Poverty, parenting and poor health: comparing early years' experiences in Scotland, England and three city regions

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Contents

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Executive summary

- Early years' and childhood experiences can have profound and long-lasting consequences for individuals' health. There is, therefore, considerable interest in this issue from policy-makers at a UK, Scottish and local level.

- Negative early years' and childhood experiences have also been proposed as a possible 'midstream' explanation for the excess poor health and mortality seen in Scotland (and especially in Glasgow and West Central Scotland) compared with other parts of the UK.

- This report investigated whether there were indeed differences in early years' experiences between Scotland and England, and between the three 'city regions' of Merseyside, Greater Manchester and Glasgow and the Clyde Valley (GCV), that might partly account for the poorer health status of Scotland, and these areas. It drew on four cohort studies of children, born in Britain in 1946, 1958, 1970 and 2000, supplemented by analyses of routine data and other large scale surveys.

- Drawing on the existing literature regarding the means by which early years' experiences influenced health in the UK, USA and Scotland, the report identified four key areas for investigation. These were: social and material circumstances (e.g. poverty, family structure, demographics); dysfunctional households (e.g. parental drug and alcohol misuse, domestic abuse, parental discord); maternal and child health (e.g. breastfeeding, mother's mental health, smoking in pregnancy); and parenting (e.g. parent-child relationships, parenting practices and styles, child behavioural problems).

- Few clear differences in contemporary childhood and early years' experiences emerged. On almost all measures of social and material circumstances (e.g. child poverty, age of mother), child and maternal health (e.g. mother's malaise) and parenting (e.g. parent-child conflict, child behavioural problems), Scotland and England, and GCV and the English regions, were very similar. There was also little evidence to suggest poorer gender relations or a lack of shared parental responsibilities in the Scottish areas.

- In only a few aspects (maternal smoking during pregnancy, breastfeeding) could it be said clearly that Scottish children were potentially disadvantaged. At a regional level, even fewer differences were identified. GCV had a lower proportion of breastfeeding mothers than Greater Manchester but a higher proportion than Merseyside; differences in smoking during pregnancy were either small or non-existent.

- For a number of aspects, concentrated in the area of dysfunctional households, the evidence was ambiguous as to whether contemporary childhood and early years' experiences were worse in Scotland. These include parental substance misuse, parental imprisonment, domestic violence, warmth of parent-child relationships, looked after children and the use of shouting to discipline children. Further comparisons of these aspects of family life may provide useful insights into geographical variation in childhood and early years' experiences within the UK.

- The study was limited by a number of factors. The most important of these were the reliance on self-reporting of highly sensitive topics (e.g. asking parents to rate their relationship with their child and declare their use of drugs or experience of partner abuse), which may bias the results; the absence of contemporary data on parenting measures for Merseyside (because the Millennium Cohort Study (MCS) sample for this region was not representative); and the relatively small sample sizes available for some analyses.

- Future research will extend the analysis in this report and examine longitudinal associations between childhood and early years' experiences and adult morbidity and mortality in Scotland, England and the three regions.

Glossary of acronyms

Cohort studies

ACE	Adverse Childhood Experiences
BCS70	British Cohort Study 1970
GUS	Growing Up in Scotland
MCS	Millennium Cohort Study
NCDS58	National Child Development Study 1958
NSHD	MRC National Survey of Health and Development

Cross-sectional surveys

APS	Annual Population Survey
BCS	British Crime Survey
LFS	Labour Force Survey
SCJS	Scottish Crime and Justice Survey
HSBC	Health Behaviour in School-Aged Children

Other sources

CHSP-PS	Child Health Systems Programme – Pre-School
DCSF	Department of Children, Schools and Families
DoH	Department of Health
DWP	Department for Work and Pensions
GRO(S)	General Register Office for Scotland
HIAT	Health Improvement Analytical Team
HMRC	HM Revenue and Customs
ISD Scotland	Information Services Division, NHS National Services Scotland
MoJ	Ministry of Justice
NRS	National Records of Scotland
ONS	Office for National Statistics
SMR02	Scottish Morbidity Record 2 – Maternity Data

1.0 Introduction

1.1 Background

1.1.1 Why look at early years' and childhood experiences?

Experiences in early years and childhood have profound and long-lasting consequences for the health and wellbeing of individuals[1,2]. This has prompted considerable interest from policy-makers, not least because investment in the early years can potentially avoid much more costly public expenditure to alleviate problems later in life[3,4]. At a UK-level, the Field Review (2010) argued that *"children's life chances are most heavily predicated on their development in the first five years of life"*[5]. In Scotland, the importance of early years has been recognised at a national level by successive devolved administrations, a process that is likely to be further strengthened with the recent publication of the National Parenting Strategy[6]. Deacon (2011) summarised the human, social and economic benefits of a focus on early years and the support for this approach[7], highlighting documents such as The Early Years Framework[8], Getting it Right for Every Child[9] and the Scottish Parliament Report on preventative spending[3]. Deacon also argued that Scotland can and should improve its support for the early years by ensuring that the importance of maternal health and warm, secure parent-child relationships is widely understood, investing in a network of child and family centres across Scotland, and by empowering families, children, communities and frontline professionals[7]. In West Central Scotland, the Glasgow Health Commission (2009) was explicit about the need to prioritise support for parents and children in the early years, for example through parenting programmes and advice[10].

Negative early years' and childhood experiences have also been proposed as a possible influence on the 'excess' levels of poor health seen in Scotland, especially in Glasgow and the West Central Scotland conurbation[11,12]. This 'excess' relates to the higher levels of mortality seen in Scottish areas, even after controlling for age, sex and deprivation. It has been shown to exist for Scotland compared with England[13] and more recently for Glasgow compared with Liverpool and Manchester, where despite these cities sharing identical deprivation profiles, premature mortality is 30% higher in Glasgow city[14]. Following publication of these studies, a number of hypotheses have been proposed, ranging from 'upstream' (e.g. social and economic inequality, deindustrialisation) to 'downstream' explanations (e.g. differences in health behaviours or individual values)[15]. Early years and childhood factors, especially family breakdown, acrimony between partners or dysfunctional parenting, are included among these hypotheses as a 'midstream' explanation. Research in this area may therefore provide insights into the phenomenon of excess mortality. This report aims to do this by examining whether there are differences in early years' and childhood experiences in Scotland and England, and the three city regions of Glasgow and the Clyde Valley (GCV), Merseyside and Greater Manchester.

1.1.2 How do early years' and childhood experiences impact on health and wellbeing?

The first step in this process is to identify what is already known on this subject. In this section and the one that follows, we review the literature on the importance of early years' experiences in influencing health, and consider the extent to which Scotland is distinct from England in this respect.

The evidence for the impact of early years' and childhood experiences on health includes complex and interrelated factors such as: social and material circumstances; the physical and mental health of the mother; family structure; and household dysfunction. For example, there is substantial evidence that poverty and social disadvantage (including material

deprivation and parental worklessness), maternal depression and poor maternal general health are associated with a range of poor outcomes for children[16-18]. Young mothers and those with low levels of educational attainment also face more challenges in rearing their children[19,20]. Family structure is also associated with child health and development, but other factors (e.g. conflictual parenting, the quality of family relationships, mother's health and educational attainment) have a more consistent and stronger influence[18,21,22]. Breakdown in parental relationships has been shown to have an adverse effect on children in terms of a damaging loss of material and emotional support[23]. Children living in lone parent or stepfamilies have been shown to be at greater risk of maltreatment[20], while having a lone parent or cohabiting[a] mother at birth to the age of three has a measurable link with behavioural problems at age five[16]. Finally, the degree of household dysfunction also has an important influence on childhood and early years development. This covers a spectrum of issues from parental discord (both after relationship breakdown and within an intact relationship or marriage) to problems such as domestic violence and parental substance misuse. For example, a 2008 survey of children in England found that children's overall life satisfaction was strongly determined by how happy they were with their family, even allowing for other factors[22]. At the more extreme end of family conflict, young children who witness or experience domestic abuse are more vulnerable to behavioural problems and/or difficulties with learning and development[24].

The level of material and social resources available, and the degree of household dysfunction, can also influence how engaged and positive parents are in bringing up their children. For example, Parkes and Wight (2011) found that higher levels of 'family adversity'[b] were associated with lower levels of parenting skill (e.g. less warmth, more conflict between mother and child, less supervision and fewer rules)[19]. Parental substance misuse is likely to have an adverse effect on parenting skills and parental attention to the child[25,26]. Turning to domestic violence, while some mothers in abusive relationships have warm, positive parenting styles, their greater risk of depression and the negative influences of the abuser (e.g. role model effects, use of coercive parenting strategies by the mother to avoid worse intervention by the father) make this less likely[27]. The combination of domestic abuse and parental substance misuse appears to be especially harmful[28].

In turn, poorer parenting can increase the risk of children developing problems with their behaviour, learning and development and general health early in life. Behavioural problems in early childhood are strongly associated with some aspects of parenting (higher parent-child conflict and low parental supervision, disagreement with partner, regular use of shouting and smacking to discipline the child, fewer visits to other households, and irregular mealtimes), along with maternal depression and low levels of maternal educational attainment[16,29,30]. Parental warmth and smoking play a subsidiary[c] role[16].

[a] Hobcraft and Kiernan (2010)[16] reported that, in the Millennium Cohort Study (MCS) cohort, the odds ratio for children having behavioural problems at age five was significantly higher among those whose mothers were cohabiting (2.01) or lone parents (3.42) when the child was three, compared to those whose mothers were married.

[b] The 'family adversity scale' was based on family characteristics such as area deprivation, income, housing tenure, maternal depression, age of mother, ethnicity and family structure.

[c] For example, the PREview visualisation diagrams (http://www.chimat.org.uk/preview/evidence) show that maternal smoking has a weak but still measurable link with risk of child behavioural problems, while low maternal warmth has a moderate association with child behavioural problems and learning and development (though mother-child conflict has a much stronger role).

Low parental warmth and attachment in the child's first three years, lack of reading to the child and researcher-observed parent-child interaction (e.g. mother not talking to the child at least twice during the visit) are negatively associated with children's development of cognitive, problem solving and vocabulary skills[16,31]. Lack of pre-school child care and irregular bedtimes also have a similar detrimental effect, while breastfeeding and a positive home learning environment (including reading to the child) can help boost early development[16].

Negative childhood experiences can also store up problems for adolescence and early adulthood. An absence of good parent-child relationships can result in increased risk of substance misuse, violence and suicide, and lower wellbeing in adolescence and early adulthood. Research drawing on the Avon Longitudinal Study of Parents and Children (ALSPAC) found that after controlling for other factors, higher levels of parental warmth towards a child at ages two to five lowered the risk of excessive drinking at age 16[32]. Family disruption in childhood is associated with a higher risk of depression and smoking at age 30[33]. The quality of parent-child relationships and communication between parents and children, the level of family conflict, family structure, parental support and parental supervision are all associated with young people's smoking rates and their use of alcohol and illicit drugs[34]. Child maltreatment also increases the risk of substance misuse, risky sexual behaviour, obesity and criminal behaviour in adulthood[35]. Parental substance misuse and witnessing or experiencing domestic violence may increase the risk of developing violent attitudes and behaviours in childhood and early adulthood[36]. Lack of good, positive relationships between parents and children, or positive maternal coping strategies, can increase the risk of suicide, especially among adolescents[37]. Furthermore, analysis of British Cohort Study 1970 (BCS70) data found that emotional wellbeing at age ten, including measures of emotional and behavioural problems and the belief people have in their own competence and their ability to achieve desired outcomes ('self-efficacy'), is strongly associated with wellbeing at age 16[38].

In the longer term, aspects such as childhood disadvantage, poor parenting and early behavioural or developmental problems can entrench self-destructive health behaviours, lead to poorer physical and mental health in adulthood, as well as increasing the risk of premature mortality. For example, failure to develop positive attachment relationships in childhood often leads to relationship problems in adulthood[23]. A low level of parental warmth and supervision when children are aged 16 increases the risk they will drink excessively at age 34[32]. Exposure to a greater number of adverse childhood experiences (abuse, neglect, parental drug misuse) and lower levels of cognitive development at age seven are also found to be associated with increased risk of chronic illnesses, such as diabetes, heart disease or stroke, in adulthood[39,40]. British research using three birth cohorts found that those cohort members reporting poor relationships with their parents in childhood and adolescence were more likely to report three or more health problems in adulthood[41,42]. Finally, exposure to adverse childhood experiences, problem behaviour in childhood and parental disinterest in their child's education when the child was aged 11, also increase the relative risk of premature death[43,44].

It is important to note the complexity of the issues and the limitations of the research. In particular, the literature suggests that focusing solely on factors associated with early years development (e.g. family adversity, maternal health) or parenting styles (e.g. warmth, conflict, rules) in isolation from each other would provide limited insights into childhood and early years' experiences. For example, even after controlling for parenting skills, material disadvantage still plays a role in determining early years outcomes[45,19]. On the other hand, poverty, by itself, does not necessarily lead to poor parenting[46,47]. This suggests that any

study examining differences in early years' experiences should take as broad a view as possible on the many potential influences on early years/childhood.

Furthermore, the evidence base is heavily reliant on studies based on self-reported information about highly sensitive topics (e.g. parents rating how good they are at child rearing), sometimes compounded by a retrospective method limited by memory (e.g. the Adverse Childhood Experiences (ACE) study), which should be borne in mind when interpreting any findings.

1.1.3 What is already known about this issue?

This section briefly reviews previously published research comparing childhood and early years' experiences in Scotland, England and the three city regions. No publications were identified which compared comprehensive measures of early years'/childhood experiences in Glasgow and the Clyde Valley to the regions of Merseyside and Greater Manchester. There is, however, some literature comparing some aspects of early years' and childhood experiences in Scotland and England, which can inform our understanding.

Child poverty, children in workless families and low income households with children

Most data do not suggest that Scotland is disadvantaged compared to England using these measures. In the eight years to 2008/09, Scotland had a lower percentage of children living in low income households than England[48]. Since the late 1990s, the percentage of Scottish children living in workless households has either been similar to, or lower than the level for England[49]. Analysis of the most recently available data suggests the percentage of children living in workless or benefit-dependent households in Glasgow currently compares favourably to Manchester and Liverpool, and its relative position using these indicators may have improved at a faster pace than the English cities in the last decade or so[d].

Domestic abuse

To the authors' knowledge, no direct comparisons of domestic abuse between Scotland and England have been published. It is not possible to compare police-recorded crime data on domestic abuse across the countries of the UK due to differences in the way statistics are compiled between countries. Survey based data are available from the British Crime Survey (which, despite its name, only covers England and Wales) and the Scottish Crime and Justice Survey (covering Scottish adults). While comparisons are not straightforward, given differences in topics covered, age bands and questions asked in the two surveys[50], they are possible, and some are presented later in this report (pages 46-48).

Family disruption

The most recent (2010) Health Behaviour in School-Aged Children (HBSC) surveys suggest the proportion of 11-15 year olds living with both parents is very similar in Scotland and England: 66% and 67% respectively[51,52]. (This is different from the 2006 surveys, which found children in Scotland more likely to live in non-intact families)[53]. There are also few differences at the level of relevant regions and cities. Marriage rates among 25-64 year olds are slightly lower and the concentration of lone parent households slightly higher in Merseyside compared to West Central Scotland[54]. The percentage of lone parent households is similar in the three cities of Liverpool, Manchester and Glasgow[14].

[d] NHS Health Scotland analysis of Department of Work and Pensions (DWP) 5% benefits data and Labour Force Household Survey Datasets.

Estimates of the prevalence of kinship care (where other family members e.g. grandparents, aunts or uncles, are caring for children because their parents are unable to do so) are similar for Scotland and England. At a city-level, kinship care levels are highest in Manchester (3.1%) with percentages for Glasgow (2.4%) and Liverpool (2.2%) similar to each other[55].

Maternal depression

Evidence in this area is limited. The four rounds of the Millennium Cohort Study (MCS) (2001-03 to 2008) found that mothers in Scotland were more likely to be treated for depression/anxiety than in England. In contrast, the same sources found that reported levels of postnatal depression and malaise did not vary significantly by country[56-59].

Poor gender relations

Some commentators have argued that West Central Scotland, and especially Glasgow, has been characterised historically by very poor gender relations, evidenced by macho male self-image, domestic violence (both physical and verbal, and often fuelled by alcohol) and self-destructive health behaviours[12,60]. It remains unclear, however, how distinctive Scotland and West Central Scotland were or are in this respect. Hughes (2002) discusses the concept of 'companionable marriage', where men and women shared childcare, household chores and leisure more evenly, which emerged in Britain in the inter-war period[61]. Hughes found that the 'companionable marriage' failed to take root among working class communities on Clydeside but notes that this was also the case in a number of other British industrial cities, including Liverpool, Manchester and London. In addition, more recent analysis suggests that Scottish and English attitudes towards the male breadwinner role are very similar[62,63].

Parental substance misuse

In 2003, the Advisory Council on the Misuse of Drugs (ACMD) estimated prevalence of parental substance misuse to be higher in Scotland than England and Wales (4-6% compared with 2-3%)[64]. This is partly reinforced by some evidence from the MCS which found levels of reported drug use to be higher among Scottish parents compared to other UK countries[58].

Parenting measures

There are a large number of studies which have considered parenting in the UK, Britain or Scotland (and in some cases, the West of Scotland) in isolation. However, cross-national comparisons of parenting are limited at present to the MCS, with indirect evidence of parenting styles from previous cohort studies having tended to focus on Britain as a whole. In the MCS, many measures of parenting (including self-rated parenting competence, regularity of bedtimes and mealtimes, use of smacking to discipline the child, playing with the child and reading to the child) showed little difference between Scotland and England[57]. However, the percentage of mothers reporting that they disciplined their children daily was higher in Scotland than in England[65]. Direct measures of warmth and conflict, using the Pianta[e] scale, are available in the MCS (Round 2) and Growing Up in Scotland (GUS) (Round 5) surveys, but cross-national comparisons have not been published.

[e] The Pianta child-parent relationship scale consists of 14 questions: seven on parent-child warmth and seven capturing aspects of parent-child conflict. For more information see Appendix A.

Behavioural problems

Most, but not all, studies suggest that the prevalence of childhood behavioural problems (which are highly correlated with low parenting skills) is no worse in Scotland than England[56-59,66]. Initial analysis of the MCS suggested that children in Scotland had lower difficulty scores (indicating fewer behavioural problems) than their peers in the rest of the UK, though further work by Dex (2010) found that this could be attributed to a combination of the gender of the child and characteristics of the MCS families (such as family type, parental income, education, occupation and employment) *"rather than due to being a child in Scotland per se"*[67]. Previous research comparing the mental health of children in Britain found no evidence that mental health disorders among children in Scotland were higher than those in England[68]. On the other hand, Pedace (2009) reported that children in Scotland were more likely to have behavioural problems at school than those in England and Wales, though the differences were small[66].

Development of violent attitudes

Cross-national comparisons suggest that fighting among adolescents is higher among Scottish boys than those in England, which might be indicative of distinctive attitudes to violence[69]. There is some historical evidence for this from an older study by Gillies (1976) examining homicides in the West of Scotland[70]. This study found that those committing homicide in Scotland differed from their counterparts in England and Wales in important respects. These included a higher proportion of perpetrators classified as 'mentally normal' and fewer murders that were followed by suicide, which may also indicate differing attitudes to violence. However, it should be noted that this study is more than 35 years old and may not reflect the contemporary situation.

Early adult substance misuse

Most evidence suggests alcohol consumption and drug use in early adulthood in Scotland is similar to, or slightly lower than, England. Comparisons of alcohol use among 8-15 year olds (based on 2003 data) found that Scottish children were less likely to have tried an alcoholic drink or to have drunk alcohol in the previous week, compared to those in England[71]. Surveys of young people (aged 11-15) in 2001/02 found that for this age group levels of drunkenness and drug use in Scotland were similar to or lower than those in England[68,72]. More recent work confirms this. For example, in 2010, 47% of girls in this age group in Scotland and 45% in England reported they had been drunk at least twice in their lives[52,53]; in 2008, 29% of 15 year olds in England and 20% of 15 year olds in Scotland reported using illicit drugs in the previous year[73,74]. A similar pattern can be seen for reported drug use among 16-24 year olds, which was almost identical in both countries in 2008-09[73,74]. However, this picture is partly contradicted by a 2006 study that found young people reporting use of cannabis in the last 30 days, or being drunk more than once, was higher in Scotland than England[53].

Poor relationships with parents

Although the 2006 HBSC study found that Scottish children aged 11-15 found it harder to talk to their father about 'things that really bothered them' than their peers in England[53], differences were not seen in either the 2001/02 or the 2010 surveys. More general indicators can be discerned from the 2008 MCS, which asked seven year olds about a number of aspects of 'family life'. This found no cross-national differences in the percentage of children reporting that they felt sad, worried or quiet all of the time, with the percentage of Scottish children reporting they felt happy all the time higher than the figure for England. In addition, the percentage who reported that they had 'fun with their family at the weekend' was similar in Scotland and England[59].

1.1.4 Summary

There is considerable policy interest in the UK, Scotland and Glasgow in the role of early years in promoting and protecting health. Some commentators have also suggested that differences in early years' experiences can provide insights into the excess mortality seen in Scotland and Glasgow compared to other parts of the UK. A large body of research supports the view that childhood experiences (especially family context, adverse events such as abuse and neglect, health of the mother and parenting practices) are associated with health outcomes and determinants throughout the life-course. However, in general the current evidence base does not suggest early years' and childhood experiences are *consistently* worse in Scotland than England. The two exceptions to this rule are (potentially) parental substance misuse and development of violent attitudes, though in both cases the evidence is limited. Across a range of other relevant indicators of early years development, cross-national studies have either found no differences or, in some cases, Scotland faring rather 'better' than England. There are also a number of other important early years topics, notably parental warmth, parental conflict and domestic violence, where data are available but cross-national comparisons have not yet been made in-depth, nor have comparisons been made sub-nationally. This report aims to improve the knowledge base on this topic.

1.2 Aims and research questions

The aim of the present study was to compare childhood and early years' experiences in Scotland and England, and in the three cities of Glasgow, Liverpool and Manchester. Due to data limitations (especially small survey sample sizes at a sub-regional level), the city regions of Glasgow and the Clyde Valley, Merseyside and Greater Manchester were used as substitutes for the cities[f]. We also wanted to compare (as far as possible) not only contemporary, but also historical, childhood and early years' experiences in these geographies, to see if differences were apparent in previous decades.

The research questions to be answered were therefore:

1. Are contemporary early years' and childhood experiences different in Scotland compared with England?
2. Were early years' and childhood experiences different in Scotland compared with England in the 1950s-1980s?
3. Are contemporary early years' and childhood experiences different in Glasgow and the Clyde Valley compared with Merseyside and Greater Manchester?
4. Were early years' and childhood experiences different in Glasgow and the Clyde Valley compared with Merseyside and Greater Manchester the 1950s-1980s?

In the sections that follow, the methods used to answer these questions are described in detail.

[f] These areas are defined, and shown as maps in Figures 1 and 2.

1.3 Methods

1.3.1 Defining the issue and indicator selection

Early years and childhood can be defined in various ways. Consistent with the UN Convention on the Rights on the Child[75] and statutory guidance on child protection in all four nations of the UK, this report defines a child as anyone who has not yet reached their 18th birthday. Within this broad timeframe, it also recognises the special importance of 'early years development', defined by the Scottish Government as birth to eight years[76].

An inclusive approach was used to identify appropriate measures and indicators associated with family breakdown, acrimony between partners or dysfunctional parenting. The relevant literature was reviewed, with a particular focus on publications from the PREview[g], Growing Up in Scotland[h] and Adverse Childhood Experiences[i] studies.

Existing indicator frameworks designed to inform knowledge of child and early years health, such as the NHS Health Scotland children and young people's mental health indicator set and the Scottish Government Early Years Indicators Group, were also considered. Advice was also sought from professionals with expertise in the area (see acknowledgements section). In parallel, a scoping exercise of the four British Cohort Studies and other large routine surveys was also carried out to identify appropriate items and scales that could be used to capture relevant concepts. This was supplemented by a brief review of available administrative data (e.g. vital statistics on age of mothers and infant birth-weight, benefit statistics, social care statistics on children). Note that the term 'Scottish mothers' is used throughout and is assumed to be interchangeable with the term 'mothers in Scotland'.

This process produced the list of key themes and relevant indicators shown in Table 1. Note that while the themes and indicators identified were based on the expertise assembled above, the choice about how these were grouped was made by the authors.

[g] The PREview project, managed by the Child and Maternal Health Observatory, was produced to identify factors in infancy and age three associated with child outcomes at age five. See: http://www.chimat.org.uk/preview/evidence

[h] Growing Up in Scotland (GUS) is a longitudinal study of 8,000 Scottish children. Begun in 2005, GUS will collect data on the characteristics, circumstances and experiences of these children and their families between their early years and adolescence. More information can be found here: http://www.growingupinscotland.org.uk/

[i] The Adverse Childhood Experiences (ACE) study collects data about adults' current health status, disease and health behaviours as well as retrospective information about their experiences of abuse, neglect or household dysfunction before the age of 18. See: http://www.cdc.gov/ace/index.htm

Table 1. Key themes, domains and indicators used to examine early years' and childhood experiences.

Theme	Domain	Indicator
Social and material circumstances	Maternal education	Mother's highest level of qualifications
		Age mother left school
	Age of mother	Mothers aged <20 years at birth of first child
	Low birth-weight	Children weighing less than 2,500g at birth
	Housing	Children living in rented homes
	Income and poverty	Children living in workless households
		Children living in benefit dependent households
		Children living in poverty
	Ethnicity	Children with a Pakistani or Bangladeshi ethnic background
	Family structure	Children in lone parent households
		Children in cohabiting households
Dysfunctional households	Domestic abuse	Partner ever used force
		Partner ever kicked, bit, hit or threw something
		Partner ever choked/tried to strangle
		Partner ever prevented fair share of money
		Partner ever prevented seeing friends/relatives
		Partner ever emotionally abused
		Partner ever threatened to hurt
		Partner ever threatened to kill
	Parental discord	Mother's quality of relationship with partner
		Role of father in managing child
		Father's help with child and home
	Parental substance misuse	Illicit drug use
		Problematic alcohol use
	Parental imprisonment	Male imprisonment rates
	Child neglect or abuse	Looked after children

Theme	Domain	Indicator
Maternal and child health	Maternal physical health	Smoking during pregnancy
		Mother's self-reported general health
		Pre-pregnancy maternal obesity
	Maternal mental health	Mother's psychological distress
		Mother's malaise
		Mother's neuroticism
	Maternal powerlessness	Mother's self-efficacy
	Child health	Children with a limiting long-term illness
Parenting	Conflict	Parent-child conflict
		Disagreement about parenting
	Learning and development	Reading to child
		Breastfeeding
		Childcare
	Harsh discipline	Smacking children
		Shouting at children
	Rules	Regular mealtimes
		Regular bedtimes
	Warmth and affection	Low parent-child warmth
		Physical affection between parent and child
		Maternal postnatal attachment
		Fathers taking their children on outings
	Childhood behavioural problems	Strengths and difficulties questionnaire
		Rutter behaviour scale
		Conduct disorders

The rationale for the choice of indicators and precise definitions of how they are measured are discussed in more detail in the body of the report. For now it is worth highlighting some of the main limitations of this approach. First, many of the indicators are based on self-reported responses provided by parents. The sensitive nature of many of the topics covered (e.g. partner abuse, quality of family relationships) means that survey results on these should be interpreted with care. In addition, parents' responses may not necessarily tally with children's lived experiences. This was partly compensated for by using multiple sources to verify results. Second, historical studies do not allow the same degree of direct investigation of key concepts (e.g. warmth and attachment, parental drug misuse) compared with more recent surveys. Proxy measures, in particular childhood behavioural problems – which are strongly associated with a range of parenting characteristics and practices – were used as a second best solution to this problem.

1.3.2 Main data sources

The main surveys used were the four British Cohort Studies: the MRC National Survey of Health and Development (NSHD58), the National Child Development Study (NCDS), the British Birth Cohort 1970 (BCS70) and the Millennium Cohort Study (MCS). These studies have collected longitudinal data on individuals born in Britain[j] in 1946, 1958, 1970 and 2000 respectively, and at subsequent regular intervals over time. Advantages of these sources include the breadth of information collected (including many indicators relevant to the research question); the fact they include data on cohort members from very early childhood to adolescence as well as in adulthood; their Britain-wide coverage, allowing comparisons between English and Scottish geographies; and (for the NCDS, BCS70 and, in a more limited way, the MCS and NSHD) representative sub-regional samples.

Although not pursued in this report – which merely describes and compares early years' experiences between geographies – the longitudinal nature of these surveys offers the potential to explore causal links between childhood factors and adult morbidity and mortality. A second phase of research will use this approach to model the association between childhood and early years' experiences and health outcomes in Scotland and GCV compared to England, Merseyside and Greater Manchester. Disadvantages of cohort studies include attrition between survey rounds (i.e. 'drop-out' of cohort members over time, especially among more disadvantaged groups) making them less representative over time; changes in the type of information collected, not only between different cohort studies but also between 'sweeps' of the same studies; and lack of representative samples for any of the regions in the NSHD and for Merseyside in the MCS.

Other large, routine surveys and administrative data were used to supplement these analyses. The British Crime Survey and Scottish Crime and Justice Survey were used to provide more detail on the extent and nature of partner abuse in households with children in Scotland and England and the three regions. Growing Up in Scotland was used to validate findings across a range of topics, including Parental Warmth and Conflict (as measured by the Pianta scales) in families with very young children. Labour Force Survey data were employed to track changes in workless households in the countries, regions and cities over time. Administrative data on the age of the mother at birth, maternal smoking, low birth-weight and breastfeeding – all important aspects of early years development – was also obtained for the relevant geographies. A full list of the sources used and definitions is shown in Appendix D.

[j] The first three studies covered England, Scotland and Wales only. The MCS also includes data on children born in Northern Ireland.

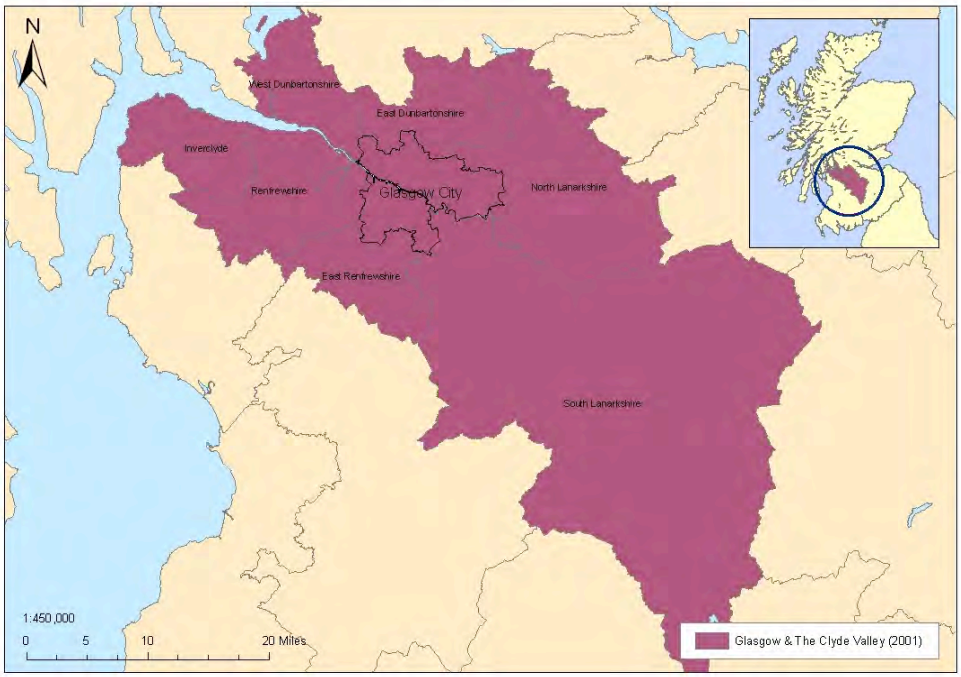
1.3.3 Geographies

In this report, comparisons are made at three geographical levels: national, regional and (where possible) city-level. National comparisons were made between Scotland and England. The regions selected for comparison were GCV, Greater Manchester and Merseyside. These were chosen because of their relevance to the Glasgow Centre for Population Health's Glasgow, Liverpool and Manchester work programme and the overarching research question. The three regions include the relevant post-industrial cities (Glasgow, Liverpool and Manchester). Early years' experiences are therefore likely to be similar in the cities and immediate wider urban areas. Comparison of survey data at city level is difficult because of small sample sizes. Using regions rather than cities as the main sub-national geography allows for larger, more representative samples, improving the robustness of any findings.

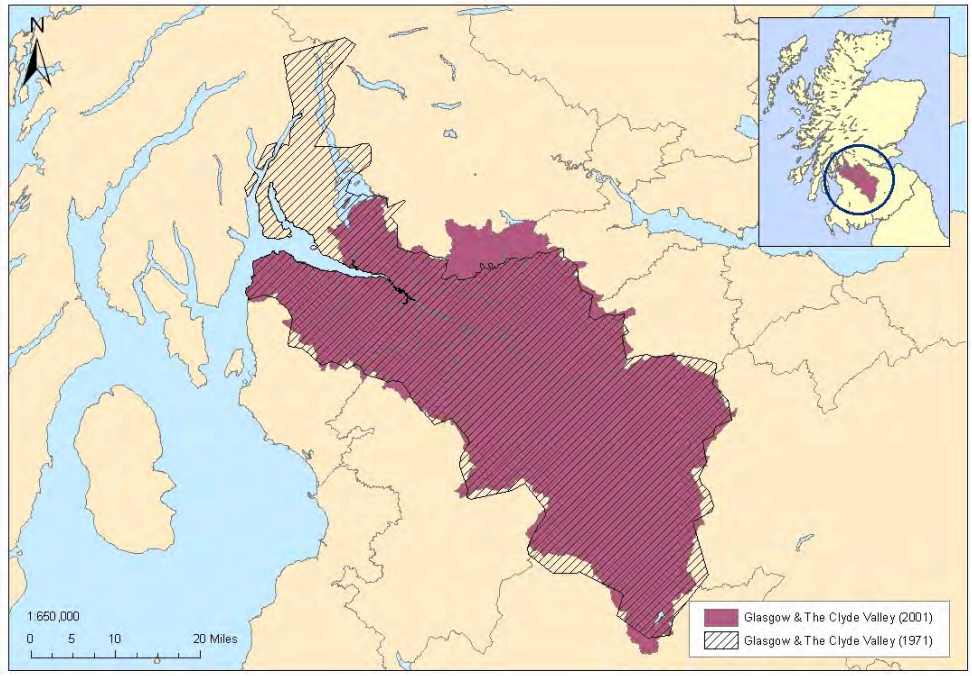
Regional samples were created by combining data from the 'best-fit' administrative boundaries. While an attempt was made to maintain consistent boundaries over time, changes to local government mean there are some differences in the definitions of the regional boundaries used in different years of analyses of the survey data. The present day boundaries (based on local authority areas, and used in analyses from 2001 onwards) are shown in Figures 1a (GCV) and 1b (Merseyside and Greater Manchester); the older boundaries (used in analyses of data prior to 2000) are additionally shown in Figures 2a and 2b. The older definitions cover larger geographical areas and include a number of small rural communities: however, given that few survey respondents were recruited from these areas, this is unlikely to have a large effect on the results.

Figure 1. Boundaries of Glasgow and Clyde Valley[k].

1a. Present-day boundary.



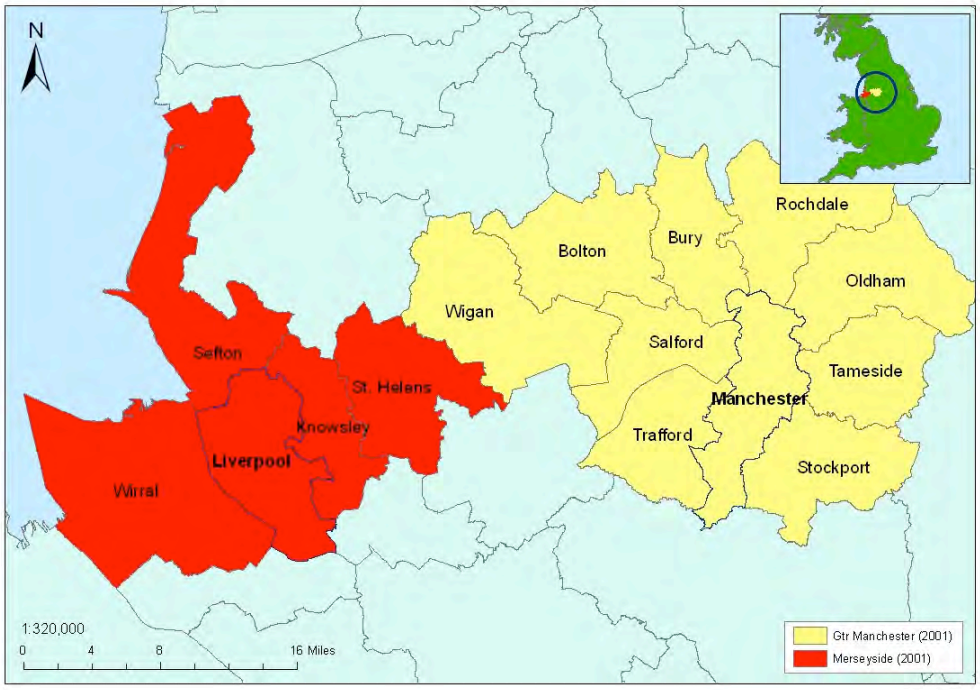
1b. Present-day and historical boundaries.



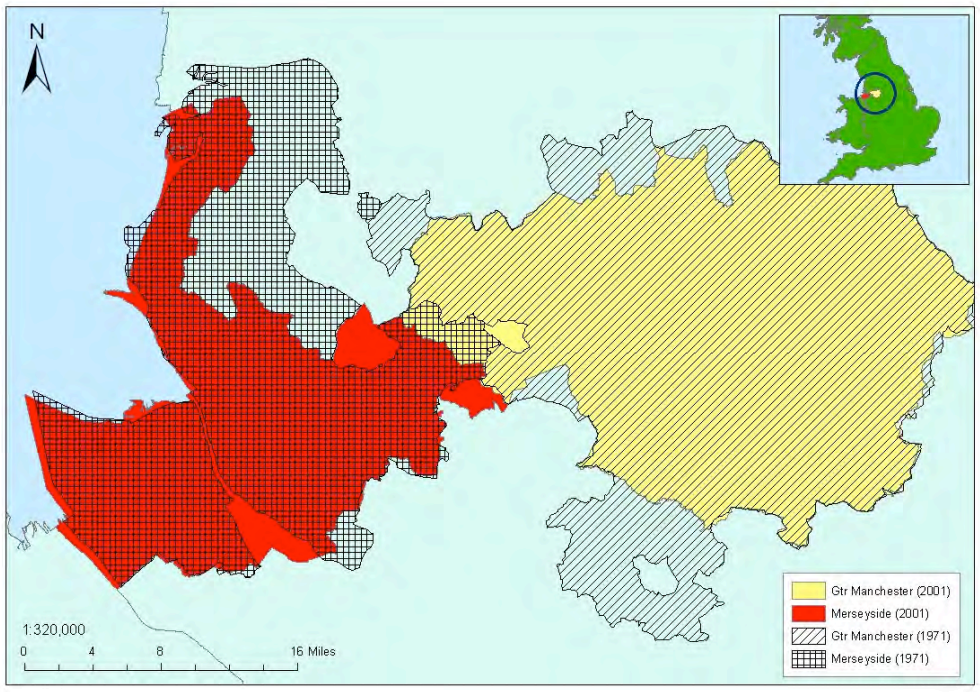
[k] This work is based on data provided through EDINA UKBORDERS with the support of the ESRC and JISC and uses boundary material which is copyright of the Crown.

Figure 2. Boundaries of Merseyside and Greater Manchester[I].

2a. Present-day boundaries.



2b. Present-day and historical boundaries.



[I] This work is based on data provided through EDINA UKBORDERS with the support of the ESRC and JISC and uses boundary material which is copyright of the Crown.

1.3.4 Sample sizes and representativeness

Since the main data sources are surveys, the reliability of any findings should be judged in part on sample sizes (the numbers of people interviewed) and representativeness (how accurately the samples reflect the true population of an area). Table 2 below provides some basic descriptions of the sample sizes for relevant geographies when children in the studies were aged between three and seven years old. Detailed sample sizes for each measure are reported as appropriate throughout.

Table 2. Main studies used and sample sizes for relevant geographies.

Study / Area	NSHD (1946)	NCDS (1958)	BCS70 (1970)	MCS (2000)
Scotland	580	1,640	1,166	1,797
England	4,037	12,945	11,157	9,824
Merseyside	*	399	420	*
Greater Manchester	*	402	450	645
Glasgow and the Clyde Valley	*	701	377	598

*Note: Birth year of study children shown in parenthesis after study title. Sample sizes shown are maximum when child aged four (NSHD), seven (NCDS), five (BCS70) and three (MCS). * Not used due to small sample sizes.*

Basic checks were also carried out to assess how representative the samples were at national and (for the NCDS, BCS70 and MCS) sub-national level (see Appendix C). The NCDS and BCS70 were found to be fairly representative of the populations of these geographies by social class (as reported in the 1971 and 1981 Censuses). The MCS2000 was also representative at a national level and, once the weighting was applied, at a sub-regional level for Greater Manchester and GCV. There is also a suggestion that the Scottish MCS sample was marginally more advantaged than the 'real' population[67]. To ensure findings were reliable, where possible comparisons were also made between the same measures taken from the GUS survey and those from the MCS: the report details where the findings from these sources differ. (A very small and unrepresentative sample for Merseyside in MCS meant it had to be excluded from contemporary analyses. This is an important limitation of the contemporary findings on child and early years' experiences presented here.)

1.3.5 Approach taken and limitations

This report takes a descriptive approach. Sweeps from the 1946, 1958, 1970 and millennium cohort studies are treated as cross-sectional data. That is, they measure data from respondents based on their place of residence at time of interview rather than birth and ignore migration flows[m]. In terms of comparisons of proportions, 95% confidence intervals and Chi-squared significant tests were used to identify and confirm differences that were unlikely to have arisen from sampling error alone. As sample sizes decrease in size, however, larger differences are required for any observed difference to be statistically significant. This is more challenging for regional than for national comparisons. More generally, even where differences are significantly different, they may not be substantial in magnitude. Even where differences are statistically significant and large, readers should also consider how important they are to the issue – this is discussed as appropriate throughout. Finally, it should be noted that a second phase of work will go beyond the descriptive approach of this report. As outlined above, this will use multi-level modelling to analyse associations between childhood and early years' experiences and health outcomes, for Scotland and GCV compared to the English geographies.

[m] The exception to this is the 1946 MRC National Survey of Health and Development (NSHD) study, with less geographical data readily available – this is acknowledged in the report.

2.0 Results

2.1 Social and material circumstances

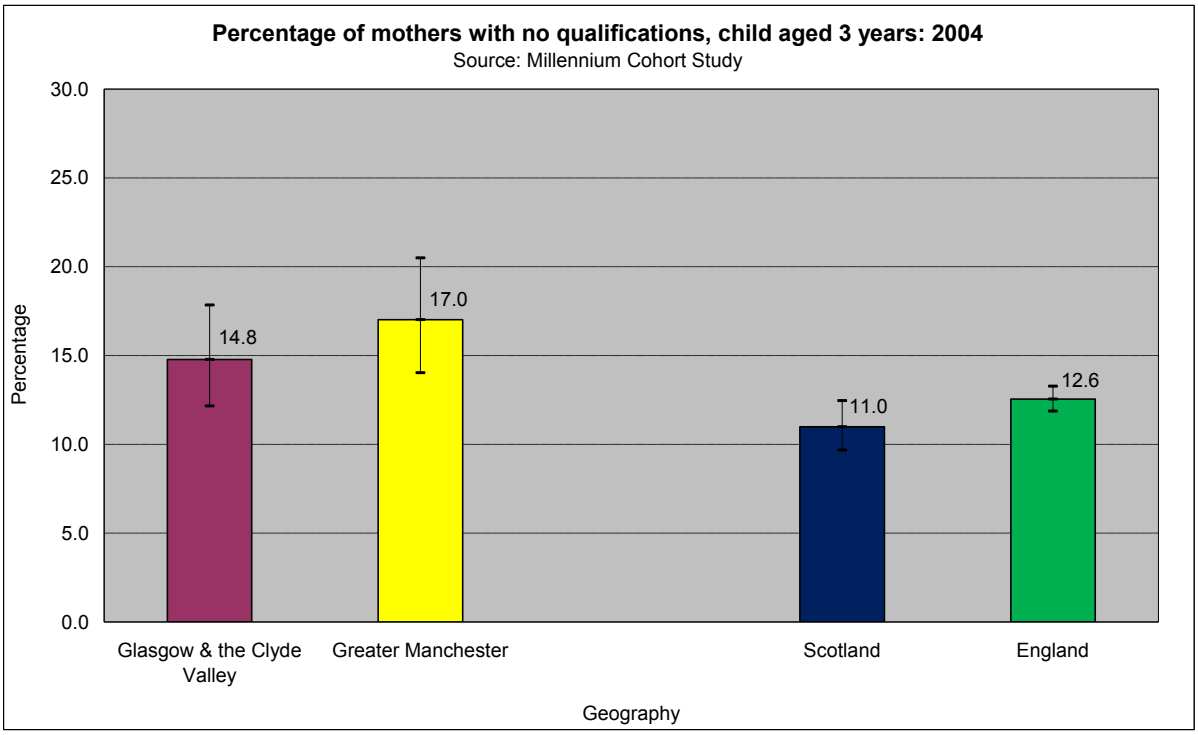
Both economic and social factors are strongly associated with the health, behaviour and learning and development of children in their early years. At birth, the mother's educational attainment, housing tenure and deprivation, along with the mother's age, are good predictors of children's health, risk of behavioural problems and cognitive development at age five[77]. Lack of money (regardless of the precise measure used) also appears to be independently associated with worse child health outcomes[18,78]. There is also good evidence that social and material circumstances interact, so for instance, mothers growing up in poverty will be at greater risk of low educational attainment and of giving birth at a young age, with implications for the health of subsequent generations[79].

