The Scottish Government

Growing Up In Scotland Study

Exploring the Experience and Outcomes for Advantaged and Disadvantaged Families

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GROWING UP IN SCOTLAND STUDY
EXPLORING THE EXPERIENCES AND OUTCOMES OF ADVANTAGED AND DISADVANTAGED FAMILIES

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It should be noted that since this research was commissioned a new Scottish government has been formed, which means that the report reflects commitments and strategic objectives conceived under the previous administration. The policies, strategies, objectives and commitments referred to in this report should not therefore be treated as current Government policy.

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Responsibility for the opinions expressed in this report, and for all interpretation of the data, lies solely with the authors.

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EXECUTIVE SUMMARY

This report uses data from the Growing up in Scotland (GUS) study to explore the contribution of specific measures of advantage and disadvantage in relation to a number of specific health related behaviours for parent and child and, in doing so, seeks to identify the characteristics of more vulnerable and more resilient families. Findings are based on the first sweep of GUS, which involved interviews with the main carers of 5,217 children aged 0-1 years old and 2,859 children aged 2-3 years old, carried out between April 2005 and March 2006. Analysis in this report has been restricted to the birth cohort only.

Patterns of advantage and disadvantage

The data demonstrated clear inter-relationships between age of mother at the sample child's birth, family type (that is being in a couple family, being a lone parent living with other adults, or a lone parent living only with children), socio-economic classification, household income and area deprivation. It is clear that age and family type themselves are important factors contributing to a mother's relative social position with concentrated disadvantage evident, in particular, amongst mothers aged under 25, and lone parents.

Compared with older mothers, younger mothers (particularly those aged under 25) were:

- *more likely to be living in lower income households and to be in receipt of state benefits* (85% of mothers aged under 20 were living in households in one of the two lowest income groups (with annual incomes of less than £13,750) compared with around 27% of mothers aged 30 to 34 and those aged 35 or older)
- *more likely to be lone parents* (67% of mothers in the youngest age group were lone parents compared with just 9% of mothers aged 35 or older)
- *less likely to be employed* (20% of mothers aged 35 or older were in full-time employment compared with 5% of mothers aged under 20)
- *more likely to have fewer educational qualifications* (80% of mothers aged 30 to 34 had qualifications to at least Higher grade compared with 34% of mothers aged under 20; 19% of mothers aged under 20 had no educational qualifications at all, compared with 9% of mothers aged 35 or older)
- *more likely to be renting their home from the local authority* (50% of those aged under 20 compared with 7% of those aged 35 or older)
- *less likely to live in an area of low deprivation* (24% of mothers aged 30 to 34 lived in an area in the least deprived quintile of the deprivation index compared with just 4% of mothers aged under 20 and 6% of mothers aged 20 to 24).

Compared to mothers in couple families, lone mothers (particularly those who did not live with other adults, such as their own parents) were:

- *more likely to be living in lower income households and to be in receipt of state benefits at the time of the interview* (88% of lone mothers who were not living with other adults were in one of the two lowest income groups compared with 30% of couple families)
- *less likely to be employed* (28% of lone mothers who did not live with other adults were employed compared with 65% of mothers in couple families)
- *more likely to have fewer educational qualifications* (78% of mothers in couple families were educated to at least Higher grade level compared with around 46% of lone mothers in each lone parent group)

- *more likely to be renting their home from the local authority* (51% of lone mothers who were not living with other adults compared with 13% of couple families)
- *less likely to live in an area of low deprivation* (20% of mothers in couple families lived in an area in the least deprived quintile of the deprivation index compared with just 2% of lone mothers who did not live with other adults).

Differences in maternal behaviour by measures of social disadvantage

Breastfeeding
Younger mothers, lone mothers, those with fewer educational qualifications, on low incomes, and those living in areas of relative deprivation were less likely to breastfeed. Maternal level of education was proven to be the strongest predictor of breastfeeding.

Attendance at ante-natal classes
Amongst first-time mothers, non-attendance at ante-natal classes was associated with younger age, lower income, socio-economic classification and lower educational attainment. First-time motherhood had the strongest association was attendance at classes but maternal age at the child's birth emerged as the next strongest predictor of attendance at ante-natal classes.

Smoking
Living in social housing, having a home in a deprived area and lack of educational qualifications were all similarly strongly predictive of smoking. Renting from the local authority was the strongest predictor.

Resilience amongst disadvantaged mothers

To explore resilience amongst mothers considered to be 'disadvantaged', two sets of analysis were undertaken – one restricted to mothers aged under 25 at the time of birth, the other restricted to lone parents. Those young mothers and lone parents who demonstrated 'positive' behaviours - breastfeeding, attendance at ante-natal classes, not smoking, – were compared with those young mothers and lone parents who demonstrated 'negative' behaviours.

Breastfeeding
Those younger mothers who breastfed were characterised by relative social and economic advantage: they were more likely than those who did not breastfeed to be in couple families (64% of breastfeeding young mothers were in couple families compared with 44% of non-breastfeeding younger mothers); to be owner occupiers and not social renters; and to have attained a higher level of education. Educational qualifications at Higher grade or above was the strongest predictor of breastfeeding within this group of younger mothers.

Lone parents who breastfed were more likely than lone mothers who did not to be older, to be living in areas of lower deprivation and to be more highly educated. Being educated to Higher grade or above was the strongest predictor of breastfeeding amongst lone parents:

Attendance at ante-natal classes
Those younger mothers who attended ante-natal classes were also characterised by relative social and economic advantage. After controlling for first-time motherhood (by far the strongest predictor of attendance at such classes), higher educational attainment, having a

higher household income, and living in an area of lower deprivation were all positively and independently associated with ante-natal class attendance by mothers aged under 25.

Amongst lone parents, age was a strong predictor of attendance as was working full-time.

Smoking
Living in a couple household, being an owner occupier and having educational qualifications were all independently and positively associated with non-smoking amongst younger mothers. Being educated to Higher grade or beyond was again the strongest predictor.

The pattern for lone parents was slightly different: age was not significant but lone mothers with higher grades or above, those who worked full-time and those in managerial/ professional or intermediate occupations were all less likely to smoke.

Conclusion

This report provides further evidence of the interrelationship between age, young motherhood, family type and a range of measures of socio-economic advantage and disadvantage. Maternal age and family type were found to be closely interrelated and both strongly associated with socio-economic disadvantage, with concentrated disadvantage evident in mothers under 25 and lone parents who do not live with other adults. These measures were also closely associated with health-related behaviours including likelihood of breastfeeding, attending ante-natal classes and smoking amongst mothers. Even amongst more disadvantaged groups, positive health-related behaviours were connected to relative social and economic advantage with level of maternal education featuring prominently.

The measures of disadvantage used in these analyses are only part of the overall picture of what influences maternal health related behaviour and the models used do not fully explain these behaviours. The longitudinal nature of GUS will enable the longer term effect of disadvantage and changes in socio-economic circumstances to be tracked, as well as the ameliorating effect of a range of different services.

CHAPTER ONE INTRODUCTION

Introduction

1.1 This report draws on data from the first sweep of the Growing Up in Scotland (GUS) study. The Sweep 1 Report highlighted the persistence of inequalities between advantaged and disadvantaged families which impact on parents and their children (Anderson *et al,* 2007). Within the first sweep, there were clear inter-relationships between the age of mother at birth, socio-economic classification, household income and area deprivation. This paper explores the contribution of specific measures of advantage and disadvantage in relation to a number of specific health related behaviours for parent and child and, in doing so, seeks to identify the characteristics of more vulnerable and more resilient families in ways that can support policy making, service development and delivery to ensure that all children have the best start in life, whatever their circumstances.

