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The Impact of Disability on The Lives of Young Children: Analysis of Data From the Growing up in Scotland Study

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THE IMPACT OF DISABILITY ON THE LIVES OF YOUNG CHILDREN: ANALYSIS OF GROWING UP IN SCOTLAND DATA

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Table of Contents

EXECUTIVE SUMMARY 1

1 INTRODUCTION 8

Background 8
Objectives and scope of the research 8
Data and methods 9

2 FINDINGS 12

Demographics 12
Mother’s experience of pregnancy and birth 19
Child-parent relationship 25
Child development 34
Family structure and couple relationships 45
Parents’ mental health and emotional wellbeing 48
Parents’ experiences of support and information services 50
Attitudes toward support 64
Barriers to accessing childcare and pre-school education 69
The impact of limiting disability 81

3 CONCLUSION 86

APPENDIX 89

EXECUTIVE SUMMARY

This research project was commissioned by Scottish Government Children and Families Analysis with the objective of undertaking an in-depth analysis of data from the Growing Up in Scotland study (GUS) to examine the circumstances and outcomes of children living with a disability in Scotland. The overall aim of this analysis was to explore the impact of disability on the child, their parents and the wider family unit.

GUS is an important longitudinal research project aimed at tracking the lives of several cohorts of Scottish children through the early years and beyond. The study is funded by the Scottish Government and carried out by ScotCen Social Research. GUS launched in 2005 with two cohorts of children – around 3000 born in 2002/03 (the child cohort) and around 5000 born in 2004/05 (the first birth cohort). A further cohort of 6000 children born in 2010/11 (the second birth cohort) was recruited to the study in 2011. Each sample is nationally representative of all children born in Scotland in the corresponding year.

This report presents analysis of data on the children and families in the first birth cohort. Data was first collected on this cohort when the child was aged 10 months old. The children and their families were then followed via annual ‘sweeps’ of data collection until the child was aged 6 (in 2011/12). The data included here refers to the point at which the children were aged 10 months, three years old and five years old.

Defining disability

The analysis sought to adopt a definition of disability in line with both The Equality Act 2010 (“A person has a disability…if he has a physical or mental impairment which has a substantial and long-term adverse effect on his ability to carry out normal day to day activities”) while also accounting for other definitions of disability, including additional educational support needs.

For the initial analysis children were therefore defined as disabled if their main carer had answered ‘yes’ to the following question:

> Does ^ChildName have any longstanding illness or disability? By longstanding I mean anything that has troubled ^him over a period of time or that is likely to affect ^him over a period of time?[1]

And from age three onwards, those who answered ‘yes’ to the following question were also included:

> When we spoke to you last time you said that ^ChildName had a longstanding illness or disability. Can I just check does ^ChildName still have this longstanding illness or disability?

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[1] The question was slightly different at sweep one, referring to health problems or disabilities that lasted or were expected to last for more than a year rather than ‘a period of time’.

Further analysis was also carried out using an additional definition of ‘limiting’ disability where, from age 2 onwards, parents had *also* answered ‘yes’ to the following question:

> Does this/Do these condition(s) or health problem(s) limit him/her at play or from joining in any other activity normal for a child his/her age?

12% of children (*n*=690) were reported as having a disability at 10 months of age. This increased with age; by age six, 19% (*n*=680) of children were reported to have a disability. 2% of children (*n* = 94) had a limiting disability at age 2. This had increased slightly to 5% (*n* = 167) at age 6.

Overall findings

The analysis found clear differences between disabled and non-disabled children. However, the broad definition applied to disability means that differences are not huge. Some of the largest distinctions are in relation to socio-economic characteristics and it appears that these socio-economic differences are, to a large extent, driving the many other differences between these children. After controlling for variations in socio-economic characteristics, disability was only associated with one of the outcomes and experiences considered in the multivariate analyses – poorer social, emotional and behavioural development. Even after using a more focussed definition, restricting the analysis to children with limiting disability, only a small number of independent associations were found - with low warmth in the parent-child relationship, high parenting stress and poorer child social, emotional and behavioural development.

Demographics

Disability is closely associated with socio-economic circumstances being significantly more common amongst children from more disadvantaged circumstances. This is important because, in the remainder of the analysis, it is this underlying distinction between disabled and non-disabled children which appears to be driving many of the other differences between them.

- A significantly higher proportion of disabled children than non-disabled children lived in the most deprived areas of Scotland.

- At ages three and five, disabled children were more likely than non-disabled children to be living in households in the lowest income quintile. For example, at age five, 31% of disabled children lived in a household in the lowest income quintile compared with 22% of non-disabled children.

- A higher proportion of children with a disability than non-disabled children had parents who were not in paid work.

- Children with a disability were less likely to be living in owner-occupied accommodation than children without a disability

Pregnancy and birth

- A higher proportion of mothers with disabled children had an illness or other problem during pregnancy that required medical attention or treatment (49% compared with 37%).

- Mothers with disabled children were slightly more likely to have smoked during pregnancy than those with non-disabled children. There were no differences in alcohol consumption.

- 31% of disabled children were born weeks early compared with 22% of non-disabled children, while 39% were born late compared with 46% of non-disabled children.

- A higher proportion of children with a disability at 10 months had spent time in a special care baby unit or neonatal unit after they were born compared with children without a disability. 11% of children with a disability had spent seven or more days in such a unit compared with 4% of children without a disability.

After controlling for socio-economic characteristics, the key factors associated with *having* a disability at 10 months were: having spent time in a special care unit or neonatal unit; maternal ill health during pregnancy; being a boy; and the baby arriving ‘weeks’ early.

Parenting

- Mothers with non-disabled children tended to report greater ‘warmth’ between them and their child than mothers with disabled children. At age five, 67% of mothers with non-disabled children scored as high for the warmth of mother-child relationship compared with 59% of mothers with disabled children.

- At age two, mothers with a disabled child reported carrying out fewer activities with their child than mothers with non-disabled children. However, by age four the number of activities was approximately the same for both groups.

- When the child was aged five, mothers of disabled children were more likely to report higher levels of conflict in their relationship with the child and to exhibit a higher level of parental supervision than mothers with non-disabled children.

- There were no differences in use of smacking or in the application of rules and routines. However, at age five, households in which disabled children lived were a little more likely to be disorganised or chaotic than those of non-disabled children.

After controlling for other factors, disability was not independently associated with mother-child warmth at age five or with the level of parent-child activities. These were instead associated with factors such as parental mental wellbeing, parental stress, housing tenure, income and employment. Although not tested, it appears unlikely that disability would be independently associated with levels of conflict or parental supervision.

However, limiting disability *was* associated with warmth in the parent-child relationship and parenting stress. After controlling for other factors parents whose children had a limiting disability at age five were more likely to report high parenting stress and low warmth in the parent-child relationship

Child development

- Disabled children were significantly more likely than non-disabled children to have missed key developmental milestones associated with gross and fine motor skills at 10 months and age three.

- However, after controlling for key socio-economic and demographic factors, disability was not found to be independently associated with missing developmental milestones at 10 months. The main predictors were similar to those which were associated with having a disability at 10 months – in particular, early gestation and time in a special baby or neonatal unit.

- Disabled children had a lower average problem solving ability score than non-disabled children at both ages three and five. They also had a lower mean vocabulary ability score at both sweeps.

Compared with non-disabled children, disabled children tended to have a higher level of social, emotional and behavioural difficulties at ages four and five. This relationship remained after controlling for socio-economic characteristics. The strength of this association increased for children with limiting disability. The odds of children with a limiting disability at age five of having an SDQ total difficulties score in the moderate or severe range were four times higher than those of children who did not have a limiting disability.

Family structure and couple relationships

- Parents of disabled children who lived with a partner were more likely to report a less secure couple relationship than parents of non-disabled children. They were also less likely to remain as a stable couple from when the child was 10 months to age six. However, there was no independent association between disability, or limiting disability, and a less secure couple relationship.

Parental mental wellbeing

- At all three sweeps, parents of disabled children reported a lower level of mental wellbeing and a higher level of parental stress than parents with non-disabled children. But disability was not independently associated with high parental stress.

However, after controlling for other factors, parents whose children had a limiting disability at age five were more likely to report high parenting stress.

Parents’ experiences of services

- At age two to four, parents of disabled children tended to report using a higher number of sources of information on their child’s health and behaviour than did parents of non-disabled children.

- Just 4% of parents with disabled children reported being unable to find help on their child’s health (at both ages three and four). However, this was higher than for parents with non-disabled children (1%).

- There was no significant difference between parents of disabled children and parents of non-disabled children on the number of sources of information or advice used about pre-school or primary school enrolment.

- There was also no difference in parents’ satisfaction with the range of advice, information or support available about their child’s start at primary school or parenting generally.

- After controlling for socio-economic characteristics, there was no independent relationship between disability, or limiting disability, and use of and satisfaction with services.

Attitudes to support

- Parents of disabled children tended to have more negative perceptions of seeking and receiving support with parenting than did parents of non-disabled children, although differences were small.

- Neither disability nor limiting disability were independently associated with reluctance or uncertainty in seeking help or support.

Childcare and pre-school

- There was no significant difference in the use of regular childcare between parents of disabled and non-disabled children. Disabled children were, however, slightly less likely to have attended pre-school (89% compared with 93%).

- Neither did parents differ in the amount of choice they felt they had when choosing childcare (at ages two and five). However, at age three a higher proportion of parents with disabled children than those with non-disabled children felt they had no choice at all.

- In addition, parents with disabled children were more likely say they had found it fairly or very difficult to arrange childcare (though most had not found it difficult).

- Parents of disabled children were less likely than parents of non-disabled children to be ‘very satisfied’ with their main childcare provider when the child was under five. However, at ages five and six there were no differences in satisfaction.

- Parents of disabled children were more likely to say they were not using childcare because their child needed special care. The proportion (of those not using childcare) doing so decreased from 7% at 10 months to 4% at age 5.

- Disability and limiting disability were not independently associated with any of the childcare or pre-school indicators of satisfaction or availability.

Conclusion

As noted above, using the definition applied in this report the differences between disabled and non-disabled children are not huge and it appears that the clear differences in the socio-economic characteristics between disabled and non-disabled children may be behind the many other differences between these children. After controlling for the different socio-economic characteristics of disabled and non-disabled children, disability was only associated with one of the outcomes and experiences considered in the multivariate analyses – the child's social, emotional and behavioural development. Limiting disability was also independently associated – and more strongly - with the child's social development. It was also found to be associated with lower warmth in the parent-child relationship and higher parenting stress.

Thus having a disability is linked with a greater likelihood of having early social, emotional or behavioural difficulties. In many cases the disability indicator used here will actually be identifying a long-standing condition linked to that area of the child's development. In other cases, the specific disability reported may be one which affects areas of the child's development which subsequently affect their social experience. The lower warmth in the parent-child relationship may be similarly explained; specific conditions will make parent-child interactions more challenging. Higher stress amongst parents of children with limiting disabilities is perhaps unsurprising. These parents face the daily challenges faced by all parents of young children along with those additional challenges presented by a child with a limiting condition.

Yet otherwise there is little in the data to distinguish the experiences of parents of disabled and non-disabled children. This does not correspond with research elsewhere which reports clear differences between these two groups. We do not suggest that these differences do not exist but rather that they do not occur here because of the definition of disability used, how differences in experiences were measured and the size of the sample.

The definition of disability used in the analysis was very broad, encompassing everything from asthma to mental illness. It is perhaps unsurprising that on considering, in depth, *all* children with *any* sort of disability, we find them to be quite a heterogeneous group. One obvious extension to the initial analysis conducted therefore, was to consider a more focussed definition of disability. This was done on the basis of the effects of the condition - restricting the definition to 'limiting' disability. However, even limiting disability was only found to be independently associated with a small number of outcomes associated with parenting and child development.

Further alternative definitions are possible, for example using the type of disability. In addition, using the unique longitudinal nature of GUS data, children could be distinguished in terms of whether disability was ‘brief’ (occurring at a single time point) or ‘persistent’ (occurring over multiple time points). Variations could also be considered in relation to age of onset

However disability is further defined, the key factor determining the feasibility of further analysis is the size of the resultant sub-group. With too precise a definition, the disabled sub-group will be too small for separate consideration. With too broad a definition, it appears that disability will not show any relationship with children’s experiences and outcomes.

In addition, the experiences enquired about in the Growing Up in Scotland study are many and varied - designed to capture broad variations in a general population. A survey more focussed on identifying variation between the parents of disabled and non-disabled children would perhaps use questions designed to explore in a more focussed fashion, known differences between these two groups.

1 INTRODUCTION

1.1 This research project was commissioned by Scottish Government Children and Families Analysis with the objective of undertaking an in-depth analysis of the Growing Up in Scotland (GUS) data to examine the circumstances and outcomes of children living with a disability in Scotland. The overall aim of this analysis was to explore the impact of disability on the child, their parents and the wider family unit.

Background

1.2 The Getting It Right For Every Child (GIRFEC) framework is intended to apply to all children. It is a holistic approach that requires specific needs and risks from whatever issue (whether disability, mental health, offending behaviour, medical illness, among others) to be reflected within the overarching wellbeing outcomes of SHANARRI (safe, healthy, achieving, nurtured, active, responsible, respected, included) through a child's single plan.

1.3 The GUS study offers one of the richest sources of data on Scottish children's outcomes. As yet, the data that has been collected on children living with a disability – including their early childhood outcomes – has not been subject to any in-depth analysis over and above what is systematically recorded in the annual reports and summaries on child health. The sample of children who may be classified as having a 'disability' is small, as may be expected of a nationally representative sample, which means that any data on disability cannot be disaggregated by 'disability type'. However, the sample is large enough to draw comparisons between disabled and non-disabled children.

1.4 The results of this analysis will be used to influence and inform the wider work on mapping outcomes and indicators project for disabled children and young people that is currently underway. It will also add significant value to the long term visioning of how services, support and opportunities for disabled children in Scotland can be provided and improved.

Objectives and scope of the research

1.5 The aim of this research is to use existing data to explore the characteristics, circumstances and experiences of children living with a disability in Scotland and examine how they compare with those for children without a disability. The data used will be drawn from the first six sweeps of the first birth cohort (BC1) of the GUS study. The analysis attempted to answer the following research questions:

- What are the demographics of children with a disability?
- How does the mother's experience of pregnancy and birth (with a child disabled from birth) differ from parents with a non-disabled child?
- How does disability affect the child-parent relationship?
- How is child development affected in comparison with non-disabled child developmental milestones?
- How does disability affect family structure and couple relationships?

- How does disability affect parents mental health and emotional wellbeing?
- What are parents' experiences of services for disabled children (in terms of information, usefulness, accessibility and availability)?
- What type of information/support do parents with disabled children most value?
- What are the barriers to accessing childcare and pre-school education?

Data and methods

Growing up in Scotland

1.6 The Growing Up in Scotland study (GUS) is an important longitudinal research project aimed at tracking the lives of several cohorts of Scottish children through the early years and beyond. The study is funded by the Scottish Government and carried out by ScotCen Social Research. GUS provides crucial evidence for the long-term monitoring and evaluation of policies for children, with a specific focus on the early years. The study collects a wide range of information about children and their families - the main areas covered include childcare, education, parenting, health and social inclusion. Much of the data collected is relevant to this project.

1.7 GUS launched in 2005 with two cohorts of children. The youngest of these, the birth cohort, involves a nationally representative sample of around 5217 children who were all born in 2004 or 2005. Data was collected annually from these children and their families, from the time when the cohort child was aged 10 months until they were 6 years old. Further data is being collected at age 8 and age 10.

Defining disability

1.8 The Equality Act 2010 states that "A person has a disability…if he has a physical or mental impairment which has a substantial and long-term adverse effect on his ability to carry out normal day to day activities".

1.9 The aim for this analysis was to define 'disability' based on the definition used within the Equality Act 2010, while also accounting for other definitions of disability, including additional educational support needs. A child or young person is said to have 'additional support needs' if they need more – or different – support to what is normally provided in schools or pre-schools to children of the same age.