This section considers if contemporary early years social and material circumstances in Scotland and Glasgow and the Clyde Valley (GCV) are worse than other parts of the UK. It also uses historical data to consider whether Scottish levels of social and material hardship were historically higher compared to England, Merseyside and Greater Manchester.

2.1.1 Maternal education

Maternal education appears to be closely associated with early years prospects: for example, PREview found that the children of mothers with no qualifications were at greater risk of both behaviour problems and difficulties with learning and development at age five[80]. Contemporary data from the Millennium Cohort Study (MCS) shows the percentage of mothers with no qualifications when cohort children were three years old (Figure 3). The figures for Scotland (11%) and England (12.6%) were similar and not statistically significantly different. Regional comparisons show that the percentage of mothers without qualifications did not vary significantly between GCV (14.8%) and Greater Manchester (17.0%).

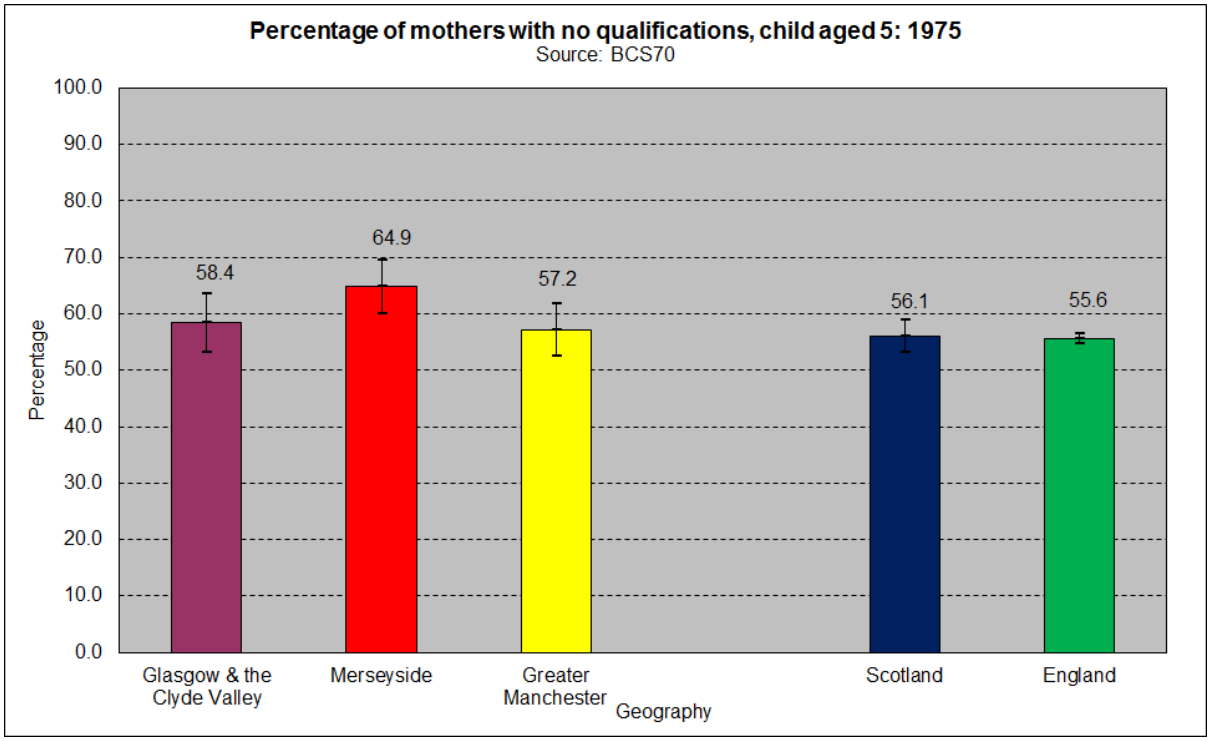
Figure 3.



Sample sizes: GCV=586; Greater Manchester= 574; Scotland=1,792; England=9,154.

Historical data are also available for the mothers of children born in the 1940s, 1950s and 1970s. In 1975, the percentage of mothers with no qualifications did not vary significantly between Scotland (56.1%) and England (55.6%). At a regional level, the observed figures were similar in GCV (58.4%) and Greater Manchester (57.2%) but rather higher in Merseyside (64.9%) though the differences were not statistically significant (Figure 4).

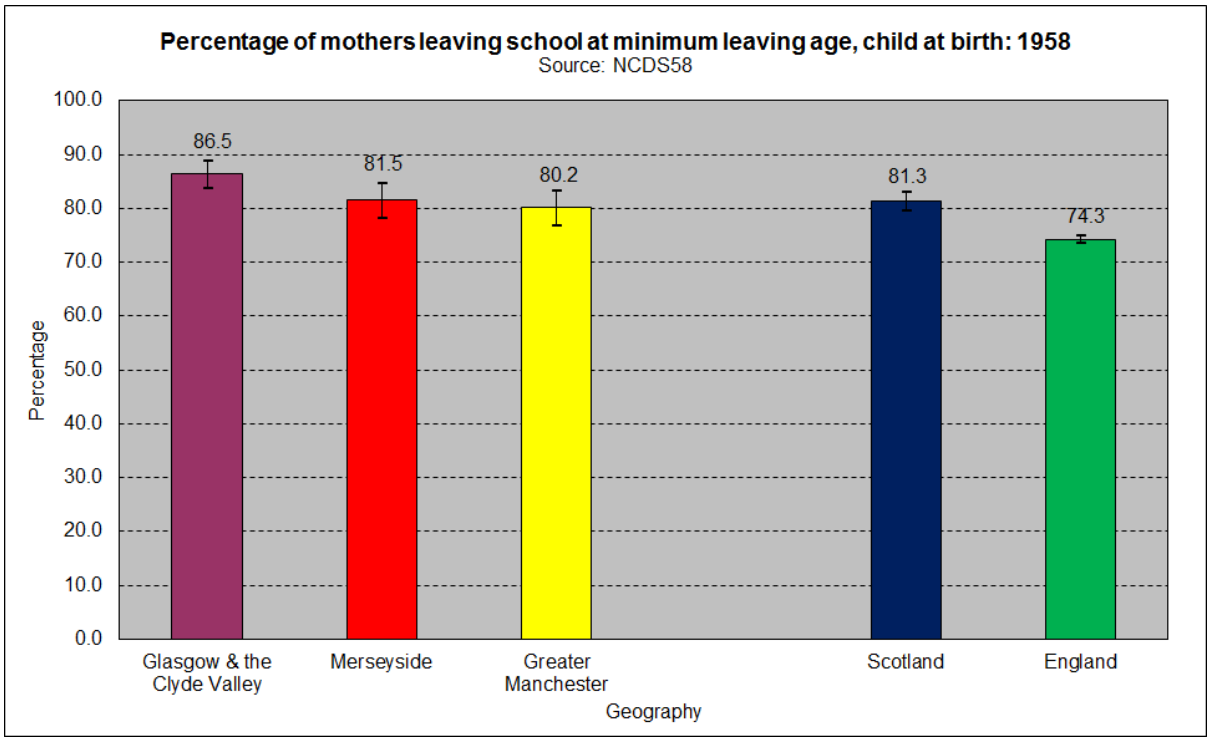
Figure 4.



Sample sizes: GCV=356; Merseyside=396; Greater Manchester=423; Scotland=1,104; England=10,679.

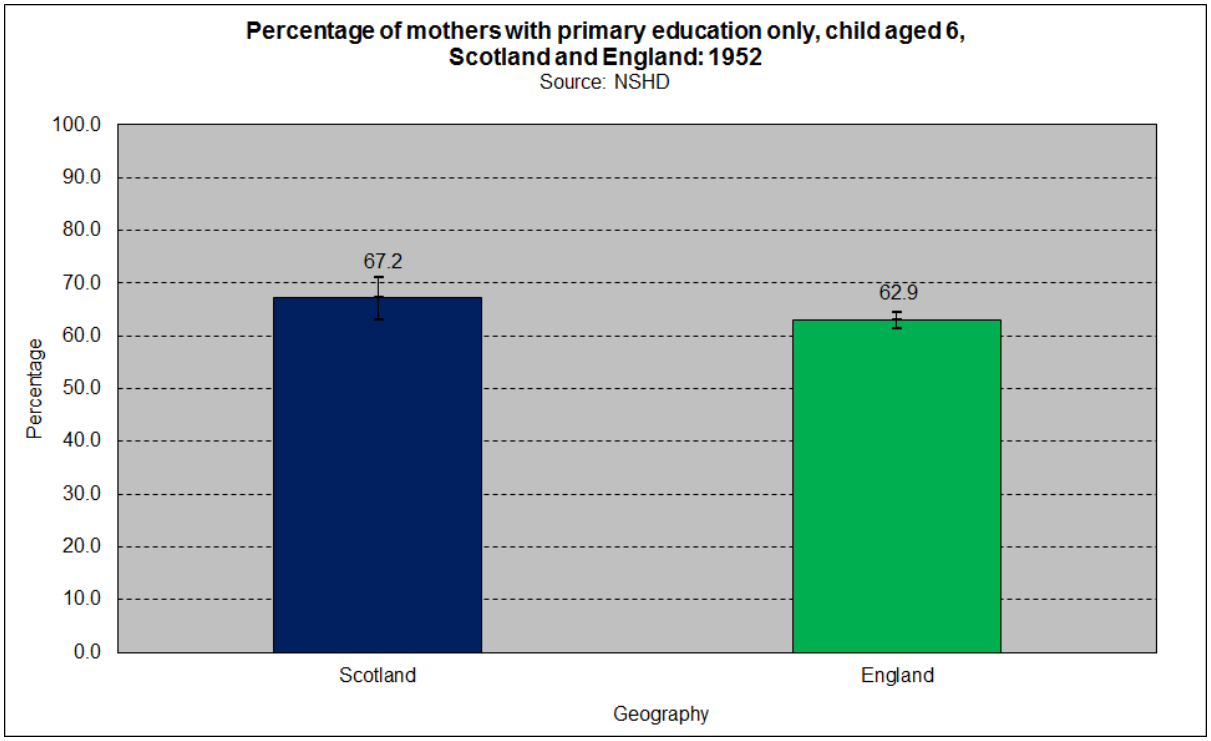
For earlier periods, the indicators used are broader. Figure 5 shows the percentage of mothers of the 1958 birth cohort who left school at minimum leaving age. Both at a national and regional level, the figures were significantly higher in the Scottish areas. Finally, the MRC National Survey of Health and Development (NSHD) provides national comparisons of the maternal educational attainment of children born in 1946 (Figure 4). In 1952, when these children were aged six, the percentage of mothers with primary education only was significantly higher in Scotland (67.2%) than in England (62.9%).

Figure 5.



Sample sizes: GCV=672; Merseyside=547; Greater Manchester=586; Scotland=1,980; England=14,461.

Figure 6.

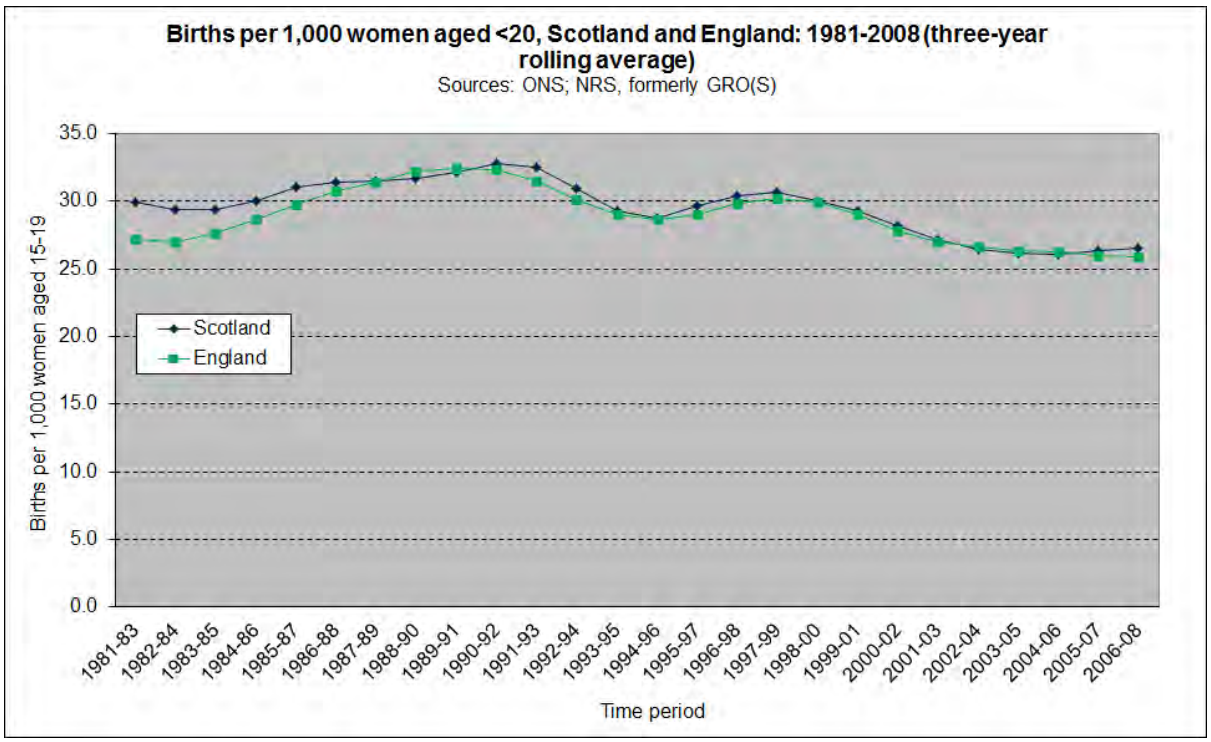


Sample sizes: Scotland=524; England=3,579.

2.1.2 Age of mother

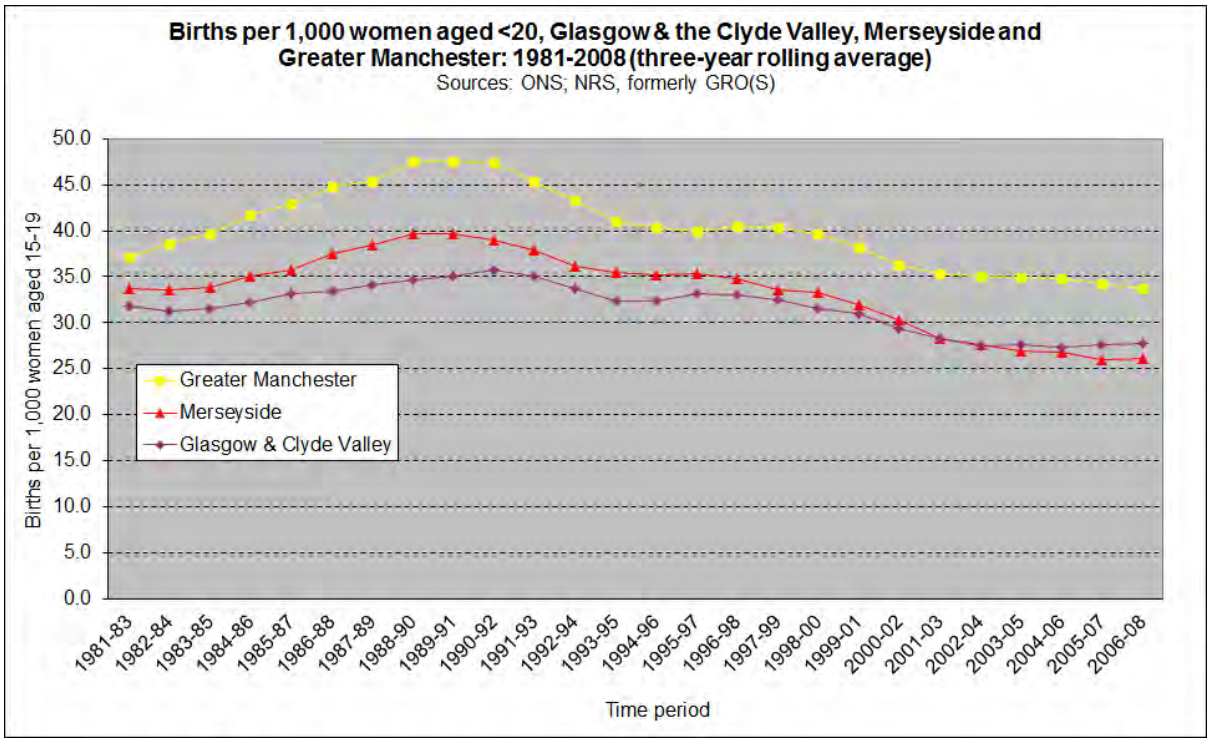
Children of young mothers (aged <20 at first birth) are more likely to have difficulties with learning and development, exhibit health problems and have behavioural problems at age five[18]. The indicator used here to examine this issue is the number of live births to mothers under 20 per 1,000 women aged 15-19. In 2006-08, the Scottish figure (26.5 per 1,000) was similar to that recorded for England (25.9 per 1,000). Although numbers were slightly higher in Scotland than England in the early to mid-1980s, they have been almost identical in both countries since then (Figure 7).

Figure 7.



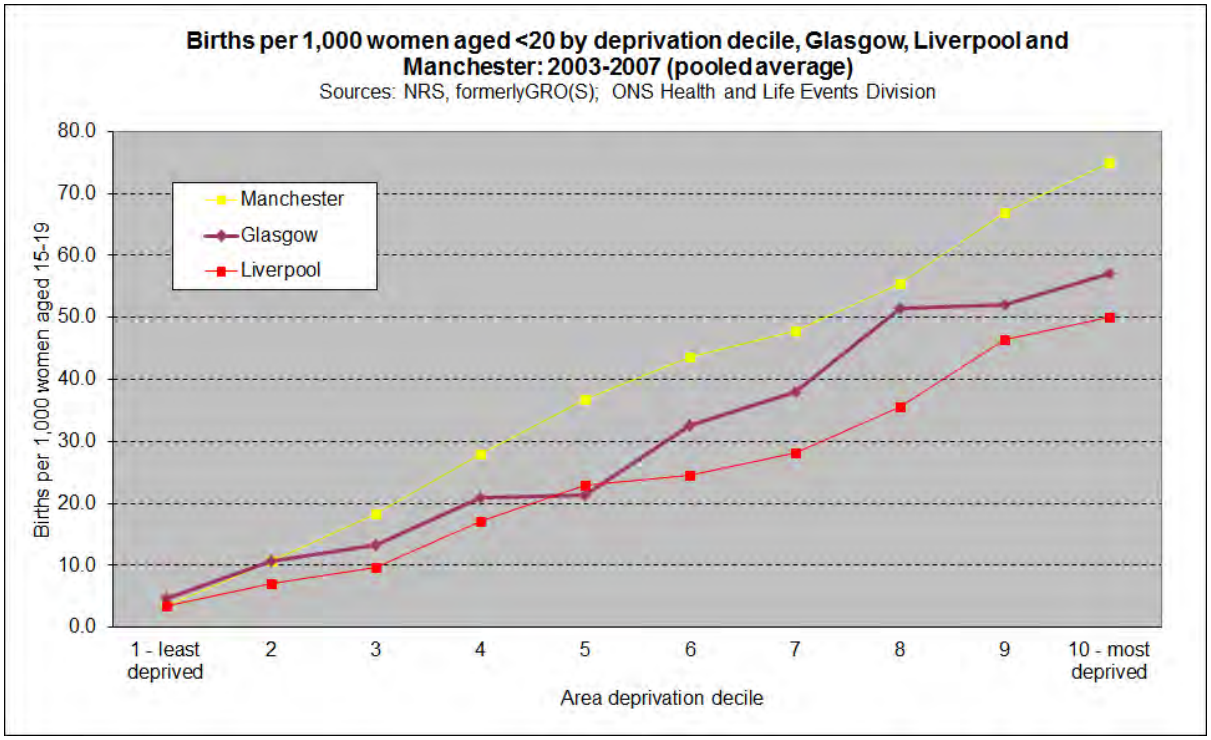
At a regional level, the 2006-08 birth rate to young mothers was highest in Greater Manchester (33.7 per 1,000). Rates were similar in GCV (27.7 per 1,000) and Merseyside (26.1 per 1,000). Greater Manchester's birth rate to young mothers was consistently higher than the other two regions for the entire period shown. Rates in Merseyside were higher than the Scottish region in the 1980s and 1990s, but had fallen to similar levels by the mid 2000s (Figure 8a).

Figure 8a.



Although the focus of this report is, for reasons already explained, the 'city regions' of GCV, Merseyside and Greater Manchester, for this particular indicator, analyses *within* different parts of the *cities* of Glasgow, Liverpool and Manchester is possible. At the city level, the overall 'ranking' of the areas is similar to the regional results, with the highest figure in Manchester, followed by Glasgow and Liverpool. Figure 8b, however, shows these data broken down by a three-city deprivation index[14], with figures for the *least* deprived tenth of the population of each city (Decile 1) through to the *most* deprived tenth (Decile 10). This shows that the higher figure for Manchester is seen across virtually all areas of the city (deciles 3-10), but the gap is greatest when comparing across the most deprived parts of the cities. In turn, the figures for Glasgow are higher than in Liverpool principally in the five more deprived deciles.

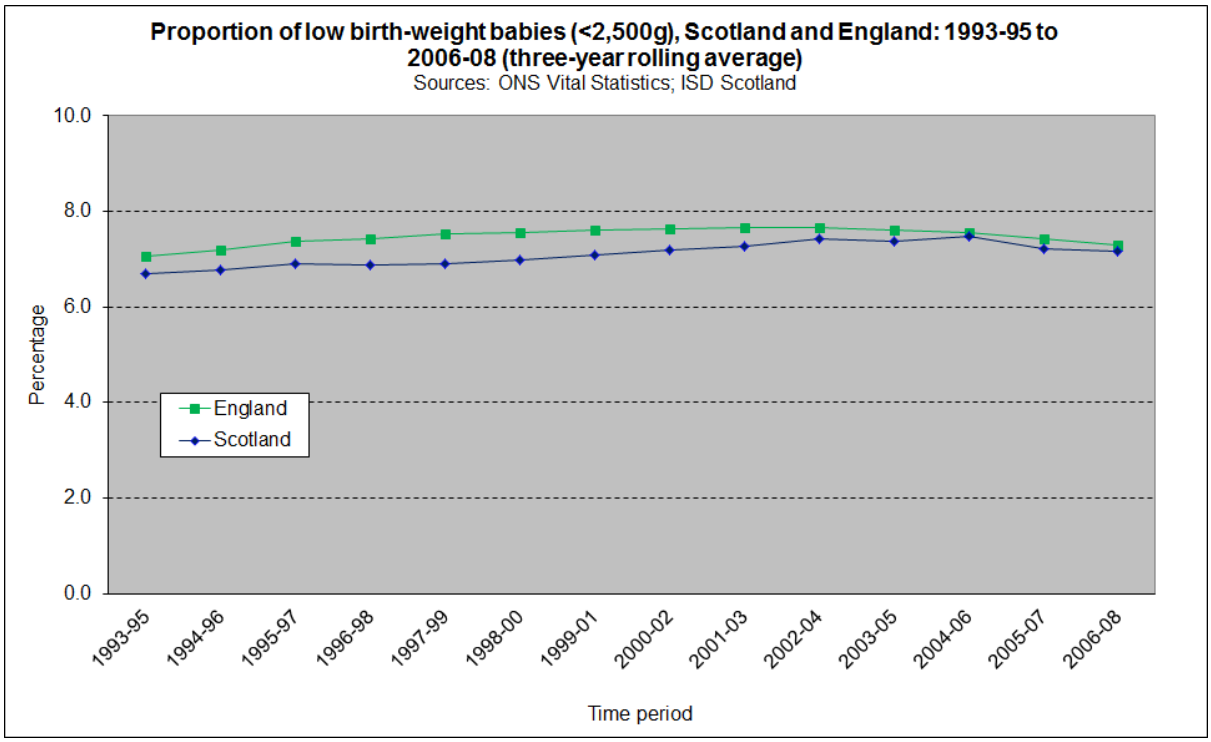
Figure 8b.



2.1.3 Low birth-weight

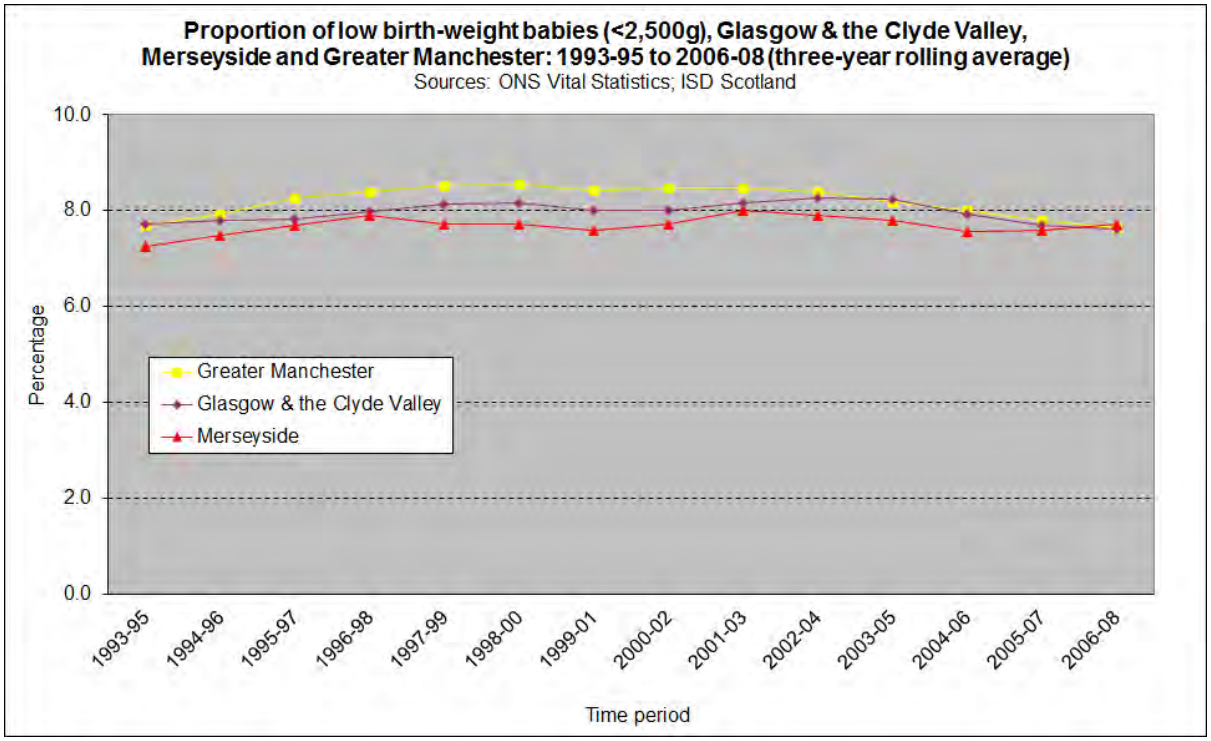
The PREview study found that once other factors were taken into account, low birth-weight had a modest, but still measurable, association with behavioural problems and worse child health. In 2006-08, the proportion of low birth-weight babies born in Scotland (7.2%) was almost identical to the figure for England (7.3%). Since the early 1990s, the proportion of Scottish babies born underweight has been either lower than or similar to the English figure (Figure 9).

Figure 9.



There was also little difference on this indicator at a regional level. In 2006-08, the proportion of low birth-weight births was almost identical in all three regions. Time series data suggests that between the early 1990s and mid-2000s, the proportion of babies born underweight may have been highest in Greater Manchester and lowest in Merseyside, but the regional variation in numbers was very small (Figure 10).

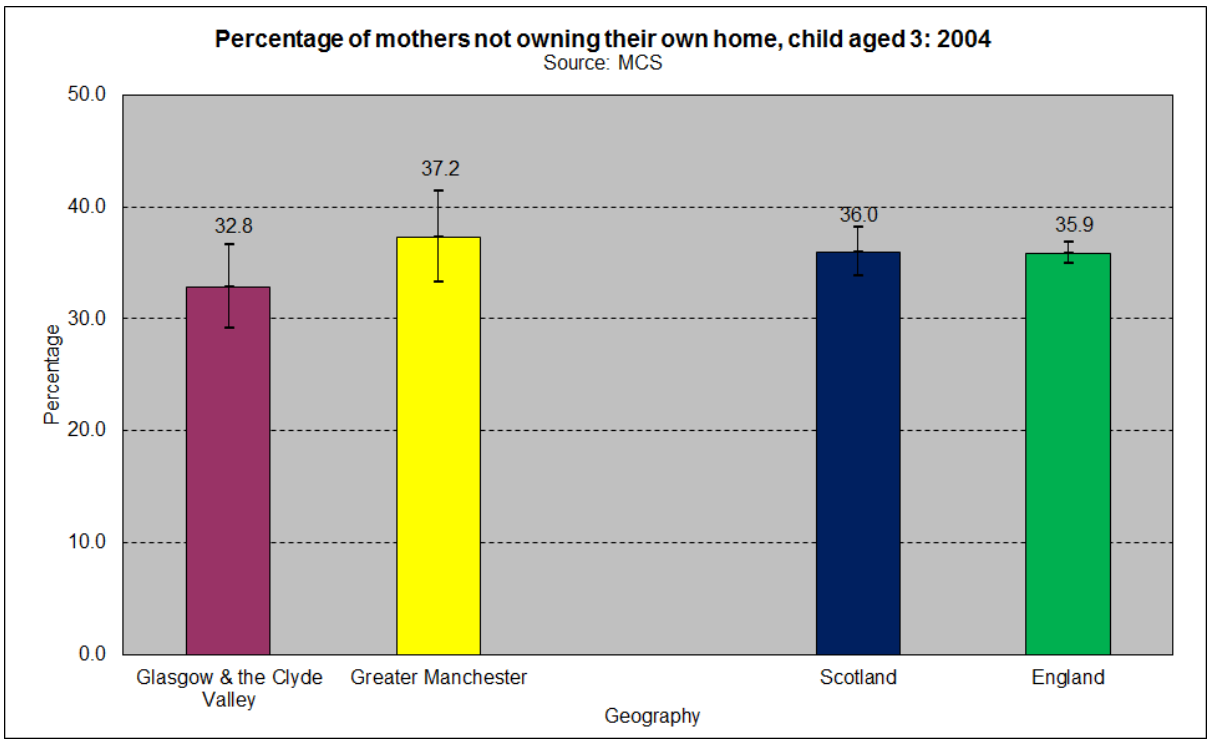
Figure 10.



2.1.4 Home ownership

Previous analysis of the MCS found that children born into families who did not own their own home had increased risk of both behaviour problems and difficulties with learning and development at age five. Living in rented accommodation at age three had a less pronounced, but still measurable, impact on learning and development[80]. Traditionally, levels of home ownership among families were much lower in Scotland than in England. However, this is no longer the case. The MCS suggests that for mothers with young children, the percentage who did not own their home in 2004 was similar in Scotland (36.0%) and England (35.9%). At a regional level, the observed percentages were somewhat higher in Greater Manchester than in GCV, but the differences were not statistically significant (Figure 11).

Figure 11.



Sample sizes: GCV=594; Greater Manchester=629; Scotland=1,795; England=9,984.

The historical picture is very different. Until the 1990s, families in Scotland (and GCV) were much more likely to rent their homes than their peers in England, Merseyside and Greater Manchester. For example, in 1975, home ownership levels among the British Cohort Study 1970 (BCS70) cohort families were 30 percentage points higher in England than in Scotland, with GCV showing a gap in home ownership of similar magnitude compared to the English conurbations. The same broad pattern on home ownership was also observed for 1965, using NCDS 1958 data (data not shown).

However, it is unclear whether these differences in housing tenure translated into relative disadvantage for children in Scotland and GCV. As late as the 1980s housing tenure was a less effective proxy for deprivation in Scotland than in England[81], while the three cities of Glasgow, Liverpool and Manchester had a similar socioeconomic profile between the 1950s and 1980s despite variation in home ownership. In other words, the historical home ownership 'gap' reflected cultural differences, rather than material disadvantage.

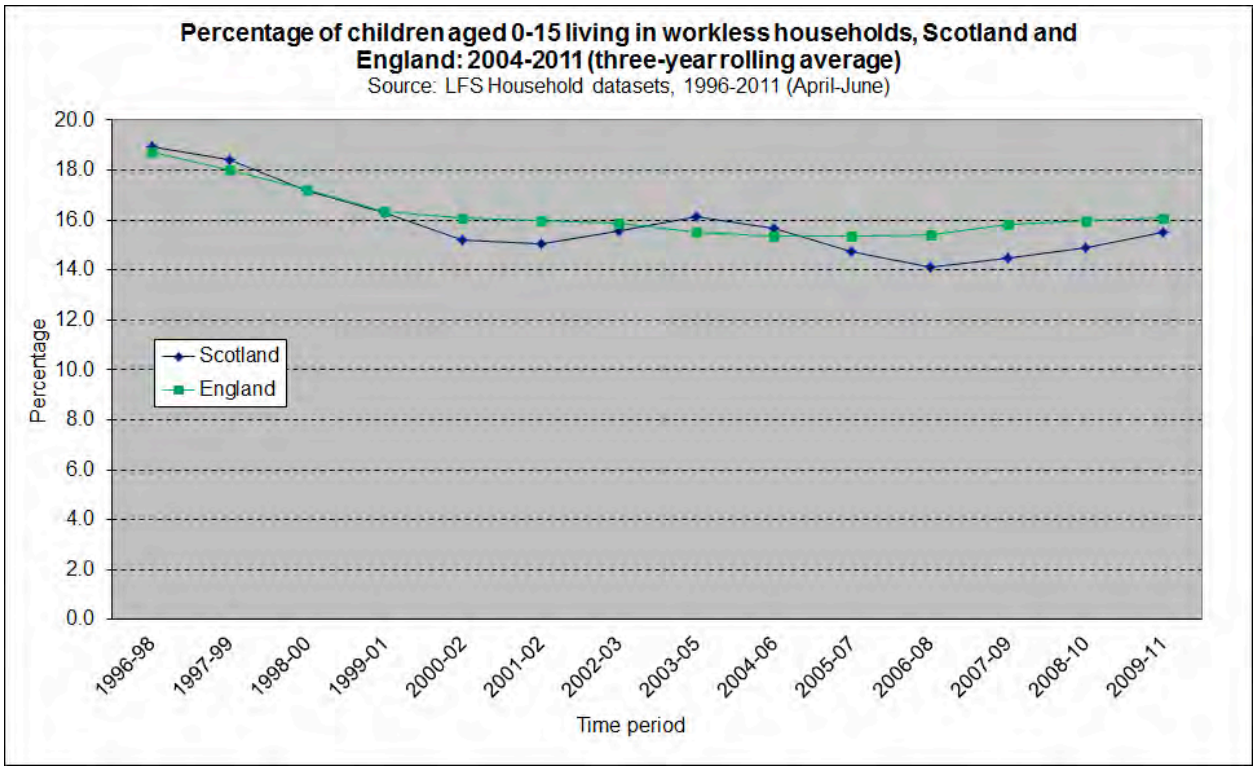
2.1.5 Workless households, benefit-dependency and living in poverty

Previous analysis of MCS data found that living in a workless household at age three increased a child's risk of learning and development difficulties at age five, while benefits-dependency and living in poverty (along with low income and deprivation) had a negative impact on children's health. Here we compare data on these indicators between countries and regions of interest.

Children living in workless households

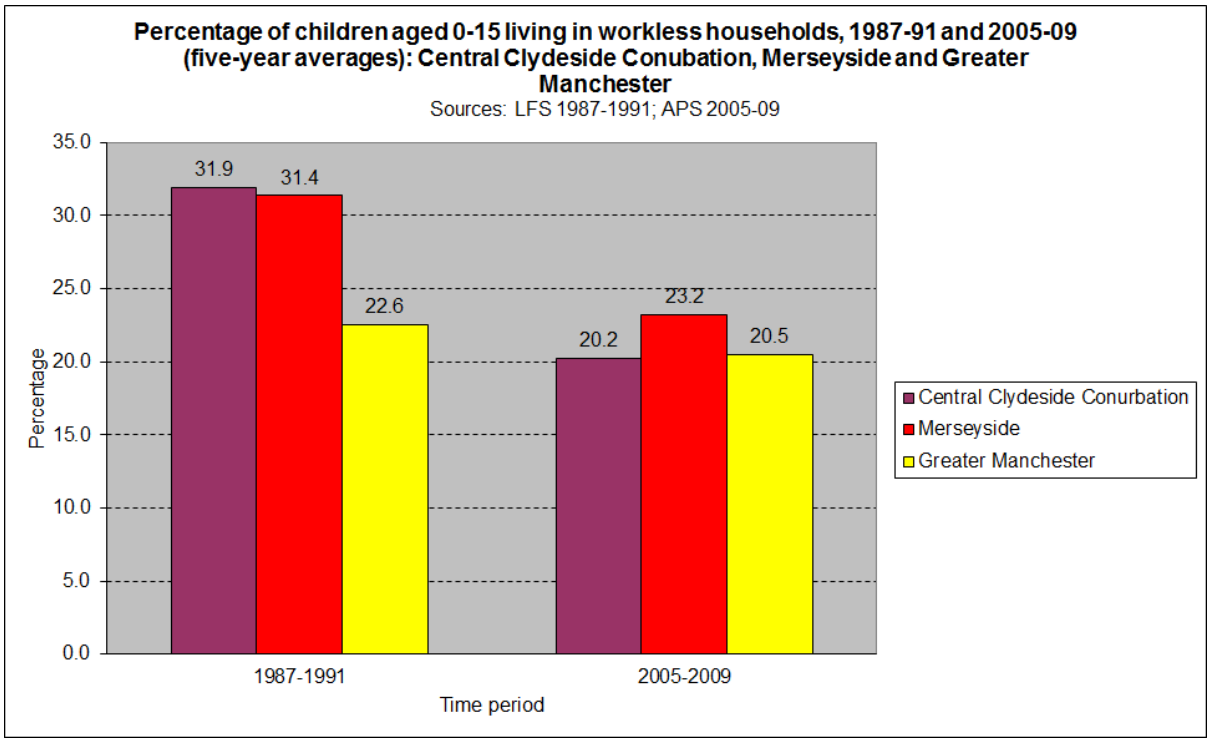
The first measure used is the percentage of children under the age of 16 living in households with at least one working-age adult (aged 16-64), where no adult was in paid employment. In the three-year period 2009-11, the percentage of children living in workless households was very similar in Scotland (15.5%) and England (16.1%). Since the mid-1990s, proportions in both countries have remained broadly similar (Figure 12).

Figure 12.



At a regional level, Merseyside had the highest percentage of children in workless households in 2005-09. Percentages for Greater Manchester and Clydeside[n] were similar to each other. In the late 1980s, the percentage of children in workless households was similar in Merseyside and Clydeside, with a lower percentage in Greater Manchester (Figure 13).

Figure 13.

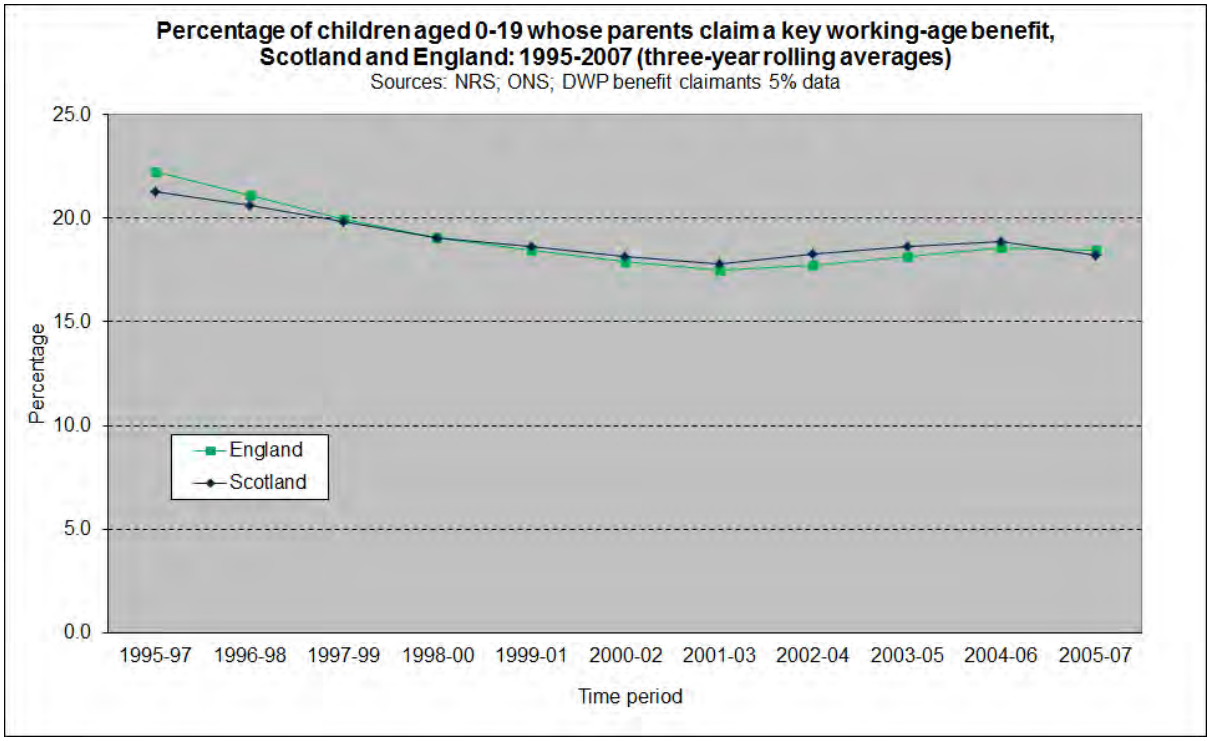


[n] The Clydeside conurbation is used here instead of Glasgow and the Clyde Valley, due to restrictions on geographical markers in the Labour Force Survey from this period.

Children living in benefit-dependent households

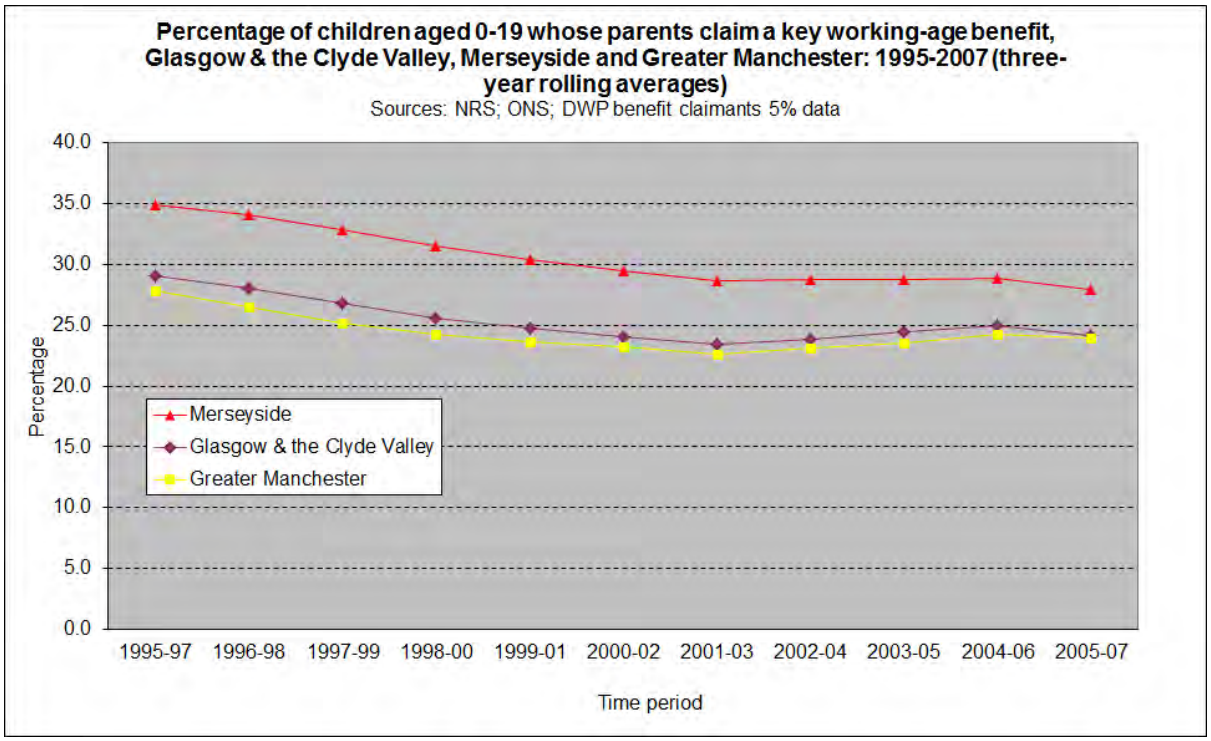
In this case, the indicator used is the percentage of children aged 0-19 whose parent claimed a key benefit. In 2005-07, the figures for Scotland (18.2%) and England (18.5%) were almost identical, with trends over time also showing little difference between the two countries (Figure 14).

Figure 14.



Of the three regions, Merseyside had the highest percentage of children with benefit-dependent parents (28% in 2005-07). The figure for GCV was similar to Greater Manchester's (24.1% versus 23.9%). The relative position of the three regions remained unchanged between 1995 and 2007 (Figure 15).