Background

1.2 The intractable nature of social and health inequalities pose difficult challenges for government policy. Nonetheless, both the UK and Scottish Governments have expressed a strong commitment to lessening such inequality and have done so across policy domains. Early years policies in particular aim to give children the best possible start in life, whatever their circumstances, and seek to target resources to those most in need alongside a more universal approach to supporting families. Ameliorating social and health inequalities requires an understanding of the complex relationship between social circumstances, health related behaviours and the provision and uptake of services, including health and education. The interrelationship between structural factors, for example, relating to socio-economic position, cultural processes, relating for example, to social group, family or area, and individual behaviours is complex, and demands careful analysis of the factors that influence people's lives and health related behaviours. While the baseline data from the first sweep of GUS (Anderson *et al,* 2007) revealed some clearly differentiated aspects of experience for mothers and children by measures of advantage and disadvantage, this briefing will extend this analysis to focus in more detail on the interrelatedness of different factors.

1.3 The notion of resilience has become popular in policy terms, suggesting, as it does, that understanding factors that promote positive outcomes, in the face of disadvantage, may help governments meet the policy challenges of persisting disadvantage (Hill, M et al 2007). A resilience perspective would ask what social processes seem to foster more positive outcomes for those in disadvantageous circumstances. Identifying such processes might lead to the development of more specific policies and practices that actively support resilience through specific initiatives to alter the trajectories of those experience disadvantage. In relation to GUS, this would involve identifying those displaying positive behaviours or outcomes for parents and young children, who would, overall, be characterised as disadvantaged.

About the Study

1.2 The Growing Up in Scotland study (GUS) is an important longitudinal research project aimed at tracking the lives of a cohort of Scottish children from the early years, through childhood and beyond. Its principal aim is to provide information to support policy-making, but it is also intended to be a broader resource that can be drawn on by academics, voluntary sector organisations and other interested parties. Focusing initially on a cohort of 5,217 children aged 0-1 years old and a cohort of 2,859 children aged 2-3 years old, the first wave of fieldwork began in April 2005. This report is one of a series that provide key findings from the first sweep of the survey.

1.3 GUS is based on a cohort or longitudinal design involving the recruitment of a 'panel' of children (and their families) who will be revisited on a number of occasions over an extended period of time. Members of the panel were identified in the first instance from Child Benefit records. For the first year of the study, interviewers sought to contact the 'main carer' of the child named in the Child Benefit records. In virtually all cases (99%), this proved to be the child's natural mother. As well as information on informal support, the first interview also collected data on pregnancy, birth and early parenting, childcare, child health and development, and parental health.

Measures of advantage and disadvantage

1.4 Table 1 details the variables which were used to measure different aspects of advantage and disadvantage across the GUS sample. Many of these were selected because of the variance demonstrated according to these characteristics in relation to a wide range of maternal behaviour, service use and child outcomes in the sweep 1 overview report (Anderson *et al,* 2007). Others (for example receipt of benefits and housing tenure) were chosen on the basis of their use as deprivation measures in other research.[1]

[1] See, for example, Nelson *et al* (2007)

Table 1 Selected measures of advantage and disadvantage

Variable	Categories
Level of mother's educational qualifications	No qualifications
	Standard grade or equivalent
	Higher grade or above
Family type	Lone parent living with other adults
	Lone parent living only with child(ren)
	Couple family
Equivalised annual household income (quintiles)[2]	Less than £8410
	Between £8411 and £13,750
	Between £13,751 and £21,785
	Between £21,786 and £33, 571
	More than £33,572
Mother's NS-SEC	Semi-routine and routine occupations
	Lower supervisory and technical occupations
	Small employers and own account workers
	Intermediate occupations
	Managerial or professional
Area deprivation (Quintiles of the Scottish Multiple Index of Deprivation)	Most deprived
	2
	3
	4
	Least deprived
Mother's employment status	Unemployed
	Working part-time
	Working full-time
Housing tenure	Rents from the local authority
	Rents from a housing association
	Rents from a person or company
	Other rent arrangement or rent free
	Owns outright or buying with mortgage
Receipt of benefits	Solely reliant on benefits for income
	Not solely reliant on benefits

Format of the Report

1.5 This report begins, in the next chapter, by examining patterns of advantage and disadvantage in order to map out the complex interrelationship between different factors. Chapter 3 then examines the interrelationship between social disadvantage and the following specific maternal behaviours: breastfeeding, attendance at ante-natal classes and smoking. Chapter 4 takes a resilience perspective by focussing on mothers considered to be disadvantaged (lone and young mothers) and comparing those who demonstrate more 'positive' behaviours with those demonstrating more 'negative' behaviours. Chapter 5 will offer some conclusions and recommendations based on these analyses.

[2] The income that a household needs to attain a given standard of living will depend on its size and composition. For example, a couple with dependent children will need a higher income than a single person with no children to attain the same material living standards. "Equivalisation" means adjusting a household's income for size and composition so that we can look at the incomes of all households on a comparable basis.

Description of the analysis

1.6 The fact that there is a relationship between key independent variables such as family type, age of mother at birth of sample child, and level of mother's education, means that it is difficult to establish the key drivers of differences in the observations contained in simple descriptive analysis. For example, is the relationship between age of mother and breastfeeding simply a function of the fact that younger mothers are more likely to be in lower income households or have fewer qualifications? By using multivariate analysis (logistic regression) to look at the impact of a number of variables simultaneously on a mother's propensity to breastfeed, for example, we can find out whether the circumstances of younger mothers are distinct once other factors, such as educational qualifications, are controlled. The results of these analyses are presented in chapters 3 and 4 of the report.

1.7 The regression results are presented as odds ratios for each independent variable, all of which have a significance value and 95% confidence intervals attached. Odds ratios estimate the effect of each individual independent variable on the outcome variable, adjusted for all other independent variables in the regression model. Logistic regression compares the odds of a reference category (shown in the tables in brackets) with that of the other categories. An odds ratio of greater than one indicates that the group in question is more likely to demonstrate this characteristic than is the chosen reference category, an odds ratio of less than one means they are less likely. For example, in Table 2, which contains the results of the regression model seeking to identify measures of disadvantage related to the sample child having been breastfed, the category of maternal educational qualifications at Higher grade returns an odds ratio of 2.65. This indicates that the odds of mothers with educational qualifications at Higher grade having breastfed the sample child are 2.65 times greater than they are for mothers who have no qualifications (the reference category). Categories which have a significance value of greater than 0.05 are not considered to be significant.

1.8 As well as significance scores, odds ratios and confidence intervals, the regression tables display the results of two statistical tests carried out with the regression analysis which help to evaluate how well the models predicted the outcome variable – Nagelkerke's R^2 and Hosmer and Lemeshow's Goodness of Fit test. Nagelkerke's R^2 is most often quoted in logistic regression as a measure of strength of association ranging from 0 to 1. The closer the R^2 value is to 1, the better the model is at accurately predicting the value of the outcome variable. A value closer to 0, suggests that there are important explanatory factors which are not included in the model. If the result of the Hosmer and Lemeshow Goodness of Fit test is not significant ($p>0.05$) the model's prediction of the outcome variable is not significantly different from the observed values of the outcome variable and the model is predicting the dependent variable well, or has 'good fit'. Further notes on the regression analysis are included in Appendix A.

1.9 Analysis of data from each of the Growing Up in Scotland cohorts must be undertaken separately (because together the cohorts do not represent a coherent or real population and results would be misleading). For the purposes of space and simplicity, all analysis in this report uses only data collected from natural mothers in the birth cohort. Larger numbers in the birth cohort also allow more detailed analysis of the selected sub-groups.

CHAPTER TWO PATTERNS OF ADVANTAGE AND DISADVANTAGE

Introduction

2.1 Preliminary analysis of sweep 1 data for the overview report (Anderson *et al, 2007)* demonstrated that maternal age, socio-economic position, marital and cohabitation status, and educational attainment were closely inter-related and were, in turn, strongly associated with child and maternal behaviours and outcomes. In this chapter, we consider these relationships in more detail to map out more clearly the complex and inter-linked patterns of advantage and disadvantage that exist across the sample.