1.10 The definition of disability for this analysis that was broadly in line with the aim outlined above and could be achieved from GUS data consistently at multiple sweeps was obtained from affirmative answers to the following question:

> Does ^ChildName have any longstanding illness or disability? By longstanding I mean anything that has troubled ^him over a period of time or that is likely to affect ^him over a period of time?[2]

And from age three onwards we have also included those who answered ‘yes’ to the following question also:

> When we spoke to you last time you said that ^ChildName had a longstanding illness or disability. Can I just check does ^ChildName still have this longstanding illness or disability?

Analysis and presentation of results

1.11 The research questions require comparisons to be made between disabled and non-disabled children on a wide range of topics. Therefore, to answer the questions it is necessary to draw on the six existing datasets from BC1, spanning the period between birth and age 6.

1.12 Some data – such as that on the child’s demographic and socio-economic circumstances - is available in all sweeps. Other data - such as that on pregnancy and birth or on parenting – is available in only a single sweep, or in a small number of sweeps. For those data which were available at each of the six sweeps, analysis is undertaken only at sweep 1 (10 months), sweep 3 (34 months/age 3) and sweep 5 (58 months/age 5). This allows a suitable consideration of differences by age whilst not presenting an unnecessary level of detail. It also allow coverage of a wider range of topics than would be the case if a single sweep was considered.

1.13 A number of research questions ask how disability ‘affects’ certain dimensions of family life and parenting. It is important to note that the analysis undertaken here does not demonstrate that where differences exist between disabled and non-disabled children that these differences occur as a result of the child’s condition. That is, causal inferences are not possible.

1.14 It is possible however, to look at how strongly disability is associated with certain circumstances and experiences relative to, and after controlling for, other influencing factors such as socio-economic circumstances. Indeed, such analysis is crucial given the fairly strong differences in prevalence of disability according to key socio-economic characteristics as shown by Bromley[3]. In her report, Bromley showed that children living in areas of higher deprivation and in lower income households were more likely to have had a long-term health problem in their first four years than were those living in areas of lower deprivation or in higher income households. Given that household income has been shown, in a range of other GUS research, to be related to various child and family circumstances, experiences and outcomes, it is necessary, at a minimum, to ensure that any differences between

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[2] The question was slightly different at sweep one, referring to health problems or disabilities that lasted or were expected to last for more than a year rather than ‘a period of time’.

[3] Bromley, C. (2010) *Growing Up in Scotland: Health inequalities in the early years,* Edinburgh: Scottish Government

disabled and non-disabled children which are observed in the cross-tabulation analysis are not occurring due to differences in the socio-economic characteristics of children in each group.

1.15 In order to do this, multivariate analysis was used to control for differences in socio-economic characteristics and examine the independent relationship, if any, between disability and the various circumstances and outcomes of interest. Key variables of interest were converted into binary measures. For example, for parental separation, a simple measure was constructed with a value of 1 if the child's parent's had separated and 0 if they had not. These binary measures were then used as outcome variables in a series of logistic regression models. For these models, disability was added as an explanatory variable alongside a small number of standard demographic and socio-economic variables known to vary between disabled and non-disabled children and also known to influence many of the experiences of interest. These variables included: child's sex, equivalised household income (quintiles) and area deprivation (SIMD quintiles). Further information on logistic regression analysis and interpreting regression results is included in the appendix.

1.16 All figures quoted in this report have an associated margin of error, due to the fact that they are estimates based on only a sample of children, rather than all children. This margin can be estimated for each figure. For a figure which has a significance value (or p-value) of < .05 or 95%, this indicates that there is a 95% chance that the true value across all children in the population subgroup (as opposed to just those in the sample) falls within the margin. Thus a lower significance value (of < .01 or < .001) indicates a lower margin of error and a greater chance that the figure or relationship presented in the report occurs within the population. Unless otherwise stated, only statistically significant differences (between subgroups) are commented on in the text. This is true at the 95% confidence limit.

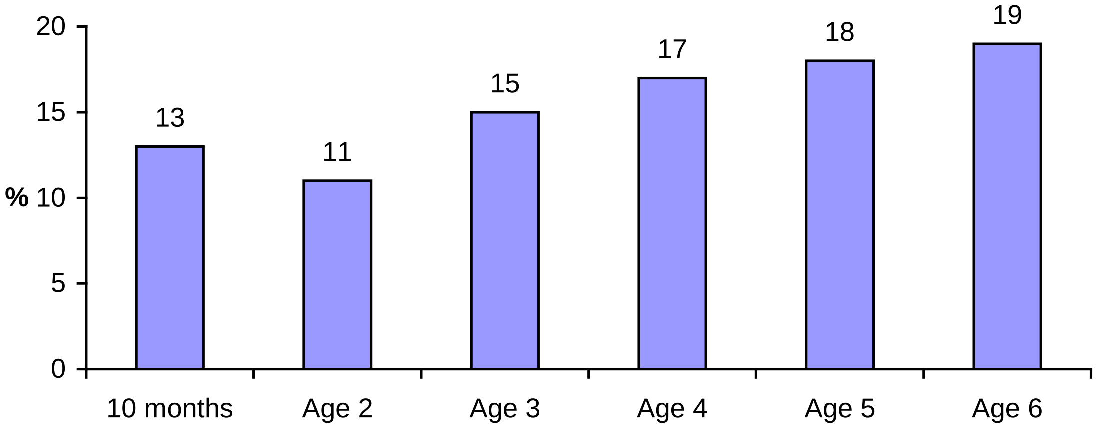
1.17 Each table provides the weighted and unweighted bases corresponding to each percentage – that is, the total number of cases on which the percentage is based. The data were weighted to compensate for differential non-response and sample drop-out across the subgroups included in GUS. Tables were created in SPSS v18 using the Complex Samples module. This module generates robust standard errors that take sample design features, such as clustering, into account. The commands identify the sample clusters; the between- and within-cluster variances are then used to generate robust standard errors.

2 FINDINGS

Demographics

2.1 13% of children had a disability at 10 months of age. By age six, this had increased to 19% (Figure 2-A). The largest increase (4 percentage points) occurred between ages 2 and 3. However, at age 2, respondents were not asked whether their child still had the longstanding illness or disability which had been identified at the previous sweep. This may explain the drop in the proportion identifying their child as having a disability at age 2 compared with age 1[4]. If we discount this sweep, the largest increase was between 10 months and age 3, with a 3 percentage point increase.

Figure 2-A % of children with a disability by age



2.2 There was no difference in age of the mother when the child was born between disabled and non-disabled children, nor in the proportion of children who were of non-white ethnic background (Table 2.1, Table 2.2).

2.3 A higher proportion of children with a disability had mothers who were looking after the home or family rather than working or looking for a job, compared with children who did not have a disability (this was only significant at the 10% level at 10 months, Table 2.3).

2.4 There was a significantly higher proportion of disabled children living in the most deprived areas of Scotland compared with non-disabled children in all three sweeps examined. Twenty nine percent of disabled children lived in areas that fell in the most deprived quintile compared with 24% of non-disabled children at 10 months (Table 2.4). In addition, a higher proportion of children living in deprived areas had a disability than children living in non-deprived areas (Table 2.5).

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[4] In sweep 3, 267 respondents identified their child as still having a longstanding illness or disability that they had identified at the previous sweep, but then answered 'no' to the question 'Does ^childname have any longstanding illness or disability? By longstanding I mean anything that has troubled ^him over a period of time or that is likely to affect ^him over a period of time?'

2.5 At 10 months there was no significant difference between the proportion of disabled children and non-disabled children in the bottom quintile for equivalised household income. However, at ages three and five disabled children were more likely than non-disabled children to be living in households in the lowest income quintile. For example, at age 5, 31% of disabled children lived in a household in the lowest income quintile compared with 22% of non-disabled children (Table 2.6).

2.6 There was a significant difference at all sweeps in the proportion of disabled children whose mother's partner was not in paid work compared with children with no disability (Table 2.7).

2.7 At all sweeps children with a disability were less likely to be living in owner-occupied accommodation than children without a disability (Table 2.8).

Table 2.1 Disability by mother's age at child's birth

Age of natural mother at birth of cohort child	**Non-disabled children**	**Disabled children**
	%	%
Under 20	8	9
20 to 29	42	44
30 to 39	47	45
40 or older	3	2
Bases		
Unweighted	4518	680
Weighted	4510	687

Table 2.2 Disability by ethnicity

Age of natural mother at birth of cohort child	**Non-disabled children**	**Disabled children**
	%	%
White	95	96
Other ethnic background	5	4
Bases		
Unweighted	4524	683
Weighted	4516	690

Table 2.3 Disability by mother's employment status

Mothers employment status	**Non-disabled children** %	**Disabled children** %
Age 1		
In full-time paid employment or self-employed, over 30hrs a week	15	16
In part-time paid employment or self-employed, under 30hrs a week	38	32
On maternity/parental leave	5	4
Looking after the home or family	38	41
Not in paid work	5	7
Age 3		
In full-time paid employment or self-employed, over 30hrs a week	18	17
In part-time paid employment or self-employed, under 30hrs a week	41	35
On maternity/parental leave	4	1
Looking after the home or family	30	37
Not in paid work	6	10
Age 5		
In full-time paid employment or self-employed, over 30hrs a week	23	17
In part-time paid employment or self-employed, under 30hrs a week	40	38
On maternity/parental leave	3	3
Looking after the home or family	28	34
Not in paid work	6	9
Bases		
Age 1		
Unweighted	4527	683
Weighted	4519	690
Age 3		
Unweighted	3589	599
Weighted	3580	607
Age 5		
Unweighted	3181	648
Weighted	3148	681

Table 2.4 Disability by Scottish Index of Multiple Deprivation Quintiles (i)

Scottish IMD quintiles	**Non-disabled children**	**Disabled children**
	%	%
Age 1		
1 Least deprived	18	18
2	20	16
3	20	18
4	18	19
5 Most deprived	24	29
Age 3		
1 Least deprived	19	16
2	20	17
3	20	17
4	18	19
5 Most deprived	23	30
Age 5		
1 Least deprived	20	14
2	21	16
3	19	18
4	19	23
5 Most deprived	22	29
Bases		
Age 1		
Unweighted	4528	683
Weighted	4520	690
Age 3		
Unweighted	3590	599
Weighted	3581	607
Age 5		
Unweighted	3184	648
Weighted	3151	681

Table 2.5 Disability by Scottish Index of Multiple Deprivation Quintiles (ii)

	Scottish IMD quintiles				
	1 Least deprived	**2**	3	**4**	5 Most deprived
	%	%	%	%	%
Age 1					
Non-disabled children	87	89	88	86	84
Disabled children	13	11	12	14	16
Age 3					
Non-disabled children	87	87	87	85	82
Disabled children	13	13	13	15	18
Age 5					
Non-disabled children	86	86	83	79	78
Disabled children	14	14	17	21	22
Bases					
Age 1					
Unweighted	1015	1056	1042	929	1169
Weighted	936	1002	1010	968	1295
Age 3					
Unweighted	904	882	873	698	832
Weighted	783	808	822	758	1016
Age 5					
Unweighted	838	838	752	671	647
Weighted	730	757	708	712	790

Table 2.6 Disability by Equivalised Household Income Quintiles

Equivalised household income quintiles	**Non-disabled children**	**Disabled children**
	%	%
Age 1		
Bottom Quintile (<£8,410)	19	21
2nd Quintile (>=£8,410< £13,750)	18	20
3rd Quintile (>=£13,750< £21,785)	16	17
4th Quintile (>=£21,785< £33,571)	19	18
Top Quintile (>=£33,571)	17	15
Missing	11	9
Age 3		
Bottom Quintile (<£11,250)	22	27
2nd Quintile (>=£11,250< £17,916)	20	19
3rd Quintile (>=£17,916< £25,000)	17	18
4th Quintile (>=£25,000< £37,500)	19	16
Top Quintile (>=£37,500)	15	13
Missing	6	6
Age 5		
Bottom Quintile (<£12,217)	22	31
2nd Quintile (>=£12,217< £19,643)	21	23
3rd Quintile (>=£19,643< £29,126)	16	17
4th Quintile (>=£29,126< £37,857)	21	14
Top Quintile (>=£37,857)	14	10
Missing	6	6
Bases		
Age 1		
Unweighted	4528	683
Weighted	4520	690
Age 3		
Unweighted	3590	599
Weighted	3581	607
Age 5		
Unweighted	3184	648
Weighted	3151	681

Table 2.7 Disability by partner's employment status

Partner's employment status	**Non-disabled children**	**Disabled children**
	%	%
Age 1		
In paid work	91	85
Does not currently have a paid job	9	15
Age 3		
In full-time paid employment or self-employed, over 30 hours a week	89	85
In part-time paid employment or self-employed, under 30 hours a week	4	2
Not in paid work	7	13
Age 5		
In full-time paid employment or self-employed, over 30 hours a week	86	82
In part-time paid employment or self-employed, under 30 hours a week	4	5
Not in paid work	9	13
Bases		
Age 1		
Unweighted	3700	531
Weighted	3625	525
Age 3		
Unweighted	3045	478
Weighted	2908	463
Age 5		
Unweighted	2712	521
Weighted	2571	517

Table 2.8 Disability by tenure

Tenure	Non-disabled children	Disabled children
	%	%
Age 1		
Owner occupied	27	33
Social rented	6	7
Private rented	4	3
Other	63	57
Age 3		
Owner occupied	64	56
Social rented	27	35
Private rented	6	7
Other	3	2
Age 5		
Owner occupied	66	53
Social rented	26	38
Private rented	7	8
Other	2	1
Bases		
Age 1		
Unweighted	4523	683
Weighted	4515	690
Age 3		
Unweighted	3589	599
Weighted	3580	607
Age 5		
Unweighted	3180	647
Weighted	3147	680

Mother’s experience of pregnancy and birth

2.8 A lower proportion of mothers with a disabled child were very happy about the prospect of having their child while they were pregnant (65% compared with 71% of mothers with a non-disabled child, Table 2.9).

2.9 A higher proportion of mothers with disabled children had an illness or other problem during pregnancy that required medical attention or treatment (49% compared with 37%). Similarly, a lower proportion reported that they kept ‘very well’ during pregnancy compared with mothers with non-disabled children (Table 2.10, Table 2.11).

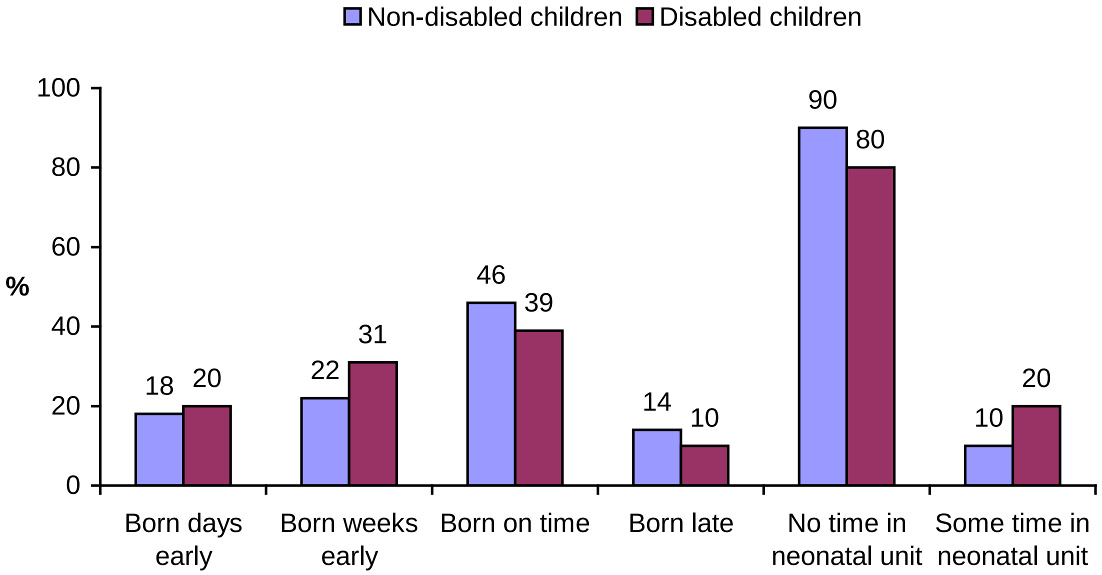
2.10 29% of mothers with disabled children reported having smoked cigarettes (occasionally or most days) during pregnancy compared with 25% of mothers with non-disabled children. However, there was no difference between mothers with disabled children and mothers with non-disabled children in alcohol consumption during pregnancy (Table 2.12, Table 2.13).

