Millennium Cohort Study Briefing 12

Ethnic inequalities in child outcomes

Based on Chapter 10 of *Children of the 21st century (Volume 2): The first five years*

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About these briefings

This Briefing is one of 14 that distil the key findings of the first three surveys of the Millennium Cohort Study, as collected in *Children of the 21st century (Volume 2): The first five years*.

The study has been tracking the Millennium children through their early childhood and plans to follow them into adulthood. It covers such diverse topics as parenting; childcare; school choice; child behaviour and cognitive development; child and parental health; parents' employment and education; income; housing; and neighbourhood.

It is the first of the nationwide cohort studies to over-sample areas with high densities of ethnic minorities and large numbers of disadvantaged families.

For the first survey, in 2001–2, interviewers visited the families of nearly 19,000 children aged 9 months throughout the United Kingdom. It established the circumstances of pregnancy and birth, as well as the families' social background. The second survey recorded how nearly 16,000 cohort children were developing at age 3. The third survey, when they were age 5, involved almost 15,500 children and provided a uniquely detailed account of their physical, cognitive and social development in the year they entered school.

The study is housed at the Centre for Longitudinal Studies at the Institute of Education, University of London. It was commissioned by the Economic and Social Research Council, whose funding has been supplemented by a consortium of government departments.

Children of the 21st century (Volume 2): The first five years, edited by Kirstine Hansen, Heather Joshi and Shirley Dex, The Policy Press, 2010, can be ordered via www.policypress.co.uk

Introduction

This Briefing reports findings from the Millennium Cohort Study (MCS) on the nature and extent of ethnic differences in early childhood outcomes up to age 5.[2] Lack of suitable UK data made it impossible to consider this issue until now. The analysis of MCS data summarised here also considers background factors that are likely to have affected child outcomes. It looks at differences in socio-economic status (SES) and family characteristics, such as parental education and health, and also the home-learning environment and parenting styles and rules.

Defining the ethnic groups

Although minority ethnic groups have been oversampled by MCS, the sample sizes only make it possible to split ethnicity into eight groups: white, Indian, Pakistani, Bangladeshi, black African, black Caribbean, other ethnicity and mixed ethnicity. Minority ethnic families are more likely to drop out of longitudinal surveys. Nevertheless, almost all non-white ethnic groups (except 'mixed')

were still over-represented by the time of the study's third (age 5) survey (see Table 1).

Ethnic differences in early childhood outcomes

The second and third MCS surveys at age 3 (MCS2) and age 5 (MCS3) measured cognitive and non-cognitive development. The cognitive outcome measure examined here was the British Ability Scales (BAS) vocabulary assessment.[3] Non-cognitive development was assessed using the Strengths and Difficulties Questionnaire (SDQ). Four of its subscales – measuring conduct problems, hyperactivity, emotional symptoms and peer problems[4] – were combined into a single score. It should be borne in mind, however, that differences in SDQ scores reported could reflect ethnic or cultural differences in interpreting or reporting children's behaviour.

In Table 2, raw ethnic differences in mean percentile rankings are given for the two measures at ages 3 and 5. All minority ethnic groups perform significantly worse than white children in terms of the cognitive

outcome (BAS Naming Vocabulary score) at both ages. Pakistani and Bangladeshi children have markedly worse academic outcomes at ages 3 and 5.[5] Pakistani youngsters are 32 percentile points behind white children at age 3 while Bangladeshi children are 37 points behind. Both are just under 30 points behind at age 5.

The non-cognitive measure, Total Difficulties from the Strengths and Difficulties scale, shows very different results. At age 3, children from the black African and 'other ethnicity' groups have significantly *better* outcomes than their white peers, whilst Pakistani children have significantly worse outcomes. By age 5, Pakistani, Bangladeshi and black Caribbean children have significantly worse non-cognitive outcomes than white youngsters.