Differences in socio-economic and demographic characteristics by maternal age

2.2 Younger mothers (aged less than 25 at the birth of the sample child) were generally found to be in a less advantaged position, in a number of ways, than were older mothers. For example, Table 2 details levels of household income and receipt of selected benefits by maternal age at the sample child's birth. The data show that younger mothers, particularly those aged under 25, were significantly more likely to be living in lower income households and to be in receipt of state benefits at the time of the interview than mothers aged 25 or older were. Eighty-five percent of mothers aged under 20 were living in households in one of the two lowest income groups (with annual incomes of less than £13,750) compared with around 27% of mothers aged 30 to 34 and those aged 35 or older. In contrast, 30% of mothers aged 35 or older were living in the highest income group (annual income of £33,572 or above) compared with around1% of mothers aged under 20 and 4% of those aged 20 to 24.

2.3 Considerable differences are noted, in particular, between the under 20 and 20 to 24 age groups, between those aged under 25 and those 25 or over, and those under 30 compared with those aged 30 or older. The income characteristics of the 30 to 34 group, and those aged 35 and older are fairly similar.

2.4 Younger mothers were considerably more likely to be lone parents than older mothers were. The data in Table 3 shows that 67% of mothers in the youngest age group were lone parents compared with just 9% of mothers aged 35 or older. Examination of household relationships contained within the sweep 1 overview report (Anderson *et al*, 2007) indicated however, that although many young mothers were lone parents in the sense that they were not cohabiting with a spouse or partner, many of them lived with other adults, often their own parents. The second measure of family type in Table 3 therefore separates lone parents who live with other adults from lone parents who do not live with other adults[3]. The data here show that younger lone mothers were considerably more likely to be living with other adults than were older lone mothers, indeed half of all lone parents aged under 20 lived with other adults.

[3] An 'other adult' was any person in the household aged 16 or over who was not a partner or spouse of the respondent.

Table 2 Household income and receipt of selected benefits by age of mother at birth of cohort child

Base: Natural mothers in the birth cohort					
	Age of mother at birth of cohort child				
	Under 20	20 to 24	25 to 29	30 to 34	35 or older
	%	%	%	%	%
Equivalised annual household income (quintiles)					
Less than £8410	67.7	39.3	17.3	9.7	10.9
Between £8411 and £13,750	17.7	28.7	23.8	17.5	15.9
Between £13,751 and £21,785	10.6	16.9	21.0	19.7	16.8
Between £21,786 and £33, 571	2.6	10.7	22.3	27.3	26.6
More than £33,572	1.3	4.4	15.6	25.9	29.8
Bases					
Weighted	*348*	*831*	*1094*	*1414*	*920*
Unweighted	*302*	*778*	*1069*	*1489*	*978*
Receipt of income support					
No	48.0	71.2	87.1	94.0	94.3
Yes	52.0	28.8	12.9	6.0	5.7
Receipt of housing benefit					
No	62.6	71.1	84.8	92.7	93.5
Yes	37.4	28.9	15.2	7.3	6.5
Solely reliant on benefits for income					
No	45.8	68.5	85.1	92.6	92.6
Yes	54.2	31.5	14.9	7.4	7.4
Bases					
Weighted	*403*	*931*	*1232*	*1545*	*1035*
Unweighted	*349*	*871*	*1201*	*1621*	*1101*

Table 3 Family type by age of mother at birth of cohort child

Base: Natural mothers in the birth cohort					
	Age of mother at birth of cohort child				
	Under 20	20 to 24	25 to 29	30 to 34	35 or older
	%	%	%	%	%
Family type: Measure 1					
Lone parent	66.8	39.6	15.9	8.3	8.7
Couple family	33.2	60.4	84.1	91.7	91.3
Family type: Measure 2					
Lone parent living with other adults	32.0	10.8	2.4	1.3	2.7
Lone parent living only with child(ren)	34.8	28.7	13.5	7.1	6.0
Couple family	33.2	60.4	84.1	91.7	91.3
Bases					
Weighted	*403*	*931*	*1232*	*1545*	*1035*
Unweighted	*349*	*871*	*1201*	*1621*	*1101*

2.5 Patterns in maternal employment and educational qualifications also varied considerably by mother's age as seen in Table 4. In terms of employment status, younger mothers were less likely to be working either full-time or part-time than older mothers were. One in five (20%) mothers aged 35 or older were in full-time employment compared with one in twenty (5%) mothers aged under 20. Differences in employment status are also, inevitably, reflected in differences in NS-SEC. Due to their increased

likelihood of being unemployed, younger mothers were more likely to fall into the semi-routine and routine classification than older mothers were. In contrast, older mothers were significantly more likely to be in occupations classed as managerial or professional. Younger mothers also tended to have fewer educational qualifications than did older mothers – around 80% of mothers aged 30 to 34 and 35 or older had Higher grade qualifications or a qualification beyond Higher grade compared with 34% of mothers aged under 20. Indeed, one in five (19%) mothers in the youngest age group had no educational qualifications at all, compared with one in ten (9%) mothers in the oldest age group.

Table 4 Maternal employment status and highest educational qualification by age of mother at birth of cohort child

Base: Natural mothers in the birth cohort					
	Age of mother at birth of cohort child				
	Under 20	20 to 24	25 to 29	30 to 34	35 or older
	%	%	%	%	%
Mother's education					
Higher grade or above	33.5	62.0	75.3	80.4	78.2
Standard grade or equivalent	47.6	27.2	16.0	12.3	12.9
No qualifications	18.9	10.8	8.7	7.3	9.0
Bases					
Weighted	*399*	*928*	*1230*	*1541*	*1035*
Unweighted	*346*	*868*	*1199*	*1617*	*1101*
Mother's employment					
Employed full-time	5.1	6.8	15.0	19.0	20.3
Employed part-time	21.4	35.7	43.7	49.6	47.6
Unemployed	73.5	57.5	41.3	31.5	32.0
Bases					
Weighted	*402*	*930*	*1232*	*1543*	*1035*
Unweighted	*348*	*870*	*1201*	*1619*	*1101*
Mother's NS-SEC					
Managerial and professional occupations	5.2	13.4	34.7	46.9	53.0
Intermediate occupations	15.9	20.7	22.0	21.9	17.0
Small employers and own account workers	0.4	1.8	2.8	4.9	7.2
Lower supervisory and technical occupations	8.5	11.0	6.5	5.2	4.0
Semi-routine and routine occupations	70.1	53.1	33.9	21.2	18.8
Bases					
Weighted	*305*	*861*	*1176*	*1509*	*1018*
Unweighted	*266*	*806*	*1150*	*1586*	*1085*

2.6 The housing and neighbourhood characteristics of younger mothers were also distinct from that of older mothers. Those in the younger age groups were significantly more likely than those in the older age groups to be renting their home from the local authority (50% of those aged under 20 compared with 7% of those aged 35 or older) whereas older mothers were more likely than younger mothers were to own their home or be buying it with a mortgage (83% of those in the oldest age group compared with 14% of those in the youngest age group). Older mothers tended to live in areas of lower deprivation than did younger mothers. Around one-quarter of mothers aged 30 to 34 and 35 or older lived in an area in the least deprived quintile of the deprivation index compared with just 4% of mothers aged under 20.

