.590	*	0.677	
	Missing			0.847		0.829		0.805	
Number of cohort child's younger siblings at wave 3	No younger siblings			0		0		0	
	One			0.803	***	0.811	***	0.829	**
	Two			0.671	**	0.675	**	0.696	**
	Three-four			0.414	*	0.433	*	0.382	*
Number of cohort child's older siblings at wave 3	None			0		0		0	
	One			0.828	**	0.822	***	0.818	***
	Two			0.843	*	0.827	*	0.802	*
	Three			0.886		0.861		0.794	*
	Four+			0.816		0.783		0.699	*
Highest parental social class waves 1 and 2	Prof/managerial			0		0			
	Intermediate			1.048		1.029			
	sm emp & s-emp			1.286	**	1.271	*		
	low sup & tech			1.312	***	1.269	**		
	semi-routine & routine			1.352	***	1.293	***		
	unemployed/never worked/missing			1.225		1.179			
Good area to bring up children	Excellent/good					0		0	
	Average/poor/very poor					1.216	***	1.128	*
	Missing					0.702		0.709	
ONS 2005 rural/urban code	Urban					0		0	
	Town and fringe					0.765	**	0.792	*
	Village, hamlet &					1.012		1.041	

Predictor variable		Model 1		Model 2		Model 3		Model 4	
	isolated dwellings								
	Missing					1.601		1.745	
Whether moved between waves 1 and 3	Moved at least once					0		0	
	Not moved					1.141	*	1.155	**
	Missing					0.777		0.764	
Mother smoked during pregnancy	No							0	
	Yes							1.460	***
	Missing/non applicable							1.398	***
Partner smoked in wave 2	No							0	
	Yes							1.168	*
	Missing/non applicable							1.212	**
Anyone at home takes child to the library	No							0	
	Yes							0.889	*
Father's BMI	Normal							0	
	Underweight							0.572	
	Overweight							1.713	***
	Obese							2.714	***
	Missing							1.641	***
Mother's BMI	Normal							0	
	Underweight							0.742	
	Overweight							1.489	***
	Obese							2.130	***
	Missing							1.239	
	Weighted analysis sample	13302		13302		13302		13302	
	Unweighted analysis sample	12,882		12,882		12,882		12,882	

* p < 0.05, ** p < 0.01, *** p < 0.001

Overweight (NI)

Predictor variable		Model 1		Model 2		Model 3		Model 4	
Poverty between wave 1 and 2	Above 60% median at both waves	0		0		0			
	Below/above 60% median at one wave	1.473	**	1.577	***	1.547	***		
	Below 60% median at both waves	1.487		1.549	*	1.399			
	Missing data at both waves	1.007		1.102		1.116			
Cohort member's birth weight	<2kg	0		0		0		0	
	2-3kg	1.269		1.203		1.242		1.297	
	3-4kg	1.929		1.956		2.066		2.306	
	4+kg	3.209	*	3.433	*	3.630	*	4.183	*
Number of cohort childs' older siblings at wave 3	None			0		0		0	
	One			0.623	**	0.633	**	0.565	**
	Two			0.635	*	0.645	*	0.569	**
	Three			0.951		0.948		0.784	
	Four+			0.352	*	0.359	*	0.230	**
Good area to bring up children	Excellent/good					0			
(reported by main respondent	Average/poor/very poor					1.464	*		
Main respondent smoked in wave 2	No							0	
	Yes							1.663	*
	Missing/non applicable							2.116	***
Type of childcare at wave 2	Family							0	
	No childcare							1.466	*
	Other - informal							1.366	
	Formal							0.877	
	Missing							1.310	
Father's BMI	Normal							0	
	Overweight							1.502	
	Obese							3.103	***
	Missing							1.513	
Mother's BMI	Normal							0	
	Underweight							0.448	
	Overweight							1.384	*
	Obese							1.618	*
	Missing							0.701	
	Weighted analysis sample	1633		1633		1633		1633	
	Unweighted analysis sample	1260		1260		1260		1260	

* p < 0.05, ** p < 0.01, *** p < 0.001

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