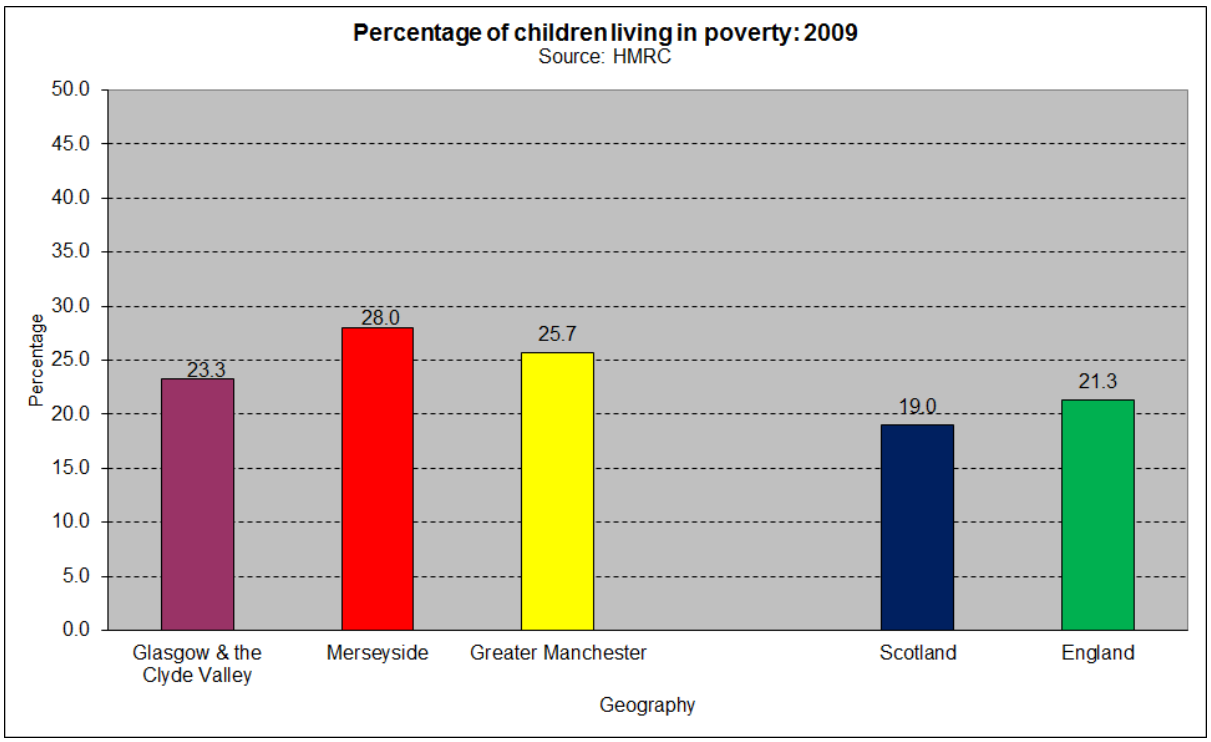
Figure 15.



Children living in poverty

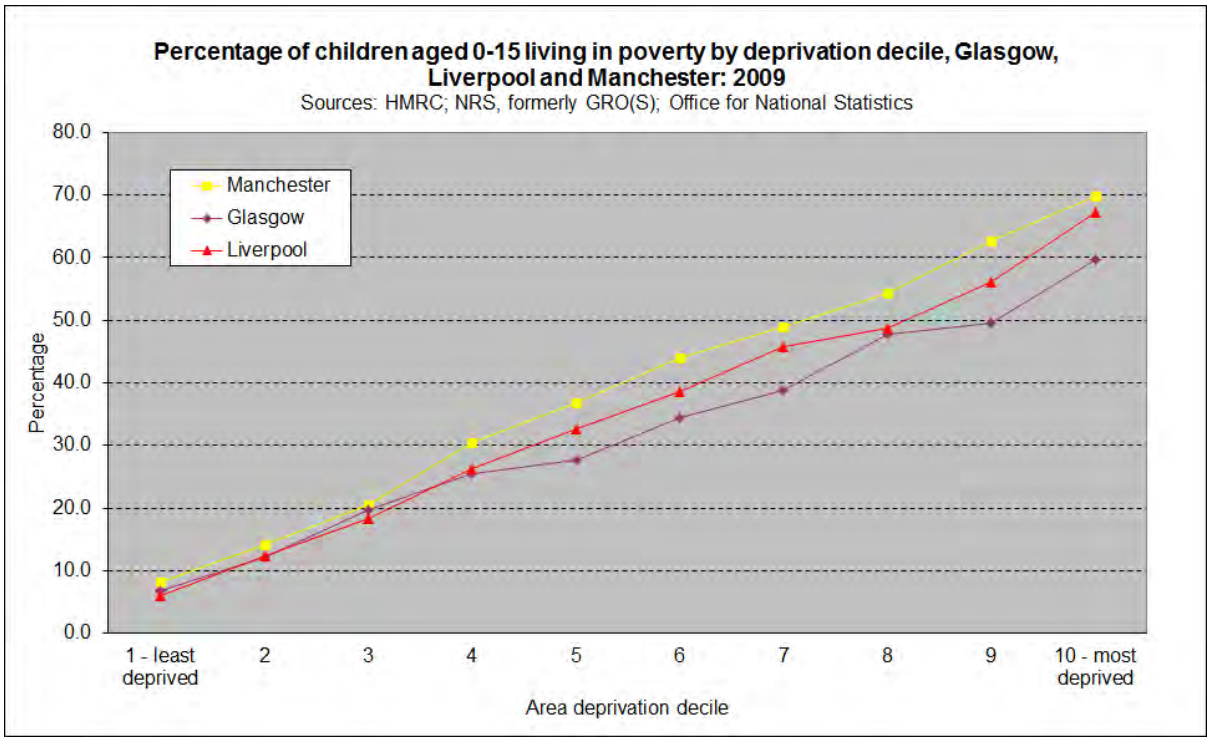
Her Majesty's Revenue and Customs (HMRC) have recently published estimates of the number of 'children in poverty' for all UK local authorities, based on a combination of survey and administrative data. Using this measure, it is possible to estimate relative child poverty at a sub-national level, although for one year only (2009). As Figure 16a shows, child poverty levels appear slightly higher in England than Scotland, although the differences are modest (21.3% versus 19.0%). Focusing on the regions, in 2009 the percentage of children living in poverty was highest in the two English regions, especially Merseyside. GCV compares more favourably on this 'child poverty' measure.

Figure 16a.



As with births to young mothers (Figures 8a and 8b), this indicator can also be analysed within different parts of the *cities* of Glasgow, Liverpool and Manchester, rather than only at 'city-region' level. At the city level, Manchester has the highest percentage of children living in poverty (42%), followed by Liverpool (37%) and Glasgow (34%). Figure 16b presents these data broken down by the ten deprivation deciles, showing that this higher figure for Manchester is seen across virtually all areas of the city, with the gap between that city and Glasgow generally wider at higher levels of deprivation.

Figure 16b.



2.1.6 Children with a Pakistani or Bangladeshi ethnic background

Comparisons of ethnicity have been included because of the evidence that Pakistani and Bangladeshi children are disadvantaged compared to White children in terms of learning and development and behavioural problems[82]. Although much of this difference can be attributable to higher levels of material deprivation among the Black and Minority Ethnic (BME) group, some disadvantage was observed even after adjusting for other factors[18,82]. Mothers from these BME groups are also more likely to have other characteristics associated with childhood and early years disadvantage. For example, the MCS has found that compared to White mothers, Pakistani and Bangladeshi mothers had higher levels of psychological distress[59] and were more likely to lack formal qualifications or to rent their home[83].

Data are available from the 2001 Census on the percentage of children aged 0-15 with a Pakistani or Bangladeshi ethnic background. In 2001, the percentage of Pakistani/Bangladeshi children was more than twice as high in England (3.6%) as it was in Scotland (1.3%). For the regions, Greater Manchester had the highest percentage of children with a Pakistani or Bangladeshi background (6.8%), much higher than the figure recorded for GCV (2.4%). Less than 1% of children in the Merseyside region were of Pakistani/Bangladeshi origin in 2001.

2.1.7 Family structure

Lastly in relation to social and material circumstances, we look at differences in family structure. Growth in non-traditional families in the last decade, especially in cohabitation, may mean this has become a less efficient indicator of childhood and early years disadvantage over time. For example, in the UK, between 2001 and 2011, the percentage of children living in cohabiting couple families increased from 10% to 14%[84]. Similar trends have been noted for Scotland. Nevertheless, comparisons are retained because of evidence from Scottish and UK studies that children whose parents were cohabiting had a higher risk of behavioural problems compared to those whose parents were married[18].

Two measures are used here to describe differences in family structure. These are:

- The percentage of dependent children aged 0-4 living in a lone parent household (Figure 17).
- The percentage of dependent children aged 0-4 living in a cohabiting household (Figure 18).

Comparing the nations, Scotland had a slightly higher percentage of children aged 0-4 living in lone parent households than England (23.2% versus 20.3%) in 2001. However, for children living in cohabiting households the position reversed, with the figure for Scotland slightly lower than that for England (15.3% versus 16.5%).

Of the three regions, Merseyside had the highest percentage of children aged 0-4 living in a lone parent household and Greater Manchester the lowest, with GCV occupying an intermediate position (Figure 17). However, Figure 18 shows that the percentage of children living in cohabiting households was higher in both Merseyside (15.8%) and, especially, Greater Manchester (18.3%) compared to GCV (13.2%).

Figure 17.

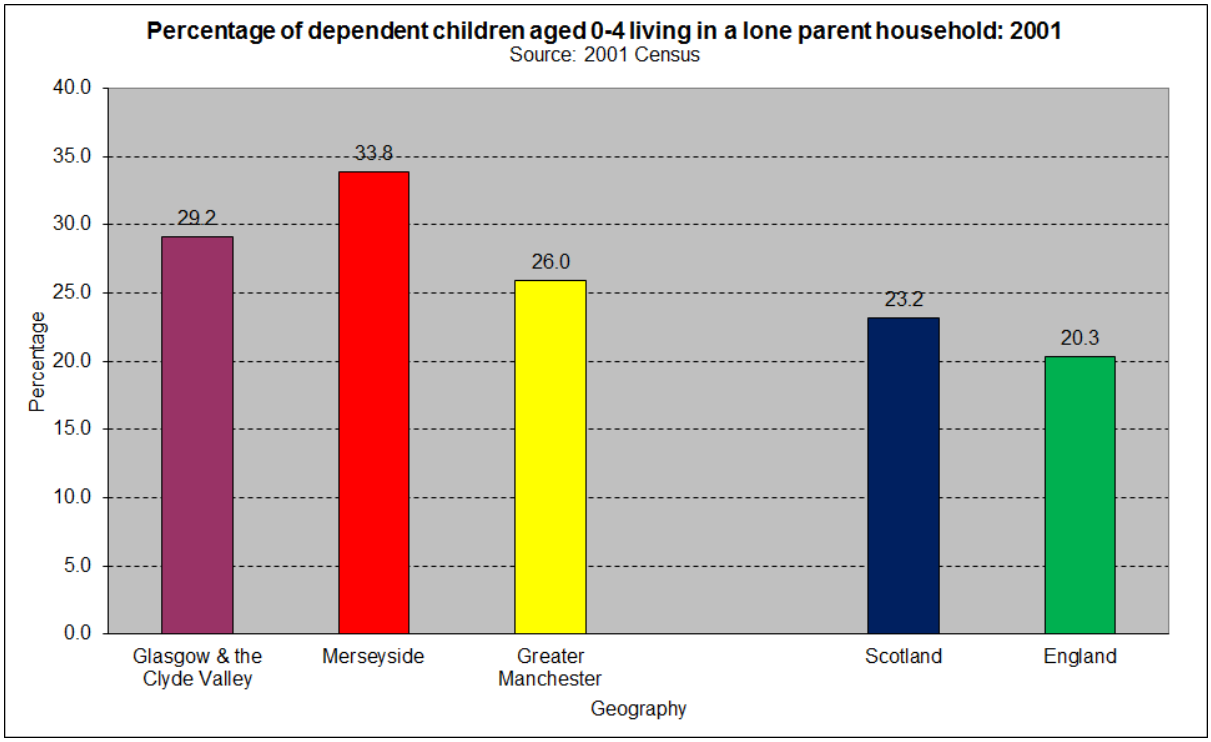
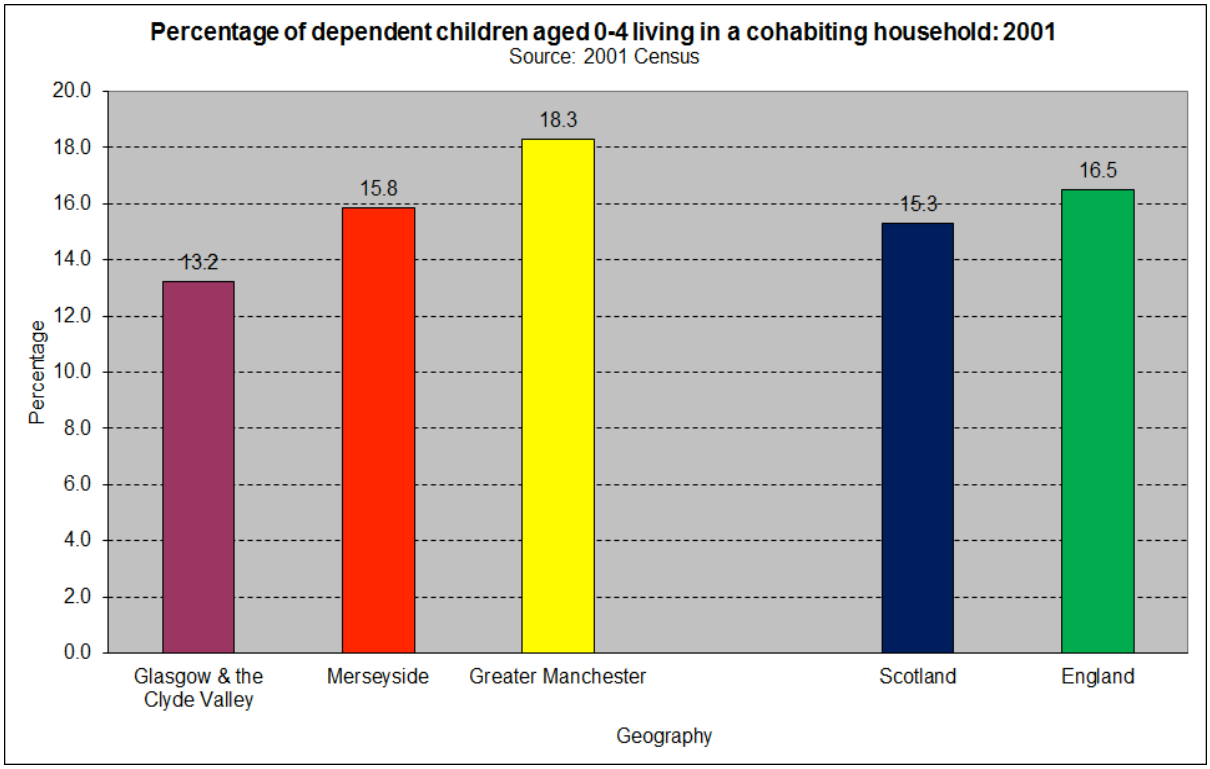


Figure 18.



2.1.8 Summary

- In the 2000s and 1970s, levels of maternal educational attainment in Scotland were similar to England, and did not vary significantly between the three regions. There is some evidence that mothers' levels of educational attainment were lower in Scotland compared with England in the 1950s. One study suggests that maternal education in GCV was lower than the English regions in this period.

- Birth rates to mothers under the age of 20 have been similar in Scotland and England since the late 1980s. At a regional level, birth rates to young mothers in GCV have been consistently lower than Greater Manchester, and lower than or similar to those in Merseyside, for the last three decades.

- Little difference was observed in the proportion of low birth-weight babies at either a national or a regional level.

- The percentage of mothers not owning their home was similar in Scotland and England, and GCV and Greater Manchester, in the 2000s. The historical proportion of home ownership was much lower in Scotland and GCV, but this may reflect cultural differences as much as material disadvantage.

- The percentage of children living in workless households has been similar in Scotland and England since the late 1990s. In 2004-09, the percentage of children living in workless households was highest in Merseyside, with levels in Greater Manchester and Clydeside similar to each other. Over time, Greater Manchester's relative position on this indicator deteriorated, and Clydeside's improved.

- Between 1995 and 2007, the percentage of children living in households with a benefit-dependent parent was almost identical in Scotland and England. Merseyside had a consistently higher proportion of children living with a benefit-dependent parent than both GCV and Greater Manchester.

- In 2009, the proportion of children living in poverty (using an HMRC measure) was higher in England than Scotland, though the scale of difference was modest (21% versus 19%). Of the three regions, Merseyside had the highest proportion of children living in poverty and GCV the lowest, with Greater Manchester somewhere in between.

- Census data show that England had more than twice the proportion of children from a Pakistani/Bangladeshi background than Scotland in 2001. Greater Manchester had almost three times the percentage of children with this ethnic background as GCV (6.8% versus 2.4%). Less than 1% of Merseyside children were of Pakistani/Bangladeshi origin in 2001.

- Evidence on family structure is mixed. At a national level, Scotland has more children aged 0-4 living in lone parent families than England but fewer living in cohabiting households. In the regions, the percentage of children aged 0-4 living in a lone parent household in GCV was higher than Greater Manchester but lower than Merseyside. In 2001, the percentage of children aged 0-4 living in a cohabiting household in GCV was lower than either of the two English regions.

- Overall, there appears to be little evidence from national or regional comparisons that Scotland and GCV are disadvantaged on social and material indicators of childhood and early experiences, compared to England, Merseyside and Greater Manchester.

2.2 Dysfunctional households

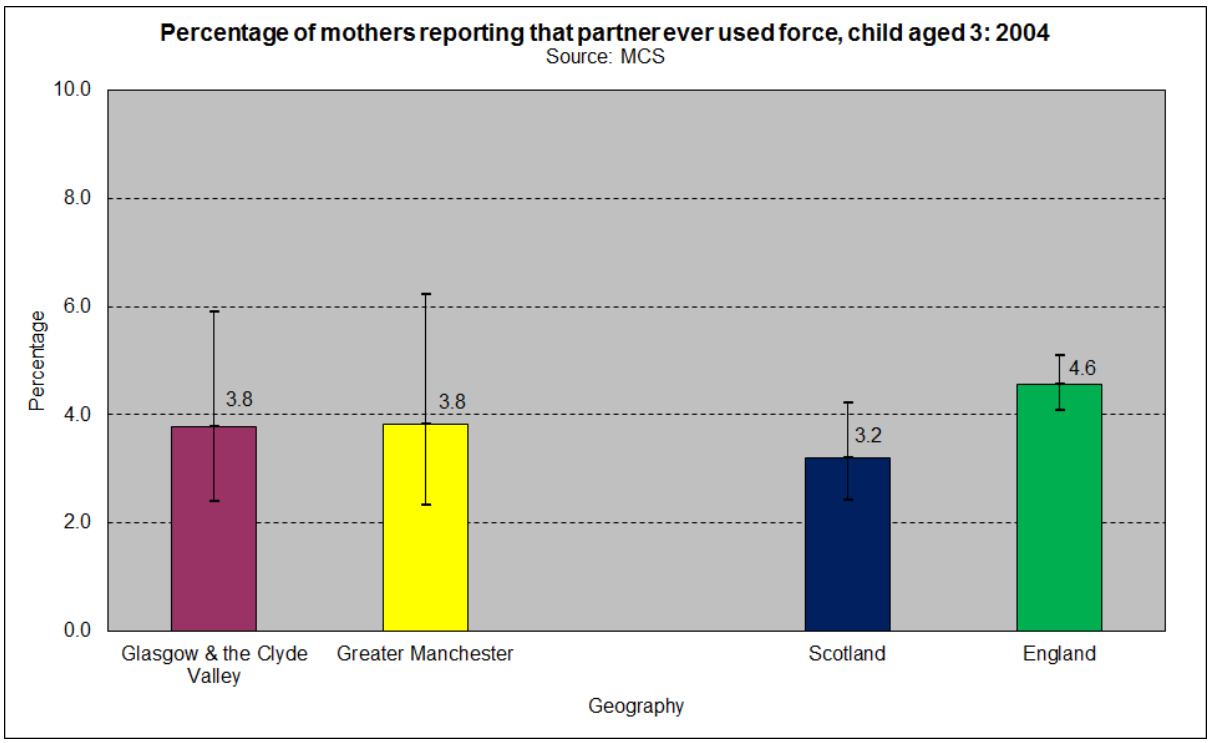
As discussed in the introduction, growing up in a dysfunctional household – including features such as regular physical or emotional violence between household members, parental drug or alcohol abuse and parental imprisonment – can have long-term, 'toxic' consequences for the children exposed to these factors[85]. This section compares our areas of interest in relation to these extreme indicators of household dysfunction as well as measures of shared parental responsibilities for children and the quality of the relationship between parents.

2.2.1 Domestic abuse

In Scotland, domestic abuse is defined as *'any form of physical, non-physical [e.g. financial or emotional], or sexual abuse which takes place within the context of a close relationship'*[86]. A 2006 UNICEF report summarised the harmful impacts of exposure to domestic violence on children's health. These included the stunting of physical, mental and emotional development and, in some studies, increased risk of aggression in early adulthood and adolescence. Children growing up in homes where domestic violence was common were also likely to be physically or sexually abused[87]. This section compares measures of (victim-reported) domestic abuse from the MCS and two major crime surveys: the British Crime Survey (BCS) and the Scottish Crime and Justice Survey (SCJS).

The first indicator used is from the MCS: *the percentage of mothers reporting that their partner ever used force*. Figure 19 presents data on this indicator at a national and regional level in 2004, when MCS cohort children were aged three. It suggests that Scottish mothers were significantly *less* likely to report their partner had ever used force compared to English mothers. At a regional level, there was no significant difference between levels of domestic violence reported in GCV and Greater Manchester.

Figure 19.



Sample sizes: GCV=467; Greater Manchester=412; Scotland=1,421; England=6,709.

A second set of measures of domestic violence are drawn (for England) from the BCS and (for Scotland) from the SCJS. Respondents aged 16-59, with at least one child in their household, were asked whether they had experienced various types of emotional and physical partner abuse since the age of 16. As such, their responses may reflect violence experienced from a previous partner. Only those questions which were comparable across the two surveys were included in the analysis; two years of data were combined to improve the robustness of results[o].

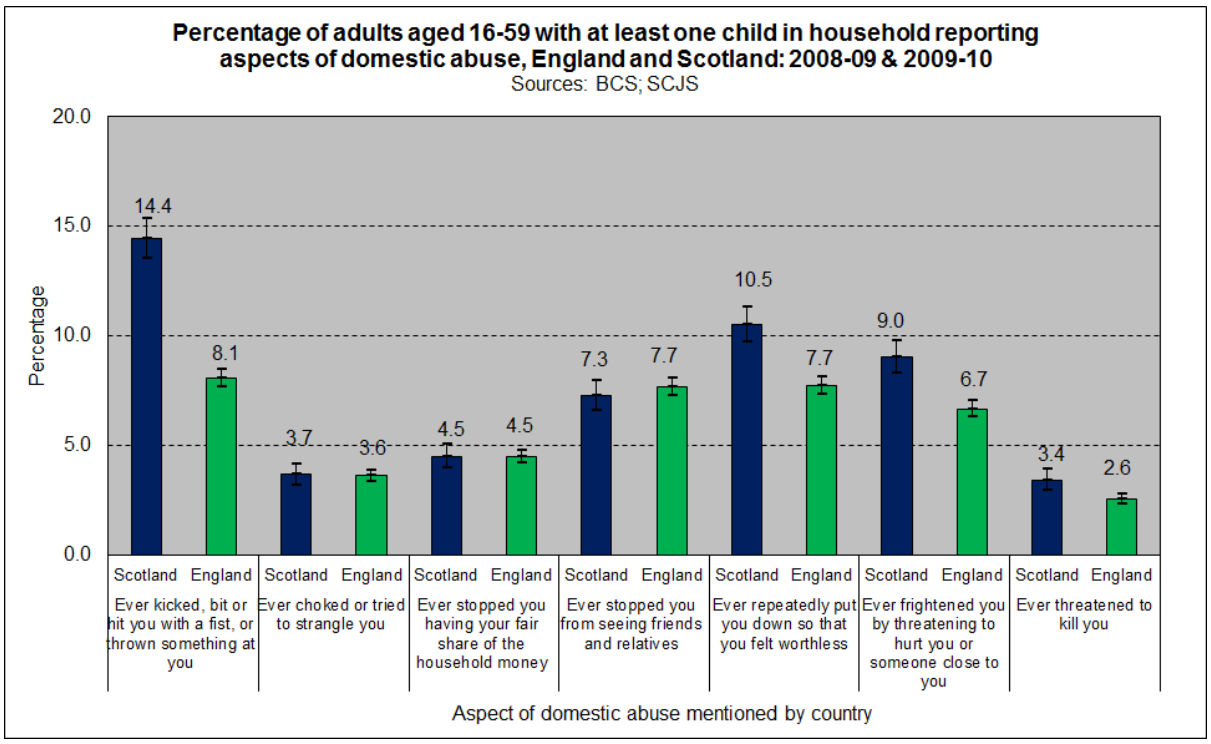
Figure 20 compares seven aspects of partner abuse in Scotland and England in 2008-2010. For three of the measures – attempted choking/strangling, stopping them from having their fair share of the household money and stopping them seeing friends/relatives – there was no significant difference in percentages between the nations. However, the reported percentages for partner abuse were significantly higher in Scotland compared to England for four aspects:

- Ever kicked, bit or hit you with a fist, or thrown something at you (14.4% versus 8.1%)
- Ever repeatedly put you down so that you felt worthless (10.5% versus 7.7%)
- Ever frightened you by threatening to hurt you or someone close to you (9.0% versus 6.7%)
- Ever threatened to kill you (3.4% versus 2.6%)

[o] See Appendix B for more information.

Some caution should be attached to comparisons of the first question ('Ever kicked, bit or hit you with a fist, or thrown something at you'). This is because this is based on a single item from the BCS but a derived item (combining two separate questions) from the SCJS. This difference may result in a higher percentage of Scottish respondents reporting experience of these forms of physical violence from their partner.

Figure 20.



Sample sizes: Scotland=5,698; England=17,892.

At a regional level, only one of the measures ('Ever kicked, bit or hit you with a fist, or thrown something at you') was significantly higher in GCV (14.4%) compared to Merseyside (7.9%) and Greater Manchester (9.9%). As with the national comparisons, the same caveat regarding comparisons using this indicator of physical violence applies regionally. The other indicators of emotional, physical and financial abuse and threats did not vary significantly by region (data not shown).

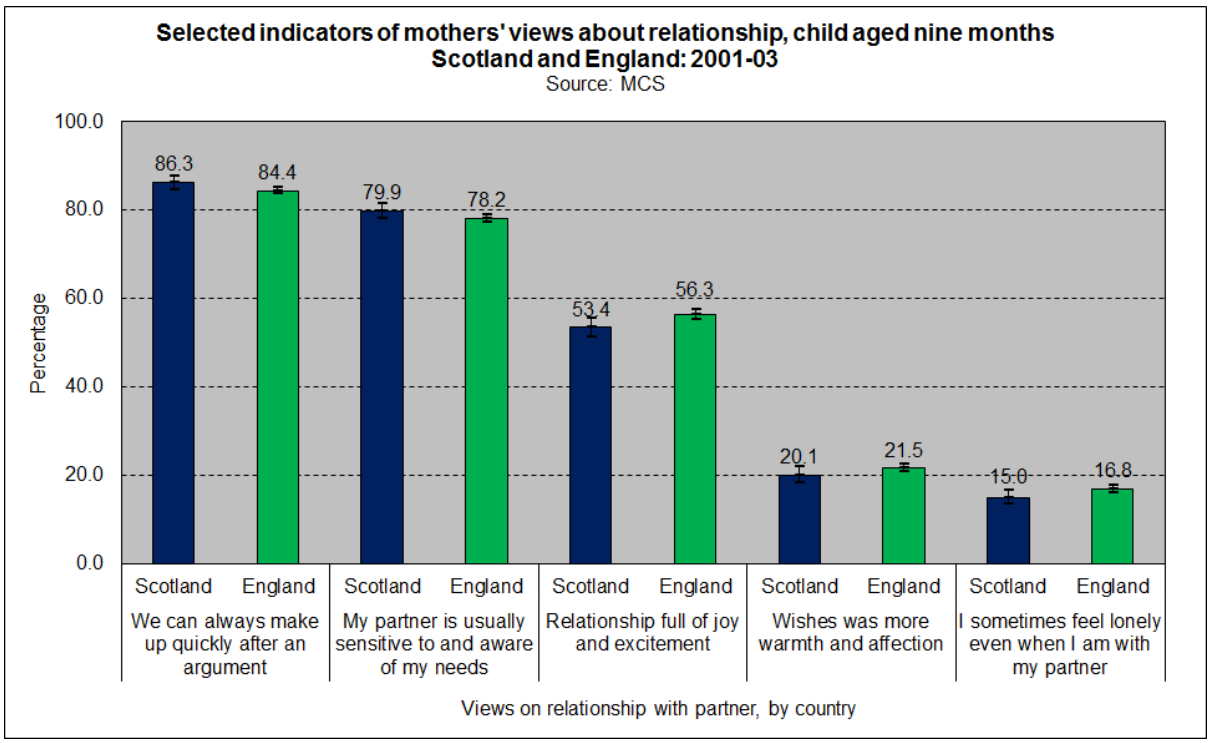
2.2.2 Parental discord

Mother's quality of relationship with father

The MCS asked mothers how much they agreed with a series of statements about the quality of relationship they had with their partner. The questions included whether they and their partner usually made up quickly after an argument; whether their partner was sensitive to their needs; whether the relationship was full of joy and excitement; whether they wished there was more warmth and affection in the relationship; and whether they sometimes felt lonely when with their partner.

Figure 21 compares responses to these five statements for Scotland and England when MCS cohort members were nine months old. Responses were almost identical except for two statements: agreement that they always made up quickly after an argument (higher in Scotland) and agreement that the relationship was full of joy and excitement (lower in Scotland). However, in both cases the scale of the observed differences was small.

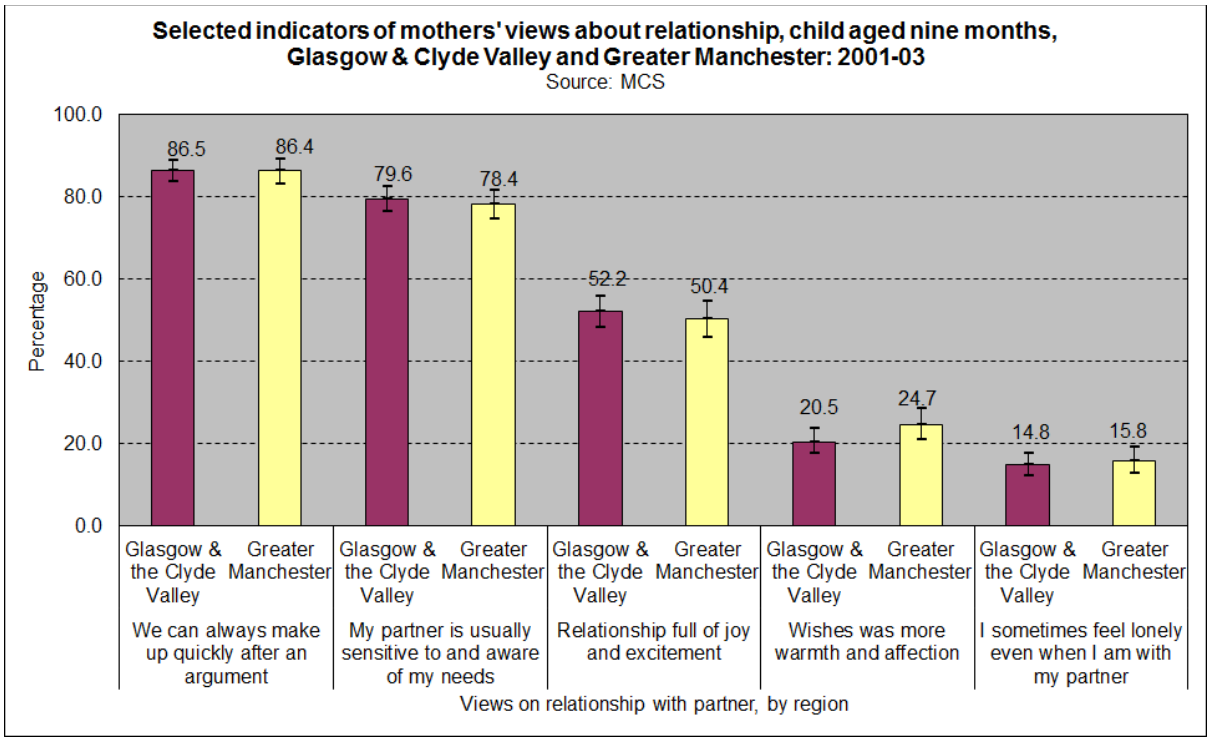
Figure 21.



Sample sizes: Scotland=1,836; England=8,817.

Repeating the exercise at a regional level shows there was no significant difference in perceived relationship quality for mothers in GCV and those in Greater Manchester (Figure 22).

Figure 22.



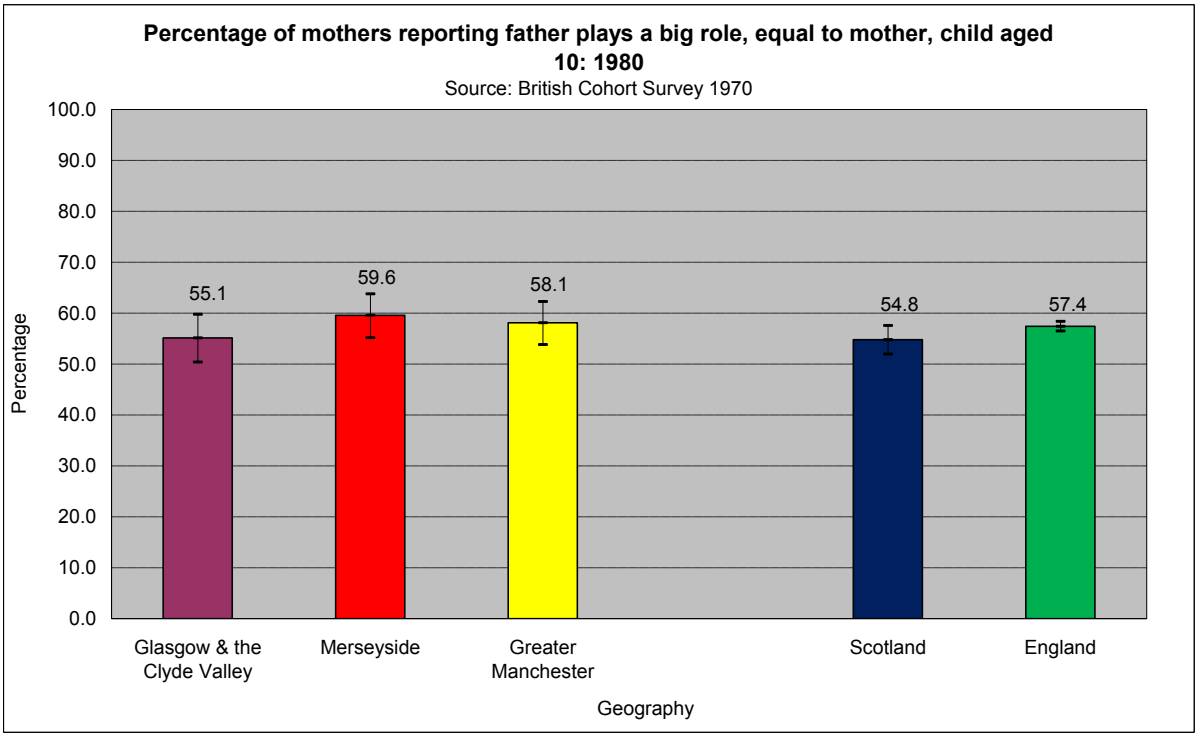
Sample sizes: GCV=649; Greater Manchester=504.

Role of father

Craig (2010)[12] argues that, historically, Scottish fathers were less involved in the upbringing of their children than fathers elsewhere in the UK. In order to test this, we first examine a measure used in both the National Child Development Study 1958 (NCDS58) and the BCS70. In both surveys, mothers were asked what role they felt the child's father played in managing the child. The indicator used is the percentage of mothers reporting that they thought the father took *'a big role or equal to the mother'* in this task.

Comparisons from 1980, when the BCS70 cohort members were aged ten years old, are shown in Figure 23. The percentages of Scottish mothers reporting that fathers played a big or equal role in managing the child (54.8%) were not significantly different to the figure for English mothers (57.8%). At a regional level, more than half (55.1%) of mothers in GCV agreed with this statement, a figure which was not significantly different from the levels found in Merseyside and Greater Manchester.

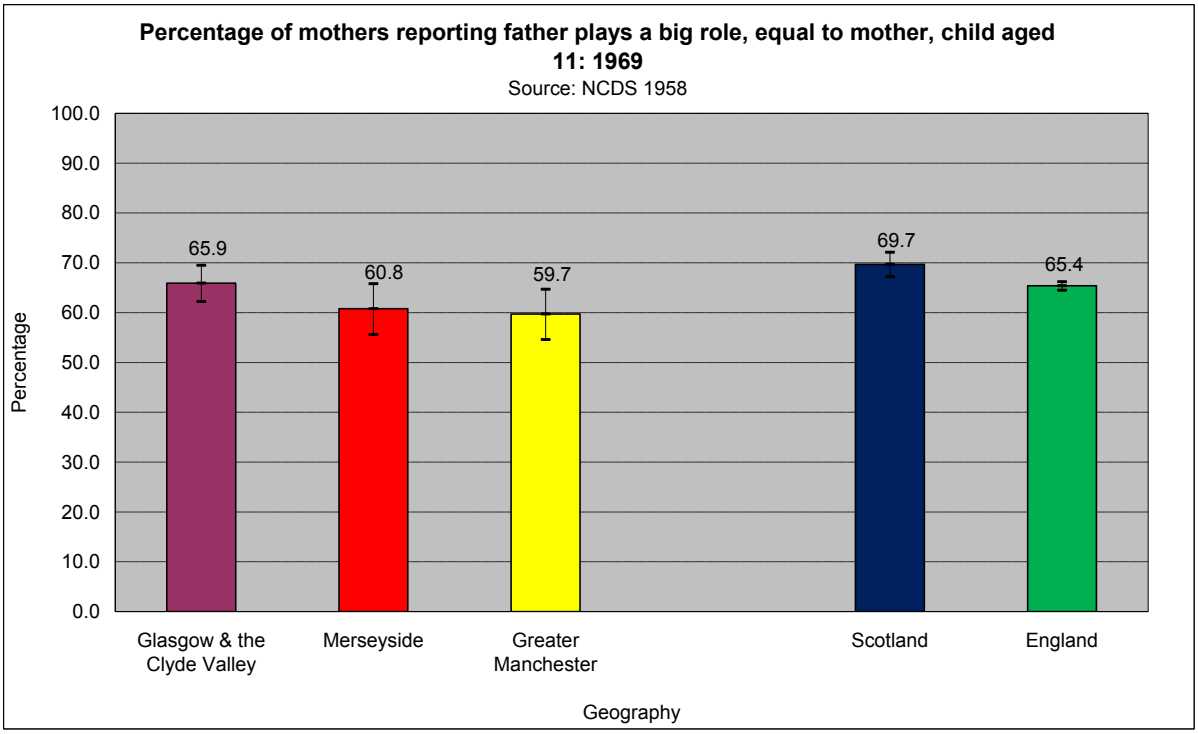
Figure 23.



Sample sizes: GCV=428; Merseyside=497; Greater Manchester=518; Scotland=1,214; England=10,459.

Comparisons from 1969, when the NCDS cohort were aged 11 years old, are shown in Figure 24. At this time point, the percentage of mothers selecting this option was significantly higher in Scotland than England (69.7% versus 65.4%). Turning to the regions, the percentage of GCV mothers who thought the father played a big role in the management of the child was similar to Merseyside and significantly higher than the figure observed for Greater Manchester (Figure 24).

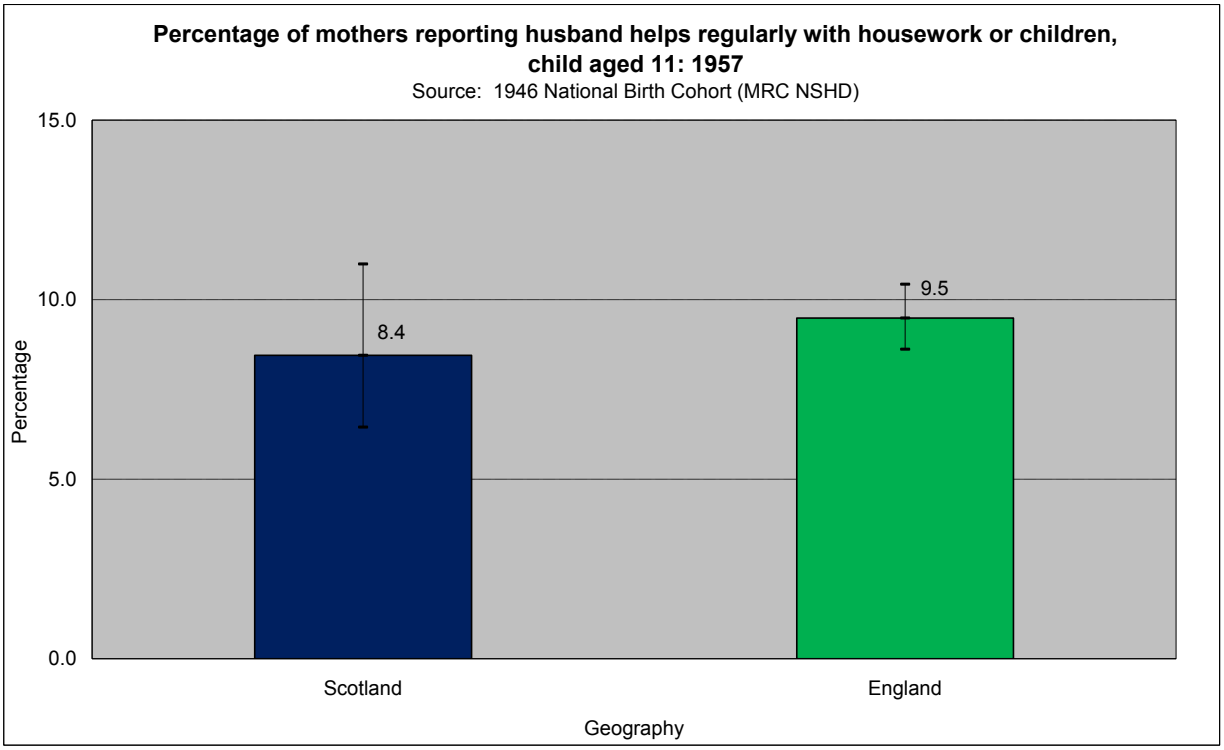
Figure 24.



Sample sizes: GCV=571; Merseyside=298; Greater Manchester=218; Scotland=1,335; England=10,907.

Using a slightly different measure, it is possible to compare fathers' involvement in the child and home from the NSHD, for Scotland and England only (Figure 25). Data are from 1957, when the cohort children were aged 11, and the indicator compared is the percentage of mothers reporting that their husband helps regularly with the housework or children. The figure for Scotland (8.4%) was not significantly different from that for England (9.5%).

Figure 25.



Sample sizes: Scotland=580; England=4,037.

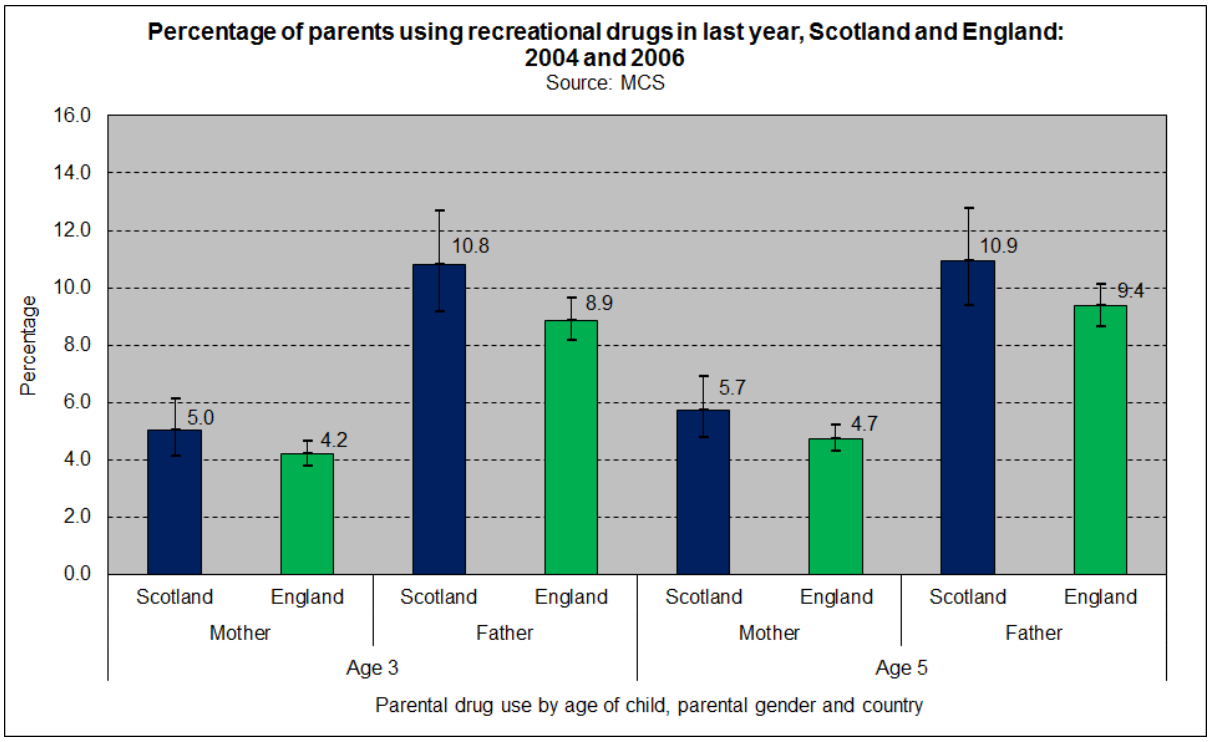
2.2.3 Parental substance misuse

Children living with parental substance misuse face a number of disadvantages, including increased risk of witnessing violence and poor, neglectful or inconsistent parenting. These factors may increase their risk of behavioural problems, learning and development difficulties and have a detrimental impact on their social and mental wellbeing[88]. Parental substance misuse remains highly relevant to Scotland, and especially Glasgow: in 2003, it was estimated that more than one in 20 children in the city was living with a parent with a drug or alcohol misuse problem[89]. This section compares levels of parental substance misuse in the countries and regions.

Illicit drug use

There is some limited survey evidence that drug misuse is higher among fathers in Scotland than in England. The MCS asked parents whether they had used recreational drugs in the last year in 2004 and 2006: results for Scotland and England are shown in Figure 26. Observed rates of recreational drug use were higher for Scottish mothers and fathers in both survey years, but the difference was only significant for fathers in 2004 (10.8% versus 8.9%).