Ethnic differences in background and mediating factors

Several factors could mediate[6] these ethnic differences in child outcomes. One set considered here covers family characteristics and demographics, including SES. Family

Table 1
Ethnic breakdown of MCS sample at age 5

Ethnic group	Weighted percentage corrected for over-representations in sample	Unweighted actual percentage in the sample
White (%)	90.7	88.9
Indian (%)	1.6	2.2
Pakistani (%)	2.0	2.9
Bangladeshi (%)	0.4	0.7
Black African (%)	0.9	1.0
Black Caribbean (%)	0.8	0.9
Other (%)	0.8	0.9
Mixed (%)	2.8	2.5
Sample size	11,054	11,054

Note: cases are confined to those with data on child outcomes.

Table 2
Cognitive and behavioural mean percentile scores by ethnicity

| Child's ethnic group | BAS | | SDQ | |
	Age 3	Age 5	Age 3	Age 5
White	48.3	46.2	47.5	47.6
Indian	28.9*	35.2*	47.7	44.9
Pakistani	16.4*	18.7*	42.4*	31.9*
Bangladeshi	11.4*	17.8*	48.8	39.3*
Black African	31.5*	26.7*	55.4*	47.4
Black Caribbean	31.2*	30.5*	43.4	33.7*
Other	28.8*	31.0*	53.8*	42.8
Mixed	43.2*	42.4	47.7	44.5
All	46.6	44.8	47.5	46.9

*Significant differences from white children.

The scores reflect the position of each child in terms of percentiles. A score of 30 implies 7 out of 10 children gained higher marks and 3 out of 10 lower ones. A score of 50 would represent a place halfway up the ranking, otherwise known as the median. Where more cases are placed above the mean mark than below it, as here, the median is above the mean. The SDQ percentile measure, based on total difficulties, has been transformed so that a higher percentile score is a better outcome (as with the BAS).

interactions, family health and wellbeing, childcare, home-learning environment and parenting styles/rules are also examined.

Family characteristics and demographics include a combined indicator of SES based on family income, reported financial difficulties, occupational class and housing tenure. They also cover parents' highest qualification, employment and partnering at MCS surveys at age 9 months (MCS1) and at age 3 and 5 years, child's gender, whether the child is a twin or triplet, whether only English was spoken at home at MCS1, and mother's age.

Family interactions are gauged by degree of parental harmony at MCS1 and 2;[7] an interviewer-assessed measure of mother–child closeness at MCS2; and whether mothers and fathers felt they spent sufficient time with their children at MCS2.

Family health and wellbeing are measured by such factors as mother's smoking whilst pregnant; length of gestation; birthweight; breastfeeding; whether mother suffered from depression; and parents' body mass index (BMI).

Non-maternal childcare refers to parents' use of nursery school/class, playgroup, pre-school or childminder.

Home-learning environment covers such factors as frequency of reading to the child, play with ABCs/letters, teaching of numbers/shapes, songs/nursery rhymes, and drawing/painting.

Parenting styles/rules measure whether parents have lots of rules and strictly enforce them; children have regular bed times and meal times; family eats breakfast together; and children watch more than three hours of TV a day.

Family characteristics and demographics
Over 60 per cent of Bangladeshi children were in the lowest SES band (bottom 20%), as were around 45 per cent of black African and black Caribbean youngsters. All minority ethnic groups are significantly more likely than white children to have mothers with no qualifications. South Asian families are very much less likely than others to have been speaking English exclusively at

MCS1. Pakistani, Bangladeshi and black African children have significantly more siblings than white children.

Family interactions
Children from Indian, mixed or 'other ethnic' groups appear to experience significantly fewer relationship problems with their mother than white youngsters, whereas Pakistani children reportedly experience significantly more.

Family health and wellbeing
Children from minority ethnic groups are more likely to have been breastfed and generally for longer than white youngsters. However, the former have significantly lower birthweights, on average, than white children.