Table 5 Tenure and area deprivation by age of mother at birth of cohort child

Base: Natural mothers in the birth cohort					
	Age of mother at birth of cohort child				
	Under 20	20 to 24	25 to 29	30 to 34	35 or older
	%	%	%	%	%
Housing tenure					
Owns outright or buying with mortgage/loan	13.6	33.7	60.8	80.3	82.7
Rents from Local Authority	50.3	35.0	20.3	9.7	7.0
Rents from Housing Association	15.6	14.9	8.4	3.9	4.5
Rents from a person or company	11.3	12.0	8.0	5.3	4.8
Other rent arrangement or rent free	9.2	4.3	2.4	0.8	1.0
Bases					
Weighted	*400*	*929*	*1232*	*1544*	*1035*
Unweighted	*346*	*869*	*1201*	*1620*	*1101*
Area deprivation (SNIMD quintiles)					
5 Least deprived	3.5	5.5	15.7	24.4	27.0
4	8.3	12.6	18.5	21.8	25.5
3	14.5	18.3	20.4	21.3	21.2
2	25.2	22.6	20.3	17.1	13.0
1 Most deprived	48.6	41.0	25.1	15.5	13.3
Bases					
Weighted	*403*	*931*	*1232*	*1545*	*1035*
Unweighted	*349*	*871*	*1201*	*1621*	*1101*

Differences in socio-economic and demographic characteristics by family type

2.7 As a high proportion of young mothers are lone parents, and because of the relatively disadvantaged characteristics of the majority of young mothers, we would expect that lone parents, as a social group, will portray similar social status to young mothers. Analysis of the data confirms that lone mothers are significantly more disadvantaged socially and economically than mothers in couple families. For example, lone mothers, particularly those who were not living with other adults, were significantly more likely to be residing in lower income households and to be in receipt of state benefits at the time of the interview than mothers in couple families (Table 6). Almost ninety percent of lone mothers who were not living with other adults were in one of the two lowest income groups compared with 30% of couple families (although this still involves quite a large number of mothers and children). Lone parents living with other adults appear to be slightly less advantaged in income terms than lone parents living only with children according to these data. These differences are largely explained by the equivalised income variable being used which is adjusted for the household composition. Households where lone parents live with other adults will require higher incomes to achieve the same material living standards as households where lone parents live only with children[4].

[4] Note that in cases where the respondent lives with other adults, this data relies on their reporting of the incomes of other people in the household, which is often an estimate. As such, this data should be treated with some caution.

Table 6 Household income and receipt of selected benefits by family type

Base: Natural mothers in the birth cohort			
	Family Type		
	Couple family	Lone mother living with other adults	Lone mother living only with children
	%	%	%
Equivalised annual household income (quintiles)			
Less than £8410	10.0	71.3	62.7
Between £8411 and £13,750	20.1	16.8	25.3
Between £13,751 and £21,785	20.8	6.4	8.8
Between £21,786 and £33, 571	25.8	4.6	2.6
More than £33,572	23.2	0.9	0.6
Bases			
Weighted	*3649*	*253*	*705*
Unweighted	*3730*	*231*	*656*
Receipt of income support			
Yes	4.4	46.6	62.5
No	95.6	53.4	37.5
Receipt of housing benefit			
Yes	6.5	12.6	65.1
No	93.5	87.4	34.9
Solely reliant on benefits for income			
Yes	6.5	45.3	64.8
No	93.5	54.7	35.2
Bases			
Weighted	*4095*	*306*	*745*
Unweighted	*4173*	*278*	*693*

2.8 Striking differences were also observed in the extent to which lone mothers were employed and their level of education when compared with mothers in couple families. The data in Table 7 show that lone parents were less likely to be working than parents in couple families, and that lone parents who did not live with other adults were less likely to be working than those who did live with other adults. This latter distinction may be explained, at least in part, by the more immediate availability of informal childcare for lone mothers who are living, for example, with their own parents (the child's grandparents) allowing them to more easily take up employment. Mothers in couple families were considerably more likely to be in managerial or professional occupations than lone mothers were. However, there were no significant differences in NS-SEC between the two lone parent groups, neither were there differences between these groups in terms of educational qualifications although they were each similarly distinct from mothers in couple families in this respect. For example, 78% of mothers in couple families were educated to at least Higher grade level compared with around 46% of lone mothers in each lone parent group.

Table 7 Maternal employment status and highest educational qualification by family type

Base: Natural mothers in the birth cohort			
	Family type		
	Couple family	Lone mother living with other adults	Lone mother living only with children
	%	%	%
Mother's education			
Higher grade or above	78.2	46.9	46.4
Standard grade or equivalent	15.2	34.9	31.8
No qualifications	6.6	18.3	21.8
Bases			
Weighted	*4090*	*305*	*739*
Unweighted	*4168*	*277*	*687*
Mother's employment			
Employed full-time	17.3	7.3	5.7
Employed part-time	47.5	34.8	22.1
Unemployed	35.3	57.9	72.1
Bases			
Weighted	*4093*	*305*	*744*
Unweighted	*4171*	*277*	*692*
Mother's NS-SEC			
Managerial and professional occupations	42.4	8.5	13.0
Intermediate occupations	21.5	16.0	14.8
Small employers and own account workers	4.6	2.3	1.4
Lower supervisory and technical occupations	5.5	8.7	11.5
Semi-routine and routine occupations	26.0	64.5	59.3
Bases			
Weighted	*3961*	*256*	*653*
Unweighted	*4048*	*236*	*610*

2.9 Lone mothers were significantly more likely to be renting from the local authority and less likely to own or be buying their home than were mothers in couple families (Table 8). A little over 7 in 10 (74%) couple families owned their home or were buying it with a mortgage compared with one in ten (12%) lone mothers who did not live with other adults. Tenure was a further measure where the two lone parent groups were distinct, with those lone parents who lived with other adults less likely to be renting, and indeed more likely to be in some kind of 'rent-free' arrangement, than were lone parents who did not live with other adults. This is perhaps not unusual given that in many of the latter cases, the respondent is living with her own parents. Couple families tended to be living in less deprived areas than lone parent families did. One in five (20%) couple families lived in an area in the least deprived quintile compared with around one in twenty (7%) lone mothers who lived with other adults and one in fifty (2%) lone mothers who did not live with other adults.

Table 8 Tenure and area deprivation by family type

Base: Natural mothers in the birth cohort			
	Family type		
	Couple family	Lone parent living with other adults	Lone parent living only with children
	%	%	%
Housing tenure			
Owns outright or buying with mortgage/loan	74.1	30.5	11.5
Rents from Local Authority	12.8	31.6	50.7
Rents from Housing Association	5.1	11.2	22.9
Rents from a person or company	6.6	4.4	14.0
Other rent arrangement or rent free	1.4	22.4	0.8
Bases			
Weighted	*4093*	*303*	*744*
Unweighted	*4171*	*275*	*692*
Area deprivation (SNIMD quintiles)			
5 Least deprived	21.4	6.7	2.3
4	21.7	8.7	8.6
3	21.4	15.6	14.3
2	17.6	26.8	20.9
1 Most deprived	17.9	42.2	53.8
Bases			
Weighted	*4095*	*306*	*745*
Unweighted	*4173*	*278*	*693*

CHAPTER THREE DIFFERENCES IN MATERNAL BEHAVIOUR BY MEASURES OF SOCIAL DISADVANTAGE

Introduction

3.1 Chapter 2 mapped out the patterns of advantage and disadvantage in terms of socio-economic and demographic characteristics by maternal age and family type. This exploration highlighted the inter-relationship between many of these characteristics and demonstrated that age and family type themselves are important factors contributing to a mother's relative social position with concentrated disadvantage evident in particular amongst mothers aged under 25, and lone parents who do not live with other adults.

3.2 Data collected on various maternal behaviours and service use, namely breastfeeding, smoking and attendance at ante-natal classes allow an initial consideration of the relationship between social disadvantage and these behaviours and outcomes.

Breastfeeding

3.3 Younger mothers, lone mothers, those with fewer educational qualifications, on low incomes, and those living in areas of relative deprivation were less likely to breastfeed than older mothers, those in couple families, those with more educational qualifications, living in high income households and those living in less deprived areas respectively (Table 9). Differences in likelihood of breastfeeding by maternal age and level of educational qualifications are particularly notable. Whereas 70% of mothers with Higher grades or above had breastfed the sample child only 29% of mothers with no qualifications had done so. A similarly sized gap exists by maternal age – around one-third (33%) of mothers in the youngest age group had breastfed the sample child compared with over two-thirds (68%) of mothers aged 30 to 34, and 72% of mothers in the oldest age group. Again, the distinction between the under 25s and over 25s is prominent in these analyses.