2.11 There was no significant difference between mothers with a child with a disability and mothers with a child without a disability in the proportion who used two or more sources of information during pregnancy.[5] There was also no difference between these two groups of mothers in the proportion who found the information they received from health professionals during pregnancy very useful (Table 2.14, Table 2.15).

2.12 A lower proportion of disabled children were born on time compared with non-disabled children. 31% of disabled children were born weeks early compared with 22% of non-disabled children, while 39% were born late compared with 46% of non-disabled children (Figure 2-B). There was no significant difference, however, between disabled and non-disabled children in the proportion who were born through a normal delivery. There was also no difference in the proportion born as singletons (96% of children with a disability were single births and 98% of children without a disability; Table 2.16, Table 2.17, Table 2.18).

2.13 A higher proportion of children with a disability at 10 months had spent any time in a special care baby unit or neonatal unit after they were born compared with children without a disability at 10 months. 11% of children with a disability had spent seven or more days in such a unit compared with 4% of children without a disability (Table 2.19).

Figure 2-B Timing of birth in relation to due date and time spent in neonatal unit after birth by disability



2.14 Multivariate analysis of disability at 10 months was conducted to examine which variables were associated with disability once other covariates were controlled for. A summary of the statistically significant factors is provided below. Time spent in a special care unit or neonatal unit, how well the mother kept during pregnancy and whether she had any illnesses during pregnancy, the sex of the child, and the timing of the birth all remained significantly

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[5] Mothers were asked which sources of information they used from a list of eight (including other) if they had any questions or concerns during their pregnancy.

associated with disability at 10 months in the multivariate setting. The odds of children who spent seven or more days in a special care unit or neonatal unit having a disability at 10 months were about 2.5 times than for those who had not spent any time in such a unit. Children with mothers who reported not keeping well during pregnancy or who had any illness during pregnancy were more likely to have a disability, as were those who were born early. Female children were less likely to have a disability (Table 2.20).

Summary of multivariate analysis results: factors associated with child having a disability at 10 months
Spent 7+ days in a special care baby unit or neo-natal unit more likely to have a disability Child is a male Mother kept less than ‘very well’ during pregnancy Mother had any illnesses or other problems during pregnancy Child was born days or weeks early

Table 2.9 Disability by mother’s feelings about the prospect of having the study child

Mother’s feelings about the prospect of having study child	**Non-disabled children**	**Disabled children**
	%	%
Very happy	71	65
Fairly happy	16	16
Neither happy nor unhappy	9	11
Fairly unhappy or very unhappy	5	7
Bases		
Unweighted	4461	666
Weighted	4454	673

Table 2.10 Disability by whether mother had any illnesses or other problems during pregnancy that required medical attention or treatment

Mother had any illnesses or other problems during pregnancy	**Non-disabled children**	**Disabled children**
	%	%
Yes	37	49
No	63	51
Bases		
Unweighted	4467	667
Weighted	4461	674

Table 2.11 Disability by how mother kept during pregnancy

How mother kept during pregnancy	**Non-disabled children**	**Disabled children**
	%	%
Very well	52	38
Fairly well	35	42
Not very well	9	14
Not at all well	3	7
Bases		
Unweighted	4466	667
Weighted	4460	674

Table 2.12 Disability by whether mother smoked during pregnancy

Mother smoked cigarettes during pregnancy	**Non-disabled children**	**Disabled children**
	%	%
Yes, occasionally	12	12
Yes, most days	13	17
No	75	71
Bases		
Unweighted	4440	663
Weighted	4434	670

Table 2.13 Disability by mother’s alcohol consumption during pregnancy

Mother’s alcohol consumption during pregnancy	**Non-disabled children**	**Disabled children**
	%	%
1-2 times per week plus	4	4
2-3 times a month	5	4
Less than once a month	18	16
Never – did not drink at all	74	76
Bases		
Unweighted	4408	655
Weighted	4401	661

Table 2.14 Disability by number of sources of information used during pregnancy

Number of sources of information used by the mother during pregnancy	**Non-disabled children**	**Disabled children**
	%	%
0	0	0
1	12	13
2	22	21
3	25	27
4	20	16
5	12	12
6	7	7
7	3	4
Bases		
Unweighted	4389	660
Weighted	4383	668

Table 2.15 Disability by how useful found information received from health professionals while pregnant

How useful the mother found information received from health professionals during pregnancy	**Non-disabled children**	**Disabled children**
	%	%
Very useful	59	56
Fairly useful	36	39
Not very useful or not at all useful	4	5
Bases		
Unweighted	4444	665
Weighted	4436	672

Table 2.16 Disability by timing of birth

Timing of birth	**Non-disabled children**	**Disabled children**
	%	%
Early – days	18	20
Early – weeks	22	31
Late	46	39
On time	14	10
Bases		
Unweighted	4517	682
Weighted	4509	689

Table 2.17 Disability by type of delivery

Type of delivery	Non-disabled children	Disabled children
	%	%
Normal delivery	62	59
Forceps	7	8
Ventouse Suction	4	5
Forceps and Ventouse, or other	2	2
Caesarean Section … before labour began	11	15
Caesarean Section … after labour began	13	11
Bases		
Unweighted	4515	680
Weighted	4507	687

Table 2.18 Disability by single or multiple pregnancy

Single or multiple pregnancy	Non-disabled children	Disabled children
	%	%
Single	98	96
Multiple	2	4
Bases		
Unweighted	4527	682
Weighted	4519	689

Table 2.19 Disability by time spent in a neo-natal unit

Time spent in a special care baby unit or neo-natal unit	Non-disabled children	Disabled children
	%	%
Did not spend any time	90	80
0-2 days	4	5
3-6 days	3	4
7+ days	3	11
Bases		
Unweighted	4524	682
Weighted	4516	689

Table 2.20 Multivariate analysis of disability at 10 months

Covariates	Odds ratios (95% Confidence limits)	N (unweighted)
Time spent in a special care baby unit or neo-natal unit (p<0.001)		
Did not spend any time	1	4,532
0-2 days	1.42 (0.99,2.02)	207
3-6 days	1.52 (0.97,2.38)	141
7+ days	2.51 (1.88,3.36)	240
Sex (p<0.001)		
Male	1	2,631
Female	0.72 (0.61,0.84)	2,489
How mother kept during pregnancy (p<0.001)		
Very well	1	2,613
Fairly well	1.49 (1.21,1.83)	1,829
Not very well	1.55 (1.11,2.15)	505
Not at all well	2.22 (1.52,3.24)	173
Mother had any illnesses or other problems during pregnancy (p=0.035)		
Yes	1.27 (1.02,1.58)	1,942
No	1	3,178
Timing of birth (p=0.046)		
Early – days	1.59 (1.06,2.40)	937
Early – weeks	1.52 (1.07,2.16)	1,178
Late	1.24 (0.89,1.73)	2,301
On time	1	704

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: how mother kept during pregnancy; whether mother had any illness in pregnancy; whether smoked cigarettes during pregnancy; whether drank alcohol during pregnancy; whether child was born early, late or on time; type of delivery; whether child was single or multiple birth; any time spent in neonatal or special care baby unit

Child-parent relationship

2.15 Parents were asked about a number of different aspects, or dimensions, of the day-to-day parenting of their child. To explore differences in this domain, we draw largely on the parenting measures defined by Parkes and Wight[6]. Three domains were explored: connection, negativity and control.

Connection

2.16 Mother-infant attachment was measured at 10 months using an abbreviated six-item version of the Condon mother-infant attachment scale[7]. Mothers were

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[6] Parkes, A. and Wight, D. (2010) *Growing Up in Scotland: Parenting and children's health*, Edinburgh: Scottish Government.

[7] Condon, J. T. and C. J. Corkindale (1998). "The assessment of parent-to-infant attachment: Development of a self-report questionnaire instrument." Journal of Reproductive and Infant Psychology **16**(1): 57-76.

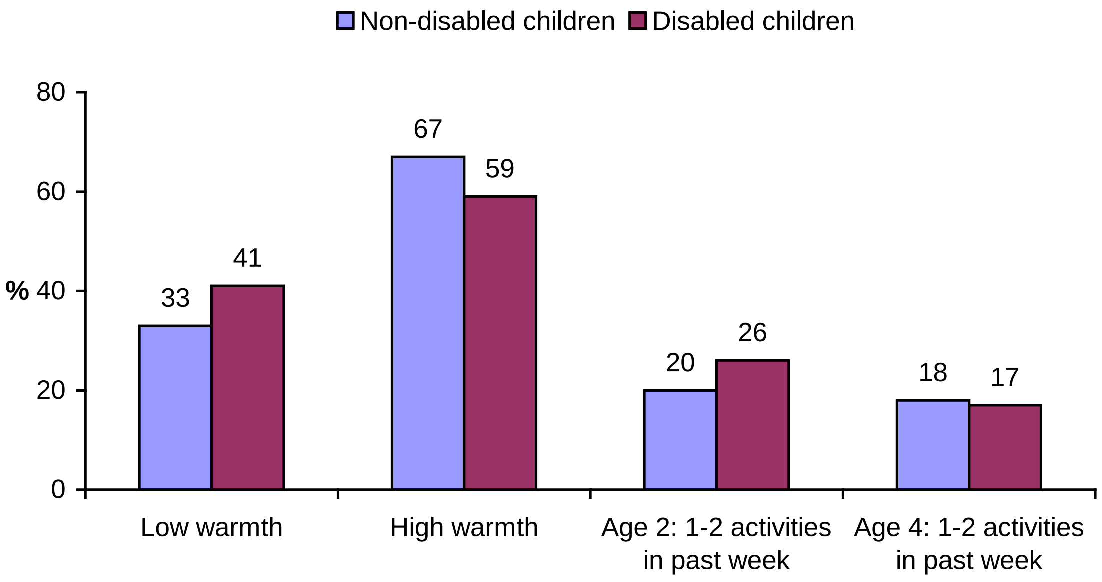
asked about their feelings for their child, with four different possible responses for each item. The scale had a low reliability (Cronbach alpha=0.52), and this should be borne in mind when interpreting the results. Mean scores were divided into tertiles indicating low, medium and high mother-infant attachment.

2.17 The warmth of mother-child relationship was measured at age five using seven items from the Pianta scale (reliability acceptable, Cronbach alpha=0.67). Each item was scored as 1 definitely does not apply, 2 not really, 3 neutral, 4 applies sometimes, or 5 definitely applies. 'Can't say' responses were considered as missing. Scores were summed for parents who had completed all warmth items. A high number of parents scored the maximum of 35, and so the lowest third of parents (with scores between 7 and 33) were contrasted with the remainder (referred to as 'high warmth').

2.18 Information on each mother's activities with their child was measured at sweeps two, three and four. A count of the number of activities that the mother had carried out with the child in the past week was made for sweeps two and four (from a list of six: books/stories, played outdoors, painting or drawing, nursery rhymes or songs, letters or shape recognition, used a computer or games console). For the multivariate analysis the counts were divided into a binary outcome: low (1 to 2 activities mentioned) and high (3 to 6 activities mentioned).

2.19 There was no significant difference between mothers of non-disabled children and mothers of disabled children in the proportion scoring low on the mother-infant attachment scale. There was, however, a difference in the proportion scoring 'high warmth'. 67% of mothers with non-disabled children scored as high for the warmth of mother-child relationship compared with 59% of mothers with disabled children (Table 2.21, Table 2.22, Figure 2-C).

Figure 2-C Parent-child warmth at age five and parent-child activities by disability



2.20 At age two, mothers with a disabled child reported carrying out fewer activities with their child than mothers with non-disabled children. 26% of mothers with disabled children carried out 1 or 2 activities with their child compared with 20% of mothers with non-disabled children. However, by age four the distribution over the number of activities carried out was approximately the same for mothers with non-disabled children and mothers with disabled children (Table 2.23).

2.21 Multivariate analysis of the warmth of the mother-child relationship revealed that the sex of the child, housing tenure, parental stress, and mental wellbeing were related to this outcome (see the summary of the statistically significant factors below). Mothers were more likely to score as low warmth if their child was a boy, if they were renting compared with being an owner-occupier, if they reported high stress levels as a parent, and if they scored as having poorer levels of mental health on the medical outcomes Short-Form (SF-12) mental wellbeing subscale. Whether their child had a disability or not was not related to warmth of the mother-child relationship once these other variables were taken into consideration (Table 2.24).

Summary of multivariate analysis results: factors associated with low mother-child warmth

Child is a male

Accommodation is rented – social or private

High parenting stress

Main carer has lower mental wellbeing

2.22 The variables that were related to the level of activities carried out with the child in the multivariate analysis (summarised below) were sex of the child, equivalised household income, employment status, and mental wellbeing of the mother. The mother was more likely to have only carried out 1 or 2 activities at age four if their child was a boy, if they were in lower income quintiles for their household income, if they were staying at home to look after the home or family rather than being in full-time employment, or if they had a lower mental wellbeing score. Again, whether the child had a disability or not was not related to the level of parent-child activities once these other variables were taken into consideration (Table 2.25).

Summary of multivariate analysis results: factors associated with low parent-child activities

Child is a male

Having a lower income

Main carer not in paid employment

Main carer has lower mental wellbeing

Table 2.21 Disability by tertiles of the Condon mother-infant attachment scale (total score)

Condon mother-infant attachment scale total score – tertiles (Age 1)	**Non-disabled children**	**Disabled children**
	%	%
Low	35	36
Medium	30	29
High	35	35
Bases		
Unweighted	4027	611
Weighted	4019	616

Table 2.22 Disability by warmth of parent-child relationship

Warmth of parent-child relationship – total score of 7 items on the Pianta scale (Age 5)	**Non-disabled children**	**Disabled children**
	%	%
Low warmth	33	41
High warmth	67	59
Bases		
Unweighted	3108	609
Weighted	3066	636

Table 2.23 Disability by level of mother-child activities

Count of the number of activities the mother carried out with her child in the past week	**Non-disabled children**	**Disabled children**
	%	%
Age 2		
1	6	8
2	14	18
3	21	24
4	30	25
5	27	23
6	2	2
Age 4		
1	6	5
2	12	12
3	19	20
4	28	26
5	27	27
6	9	10
Bases		
Age 1		
Unweighted	3942	471
Weighted	3920	476
Age 4		
Unweighted	3289	633
Weighted	3260	645

Table 2.24 Multivariate analysis of warmth of parent-child relationship at age five

Covariates	**Odds ratios (95% Confidence limits)**	***N (unweighted)***
Sex (p<0.001)		
Male	1	1,890
Female	0.72 (0.62,0.84)	1,824
Tenure (p<0.001)		
Owner occupied	1	2,665
Social rented	1.63 (1.33,1.99)	771
Private rented	1.55 (1.17,2.05)	212
Other	1.06 (0.52,2.16)	66
Parental stress (p<0.001)		
High stress	1	1,374
Medium stress	0.83 (0.68,1.01)	1,092
Low stress	0.62 (0.52,0.74)	1,248
Medical outcomes Short-Form (SF-12) mental wellbeing subscale score (p=0.003)	0.99 (0.98,1.00)	3,714

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: whether smoked cigarettes during pregnancy; whether drank alcohol during pregnancy; level of parenting stress; family type (couple or lone parent); whether used childcare; main carer's general health; whether main carer has long-standing illness; score on SF-12 mental wellbeing component

Table 2.25 Multivariate analysis of level of mother-child activities at age 4

Covariates	**Odds ratios (95% Confidence limits)**	***N (unweighted)***
Sex (p<0.003)		
Male	1	1,950
Female	0.74 (0.61,0.90)	1,860
Equivalised household income (p<0.001)		
Bottom Quintile (<_11,250)	1	652
2nd Quintile (>=_11,250< _17,916)	1.06 (0.81,1.4)	735
3rd Quintile (>=_17,916< _25,000)	0.63 (0.47,0.84)	712
4th Quintile (>=_25,000< _37,500)	0.52 (0.39,0.71)	809
Top Quintile (>=_37,500)	0.37 (0.26,0.51)	674
missing	0.89 (0.57,1.39)	228
Employment status (p=0.042)		
In full-time paid employment or self-employment	1	710
In part-time paid employment or self-employment	1.18 (0.87,1.6)	1,653
On Maternity / parental leave from an employment	0.83 (0.47,1.45)	177
Looking after home or family	1.46 (1.09,1.96)	1,059
Not in paid work	0.95 (0.59,1.54)	211
Medical outcomes Short-Form (SF-12) mental wellbeing subscale score (p=0.015)	0.99 (0.98,1.00)	3,810

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: whether smoked cigarettes during pregnancy; whether drank alcohol during pregnancy; level of parenting stress; family type (couple or lone parent); whether used childcare; main carer's general health; whether main carer has long-standing illness; main carer's score on SF-12 mental wellbeing component

Negativity

2.23 Mother-child conflict was measured at age five using eight questions from the Pianta scale. Items were scored on a 4-point scale as for the Pianta warmth items (see above). Cronbach's alpha indicated good reliability (0.80). Scores were summed for parents who had completed all conflict items and grouped into thirds as 8-12 (lowest conflict), 13-18 (medium conflict), or 19-40 (high conflict).