Childcare
Children from minority ethnic backgrounds are more likely to have been to nursery school by age 5, and less likely to have attended a playgroup. Parents from ethnic minorities are much less likely to read to their children every day at age 3. Only 24 per cent of black African parents did this, compared to 64 per cent of white parents.

Home learning and parenting
Minority ethnic parents are much less likely than white parents to read to their children every day at age 3. They also seem to have less regular routines. While 83 per cent of white children had a regular bed time at age 3, the same could be said of only half of black Africans and 63 per cent of black Caribbean youngsters.

Multivariate analysis

The study summarised here used multiple regression[8] to establish how much of these observed ethnic differences in child outcomes at ages 3 and 5 can be explained by differences in family characteristics and demographics and how much by other factors. The estimated relationships cannot, however, necessarily be interpreted as causal.

Cognitive outcomes

Age 3
Differences in family background characteristics, including language spoken at home and demographics, seem to

explain much of the raw ethnic gap at age 3. This is particularly true for the Pakistani and Bangladeshi groups. The addition of variables on the quality of family interaction makes little impact on the remaining estimated gaps. Health and wellbeing factors slightly reduce most of them. The inclusion of home-learning environment factors, however, makes a noticeable impact, especially for black African children (notably, reading to the child every day). Parenting styles/rules makes a small impact, similar to the effect of childcare, with most of the effect coming from regular bed times. Once all these factors are controlled for, most estimated gaps between minority ethnic and white children remain but are much reduced. For two groups, children of black African and mixed ethnicity, the remaining gap is no longer statistically significant.

Age 5
At this age, the raw ethnic gaps are smaller and are also much reduced after controlling for family characteristics, SES, language and demographics. Family interactions, family health and wellbeing and childcare seem to make little difference to the remaining gaps. Again, the reduction in the gap for black Africans is most stark after allowing for home learning. The gaps at age 5 before and after allowing for all sets of predictors are shown in Figure 1.

After considering the full set of predictors, the remaining gap at age 5 for all but the black Caribbean and black African children is statistically insignificant. This underlying gap for black African children appears to have increased since age 3.

Non-cognitive outcomes

This analysis was repeated for the measure of non-cognitive ability, based on Strengths and Difficulties, where the ethnic differences are relatively smaller. At age 3, after accounting for family characteristics and demographics, the gap between white and Pakistani youngsters was no longer statistically significant. Black African children, however, now had even higher (better) scores compared with white children – even after accounting for all variables. All other gaps between white and minority ethnic children are statistically insignificant at this age.

Figure 1

Gaps in cognitive scores at age 5 between minority ethnic and white children: before and after allowing for predictors*
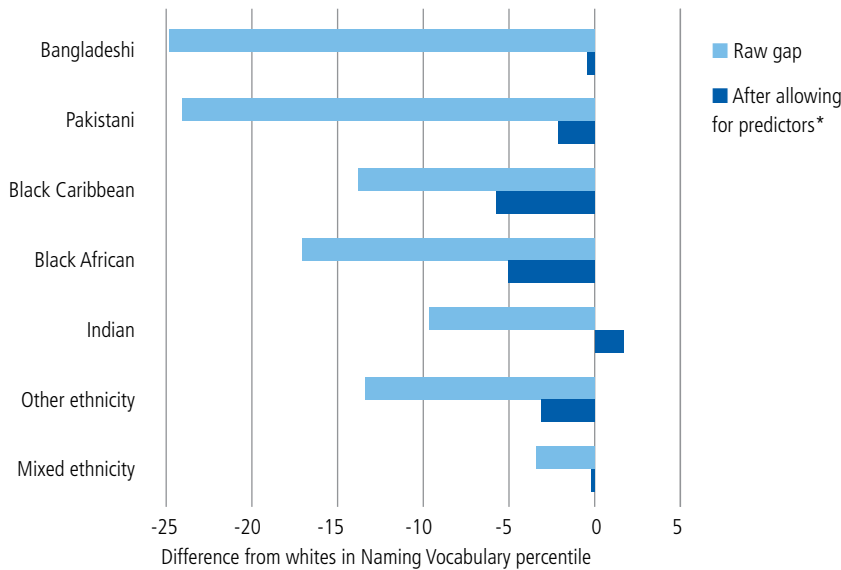
* Predictors other than ethnicity cover family characteristics and demographics, family interactions, family health and wellbeing, childcare, home learning and parenting.