Table 9 Whether child was ever breastfed by selected measures of advantage/disadvantage

Base: Natural mothers in the birth cohort				
	Was child ever breastfed?			
	Yes	**No**	*Bases*	
	%	%	*Weighted*	*Unweighted*
All	60.1	39.9	*5145*	*5143*
Family type				
Couple family	66.5	33.5	*4093*	*4172*
Lone mother living with other adults	34.1	65.9	*306*	*278*
Lone mother living only with child(ren)	35.9	64.1	*745*	*693*
Age of mother at birth of sample child				
Under 20	33.1	66.9	*403*	*349*
20 – 24	44.6	55.4	*930*	*870*
25 - 29	61.1	38.9	*1232*	*1201*
30 to 34	68.0	32.0	*1545*	*1621*
35 or older	71.8	28.2	*1035*	*1101*
Mother's education				
Higher grade or above	69.4	30.6	*3684*	*3749*
Standard grade or equivalent	40.6	59.4	*960*	*923*
No qualifications	29.4	70.6	*488*	*459*
Area deprivation				
Least deprived quintile	77.9	22.1	*1444*	*1560*
2	71.6	28.4	*1505*	*1591*
3	64.3	35.7	*1619*	*1663*
4	50.6	49.4	*1423*	*1357*
Most deprived quintile	40.2	59.8	*1951*	*1769*
Equivalised annual household income (quintiles)				
Less than £8410	36.2	63.8	*988*	*918*
Between £8411 and £13,750	52.0	48.0	*954*	*938*
Between £13,751 and £21,785	60.3	39.7	*839*	*850*
Between £21,786 and £33, 571	73.3	26.7	*972*	*1005*
More than £33,572	80.2	19.8	*853*	*905*

3.4 Logistic regression was undertaken to identify more precisely the key measures of advantage or disadvantage, amongst those being considered, which appeared to influence whether or not a mother had decided to breastfeed. Whilst most measures remained significant in the regression analysis, mother's level of education was proven to be the strongest predictor of breastfeeding. The odds of mothers who were educated to higher grade breastfeeding were 2.6 times higher than for those who had no qualifications. Clearly the data cannot tell us what is it about education that produces such results or whether education itself is a proxy for other relevant social processes. The Hosmer-Lemeshow test revealed a good fit for the model, although the Nagelkerke R^2 effect size demonstrated fairly weak explanatory power suggesting there are other important factors at work here.

Table 2 Logitistic regression model detailing factors related to child having been breastfed: birth cohort

Variable	Category	Significance	Odds ratio	95% C.I.	
				Lower	Upper
Mother's education	(No qualifications)				
	Standard grade or equivalent	0.02	1.43	1.06	1.92
	Higher grade or above	0.00	2.65	1.99	3.52
Age of mother at sample child's birth	(Under 20)				
	20 to 24	0.77	0.96	0.70	1.30
	25 to 29	0.17	1.25	0.91	1.71
	30 to 34	0.16	1.26	0.91	1.74
	35 or older	0.02	1.51	1.07	2.11
Family type	(Lone parent living with other adults)				
	Lone parent living only with child(ren)	0.06	1.44	0.99	2.10
	Couple family	0.00	1.76	1.24	2.50
Equivalised annual household income	(Less than £8410)				
	Between £8411 and £13,750	0.38	0.90	0.70	1.14
	Between £13,751 and £21,785	0.08	0.78	0.60	1.03
	Between £21,786 and £33, 571	0.73	1.05	0.79	1.40
	More than £33,572	0.29	1.19	0.86	1.63
Mother's NS-SEC	(Semi-routine and routine occupations)				
	Lower supervisory and technical occupations	0.49	0.91	0.69	1.19
	Small employers and own account workers	0.02	1.56	1.08	2.26
	Intermediate occupations	0.67	1.04	0.86	1.27
	Managerial or professional	0.00	1.80	1.47	2.20
Area deprivation	(Most deprived)				
	2	0.62	1.05	0.86	1.30
	3	0.00	1.54	1.25	1.90
	4	0.00	1.69	1.35	2.12
	Least deprived	0.00	1.65	1.29	2.10
Housing tenure	(Rents from the local authority)				
	Rents from a housing association	0.43	1.21	0.75	1.96
	Rents from a person or company	0.00	1.78	1.34	2.37
	Other rent arrangement or rent free	0.30	1.16	0.88	1.54
	Owns outright or buying with mortgage	0.00	1.50	1.20	1.88
Receipt of benefits	(Solely reliant on benefits for income)				
	Not solely reliant on benefits	0.04	1.31	1.01	1.69
				Nagelkerke's R^2	*0.220*
				Hosmer & Lemeshow test	*0.682*

Attendance at ante-natal classes

3.5 Earlier analysis of GUS data (Anderson et al, 2007) illustrated that parity was the strongest factor affecting attendance at ante-natal classes with first-time mothers significantly more likely to attend than those who already had children. As such, to examine differences in attendance by measures of disadvantage, cross-sectional analysis was restricted to first-time mothers only. The data in Table 11 show that amongst first-time mothers, non-attendance at ante-natal classes was associated with younger age, lower income, socio-economic classification and lower educational attainment.

Table 11 Whether mother attended ante-natal classes by selected measures of advantage/disadvantage

Base: Primaparous natural mothers in the birth cohort				
	Did mother attend ante-natal classes?			
	Yes	**No**	*Bases*	
	%	%	*Weighted*	*Unweighted*
All	28.9	71.1	*2569*	*2513*
Age of mother at birth of sample child				
Under 20	35.7	64.3	*366*	*316*
20 – 24	55.8	44.2	*567*	*529*
25 - 29	82.1	17.9	*640*	*622*
30 to 34	86.5	13.5	*661*	*692*
35 or older	83.8	16.2	*335*	*354*
Mother's education				
Higher grade or above	80.1	19.9	*1898*	*1894*
Standard grade or equivalent	50.4	49.6	*459*	*427*
No qualifications	33.7	66.3	*202*	*184*
Mother's NS-SEC				
Managerial and professional occupations	88.1	11.9	*960*	*985*
Intermediate occupations	78.8	21.2	*518*	*510*
Small employers and own account workers	70.9	29.1	*65*	*65*
Lower supervisory and technical occupations	65.3	34.7	*154*	*148*
Semi-routine and routine occupations	52.7	47.3	*732*	*683*
Equivalised annual household income (quintiles)				
Less than £8410	41.2	58.8	*532*	*478*
Between £8411 and £13,750	63.5	36.5	*360*	*342*
Between £13,751 and £21,785	77.2	22.8	*393*	*389*
Between £21,786 and £33, 571	87.7	12.3	*460*	*470*
More than £33,572	90.6	9.4	*551*	*575*

3.6 Again, logistic regression analysis was run to pinpoint the key measures influencing attendance at ante-natal class. As with breastfeeding, several measures remained significant in the regression analysis however, after parity (which was by far the strongest variable), maternal age at the child's birth emerged as the next strongest predictor of attendance at ante-natal classes. The odds of mothers in each of the three age groups above 25 years attending ante-natal classes were at least three times higher than for mothers aged under 20, and around twice as high as for mothers aged between 20 and 24. Whilst the Nagelkerke R^2 effect suggests this model has better predictive efficacy than the breastfeeding model (although it is still moderate), the Hosmer and Lemeshow test indicates that the model is of poor fit.