2.24 Harsh discipline was measured at ages two and four from parents' replies to questions about whether they had ever smacked their child at age two, and whether they had ever smacked, or smacked in the last year, at age four. Any report of smacking was contrasted with no mention of smacking.

2.25 Mothers of disabled children were more likely to score in the 'high conflict' tertile than mothers with non-disabled children; 30% of mothers with disabled children scored in the highest tertile compared with 23% of those with non-disabled children (Table 2.26).

2.26 At both sweeps two and four there was no significant difference between mothers of disabled children and mothers of non-disabled children in the proportion who had ever smacked their child (Table 2.27).

Table 2.26 Disability by mother-child conflict

Mother-child confilct – total score of 7 items on the Pianta scale (Age 5)	Non-disabled children	Disabled children
	%	%
Low conflict	41	37
Medium conflict	36	32
High conflict	23	30
Bases		
Unweighted	3122	632
Weighted	3078	661

Table 2.27 Disability by whether mother ever smacked child

Whether mother ever smacked child	**Non-disabled children**	**Disabled children**
	%	%
Age 2		
No	84	86
Yes	16	14
Age 4		
No	55	55
Yes	45	45
Bases		
Age 2		
Unweighted	4022	*485*
Weighted	4015	*491*
Age 4		
Unweighted	3336	*655*
Weighted	3318	*672*

Control

2.27 Parental supervision was measured at age four using an abbreviated version of the Parent Supervision Attributes Profile Questionnaire[8]. Mothers were asked about their agreement with statements covering protectiveness (“I feel very protective of my child”; “I think of all the dangerous things that could happen”; “I keep my child from playing rough games or doing things where he/she might get hurt”) and supervision while the child plays outdoors (“I can trust my child to play by (him/herself) without constant supervision”; “I stay close enough to my child so that I can get to him/her quickly”; “I make sure I know where my child is and what he/she is doing”). Answers were coded on a 5-point scale from 1 strongly agree to 5 strongly disagree. Item 4 was reverse-coded, and a mean score of the six items (Cronbach’s alpha=0.67, indicating acceptable reliability) was computed and divided into thirds of low, medium and high parental supervision.

2.28 Parental supervision was also measured at age six using questions where the parent indicated where, amongst a list of places, the child was permitted to go on his/her own without constant adult supervision (but with siblings or friends). The list ranged from the child’s own garden and street, to a local shop or play area. A count of the number of places the child was allowed to go on his/her own was computed from these questions.

2.29 Rules and routines were measured at ages two and five. A count of the number of ‘rules’ or routines at sweeps two and five were derived from the following: ‘always’ responses to a question on regular meals at age two and a question on regular bedtime at age five, and four questions at age five on whether the child had to tidy up toys, brush teeth, stay in room, and turn off

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[8] Morrongiello, B. A. and M. Corbett (2006). "The Parent Supervision Attributes Profile Questionnaire: a measure of supervision relevant to children's risk of unintentional injury." *Injury Prevention* **12**(1): 19-23.

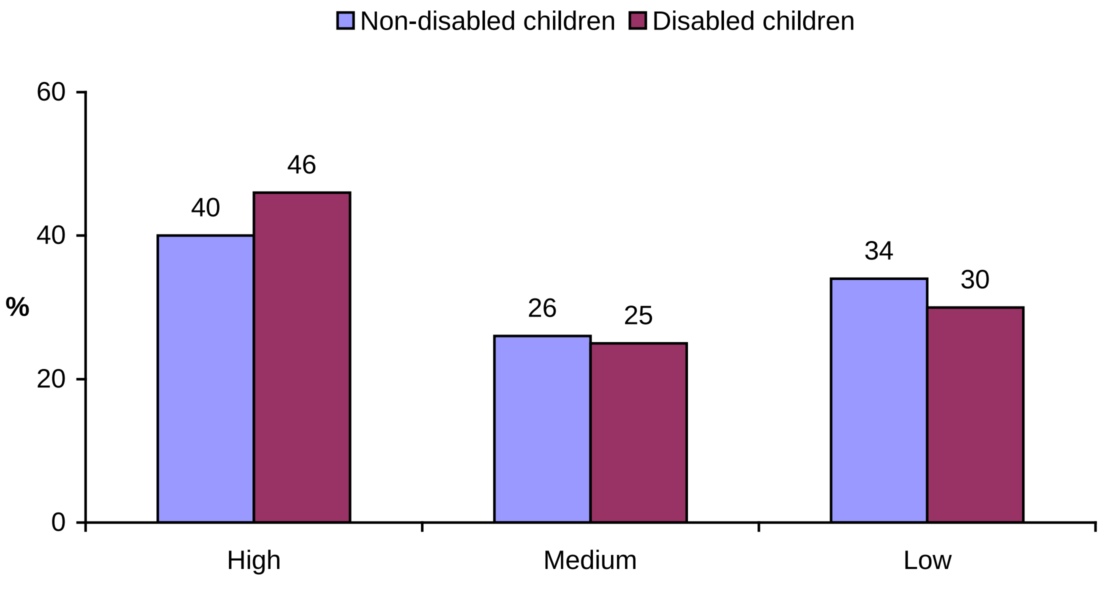
TV or music in room (using 4-point scale – always/usually/sometimes/never or almost never).

2.30 Home chaos was measured at age five using an abbreviated version of the Confusion, Hubbub, and Order scale[9]. This was devised as a measure of household disorganisation that captures noise, crowding, home 'traffic' (people coming and going) and a lack of routine or regularity. A number of studies suggest that household disorganisation may impair effective parenting

2.31 For the chaos scale, mothers were asked for their agreement with four items (Cronbach alpha=0.63, indicating acceptable reliability): "It's really disorganised in our home", "You can't hear yourself think in our home", "The atmosphere in our home is calm" and "First thing in the day, we have a regular routine at home". The first two items were reverse coded. Mean scores were divided into three groups, indicating low, medium and high levels of chaos. Because of large numbers of tied scores these groups were unequal in size, with 49% in low, 16% in medium and 35% in high chaos homes.

2.32 Mothers with disabled children exhibited a higher level of parental supervision than mothers with non-disabled children. At age four, a higher proportion of mothers with disabled children scored in the highest group for parental supervision score (46% compared with 40% of mothers with non-disabled children, Figure 2-D). At age six, mothers with disabled children were more likely to allow their child to go to fewer places on their own than mothers with non-disabled children – 53% of mothers with disabled children allowed them to go to two or more places on their own compared with 63% of mothers with non-disabled children. Similarly, 11% of mothers with disabled children did not allow their child outdoors without an adult compared with 6% of mothers with non-disabled children (Table 2.28, Table 2.29, Table 2.30).

Figure 2-D Level of parental supervision at age four by disability



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[9] Coldwell, J., A. Pike, et al. (2006). "Household chaos - links with parenting and child behaviour." *Journal of Child Psychology and Psychiatry* **47**(11): 1116-1122.

2.33 For rules and routines, there appeared to be no difference between mothers of disabled children and mothers of non-disabled children. 72% of both groups always had regular meals for their child at age two, while at age five the number of rules and routines always followed were similar for both groups (Table 2.32).

2.34 Mothers with disabled children were more likely to score in the highest tertile for home chaos, with 44% doing so compared with 33% of mothers with non-disabled children (Table 2.33).

Table 2.28 Disability by tertiles of the parental supervision mean score

Tertiles of parental supervision mean score (Age 4)	**Non-disabled children**	**Disabled children**
	%	%
High	40	46
Medium	26	25
Low	34	30
Bases		
Unweighted	3336	653
Weighted	3318	670

Table 2.29 Disability by the number of places the child was allowed to go on their own

Number of places child allowed to go on own (Age 6)	**Non-disabled children**	**Disabled children**
	%	%
0	6	11
1	31	36
2	21	18
3	17	15
4	13	11
5+	12	9
Bases		
Unweighted	2994	661
Weighted	2975	680

Table 2.30 Disability by whether child allowed outdoors without adult

Whether child allowed outdoors without an adult (Age 6)	**Non-disabled children**	**Disabled children**
	%	%
Yes	94	89
No	6	11
Bases		
Unweighted	2994	661
Weighted	2975	680

Table 2.31 Disability by how often child has regular meals

How often child has regular meals (Age 2)	**Non-disabled children**	**Disabled children**
	%	%
Always	72	72
Usually	24	25
Sometimes, never, or almost never	3	4
Bases		
Unweighted	4023	485
Weighted	4016	491

Table 2.32 Disability by rules and routines

Number of rules or routines always followed out of 5 items (Age 5)	**Non-disabled children**	**Disabled children**
	%	%
0	3	2
1	12	13
2	23	23
3	33	31
4	22	24
5	6	6
Bases		
Unweighted	3181	648
Weighted	3146	681

Table 2.33 Disability by home chaos score

Tertiles of home chaos mean score (Age 5)	**Non-disabled children**	**Disabled children**
	%	%
Low	27	21
Medium	40	35
High	33	44
Bases		
Unweighted	3184	648
Weighted	3151	681

Child development

2.35 Physical, cognitive and social, emotional and behavioural development are measured at repeated points throughout the first six sweeps of GUS. Here, we restrict analysis to sweeps one, three and five.

2.36 Developmental milestones were assessed by the main respondents' reports on their child's developmental status at ages 10 months and three years, using 14 items derived from the Denver Development Screening Test.[10] At 10

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[10] Frankenburg, W.K., Dodds, J.B. (1967). "Denver Developmental Screening Test". *J.*

months, these items covered gross (e.g. has the child sat up without being supported) and fine (e.g. had the child grabbed objects using his/her whole hand) motor skills plus early communicative gestures (e.g. has the child waved bye-bye on his/her own when someone leaves). At age three, items on gross and fine motor skills were again included, plus items on independence (e.g. can the child get dressed alone). The items used differ at each age reflecting the child's expected developmental stage. For each item, the respondent was asked to indicate whether or not the child could perform the action. A measure was constructed for each sub-set indicating the number of milestones missed.

2.37 Cognitive development was measured by expressive vocabulary (knowledge of words) and non-verbal reasoning (problem solving) ability. Assessments of cognitive ability were included at sweeps three and five. Comparisons are made of average scores between disabled and non-disabled children.

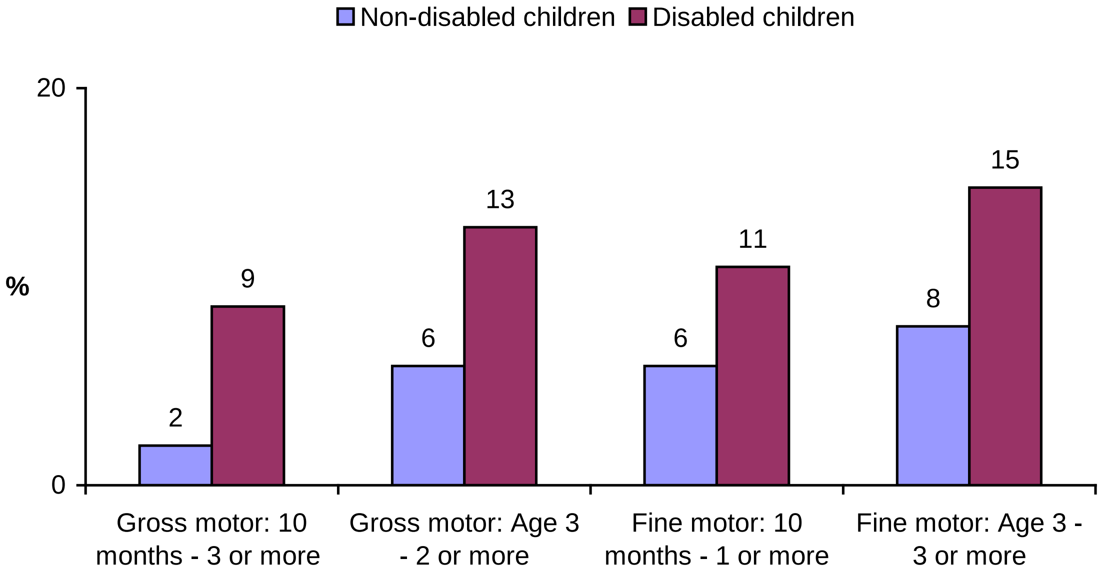
2.38 Social, emotional and behavioural development was measured at all sweeps from four to six using parent's reports on the Strength and Difficulties Questionnaire (SDQ), a brief behavioural screening questionnaire designed for use with 3-16 year olds[11]. The scale includes 25 questions which are used to measure five aspects of the child's development: emotional symptoms, conduct problems, hyperactivity/ inattention, peer relationship problems and pro-social behaviour. A score is calculated for each of these domains, as well as an overall 'difficulties' score which is generated by summing the scores from all the scales except pro-social. The scores at sweeps four and five were banded into normal, moderate and severe ranges.

2.39 There were significant differences between disabled and non-disabled children in the number of developmental milestones missed (Figure 2-E). For gross motor skills, disabled children were more likely to miss more milestones at both sweeps, with 9% missing three or more milestones at 10 months compared with 2% of non-disabled children, and 13% missing two or more milestones at age three compared with 6% of non-disabled children. For fine motor skills, 11% of disabled children missed one or more milestones at 10 months compared with 6% of non-disabled children, while at age three 15% missed three or more milestones compared with 8% of non-disabled children. At age three however, approximately the same proportion of disabled children and non-disabled children missed no fine motor skills milestones (32% and 33% respectively; Table 2.34, Table 2.35).

Pediatrics, 71, 181-191

[11] Goodman, R. (1997) "The Strengths and Difficulties Questionnaire: a research note", *Journal of Child Psychology and Psychiatry,* 38, pp581-586

Figure 2-E % of children who missed gross and fine motor developmental milestones missed at 10 months and age three by disability

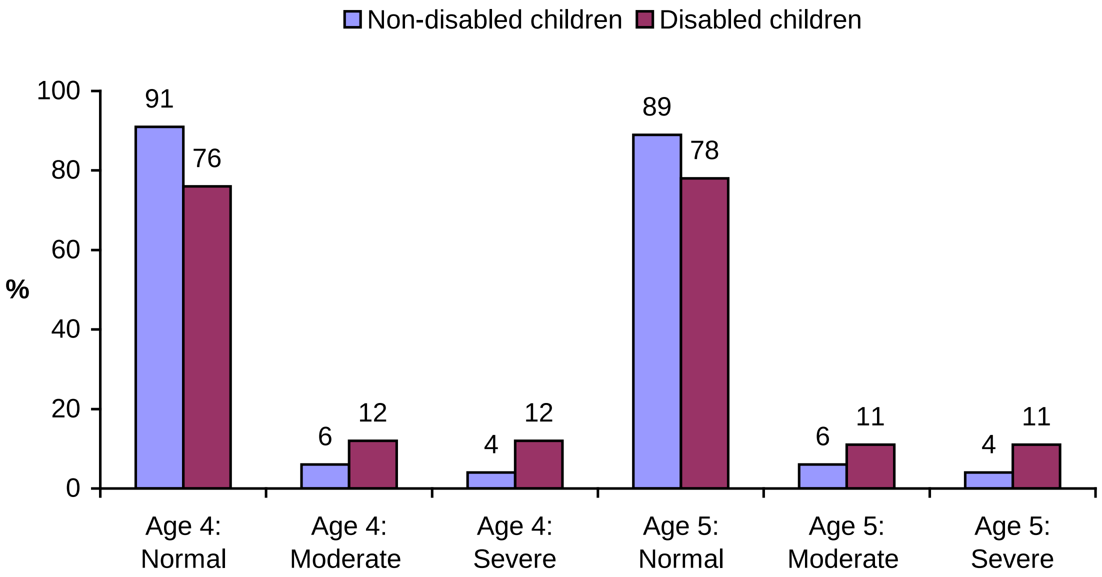


2.40 At 10 months, disabled children were more likely to miss three or more communicative gestures milestones – though only a small proportion did so. 7% missed this many compared with 4% of non-disabled children, however 18% of both groups missed no communicative gestures milestones. At age three, 40% of both groups missed no independence milestones, but 5% of disabled children missed three of these milestones compared with 2% of non-disabled children.