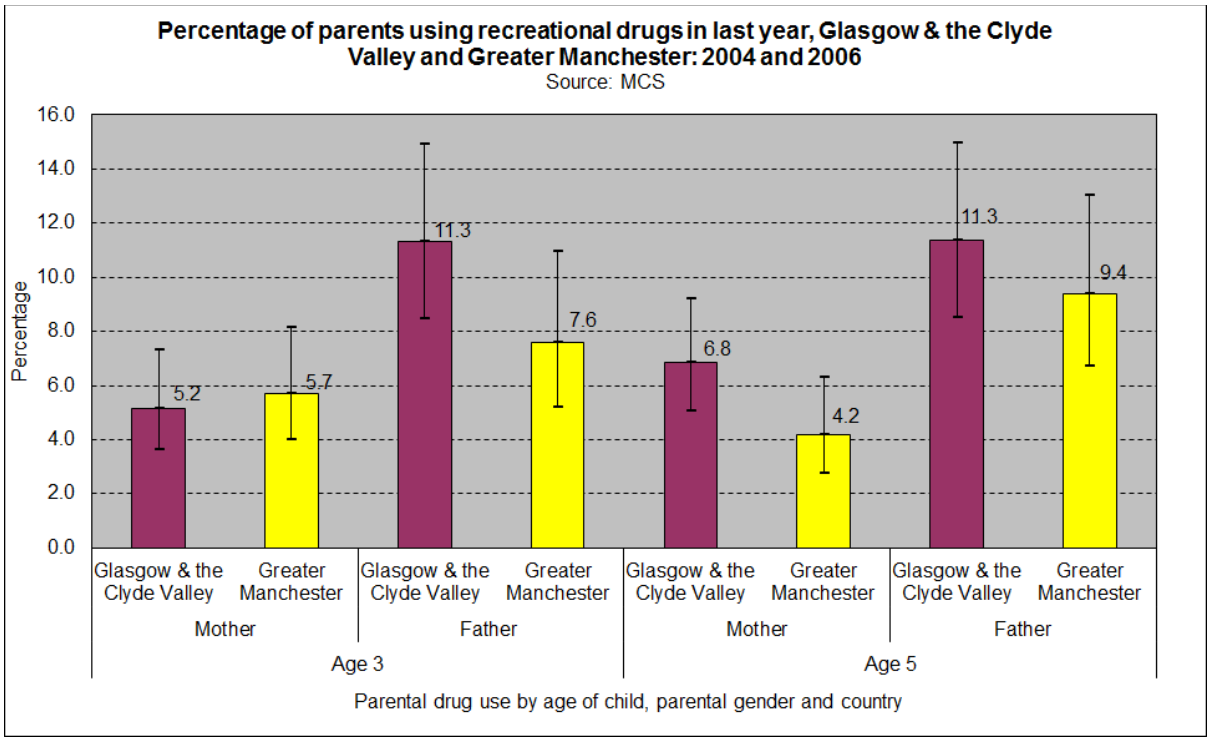
Figure 26.



Sample sizes: Child aged 3 Mothers: Scotland =1,680, England=8,273, Fathers: Scotland =1,149, England=6,274; Child aged 5 Mothers: Scotland =8,563, England=1,728, Fathers: Scotland =5,968, England=1,209.

Regional analysis from the same source also hints that observed rates of substance misuse were higher among fathers in GCV than those in Greater Manchester – but differences were not statistically significant (Figure 27).

Figure 27.



Sample sizes: Child aged 3 Mothers: GCV=551, Greater Manchester=536, Fathers: GCV=379, Greater Manchester=355; Child aged 5 Mothers: GCV=559, Greater Manchester=530, Fathers: GCV=378, Greater Manchester=329.

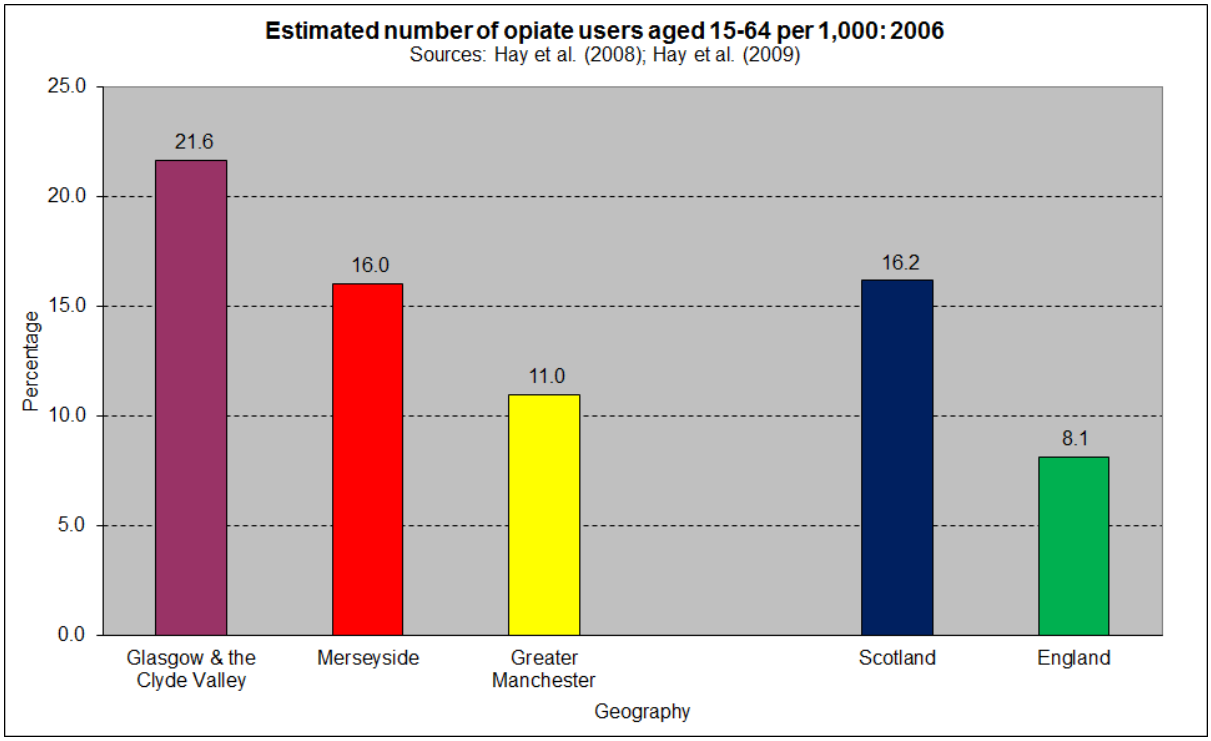
As this is inconclusive, it may be useful to consider these data alongside evidence from other sources. Routine data suggest that a substantial number of children are affected by parental drug misuse[64,90]. In 2010/11, 41% of new clients registered by the Scottish Drug Misuse Database reported that they had children[91]. For England, Jones *et al*. (2007) reported that around half (49%) of drug users in treatment had children[92]. However, national and regional comparisons of parental drug use from these sources currently remain difficult. Definitions, recording and reporting practices vary between Scotland and England, and many drug users are not in treatment.

As a second best solution, we use estimates produced by Hay *et al*. (2008[93], 2009[94]), who published comparable national and local estimates of opiate drug users aged 15-64 for both Scotland and England. Figure 28 provides the numbers of opiate users aged 15-64 per 1,000 for the geographies of interest in 2006. It shows that:

- The prevalence of opiate drug use among 15-64 year olds was twice as high in Scotland than it was in England (16.2 per 1,000 versus 8.1 per 1,000)
- Glasgow and the Clyde Valley's incidence of opiate drug use among 15-64 year olds was higher than that for Merseyside and almost twice as high as that estimated for Greater Manchester.

Note, however, that these data do not reveal whether those drug users are parents or not – an important limitation.

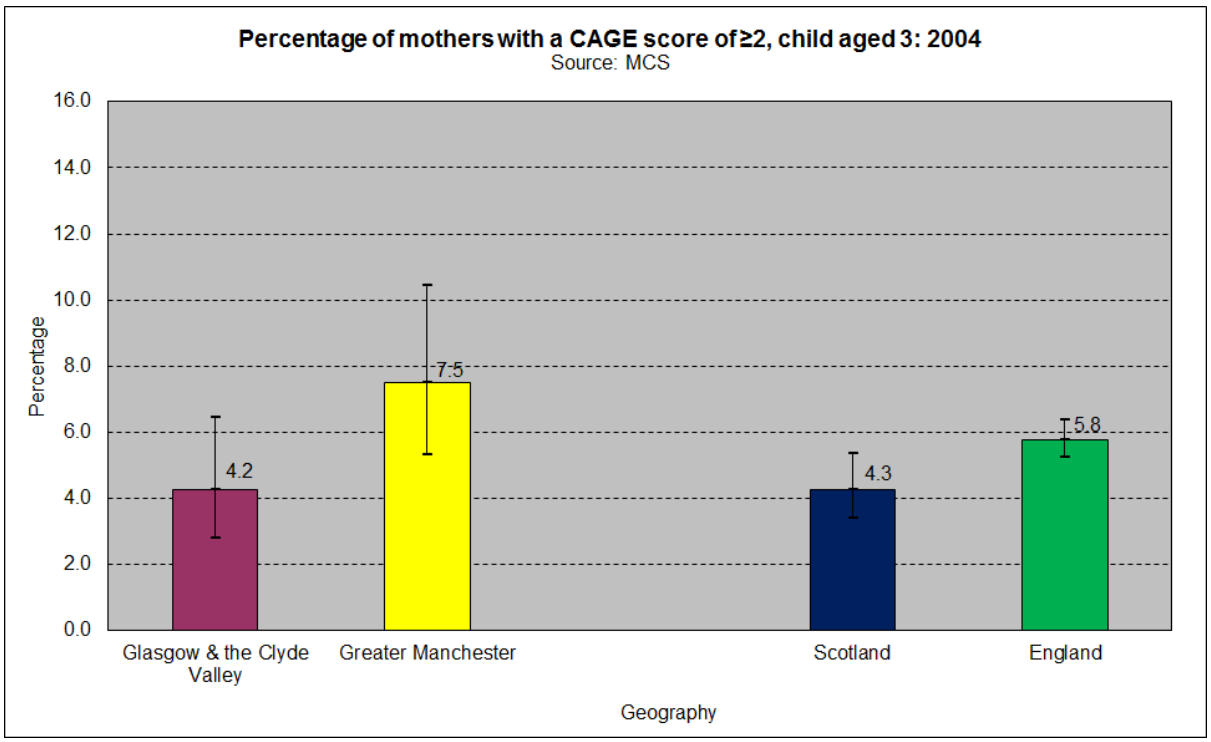
Figure 28.



Problematic alcohol use

Data from the MCS allow us to compare (self-assessed) problematic alcohol use. The measure used is the CAGE questionnaire, with a score of 2 or more indicating possible alcohol problem[p]. In 2004, Scottish mothers were significantly less likely than those in England to score 2 or more on the CAGE score (4.3% versus 5.8%). At a regional level, the percentage of mothers in Glasgow and the Clyde Valley with a high CAGE score was also significantly lower than mothers in Greater Manchester (Figure 29).

Figure 29.

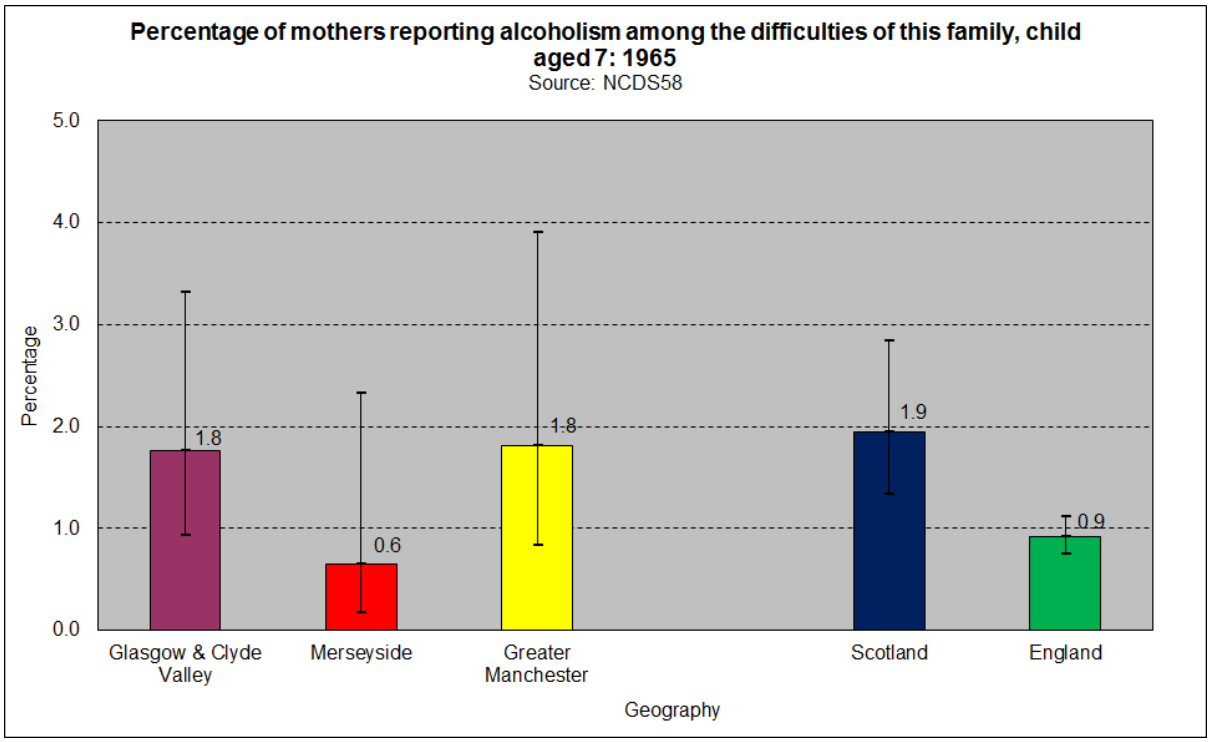


Sample sizes: GCV=479; Greater Manchester=434; Scotland=1,492; England=6,724.

[p] The four questions in the CAGE survey were: were: Have you ever felt you needed to **c**ut down on your drinking?; Have people **a**nnoyed you by criticising your drinking?; Have you ever felt **g**uilty about drinking?; and Have you ever felt you needed a drink first thing in the morning (**e**ye-opener) to steady your nerves or to get rid of a hangover?

A historical indicator of problem alcohol use is available from the NCDS. In 1965, mothers were asked whether they thought their family faced any problems, including alcoholism. Very few mothers reported that this was an issue, reflecting at least in part the sensitive nature of this topic. Nevertheless, national comparisons suggest that Scottish mothers were more likely than English mothers (1.9% versus 0.9%) to report that alcoholism was among the problems faced by their family. Differences reported at a regional level were not significant (Figure 30).

Figure 30.



Sample sizes: GCV=511; Merseyside=310; Greater Manchester=330; Scotland=1,335; England=10,558.

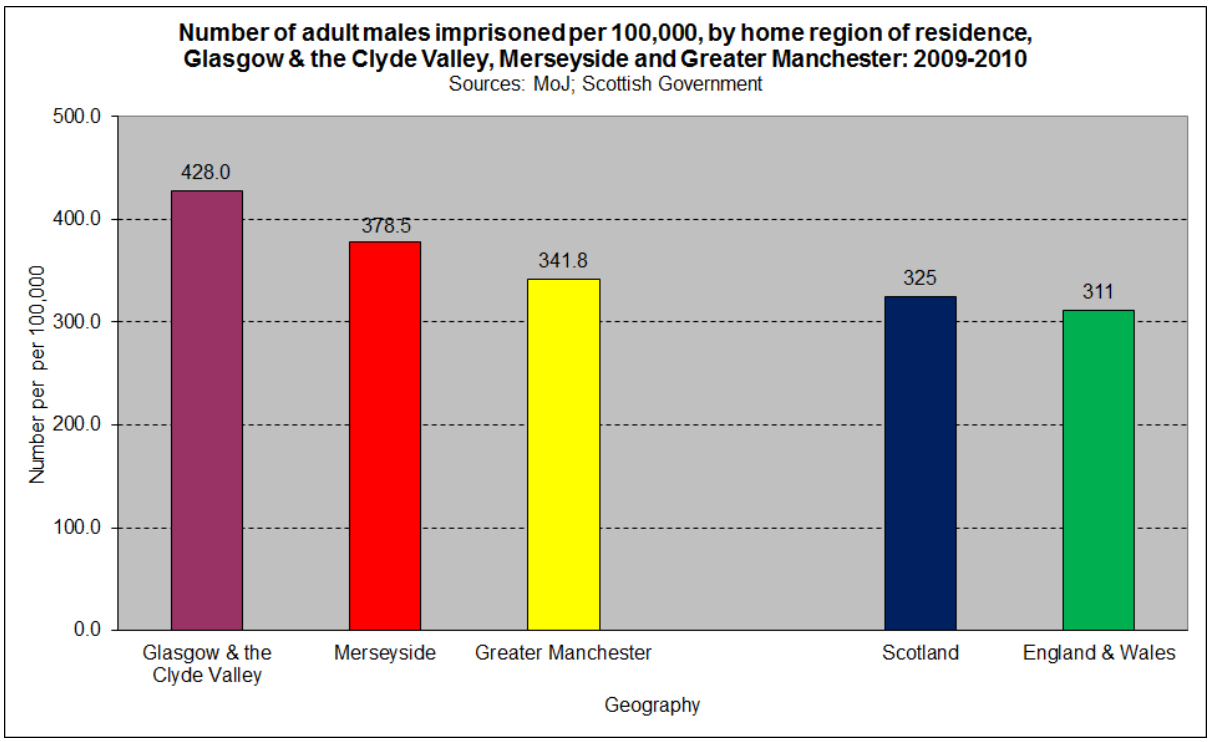
2.2.4 Male imprisonment

Parental imprisonment is often associated with detrimental effects for children's health and wellbeing[95]. Experience of parental imprisonment also appears to increase the risk of antisocial behaviour (though not mental health problems, drug use, or poor educational performance) in adolescence[96]. Unfortunately, it is not currently possible to compare parental imprisonment proportions directly across the UK. Although the 2011 Scottish Prisoners Survey found that almost half (48%) of Scottish prisoners had children[97], equivalent English survey results are not available. Administrative statistics permit national and regional comparisons of imprisonment, although neither Scotland nor England currently records parental status in the routine data. As an imperfect proxy, Figure 31 compares adult male (aged 21 and older) imprisonment across the five geographies[q]. The results show that:

- Numbers of adult males imprisoned in Scotland were higher than those recorded for England and Wales (324 per 100,000 versus 311 per 100,000).
- Similarly, the numbers of adult males imprisoned for Glasgow and the Clyde Valley (428 per 100,000) were much higher than those recorded for Merseyside (378 per 100,000) and Greater Manchester (342 per 100,000).

One interpretation of this might be that Scotland and Glasgow and the Clyde Valley may be more disadvantaged on this indicator of household dysfunction. However, the inability to say whether *parental* imprisonment proportions are higher in the Scottish areas means that some caution must be attached to this finding.

Figure 31.

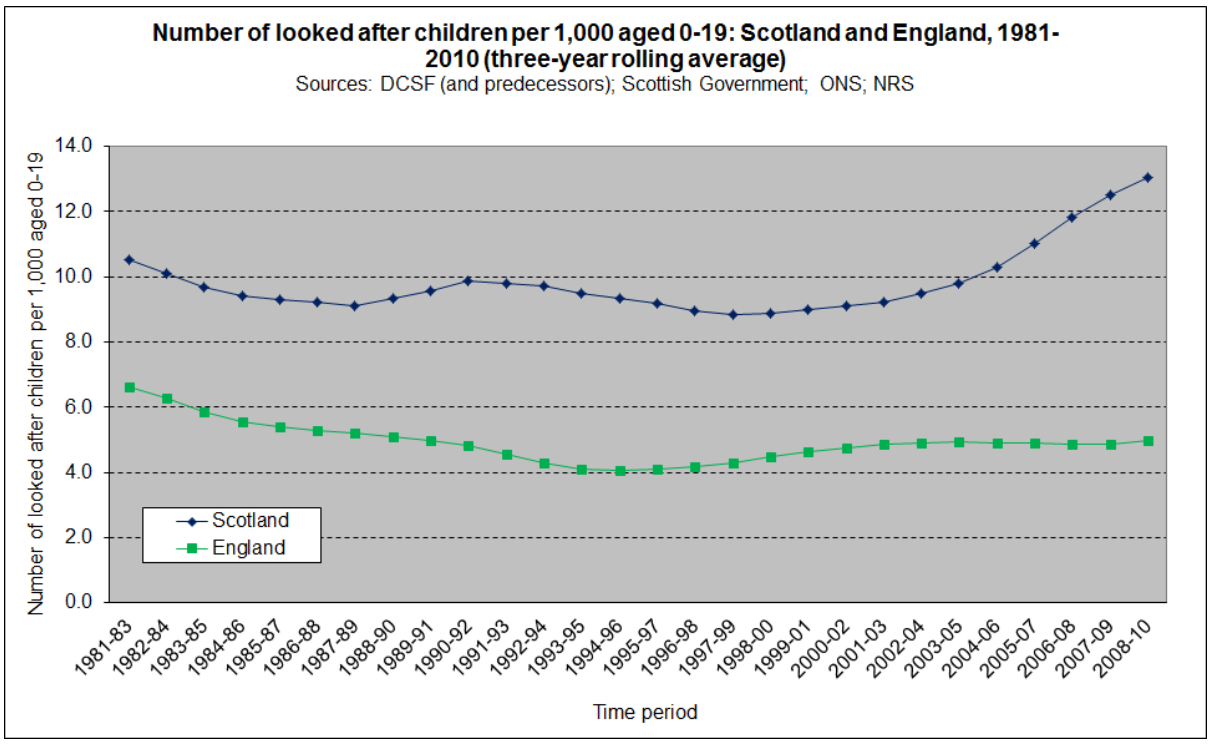


[q] Note that national comparisons are between Scotland and England and Wales.

2.2.5 Looked after children

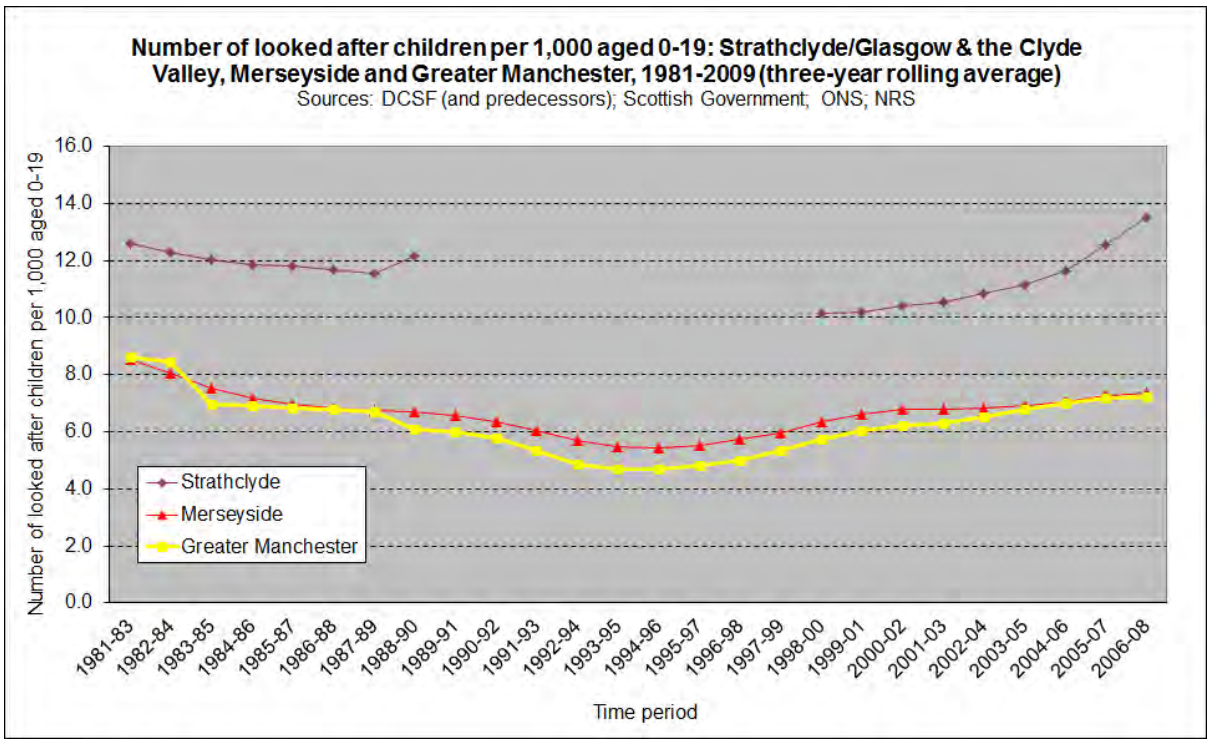
In Britain, most children become 'looked after' (by local authorities) due to issues relating to care and protection, including neglect, mental, physical or emotional abuse, parental substance misuse or poor parenting skills[98]. This may mean that the number of looked after children provides an indication of the levels of household dysfunction – though as an administrative measure, it may also, at least in part, reflect variations in service provision or different definitions of need. In 2006-08, the Scottish figure (11.8 per 1,000) was much higher than that recorded for England (4.9 per 1,000). The rate of looked after children has remained persistently higher in Scotland than in England for the last three decades (Figure 32).

Figure 32.



Analysis for the regions shows a similar pattern. In 2006-08, the proportion of looked after children in Glasgow and the Clyde Valley (was almost twice as high as that recorded for Merseyside and Greater Manchester). Time series data – comparing with the slightly larger Strathclyde region for the 1980s due to data limitations – suggest that this divide has also persisted over time (Figure 33).

Figure 33.



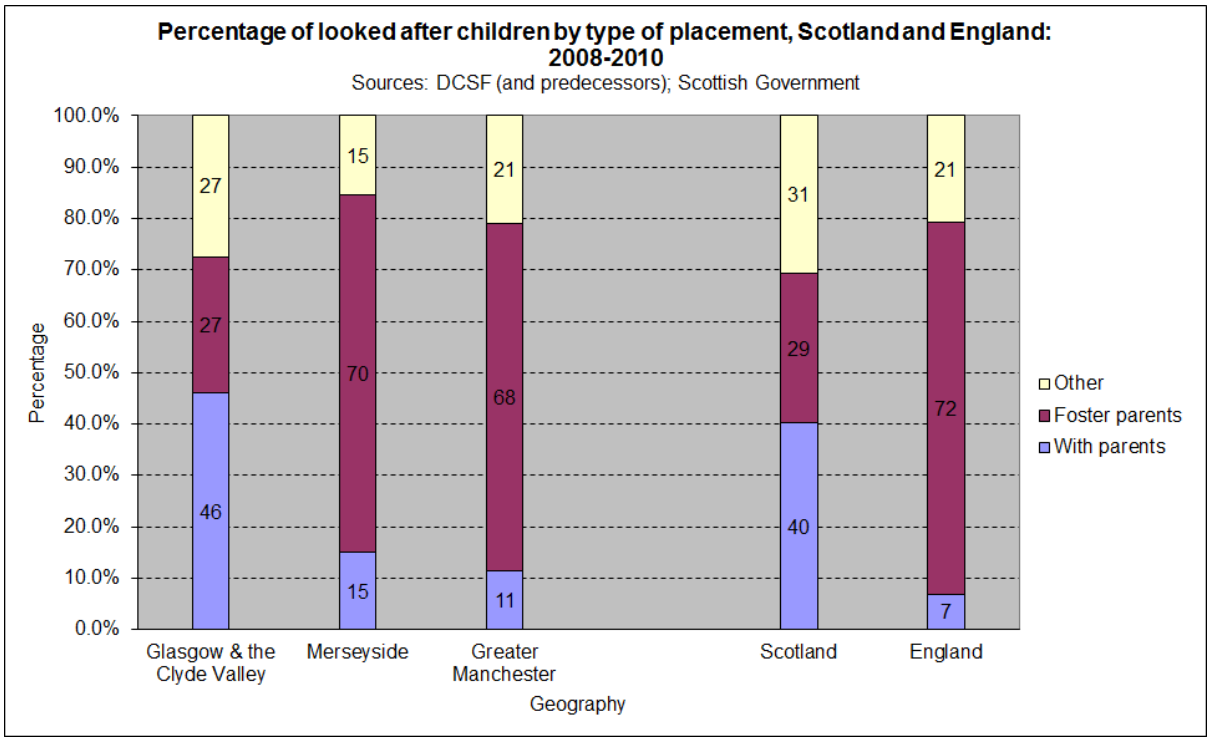
Note: Series breaks for Scottish regions reflect changes in administrative boundaries, and data collection practices in the mid-1990s.

These findings remain challenging to interpret because of the different administrative and legal systems prevailing in Scotland and England. Much of the gap is accounted for by the much larger number of Scottish children who are 'supervised on a regular basis by social services but remain in the day-to-day setting of the family home'. Parental rights and responsibilities remain with their natural parents. In contrast, 'looked after children' in England are the legal responsibility of the local authority[r].

[r] *Children looked after by local authorities: the legal framework.* Social Work Inspection Agency: http://www.scotland.gov.uk/Resource/Doc/128956/0030715.pdf

These differences in legal rights and responsibilities are partly reflected in the way that 'looked after' children are accommodated. In England and its regions, around two thirds of 'looked after' children reside with foster parents, while in Scotland and Glasgow and the Clyde Valley, this figure falls to around a quarter: four out of every ten Scottish looked after children remain with their parents (Figure 34). There are advantages to the Scottish approach, especially because many looked after children say they want to remain in close contact with their parents[99], although there is no evidence that these arrangements improve long-term outcomes for looked after children[100]. By contrast, there is some evidence that achieving 'early permanence' (e.g. adoption) can improve outcomes[101,102].

Figure 34.



2.2.6 Summary

- The evidence on geographical differences in domestic abuse within families with children is contradictory. Self-reported experience of partner violence in the MCS did not vary significantly by nation or regions. However, the British and Scottish Crime Surveys suggest a higher prevalence of some forms of physical abuse, emotional abuse and threats in Scotland and (for physical abuse only) GCV, though this may partly reflect differences in the questionnaires.

- Surveys provide little evidence that gender relations were more negative in the Scottish areas. Self-reported quality of relationships between mothers and fathers was similar at a national and a regional level. The cohort studies also fail to support the view that fathers in Scotland and GCV were less involved with their home or family in the 1960 and 1980s.

- Analysis of the MCS provides some evidence of a higher incidence of illicit drug use among fathers in Scotland, though regional differences were not significant. Administrative data provide strong evidence of higher incidence of drug abuse in Scotland and GCV, but data constraints mean we are currently unable to say whether this also applies to parents.

- Contemporary surveys do not suggest alcohol use is more problematic among mothers in Scotland or GCV. There is, however, evidence from the 1960s that alcoholism was more of a problem in Scotland than in England (although regional differences were not significant).

- Administrative data suggest a higher incidence of adult male imprisonment in Scotland and Glasgow and the Clyde Valley, although as with the substance misuse data, we are unable to say definitively whether parental imprisonment is higher.

- The rate of 'looked after' children is much higher in Scotland and GCV than England and its regions. However, it remains unclear how much this difference can be explained by differences in administrative and legal systems and definitions of looked after children in the two countries. Scottish looked after children are also much less likely to be fostered and more likely to be accommodated at home with their parents. The implications of this remain uncertain.

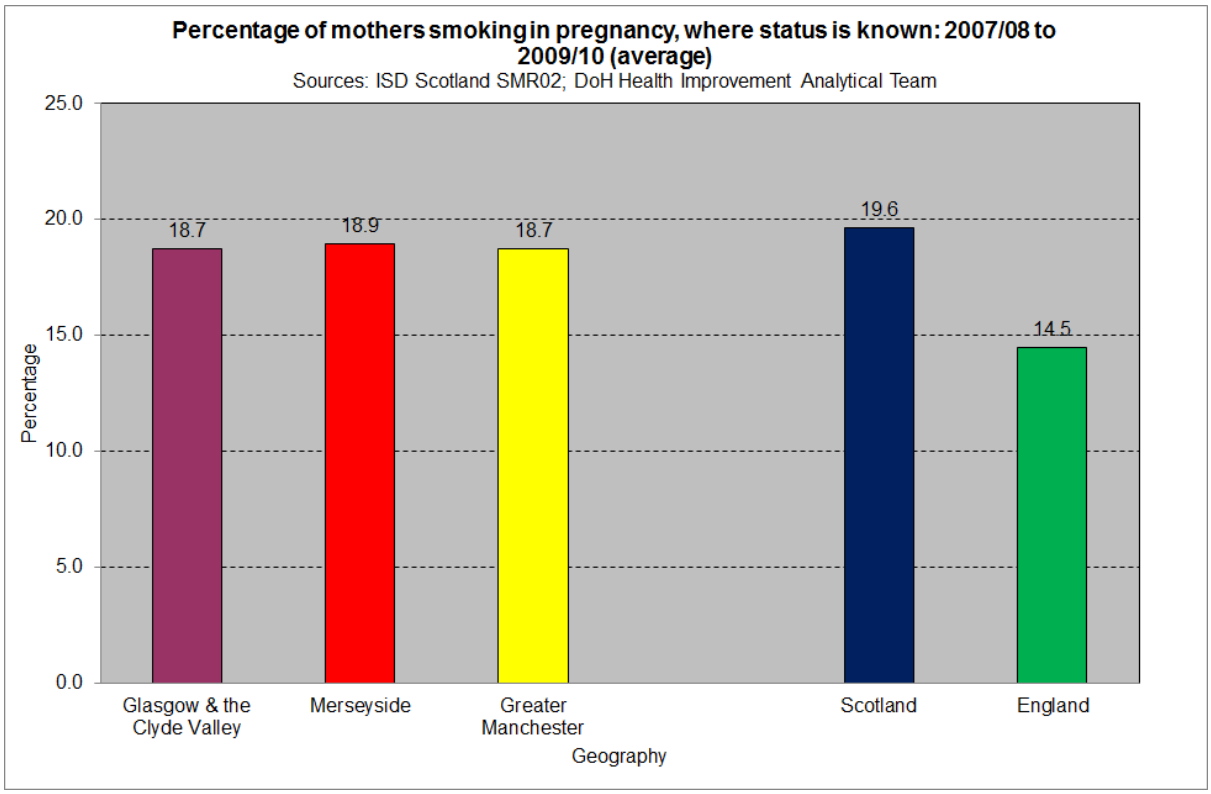
- It remains unclear whether levels of domestic violence, parental drug and alcohol misuse and parental imprisonment are higher in Scotland and GCV compared to England, Merseyside and Greater Manchester. The high rate of looked after children (and differing accommodation practices) between Scottish and English areas also invites further scrutiny. More research may be required to provide definitive answers to these questions.

2.3 Maternal and child health

2.3.1 Mother's smoking during pregnancy

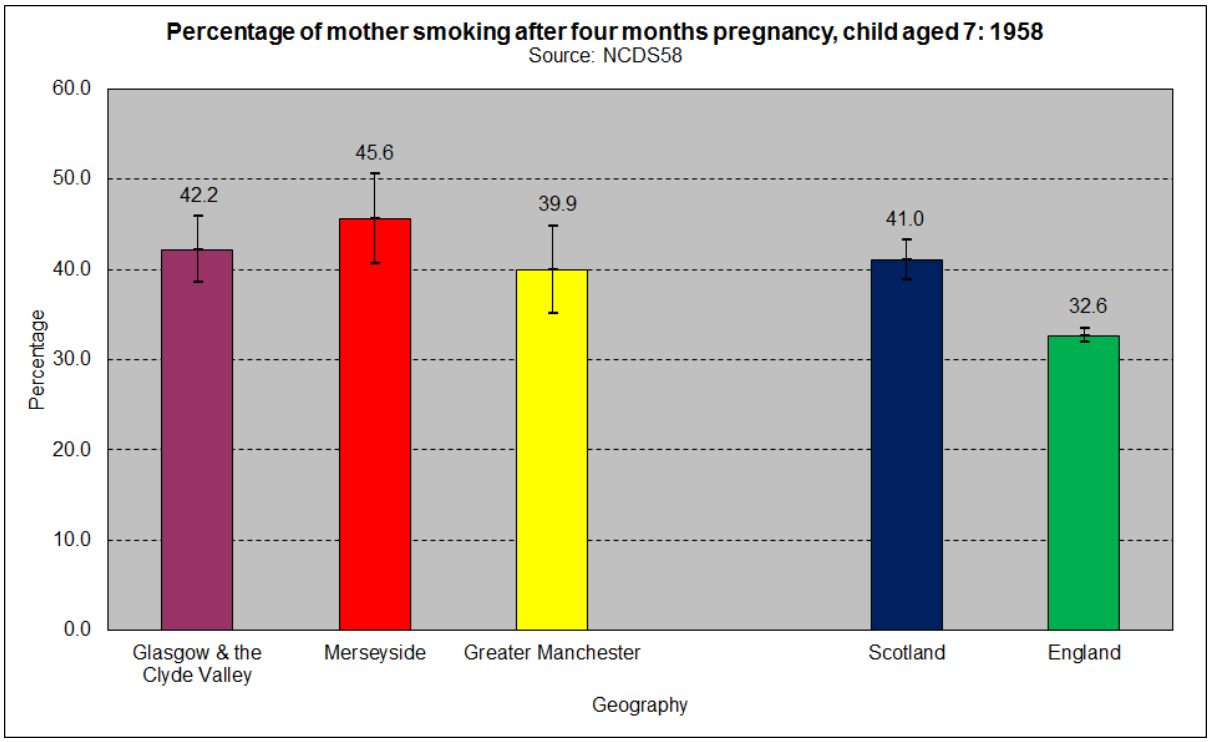
The MCS found a weak (but still measurable) link between maternal smoking when children are very young and the likelihood that they will have behavioural problems at age five. Figure 35 compares the percentage of mothers smoking in pregnancy (where smoking status was recorded), for Scotland, England and the three post-industrial regions for the period 2007/08 to 2009/10. Scottish mothers were significantly more likely to smoke in pregnancy than English mothers (19.6% versus 14.5%). However, the percentage of mothers smoking during pregnancy did not vary significantly between regions.

Figure 35.



We can also examine some historical data on smoking during pregnancy, using the NCDS. The measure used is the percentage of mothers smoking after four months of pregnancy (Figure 36). In 1958, the percentage of Scottish mothers smoking during pregnancy (41.0%) was significantly higher than the figure for English mothers (32.6%). At a regional level, the percentage of mothers smoking during pregnancy in Glasgow and the Clyde Valley was similar to the English regions.

Figure 36.

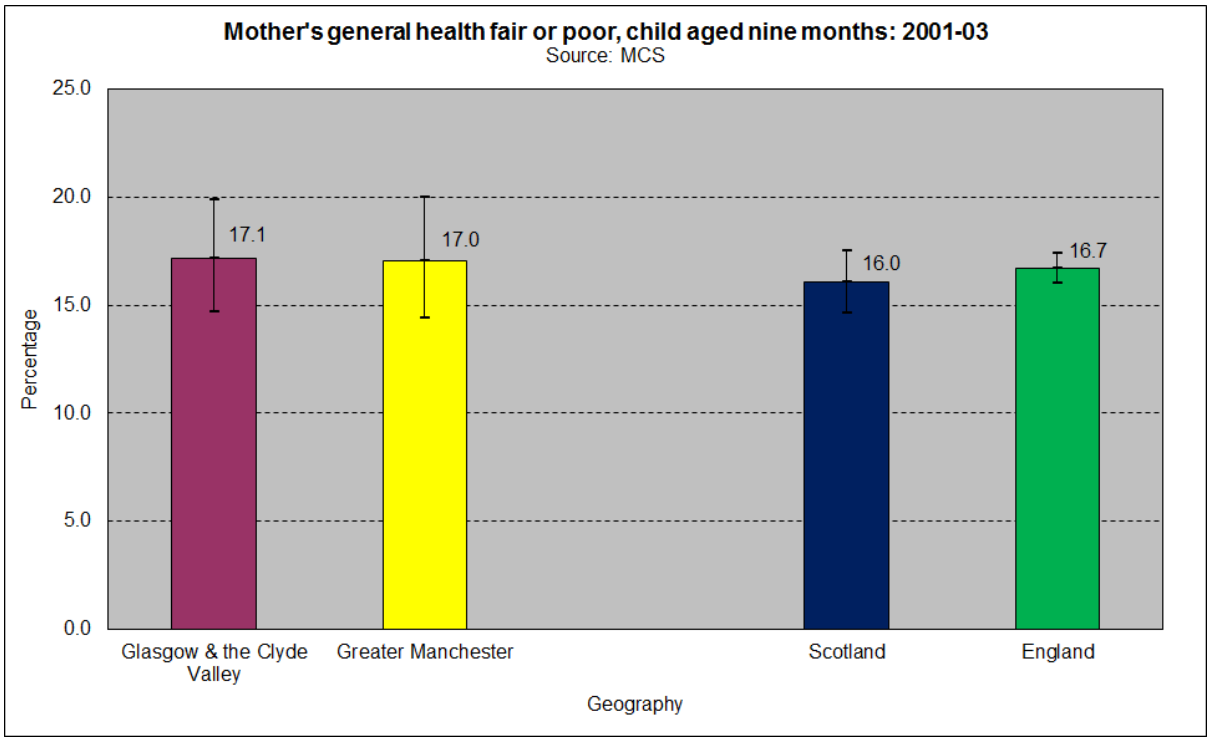


Sample sizes: GCV=678; Merseyside=384; Greater Manchester=391; Scotland=1,964; England=14,318.

2.3.2 Maternal general health

The PREview study found that children of mothers rating their general health as 'poor' are at greater risk of negative health, behavioural and development outcomes[80]. The measure used here is drawn from the first sweep of the Millennium Cohort Survey: the percentage of mothers describing their general health as fair or poor, when the cohort member was aged nine months. As Figure 37 shows, in the MCS cohort, maternal general health did not vary significantly by country or region.

Figure 37.

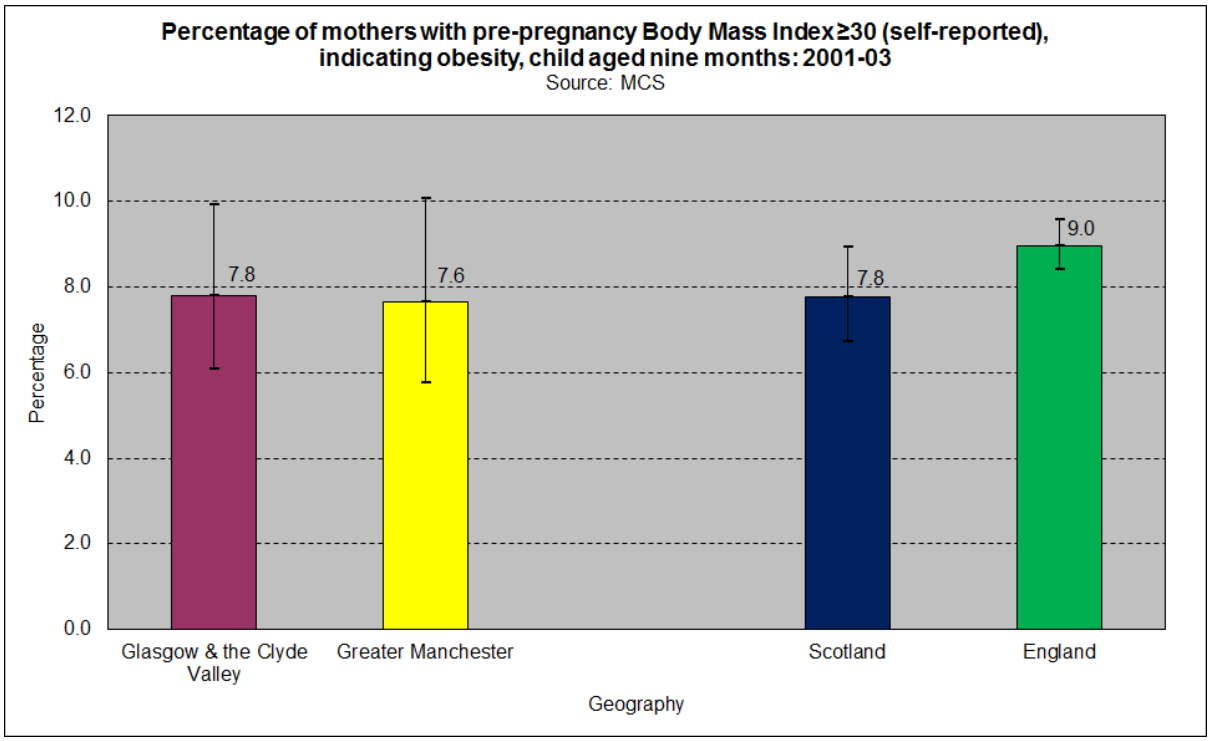


Sample sizes: GCV=808; Greater Manchester=755; Scotland=2,329; England=11,496.

2.3.3 Pre-pregnancy obesity

Pre-pregnancy maternal obesity is associated with an increased risk of childhood obesity[103], while pre-pregnancy maternal morbid obesity is modestly associated with difficulties with children's learning and development at age five[16]. To examine this issue, we use the percentage of mothers with a pre-pregnancy Body Mass Index (BMI) of 30 or greater: the source is the MCS (Figure 38). The proportion of obese females in Scotland was slightly lower than for England, but this was not a statistically significant difference. The proportions of obese females in Glasgow and the Clyde Valley and Greater Manchester were very similar. However, any interpretation is limited by the fact that the BMI is based on self-reported height and weight, which are likely to understate the 'true' levels of obesity.

Figure 38.



Sample sizes: GCV=743; Greater Manchester=609; Scotland=2,120; England=9,407.