Table 12 Logitistic regression model detailing factors related to attendance at ante-natal classes: birth cohort

Variable	Category	Significance	Odds ratio	95% C.I.	
				Lower	Upper
Mother's education	(No qualifications)				
	Standard grade or equivalent	0.01	1.61	1.12	2.32
	Higher grade or above	<0.01	2.06	1.46	2.90
Age of mother at sample child's birth	(Under 20)				
	20 to 24	0.01	1.59	1.15	2.19
	25 to 29	<0.01	3.04	2.17	4.25
	30 to 34	<0.01	3.39	2.40	4.78
	35 or older	<0.01	3.12	2.17	4.50
Equivalised annual household income	(Less than £8410)				
	Between £8411 and £13,750	<0.01	1.58	1.23	2.03
	Between £13,751 and £21,785	<0.01	1.84	1.42	2.39
	Between £21,786 and £33, 571	<0.01	2.59	1.97	3.41
	More than £33,572	<0.01	3.00	2.22	4.04
Mother's NS-SEC	(Semi-routine and routine occupations)				
	Lower supervisory and technical occupations	0.10	1.31	0.95	1.80
	Small employers and own account workers	0.65	1.10	0.73	1.66
	Intermediate occupations	<0.01	1.41	1.13	1.77
	Managerial or professional	<0.01	1.46	1.16	1.83
Parity	(Has other children)				
	Sample child is first child	<0.01	16.22	13.64	19.29
				Nagelkerke's R^2	*0.449*
				Hosmer & Lemeshow test	*<0.001*

Smoking

3.7 Younger mothers, those with lower educational attainment and those living in more deprived areas were more likely to say they smoked. Differences by area of deprivation are particularly stark. Mothers living in an area in the most deprived quintile were around 4 times more likely to say they smoked than mothers living in the least deprived quintile (44% compared with 10%). Likelihood of smoking decreased with age – around two-fifths (41%) of mothers aged 20-24 said they smoked compared with one-fifth (19%) of mothers aged 30 to 34.

Table 13 Whether mother smoked by selected measures of advantage/disadvantage

Base: Primiparous natural mothers in the birth cohort				
	Did mother smoke?			
	Yes	**No**	*Bases*	
	%	%	*Weighted*	*Unweighted*
All	27.5	72.5	5118	5117
Age of mother at birth of sample child				
Under 20	54.3	45.7	401	347
20 – 24	40.7	59.3	922	862
25 - 29	28.0	72.0	1226	1196
30 to 34	19.0	81.0	1537	1613
35 or older	17.2	82.8	1032	1098
Mother's education				
Higher grade or above	19.4	80.6	3672	3737
Standard grade or equivalent	44.1	55.9	958	921
No qualifications	55.9	44.1	477	448
Mother's NS-SEC				
Managerial and professional occupations	12.6	87.4	1783	1856
Intermediate occupations	21.4	78.6	986	993
Small employers and own account workers	19.1	80.9	196	202
Lower supervisory and technical occupations	38.2	61.8	315	311
Semi-routine and routine occupations	43.6	56.4	1571	1514
Area deprivation				
Least deprived quintile	9.7	90.3	913	996
4	19.3	80.7	975	1025
3	23.6	76.4	1025	1048
2	34.0	66.0	954	919
Most deprived quintile	44.9	55.1	1252	1129

3.8 Logistic regression analysis was run again to identify those variables which were most strongly predictive of smoking. Living in social housing, having a home in a deprived area and lack of educational qualifications were all similarly strongly predictive of smoking. Renting from the local authority was the strongest predictor: the odds of mothers who lived in a home rented from the local authority smoking were around 2.4 times higher than for mothers who owned their home (or were buying it with a mortgage). Maternal age did not feature in this model. Whilst the parameters of the model suggest good fit, Nagelkerke's R^2 indicates only weak explanatory power. Clearly, renting from the local authority, while being the strongest predictor in this model, is likely to be related to a range of factors that influence smoking rather than itself being a direct influence on that behaviour.

Table 14 Logitistic regression model detailing factors related to mother smoking

Variable	Category	Significance	Odds ratio	95% C.I.	
				Lower	Upper
Mother's education	(Higher grade or above)				
	Standard grade or equivalent	0.00	1.65	1.37	2.00
	No qualifications)	0.00	2.01	1.52	2.65
Family type	(Couple family)				
	Lone parent living with other adults	0.01	1.55	1.10	2.18
	Lone parent living only with child(ren)	0.01	1.39	1.10	1.76
Equivalised annual household income	(Less than £8410)				
	Between £8411 and £13,750	0.23	0.86	0.68	1.10
	Between £13,751 and £21,785	0.13	0.80	0.60	1.06
	Between £21,786 and £33, 571	0.14	0.79	0.58	1.08
	More than £33,572	0.00	0.57	0.39	0.82
Mother's NS-SEC	(Managerial or professional)				
	Intermediate occupations	0.07	1.24	0.98	1.57
	Small employers and own account workers	0.83	1.05	0.68	1.63
	Lower supervisory and technical occupations	0.00	1.72	1.26	2.36
	Semi-routine and routine occupations	0.00	1.68	1.34	2.11
Area deprivation	(Least deprived)				
	4	0.00	1.82	1.34	2.46
	3	0.00	1.67	1.24	2.26
	2	0.00	2.17	1.60	2.93
	Most deprived	0.00	2.19	1.61	2.97
Housing tenure	(Owns outright or buying with a mortgage)				
	Rents from a local authority	0.00	2.37	1.88	2.98
	Rents from a housing association	0.00	2.14	1.60	2.88
	Rents from a person or company	0.00	1.87	1.42	2.46
	Other rent arrangement or rent free	0.19	1.39	0.85	2.26
Receipt of benefits	(Solely reliant on benefits for income)				
	Not solely reliant on benefits	0.00	0.69	0.53	0.89
Nagelkerke's R^2					0.270
Hosmer & Lemeshow test					*0.609*

Summary

3.9 This chapter has demonstrated clearly that adverse maternal behaviour appears to be closely related to maternal age and socio-economic circumstances. Younger mothers (particularly those aged under 25), lone mothers, those with lower or fewer educational qualifications, on low incomes, and those living in areas of relative deprivation were less likely to breastfeed, while low socio-economic status, poor educational attainment, area deprivation and renting from the local authority were also associated with maternal smoking. Similarly, controlling for parity, non-attendance at ante-natal classes was associated with younger age, lower income, socio-economic position and educational attainment.

3.10 Considerable attention has rightly focused on the association between adversity and negative social and health behaviours and outcomes for mothers and children. Rather less attention has been paid to understanding, within a group with generally poor outcomes, whether and how "healthy" or more positive outcomes may be produced. The next chapter takes an approach to the exploration of the impact of social disadvantage on

the potential health and well-being of mothers and their infants that aims to identify resilience; in other words identifying those who report more positive health related behaviours although in disadvantaged circumstances.

CHAPTER FOUR RESILIENCE AMONGST DISADVANTAGED MOTHERS

Introduction

4.1 To explore resilience amongst mothers considered to be 'disadvantaged', two sets of analysis were undertaken – one was restricted to mothers aged under 25 at the time of birth, the other was restricted to lone parents[5]. Those young mothers and lone parents who demonstrated 'positive' behaviours - breastfeeding, attendance at ante-natal classes, not smoking, – were compared, using the same set of socio-economic measures that have been applied above, with those young mothers and lone parents who demonstrated 'negative' behaviours.

Breastfeeding

4.2 Breastfeeding is associated with infant health outcomes, but remains very much patterned by socio-economic characteristics. Women in higher income households or with higher educational attainment are not only more likely to breastfeed in the first place, but to continue breastfeeding and delay weaning. Within the birth cohort, overall, 60% of mothers breastfed their baby but analysis for chapter three showed that, as well as age and family type, educational qualifications, household income, area deprivation and other socio-economic measures appeared to impact on the extent to which a mother had breastfed the cohort child. To identify the key independent factors which impacted on likelihood of breastfeeding amongst mothers aged under 25 and amongst lone mothers, logistic regression was undertaken. Table 15 displays the results of the under 25s regression.