2.41 Disabled children had a lower average problem solving ability score than non-disabled children at both ages three and five. They also had a lower mean vocabulary ability score at both sweeps (Table 2.36).

2.42 Disabled children were more likely to score in the severe band for the total SDQ score, as well as for each of the five subscales, at both ages four and five (Figure 2-F). 12% of disabled children at age four and 11% at age five scored in the severe band for the total score, compared with 4% of non-disabled children at both sweeps. The most marked difference occurred for the hyperactivity subscale, with a percentage point difference in the severe band of 11 between disabled and non-disabled children at age four and a percentage point difference of nine at age five (Table 2.37).

Figure 2-F **% of children with a score on the SDQ total difficulties scale in the normal, moderate or severe range at ages four and five by disability**



2.43 Multivariate analysis was conducted using developmental milestones at sweeps one and three as the dependent variables. A total count of milestones missed over the three domains at each age (gross motor skills, fine motor skills and communicative gestures at 10 months, and gross motor skills, fine motor skills and independence at age three) was constructed and then banded into binary outcomes indicating whether the child had missed 2 or more milestones versus one or none.

2.44 At 10 months, children were more likely to have missed two or more developmental milestones if:

- They had been born weeks early compared with on time (but less likely if they had been born late);
- Their mother was aged 30 or over when they were born;
- They lived in less deprived areas;
- Their mother had consumed any alcohol during her pregnancy;
- They had spent seven or more days in a special care baby unit or neonatal unit;
- Their mother was not employed full-time (in the past seven days);
- Their mother was living with a spouse or partner.

2.45 Having a disability at 10 months was not itself associated with having missed two or more developmental milestones. However, it is notable that some of the factors which are associated with having missed milestones were also shown to be associated with having a disability at 10 months (Table 2.38).

2.46 At age three, the variables found to be associated with an increased likelihood of missing two or more developmental milestones (summarised below) were living in less deprived areas, being a male child, and being born as part of a multiple birth. Again, having a disability was not independently associated (Table 2.39).

Summary of multivariate analysis results: factors associated with child missing two or more developmental milestones at age three
Child is a male Multiple birth Live in an area with lower deprivation

2.47 A further model was run to examine whether disability was associated with having a score in the moderate or severe range on the total difficulties scale of the SDQ at age five. The results are summarised below. In this instance, the results show a significant relationship between disability and total difficulties score. After controlling for key socio-economic characteristics, the odds of disabled children having a score in the moderate or severe range were 1.8 times higher than those for non-disabled children. Other than disability, having a moderate or severe total difficulties score was associated with a range of other factors including the child's sex, ethnicity, area deprivation, household income and parental employment (Table 2.40). .

Summary of multivariate analysis results: factors associated with child scoring in the moderate or severe range of SDQ total difficulties at age five
Child has a disability
Child is a male Live in an area with lower deprivation Live in rented accommodation Lower household income Mother did not keep well during pregnancy Child is from minority ethnic background Mother is not in employment Child spent 7+ days in a neonatal unit after birth

Table 2.34 Disability by number of milestones missed at 10 months

Number of milestones missed (age 1)	**Non-disabled children**	**Disabled children**
	%	%
Gross motor coordination		
0	24	19
1	63	57
2	11	15
3+	2	9
Fine motor coordination		
0	94	89
1+	6	11
Communication/gestures		
0	18	18
1	61	58
2	17	17
3+	4	7
Bases*		
Unweighted	*4514*	*681*
Weighted	*4507*	*688*

*Bases vary for each set of items. Those shown are the smallest.

Table 2.35 Disability by number of milestones missed at age 3

Number of milestones missed (age 3)	**Non-disabled children**	**Disabled children**
	%	%
Gross motor coordination		
0	70	64
1	24	23
2+	6	13
Fine motor coordination		
0	33	32
1	37	30
2	22	24
3+	8	15
Independence		
0	40	40
1	33	30
2	25	26
3	2	5
Bases*		
Unweighted	*3492*	*576*
Weighted	*3484*	*586*

*Bases vary for each set of items. Those shown are the smallest.

Table 2.36 Disability by cognitive development

Cognitive development	**Non-disabled children**	**Disabled children**
Picture similarities ability mean score		
Age 3	54.1	50.6
Age 5	83.0	80.7
Naming vocabulary ability mean score		
Age 3	72.0	67.2
Age 5	109.6	104.9
Bases*		
Age 3		
Unweighted	3395	531
Weighted	3358	534
Age 5		
Unweighted	3115	607
Weighted	3072	633

*Bases vary for each set of items. Those shown are the smallest.

Table 2.37 Disability by social, emotional and behavioural development

Cognitive development	**Non-disabled children**	**Disabled children**
	%	%
SDQ conduct problems banded score		
Age 4		
Normal	71	59
Moderate	16	22
Severe	13	20
Age 5		
Normal	75	65
Moderate	14	17
Severe	11	17
SDQ emotional symptoms banded score		
Age 4		
Normal	94	87
Moderate	4	6
Severe	2	7
Age 5		
Normal	92	86
Moderate	4	8
Severe	4	7
SDQ hyperactivity banded score		
Age 4		
Normal	83	70
Moderate	7	9
Severe	10	21
Age 5		
Normal	80	72
Moderate	9	8
Severe	11	20
SDQ peer problems banded score		
Age 4		
Normal	85	79
Moderate	8	10
Severe	7	11
Age 5		
Normal	87	75
Moderate	7	11
Severe	6	14
SDQ pro-social banded score		
Age 4		
Normal	90	85
Moderate	7	8
Severe	3	8
Age 5		
Normal	93	87
Moderate	5	8
Severe	1	5
SDQ total difficulties banded score		
Age 4		
Normal	91	76
Moderate	6	12
Severe	4	12

Age 5		
Normal	89	78
Moderate	6	11
Severe	4	11
Bases*		
Age 4		
Unweighted	*3298*	*640*
Weighted	*3275*	*656*
Age 5		
Unweighted	*3149*	*636*
Weighted	*3111*	*666*

*Bases vary for each set of items. Those shown are the smallest.

Table 2.38 Multivariate analysis of developmental milestones at 10 months

Covariates	**Odds ratios (95% Confidence limits)**	**N (unweighted)**
Time spent in a special care baby unit or neo-natal unit (p<0.0012)		
Did not spend any time	1	4,432
0-2 days	1.03 (0.77,1.38)	202
3-6 days	1.00 (0.69,1.44)	138
7+ days	2.24 (1.40,3.58)	235
Timing of birth (p<0.001)		
Early - days	0.81 (0.65,1.02)	924
Early - weeks	1.36 (1.06,1.74)	1,145
Late	0.73 (0.61,0.88)	2,251
On time	1	687
Age of mother at birth (p=0.003)		
Under 20	1	340
20 to 29	1.19 (0.91,1.54)	2,009
30 to 39	1.51 (1.15,1.98)	2,485
40 or older	1.43 (0.92,2.24)	173
Mother’s alcohol consumption during pregnancy (p<0.001)		
1-2 times per week plus	1.62 (1.16,2.25)	197
2-3 times a month	1.41 (1.04,1.9)	236
less than once a month	1.39 (1.17,1.65)	900
Never - did not drink at all	1	3,674
Scottish Index of Multiple Deprivation 2006 Quintiles (p=0.002)		
0.9449 - 7.7446 - least deprived	1	984
7.7472 - 13.5627	0.81 (0.65,1.00)	1,028
13.5640 - 21.0436	0.71 (0.58,0.87)	1,003
21.0521 - 33.6982	0.69 (0.55,0.85)	884
33.7252 -89.0941 - most deprived	0.62 (0.48,0.79)	1,108
Employment status (p=0.012)		
In full-time paid employment or self-employment	1	766
In part-time paid employment or self-employment	1.27 (1.05,1.54)	1,900
On maternity / parental leave from an employer	1.68 (1.16,2.44)	240
Looking after home or family	1.38 (1.14,1.66)	1,868
Not in paid work	1.35 (0.94,1.93)	233
Respondents cohabiting status (p=0.003)		
Not living with spouse/partner	1	940
Living with spouse/partner	1.40 (1.13,1.74)	4,067

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: how mother kept during pregnancy; whether mother had any illness in pregnancy; whether smoked cigarettes during pregnancy; whether drank alcohol during pregnancy; whether child was born early, late or on time; type of delivery; whether child was single or multiple birth; any time spent in neonatal or special care baby unit; family type (couple or lone parent)

Table 2.39 Multivariate analysis of developmental milestones at 34 months

Covariates	**Odds ratios (95% Confidence limits)**	**N (unweighted)**
Sex (p<0.001)		
Male	1	2,064
Female	0.40 (0.35,0.46)	1,968
Scottish Index of Multiple Deprivation 2006 Quintiles (p=0.002)		
0.9449 - 7.7446 - least deprived	1	870
7.7472 - 13.5627	1.02 (0.81,1.29)	834
13.5640 - 21.0436	0.73 (0.57,0.92)	843
21.0521 - 33.6982	0.82 (0.66,1.02)	672
33.7252 -89.0941 - most deprived	0.7 (0.56,0.88)	813
Single or multiple pregnancy (p=0.013)		
Single pregnancy	1	3,962
Multiple pregnancy	2.2 (1.19,4.09)	70

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: how mother kept during pregnancy; whether mother had any illness in pregnancy; whether smoked cigarettes during pregnancy; whether drank alcohol during pregnancy; whether child was born early, late or on time; type of delivery; whether child was single or multiple birth; any time spent in neonatal or special care baby unit; family type (couple or lone parent)

Table 2.40 Multivariate analysis of factors associated with child scoring in the moderate or severe range of SDQ total difficulties at age five

Covariates	**Odds ratios (95% Confidence limits)**	**N (unweighted)**
Disability (p < 0.001)		
No	1	3,105
Yes	1.82 (1.43, 2.31)	626
Time spent in a special care baby unit or neo-natal unit (p<0.03)		
Did not spend any time	1	3,336
0-2 days	0.57 (0.30,1.09)	138
3-6 days	1.54 (0.88,2.86)	97
7+ days	1.64 (1.08,2.51)	160
Scottish Index of Multiple Deprivation 2006 Quintiles (p=0.005)		
0.9449 - 7.7446 - least deprived	1	833
7.7472 - 13.5627	1.12 (0.72,0.64)	830
13.5640 - 21.0436	2.05 (1.36,1.77)	751
21.0521 - 33.6982	1.70 (1.11,3.09)	668
33.7252 -89.0941 - most deprived	1.77 (1.15,2.58)	649
Maternal employment status (p=0.03)		
In full-time paid employment or self-employment	1	886
In part-time paid employment or self-employment	1.07 (0.72,1.60)	1,560
On maternity / parental leave from an employer	1.10 (0.53,2.31)	125
Looking after home or family	1.52 (1.03,2.24)	957
Not in paid work	1.35 (1.21,3.82)	203
Sex (p<0.001)		
Male	1	1,905
Female	0.51 (0.41,0.64)	1,826
Housing tenure (p<0.001)		
Owner occupied	1	2,666
Social rented	1.92 (1.43, 2.59)	785
Private rented	1.56 (1.04, 2.34)	212
Other	1.37 (0.65, 2.89)	68
Annual equivalised household income quintile (p=0.006)		
Bottom Quintile (<£12,217)	1	694
2nd Quintile (>=£12,217 <£19,643)	0.68 (0.49, 0.96)	782
3rd Quintile (>=£19,643 < £29,126)	0.79 (0.53, 1.18)	634
4th Quintile (>=£29,126 < £37,857)	0.59 (0.39, 0.89)	837
Top Quintile (>=£37,857)	0.41 (0.25, 0.66)	580
Missing	0.82 (0.51, 1.32)	204
How mother kept during pregnancy (p<0.014))		
Very well	1	1,949
Fairly well	1.45 (1.12, 1.88)	1,305
Not very well	1.68 (1.18, 2.39)	355
Not at all well	1.79 (0.98, 3.26)	122
Ethnicity of child		
White	1	3,603
Other ethnic group	2.23 (1.45, 3.43)	128

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: how mother kept during pregnancy; whether mother had any illness in pregnancy; whether smoked cigarettes during pregnancy; whether drank alcohol during pregnancy; whether child was born early, late or on time; type of delivery; whether child was single or multiple birth; any time spent in neonatal or special care baby unit; family type (couple or lone parent)

Family structure and couple relationships

2.48 Parental separation was measured following the rules applied by Chanfreau *et al* in their analysis of GUS data on change in early childhood[12]. Separation is identified when families with two parents living together, whether married or cohabiting, are no longer living together when the interviewer returns a year later. Chanfreau *et al* found that almost all (98%) of the GUS children whose parents separated went on to live with their mother. Only separations which occur after the first interview were considered. Unlike Chanfreau *et al,* we will not exclude those cases where the mother re-partnered after the initial separation.

2.49 A set of nine items was included in the self-complete section of the questionnaire at sweeps two and four which measure the relationship between the respondent and his/her partner. Respondents were asked the extent to which they agree or disagree with a series of statements such as: “My husband/wife/partner is usually sensitive to and aware of my needs” and “I suspect we may be on the brink of separation”. These items were re-coded and a scale constructed where a higher score indicates a less secure relationship. Scores on the scale were then banded to identify three groups and comparisons made of the proportion of parents of disabled and non-disabled children in each group.

2.50 Parents of disabled children were more likely to be in the least secure band for the strength of couple relationships score, at both sweeps two and four (Figure 2-G). At age two, 43% of parents of disabled children scored in this band (40% at age four), compared with 37% of parents of non-disabled children (and 32% at age four, Table 2.41).

2.51 Parents of disabled children were less likely to remain as a stable couple throughout all six sweeps (Figure 2-G). 75% of parents with disabled children remained as a couple (i.e. did not separate at any sweep) compared with 83% of parents with non-disabled children (Table 2.42).

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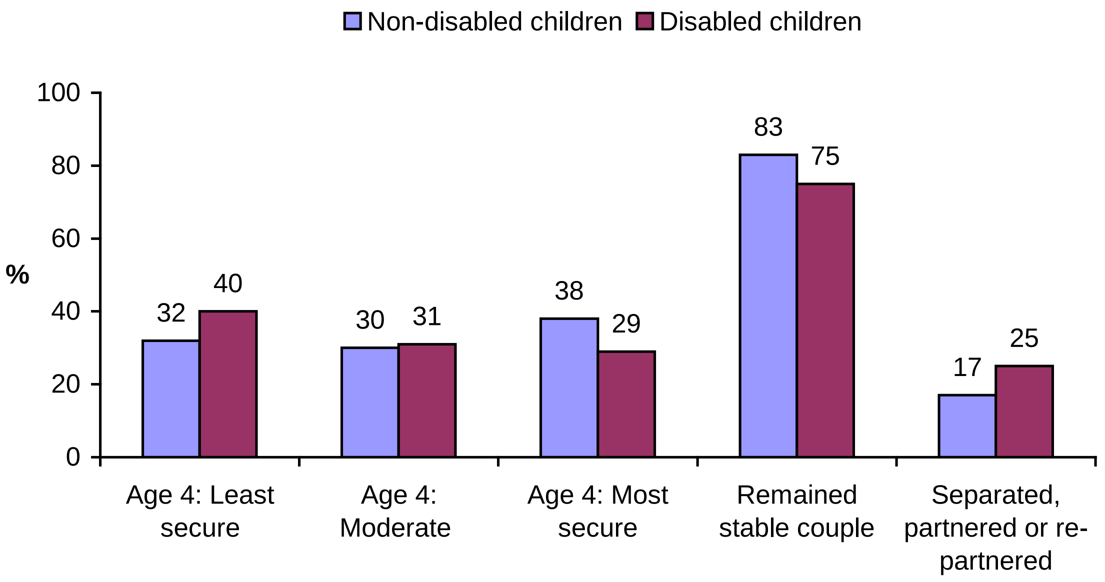
[12] Chanfreau, J., Barnes, M., Tomaszewski, W., Philo, D., Hall, J. and Tipping, S. (2011) *Growing Up in Scotland: Change in early childhood and the impact of significant events,* Edinburgh: Scottish Government.