2.3.4 Maternal mental health

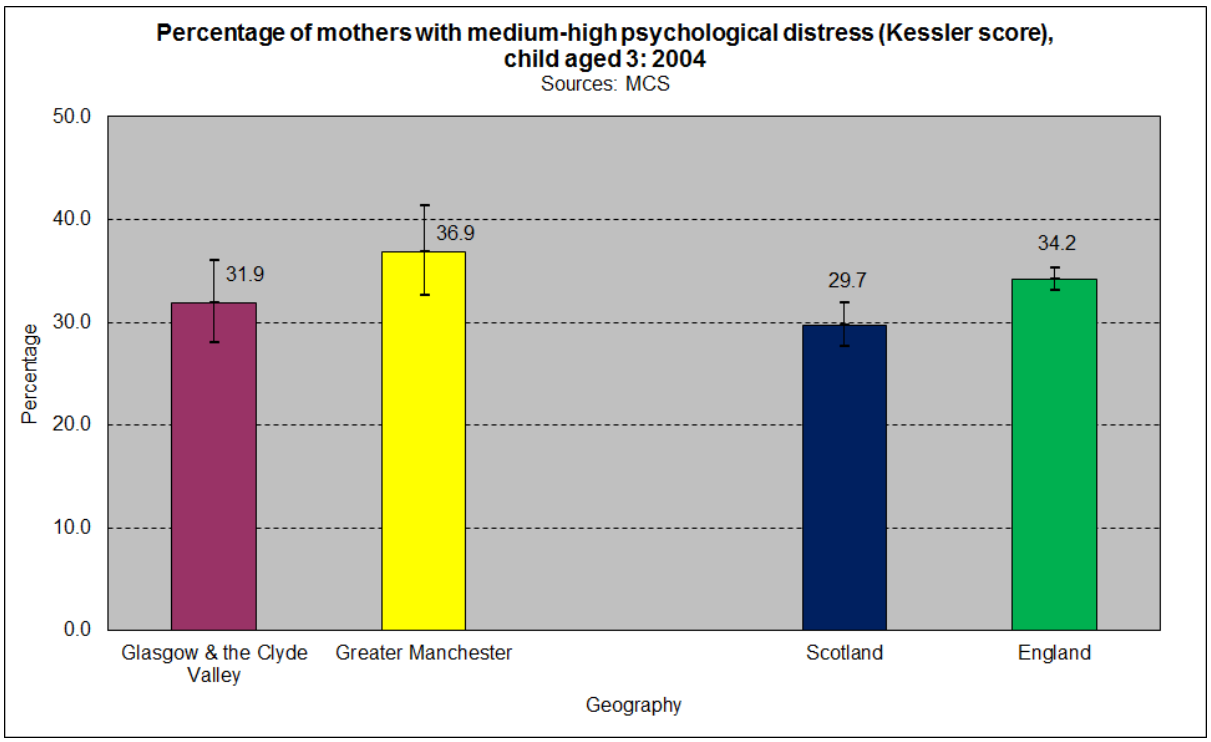
Poor maternal mental health is associated with worse childhood health, increased risk of behavioural problems and (to a lesser extent) increased risk of difficulties with learning and development. In Scotland, children of mothers with repeated, prolonged mental health problems have been shown to experience more difficulties with their social, emotional and behavioural development at age four than those whose mothers had no such problems, even after controlling for other factors[29].

Kessler scores

The first indicator of maternal mental health is the percentage of mothers experiencing psychological distress, as measured by the Kessler-6 scale. Based on responses to six questions[s] about their mental health in the last 30 days, mothers were classified as having medium-high psychological distress if they scored 4 or greater on this scale[57].

Figure 39 shows the percentage of mothers with medium-high psychological distress in Scotland, England and two of the three post-industrial regions in 2004, when cohort children were aged three. In Scotland, the percentage of mothers with medium-high psychological distress (29.7%) was significantly lower than the figure for mothers in England (34.2%). The observed percentage of mothers with medium-high psychological distress was also lower in Glasgow and the Clyde Valley compared to Greater Manchester (31.9% versus 36.9%), but the difference was not statistically significant.

Figure 39.



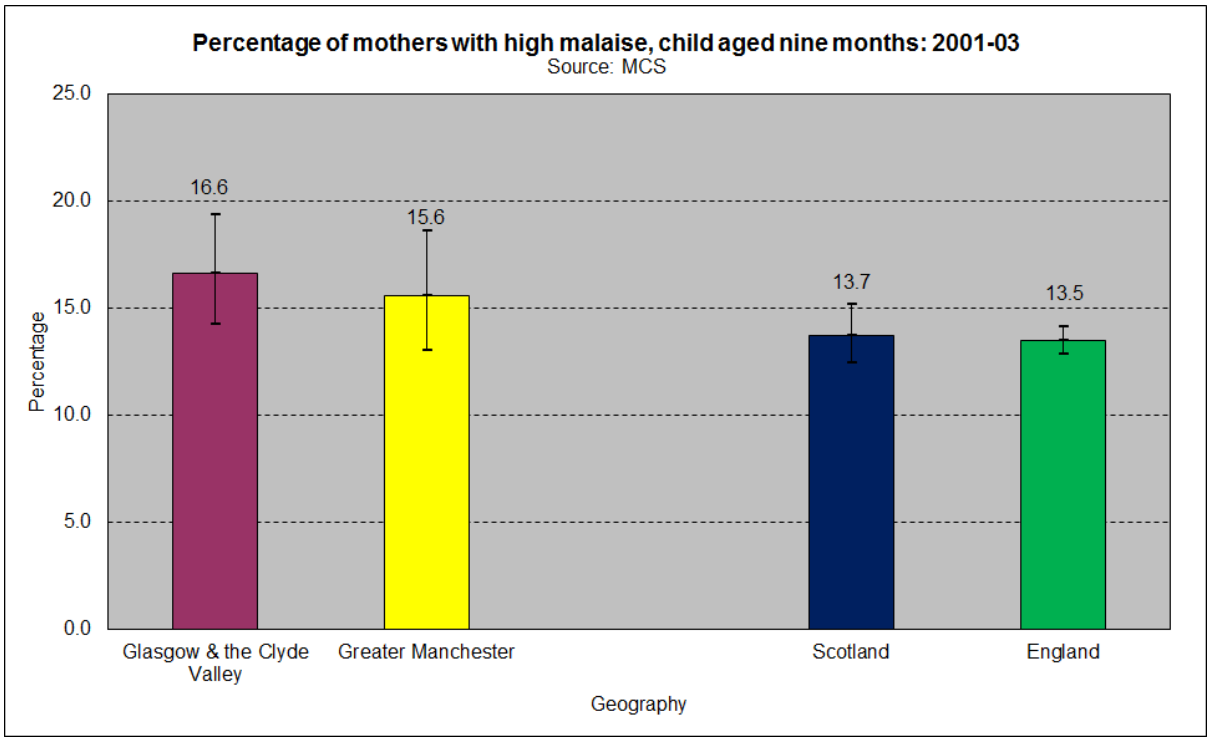
Sample sizes: GCV=516; Greater Manchester=488; Scotland=1,576; England=7,643.

[s] The six questions ask how often in the past 30 days the respondent had felt i) 'so depressed that nothing could cheer you up' ii) 'hopeless' iii) 'restless or fidgety' iv) 'that everything you did was an effort' v) 'worthless' vi) 'nervous'.

Maternal malaise

Our second indicator of maternal mental health is the Malaise Inventory, which measures levels of depression based on mothers' responses to a series of questions. In the MCS, malaise scores were available for 2001-03, when children in the cohort were around nine months old[56]. Scores of 4 or greater were treated as indicating high levels of malaise and therefore maternal depression. In 2001-03, levels of maternal malaise score were almost identical in Scotland (13.7%) and England (13.5%). Malaise scores in Glasgow and the Clyde Valley were also not significantly different from those recorded for Greater Manchester (Figure 40).

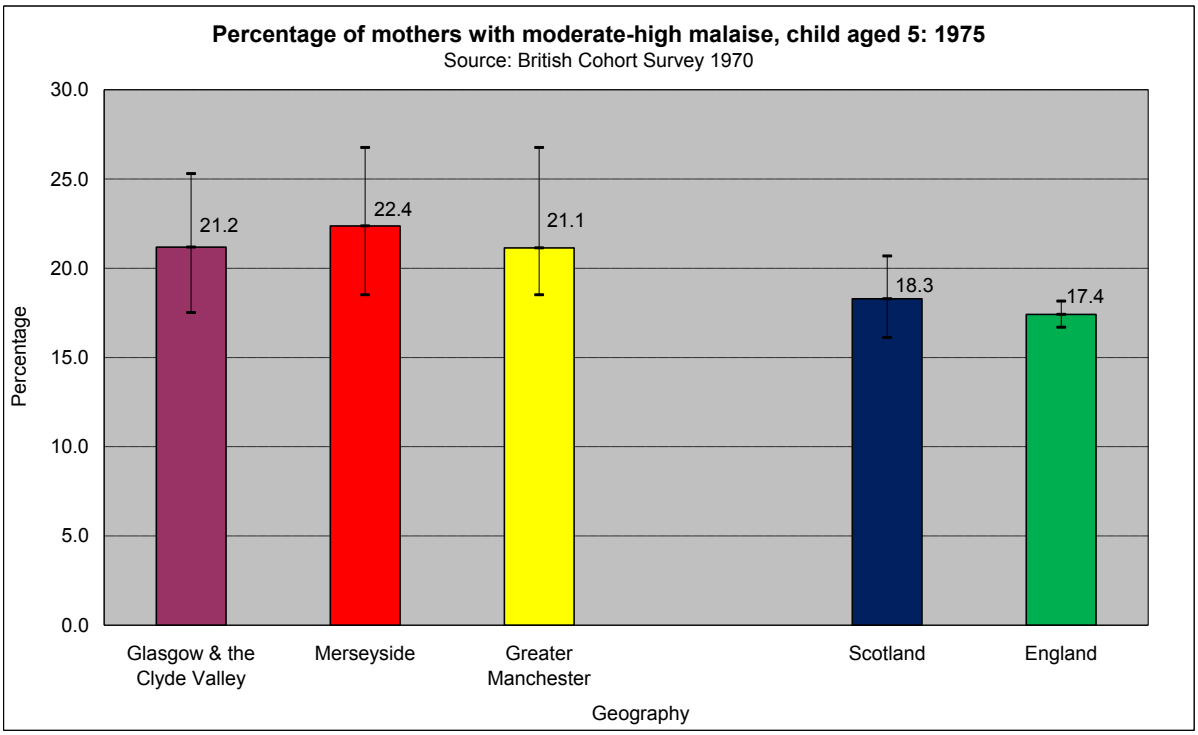
Figure 40.



Sample sizes: GCV=802; Greater Manchester=698; Scotland=2,252; England=10,920.

Mothers' malaise scores were also collected in the BCS70. Based on their responses to 24 questions, mothers were grouped according to the distribution of malaise scores. Those in the 81st-100th percentile were classified as having 'moderate-high' malaise. In 1975, the percentage of Scottish mothers with 'moderate-high' malaise stood at 18.3%, which was not significantly different from the figure for English mothers (17.4%). Using this indicator, levels of maternal depression did not vary significantly by region (Figure 41).

Figure 41.

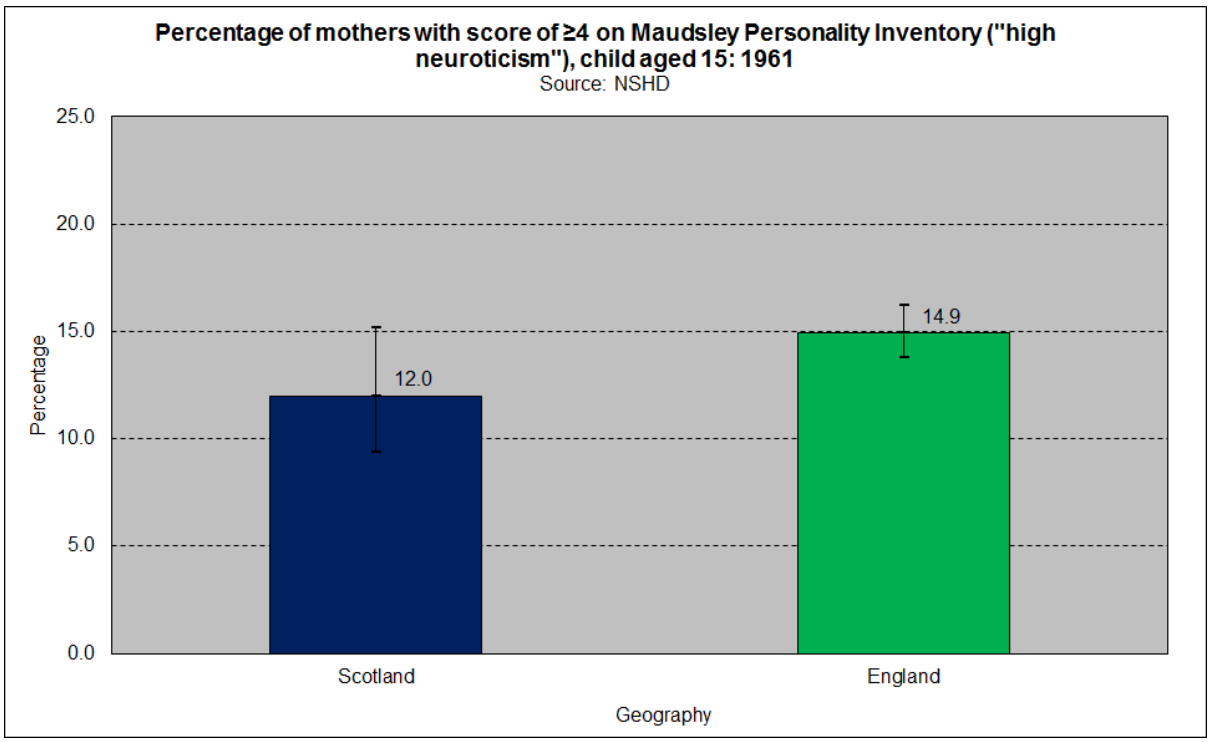


Sample sizes: GCV=354; Merseyside=389; Greater Manchester=421; Scotland=1,099; England=10,306.

High neuroticism

Further historical evidence on maternal mental health for Scotland and England only is available from the NSHD, which collected data on mother's levels of neuroticism in 1961 (when cohort members were aged 15). Neuroticism scores from 0-6 were calculated for all mothers, based on their responses to six questions[t] from the Maudsley Personality Inventory (MPI). Respondents with a score of 4 or greater were classified as having high levels of neuroticism. Results are shown in Figure 42. In 1961, the observed percentage of mothers classified as having high levels of neuroticism was lower in Scotland (12.9%) than England (14.0%), but this was not statistically significant.

Figure 42.



Sample sizes: Scotland=484; England=3,307.

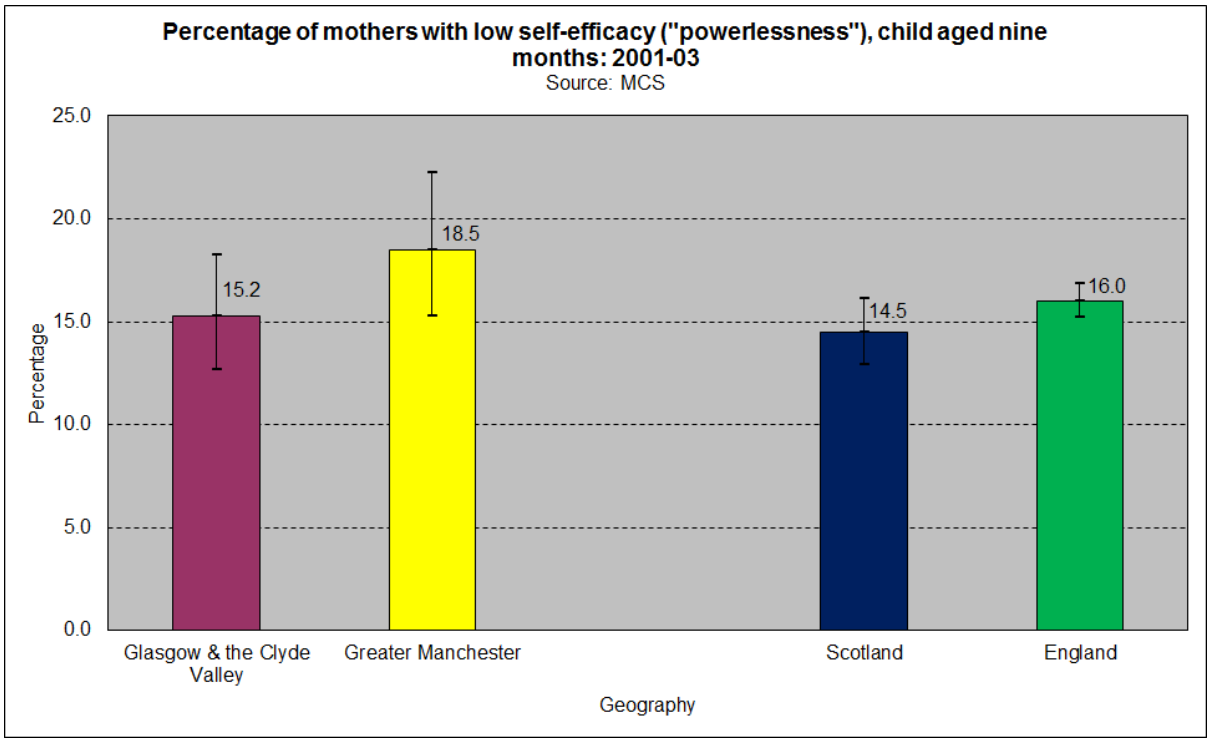
[t] Mothers were asked to answer yes or no to six questions: (i) Are you inclined to be moody? (ii) Do you sometimes feel happy, sometimes depressed without adequate reason? (iii) Does your mind often wander when you are trying to concentrate? (iv) Do you have frequent ups and downs in mood either with or without apparent cause? (v) Are you sometimes bubbling over with energy and sometimes very sluggish? (vi) Are you frequently 'lost in thought' even when supposed to be taking part in a conversation?

2.3.5 Maternal feelings of powerlessness

This indicator uses mothers' responses to three questions to derive a measure of low 'self-efficacy' or powerlessness, which has been found to be associated with child behavioural problems at age five[16]. Figure 43 shows the percentage of MCS cohort mothers with low self-efficacy in 2001-03, when children were nine months old.

Using this measure, feelings of powerlessness in Scotland (14.5%) were not significantly different from rates seen among English mothers (16.0%). At a regional level, the percentage of mothers who felt powerless was significantly lower in Glasgow and the Clyde Valley compared to Greater Manchester (15.2% versus 18.5%).

Figure 43.

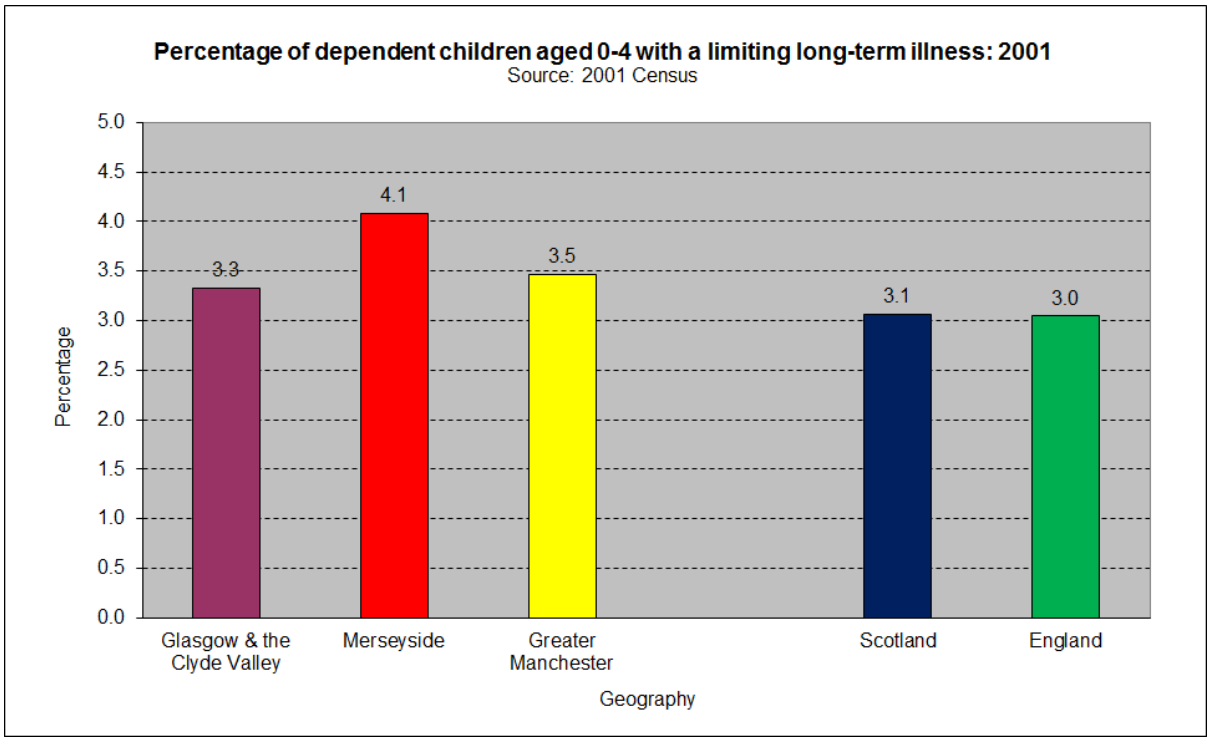


Sample sizes: GCV=623, Greater Manchester=502, Scotland=1,739, England=8,194.

2.3.6 Children with a limiting long-term illness

The final indicator of child and maternal health is the percentage of children age 0-4 with a limiting long-term illness (LLI). In 2001, the figure for Scotland (3.1%) was very similar to that for England (3.0%). In the regions, the percentage of children with an LLI in Glasgow and the Clyde Valley (3.3%) was similar to that for Greater Manchester (3.5%). Both regions had a lower rate than Merseyside (Figure 42).

Figure 44.



2.3.7 Summary

- The proportion of women smoking during pregnancy was significantly higher in Scotland compared to England in the 2000s and 1950s. However, the proportion of smoking mothers in GCV were similar to Merseyside and Greater Manchester in both periods.
- Contemporary survey data suggest the percentage of mothers with fair/poor health did not vary significantly by country or region.
- The proportion of pre-pregnancy maternal obesity also did not vary significantly by country or region. It is more difficult to draw firm conclusions from this indicator because these obesity percentages are based on self-reported height and weight, which is likely to understate the true extent of obesity.
- There is no evidence from surveys that contemporary maternal mental health is worse in Scotland compared to England, or in GCV compared to Greater Manchester.
- Historical survey data also fails to provide convincing evidence that maternal mental health was poorer in Scotland and GCV, compared to England, Merseyside and Greater Manchester, in the 1960s and 1970s.
- In 2001, England and Scotland had a similar percentage of children aged 0-4 with an LLI. GCV had a similar percentage of children aged 0-4 with an LLI to Greater Manchester: the highest percentage of children in this age group with an LLI was seen in Merseyside.
- Of the measures of child and maternal health examined, only smoking during pregnancy was found to be distinctively worse in Scotland (though not at a regional level, comparing GCV with Greater Manchester and Merseyside).

2.4 Parenting

As discussed in the introduction, parenting styles can have a profound effect on childhood and early years' experiences, and on subsequent health outcomes in later life. This section examines a number of important factors associated with parenting: conflict within the family, learning and development (including reading to children, breastfeeding and childcare), use of harsh discipline, rules and warmth and affection. Finally, childhood behavioural problems are compared to provide a further indication of patterns of parenting and childhood and early years' experiences.

2.4.1 Conflict

Levels of conflict within the family can be understood in a number of ways. For adults, this may include partner abuse and parental discord, discussed in more detail above. In the context of parenting, the main forms of conflict are between parent and child (parent-child conflict), and between parents in relation to the child (i.e. disagreement about parenting)[16].

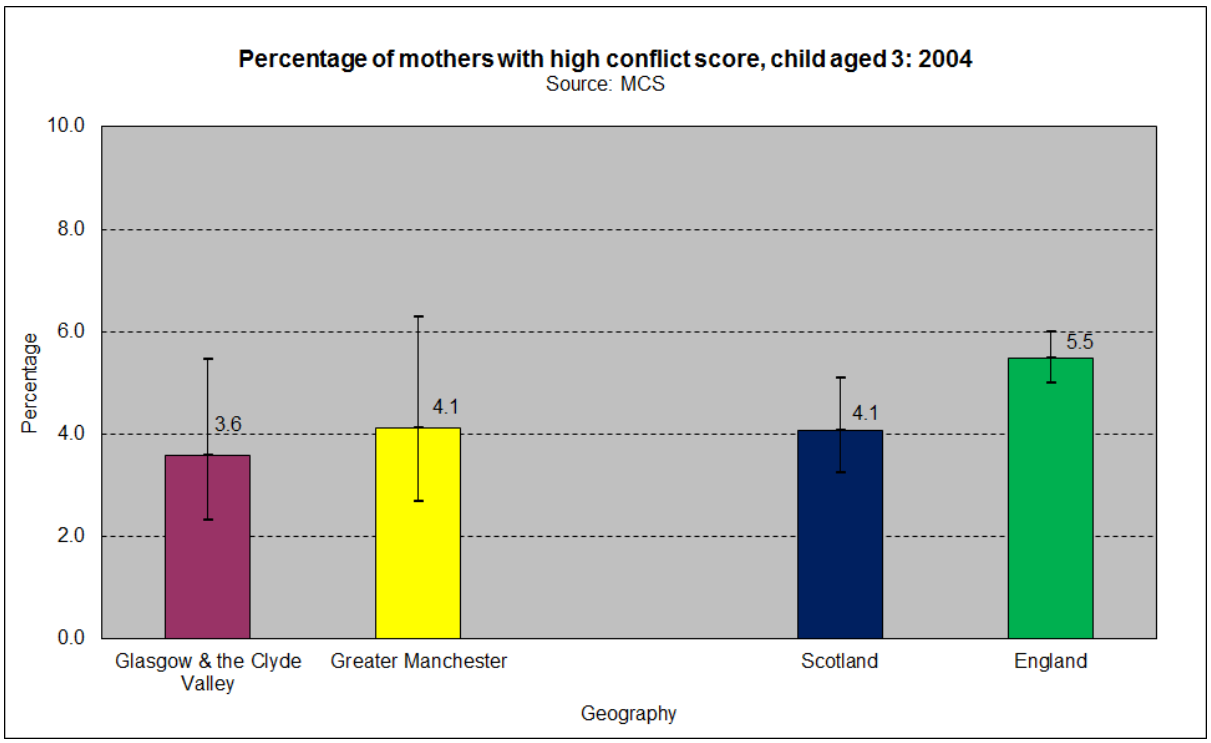
Parent-child conflict has been found to be associated with poorer health[104] and strongly associated with an increased risk of mental and behavioural problems[19] in early childhood. It is measured here using mothers' responses to seven items on the Pianta child parent relationship scale[u], asked in the MCS, which were then transformed into a score between 7 and 35. Following the method proposed by Hobcraft and Kiernan (2010)[16], scores of 27-35 were classified as indicating high levels of parent-child conflict.

As shown in Figure 45, fewer than one in 20 (4.1%) of Scottish mothers had a high conflict score: this was significantly lower than the figure for English mothers (5.5%). Focusing on the regions, the observed proportion of GCV mothers (3.6%) with a high conflict score was lower than for Greater Manchester (4.1%), but the difference was not statistically significant.

The second measure of conflict within the family is the frequency with which mothers disagreed with their partner over the child: this factor has a measurable link to behavioural problems in early childhood[18]. Figure 46 compares the percentage of mothers in each country and region who reported disagreeing with their partner about parenting once a week or more. Parental disagreement was reported by a greater proportion of Scottish (7.3%) than English mothers (6.0%). Levels of parental disagreement were also higher in GCV (9%) than in Greater Manchester (6%), but the difference was not statistically significant.

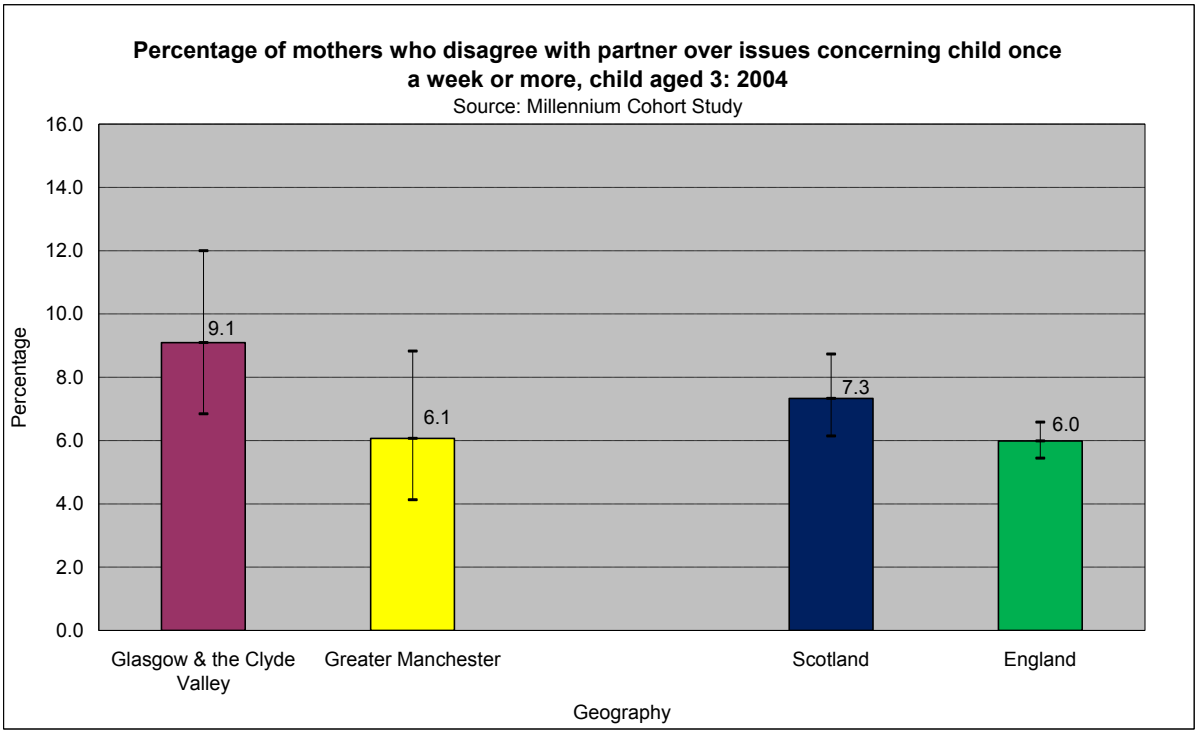
[u] Questions included: 'When the child wakes up in a bad mood, I know we're in for a long and difficult day' and 'Child easily becomes angry with me'. See Appendix A for more information.

Figure 45.



Sample sizes: GCV=549, Greater Manchester=516, Scotland=1,660, England=8,106.

Figure 46.



Sample sizes: GCV=479, Greater Manchester=429, Scotland=1,462, England=7,014.

2.4.2 Learning and development

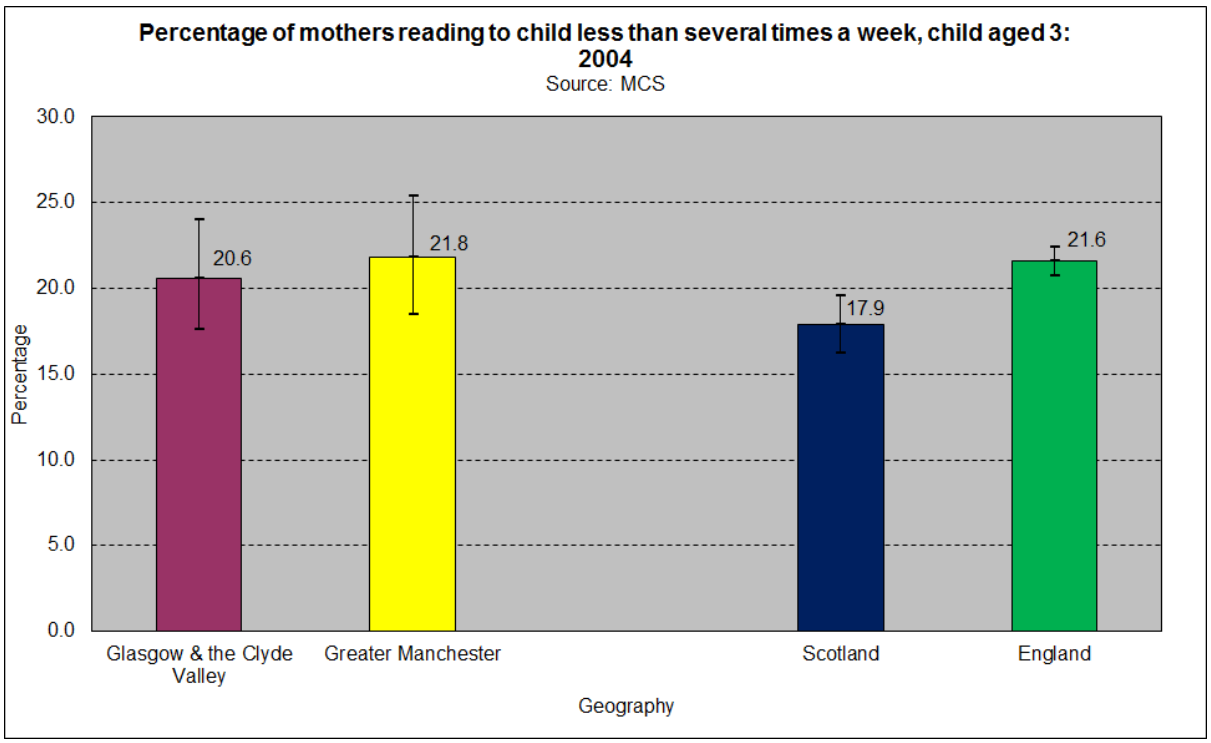
Reading to children

Reading to very young children on a regular basis not only provides a good preparation for formal education[105], it also has protective effects on their health and wellbeing. For example, Kelly *et al*. (2011)[106] estimated that if all the three-year olds in the UK currently read to on a less than weekly basis were read to daily, this would reduce the percentage with social or emotional difficulties at age five by a fifth.

The frequency with which parents read to their child was measured, in slightly different ways, in the 1960s, 1970s and 2000s. Beginning with the MCS, Figures 47 and 48 show the percentage of mothers and fathers who read to their child infrequently (less than several times a week) in 2004, when the MCS children were aged three. The results were:

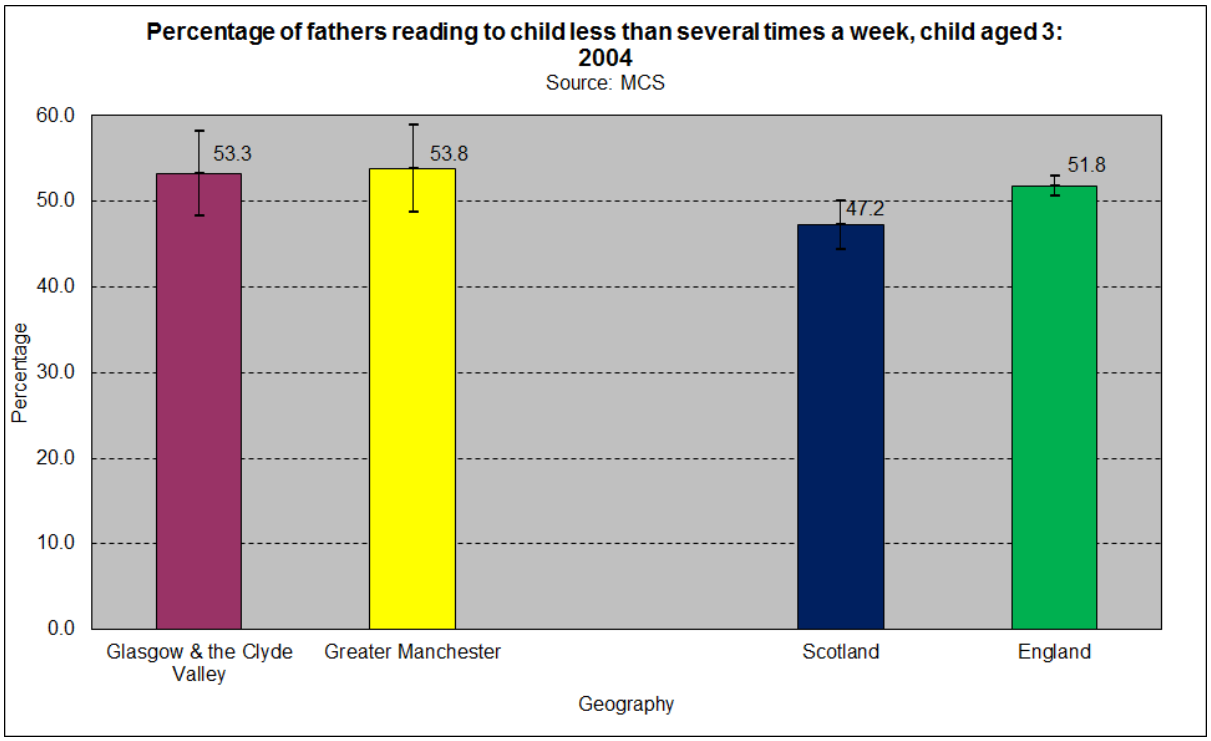
- Scottish mothers were less likely to read infrequently to their child than those in England, though the absolute scale of the difference was small. Regional differences between GCV and Greater Manchester were not significant (Figure 47).
- Scottish fathers were less likely to report reading infrequently to their children than English fathers. Again, regional differences were not significant (Figure 48).

Figure 47.



Sample sizes: GCV=586, Greater Manchester=620, Scotland=1,785, England=9,800.

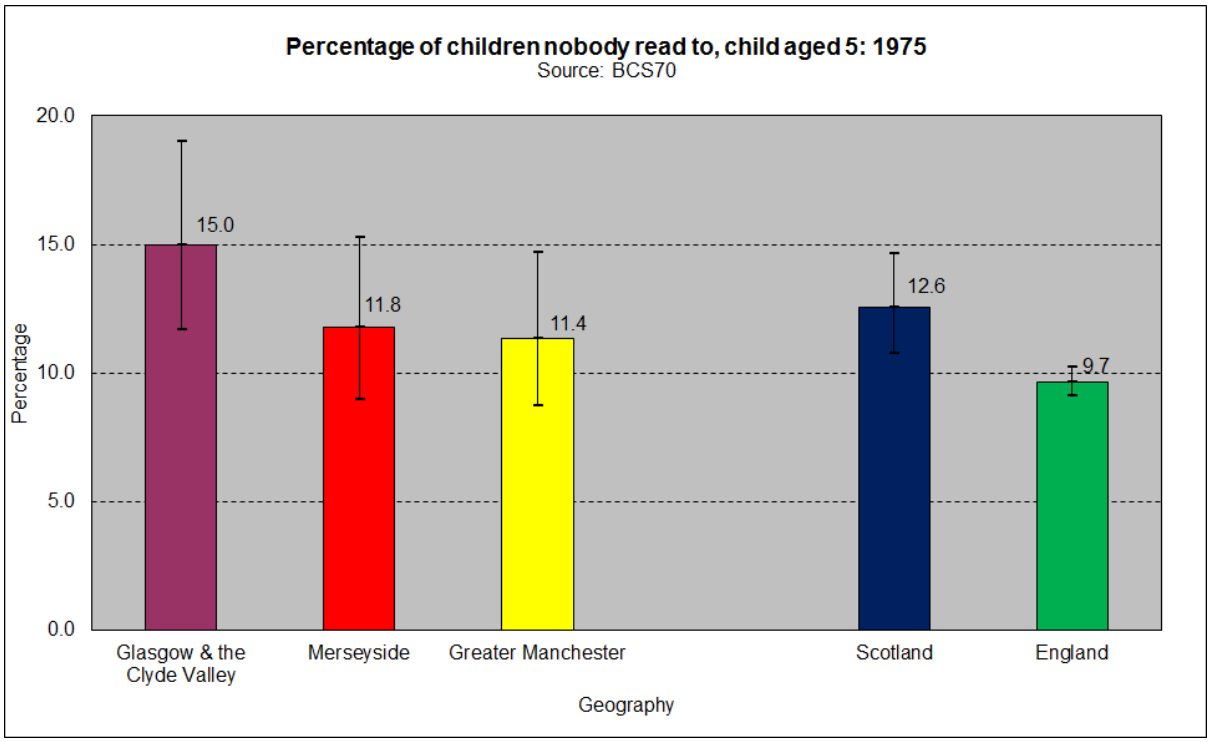
Figure 48.



Sample sizes: GCV=387, Greater Manchester=405, Scotland=1,160, England=6,660.

What about the historical data? Mothers of the BCS70 cohort were asked (in 1975, when the children were aged five) whether anyone had read to their children in the last week. Scottish children were significantly more likely than English children to have 'no one' read to them (12.6% versus 9.7%). However, regional differences were not significant (Figure 49).

Figure 49.

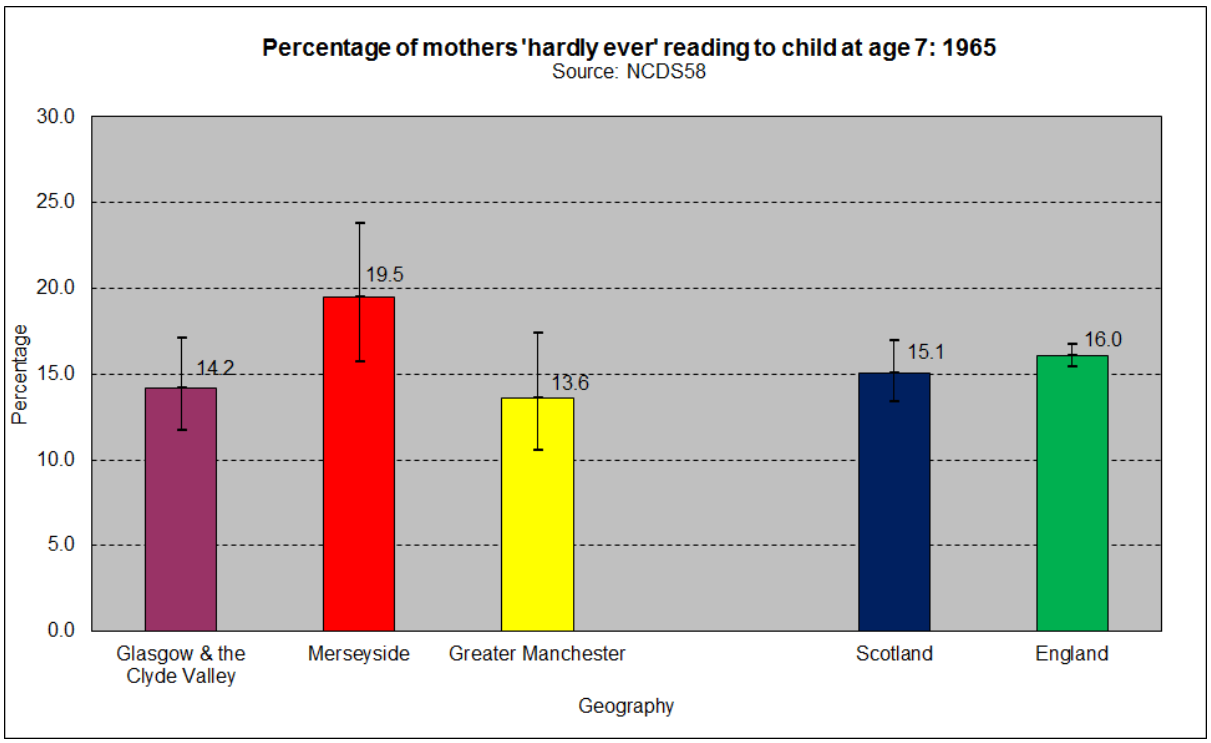


Sample sizes: GCV=367, Merseyside=408, Greater Manchester=440, Scotland=10,859, England=1,138.

A decade earlier, in 1965, mothers of the NCDS were asked how frequently they and their partners read to their children. Comparisons of the percentage of parents who 'hardly ever' read to their child for Scotland, England and the three post-industrial regions show that:

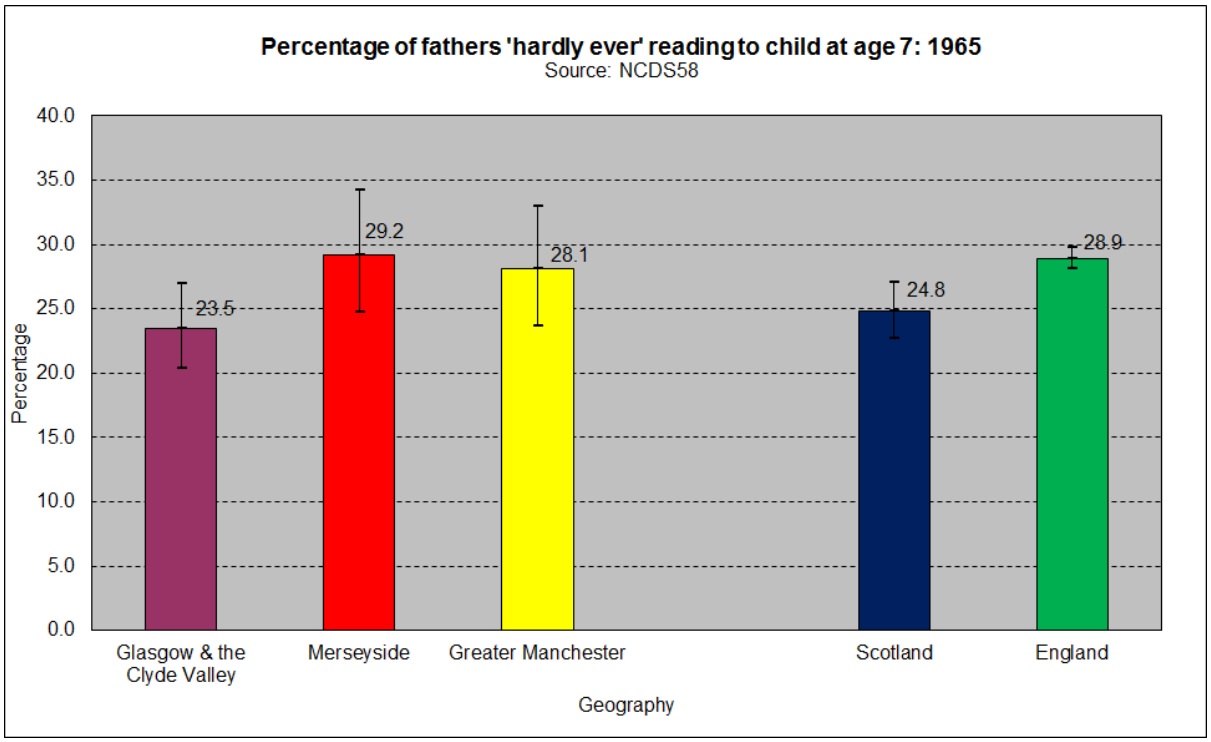
- the proportion of Scottish mothers hardly ever reading to their child was not significantly different to the proportion reported in England. At a regional level, the percentage of mothers in GCV 'hardly ever' reading to their child was similar to Greater Manchester and lower than that reported for Merseyside (Figure 48).
- Scottish fathers were significantly *less* likely than English fathers to report this was the case (24.8% versus 28.9%). The proportion for fathers did not vary significantly between regions (Figure 51).

