Mothers, babies and the risks of poverty

Class difference in infant mortality, one of the Opportunity for All poverty indicators, has widened since 1998. Many other poverty-related child health indicators are also not improving or getting worse – low birth-weight, obesity, asthma, teenage conceptions, some infectious diseases and sexually transmitted disease. Childhood accidents have fallen but class differentials have widened. A new source of evidence on child poverty and health is emerging as the results of the Millennium Cohort Study become available. Emese Mayhew and Jonathan Bradshaw present some findings from and analysis of this important new source.

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Born poor

The Acheson Report[1] pointed to evidence that children born to poor mothers had higher chances of poor health and acute and chronic illness. The quality of the diet before and during pregnancy has been shown to be associated with very long-term health outcomes, including death from cardiovascular disease in adult life, and higher levels of its major risk factors such as hypertension. The first sweep of the Millennium Cohort Survey offers the opportunity for a new and more up-to-date investigation of the incidence of poverty in childbirth.

The Millennium Cohort Study

The Millennium Cohort Study (MCS)[2] is a new national longitudinal birth cohort study that was launched in 2000 to mark the new millennium. The first wave of the MCS on which this analysis is based contains a child population aged nine months (born between September 2000 and January 2002), alive and living in the UK and eligible to receive child benefit. The final sample size contains 18,553 families and after allowance for 246 twin and 10 triplet births, the number of babies included in the study amounts to 18,819. The vast majority of main respondents to the survey were mothers. The cohort members will be followed again at ages 3, 5 and 7.

The MCS has several notable advantages over other data sets that make it especially suitable for the investigation of poverty at birth as well as poverty at large. The survey was designed to over-represent ethnic minorities, residents living in areas of relatively high levels of deprivation and the residents of Wales, Scotland and Northern Ireland. We restricted our analysis to cohort children living with their parent(s) and no other adults, a sample size of 16,939 children. This effectively excluded 1,459 children living with their grandparents.

However, the survey was not primarily designed to measure poverty. We used the answers to four sets of questions in the interviews to derive indicators of poverty covering different dimensions. They were:

- households *lacking three or more household assets* in working order (27 per cent);
- net equivalent *household income* below 60 per cent of the national median before housing costs (BHC). This was derived using the grouped income data in the MCS and a simplified version of the McClements equivalence scale.[3] This gave 24 per cent of all households;
- respondents' own assessment of their poverty status. The question was: 'How well would

you say you (and your partner) are managing financially these days?' We chose as *subjectively poor* those who were finding it quite difficult or very difficult to manage (10 per cent);

- *those receiving means tested benefits*. We chose those families receiving income support (IS), jobseekers' allowance if they were also receiving housing benefit (HB) or council tax benefit (CTB), and working families' tax credit if they were also receiving HB or CTB. This gave 17.3 per cent of households.

Table 1: The impact of socio-economic factors on the odds of being a poor baby

	Bivariate analysis	Controlling for all
Combined marital and employment status		
Married, both employed	1.00	1.00
Married, one employed	6.10***	3.18***
Married, zero earners	188.99***	78.07***
Cohabiting, both employed	2.93***	2.13***
Cohabiting, one employed	17.09***	10.08***
Cohabiting, zero earners	531.12***	260.06***
Lone parent, working	33.55***	22.73***
Lone parent, not working	906.76***	458.07***
Mother's highest qualification		
None on the list shown	1.00	1.00
NVQ Level 1	0.39***	0.72**
NVQ Level 2	0.17***	0.47***
NVQ Level 3	0.13***	0.45***
NVQ Level 4	0.04***	0.25***
NVQ Level 5	0.02***	0.10***
Mother's age at birth		
14 to 19	1.00	1.00
20 to 29	0.20***	0.37***
30 to 39	0.07***	0.18***
40 plus	0.10***	0.22***
Number of siblings of baby		
Only child	1.00	1.00
1 sibling	1.10 NS	1.50***
2 siblings	1.73***	2.12***
3+ siblings	3.79***	2.95***
Mother's ethnicity		
White	1.00	1.00
Mixed	3.71***	2.84***
Indian	1.17 NS	2.61***
Pakistani or Bangladeshi	4.91***	5.38***
Black or Black British	3.98***	3.63***
Other	1.51**	2.60***
Country		
England	1.00	1.00
Wales	1.20 NS	1.14 NS
Scotland	0.95 NS	1.22*
Northern Ireland	0.97 NS	1.08 NS