Table 15 Logitistic regression model detailing factors related to breastfeeding amongst mothers aged under 25 at the child's birth: birth cohort

Variable	Category	Significance	Odds ratio	95% C.I.	
				Lower	Upper
Mother's education	(No qualifications)				
	Standard grade or equivalent	0.02	1.80	1.10	2.94
	Higher grade or above	0.00	2.72	1.69	4.38
Family type	(Lone parent living with other adults)				
	Lone parent living only with child(ren)	0.38	1.22	0.78	1.89
	Couple family	0.01	1.72	1.16	2.53
Tenure	(Rents from the local authority)				
	Rents from a housing association	0.48	1.15	0.78	1.68
	Rents from a person or company	0.00	2.37	1.58	3.56
	Other rent arrangement or rent free	0.70	1.13	0.60	2.14
	Owns outright or buying with mortgage	0.02	1.48	1.06	2.05
				Nagelkerke's R^2	*0.111*
				Hosmer & Lemeshow test	*0.953*

4.3 Although significantly less likely to breastfeed than mothers aged 25 or older (66% of mothers aged 25 or older breastfed compared with 41% of those aged under 25), those younger mothers who did breastfeed were characterised by relative social and economic advantage: they were more likely than those who did not breastfeed to be in couple families (64% of breastfeeding young mothers were in couple families compared

[5] Including both those who lived with other adults and those who did not

with 44% of non-breastfeeding younger mothers); to be owner occupiers and not social renters; and to have attained a higher level of education than non-breast-feeding younger mothers. Educational qualifications at Higher grade or above was the strongest predictor of breastfeeding within this group of younger mothers. The odds of younger mothers who had qualifications at Higher grade or above having breastfed the cohort child were almost three times as large as for mothers with no qualifications. The Hosmer and Lemeshow figure indicates good fit for this model, but the low value returned for Nagelkerke's R^2 suggests that measures of advantage and disadvantage only explain a small part of why younger mothers breastfeed or not.

4.4 Table 16 displays the results from the lone parents' regression model. Lone parents who breastfed were more likely than lone mothers who did not to be older, to be living in areas of lower deprivation and to be more highly educated. Being educated to Higher grade or above was the strongest predictor of breastfeeding amongst lone parents: being only slightly stronger than being aged 35 or older at the child's birth; the odds of lone mothers with Higher grades breastfeeding was 2.8 times higher than that for lone mothers with no qualifications. As with the younger mothers regression, the lone parents model parameters indicate that the particular measures of advantage and disadvantage considered here are perhaps not the most important factors influencing these behaviours.

Table 16 Logitistic regression model detailing factors related to breastfeeding amongst lone mothers: birth cohort

Variable	Category	Significance	Odds ratio	95% C.I.	
				Lower	Upper
Mother's education	(No qualifications)				
	Standard grade or equivalent	0.01	1.83	1.16	2.90
	Higher grade or above	0.00	2.80	1.82	4.31
Mother's age at child's birth	(Under 20)				
	20 to 24	0.90	1.03	0.70	1.51
	25 to 29	0.22	1.31	0.85	2.03
	30 to 34	0.09	1.53	0.94	2.49
	35 or older	0.01	2.18	1.26	3.77
Area deprivation	Most deprived				
	2	0.77	1.05	0.74	1.50
	3	0.62	1.11	0.74	1.67
	4	0.03	1.73	1.07	2.80
	Least deprived	0.00	3.18	1.53	6.63
				Nagelkerke's R^2	*0.078*
				Hosmer & Lemeshow test	*0.902*

Attendance at ante-natal classes

4.5 Attendance at ante-natal classes is patterned by age, social position and particularly by parity: younger mothers, those in lower occupational grade households and those expecting a second or later child are much less likely to attend than older, more socially advantaged women and those expecting a first child. This pattern was reflected within the cohort of younger mothers as can be seen from the results of the regression model in Table 17. Again, those younger mothers who attended ante-natal classes were characterised by relative social and economic advantage. After controlling for parity, higher educational attainment, having a higher household income, and living in an area of lower deprivation were all positively and independently associated with ante-natal class attendance by mothers aged under 25. Whilst first-time motherhood was the strongest

predictor of attendance, it is notable that having qualifications at Higher grade or above also had a strong association with attendance in this model. Although the explanatory power of this model, demonstrated by Nagelkerke's R^2, is better than for breastfeeding, it is still weak, and the model is also of poor fit.

Table 17 Logitistic regression model detailing factors related to attendance at ante-natal classes amongst mothers aged under 25: birth cohort

Variable	Category	Significance	Odds ratio	95% C.I.	
				Lower	Upper
Parity	(Multiparous)				
	Primiparous	<0.01	7.68	5.29	11.14
Mother's education	(No qualifications)				
	Standard grade or equivalent	0.01	2.28	1.24	4.19
	Higher grade or above	<0.01	3.09	1.71	5.56
Equivalised annual household income (quintiles)	(Less than £8410)				
	Between £8411 and £13,750	<0.01	1.66	1.17	2.36
	Between £13,751 and £21,785	0.01	1.69	1.13	2.54
	Between £21,786 and £33, 571	<0.01	2.81	1.66	4.77
	More than £33,572	<0.01	3.43	1.56	7.53
Area deprivation	(Most deprived)				
	2	0.05	1.45	1.01	2.09
	3	0.03	1.58	1.06	2.35
	4	0.01	1.80	1.14	2.86
	Least deprived	0.08	1.76	0.93	3.32
				Nagelkerke's R^2	*0.273*
				Hosmer & Lemeshow test	*0.010*

4.6 Amongst lone parents, age was again a strong predictor of attendance – the odds of lone mothers aged over 25 having attended ante-natal classes were around twice as large as for younger lone mothers (Table 18). Working full-time was also a significant positive predictor of attendance for lone parents. The model parameters suggest that disadvantage is more associated with attendance at ante-classes for lone parents than for younger mothers, for whilst the predictive efficacy of the model is still weak, Hosmer and Lemeshow indicates good fit.

Table 18 Logitistic regression model detailing factors related to attendance at ante-natal classes amongst lone parents: birth cohort

Variable	Category	Significance	Odds ratio	95% C.I.	
				Lower	Upper
Parity	(Multiparous)				
	Primiparous	<0.01	6.98	4.66	10.46
Mother's age at child's birth	(Under 20)				
	20 to 24	0.25	1.27	0.85	1.91
	25 to 29	0.01	1.90	1.14	3.14
	30 to 34	0.01	2.31	1.27	4.20
	35 or older	0.03	2.06	1.07	3.96
Maternal employment status	(Unemployed)				
	Working part-time	0.28	1.21	0.86	1.70
	Working full-time	0.01	2.19	1.22	3.95
				Nagelkerke's R^2	*0.200*
				Hosmer & Lemeshow test	*0.419*

Smoking

4.7 Living in a couple household, being an owner occupier and having educational qualifications were all independently and positively associated with non-smoking amongst younger mothers (see Table 19). Maternal education was again the strongest predictor; the odds of those younger mothers having Higher grades or more not smoking were 3.5 times higher than those younger mothers who had no qualifications. The model parameters indicate this model is weak.