Figure 50.



Sample sizes: Mothers: GCV=662, Merseyside=370, Greater Manchester=382, Scotland=1,565, England=12,104

Figure 51.



Sample sizes: GCV=638, Merseyside=356, Greater Manchester=349, Scotland=1,507, England=11,714. NCDS = National Child Development Survey.

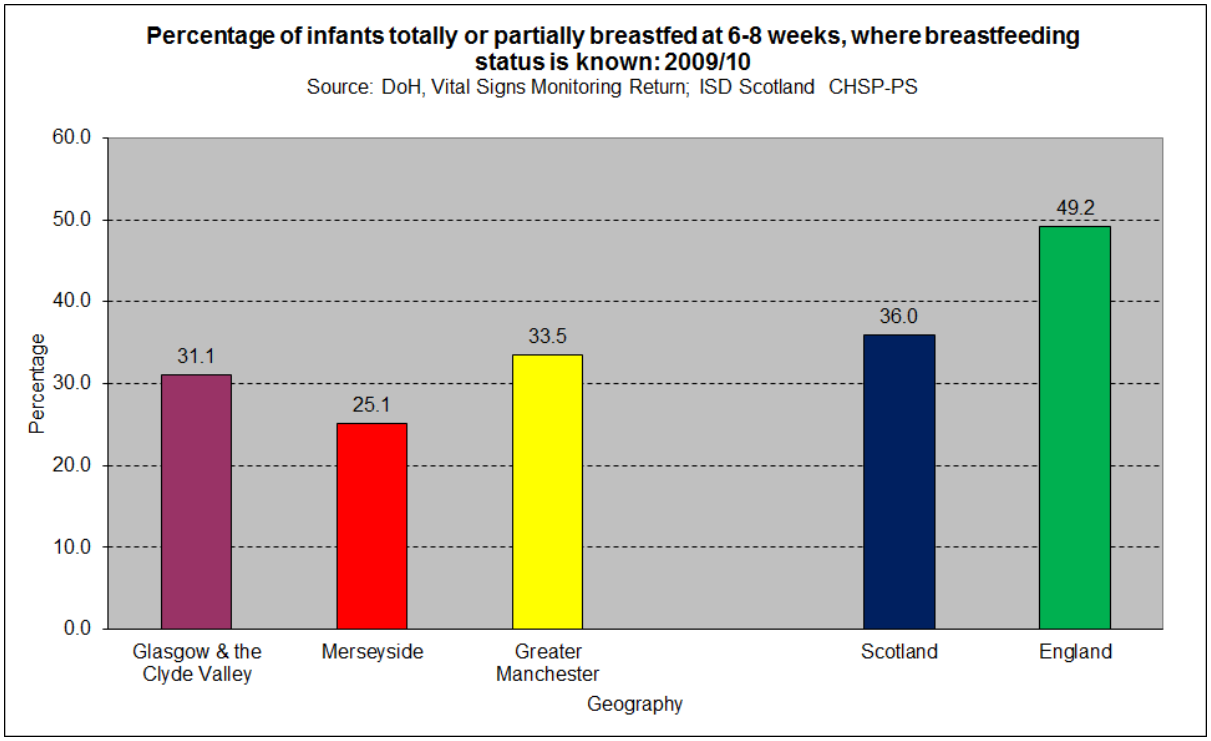
Taken as a whole, there is little consistent evidence that Scottish and GCV parents are (and were) less likely to read to their children than their counterparts in England and the regions of Merseyside and Greater Manchester.

Breastfeeding

Breastfeeding confers a number of health benefits on children and their mothers, lowering the risk of infectious disease in childhood and potentially the risk of adult obesity[107]. Longitudinal studies have also shown a negative association between the proportion of mothers breastfeeding at nine months and childhood behavioural problems, limiting long-term illness and (especially) learning and development at age five[16]. The indicator used is the percentage of infants partially or totally breastfed at 6-8 weeks, as a percentage of all infants whose breastfeeding status was known. Data are from administrative records and relate here to the financial year 2009/10.

As Figure 52 shows, the proportion of mothers breastfeeding at 6-8 weeks was significantly lower in Scotland (36.0%) than in England (49.2%). At a regional level, the proportion of breastfeeding mothers in Glasgow and the Clyde Valley (31.1%) was similar to those recorded for Greater Manchester (33.5%), while Merseyside had the lowest proportion of breastfeeding mothers (25.1%).

Figure 52.



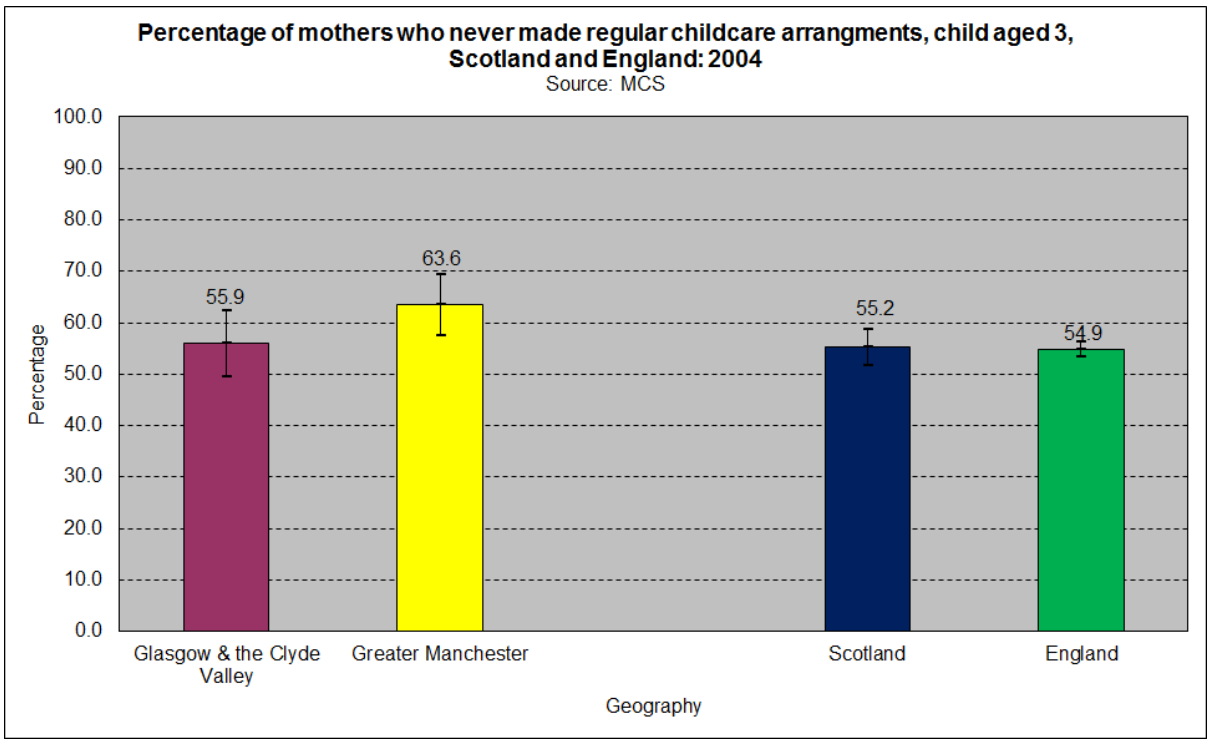
Note: Greater Manchester figure includes mothers from Glossop (in Derbyshire), served by the Tameside and Glossop Primary Care Trust.

Time trend comparisons are not possible, since administrative statistics on English breastfeeding at 6-8 weeks was not collected before April 2008. Results from the Infant Feeding Survey show that: the incidence of breastfeeding increased in both Scotland and England and Wales between 1980 and 2000 and that the gap between Scotland and the rest of Britain narrowed, but did not close, over this period[108].

Childcare

Early years education has been found to have *'positive and long-lasting effects'* for children who receive it, being associated (for example) with improved labour market outcomes at age 33[109]. The measure shown below (Figure 51) compares the percentage of MCS mothers who never made regular childcare arrangements in 2004, when children were aged three. Percentages for Scotland and England were virtually identical (55.2% versus 54.9%). Differences in the percentage of mothers who never made regular childcare arrangements did not vary significantly between Glasgow and the Clyde Valley and Greater Manchester.

Figure 53.



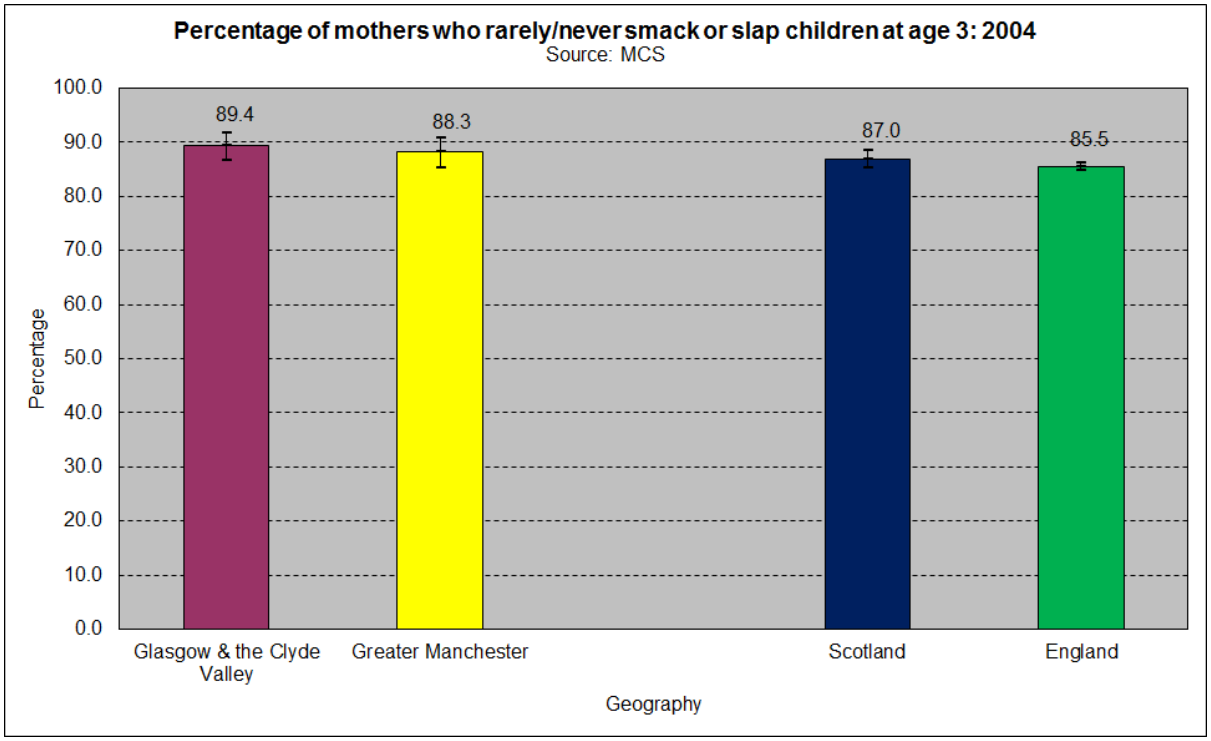
Sample size: GCV=203, Greater Manchester=309, Scotland=651, England=4,787.

2.4.3 Harsh discipline

There is some evidence that harsher discipline is associated both with more conduct disorders among children, and with higher levels of depression among mothers[17]. The Millennium Cohort Study collected two (self-reported) measures of harsh discipline: the frequency with which parents smacked their children; and how frequently they shouted at them when they misbehaved.

Contemporary surveys suggest smacking as a disciplinary tool is relatively rare. Nearly nine out of ten MCS mothers reported that they rarely/never smacked their children when they misbehaved at age three (Figures 54). The percentage of MCS mothers reporting that they rarely/never smacked their child when they misbehaved did not vary significantly between Scotland and England or between GCV and Greater Manchester.

Figure 54.

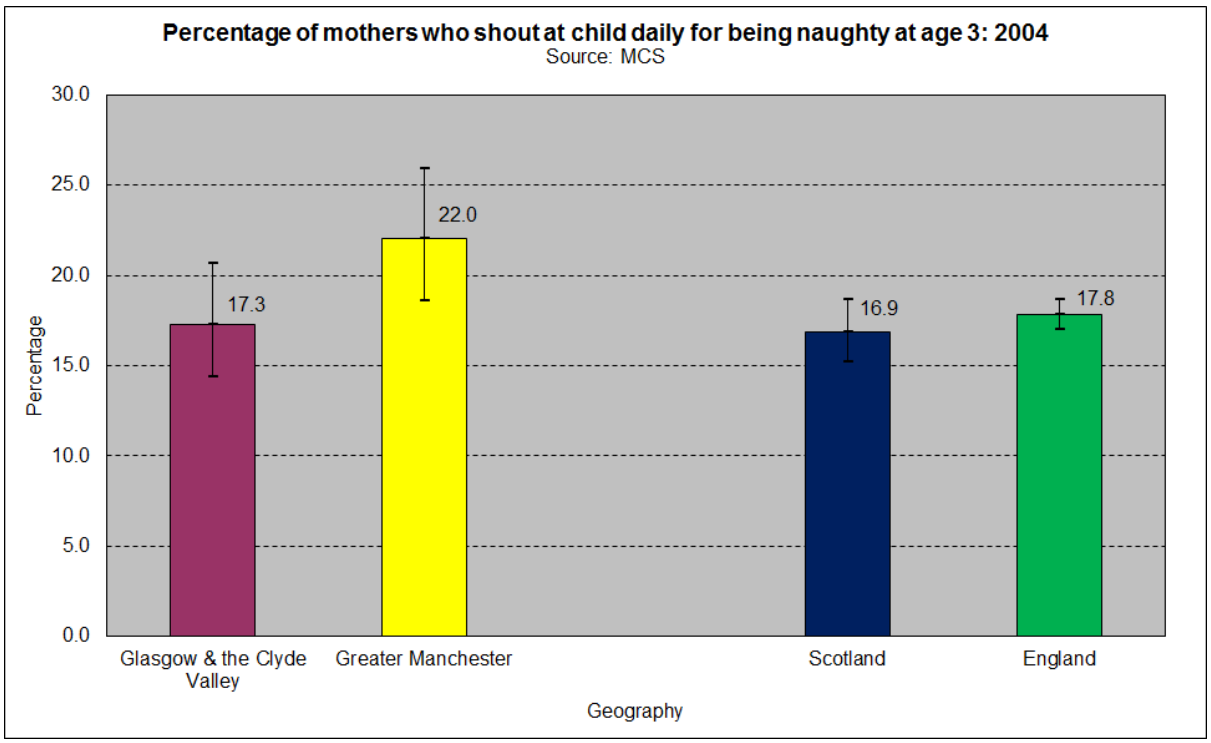


Sample sizes: GCV=557, Greater Manchester=533, Scotland=1,682, England=8,239

Turning to harsh verbal discipline, shouting at children to discipline them is more common but still used sparingly, and more likely to be employed when children were toddlers than at older or younger age groups. Figure 55 shows the percentage of mothers reporting that they shouted at their child daily (for the same time period and geographies as for Figure 54). It reveals that:

- Scottish mothers were not significantly more likely than English mothers to report shouting at their child at age three (16.9% versus 17.8%).
- Use of shouting to discipline children at age three was not significantly different in GCV compared with Greater Manchester.

Figure 55.



Sample sizes: GCV=546, Greater Manchester=534, Scotland=1,663, England=8,201.

Further analysis of the MCS cohort found that Scottish mothers were significantly more likely than English mothers to shout at their children daily at age five (6.3% versus 5.0%) but not at age seven (4.7% versus 4.6%). Mothers in Glasgow and the Clyde Valley were significantly more likely to shout at their children daily than those in Greater Manchester (6.2% versus 3.3%) at age seven but not age five. One final piece of evidence comes from the Understanding Society[v] study (2009), which found that Scottish parents were significantly more likely to report 'very often' shouting at their children than those in England (25.3% versus 18.2%). It therefore remains unclear whether parents in Scotland or GCV shout at their children more than parents in the rest of the UK.

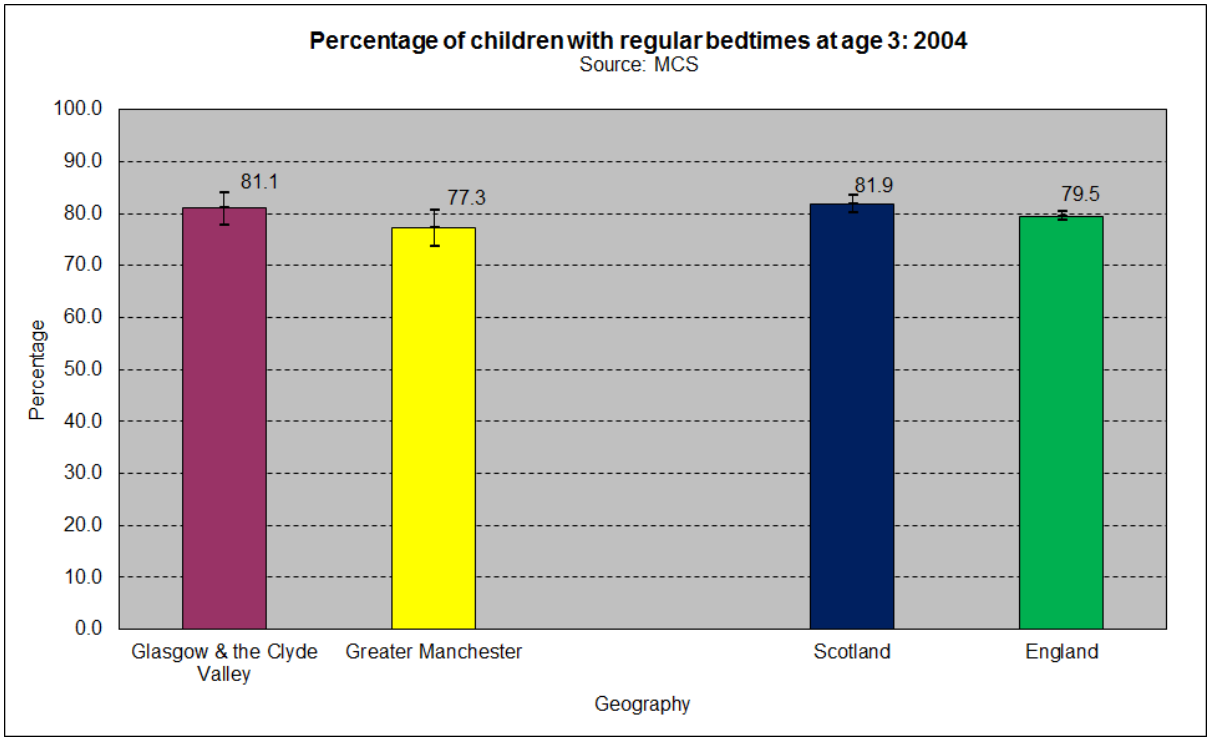
[v] Understanding Society is a longitudinal study of the attitudes and life circumstances of 100,000 individuals in 40,000 British households. For more information see: http://www.understandingsociety.org.uk/

2.4.4 Rules: regular mealtimes and bedtimes

In the PREview Study, using MCS data, researchers found that irregular mealtimes at age three had a detrimental impact on children's learning and development and (to a lesser extent) their health. Irregular bedtimes also had a negative effect on their health, as well as their behaviour, at age five. This section considers both indicators.

Figure 56 compares the percentage of MCS mothers reporting that their child usually or always had a regular bedtime at age three in 2004. Scottish mothers were significantly more likely than English mothers to report their child usually/always had a regular bedtime, though the scale of the difference is very small (81.9% versus 79.5%). The level did not vary significantly between the two post-industrial industrial regions.

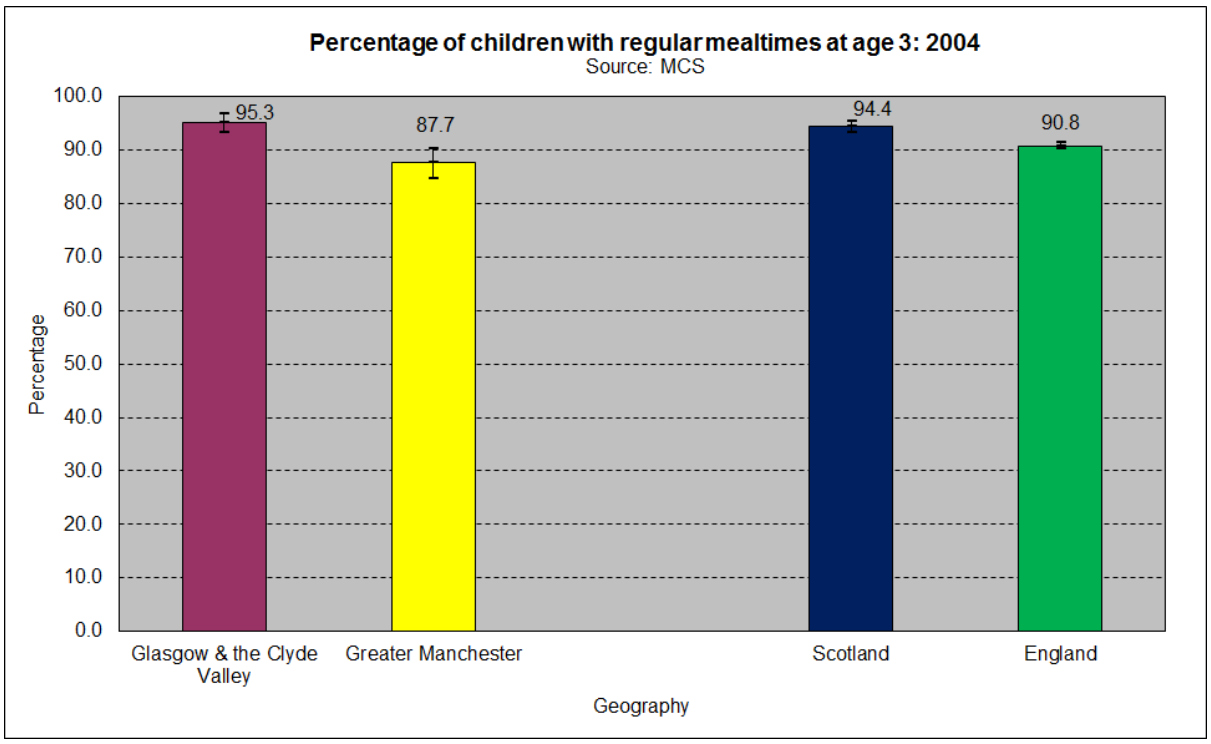
Figure 56.



Sample sizes: GCV=586, Greater Manchester=620, Scotland=1,785, England=9,800.

Figure 57 uses data from the same survey sweep to compare the percentage of mothers reporting that their child usually or always had regular mealtimes. Again, Scottish mothers were significantly more likely than English mothers to report their child usually/always had a regular mealtime (94.4% versus 90.8%). Mothers in GCV were also significantly more likely than their peers in Greater Manchester to report that their child had a regular mealtime.

Figure 57.



Sample sizes: GCV=586, Greater Manchester=620, Scotland=1,785, England=9,800.

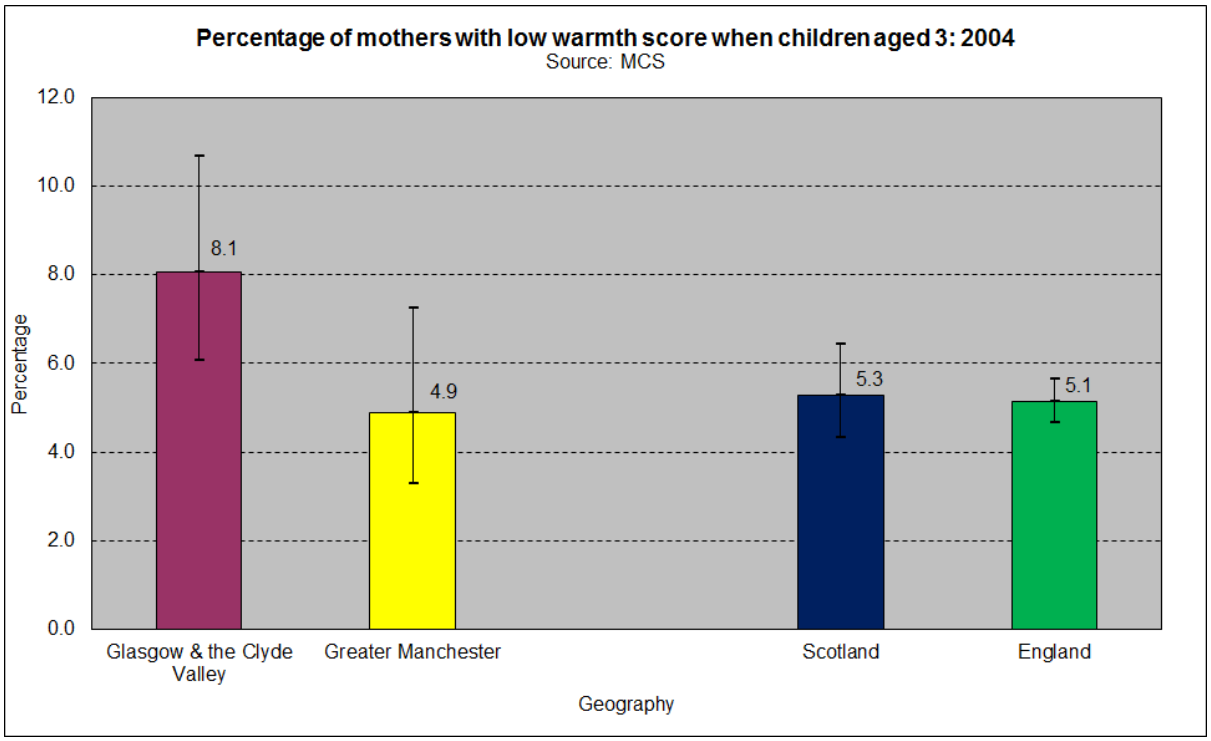
2.4.5 Warmth and affection

Low warmth: Pianta scale

The main contemporary measure of warmth was derived from mother's responses to seven items on the Pianta child parent relationship scale[w], asked in the Millennium Cohort Study. Using the method proposed by Hobcraft and Kiernan (2010)[16], mothers with a score of between 7 and 29 were classified as having a (relatively) low warmth relationship with their child.

Results for England, Scotland, Glasgow and the Clyde Valley and Greater Manchester are shown below (Figure 58). The percentage of Scottish mothers with a low warmth score was not significantly different to that recorded for English mothers (5.3% versus 5.1%). However, the percentage of mothers in GCV with a low warmth score was significantly higher than for mothers in Greater Manchester (8.1% versus 4.9%).

Figure 58.



Sample sizes: GCV=538, Greater Manchester=500, Scotland=1,612, England=7,934.

[w] Questions included 'When I praise the child, he/she beams with pride' and 'The child will seek comfort from me'. See Appendix A for more information.

Given the emphasis some have also placed on a lack of warmth and affection in accounting for Scotland (and Clydeside's) poorer health, MCS rates for mothers in England (when children were aged three) were compared with Scottish data from the GUS study (when children were aged five). Results were:

- The percentage of GUS mothers with a low warmth score was significantly higher than the percentage of MCS mothers in England with a low warmth score (6.4% versus 5.1%).
- The observed percentage of mothers with a low warmth score was higher among the GUS GCV sample than the MCS Greater Manchester sample (6.5% versus 4.9%), although results were not statistically significant.

The seemingly contradictory nature of the various results suggests that further geographical comparisons of parent-child warmth, using the Pianta child parent relationship scale, would make a useful contribution to the knowledge base.

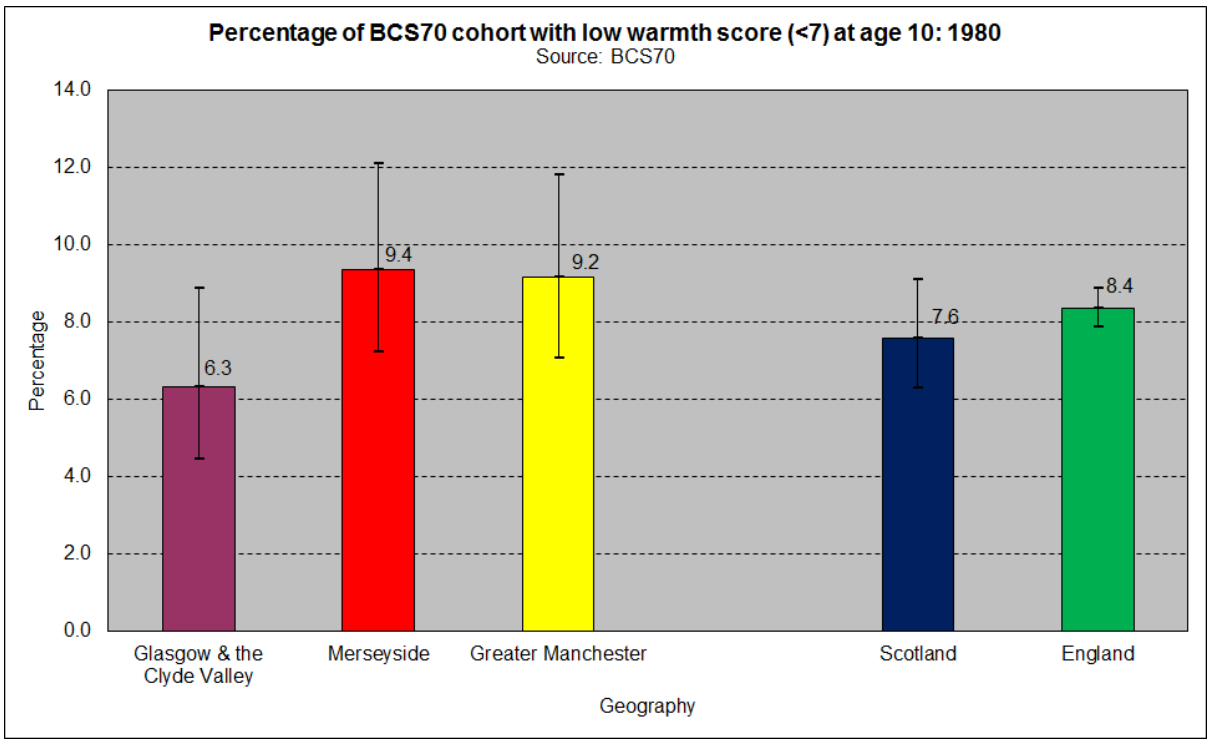
Low warmth: Bartlett, Grist and Hahn

Further ambiguity on this issue is provided by historical data on low parental-child warmth available from the BCS70. Using cohort members' responses to questions about family life at ages 10 and 16, Bartlett, Grist and Hahn (2011)[32] constructed indices to classify the warmth of the parent-child relationship. A simplified version of this index was used to examine levels of warmth in 1980, when cohort members were aged 10. Scores under 7 were classified as indicating low warmth.

National and regional results are presented in Figure 59. It shows that:

- The percentage of Scottish BCS70 cohort members with a low warmth score was not significantly different from the figure for England (7.6% versus 8.4%).
- Similarly, although the percentage of BCS70 members resident in GCV with a low warmth score (6.3%) was lower than for Merseyside (9.4%) and Greater Manchester (9.2%), the difference was not statistically significant.

Figure 59.



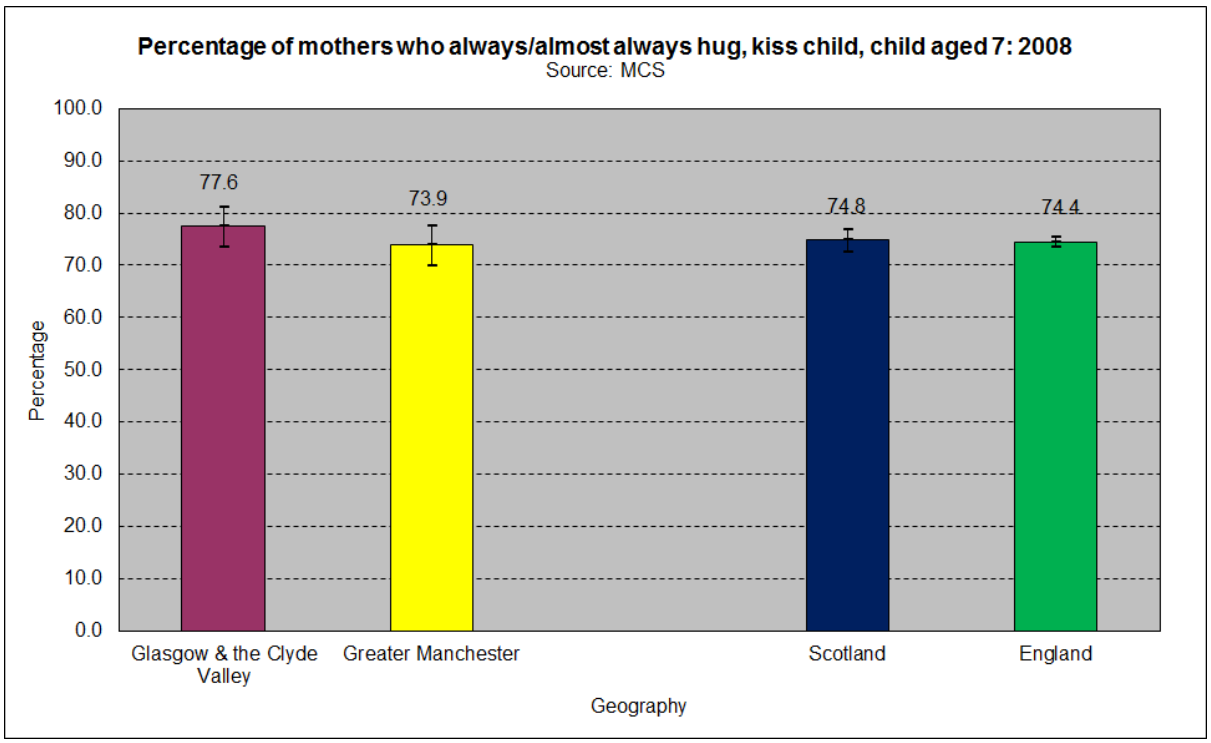
Sample sizes: Glasgow and the Clyde Valley=475, Merseyside=555, Greater Manchester=578, Scotland=1,373, England=11,549.

Physical affection

It has been suggested that parents in Scotland, and especially Glasgow, were historically less physically affectionate towards their children than parents in other places[12]. While we lack historical data to test this, we can compare contemporary levels of physical affection using the Millennium Cohort Study. In 2008, parents were asked how frequently they hugged or kissed their child.

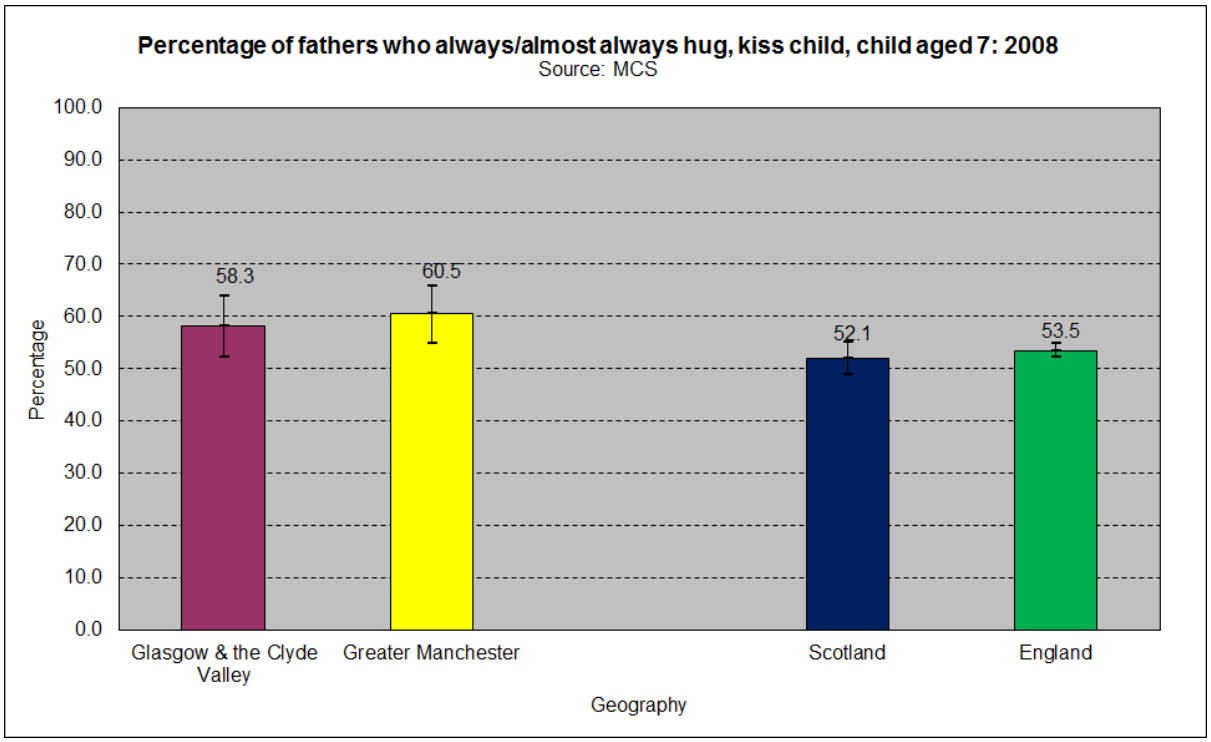
Figures 60 and 61 show the percentage of mothers and fathers reporting that they always or almost always hugged/kissed their child. For all geographies, mothers were more likely than fathers to report frequent physical affection towards their child. Levels of physical affection from either parent did not vary significantly between Scotland and England, or between Glasgow and the Clyde Valley and Greater Manchester. This finding is partly confirmed by analysis of the 2009 *Understanding Society* survey: the percentage of parents reporting that they very often hugged or cuddled their child was almost identical in Scotland and England (85.4% versus 85.6%).

Figure 60.



Sample sizes: GCV=487, Greater Manchester=482, Scotland=1,561, England=8,029.

Figure 61.

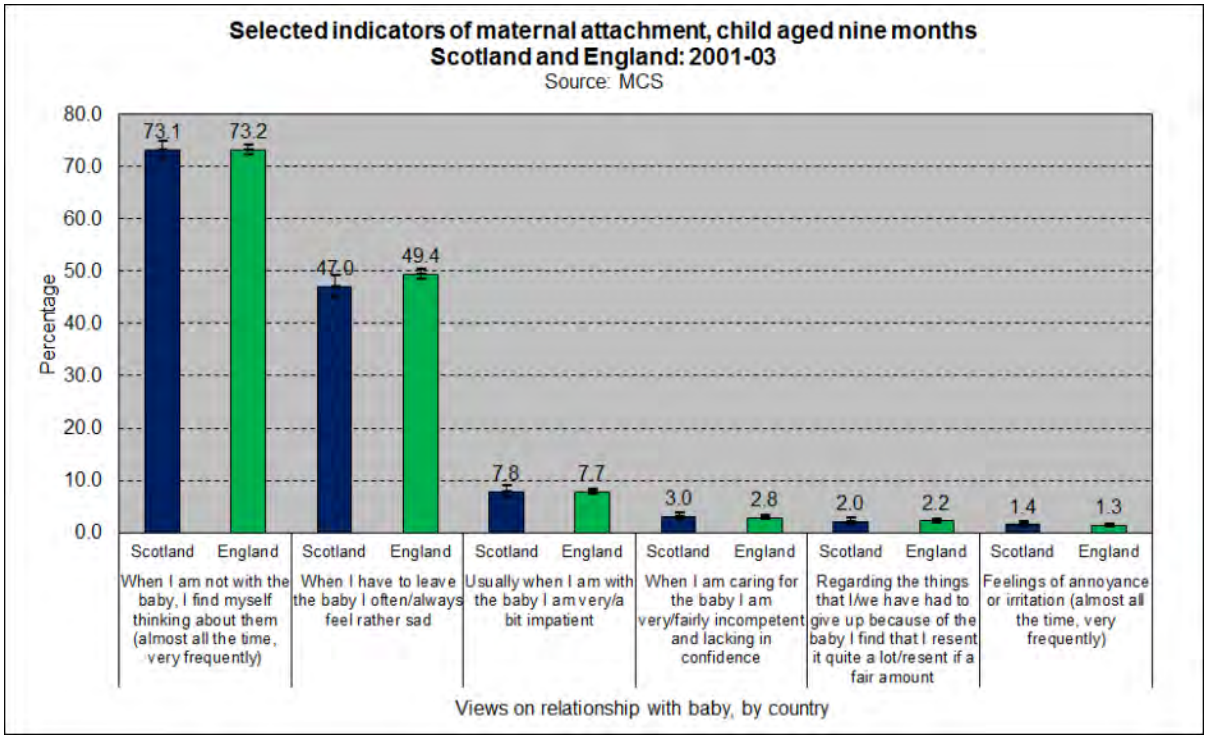


Sample sizes: GCV=314, Greater Manchester=297, Scotland=1,053, England=5,421.

Maternal postnatal attachment

In the first sweep of the MCS, when children were aged nine months old, parents were asked a series of questions designed to capture their postnatal attachment to their babies. National results for mothers are summarised in Figure 62. In fact, results were very similar for the two countries. Differences were significant for only two statements: mothers reporting that they always/often feel rather sad when they had to leave the baby (47.0% in Scotland versus 49.4% in England) and feelings of resentment about having to give things up because of the baby (2.0% versus 2.2%). In both cases the absolute size of the difference was small. At a regional level, there was no significant difference in measures of maternal attachment reported for Glasgow and the Clyde Valley and Greater Manchester (data not shown).

Figure 62.



Sample sizes: Scotland=2,206, England=10,495.

Note, however, that this does not provide a clinical assessment of postnatal attachment. The quantity and quality of care-giving actually delivered can vary widely between individuals with similar feelings of postnatal attachment[110].

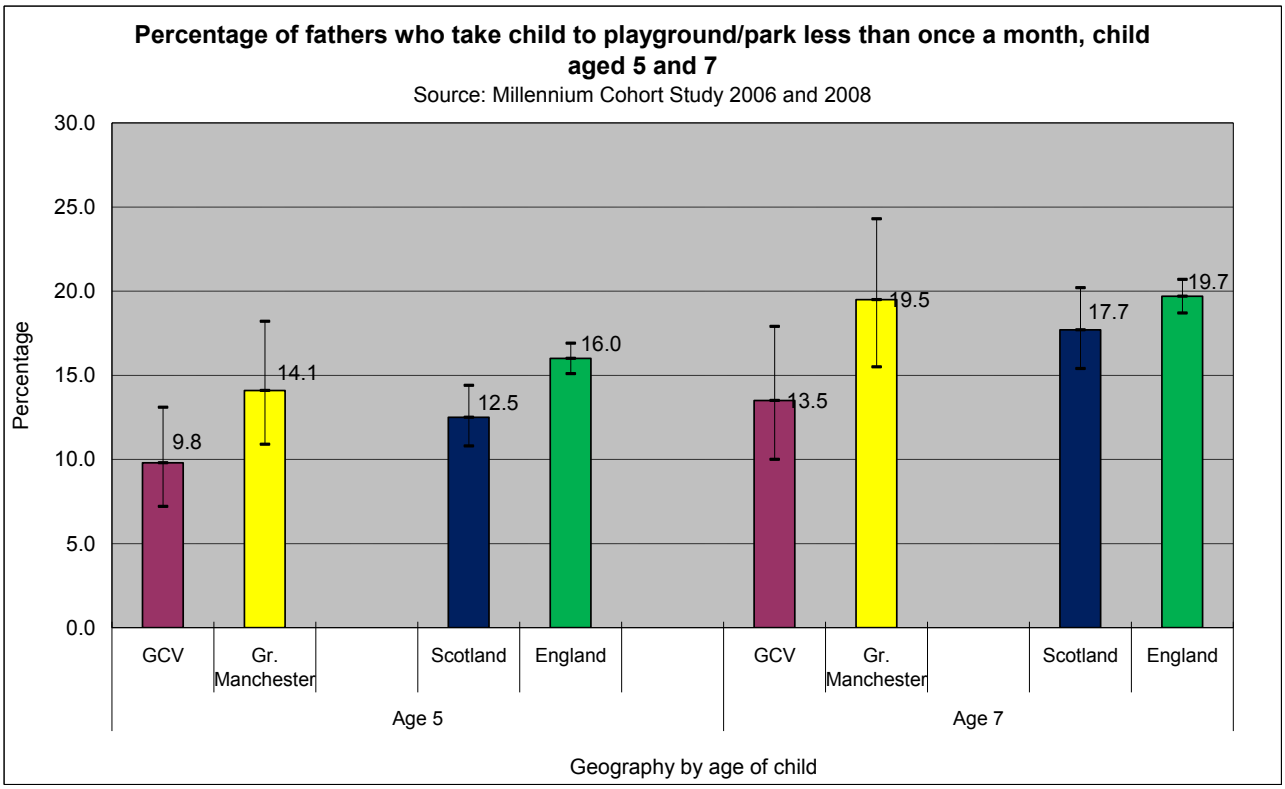
Fathers taking their child on outings

The first indicator used here is the percentage of fathers who took their child to the playground/park infrequently (less than once a month), when children were aged five and seven (Figure 63).

- At age five, Scottish fathers were significantly less likely than English fathers to report they took their child to the playground/park infrequently (12.5% versus 16.0%); regional differences between Glasgow and the Clyde Valley and Greater Manchester were not significant.
- At age seven, this indicator did not vary significantly between Scotland and England. However, fathers in Glasgow and the Clyde Valley were significantly less likely to report taking their children to the park/playground infrequently compared to fathers in Greater Manchester (13.5% versus 19.5%).

Overall, there is little to suggest contemporary fathers in Scotland or GCV take their children to the park less frequently than their counterparts in England and Greater Manchester.