Probability of not being statistically significant: * = p<0.05, ** = p<0.01, *** = p< 0.001
NS = not significant

Forty-one per cent were poor on at least one of these dimensions but only 2.4 per cent were poor on all four. In order to produce a more reliable indicator of poverty than obtained using any one of these dimensions we used 'overlaps analysis',[4] only counting a family as 'reliably' poor if they were poor on two or more dimensions at the same time; 22 per cent fell into this category. This is very similar to the proportion of children defined as poor by the Government[5] on the relative 60 per cent of median income BHC measure in *Households Below Average Income*. No poverty measure is absolutely reliable but ours is certainly a more reliable indicator than using any one of the dimensions.

Characteristics of the mothers of poor babies

Table 1 gives the odds of a baby being born poor. Before controlling for other factors (the bivariate column in the table), being born to a lone mother who is not working increases the likelihood of being born poor 907 times more than being born to a couple who are both employed. Mothers' highest educational qualification also has a significant effect on their baby's chances of experiencing poverty: those having a mother with NVQ level 5 qualification are 50 times less likely to be poor than those who have no qualifications. Being a young mother, having three or more siblings, being in certain ethnic groups and living in Wales all increase the odds of being born poor.

These effects remain significant when controlling for other factors (the controlling for all column in the table). Being born to a cohabiting couple or a lone mother increases the odds of being poor over being born to a married couple, and employment, educational level, being a young mother, having siblings and being non-white all increase the odds of being born poor. The only change as a result of controlling for the other facts is that the ethnic effects increase and Scotland replaces Wales as the country with a higher risk.

Proportion of babies born to mothers on income support

Of particular concern[6] in policy discussions has been the proportion of (young) mothers becoming pregnant and carrying children on IS. Particular anxiety has been expressed about first time mothers dependent on IS because the level of their benefits has not been increased in real terms since the end of the 1970s. The MCS is not a perfect source for estimating the size of this group because this survey collected information on benefit status at nine months after

the birth, rather than at childbirth or conception. But it is the best available data. We found that 16 per cent of all mothers were on IS at the time of the interview, and the receipt of IS was strongly associated with family type. Table 2 shows that 74 per cent of lone mothers were on IS, 69 per cent of lone mothers having their first baby were on IS and 80 per cent of lone mothers under 18 were on IS. Of all mothers, 3.8 per cent were lone mothers under age 25 having their first baby on IS, and 0.8 per cent were lone mothers under 18 having their first baby on IS. If a young lone mother (aged 18–24) became pregnant with her first baby on IS that means that she would have been living on the single person's rate of IS of £41.35 a week (in 2000/01).

Poverty and birth outcomes

Table 3 summarises the results of an analysis of the relationship between maternal poverty and the odds of the baby being born with low birth-weight. Before taking other factors into account (the bivariate column), poverty increases the odds of low birth-weight by 61 per cent. However unemployment, family type, educational level, young motherhood, being the first-born and ethnicity all also increase the odds of low birth-weight. When all the factors are taken into account (the controlling for all column) poverty no longer makes a separate contribution to low birth-weight. Unemployment, educational level, being an only child and ethnicity all remain significant contributors to low birth-weight. On its own, a mother being older seems to decrease the likelihood of having a low birth-weight baby. But when the other factors are controlled for, the mother's age at birth seems to reverse its effects on birth-weight in favour of younger mothers. All else being equal, mothers aged 30–39 are 68 per cent more likely to have a low birth-weight baby than the youngest mothers.