Key statistics

64 per cent of white parents but only 24 per cent of black African parents read to their children every day at age 3.

83 per cent of white children have regular bed times at age 3 but only 50.5 per cent of black African youngsters do. However, black African children appear to have fewer emotional and behavioural problems than other ethnic groups at age 3.

10 per cent of white mothers and 45 per cent of Pakistani mothers have no qualifications.

By age 5, black Caribbean and Pakistani children have fallen behind in non-cognitive terms. Most of the difference can be explained by family characteristics and demographics but a smaller amount can be attributed to family health and parenting styles/rules.

Conclusion

MCS has shown there are quite large ethnic gaps in early child cognitive development, particularly between white and Pakistani/ Bangladeshi children. However, family background factors account for much of these differences. For example, children from minority ethnic backgrounds, on average, live in poorer households and have less

educated parents. Some groups are also less likely to speak English at home.

There are fewer gaps in terms of non-cognitive development. Only Pakistani children are behind in raw terms at both 3 and 5. Again, however, much of the difference can be explained by family background.

Home-learning environment seems to play a crucial role in both cognitive and non-cognitive development, particularly at and before age 3. As black African children have the worst measured home-learning environment in the sample (at ages 3 and 5) this may point to a possible policy response.

Child health (e.g. birthweight) explains some of the ethnic gaps in cognitive development. Mothers' depression during the child's first year helps to account for differences in non-cognitive development. Parenting styles and rules also seem to affect both cognitive and non-cognitive development, with routines making the largest difference. Minority ethnic children tend to have less regular bed times and this impacts on their early outcomes. This may point to another possible policy response – for instance, educating parents about the benefits of regular bed and meal times could be part of the new Children's Centre agenda.

1 Lorraine Dearden, Institute of Education, University of London and the Institute for Fiscal Studies; and Luke Sibieta, Institute of Fiscal Studies. This text has been adapted and shortened to suit the format of these Briefings. Responsibility for any errors therefore rests with the Centre for Longitudinal Studies rather than the chapter authors.

2 This work draws on work reported by Dearden, L., Sibieta, L. and Sylva, K. (2010) 'The socio-economic gradient in child outcomes: the role of attitudes, behaviours and beliefs: From birth to age 5: Evidence from the Millennium Cohort Study', IFS Working Paper, London: Institute for Fiscal Studies.

3 Interviewers conducting the BAS Naming Vocabulary assessment ask the child to name a series of pictures of everyday items. There are 36 items in total but the assessment is terminated if five successive items are answered incorrectly. The assessment was not given to children who did not speak English.

4 The items are reported by the mother in the computer-assisted self-completion module of the MCS interview. A fifth subscale covering pro-social behaviour was not included in this analysis.

5 Other assessments of MCS children at age 5 produced similar results. See Jones, E. and Schoon, I. (2008) 'Child behaviour and cognitive development' in K. Hansen and H. Joshi (eds), *Millennium Cohort Study. Third Survey. A User's Guide to Initial Findings.* London: Institute of Education, Centre for Longitudinal Studies.

6 In this context mediation refers to a pathway through which a causal relationship operates.

7 Measured by survey questionnaire responses.

8 Regression is a technique for analysing a dependent variable by modelling a relationship with one or more explanatory variables. It estimates how much the typical value of the dependent variable changes when any one of the independent variables is varied, while the others are held fixed. It can also show how the association between a dependent variable and any one covariate may be accounted for by the presence of other related factors.