Figure 2-G Strength of couple relationship at age four and relationship stability from 10 months to age six by disability



2.52 Multivariate analysis of the strength of couple relationships was conducted at age two, with a binary outcome variable equal to one if scored in the least secure band and zero otherwise. A summary of the statistically significant factors is provided below. Parents were found to be more likely to be in a less secure relationship if they were in lower income bands for equivalised household income, if the mother was aged 40 or over at the birth of the child, if the respondent reported being in good, fair, or poor health compared with excellent health, and if the respondent had lower mental wellbeing as measured by the medical outcomes Short-Form (SF-12) mental wellbeing subscale. There was no statistically significant relationship between disability and having a less secure couple relationship (Table 2.43).

Summary of multivariate analysis results: factors associated with low score on strength of couple relationship scale
Lower household income
Mother aged 40 or older at child’s birth
Main carer had less than ‘excellent’ health
Lower mental wellbeing

Table 2.41 Disability by strength/nature of couple relationships

Tertiles of score for strength/nature of couple relationships	**Non-disabled children**	**Disabled children**
	%	%
Age 2		
Most secure	29	27
Moderate	34	30
Least secure	37	43
Age 4		
Most secure	38	29
Moderate	30	31
Least secure	32	40
Bases		
Age 2		
Unweighted	3206	357
Weighted	3064	342
Age 4		
Unweighted	2744	502
Weighted	2593	483

Table 2.42 Disability by longitudinal family type

Longitudinal family type: separation event	**Non-disabled children**	**Disabled children**
	%	%
Stable couple family throughout	*83*	*75*
Parents separated	*5*	*9*
Partnered or re-partnered	*12*	*16*
Bases		
Unweighted	*2558*	*560*
Weighted	*2433*	*561*

Table 2.43 Multivariate analysis of strength/nature of couple relationships at age two

Covariates	Odds ratios (95% Confidence limits)	N (unweighted)
Equivalised household income (p<0.001)		
Bottom Quintile (<£8,410)	1	295
2nd Quintile (>=£8,410< £13,750)	0.70 (0.51,0.96)	589
3rd Quintile (>=£13,750< £21,785)	0.71 (0.53,0.95)	659
4th Quintile (>=£21,785< £33,571)	0.57 (0.42,0.77)	856
Top Quintile (>=£33,571)	0.47 (0.35,0.63)	811
missing	0.74 (0.51,1.07)	327
Age of mother at birth (p=0.002)		
Under 20	1	94
20 to 29	1.20 (0.70,2.04)	1,239
30 to 39	1.46 (0.86,2.46)	2,065
40 or older	2.30 (1.23,4.29)	139
General health status (p<0.001)		
Excellent	1	739
Very Good	1.19 (0.98,1.44)	1,537
Good	2.07 (1.67,2.57)	914
Fair or poor	2.87 (2.12,3.88)	347
Medical outcomes Short-Form (SF-12) mental wellbeing subscale score (p=0.015)	0.96 (0.95,0.97)	3,537

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: how mother kept during pregnancy; whether mother had any illness in pregnancy; whether smoked cigarettes during pregnancy; whether drank alcohol during pregnancy; whether child was born early, late or on time; type of delivery; whether child was single or multiple birth; any time spent in neonatal or special care baby unit; partner's employment status; use of any childcare; main carer's general health; whether main carer has longstanding illness; main carer's score on SF-12 mental wellbeing component

Parents' mental health and emotional wellbeing

2.53 GUS has measured parents' mental health and emotional wellbeing using a range of instruments at different sweeps. The Medical Outcomes Short-Form (SF-12) – which includes a sub-scale covering mental wellbeing - was used at sweeps one, three, five and six, whilst selected items from the Depression, Anxiety and Stress scale were included at sweeps two and four. As the SF-12 data was available at sweeps one, three and five, we here focussed on comparisons of mean scores on the mental wellbeing component between parents of disabled and non-disabled children.

2.54 In addition to these measures of mental health and wellbeing, at age five, a series of questionnaire items were included to measure parenting stress. A variable indicating the reported level of stress related to parenting was created by taking the sum of the parent's response to the following statements (1=strongly disagree, 2=somewhat disagree, 3=somewhat agree, 4=strongly agree): being a parent is harder than I thought it would be; I feel trapped by my responsibilities as a parent; I find that taking care of my child(ren) is much more work than pleasure; I often feel tired, worn out, or exhausted from raising a family. Scores were banded into three groups to show higher and lower levels of stress. The proportion of parents in each band is compared.

2.55 At all three sweeps, parents of disabled children had a lower mean score on the SF-12 mental wellbeing subscale, indicating that they were more likely to have lower mental wellbeing than parents with non-disabled children (Table 2.44).

2.56 Parents of disabled children were also more likely to score in the high stress band for parental stress than parents of non-disabled children. 43% of parents with disabled children scored in this band compared with 37% of parents with non-disabled children (Table 2.45).

2.57 Multivariate analysis of parental stress was conducted by using a binary measure of these three bands, comparing those in the high stress band to those in the moderate or low stress bands. The significant factors are noted below. Respondents were found to be more likely to score in the high stress band if they were not in employment, if their child was a boy, if they scored lower on the SF-12 mental wellbeing subscale, and if they had regular childcare for their child. Disability at age five was not independently associated with higher parental stress (Table 2.46).

Summary of multivariate analysis results: factors associated with having high parental stress at age five

Child is a male

Main carer was not in employment

Main carer had lower mental wellbeing

Used regular childcare

Table 2.44 Disability by mean scores on the mental wellbeing SF-12 subscale

Medical Outcomes Short-Form (SF-12) mental wellbeing subscale mean score	Non-disabled children	Disabled children
Age 1	*50.2*	*48.2*
Age 3	*49.9*	*47.4*
Age 5	*50.5*	*48.1*
Bases		
Age 1		
Unweighted	*4503*	*679*
Weighted	*4495*	*686*
Age 3		
Unweighted	*3572*	*594*
Weighted	*3560*	*602*
Age 5		
Unweighted	*3163*	*643*
Weighted	*3125*	*675*

Table 2.45 Disability by feelings about being a parent

Tertiles of total score from 4 items of feelings about being a parent (age 5)	Non-disabled children	Disabled children
	%	%
High stress	37	43
Medium stress	29	30
Low stress	34	26
Bases		
Unweighted	3182	648
Weighted	3149	681

Table 2.46 Multivariate analysis of parental stress when child was aged five

Covariates	Odds ratios (95% Confidence limits)	N (unweighted)
Employment status (p<0.001)		
In full-time paid employment or self-employment	1	902
In part-time paid employment or self-employment	1.29 (1.07,1.55)	1,589
On Maternity / parental leave from an employer	1.12 (0.74,1.68)	126
Looking after home or family	1.67 (1.38,2.02)	979
Not in paid work	1.53 (1.08,2.18)	208
Sex of the child (p=0.045)		
Male	1	
Female	0.85 (0.73,1)	
Respondent uses regular childcare (p=0.014)		
Yes	1	3,207
No	0.77 (0.63,0.95)	597
Medical outcomes Short-Form (SF-12) mental wellbeing subscale score (p=0.005)	0.93 (0.92,0.94)	3,804

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: how mother kept during pregnancy; whether mother had any illness in pregnancy; whether smoked cigarettes during pregnancy; whether drank alcohol during pregnancy; whether child was born early, late or on time; type of delivery; whether child was single or multiple birth; any time spent in neonatal or special care baby unit; family type (couple or lone parent); any use of childcare; main carer's general health; whether main carer had longstanding illness; main carer's consumption of alcohol; score on SF12 mental wellbeing scale

Parents' experiences of support and information services

2.58 GUS has not asked the parents of disabled children directly about their experiences of services designed specifically for them. However, all parents have been asked more generally about their use of various health and support services at different sweeps of the study. These questions have tended to focus on the types of sources used for information and support rather than assessments of usefulness (or satisfaction), accessibility or availability[13].

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[13] Such questions have tended to focus on childcare which is addressed in the next section.

2.59 Questions about sources of information and accessing support are grouped into five areas: child health or behaviour, pre-school, primary school, local services and amenities, and parenting.

2.60 **Child health and behaviour:** a series of questions were included at sweeps one to four which asked parents what sources they had used for information or advice about child health and, separately, child behaviour. Here we examine differences in the number and types of sources used by parents of disabled and non-disabled children at age 10 months and four years for health and ages two and three for behaviour. In addition, at sweeps three and four parents were also asked if, at any point in the last year, they were unable to find the information they were looking for. Comparisons are also made on responses to this item.

2.61 **Pre-school**: at age four, parents were asked whether, and from whom, they had sought any advice on the child's pre-school enrolment. Sources included pre-school staff, friends and the internet. Again, the number and types of sources are examined.

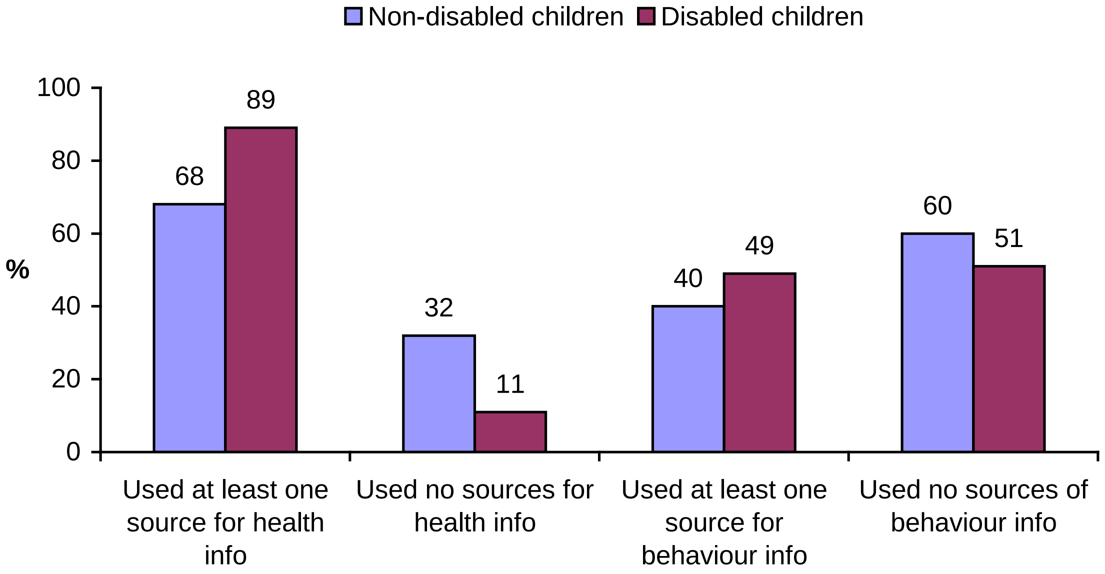
2.62 **Primary school**: A range of questions were asked at age five around support sought when the child was starting Primary School. These included: sources used for information about enrolment; whether the parent was unable to find any information about enrolment; and satisfaction with advice and information about starting school.

2.63 **Availability and use of local services/amenities**: at age three, a series of questions explored the extent to which certain services or amenities – such as a parent/toddler group, community health service or library – were available in the family's local area and whether or not they used it.

2.64 **Parenting**: questions about parents' satisfaction with the information available to them as a parent and with the services available to support them in their role as a parent were asked at age six. Analysis of these two items was undertaken.

2.65 While parents of disabled children used a similar number of sources of information on their child's health at 10 months as parents of non-disabled children, at age four they were more likely to use more sources of information (Figure 2-H). 89% of parents of disabled children had used at least one source of information at age four compared with 68% of parents with non-disabled children. In addition, while 11% used six or more sources of information only 5% of parents with non-disabled children had also done so (Table 2.47).

Figure 2-H % of parents using sources of information on child health and child behaviour at age four by disability



2.66 Parents of disabled children used a higher number of sources of information on their child's behaviour at ages two and three compared with parents of non-disabled children. Just under half (46% at age two and 49% at age three) of parents with disabled children used at least one source of information on their child's behaviour compared with about 40% (38% at age two and 40% at age three) of parents with non-disabled children (Table 2.48).

2.67 The most common source of advice used on the child's health was the family doctor for both parents of disabled children and parents of non-disabled children (at both ages one and four). At 10 months, 89% of parents with disabled children asked their family doctor for advice, while 72% of parents with non-disabled children did. 63% of parents with disabled children said they asked a health visitor for advice and 20% said they used the internet for advice or information. 36% said they used the NHS 24 telephone helpline at age four (Table 2.49).

2.68 For behavioural advice the most common source used by parents of disabled children at age two was a health visitor, with 22% of parents using this source. However, at age three a higher proportion used their own parents or other families for advice; 24% reported using their own parents and 23% said they used other families as a source of advice, compared with 19% using a health visitor. The most used source of information on behavioural advice by parents of non-disabled children was their own parents at both sweeps, with 18% at age two and 21% at age three using this source (Table 2.50).

2.69 4% of parents with disabled children reported being unable to find help on their child's health (at both ages three and four) compared with 1% of parents with non-disabled children (Table 2.51).

2.70 There was no significant difference between parents of disabled children and parents of non-disabled children on the number of sources of information or advice used about pre-school enrolment. In addition, both sets of parents appeared to use similar sources, with 26% of parents with disabled children and 31% of parents with non-disabled children asking friends for advice. 27% and 26% respectively asked pre-school staff for advice (Table 2.52, Table 2.53).

2.71 Similarly, there was no significant difference for the number of sources of information or advice used about primary school enrolment, and the sources used were again very similar. Pre-school staff were the most common source of information followed by friends and primary school staff. Only 1% of parents with disabled children and 2% of parents with non-disabled children were unable to find the help or advice they wanted on primary school enrolment (no significant difference). There was also no difference in the satisfaction with the advice, information or support available about their child's start at primary school. Only 5% of both groups of parents were not satisfied with the information available (Table 2.54 to Table 2.57)

2.72 The two most widely used facilities in the local area for both parents of disabled children and parents of non-disabled children were the family doctor and the playground/park. However, a higher proportion of parents with non-disabled children used both their GP and the playground/park than parents with disabled children.[14] A higher proportion of parents with non-disabled children also used a local community health service and a local library (Table 2.58).

2.73 There was no difference in the proportion of parents of disabled children and parents of non-disabled children who were not at all satisfied with the information available to them as a parent, with 3% of both groups reporting this. However, a higher proportion of parents with disabled children reported being not at all satisfied with the support services available to them in their role as a parent compared with parents of non-disabled children (6% and 4% respectively reported this; Table 2.59,Table 2.60).

2.74 Multivariate analysis of the number of local leisure facilities used 'often' (results summarised below) revealed that parents were more likely to only use these facilities sometimes or not at all (even though they were available locally) if they lived in more deprived areas, if they were in lower income quintiles, if they did not have regular childcare, and if the respondent had a lower mental wellbeing score (SF-12). Whether their child was disabled or not had no impact on this outcome once these other factors were controlled for (Table 2.61).

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[14] This contradicts some of the earlier data on use of GPs, but the question here was specifically on whether there was a GP in the local area *and* did the parent use it rather than general use of GPs for health advice whether or not the practice happened to be in the local area.

2.75

Summary of multivariate analysis results: factors associated with using local facilities less than ‘often’ at age two
Lower household income
Not using regular childcare
Main carer has lower mental wellbeing

2.76 Multivariate analysis showed that parents were less likely to be satisfied with the information available on parenting if they had equivalised household income in the middle quintile compared with in the lowest quintile, and if they agreed with the statement that ‘Nobody can teach you how to be a good parent, you just have to learn for yourself’ (Table 2.62).