Maternal depression and breastfeeding

We constructed a composite indicator of maternal mental health after the birth by recording the number of health problems mothers said they were experiencing at the time of the interview. There were nine indicators of maternal depression: feeling tired most of the time, feeling miserable or depressed, often getting worked up about things, often getting into a violent rage, often becoming scared suddenly for no good reason, being easily upset or irritated, being constantly keyed up and jittery, getting annoyed/worn out by every little thing, and heart often racing like mad. Mothers experiencing four or more of these problems (affecting 13 per cent of children) are defined as having maternal depression.

Table 2: Mothers on income support

	Percentage within family type receiving IS (weighted)	Sample size (unweighted) (all mothers, IS and non-IS)
Natural mothers	15.6	18,526
Natural mothers with first babies	15.5	7,581
Lone mothers	74.3	3,172
Lone mothers with first babies	68.6	1,556
Lone mothers aged < 25 with first babies	75.3	1,211
Lone mothers aged < 18 with first babies	80.0	262

The final column reports the unweighted numbers of the types of mothers who took part in the survey. The weighted percentages in the middle column adjust these numbers to give a better representation of the population.

Table 3: The impact of poverty and other factors on the odds of low birth-weight (single babies)

	Bivariate analysis (weighted)	Controlling for all
Poor		
No	1.00	1.00
Yes	1.61***	0.94 NS
Combined marital and employment status		
Married, both employed	1.00	1.00
Married, one employed	1.22 NS	1.11 NS
Married, zero earners	2.74***	2.10***
Cohabiting, both employed	1.46**	1.33*
Cohabiting, one employed	1.27 NS	1.22 NS
Cohabiting, zero earners	2.97***	2.81***
Lone parent, working	1.37 NS	1.05 NS
Lone parent, not working	1.95***	1.70***
Mother's highest qualification		
None on the list shown	1.00	1.00
NVQ Level 1	0.51***	0.58***
NVQ Level 2	0.52***	0.61***
NVQ Level 3	0.46***	0.52***
NVQ Level 4	0.36***	0.41***
NVQ Level 5	0.30***	0.30***
Mother's age at birth		
14 to 19	1.00	1.00
20 to 29	0.81 NS	1.42*
30 to 39	0.71*	1.68***
40 plus	0.91 NS	2.28**
Number of siblings of baby		
Only child	1.00	1.00
1 sibling	0.64***	0.56***
2 siblings	0.78*	0.57***
3+ siblings	0.82 NS	0.41***
Mother's ethnicity		
White	1.00	1.00
Mixed	1.79 NS	1.35 NS
Indian	2.80***	3.42***
Pakistani or Bangladeshi	2.58***	2.32***
Black or Black British	1.92***	1.79**
Other	1.20 NS	1.23 NS
Country		
England	1.00	1.00
Wales	0.96 NS	1.01 NS
Scotland	0.85 NS	0.89 NS
Northern Ireland	0.85 NS	0.94 NS

Probability of not being statistically significant: * = p<0.05, ** = p<0.01, *** = p< 0.001
NS = not significant

Table 4 shows that being poor more than doubles the chances of maternal depression before controlling for other factors and remains significantly higher after controlling for other factors, as does being a cohabiting or lone mother, having a large family and living in Northern Ireland.

The last two columns of Table 4 show the results of analysis on the odds of trying breastfeeding. Before controlling for other factors, poor mothers are less likely to breastfeed and this association remains after controlling for other factors. Also after controlling for other factors cohabiting and lone mothers, lack of qualifications, being a young mother, having more than one child, being white and living outside England are all associated with significantly lower rates of breast-feeding.