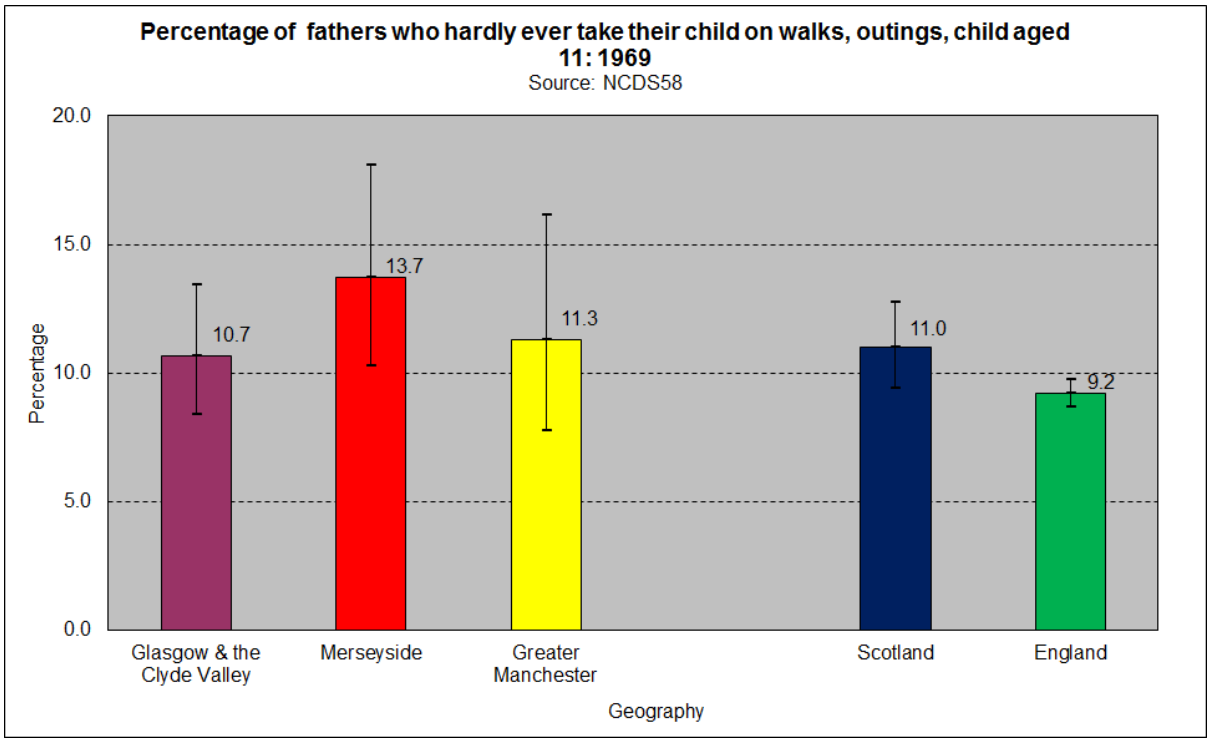
Figure 63.



Sample sizes: Age 5 GCV=391, Greater Manchester=351, Scotland=1,244, England=6,432; Age 7 GCV=324, Greater Manchester=311, Scotland=1,063, England=5,647.

We can also use historical data, from the NCDS 1958, to examine this in more detail. Figure 64 shows the percentage of fathers from this study who 'hardly ever' took their child on walks or outings in Scotland, England and the three regions in 1969. Scottish fathers were significantly more likely than English fathers to 'hardly ever' take their child on walks or outings at age 11 (11.0% versus 9.2%). However, the absolute size of the difference is small – and disappears when regional comparisons are made between GCV, Merseyside and Greater Manchester.

Figure 64.



Sample sizes: GCV=582, Merseyside=299, Greater Manchester=221, Scotland=1,356, England=11,015.

2.4.6 Children with behavioural problems

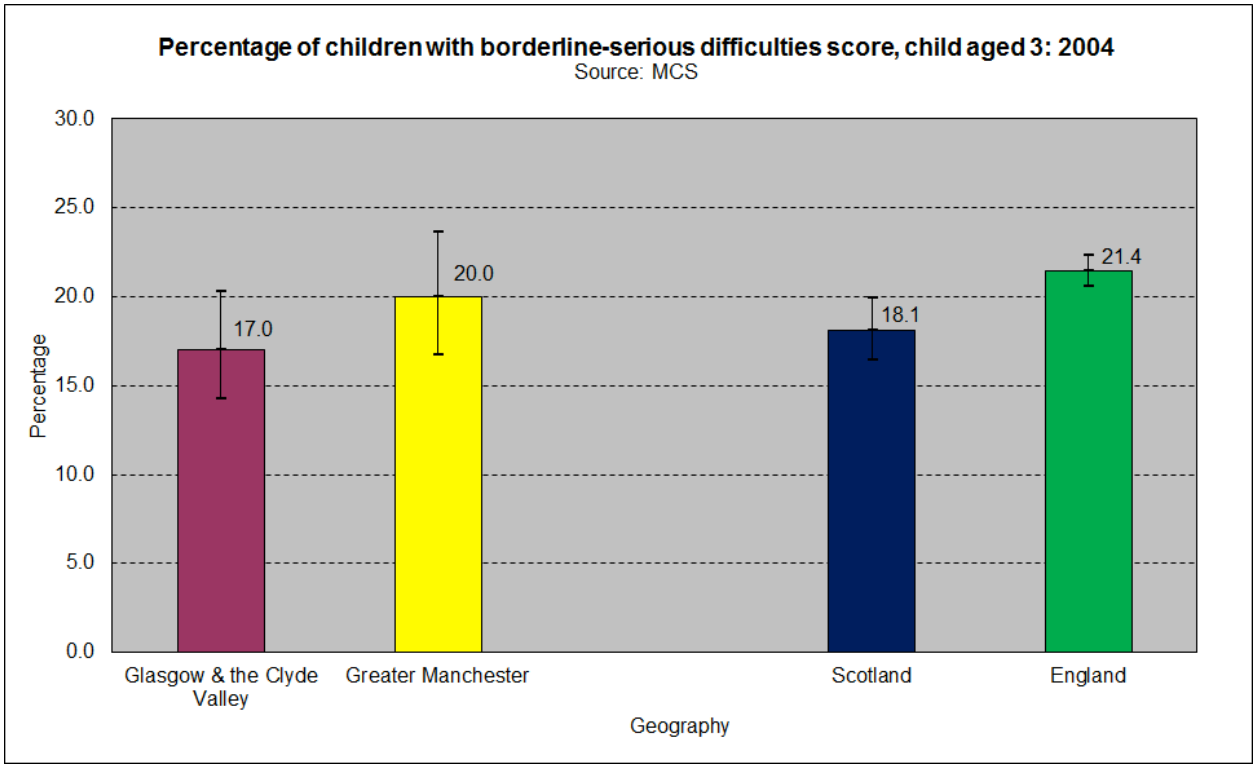
As discussed in the introduction, there is a strong association between low levels of parenting skills (especially among mothers) and increased risk of childhood social, emotional and behavioural difficulties[19]. Examining child behavioural problems may, therefore, provide an indication of childhood and early years' experiences and parenting issues. This is useful for our purposes, since child behavioural problems were measured – in slightly different ways and using different scales – for all four British cohort studies. This section presents geographical comparisons of early years behavioural problems for children born in the 2000s, 1970s, 1950s and 1940s.

Strengths and difficulties questionnaire

In the Millennium Cohort Study, child behavioural problems were measured using the Strength and Difficulties Questionnaire (SDQ). The SDQ asks parents to rate their children's behaviour across four domains: hyperactivity/inattention, conduct problems, emotional symptoms and peer problems. Scores of 14 or greater were classified as indicating a borderline-serious difficulties score[57]. Figures 65-67 show the percentage of MCS cohort members with borderline-serious difficulties at ages three, five and seven, for Scotland, England, GCV and Greater Manchester. They show that:

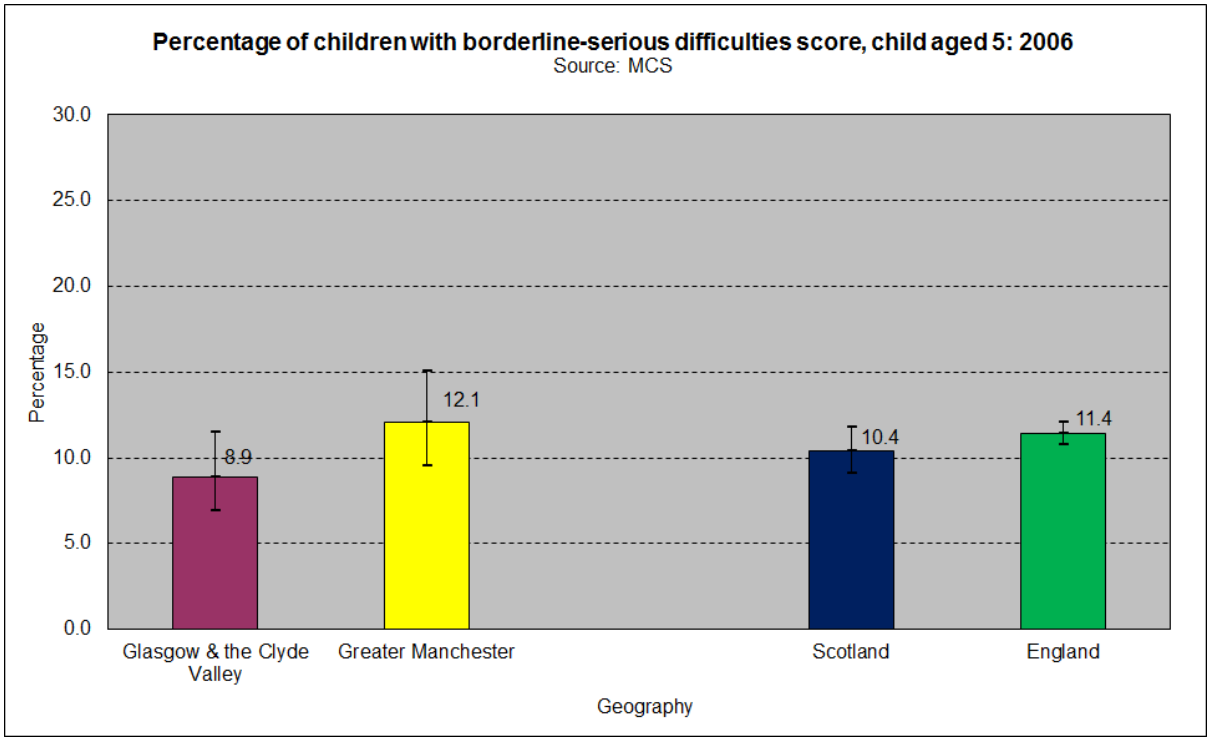
- The percentage of MCS children with borderline-serious behavioural difficulties was significant lower in Scotland than England at age three and seven, but not at age five.
- At all three ages, the percentage of MCS children with borderline-serious behavioural difficulties in Glasgow and the Clyde Valley was not significantly different from rates recorded in Greater Manchester.

Figure 65.



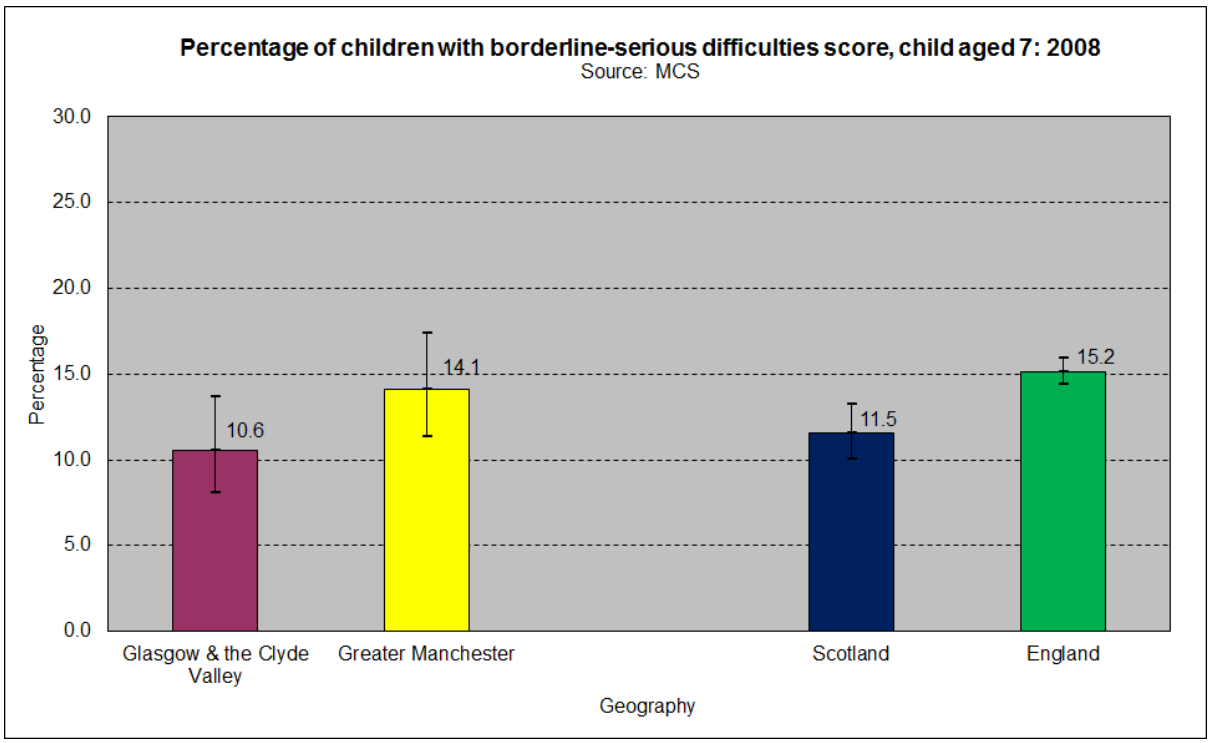
Sample sizes: GCV=580, Greater Manchester=552, Scotland=1,742, England=9,140.

Figure 66.



Sample sizes: GCV=581, Greater Manchester=574, Scotland=1,783, England=9,204.

Figure 67.



Sample sizes: GCV=501, Greater Manchester=513, Scotland=1,586, England=8,503.

Rutter Behaviour Scale

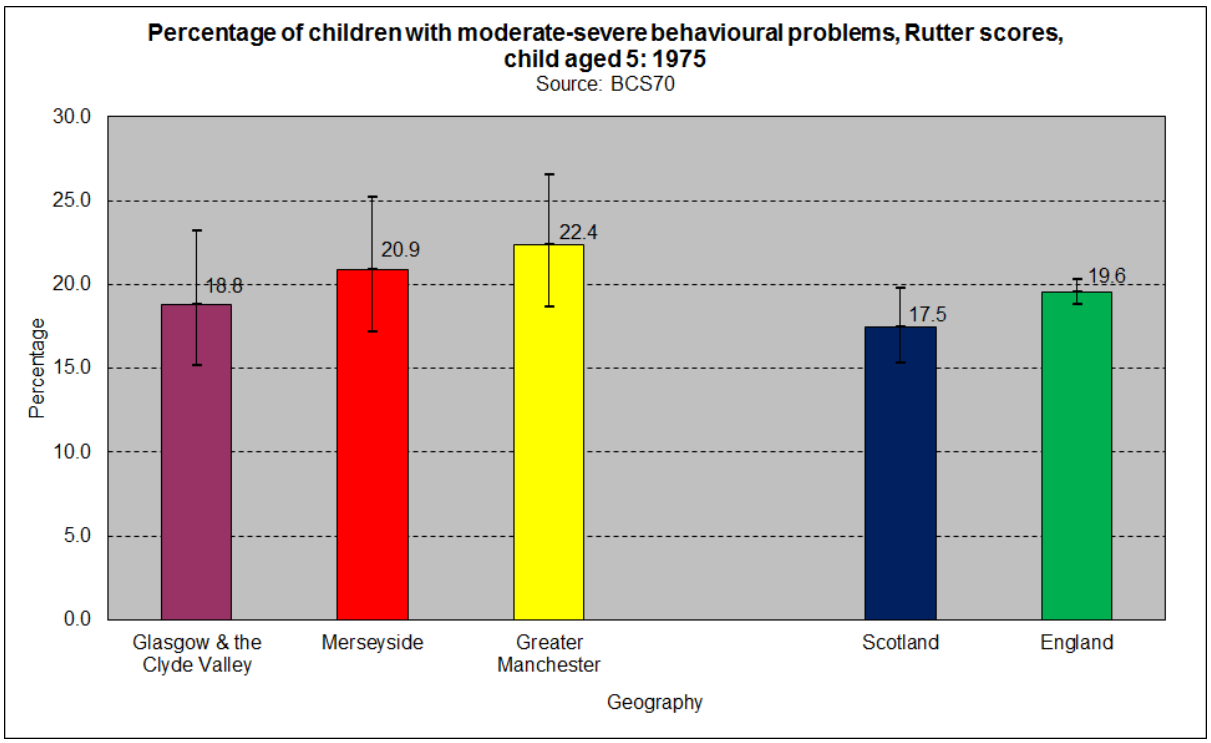
In both the NCDS58 and BCS70, the Rutter Behaviour Scale was used to indicate possible early years and childhood behavioural problems. Mothers were asked a series of questions about their children at ages seven, 11 and 15 (NCDS58) and five, ten and 16 (BCS70), with the answers summed to create an overall score[x]. Children were then classified on the distribution of these scores as having normal, moderate or severe behavioural problems[y].

Figures 68-70 show the percentage of BCS 70 cohort children with moderate-severe behavioural problems at ages seven, ten and 16. Based on this analysis:

- The percentage of the BCS70 cohort with moderate-severe behavioural difficulties was significant lower in Scotland than England at age ten, but there was no significant difference between the countries at ages five or 16.
- Similarly, the prevalence of BCS children with moderate-severe behavioural problems in Glasgow and Clyde Valley was significantly lower than in Merseyside and Greater Manchester at age ten, but regional differences were not significant at ages five or 16.

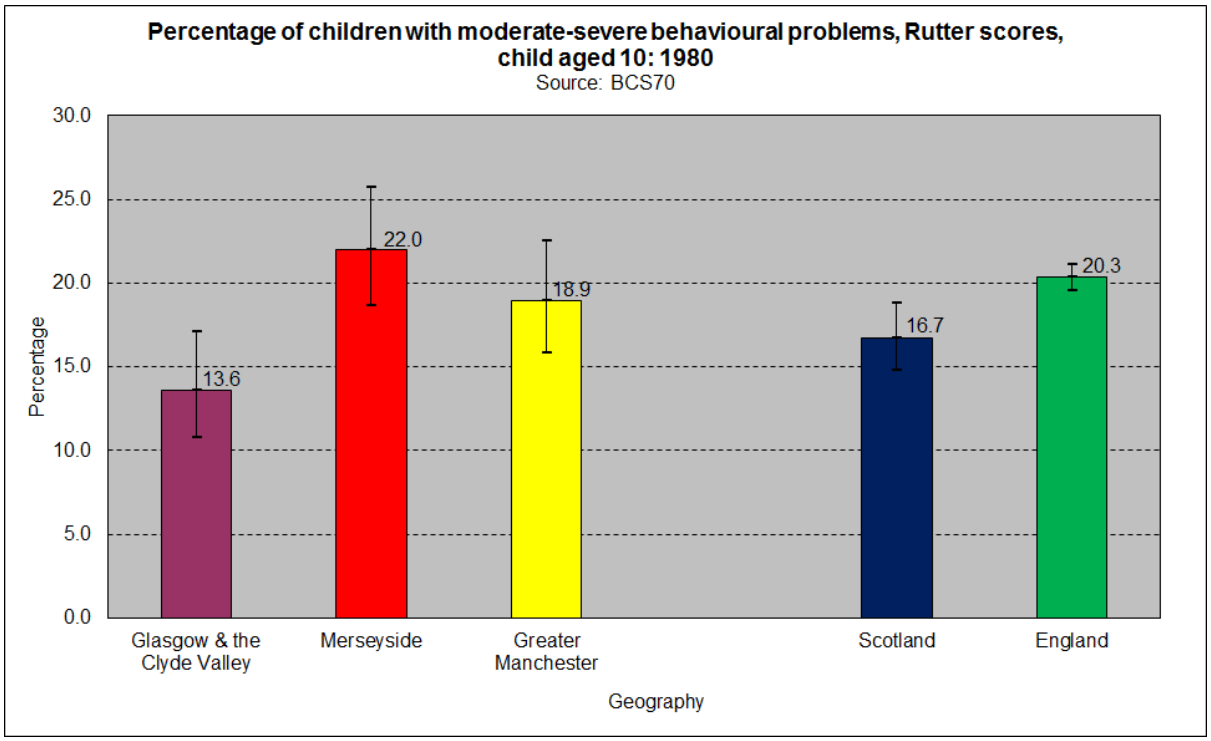
[x] See here for the questions used in these scales: http://www.esds.ac.uk/doc/5805/mrdoc/pdf/RutterBehaviourQuestions.pdf
[y] See here for detail on how the scores were derived: http://www.esds.ac.uk/doc/5805/mrdoc/pdf/RutterBehaviourVariables.pdf

Figure 68.



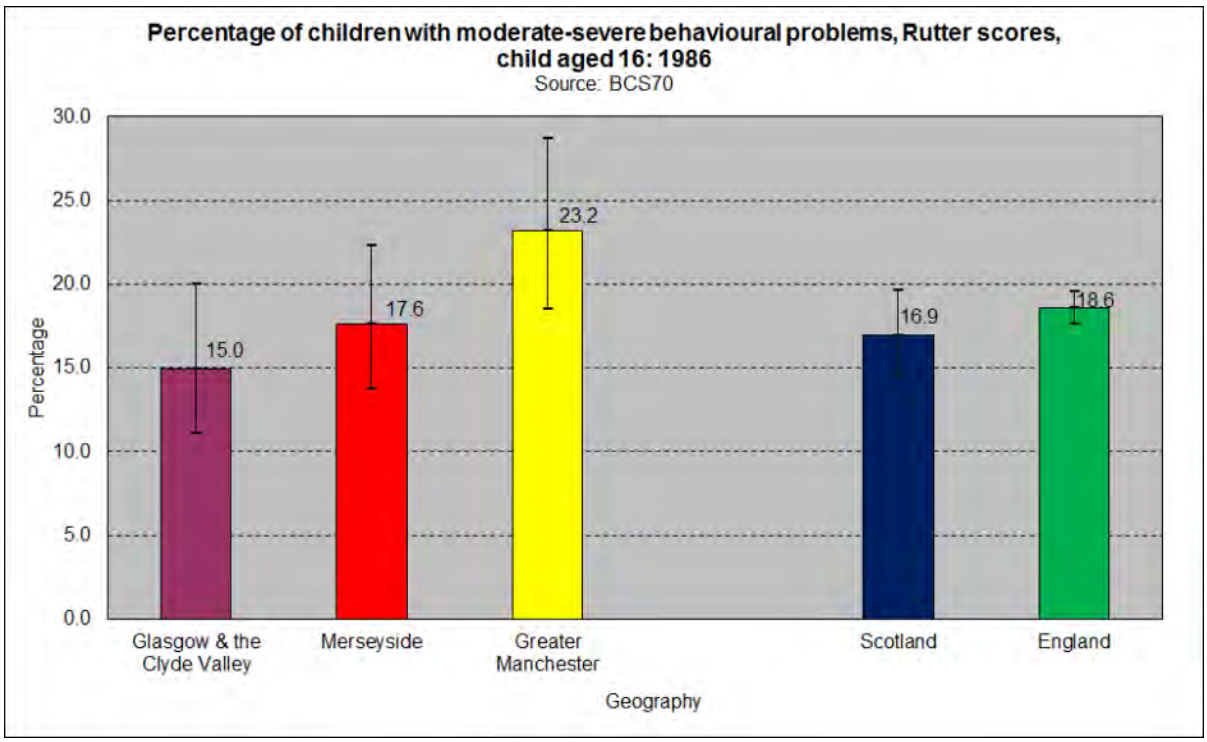
Sample sizes: GCV=361, Merseyside=397, Greater Manchester=434, Scotland=1,111, England=10,565.

Figure 69.



Sample sizes: GCV=448, Merseyside=527, Greater Manchester=533, Scotland=1,294, England=10,686.

Figure 70.

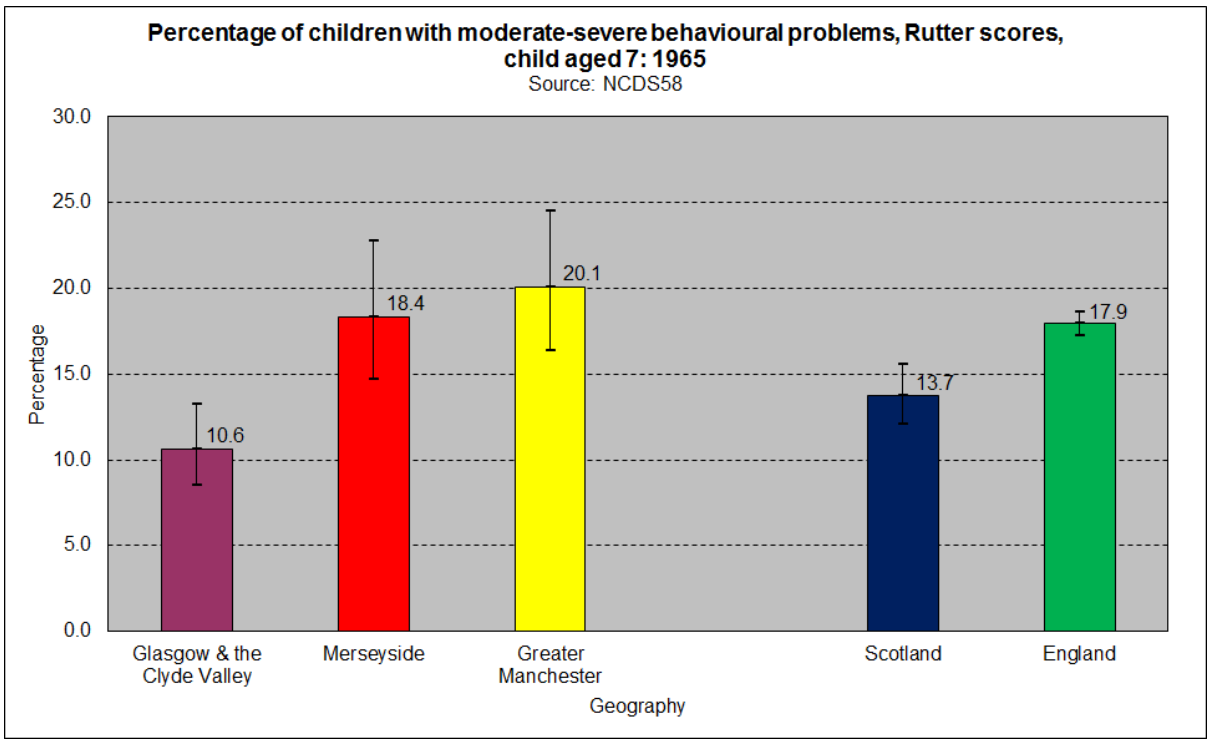


Sample sizes: GCV=247, Merseyside=306, Greater Manchester=263, Scotland=810, England=6,488.

Next, we can compare Rutter scores for the same five geographies for the NCDS cohort, born 12 years earlier. Figures 71-73 show the percentage of NCDS58 cohort children with moderate-severe behavioural problems at ages seven, ten and 16.

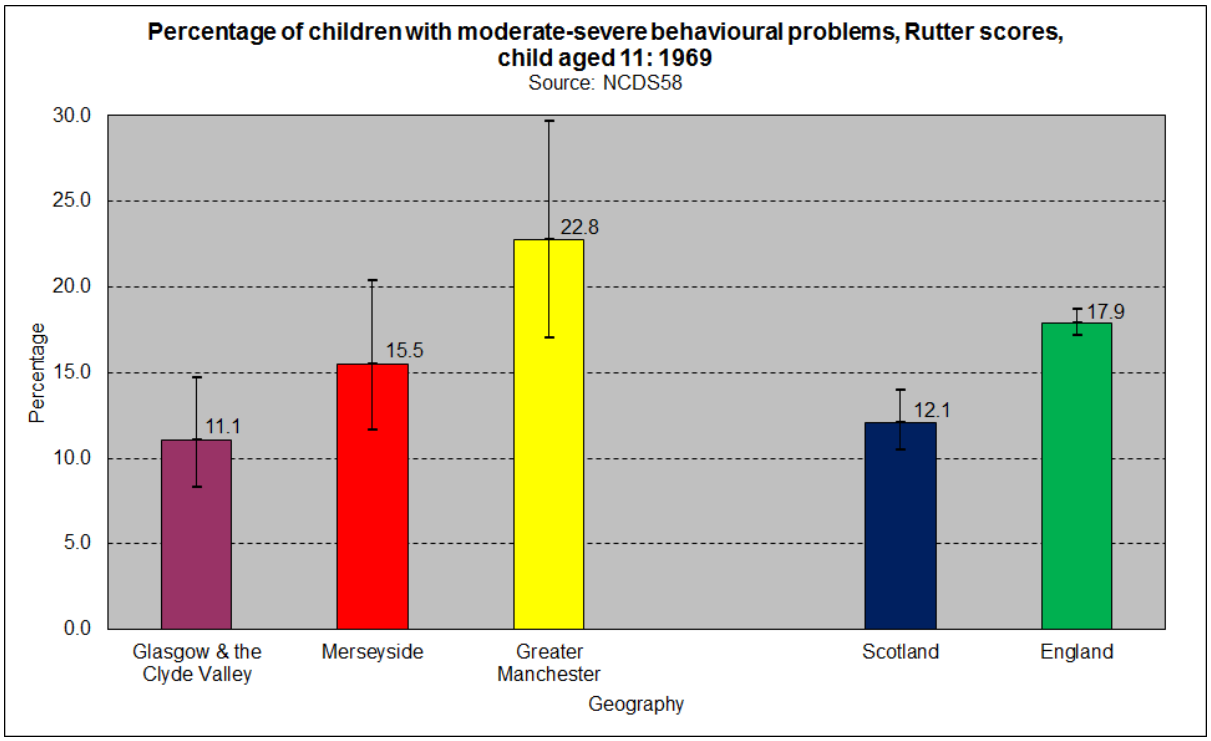
- At all three ages, the percentage of Scottish children in the NCDS58 cohort with moderate-severe behavioural problems was significantly lower than the figure for English children.
- The prevalence of behavioural problems among cohort members living in Glasgow and the Clyde Valley was significantly lower than for those living in the English regions at ages seven and 11.
- However, by age 16, there was no significant difference between the three regions on this measure.

Figure 71.



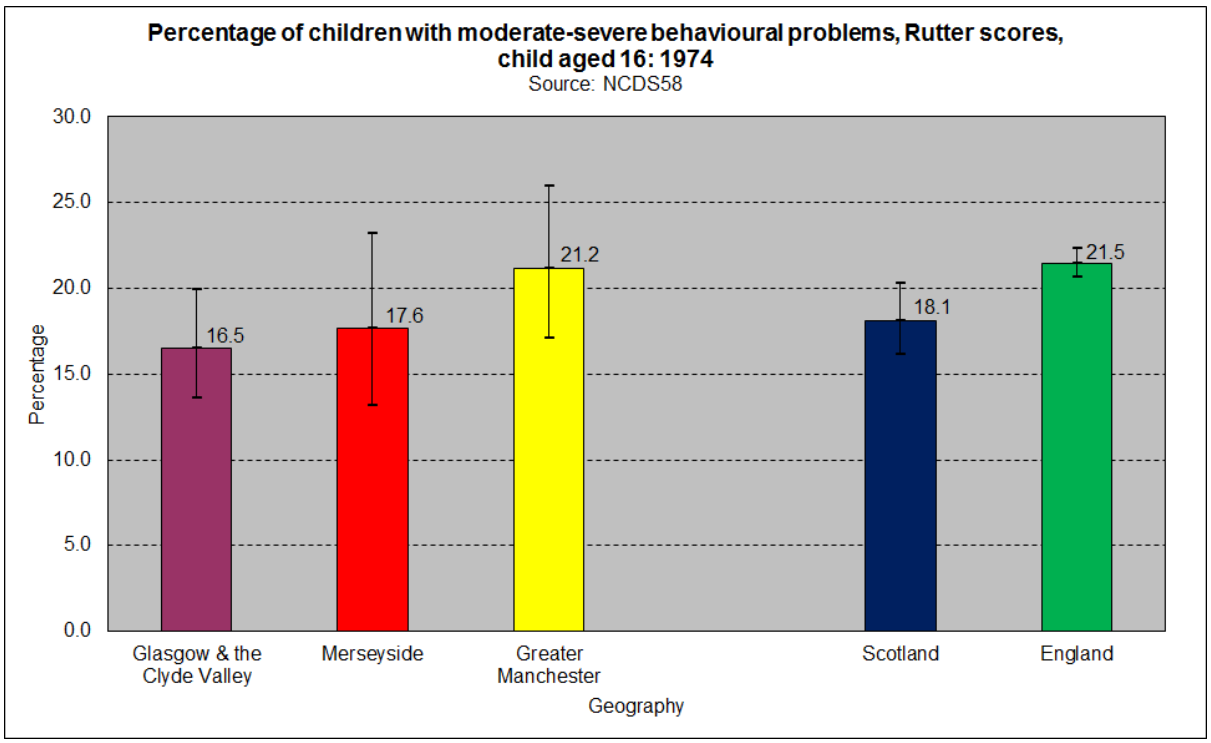
Sample sizes: GCV=648, Merseyside=354, Greater Manchester=368, Scotland=1,502, England=11,423.

Figure 72.



Sample sizes: GCV=370, Merseyside=264, Greater Manchester=167, Scotland=1,332, England=10,403.

Figure 73.



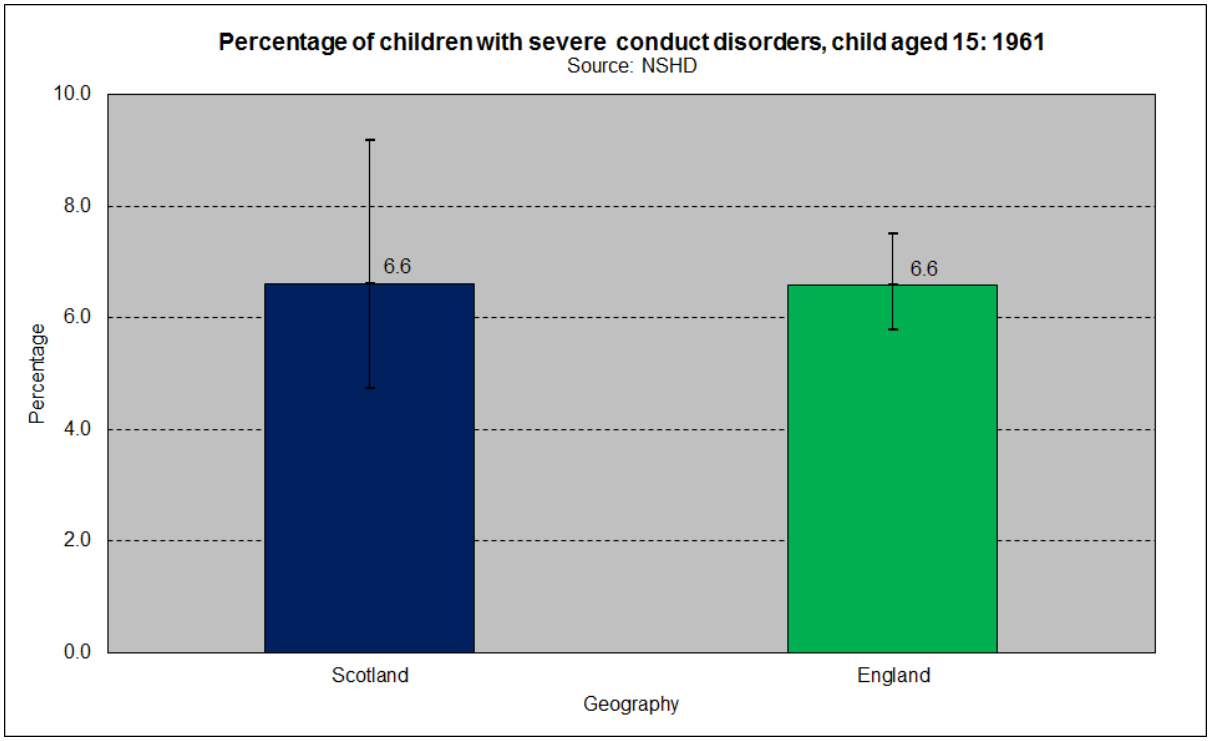
Sample sizes: GCV=527, Merseyside=221, Greater Manchester=321, Scotland=1,301, England=9,488.

Conduct disorders

Our final indicator of child behavioural problems is taken from the MRC National Survey of Health and Development (NSHD). Unlike the other measures shown, it is based on teachers' rather than mothers' perceptions of children's behaviour. Information was collected in 1961, when children were aged 15.

Using the method proposed by Colman *et al*. (2009)[111], a behaviour score between 7 and 21 was created for each cohort member, based on teachers' responses to seven items about the child's behaviour[z]. Higher scores indicated more severe externalising behaviour and a possible conduct disorder. Cohort members scoring above the 93rd percentile (13 or greater) were classified as having severe externalising behaviour. The percentage of Scottish children in the NSHD cohort with severe conduct disorders was identical to the proportion reported for English children (Figure 74).

Figure 74.



Sample sizes: Scotland=484, England=3,204.

[z] Teachers were asked whether children exhibited a range of behaviours more frequently than, the same as, or less frequently than their peers. The seven areas covered were disobedience, lying, lack of punctuality, restlessness, truancy, daydreaming in class, and poor response to discipline.

2.4.7 Summary

- National evidence on family conflict was mixed. Conflict between mother and child was significantly lower, but disagreement between mothers and fathers about parenting significantly higher, in Scotland compared to England. Levels of mother-child conflict and parental disagreement did not vary significantly between Glasgow and the Clyde Valley and Greater Manchester.

- Contemporary surveys suggest Scottish parents read to their children more frequently at age three than their counterparts in England. Regional differences were not significant.

- Analyses of historical data on parental reading provide more mixed results. Surveys from the 1970s suggest children in Scotland were less likely to be read to, but those from the 1960s show either no difference or a favourable comparison with the English areas. Overall, there is little consistent, compelling evidence that parents in Scotland and GCV were less likely to read to their children.

- Contemporary breastfeeding incidence is substantially lower in Scotland than in England. At a regional level, the proportion of mothers breastfeeding in GCV is similar to Greater Manchester; Merseyside had the lowest proportion of mothers who breastfed of the three regions.

- The percentage of mothers making regular childcare arrangements for their child at age three did not vary significantly between Scotland and England or between GCV and Greater Manchester.

- In terms of harsh discipline, the use of smacking to discipline children was similar in Scotland and England, and in GCV relative to Greater Manchester. The picture is less clear on 'shouting at children daily'. Some survey data suggest Scottish parents are more likely than parents in England to use this form of discipline with their children compared to England; others do not. At a regional level, GCV mothers were significantly more likely to shout at their children daily compared to Greater Manchester mothers at age seven, but not at ages three and five.

- In 2004, Scottish mothers were significantly more likely than English mothers to report that their children had regular bedtimes and mealtimes. Percentages reported for GCV were not significantly different from Greater Manchester.

- Analysis of measures of warmth and affection between parents and children raises several issues:

    - prevalence of 'low warmth' parenting appears similar in Scotland and England if the MCS survey is used, but higher in Scotland if GUS data is used

    - at a regional level, 'low warmth' parenting was higher in GCV compared to Greater Manchester if MCS data are used, but did not vary by region if GUS is used as the Scottish source

    - historical measures of 'low warmth' (from 1980) showed no significant difference between countries or between the three regions.

- Physical affection between parents and children (measured by hugging, kissing and cuddling) was almost identical at a national level and did not vary significantly between GCV and Greater Manchester.

- Reported maternal postnatal attachment was very similar between the comparison areas at a national and regional level.

- In the 2000s and the 1960s, Scottish fathers were no less likely than their English peers to report taking their children to the park on a regular basis. No differences were observed at a regional level.

- Measures of childhood behavioural problems from the 1960s, 1970s and 2000s provide little evidence of a distinctive and worse early years experience for children in Scotland or GCV.

- Overall, most aspects of parenting were remarkably similar in Scotland and England: only the lower incidence of breastfeeding in Scotland were distinctive. There were no areas of parenting which showed GCV to be distinctively worse than the English regions. However, it remains unclear whether childhood and early years in Scotland and GCV are characterised by less warm relationships and more use of shouting to discipline children.

3.0 Conclusions

3.1 Key findings

Are contemporary early years' and childhood experiences different in Scotland than in England?

Overall, few clear differences in childhood and early years' experiences emerged from the comparisons. On almost all indicators of social and material circumstances, child and maternal health and parenting, Scotland was very similar to England in the 2000s. These included factors strongly associated with health in childhood and with long-term consequences for children as they grow up: family poverty and worklessness, maternal education and (self-reported) maternal physical and mental health. Most parents in both Scotland and England report that their parenting style combines predictable rules and a lack of harsh discipline with warmth and affection. Finally, childhood emotional, behavioural and learning problems do not appear to be worse in Scotland than England. This does not support the hypothesis that low parenting skills are more widespread in Scotland. If they were, we might expect a higher prevalence of behavioural problems among Scottish children, given the association between levels of parenting skill and behavioural problems observed elsewhere[19].

Scottish children remain at a clear disadvantage compared to their English peers for very few indicators. The proportion of women smoking during pregnancy are higher, and the proportion of mothers of breastfeeding are lower, in Scotland compared with England. There are also some data to suggest Scotland has a higher proportion of lone parent households than England and higher levels of conflict between parents about how to raise their children. However, in absolute terms, these differences are small.

More challenging perhaps are those areas where the evidence on whether Scotland is different remains unclear and contradictory. These mainly include evidence on dysfunctional households: substance misuse and imprisonment (both areas where the Scottish general population appears disadvantaged, but where comparative data on how these affect *parents* are not readily available), looked after children (where the legal systems and norms are quite different in Scotland and England) and domestic violence (where different surveys provide different conclusions about whether violence within families is more common in Scotland). Moreover, the evidence on two aspects of parenting – more frequent use of shouting to discipline children and lower warmth (as measured by the Pianta scale) – also remains ambiguous. These are all topics for which improvements in data and/or new research would prove useful.

Were early years' and childhood experiences different in Scotland and England in the 1950s-1980s?

Comparisons of historical childhood and early years' experiences in Scotland and England are constrained by the data. However, the available evidence does not support the thesis that Scottish parenting compared poorly with English parenting in the past. In the 1960s, 1970s and 1980s, the prevalence of childhood and early years behavioural problems in Scotland was not significantly higher than levels seen in England. Further support for this view is provided by lack of national variation in maternal mental health in the 1970s and the percentage of ten year olds with 'low warmth' scores in 1980 (similar in Scotland and England).

Nor is there much evidence that fathers played a more limited role in family life in Scotland compared with England. Cohort studies drawing on mothers' experiences found that Scottish fathers' involvement with the home and family was not statistically different from levels reported for England in the 1940s, 1960s and 1970s.

There are a few measures where differences were observed. Like the current situation, the proportion of women smoking during pregnancy was higher in Scotland than in England in the past. More tentatively, there is a suggestion that alcoholism may have been more problematic in Scottish families than in English ones, though the absolute numbers reported for both countries are very small. On one measure of childhood social and material disadvantage (maternal education), Scottish children may have been disadvantaged compared to their English peers, at least in the 1940s and 1950s. As discussed earlier, patterns of home ownership traditionally were much lower in Scotland, but this may reflect cultural differences rather than higher levels of deprivation.

Are contemporary early years' and childhood experiences different in Glasgow and the Clyde Valley than in Merseyside and Greater Manchester?

The regional analyses reinforce some of the key messages from the national comparisons. Focusing first on Greater Manchester, on all indicators of social and material circumstances, parenting, the role of the father and maternal and child health, Glasgow and the Clyde Valley (GCV) was very similar to (or in a few cases, slightly 'better') than the English region. On only two indicators – lone parent households and breastfeeding – was the Scottish region disadvantaged, though even here the gap was much less pronounced than at national level. For example, the proportion of mothers breastfeeding were 13.2 percentage points higher in England compared to Scotland, but only 2.4 percentage points higher in Greater Manchester than GCV.

Comparative data for dysfunctional households (domestic violence, parental imprisonment and parental drug use, looked after children) were again difficult to interpret, for the reasons already outlined above. Although the administrative data suggest higher proportions of drug misuse and male imprisonment in GCV among the general population, we cannot say for certain that this is also true for *parents* in the Scottish region. Whether parent-child relationships are less warm in GCV also remains unclear, since different survey data (though both using the Pianta scale) give contradictory answers.

For comparisons with Merseyside, any conclusions must be much more tentative: the absence of representative Millennium Cohort Study (MCS) data means many important measures of contemporary parenting and maternal and child health are currently unavailable. This is an important qualification. However, the available measures of material disadvantage (benefits dependency, poverty, worklessness) and some measures of social disadvantage reveal little difference between GCV and Merseyside. As with the other

geographical comparisons, there is scope for improved and more tightly defined (and comparative) measures of household dysfunction in these two regions.

Were early years' and childhood experiences different in Glasgow and the Clyde Valley than in Merseyside and Greater Manchester in the 1950s-1980s?

Although even more limited by the data (including by small numbers), this analysis does not provide clear evidence that the early years experience in the 1950s-1970s in Glasgow and the Clyde Valley were marked by poorer relations between genders or less warm, supportive parenting styles than in Merseyside or Greater Manchester. This is illustrated for example by child behavioural problems, the reported role of the father in child rearing, and mothers' mental health, none of which paint the Scottish region as significantly worse. Although home ownership levels were historically lower in Glasgow and the Clyde Valley, it remains unclear to what extent this reflected greater economic disadvantage. For example, although the pattern of housing tenure was very different on Merseyside and Clydeside in the 1960s[aa], the two regions had very similar percentages of male unemployment[112].

3.2 Further research

The main area for further research suggested by this study is to explore measures of household dysfunction in more depth. In Scotland, the recent report by Parkinson (2012)[113] also noted the lack of suitable data sources available to measure adverse childhood experiences (including child neglect and abuse, domestic violence and parental substance misuse and imprisonment) and recommended that this gap be addressed. One way to tackle this in the future might be for the countries and regions of the UK to pilot an Adverse Childhood Experiences (ACE) study, perhaps in collaboration with third-sector organisations e.g. the National Society for the Prevention of Cruelty to Children (NSPCC). Such a study would be able to cover physical and emotional abuse and neglect, parental substance misuse and parental imprisonment in a much more consistent way. In addition, the Scottish Government Early Years Indicator Set is working with partners in Information Services Division (ISD) Scotland to improve data quality on parental substance misuse.