Summary of multivariate analysis results: factors associated with dissatisfaction with information available about parenting at age six
Household income in the middle 20% of incomes (middle quintile)
Agree that ‘Nobody can teach you how to be a good parent, you just have to learn for yourself’

2.77 In considering factors associated with parents being unsatisfied with the support services available to them, the multivariate analysis found less satisfaction if parents were in the middle income quintile compared with the lowest income quintile, and if they currently reported being in fair or poor health compared with being in excellent health. Having a disabled child had no impact on whether they were not satisfied with the support services available once these other factors were taken into account (Table 2.63).

Summary of multivariate analysis results: factors associated with dissatisfaction with support services available to parents
Household income in the middle 20% of incomes (middle quintile)
Main carer has fair or poor health

Table 2.47 Disability by the number of sources of information used by parents on the child's health

Number of sources of information used on child's health	**Non-disabled children**	**Disabled children**
	%	%
Age 1		
1	17	14
2	24	24
3	24	23
4	16	17
5	10	11
6+	9	12
Age 4		
0	32	11
1	19	15
2	18	21
3	14	19
4	8	13
5	5	10
6+	5	11
Bases		
Age 1		
Unweighted	4061	671
Weighted	4051	679
Age 4		
Unweighted	3336	655
Weighted	3318	672

Note: The data from 10 months excludes cases where no sources were used as there was only a very small number of these.

Table 2.48 Disability by the number of sources of information used by parents on the child's behaviour

Number of sources of information used on child's behaviour	**Non-disabled children**	**Disabled children**
	%	%
Age 2		
0	62	54
1	14	16
2	11	13
3	7	8
4+	5	9
Age 3		
0	60	51
1	13	16
2	11	13
3	8	8
4+	8	13
Bases		
Age 2		
Unweighted	4023	485
Weighted	4016	491
Age 3		
Unweighted	3590	599
Weighted	3581	607

Table 2.49 Disability by sources of advice on health used in the last year

Sources of advice used in the last year	Non-disabled children	Disabled children
	%	%
Age 1		
Books or leaflets on childcare or family health	19	22
The Internet	12	20
Family doctor	72	89
Telephone helpline	19	22
Own parents	44	46
Partners parents	17	17
Other parents	7	8
Own grandparents	2	3
Partners grandparents	1	2
Other friends or family with children	25	25
Health visitor	58	63
Other	3	9
None of these sources	10	2
Age 4		
Books/leaflets	7	10
Internet	15	23
Family doctor/GP	54	76
Own parents	25	31
Partners parents	9	11
Other parents	3	5
Own grandparents	2	3
Partner grandparents	1	1
Other families	15	21
Health visitor	14	29
Practice nurse	6	11
Psychologist	0	3
NHS 24	23	36
Other helpline	0	1
Pre-school staff	6	12
Other carers	1	1
LA staff	0	2
Social workers	0	2
Other professional	4	17
Other	1	3
None	32	11
Bases		
Age 1		
Unweighted	4527	683
Weighted	4519	690
Age 4		
Unweighted	3336	655
Weighted	3318	672

Table 2.50 Disability by sources of behavioural advice used in the last year

Sources of behavioural advice used in the last year	**Non-disabled children**	**Disabled children**
	%	%
Age 2		
Books/leaflets	7	8
Internet	5	5
Family doctor/GP	4	13
Own parents	18	19
Partners parents	6	6
Other parents	5	3
Own grandparents	1	2
Partners grandparents	0	0
Other families	15	14
Health visitor	13	22
Practice nurse	0	1
Psychologist	0	1
NHS 24	1	4
Other helpline	0	-
Pre-school staff	4	5
Other carers	2	1
LA staff	0	1
Social workers	0	2
Other professionals	1	2
Other	1	2
None	62	54
Age 3		
Books/leaflets	6	9
Internet	6	10
Family doctor/GP	7	11
Own parents	21	24
Partners parents	8	5
Other parents	3	5
Own grandparents	1	2
Partners grandparents	0	0
Other families	18	23
Health visitor	13	19
Practice nurse	0	0
Psychologist	0	2
NHS 24	2	4
Other helpline	0	0
Pre-school staff	7	10
Other carers	2	2
LA staff	0	0
Social workers	0	2
Other professionals	1	3
Other	1	2
None	60	51
Bases		
Age 2		
Unweighted	4021	485
Weighted	4014	491
Age 3		
Unweighted	3590	599
Weighted	3581	607

Table 2.51 Disability by unable to find help on health

Unable to find the help, information or advice respondent was looking for (in the past year)	**Non-disabled children**	**Disabled children**
	%	%
Age 3		
Yes (unable)	1	4
No (able)	99	96
Age 4		
Yes (unable)	1	4
No (able)	99	96
Bases		
Age 3		
Unweighted	2643	546
Weighted	2628	555
Age 4		
Unweighted	2304	584
Weighted	2288	598

Table 2.52 Disability by number of sources of information used on pre-school enrolment

Number of sources of information/advice used on pre-school enrolment (age 4)	**Non-disabled children**	**Disabled children**
	%	%
0	43	40
1	28	25
2	17	20
3	8	10
4+	4	5
Bases		
Unweighted	3102	585
Weighted	3076	595

Table 2.53 Disability by sources of information used on pre-school enrolment

Sources of information/advice used on pre-school enrolment (age 4)	**Non-disabled children**	**Disabled children**
	%	%
Pre-school staff	26	27
Other carers	5	6
LA staff	8	12
Social workers	1	3
Other professional	6	14
Own/partner parents	5	8
Own/partner siblings	7	8
Friends	31	26
Internet	4	4
Books etc	1	0
TV/Radio	1	0
Neighbours	6	4
Other	5	5
None	43	40
Bases		
Unweighted	3102	585
Weighted	3076	595

Table 2.54 Disability by number of sources of information used on primary school enrolment

Number of sources of information/advice used on primary school enrolment (age 5)	**Non-disabled children**	**Disabled children**
	%	%
0	39	36
1	22	21
2	19	21
3	12	13
4+	8	10
Bases		
Unweighted	1046	185
Weighted	1046	196

Table 2.55 Disability by sources of information used on primary school enrolment

Sources of information/advice used on primary school enrolment (age 5)	**Non-disabled children**	**Disabled children**
	%	%
Primary school staff	21	19
Pre-school staff	37	44
Other childcarer	3	0
Local Authority	7	6
Social workers	1	2
Other professionals	3	7
Own or partner parents/grandparents	12	12
Own or partner siblings	9	10
Friends	28	31
Parentzone website	2	1
Other websites	5	4
Books, etc	1	3
TV/radio	0	-
Other	3	4
None	39	36
Bases		
Unweighted	1046	185
Weighted	1046	196

Table 2.56 Disability by unable to find help, information or advice on primary school enrolment

Unable to find help, information or advice on primary school enrolment (age 5)	**Non-disabled children**	**Disabled children**
	%	%
Yes (unable)	2	1
No (able)	98	99
Bases		
Unweighted	634	117
Weighted	635	125

Table 2.57 Disability by satisfaction with advice, information and support available about starting school

Satisfaction with advice, information and support available about child's start at primary school (age 5)	**Non-disabled children**	**Disabled children**
	%	%
Very satisfied	67	66
Quite satisfied	29	29
Neither satisfied or dissatisfied, quite dissatisfied, or very dissatisfied	5	5
Bases		
Unweighted	1045	185
Weighted	1046	196

Table 2.58 Disability by facilities used in the local area

Facilities that were used in the local area sometimes or often (age 2)	Non-disabled children	Disabled children
	%	%
Parent & toddler group	42	39
Registered childminder	9	10
Playgroup	13	16
Nursery	25	29
GP (family doctor)	84	80
Community health service	71	66
Library	57	52
Swimming pool etc	56	51
Playground/park	85	79
Credit union	3	4
Advice centre	6	8
None	2	4
Bases		
Unweighted	3464	403
Weighted	3399	400

Table 2.59 Disability by satisfaction with information on parenting

How satisfied with information available to them as a parent (age 6)	Non-disabled children	Disabled children
	%	%
Not at all satisfied	3	3
Neither satisfied nor dissatisfied	34	35
Slightly satisfied	9	11
Satisfied	46	42
Very satisfied	8	10
Bases		
Unweighted	2874	636
Weighted	2859	654

Table 2.60 Disability by satisfaction with support services available to parents

How satisfied with services available to support them in their role as a parent (age 6)	Non-disabled children	Disabled children
	%	%
Not at all satisfied	4	6
Neither satisfied nor dissatisfied	35	35
Slightly satisfied	11	13
Satisfied	44	38
Very satisfied	6	7
Bases		
Unweighted	2861	633
Weighted	2843	652

Table 2.61 Multivariate analysis of use of local leisure facilities

Covariates	**Odds ratios (95% Confidence limits)**	***N (unweighted)***
Scottish Index of Multiple Deprivation 2006 Quintiles (p<0.001)		
0.9449 - 7.7446 - least deprived	1	904
7.7472 - 13.5627	1.12 (0.87,1.44)	915
13.5640 - 21.0436	1.13 (0.85,1.5)	914
21.0521 - 33.6982	1.45 (1.12,1.87)	763
33.7252 -89.0941 - most deprived	1.67 (1.27,2.19)	906
Equivalised household income (p<0.001)		
Bottom Quintile (<_8,410)	1	710
2nd Quintile (>=_8,410< _13,750)	1.02 (0.83,1.27)	798
3rd Quintile (>=_13,750< _21,785)	0.92 (0.75,1.13)	745
4th Quintile (>=_21,785< _33,571)	0.8 (0.65,0.98)	901
Top Quintile (>=_33,571)	0.66 (0.53,0.83)	836
missing	1.15 (0.87,1.52)	412
Respondent uses regular childcare (p=0.015)		
Yes	1	2,696
No	1.16 (1.03,1.31)	1,706
Medical outcomes Short-Form (SF-12) mental wellbeing subscale score (p=0.032)	0.99 (0.99,1.00)	4,402

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: how mother kept during pregnancy; whether mother had any illness in pregnancy; whether smoked cigarettes during pregnancy; whether drank alcohol during pregnancy; whether child was born early, late or on time; type of delivery; whether child was single or multiple birth; any time spent in neonatal or special care baby unit; family type (couple or lone parent); any use of childcare; main carer's general health; whether main carer had longstanding illness; score on SF12 mental wellbeing scale

Table 2.62 Multivariate analysis of satisfaction with information available on parenting at age six

Covariates	**Odds ratios (95% Confidence limits)**	**N (unweighted)**
Agreement with the statement “Nobody can teach you how to be a good parent, you just have to learn for yourself” (p=0.038)		
Strongly agree	1	388
Agree	0.88 (0.67,1.15)	1,361
Neither agree nor disagree	0.94 (0.70,1.27)	609
Disagree or strongly disagree	0.72 (0.55,0.95)	973
Equivalised household income (p=0.007)		
Bottom Quintile (<_12,217)	1	597
2nd Quintile (>=_12,217 <_19,643)	1.20 (0.91,1.59)	703
3rd Quintile (>=_19,643 < _29,126)	1.58 (1.23,2.03)	575
4th Quintile (>=_29,126 < _37,857)	1.16 (0.85,1.57)	752
Top Quintile (>=_37,857)	1.34 (1.00,1.80)	519
missing	1.67 (1.18,2.35)	185

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model; whether child was born early, late or on time; type of delivery; whether child was single or multiple birth; any time spent in neonatal or special care baby unit; family type (couple or lone parent); any use of childcare; main carer's general health; whether main carer had longstanding illness; score on SF12 mental wellbeing scale; level of parenting stress; level of home chaos; level of parent-child conflict; level of parent-child warmth; whether agree/disagree with statement “Nobody can teach you how to be a good parent, you just have to learn for yourself’.

Table 2.63 Multivariate analysis of satisfaction with support services as a parent at age six

Covariates	Odds ratios (95% Confidence limits)	N (unweighted)
Equivalised household income (p=0.021)		
Bottom Quintile (<_12,217)	1	608
2nd Quintile (>=_12,217 <_19,643)	1.11 (0.84,1.45)	699
3rd Quintile (>=_19,643 < _29,126)	1.36 (1.11,1.68)	585
4th Quintile (>=_29,126 < _37,857)	1.14 (0.88,1.49)	758
Top Quintile (>=_37,857)	1.25 (0.95,1.65)	522
missing	1.50 (1.06,2.14)	185
General health status (p=0.006)		
Excellent	1	546
Very Good	1.10 (0.87,1.39)	1,272
Good	0.98 (0.80,1.19)	1,047
Fair or poor	1.52 (1.17,1.96)	492

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model; whether child was born early, late or on time; type of delivery; whether child was single or multiple birth; any time spent in neonatal or special care baby unit; family type (couple or lone parent); any use of childcare; main carer’s general health; whether main carer had longstanding illness; score on SF12 mental wellbeing scale; level of parenting stress; level of home chaos; level of parent-child conflict; level of parent-child warmth; whether agree/disagree with statement “Nobody can teach you how to be a good parent, you just have to learn for yourself’.

Attitudes toward support

2.78 At sweeps one and four, parents were asked the extent to which they agreed or disagreed with a range of statements about help-seeking behaviour and accessing support:

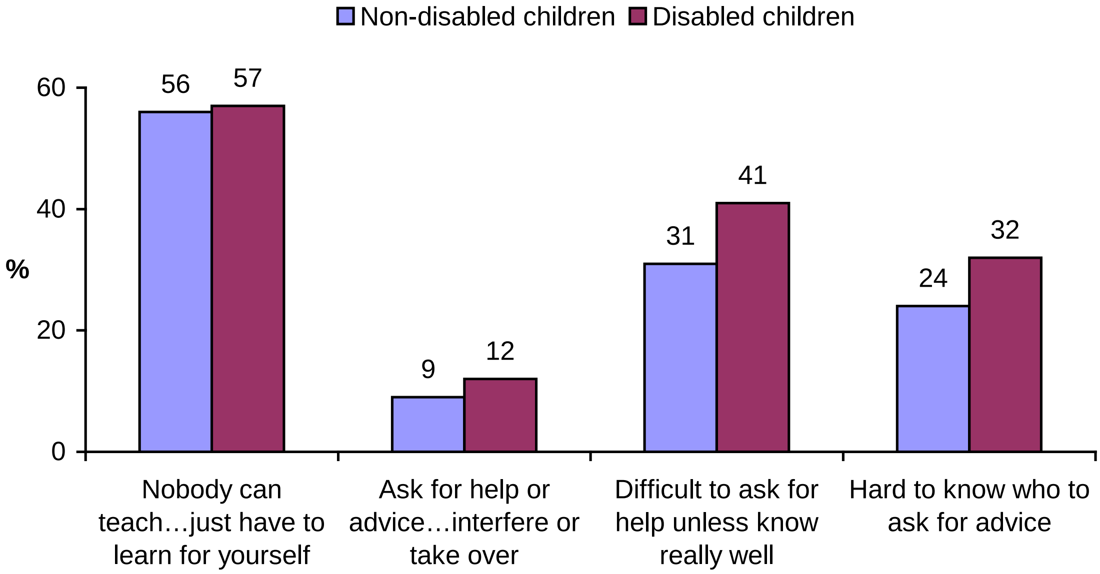
- “Nobody can teach you how to be a good parent – you just have to learn for yourself”.
- “If you ask for help or advice on parenting from professionals like doctors or social workers, they start interfering to take over”.
- “It’s difficult to ask people for help or advice unless you know them really well”.
- “It’s hard to know who to ask for help or advice about being a parent”.

2.79 Five categories of response were available for each statement: strongly agree, agree, neither agree nor disagree, disagree, or disagree strongly. Agreement with the statements suggests reluctance to engage with formal services. For example, if the respondent agreed that when asking for help or advice from professionals they start interfering and trying to take over, this would suggest they are more likely to feel uncomfortable seeking help and advice from these formal sources.

2.80 Parents of disabled children were similar to those with non-disabled children in relation to the first two statements (Figure 2-I). The proportion agreeing or strongly agreeing with these statements were quite similar in each group. However, parents of disabled children were more likely than those with non-disabled children to 'strongly' agree with the first statement. 25% at 10 months and 18% at age four answered in this category compared with 21% of parents of non-disabled children at 10 months and 13% at age four (Table 2.64).

2.81 They were also slightly more likely than parents of non-disabled children to strongly agree or agree that professionals will try to interfere if asked for help or advice. This was true at 10 months and at age four. For example, at age four, 12% of parents with disabled children strongly agreed or agreed with the statement compared with 9% of parents with non-disabled children (Table 2.65).

