

## Millennium Cohort Study Briefing 4

# Resilience in children's development

Based on Chapter 14 of *Children of the 21st century (Volume 2): The first five years*

Ingrid Schoon, Helen Cheng and Elizabeth Jones<sup>1</sup>



### 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](http://www.policypress.co.uk)

## Briefing 4: Resilience in children's development

### Introduction

The UK is a highly privileged country in terms of longevity and income. Nonetheless, a United Nations Children's Fund report indicates that UK child poverty rates are several times higher than those in most Western industrialised countries (Unicef 2007). A more recent report suggests that the position has since improved (Organisation for Economic Co-operation and Development 2008). However, unemployment has risen sharply since that report was produced. It is therefore essential to learn more about the impact of material hardship on children's early development, and to identify factors that promote successful development in the face of adversity.

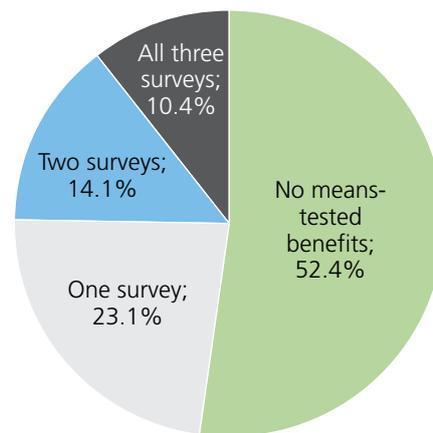
This Briefing explains what researchers at the Institute of Education, University of London, have discovered about early childhood influences on the cognitive and behavioural development of five-year-olds being tracked by the Millennium Cohort Study (MCS). A key question was whether potentially protective factors in the family environment can mitigate disadvantages known to hamper children's development, such as financial hardship.

Children growing up in disadvantaged circumstances are at greater risk of cognitive and behavioural adjustment problems that influence education and employment outcomes and can affect health and social integration. However, those who are resilient can go on to lead happy and successful lives despite experiencing poverty in childhood. Although research has identified factors that promote resilience, not enough is known about how to reduce the negative influences of family hardship during the early years. This Briefing explains how an analysis of MCS data has helped to close this evidence gap.

Ingrid Schoon and her colleagues, who conducted the analysis on which this Briefing is based, applied a measure of poverty over all three surveys. Their measure is based on the number of times the family had received income-tested state benefits – out of three time points (the MCS surveys at age 9 months, three and five years). This helps to identify whether children were in persistent poverty (at all three surveys), medium-term poverty (at two surveys) or

short-term poverty (at one survey). Just over half the families reported no means-tested benefits at any survey and one in ten was in persistent poverty on this criterion. One in seven received means-tested benefits on two occasions and just under one quarter did so once (see Figure 1).

**Figure 1**  
**Proportion of MCS families receiving benefits – first three surveys**



### Assessment of cognitive ability in MCS

Cognitive abilities of the Millennium cohort at age 5 were measured using three subscales of the British Ability Scales Second Edition (BAS II): naming vocabulary, pattern construction and picture similarities. These assessments capture core aspects of verbal and spatial abilities, as well as pictorial reasoning. In the analyses reported here the assessments were used to produce a composite measure giving information about a child's general cognitive ability.

The assessments were carried out individually by interviewers who were specially trained but were not professional psychologists. One subscale, naming vocabulary, was also used with MCS children at age 3. Another indicator of early cognitive ability, the Bracken School Readiness Composite (Bracken 1998) was included in age 3 assessments. The School Readiness Composite (SRC) comprises six sections measuring children's understanding of basic concepts such as colours, letters, numbers/counting, sizes, comparisons and shapes. Comparison of BAS scores at ages 3 and 5, as well as the Bracken assessment, are used in this analysis to examine the

interrelationship between measures of cognitive ability over time.

The MCS provided complete data for 14,853 children on all three BAS subscales at age 5. At age 3 only 12,096 completed the naming vocabulary assessment and 11,553 the Bracken SRC assessment.

MCS girls generally outperformed boys in the cognitive ability assessments at age 5. Scores also differed by ethnicity (Jones and Schoon 2008). White children achieved the highest scores, followed by children of mixed ethnicity. Children with more educated parents had higher cognitive scores than those with less educated parents. Five-year-olds growing up with two natural parents outscored those in single-parent households or in reconstituted families.