With the exception of the proportion of women smoking during pregnancy, intra-uterine factors related to substance misuse (e.g. drug and alcohol misuse during pregnancy) were not considered in this report. Self-reported data (from the infant feeding study) suggest that Scottish mothers were less likely than their English counterparts to drink during pregnancy in 2000 and 2005[114], although the 2010 results are not yet available for analysis. Work currently underway by ISD Scotland and the Scottish Government could mean that administrative data on maternal drug and alcohol use in pregnancy (for Scotland at least) will become available in the future[113], which may improve scope for research in this field.

Further investigation may be needed to explore whether parental warmth is really lower, and low-level verbal aggression (shouting to discipline children) really higher, in Scotland and GCV compared to England and comparative post-industrial regions. Some of these aspects might be partially covered by a UK-wide ACE study, but new regional and national comparisons using the Pianta scale would be valuable, given the importance assigned to attachment theory in promoting health, and the fact that this measure has appeared in just one round of an existing UK study.

[aa] In 1965, 65% of the NCDS mothers living in Merseyside reported they did not own their home, compared to 79% in the Glasgow and Clyde Valley region (NCDS58).

3.3 Discussion

This report has drawn on a range of large-scale cohort studies to compare early years' and childhood experiences in Scotland, England and three city regions. It provides further evidence of ongoing need to support families, parents and children. For example, in the mid-2000s in both Scotland and England, one in three mothers of three year olds had poor mental health, one in ten had no formal qualifications and one in 20 had a relationship with their child characterised by 'low warmth'. Not only are these aspects associated with poor outcomes for child health, and with higher levels of mortality and morbidity in adulthood, they are often highly correlated with each other. Regardless of geography, any attempt to invest in early years should include both improvements to financial circumstances and measures to reduce parental stress, promote child and maternal health and support parenting skills. This might, for example, take account of the main recommendations of the 2011 UNICEF report for the UK: to implement a living wage (promoting work-family balance), protect local authority funding for play and leisure facilities, and ban advertising aimed at the under-12s[115].

The approach taken here was subject to a number of limitations. Broadly speaking, these might be considered geographical or social/cultural in nature. The first geographical limitation was the absence of contemporary data on parenting measures for Merseyside. Given that this region's historical economic experience and demographics provide the closest match to Glasgow and the Clyde Valley, this is an unfortunate omission.

The second geographic challenge was the lack of city-level data. Some comparative analysis is provided by two questions in a 2011 survey of Glasgow, Liverpool and Manchester commissioned by the Glasgow Centre for Population Health (GCPH) and NHS Health Scotland. Retrospective levels of childhood happiness and quality of relationship were generally similar in the three cities. Forthcoming, more detailed analyses of research on these three cities will be able to shed more light on these findings and provide some context.

The last geographic limitation was the small sample sizes available (especially for the city-regions), reducing the 'power' to detect differences in any aspect being studied and the extent to which samples might be considered representative of the true population. Some comfort about the representativeness of the data might be taken from the checks discussed in the introduction; however, the issue of small samples remains a legitimate criticism.

The second cluster of limitations are social/cultural. First, many of the measures examined are sensitive in nature. Where they rely on self-completion, they may be influenced by a degree of 'social desirability' bias, where parents skew responses towards those they think might be seen as optimal forms of parenting (e.g. underreporting harsh discipline, over-reporting reading to their children). But this might be less of a problem for all purposes, since there is no reason to suppose the degree of bias varies *geographically*. Second, bias might occur due to parents being less engaged with their children and thus less able to assess their child's 'strengths and difficulties'. Ideally, this might be overcome by checking parents' assessments of behavioural problems against those of children and perhaps third parties (e.g. teachers). Again though, it is less clear whether this would be a special problem for our purposes, since this form of bias is also unlikely to vary geographically. Lastly, bias may occur if cultural norms (e.g. expectations of a child's behaviour or adult attitudes towards depression) vary between different places or social groups. Previous research has highlighted the mismatch between Scotland's higher levels of mortality but similar levels of self-reported health, compared with England[116]. It would be useful to explore whether this

discrepancy is also observed for subjective childhood wellbeing and health outcomes in adulthood.

A key rationale for this report was to compare early years' and childhood experiences in Scotland, England and three city-regions. This was as a first step towards identifying differences that can account for the 'Scottish Effect' and 'Glasgow Effect'. However, this did not exploit the full potential of the longitudinal cohort studies. Analysing the data within statistical models will better quantify these relationships and comparisons between the place of residence. Furthermore, connecting cohort members' early years and childhood experiences to health outcomes (deaths and morbidity), for the nations and regions, is an obvious next step. This approach has been adopted in new research by the GCPH and NHS Health Scotland, which began in late 2012.

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Appendix A: Measuring warmth and conflict in parent-child relationships

In the parenting section of this report, a number of measures are used to compare levels of warmth and conflict in parent-child relationships. This section describes how these key measures were derived.

Mother-child conflict

This was derived from seven questions on the Pianta child parent relationship scale. These questions were asked in the second round of the Millennium Cohort Study (when children were aged three) and the fifth sweep of Growing Up in Scotland (when children were aged five). The seven items were:

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

Based on mother's responses, items were scored from 1 (definitely does not apply) to 5 (definitely applies), producing an overall score in the range 7 to 35. In this case, lower scores indicate lower conflict and are therefore 'better'. As discussed in the body of the report, respondents with a score of 27-35 on this measure were treated as having a 'high' level of parent-child conflict.

Warmth

The first measure shown was derived from seven questions on the Pianta child parent relationship scale (see above). The seven items were:

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

Based on mother's responses, items were scored from 1 (definitely does not apply) to 5 (definitely applies), producing an overall score in the range 7 to 35. In this case, lower scores indicate lower warmth and are therefore 'worse'. As discussed in the body of the report, respondents with a score of 7-29 on this measure were treated as having a 'low' level of parent-child warmth.

Appendix B: Comparing partner abuse in the British and Scottish crime surveys

In Britain, the prevalence of domestic violence is measured regularly through the British Crime Survey (BCS), which covers England and Wales, and the Scottish Crime and Justice Survey (SCJS), which covers Scotland. Both surveys aim to assess the scale of this issue through a self-completion module of the main survey (which asks a much broader suite of questions on attitudes and experience of crime).

To improve comparability between the surveys, the following approach was adopted:

- Age bands being compared were restricted to 16-59 in the Scottish Crime and Justice Survey, to match the English age bands.
- Groups being compared were restricted to include only adults who ever had a partner since the age of 16 and where there was at least one child in the household.

As discussed in the main report, this may include previous partners. It is not currently possible to compare English and Scottish estimates of the percentage of cases where children were present and/or actually witnessed the abuse.

The next step was to identify individual items which were comparable between the two surveys. Appendix Table B1 (page 119) summarises the questions selected for comparison. Questions which asked about the threatened or actual use of weapons were excluded, since the BCS describes a weapon as ‘a stick or knife’ whereas the SCJS describes a weapon as ‘an ashtray or bottle’.

In two cases, Scottish items were merged to allow comparisons with English questions. The BCS used a single item to measure the percentage of adults whose partner had ever ‘kicked, bit or hit them with a fist, or thrown something at them’. The SCJS measures this with two separate questions: to allow comparisons with the BCS, a new variable was derived, counting adults whose partner had ever ‘kicked, bitten, or hit them’ or ‘thrown something at them’. It is possible this may inflate the percentage of Scottish adults reporting severe physical abuse, since English adults may place more emphasis on the ‘kicked, bit or hit’ part of the question and downplay having things thrown at them, while the differences in questionnaire design meant Scottish adults could think about both aspects separately. While individuals are counted only once in both surveys, the Scottish figure may include more adults who had their partner throw something at them, but have not experienced the other forms of abuse.

The BCS also used a single item to measure threats (not involving weapons) asking whether their partner had ever ‘frightened you by threatening to hurt you or someone close to you’. A new Scottish question was derived from counting all those whose partner ever ‘threatened to hurt them’ or ‘threatened to hurt someone close to them, such as your children, family members, friends or pets’. This may also produce a slightly higher proportion of Scottish reported threats (because of the inclusion of pets), though the risk of this inflating the findings was thought to be smaller than for the severe physical violence question above. Other questions selected for comparison were deemed to be broadly comparable.

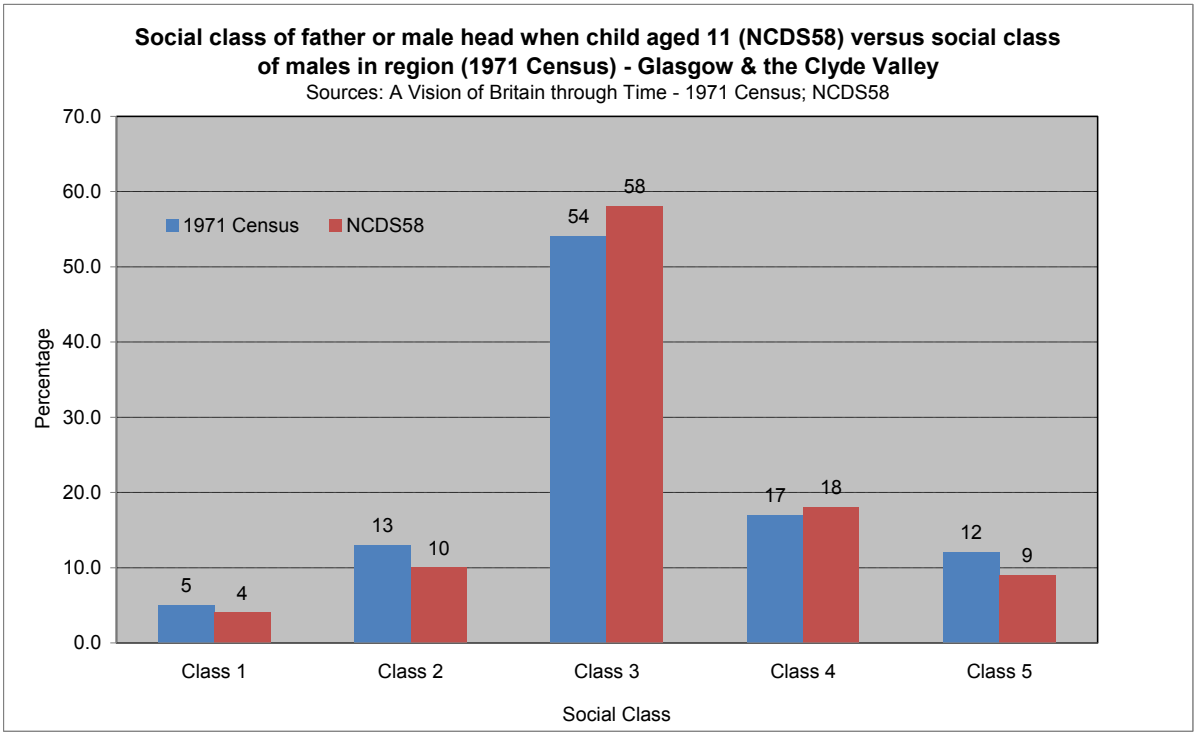
Finally, to improve the robustness of results, two years of survey results were combined (for 2008/09 and 2009/10). Individual weights, grossed to the population, were applied. Combined weight, reflecting differences in sampling approaches between the two years, might produce more precise estimates: resource constraints meant this approach was not adopted here but might be used in future research. The overall approach taken was considered reasonable by the BCS and SCJS Team.

Table B1. Questions selected for comparison in the British Crime Survey and the Scottish Crime and Justice Survey.

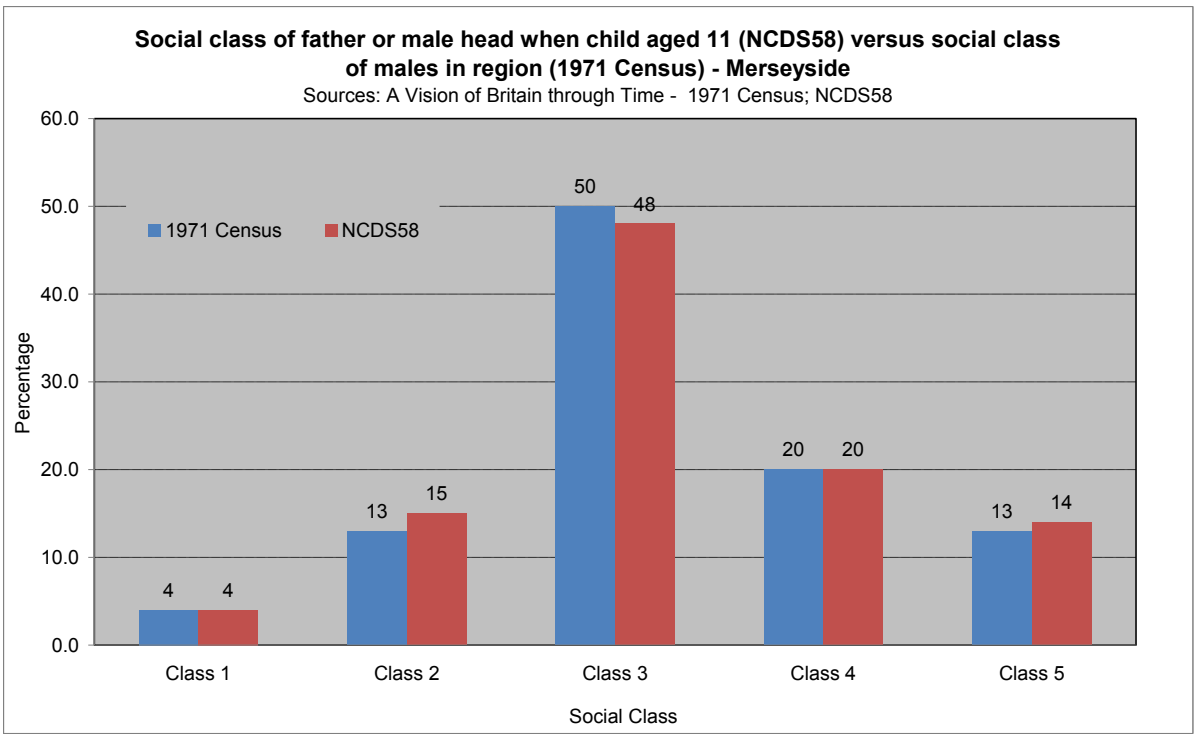
British Crime Survey	Scottish Crime and Justice Survey
Since the age of 16 has a partner ever prevented you from having your fair share of household money?	Since the age of 16 has a partner ever stopped you having your fair share of the household money or taken money from you?
Since the age of age 16 has a partner ever stopped you from seeing friends and relatives?	Since the age of age 16 has a partner ever stopped you from seeing friends and relatives?
Since the age of 16 has a partner ever repeatedly belittled you so that you felt worthless?	Since the age of 16 has a partner ever repeatedly put you down you so you felt worthless?
Since the age of 16 has a partner ever frightened you by threatening to hurt you or someone close to you?	*Combined:* • Since the age of 16 has a partner ever threatened to hurt you? • Since the age of 16 has a partner ever threatened to hurt someone close to you, such as your children, family members, friends or pets?
Since the age of 16 has a partner ever pushed you, held you down or slapped you?	Since the age of 16 has a partner ever pushed you or held you down?
Since the age of 16 has a partner ever kicked, bit or hit you with a fist, or thrown something at you?	*Combined:* • Since the age of 16 has a partner ever kicked, bit or hit you? • Since the age of 16 has a partner ever thrown something at you?
Since the age of 16 has a partner ever choked or tried to strangle you?	Since the age of 16 has a partner ever choked or tried to strangle/smother you?
Since the age of 16 has a partner ever threatened to kill you?	Since the age of 16 has a partner ever threatened to kill you?

Appendix C: Representativeness of the cohort studies

National Child Development Study 1958

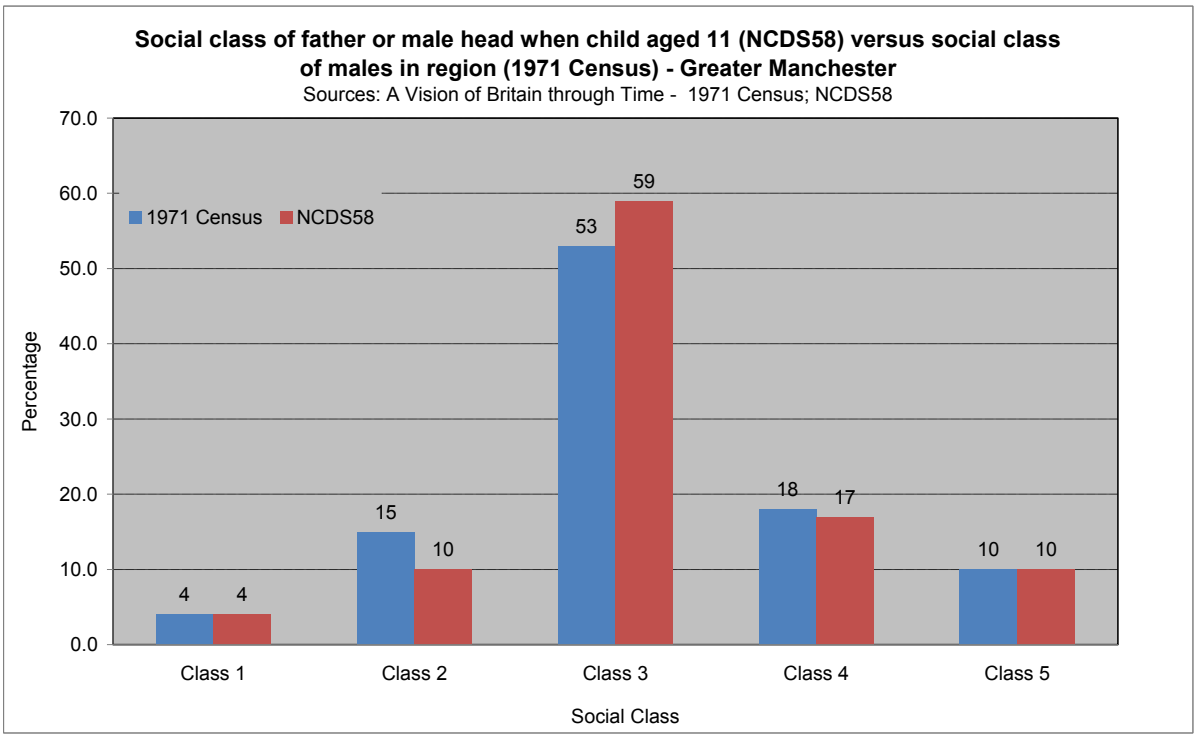


Sample size: GCV=607.



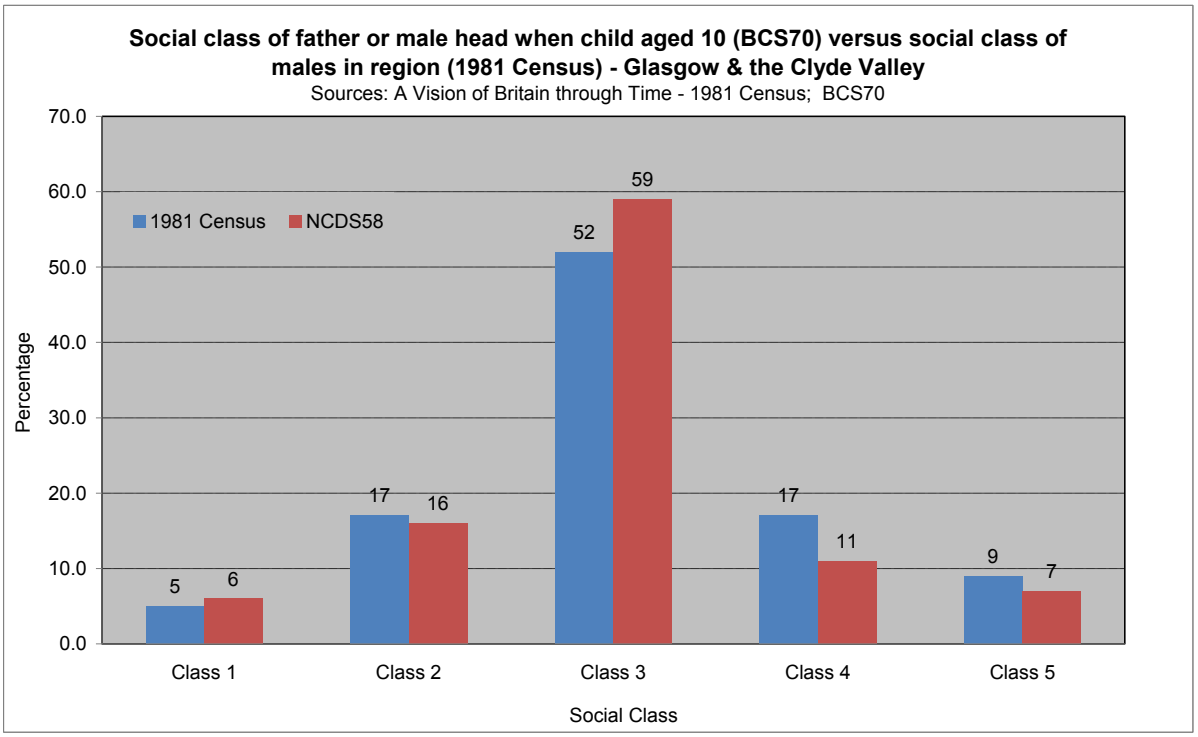
Sample size: Merseyside=301.

National Child Development Study 1958 (continued)

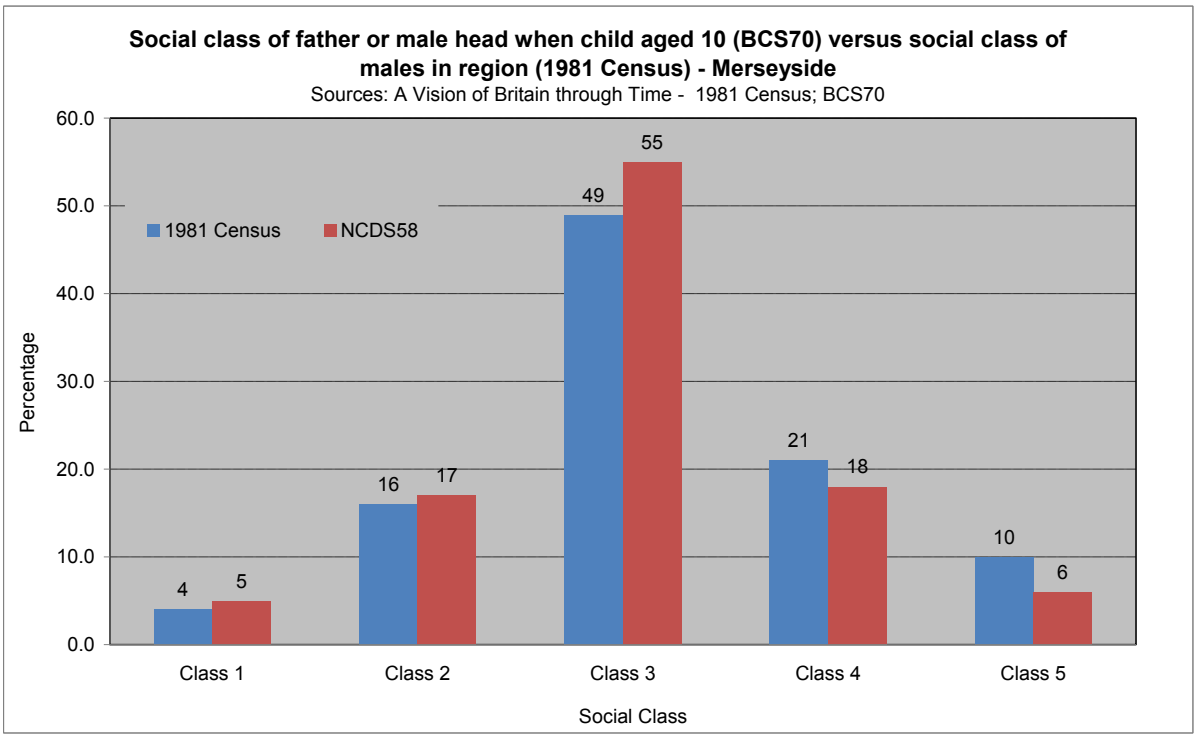


Sample size: Greater Manchester=230.

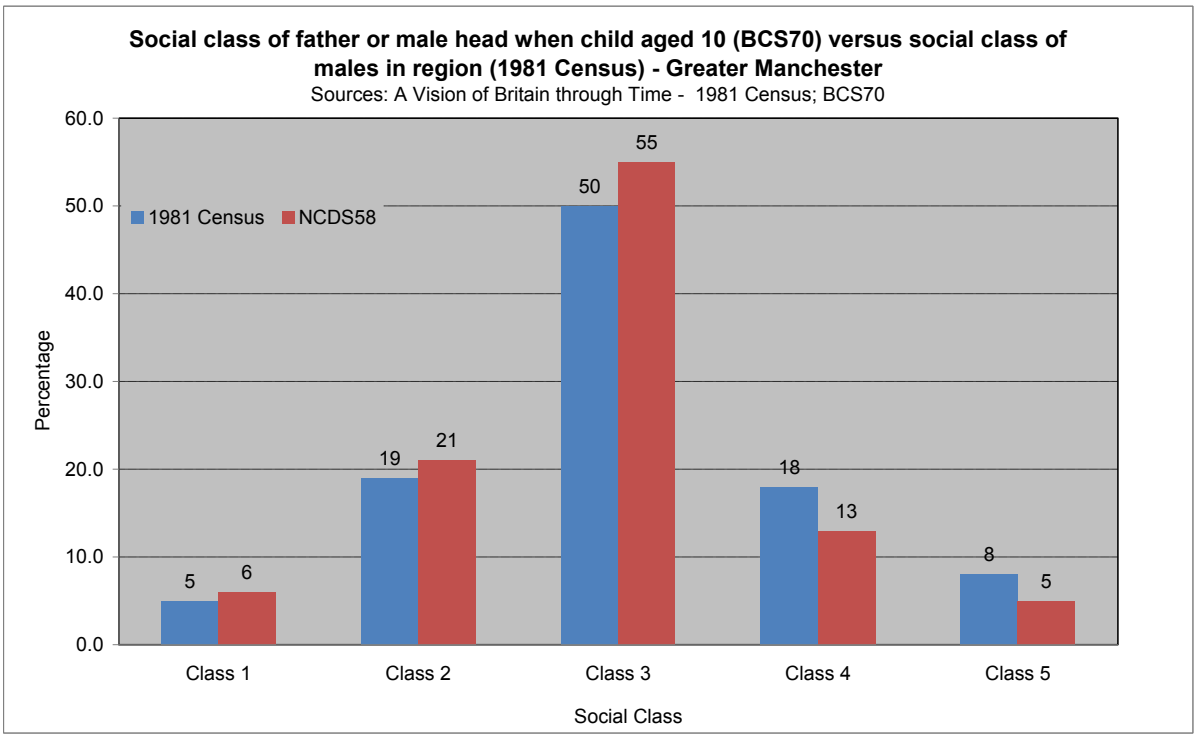
British Cohort Study 1970



Sample size: GCV=412.



Sample size: Merseyside=480.



Sample size: Greater Manchester=505.

Appendix D: Sources and definitions

Figure and description	Definition	Sources
3 – Percentage of mothers with no qualifications, child aged three	Percentage of MCS mothers with no formal qualifications (2004)	Millennium Cohort Study: Second Survey, 2003-2005
4 – Percentage of mothers with no qualifications, child aged five	Percentage of BCS70 mothers with no formal qualifications (1975)	1970 British Cohort Study: Five-Year Follow-up, 1975
5 – Percentage of mothers leaving school at minimum leaving age, child at birth	Percentage of NCDS58 mothers reporting they did not stay at school after minimum leaving age (1958)	National Child Development Study: Childhood Data, Sweep 0 (Birth)
6 – Percentage of mothers with primary education only, child aged 6	Percentage of MRC-NSHD mothers reporting they did not stay at school after minimum leaving age (1952)	National Survey of Health and Development (1952 sweep)
7 – Birth rate per 1,000 women aged <20, Scotland and England	Number of births to mothers aged under 20, per 1,000 women aged 15-19 (three-year rolling average)	ONS; National Records of Scotland (NRS)
8a – Birth rate per 1,000 women aged <20, Glasgow and the Clyde Valley, Merseyside and Greater Manchester	Number of births to mothers aged under 20, per 1,000 women aged 15-19 (three-year rolling average)	ONS; National Records of Scotland (NRS)
8b – Birth rate per 1,000 women aged <20 by deprivation decile, Glasgow, Liverpool and Manchester	Number of births to mothers aged under 20, per 1,000 women aged 15-19 (three-year rolling average)	ONS; National Records of Scotland (NRS)
9 – Proportion of low birth-weight babies, Scotland and England	Number of live births under 2,500g as a percentage of all live births for which the birth-weight is known	ONS Vital Statistics; ISD Scotland

10 – Proportion of low birth-weight babies, Glasgow and the Clyde Valley, Merseyside and Greater Manchester	Number of live births under 2,500g as a percentage of all live births for which the birth-weight is known	ONS Vital Statistics; ISD Scotland
11 – Percentage of mothers not owning their own home, child aged three	Percentage of MCS mothers renting privately, renting socially, living with parents, living rent-free, squatting	Millennium Cohort Study: Second Survey, 2003-2005
12 – Percentage of children under the age of 16 living in workless households, Scotland and England	Percentage of children under the age of 16, living in a household that includes at least one person aged 16 to 64 where no one is in employment (three-year rolling averages)	Labour Force Survey Household Datasets 1996-2011
13 – Percentage of children aged 0-15 living in workless households, Central Clydeside Conurbation, Merseyside and Greater Manchester	Percentage of children under the age of 16, living in a household that includes at least one person aged 16 to 64 where no one is in employment (three-year rolling averages)	UK Labour Force Survey 1987-1991; Annual Population Survey Household datasets 2005-2009
14 – Percentage of children aged 0-19 whose parents claim a key working-age benefit	Number of children (aged 0-19) in families where an adult of working age claims a key working-age benefit as a percentage of all 0-19 year olds	DWP benefit claimants 5% data – children of working age clients; ONS; National Records of Scotland (NRS)
15 – Percentage of children aged 0-19 whose parents claim a key working-age benefit	Number of children (aged 0-19) in families where an adult of working age claims a key working-age benefit as a percentage of all 0-19 year olds	DWP benefit claimants 5% data – children of working age clients; ONS; National Records of Scotland (NRS)

16a – Percentage of children living in poverty	Number of children in families in receipt of either out of work (means-tested) benefits, or in receipt of tax credits where their reported income is less than 60% of median income, as a percentage of all children (aged 0-19)	HM Revenue & Customs: http://www.hmrc.gov.uk/stats/personal-tax-credits/child_poverty.htm
16b – Percentage of children living in poverty by deprivation decile, Glasgow, Liverpool and Manchester	Number of children in families in receipt of either out of work (means-tested) benefits, or in receipt of tax credits where their reported income is less than 60% of median income, as a percentage of all children (aged 0-19)	HM Revenue & Customs: http://www.hmrc.gov.uk/stats/personal-tax-credits/child_poverty.htm; NRS; ONS
17 – Percentage of dependent children aged 0-4 living in a lone parent household	All dependent children living in a lone parent family as a percentage of all dependent children	ONS; National Records of Scotland (NRS) – 2001 Census of Population
18 – Percentage of dependent children aged 0-4 living in a cohabiting household	All dependent children living in a cohabiting couple family as a percentage of all dependent children	ONS; National Records of Scotland (NRS) – 2001 Census of Population
19 – Percentage of mothers reporting that partner ever used force, child aged three	Percentage of MCS mothers responding 'yes' to the question: 'People often use force in a relationship – grabbing, pushing, shaking, hitting, kicking etc. Has your husband ever used force on you for any reason?' (excluding don't want to answer) (2004)	Millennium Cohort Study: Second Survey, 2003-2005

20 – Percentage of adults aged 16-59 with at least one child in household reporting aspects of domestic abuse, England and Scotland	Percentage of adults aged 16-59, who have ever had a partner since the age of 16, with at least one child in household who ever experienced various forms of partner abuse (see Appendix B for more information)	British Crime Survey, 2008-09 & 2009-2010; Scottish Crime and Justice Survey, 2008-09 & 2009-2010
21 – Selected indicators of mothers' views about relationship, child aged nine months, Scotland and England	Percentage of MCS mothers agreeing/strongly agreeing with selected statements about relationship with partner (2001-03)	Millennium Cohort Study: First Survey, 2001-2003
22 – Selected indicators of mothers' views about relationship, child aged nine months, Glasgow and the Clyde Valley and Greater Manchester	Percentage of MCS mothers agreeing/strongly agreeing with selected statements about relationship with partner (2001-03)	Millennium Cohort Study: First Survey, 2001-2003
23 – Percentage of mothers agreeing father plays a big role in management of child at age ten	Percentage of BCS mothers agreeing father plays a big role, equal to mother, in the management of child at age ten (excluding don't know, n/a)	1970 British Cohort Study: Ten-Year Follow-up, 1980
24 – Percentage of mothers agreeing father plays a big role in management of child at age 11	Percentage of NCDS mothers agreeing father plays a big role, equal to mother, in the management of child at age 11 (excluding don't know, n/a)	Child Development Study: Childhood Data, Sweep 2 (1969)
25 – Percentage of mothers reporting husband helps regularly with housework or children, child aged 11	Percentage of NSHD mothers reporting that husband regularly helps them with the housework or children (1957)	National Survey of Health and Development (1957 sweep)

26 – Percentage of parents using recreational drugs in last year, Scotland and England	Percentage of MCS mothers and MCS fathers reporting they used recreational drugs like cannabis, cocaine or ecstasy in past year (2004 and 2006)	Millennium Cohort Study: Second Survey, 2003-2005; Millennium Cohort Study: Third Survey, 2006
27 – Percentage of parents using recreational drugs in last year, Glasgow and the Clyde Valley and Greater Manchester	Percentage of MCS mothers and MCS fathers reporting they used recreational drugs like cannabis, cocaine or ecstasy in past year (2004 and 2006)	Millennium Cohort Study: Second Survey, 2003-2005; Millennium Cohort Study: Third Survey, 2006
28 – Estimated number of opiate users aged 15-64 per 1,000: 2006	Estimated number of opiate users aged 15-64 per 1,000 adults aged 15-64	Hay *et al*.[93] Estimates of the prevalence of opiate use and/or crack cocaine use (2006/07) North West Region; Hay *et al*.[94] Estimating the National and Local Prevalence of Problem Drug Misuse in Scotland; ONS; National Records of Scotland (NRS)
29 – Percentage of mothers with a CAGE score of 2+	Percentage of MCS mothers with a CAGE score of 2+ (where all four CAGE questions answered) (2004)	Millennium Cohort Study: Second Survey, 2003-2005
30 – Percentage of mothers reporting alcoholism among the difficulties of this family, child aged seven	Percentage of households where alcoholism is recorded as a difficulty of the family (1965)	National Child Development Study: Childhood Data, Sweep 1 (1965)
31– Adult male imprisonment rate, by home region of residents	Number of adult male prisoners aged 21+ per 1,000 male adults aged 16+	Ministry of Justice; Scottish Government
32 – Looked after children per 1,000 aged 0-19	Number of looked after children per 1,000 population aged 0-19 (three-year rolling averages)	Department of Children, Schools and Families (and predecessors); Scottish Government; ONS; National Records of Scotland (NRS)
33 – Looked after children per 1,000 aged 0-19	Number of looked after children per 1,000 population aged 0-19 (three-year rolling averages)	Department of Children, Schools and Families (and predecessors); Scottish Government; ONS; National Records of Scotland (NRS)

34 – Looked after children by type of placement	Looked after children by type of placement: with parents, with foster parents and other (2008-10)	Department of Children, Schools and Families (and predecessors); Scottish Government
35 – Percentage of mothers smoking in pregnancy, where status is known	Percentage of Scottish mothers smoking at first visit and English mothers smoking at birth, excluding those mothers where smoking status not known (three year average)	ISD Scotland SMR02; Department of Health, Health Improvement Analytical Team
36 – Smoking after four months pregnancy	Percentage of NCDS mothers smoking after four months pregnancy (1958)	National Child Development Study: Childhood Data, Sweep 0 (Birth)
37 – Mother's general health fair or poor, child aged nine months	Percentage of MCS mothers general health fair or poor, where mother's health status known (2001-2003)	Millennium Cohort Study: First Survey, 2001-2003
38 – Percentage of mothers with pre-pregnancy BMI of 30+, child aged nine months	Percentage of MCS mothers with BMI of 30+, based on self-reported height and weight (2001-2003)	Millennium Cohort Study: First Survey, 2001-2003
39 – Percentage of mothers with medium-high psychological distress, child aged three	Percentage of MCS mothers with a Kessler score of 4+ (2004)	Millennium Cohort Study: Second Survey, 2003-2005
40 – Percentage of mothers with high levels of Malaise, child aged nine months	Percentage of MCS mothers with a Malaise score of 4+ (2001-2003)	Millennium Cohort Study: First Survey, 2001-2003
41 – Percentage of mothers with moderate-high levels of Malaise, child aged five	Percentage of BCS70 mothers with Malaise score in the 81st-100th percentile, all those answering all 24 questions (1975)	1970 British Cohort Study: Five-Year Follow-up, 1975
42 – Percentage of mothers with high neuroticism, child aged 15	Percentage of NSHD mothers with a score of 4+ on the Maudsley Personality Inventory (neuroticism scale) (1961)	National Survey of Health and Development (1961 sweep)

43 – Percentage of mothers with low self-efficacy score, child aged nine months	Those answering all three self-efficacy questions who chose the negative response to any of them were classified as having low self-efficacy. The questions were: I never really seem to get what I want out of life/I usually get what I want out of life; I usually have a free choice and control over my life/whatever I do has no real effect on what happens to me; usually I can run my life more or less as I want to/I usually find life's problems just too much for me.	Millennium Cohort Study: First Survey, 2001-2003
44 – Percentage of dependent children aged 0-4 with a long-term limiting illness	All dependent children with a long-term limiting illness as a percentage of all dependent children	ONS; National Records of Scotland (NRS) – 2001 Census of Population
45 – Percentage of mothers with a high conflict score when child aged three	Percentage of MCS mothers scoring 27-35 on the conflict scale of the Pianta child parent relationship scale (2004)	Millennium Cohort Study: Second Survey, 2003-2005
46 – Percentage of mothers who disagree with partner over issues concerning child once a week or more when child aged three	Percentage of MCS mothers reporting they and their husband/partner disagree over issues concerning the cohort child once a week, several times a week, once a day, more than once a day (2004)	Millennium Cohort Study: Second Survey, 2003-2005
47 – Percentage of mothers reading to child less than several times a week, child aged three	Percentage of MCS mothers reading to child once or twice a week, once or twice a month, less often or not at all (2004)	Millennium Cohort Study: Second Survey, 2003-2005

48 – Percentage of fathers reading to child less than several times a week, child aged three	Percentage of MCS fathers reading to child once or twice a week, once or twice a month, less often or not at all (2004)	Millennium Cohort Study: Second Survey, 2003-2005
49 – Percentage of mothers reporting than no one read to child in last week, child aged five	Percentage of BCS70 mothers reporting that 'no one' has read to the cohort child at home in the past seven days (1975)	1970 British Cohort Study: Five-Year Follow-up, 1975
50 – Percentage of mothers hardly ever reading to child at age seven	Percentage of NCDS mothers reporting that they never or hardly ever read to, or reads with, the child (1965)	National Child Development Study: Childhood Data, Sweep 1 (1965)
51 – Percentage of fathers hardly ever reading to child at age seven	Percentage of NCDS mothers reporting that the father never or hardly ever reads to, or reads with, the child (1965)	National Child Development Study: Childhood Data, Sweep 1 (1965)
52 – Percentage of infants breastfed at 6-8 weeks, where breastfeeding status known	Percentage of infants breastfed at 6-8 weeks, where breastfeeding status known (2009/10)	ISD Scotland CHSP-PS; Department of Health, Vital Signs Monitoring Return
53 – Percentage of mothers who never made childcare arrangements, child aged three	Percentage of MCS mothers who never made childcare arrangements (2004)	Millennium Cohort Study: Second Survey, 2003-2005
54 – Percentage of mothers who rarely/never smack children when naughty, child aged three	Percentage of MCS mothers who rarely/never smack children when naughty (2004)	Millennium Cohort Study: Second Survey, 2003-2005
55 – Percentage of mothers who shout at their children daily when naughty, child aged three	Percentage of MCS mothers who shout at their children daily when naughty (2004)	Millennium Cohort Study: Second Survey, 2003-2005
56 – Percentage of mothers reporting child had regular bedtimes at age three	Percentage of MCS mothers reporting child usually/always had regular bedtimes at age three (2004)	Millennium Cohort Study: Second Survey, 2003-2005

57 – Percentage of mothers reporting child had regular mealtimes at age three	Percentage of MCS mothers reporting child usually/always had regular mealtimes at age three (2004)	Millennium Cohort Study: Second Survey, 2003-2005
58 – Percentage of mothers with a low warmth score when child aged three	Percentage of MCS mothers scoring 7-29 on the warmth scale of the Pianta child parent relationship scale (2004)	Millennium Cohort Study: Second Survey, 2003-2005
59 – Percentage of cohort members with a low warmth score at age ten	Percentage of BCS70 cohort members with a score of <7 age ten	1970 British Cohort Study: Ten-Year Follow-up, 1980
60 – Percentage of mothers who always/almost always hug, kiss child, child aged seven	Percentage of MCS mothers reporting that they always/almost always hug, kiss child (2008)	Millennium Cohort Study: Fourth Survey, 2008
61 – Percentage of fathers who always/almost always hug, kiss child, child aged seven	Percentage of MCS fathers reporting that they always/almost always hug, kiss child (2008)	Millennium Cohort Study: Fourth Survey, 2008
62 – Selected indicators of maternal attachment, child aged nine months	Percentage of MCS mothers agreeing/strongly agreeing with selected statements about postnatal attachment to child (2001-03)	Millennium Cohort Study: First Survey, 2001-2003
63 – Percentage of fathers who take child to playground/park less than once a month	Percentage of MCS fathers who take child to playground/park less than once a month at age five and seven (2006 & 2008)	Millennium Cohort Study: Third Survey, 2006; Millennium Cohort Study: Fourth Survey, 2008
64 – Percentage of fathers who hardly ever take child on walks, outings	Percentage of NCDS mothers reporting father hardly ever takes child on walks, outings (1969)	Child Development Study: Childhood Data, Sweep 2 (1969)
65 – Percentage of children born c. 2000 with borderline-serious difficulties, child aged three	Percentage of MCS mothers with cohort child scoring 14+ on the Strengths and Difficulties Questionnaire (2004)	Millennium Cohort Study: Second Survey, 2003-2005

66 – Percentage of children born c. 2000 with borderline-serious difficulties, child aged five	Percentage of MCS mothers with cohort child scoring 14+ on the Strengths and Difficulties Questionnaire (2006)	Millennium Cohort Study: Third Survey, 2006
67 – Percentage of children born c. 2000 with borderline-serious difficulties, child aged seven	Percentage of MCS mothers with cohort child scoring 14+ on the Strengths and Difficulties Questionnaire (2008)	Millennium Cohort Study: Fourth Survey, 2008
68 – Percentage of BCS70 cohort with moderate-severe behavioural problems, child aged five	Percentage of BCS70 mothers with child Rutter scores on 81st-100th percentile (1975)	1970 British Cohort Study: Five-Year Follow-up, 1975
69 – Percentage of BCS70 cohort with moderate-severe behavioural problems, child aged ten	Percentage of BCS70 mothers with child Rutter scores on 81st-100th percentile (1980)	1970 British Cohort Study: Ten-Year Follow-up, 1980
70 – Percentage of BCS70 cohort with moderate-severe behavioural problems, child aged 16	Percentage of BCS70 mothers with child Rutter scores on 81st-100th percentile (1986)	1970 British Cohort Study: Sixteen-Year Follow-up, 1986
71 – Percentage of NCDS 58 cohort with moderate-severe behavioural problems, child aged seven	Percentage of NCDS mothers with child Rutter scores on 81st-100th percentile (1965)	National Child Development Study: Childhood Data, Sweep 1 (1965)
72 – Percentage of NCDS 58 cohort with moderate-severe behavioural problems, child aged 11	Percentage of NCDS mothers with child Rutter scores on 81st-100th percentile (1969)	National Child Development Study: Childhood Data, Sweep 2 (1969)

73 – Percentage of NCDS 58 cohort with moderate-severe behavioural problems, child aged 16	Percentage of NCDS mothers with child Rutter scores on 81st-100th percentile (1974)	National Child Development Study: Childhood Data, Sweep 3 (1974)
74 – Percentage of 1946 Birth Cohort with severe conduct disorders, child aged 15	Percentage of cohort members scoring above the 93rd percentile (13+) (1961)	National Survey of Health and Development (1961 sweep)

Appendix E: Formal citations of survey data

National Child Development Study

University of London. Institute of Education. Centre for Longitudinal Studies, *National Child Development Study: Childhood Data, Sweeps 0-3, 1958-1974* [computer file]. *2nd Edition.* National Birthday Trust Fund, National Children's Bureau, [original data producer(s)]. Colchester, Essex: UK Data Archive [distributor], August 2008. SN: 5565, http://dx.doi.org/10.5255/UKDA-SN-5565-1

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University of London. Institute of Education. Centre for Longitudinal Studies, *Millennium Cohort Study: Fourth Survey, 2008* [computer file]. 2nd Edition. Colchester, Essex: UK Data Archive [distributor], November 2010. SN: 6411, http://dx.doi.org/10.5255/UKDA-SN-6411-1

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Growing Up in Scotland

Scottish Centre for Social Research, Growing Up in Scotland: Sweeps 1 to 5, 2005-2010 [computer file]. 10th Edition. Colchester, Essex: UK Data Archive [distributor], January 2012. SN: 5760, http://dx.doi.org/10.5255/UKDA-SN-5760-2

British Crime Survey

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Scottish Crime and Justice Survey

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