Table 4: The impact of various socio-economic factors on the odds of having a mother who experiences maternal depression/who tries breastfeeding

	Maternal depression		Breastfeeding	
	Bivariate	Controlling for all	Bivariate	Controlling for all
Poor				
No	1.00	1.00	1.00	1.00
Yes	2.23***	1.49***	0.35***	0.79**
Combined marital and employment status				
Married, both employed	1.00	1.00	1.00	1.00
Married, one employed	1.19*	0.98 NS	0.85**	1.17*
Married, zero earners	2.31***	1.20 NS	0.43***	0.91 NS
Cohabiting, both employed	1.26*	1.20 NS	0.59***	0.74***
Cohabiting, one employed	1.60***	1.24*	0.44***	0.80**
Cohabiting, zero earners	2.92***	1.58**	0.20***	0.66**
Lone parent, working	1.96***	1.54**	0.49***	0.68**
Lone parent, not working	2.55***	1.36**	0.21***	0.55***
Mother's highest qualification				
None on the list shown	1.00	1.00	1.00	1.00
NVQ Level 1	0.81*	0.97 NS	1.36**	1.43***
NVQ Level 2	0.65***	0.92 NS	2.05***	1.83***
NVQ Level 3	0.62***	0.95 NS	3.35***	2.87***
NVQ Level 4	0.44***	0.78*	8.47***	5.93***
NVQ Level 5	0.42***	0.82 NS	14.74***	9.13***
Mother's age at birth				
14 to 19	1.00	1.00	1.00	1.00
20 to 2	90.72**	0.86 NS	2.02***	1.34**
30 to 3	90.53***	0.71**	3.70***	1.99***
40 plus	0.58**	0.74 NS	4.85***	2.72***
Number of siblings of baby				
Only child	1.00	1.00	1.00	1.00
1 sibling	1.31***	1.38***	0.63***	0.56***
2 siblings	1.54***	1.57***	0.52***	0.49***
3+ siblings	1.76***	1.54***	0.43***	0.46***
Mother's ethnicity				
White	1.00	1.00	1.00	1.00
Mixed	1.43 NS	1.25 NS	3.44***	4.98***
Indian	1.64*	1.90*	2.82***	2.38**
Pakistani or Bangladeshi	1.58***	1.28 NS	1.67**	3.37***
Black or Black British	1.07 NS	0.88 NS	6.22***	9.17***
Other	0.85 NS	0.77 NS	6.70***	5.79***
Country				
England	1.00	1.00	1.00	1.00
Wales	1.16 NS	1.13 NS	0.65***	0.73***
Scotland	0.99 NS	1.05 NS	0.72**	0.67***
Northern Ireland	1.15 NS	1.18 NS	0.43***	0.41***

Probability of not being statistically significant: * = p<0.05, ** = p<0.01, *** = p< 0.001
NS = not significant

Conclusion

Over one in five of all babies in the Millennium Cohort Survey were living in poverty at nine months, using a multidimensional measure of poverty. Poverty in and soon after childbirth is associated with a much higher risk of a low birth-weight birth, maternal depression in infancy and lower chances that the mother will try breastfeeding. All these are known to be associated with poor outcomes in the rest of childhood[7] and in adulthood.

One consequence of the Government achieving its objective of abolishing child poverty will undoubtedly be improvements in child health. A pregnant mother on IS can receive a Sure Start maternity grant. After childbirth a mother can obtain the higher rates of IS paid to families with children or the baby rate of child tax credit. However, a single woman falling pregnant for the first time when on IS will spend her pregnancy on £44.50 a week (if under 18), £44.50 a week (18–24) or £56.20 a week. In contrast, a single pensioner on pension credit will get £109.45 a week. We estimate that about 13 per cent of mothers get pregnant while on IS and about 6 per cent have their first baby on IS. Adult rates of IS need to be increased in line with those for children in order to improve child health indicators and raise more children out of poverty. ■

Emese Mayhew is a Research Fellow in the Social Policy Research Unit at the University of York

Jonathan Bradshaw is Professor of Social Policy at the University of York

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