### Assessment of behavioural adjustment

Behavioural adjustment of the children at ages 3 and 5 was measured with the Strengths and Difficulties Questionnaire (SDQ), an assessment for 3 to 16-year-olds (Goodman 2001). It consists of 25 items generating an overall score as well as scores for five subscales measuring conduct problems, hyperactivity, emotional symptoms, peer problems and pro-social behaviour. The SDQ was completed by a parent (usually the mother). Complete SDQ data were obtained for 12,511 children at age 5 and for 12,018 at age 3. The vast majority of children (91.5%) were found to be in the normal range, 4.5 per cent were borderline and 4 per cent had abnormal scores.

MCS girls appeared to display fewer behaviour problems than boys. Mothers of Indian and black African children reported the least behaviour problems, followed by white mothers. Pakistani children were, however, said to show the most behaviour problems.<sup>2</sup> The total difficulties score was higher for children in the few homes where no English was spoken than those in families speaking only English. Children growing up in bilingual homes fall between these two groups, with the exception of children bilingual in English and Welsh. Their scores were closer to their peers in English-only families.

Children said to have relatively few behavioural problems were those living with two natural parents; those with more educated parents; or from dual-earner homes. Children of more educated parents were also reported to show slightly higher levels of pro-social behaviour, on average.

### Predicting cognitive ability at age 5

In assessing the effects of financial hardship on cognitive ability at age 5 the researchers found a particularly large gap in ability between children from families receiving no means-tested benefits and those in families receiving benefits at all three interviews. It amounted to 11 points on the cognitive ability scale (104 to 93) – roughly equivalent to the difference between the middle of the attainment range and the bottom quarter.

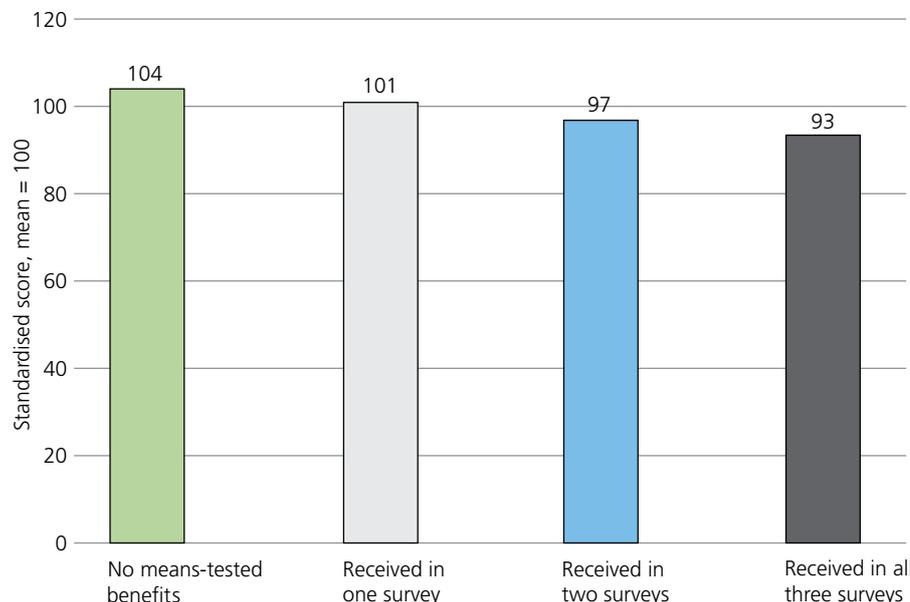
Further statistical analysis<sup>3</sup> was carried out to see how far the association with family hardship illustrated in Figure 2 could be accounted for, firstly by background characteristics of the child and family.<sup>4</sup> The gap of 11 cognitive points between families with persistent poverty and none reduced to 5 points in a like-for-like comparison allowing for background factors. The researchers then checked to see whether psychological characteristics of the mother and the quality of her relationship with the child might account for the influence of financial hardship on cognitive development.

Did the mother report any psychological distress when the child was aged 9 months?<sup>5</sup> How was her self-esteem at that time,<sup>6</sup> and how good had the parent–child relationship been at age 3?<sup>7</sup> Only the last of these factors had a significant association with the child's cognitive ability at age 5. A warm and supportive parent–child relationship can, it seems, buffer some effects of financial hardship, but poverty nevertheless remains an independently strong negative influence.

In the third stage of their analysis of cognitive ability the researchers assessed the predictive power of earlier evidence on children's development, such as delay in developmental milestones at 9 months (i.e. gross motor skills such as crawling and fine motor skills such as holding objects with the fingers). Behavioural adjustment, school readiness and vocabulary at age 3 were also considered.

This revealed that delay in gross and fine motor development in a child's first year was significantly associated with delayed cognitive development at 5. Early behaviour adjustment is also reflected in cognitive development. So, the virtuous circle of the child's greater school readiness, expressive language ability and better behaviour adjustment in the pre-school years could indicate some resilience to the effects of family hardship on age 5 cognitive scores.