Table 19 Logitistic regression model detailing factors related to non-smoking amongst mothers aged under 25: birth cohort

Variable	Category	Significance	Odds ratio	95% C.I.	
				Lower	Upper
Mother's education	(No qualifications)				
	Standard grade or equivalent	<0.01	2.17	1.29	3.63
	Higher grade or above	<0.01	3.61	2.17	6.00
Family type	(Lone parent living with other adults)				
	Lone parent living only with child(ren)	0.77	0.93	0.58	1.50
	Couple family	0.04	1.58	1.02	2.46
Area deprivation	(Most deprived)				
	2	0.01	0.64	0.45	0.91
	3	0.53	1.13	0.77	1.67
	4	0.22	0.76	0.48	1.19
	Least deprived	0.38	1.35	0.69	2.65
Tenure	(Rents from the local authority)				
	Rents from a housing association	<0.01	1.96	1.33	2.88
	Rents from a person or company	0.97	0.99	0.67	1.47
	Other rent arrangement or rent free	0.14	1.38	0.90	2.12
	Owns outright or buying with mortgage	<0.01	1.96	1.33	2.88
Receipt of benefits	(Not solely reliant on benefits for income)				
	Solely reliant on benefits	0.01	0.67	0.48	0.92
				Nagelkerke's R^2	*0.173*
				Hosmer & Lemeshow test	*0.915*

4.8 The pattern for lone parents was slightly different with occupational classification and employment status featuring more prominently alongside educational attainment as predictors of non-smoking. Age was not significant but lone mothers with higher grades or above, those who worked full-time and those in managerial/professional or intermediate occupations were all less likely to smoke. Similar values are returned by the model parameters indicating that this model is also weak.

Table 20 Logitistic regression model detailing factors related to non-smoking amongst lone mothers: birth cohort

Variable	Category	Significance	Odds ratio	95% C.I.	
				Lower	Upper
Mother's education	(No qualifications)				
	Standard grade or equivalent	0.55	1.14	0.73	1.78
	Higher grade or above	0.01	1.80	1.17	2.75
Maternal employment status	(Unemployed)				
	Working part-time	<0.01	1.99	1.44	2.76
	Working full-time	<0.01	2.64	1.41	4.94
Mother's NS-SEC	Semi-routine and routine occupations				
	Lower supervisory and technical	0.39	0.81	0.50	1.31
	Small employers and own account workers	0.72	1.21	0.42	3.48
	Intermediate occupations	<0.01	1.87	1.23	2.84
	Managerial and professional	0.05	1.63	1.00	2.66
				Nagelkerke's R^2	*0.118*
				Hosmer & Lemeshow test	*0.919*

Summary

4.9 The overwhelming impression is that within the vulnerable or disadvantaged groups - younger mothers and lone mothers (although there is inevitable overlap on account of association between the two) - the key predictors of more health promoting maternal behaviours and service use are largely linked to relative social position. Thus, those younger mothers and lone mothers who breastfeed, don't smoke and attend ante-natal classes are those living in more socially advantaged circumstances and, relatedly, are more highly educated.

CHAPTER FIVE CONCLUSION

5.1 This report provides further evidence of the persistence of inequalities within the circumstances into which Scotland's children are born. The longitudinal nature of GUS will enable the longer term effect of disadvantage to be tracked and also the ameliorating effect of a range of different services. At present, however, we are able to go someway toward identifying more precisely the constellation of factors that pattern that disadvantage.

5.2 The interrelationship between age, young motherhood and a range of measures of socio-economic advantage/disadvantage has been further explored in this report. We have identified some clear differences in the experiences between those mothers who are under 25 at the birth of their first child and those who are over 25, suggesting that the concept of young (and mostly disadvantaged) motherhood should be extended beyond the teenage years. These younger mothers are more likely to be living in lower income households and to be in receipt of state benefits. Younger mothers are also significantly more likely to be lone parents, even though a proportion of them live with other adults, often their own parents. There is, then, a complex interplay of maternal age, lone parenthood and social disadvantage operating.

5.3 Younger mothers were less likely to be working, either full-time or part-time, suggesting that work as a route out of poverty is not embedded in the life circumstances of these women. Younger mothers also have fewer educational qualifications, suggesting that employment, when taken up, is unlikely to have a marked effect on socio-economic position.

5.4 A particularly vulnerable group were lone mothers who were not living with other adults, as they were more likely to be in the lowest income group. Lone mothers were also less likely to be employed and when employed were more likely to be in routine or semi-routine occupations.

5.5 Maternal age and family type are thus interrelated and both closely associated with socio-economic disadvantage across a range of measures, with concentrated disadvantage evident in mothers under 25 and lone parents who do not live with other adults.

5.6 This report has also explored the relationship between social disadvantage, maternal age, family type and three maternal behaviours – smoking, breastfeeding and attendance at ante-natal classes. Differences in likelihood of breastfeeding by maternal age and level of education are notable. Logistic regression showed that education to Higher level or above was the best predictor of breastfeeding.

5.7 Non-attendance at ante-natal classes was associated with younger age, lower income and socio-economic classification and lower educational attainment. Logistic regression suggested that, after parity, maternal age at child's birth was the strongest predictor of attendance at ante-natal classes with older mothers being more likely to attend that younger mothers.

5.8 In relation to smoking, younger mothers, with lower educational attainment and living in more deprived areas, were more likely to report that they smoked. Logistic regression suggested that, although as with the other behaviours reported above, most measures remained significant, social renting emerged as the strongest predictor of maternal smoking. This may be because of a particular range of characteristics of disadvantage are encapsulated in those who rent from the local authority.

5.9 A resilience framework was employed to explore what factors seemed to influence 'positive' behaviours amongst more disadvantaged groups. Analysis focused on two disadvantaged groups: mothers under the age of 25 at the time of birth and lone parents of all ages.

5.10 Those younger mothers who did breastfeed were characterized by relative social and economic advantage: they were more likely to be in couple families, to be owner occupiers and to have a higher level of educational attainment. Lone mothers who breastfed were less likely to be living in areas of deprivation and to be more highly educated than lone mothers who did not breastfeed.

5.11 With regards to attendance at ante-natal classes, younger mothers who attended were characterized by relative social and economic advantage. For lone mothers, being 25 and over was a strong predictor of attendance.

5.12 For younger mothers, maternal education was the strongest predictor of not smoking although living in a couple household, being an owner occupier and having educational qualifications were all independently and positively associated with non-smoking. For lone parents, occupational classification and employment status were more prominent predictors alongside educational attainment.

5.13 It is important to note that the measures of disadvantage that were used in these analyses are only part of the overall picture of what influences maternal health related behaviour. The models that have been used certainly do not fully explain these behaviours. It is clear that there is a complex relationship between social and economic disadvantage and other factors such as maternal age and family type. While the analyses are suggestive of the importance of educational attainment in supporting resilience amongst the two disadvantaged groups of mothers (lone and younger), further multivariate analyses would need to be conducted to explore the data further and to incorporate other factors into the modeling. Nonetheless, the analyses conducted so far would imply that supporting education for young mothers, many of whom are also lone parents, may help develop resilience in the face of other disadvantages and hopefully improve outcomes and life chances for themselves and their children.

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ANNEX A –SUPPLEMENTARY NOTES ON THE REGRESSION ANALYSIS

A.1 The regression models used in this report have been composed in order to examine which of the selected measures of advantage and disadvantage appear to be more important in determining behaviours of mothers with young children in general and young mothers and lone mothers in particular. They have not been designed, as in many other research papers which use regression, to test or support a theoretically-based hypothesis. As such, we do not expect the models to have good predictive efficacy because they are likely to omit many measures which are important determinants of the behaviours being examined.

A.2 In chapter three, all of the regression models included the following independent variables: family type, household income, mother's educational qualifications, mother's employment status, mother's socio-economic classification[6], age of mother at birth of cohort child, sole reliance on benefits and tax credits for income, housing tenure and area deprivation[7]. Models which examined attendance at ante-natal classes also included a measure of whether or not the respondent was a first-time mother. In chapter four, those models which were restricted to data on mothers aged under 25 did not include age of mother at birth of cohort child as an explanatory variable, and the models which were restricted to data on lone parents did not include family type. Further, this technique requires that the outcome variable of interest has two-categories therefore for each model, all cases were coded to reflect whether or not they fell into the category of interest.

[6] Measured using the 5-category version of National Statistics Socio-Economic Classification (NS-SEC)
[7] Measured using quintiles of the Scottish Index of Multiple Deprivation

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