**Figure 2**  
Predicting cognitive ability at age 5



### Predicting behavioural adjustment at age 5

The initial comparison exercise indicated that the association of behaviour and financial hardship was less strong than that between cognitive development and poverty. Nevertheless, parents experiencing serious and persistent financial hardship were more likely to report child behaviour problems.

When indicators of parental psychological wellbeing and parent–child relationship were added to the analysis a familiar pattern emerged. A warm and supportive relationship had the greatest moderating effect on the behaviour of children in poor families. A mother's psychological wellbeing and level of self-esteem also helped to predict children's behaviour at age 5, though the effect was less strong.

### Predicting pro-social behaviour at age 5

Predictors of pro-social behaviour at age 5 were also examined. The association between persistent financial hardship and pro-social behaviour was less strong than for either cognition or behaviour problems. Parents exposed to persistent financial hardship were, however, less likely to report that their children displayed healthy pro-social behaviour. The statistical association between persistent financial hardship and pro-social behaviour at age 5 became insignificant, however, after the mother's wellbeing and warmth were taken into consideration.

Early delays in fine and gross motor development tended to lead to lower pro-social behaviour at age 5. Less surprisingly, a warm and supportive parent–child relationship and positive mother's self-esteem both enhanced it. It therefore appears that protective family factors can counter the (small) negative effects of financial hardship on pro-social behaviour.

### Conclusions

This research suggests that persistent financial hardship undermines the cognitive development and behavioural adjustment of young children. The negative impact of poverty appears to be strongest on children's cognitive development. Children

## Briefing 4: Resilience in children's development

exposed to financial hardship at all three interviews were most severely touched by its effects.

However, it also seems that a good mother–child relationship not only significantly benefits cognitive and behavioural development across the board, but has a positive effect on behaviour in economically constrained conditions. Previous research has reached similar conclusions but in this study these effects were found at a very young age. A mother's psychological wellbeing and her positive self-esteem also appear to moderate the negative association of financial hardship with children's behavioural adjustment.

The highest correlations were found between indicators of each dimension of development at the age 3 and age 5 surveys. Cognitive development at 5, for example, appears to be significantly associated with expressive language ability and school readiness at age 3. A virtuous circle seems to operate where children start off well. However, a vicious circle is also seen where children's fine and gross motor development are delayed at age 9–10 months. This suggests that screening for delays in motor development could prove crucial in identifying children who need most help with their cognitive development. Delay in gross motor development also has a significant impact on behavioural adjustment at age 5. This additional finding confirms the importance of screening for developmental delay before the first birthday.

The findings also suggest that policy interventions aiming to promote positive development of children should provide support for parents too. If parents' mental health and self-esteem are undermined by hardship this could affect their parenting and interactions with the child.

### Key statistics

**11 points** – the average gap in cognitive ability scores between five-year-olds raised in persistent poverty and those in families which reported no means-tested benefits. This is roughly the difference between the middle of the ability range and the top of the bottom quarter.

**5 points** – the cognitive score gap at age 5 between children experiencing delay in gross motor development at age 9 months and those who reached a milestone that 90 per cent of babies can pass. Children with delayed fine motor development at 9 months were also roughly 5 points behind.

### References

Bracken, B. A. (1998) *Bracken Basic Concept Scale – Revised*. San Antonio, Texas: The Psychological Corporation.

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.

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* (pp. 118–144). London: Centre for Longitudinal Studies, Institute of Education, University of London.

Organisation for Economic Co-operation and Development (2008) *Growing unequal? Income distribution and poverty in OECD countries*. Retrieved 22 October 2008 from [www.oecd.org/els/social/inequality](http://www.oecd.org/els/social/inequality)

Unicef (2007) *Child poverty in perspective: An overview of child wellbeing in rich countries*. Florence: United Nations Children's Fund/Innocenti Research Centre.

1 Ingrid Schoon, Helen Cheng and Elizabeth Jones, Institute of Education, University of London. 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 It has to be kept in mind that behavioural adjustment was assessed only via the parent's report. Among the limitations of this approach, there might be ethnic and cultural differences in parental language skills, interpretation or reporting.

3 The regression models used are described in the book chapter from which this Briefing is drawn.

4 Exact age and gender of the cohort child, birthweight, ethnicity, mother's age and education, and country of UK residence.

5 The measure of mother's psychological distress was derived from questions based on a shortened version (nine items) of the Malaise Inventory. See book chapter on which this Briefing is based.

6 Mother's self-esteem was measured using a revised version of the Rosenberg Self-esteem Scale. See book chapter.

7 The quality of the parent–child relationship was assessed using the Pianta scale. See book chapter.