Figure 2-I % of parents agreeing with statements on help-seeking behaviour at age four by disability



2.82 Few parents found it difficult to ask for help or advice but a higher proportion of parents with disabled children than those with non-disabled children strongly agreed with this statement. Though again, differences were small. 4% strongly agreed at 10 months and 5% at age four compared with 2% of parents with non-disabled children at both ages (Table 2.66).

2.83 Finally, a higher proportion of parents with disabled children than parents of non-disabled children strongly agreed or agreed that it is hard to know who to ask for help or advice. 27% at 10 months and 32% at age four answered this compared with 22% of parents of non-disabled children at 10 months and 24% at age four (Table 2.67).

2.84 Multivariate analysis of the statement "It's hard to know who to ask for help or advice about being a parent" at 10 months was undertaken, comparing those who answered strongly agree or agree to those who neither agreed or disagreed, disagreed, or strongly disagreed. Parents were more likely to strongly agree or agree with this statement if:

- They were in lower income quintiles;
- They did not have any regular childcare;
- They were social renting instead of living in owner-occupied accommodation;
- Their child was of non-white ethnic background; and
- They had a lower score for mental wellbeing (SF-12).

Having a child with a disability was not independently associated with agreeing with this statement (Table 2.68).

Table 2.64 Disability by whether agreed with the statement that nobody can teach you to be a good parent

Nobody can teach you to be a good parent – you just have to learn for yourself	**Non-disabled children**	**Disabled children**
	%	%
Age 1		
Strongly agree	21	25
Agree	42	39
Neither agree nor disagree	15	16
Disagree or strongly disagree	22	20
Age 4		
Strongly agree	13	18
Agree	43	39
Neither agree nor disagree	18	17
Disagree or strongly disagree	26	26
Bases		
Age 1		
Unweighted	4526	683
Weighted	4518	690
Age 4		
Unweighted	3336	655
Weighted	3318	672

Table 2.65 Disability by whether agreed with the statement that professionals start interfering or trying to take over when asked for advice

If you ask for help or advice on parenting from professionals like doctors or social workers, they start interfering or trying to take over	Non-disabled children	Disabled children
	%	%
Age 1		
Strongly agree or agree	9	14
Neither agree nor disagree	23	21
Disagree	60	58
Strongly disagree	8	7
Age 4		
Strongly agree	3	2
Agree	6	10
Neither agree nor disagree	30	30
Disagree	51	47
Strongly disagree	9	10
Bases		
Age 1		
Unweighted	4436	669
Weighted	4429	676
Age 4		
Unweighted	3234	642
Weighted	3213	658

Table 2.66 Disability by whether agreed with the statement that it is difficult to ask people for help or advice unless you know them really well

It's difficult to ask people for help or advice unless you know them really well	Non-disabled children	Disabled children
	%	%
Age 1		
Strongly agree	2	4
Agree	23	26
Neither agree nor disagree	12	12
Disagree	58	54
Strongly disagree	5	4
Age 4		
Strongly agree	2	5
Agree	29	36
Neither agree nor disagree	17	17
Disagree	48	40
Strongly disagree	4	3
Bases		
Age 1		
Unweighted	4521	683
Weighted	4514	690
Age 4		
Unweighted	3329	655
Weighted	3311	672

Table 2.67 Disability by whether agreed with the statement that it is hard to know who to ask for help or advice about being a parent

It's hard to know who to ask for help or advice about being a parent	**Non-disabled children**	**Disabled children**
	%	%
Age 1		
Strongly agree or agree	22	27
Neither agree nor disagree	14	15
Disagree	60	55
Strongly disagree	5	3
Age 4		
Strongly agree	2	3
Agree	22	29
Neither agree nor disagree	18	18
Disagree	54	46
Strongly disagree	4	4
Bases		
Age 1		
Unweighted	4513	677
Weighted	4505	684
Age 4		
Unweighted	3327	654
Weighted	3309	669

Table 2.68 Multivariate analysis of whether feel it is hard to know who to ask for help or advice about being a parent at 10 months

Covariates	**Odds ratios (95% Confidence limits)**	***N (unweighted)***
Equivalised household income (p<0.001)		
Bottom Quintile (<_8,410)	1	921
2nd Quintile (>=_8,410< _13,750)	0.82 (0.65,1.02)	944
3rd Quintile (>=_13,750< _21,785)	0.69 (0.52,0.91)	853
4th Quintile (>=_21,785< _33,571)	0.55 (0.41,0.73)	1,009
Top Quintile (>=_33,571)	0.57 (0.44,0.74)	916
missing	0.68 (0.51,0.90)	516
Uses regular childcare (p=0.006)		
Yes	1	3,097
No	1.24 (1.06,1.44)	2,062
Tenure (p=0.002)		
Owner occupied	1	3,330
Social rented	1.41 (1.17,1.70)	1,316
Private rented	1.08 (0.76,1.54)	326
Other	0.85 (0.57,1.27)	187
Ethnicity of child (p=0.001)		
White	1	4,933
Other ethnic background	1.54 (1.19,1.99)	226
Medical outcomes Short-Form (SF-12) mental wellbeing subscale score (p<0.001)	0.97 (0.96,0.97)	5,159

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: mother's health during pregnancy; whether mother had illness during pregnancy; whether child was born early, late or on time; type of delivery; whether child was single or multiple birth; any time spent in neonatal or special care baby unit; family type (couple or lone parent); any use of childcare; score on SF12 mental wellbeing scale;

Barriers to accessing childcare and pre-school education

2.85 Data on childcare was collected at all sweeps of GUS. This data covers the types of childcare used, perceptions of accessibility and availability, and satisfaction with providers and overall arrangements. Data on pre-school was collected at age 4, towards the end of the child's first year of his/her two years of statutory pre-school education. The questions address similar relevant topics to those described for childcare.

Childcare

2.86 Whether or not the parent was using any regular childcare was asked at all sweeps. Here we compare sweeps one, three and five. Information was collected on both formal (e.g. nursery, childminder) and informal (e.g. grandparents, friends) childcare providers. Comparisons between disabled and non-disabled children were made here on the use of the four key providers: grandparents, nurseries, childminders and 'other informal' at sweeps one, three and five.

2.87 Perceptions of accessibility/availability of childcare and barriers to access were assessed from age two to age five using a question - for those parents who were using childcare - asking how much choice they felt they had when selecting their main provider. They were also asked how easy they had found arranging childcare. For those who said it had been difficult, a follow-up question asked why. Analysis here focuses on sweeps two, three and five.

2.88 Two separate questions on satisfaction with childcare have been included in GUS questionnaires. The first, included at sweeps two, three and four assesses the parent's satisfaction with the care provided by their main childcare provider. The second, included at sweeps five and six, assesses satisfaction with their overall childcare arrangements - that is the types and mix of provision being used.

2.89 Parents who were not using childcare were asked for their reasons why at all sweeps. This data is explored for sweeps one, three and five.

2.90 There was no significant difference at any of sweeps one, three or five in the proportion of parents with disabled children compared with parents with non-disabled children using regular childcare. However, at sweeps one and three a lower proportion of parents with disabled children used grandparents as their main childcare provider. There was no difference in this proportion at age five however, and at this age a nursery or crèche had taken over as the most commonly used childcare provider for both parent groups (Table 2.69, Table 2.70).

2.91 There was no significant difference between parents of disabled children and parents of non-disabled children at sweeps two and five in how much choice parents felt they had in choosing childcare. However, at age three a higher proportion of parents with disabled children felt they had no choice at all about childcare options compared with parents of non-disabled children (24% compared with 15%; Table 2.71).

2.92 There was also no significant difference in the proportion of parents in the two groups who found it very easy to arrange childcare (at sweeps two, three and five). However, at all three sweeps parents with disabled children were more likely to find it fairly or very difficult to arrange childcare (Table 2.72).

2.93 When asked about their current childcare provider at sweeps two, three and four, parents of disabled children were less likely to say they were very satisfied with their provider than parents of non-disabled children. However, at sweeps five and six when asked about their overall childcare arrangements, parents of disabled children were no more or less likely than parents of non-disabled children to be very satisfied with their current arrangements (Table 2.73).

2.94 Parents of disabled children and parents of non-disabled children had similar distributions over the different reasons given for not using any childcare (at sweeps one, three and five). However, parents of disabled children were more likely to give as a reason for not using childcare that their child needed special care (Table 2.74).

2.95 Logistic regression was carried out to examine factors associated with finding it less than very or fairly easy to arrange childcare. The significant factors from the model are summarised below. Parents were more likely to find it less than fairly or very easy to arrange childcare if they had fair or poor general health (compared with those with excellent health) and they had a lower score for mental wellbeing (Table 2.75).

Summary of multivariate analysis results: factors associated with finding it less than fairly/very easy to arrange childcare at age three
Main carer had fair or poor general health Main carer had lower mental wellbeing

2.96 Multivariate analysis of the satisfaction with their main childcare provider at age three revealed that parents who were in worse health, and parents who lived in areas classified in the middle quintile for IMD (compared with living in areas in the least deprived quintile) were more likely to be less than very satisfied (Table 2.76).

Summary of multivariate analysis results: factors associated with being less than very satisfied with main childcare provider at age three

Main carer had fair or poor general health

Lived in an area in the middle quintile for area deprivation

2.97 Multivariate analysis of satisfaction with overall childcare arrangements at age five only identified one significant factor associated with this outcome. Respondents with a lower score for mental wellbeing (SF-12) were more likely to be less than very satisfied with their overall childcare arrangements. Disability of the child was not a significant factor in any of these regressions (Table 2.77).

Summary of multivariate analysis results: factors associated with being less than very satisfied with overall childcare arrangements at age five

Main carer had lower mental wellbeing

Table 2.69 Disability by whether uses regular childcare

Currently get help with childcare for child on a regular basis	**Non-disabled children**	**Disabled children**
	%	%
Age 1		
Yes	59	61
No	41	39
Age 3		
Yes	76	78
No	24	22
Age 5		
Yes	84	83
No	16	17
Bases		
Age 1		
Unweighted	4528	683
Weighted	4520	690
Age 3		
Unweighted	3582	598
Weighted	3573	606
Age 5		
Unweighted	3184	648
Weighted	3151	681

Table 2.70 Disability by type of childcare used

Type of regular childcare used	Non-disabled children	Disabled children
	%	%
Age 1		
Grandparents	66	60
Childminder	10	12
Nursery or creche	27	27
Other Informal	19	25
Age 3		
Grandparents	51	45
Childminder	11	12
Nursery or creche	45	47
Other Informal	14	15
Age 5		
Grandparents	45	43
Childminder	9	8
Nursery or creche	73	76
Other Informal	16	19
Bases		
Age 1		
Unweighted	2701	418
Weighted	2682	424
Age 3		
Unweighted	2787	475
Weighted	2729	476
Age 5		
Unweighted	2683	543
Weighted	2639	564

Table 2.71 Disability by choice of childcare provider available

How much choice available in selecting main childcare provider	**Non-disabled children**	**Disabled children**
	%	%
Age 2		
A great deal of choice	16	13
Quite a lot of choice	29	27
Not very much choice	39	39
None at all	16	21
Age 3		
A great deal of choice	12	12
Quite a lot of choice	33	21
Not very much choice	40	43
None at all	15	24
Age 5		
A great deal of choice	9	8
Quite a lot of choice	37	30
Not very much choice	42	47
None at all	11	15
Bases		
Age 2		
Unweighted	1143	159
Weighted	1143	162
Age 3		
Unweighted	1288	254
Weighted	1289	260
Age 5		
Unweighted	1845	376
Weighted	1787	379

Table 2.72 Disability by ease of arranging childcare

How easy/difficult to arrange childchare	**Non-disabled children**	**Disabled children**
	%	%
Age 2		
Very easy	47	42
Fairly easy	37	37
Neither easy nor difficult	6	7
Fairly difficult	7	8
Very difficult	3	7
Age 3		
Very easy	35	33
Fairly easy	45	41
Neither easy nor difficult	11	11
Fairly difficult or very difficult	9	15
Age 5		
Very easy	42	38
Fairly easy	42	41
Neither easy nor difficult	9	9
Fairly difficult or very difficult	7	12
Bases		
Age 2		
Unweighted	2794	324
Weighted	2752	325
Age 3		
Unweighted	1315	261
Weighted	1318	268
Age 5		
Unweighted	1899	388
Weighted	1840	392

Table 2.73 Disability by satisfaction with childcare

Satisfaction with childcare (main childcare provider for sweeps 2,3 and 4, overall childcare arrangements for sweeps 5 and 6)	**Non-disabled children**	**Disabled children**
	%	%
Age 2		
Very satisfied	85	81
Fairly satisfied to very dissatisfied	15	19
Age 3		
Very satisfied	83	79
Fairly satisfied to very dissatisfied	17	21
Age 4		
Very satisfied	83	80
Fairly satisfied to very dissatisfied	17	20
Age 5		
Very satisfied	75	77
Fairly satisfied to very dissatisfied	25	23
Age 6		
Very satisfied	73	71
Fairly satisfied to very dissatisfied	27	29
Bases		
Age 2		
Unweighted	2797	324
Weighted	2755	325
Age 3		
Unweighted	2785	474
Weighted	2727	475
Age 4		
Unweighted	2167	440
Weighted	2103	441
Age 5		
Unweighted	1901	389
Weighted	1842	393
Age 6		
Unweighted	1728	376
Weighted	1677	386

Table 2.74 Disability by reasons for not using childcare

Reasons for not using childcare	Non-disabled children	Disabled children
	%	%
Age 1		
Rather look after him/her myself	68	66
I rarely need to be away from him/her	47	45
There are no childcare providers available that I could trust	4	4
I cannot afford childcare	16	17
The quality of childcare is not good enough	1	1
Child needs special care	0	7
I have had bad experience using childcare in the past	1	0
I would have transport difficulties getting to a provider	2	5
Child too young	1	1
Childcare not required	7	6
Child wouldn't like to be separated from carer	0	0
Lack of availability/choice	1	1
Provider no longer available	0	-
Other reason	1	3
No reason given	2	2
Age 3		
Respondent prefers to do it themselves	68	73
Respondent rarely away	42	44
Not trusted providers	2	6
Can't afford it	12	15
Quality not good	0	2
Child needs special care	0	6
Previous bad experience	1	1
Transport difficulties	1	1
Child too young	1	1
Not required	6	4
Child would not like separation	0	2
Lack of choice	1	3
Other reason	2	2
No reason given	6	-
Age 5		
Respondent prefers to do it themselves	52	55
Respondent rarely away	46	47
Not trusted providers	1	2
Can't afford it	8	7
Quality not good	1	-
Child needs special care	0	4
Previous bad experience	0	2
Transport difficulties	1	-
Lack of choice	1	-
Child attends school	8	7
Child attends pre-school	1	1
Other	8	4
No reason given	16	14
Bases		
Age 1		
Unweighted	1827	264
Weighted	1838	265
Age 3		

Unweighted	607	99
Weighted	639	105
Age 5		
Unweighted	828	160
Weighted	866	182

Table 2.75 Multivariate analysis of satisfaction with main childcare provider at age three

Covariates	**Odds ratios (95% Confidence limits)**	***N (unweighted)***
General health status (p<0.001)		
Excellent	1	752
Very Good	1.60 (1.18,2.16)	1,284
Good	2.32 (1.72,3.12)	823
fair or poor	2.81 (1.97,4.02)	390
Scottish Index of Multiple Deprivation 2006 Quintiles (p=0.022)		
0.9449 - 7.7446 - least deprived	1	780
7.7472 - 13.5627	1.25 (0.9,1.72)	715
13.5640 - 21.0436	1.39 (1.07,1.79)	675
21.0521 - 33.6982	0.84 (0.60,1.19)	487
33.7252 -89.0941 - most deprived	1.15 (0.83,1.59)	592

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: whether child was born early, late or on time; type of delivery; whether child was single or multiple birth; any time spent in neonatal or special care baby unit; family type (couple or lone parent); main carer's general health; whether main carer has long-standing illness

Table 2.76 Multivariate analysis of satisfaction with overall childcare arrangements at age five

Covariates	**Odds ratios (95% Confidence limits)**	***N (unweighted)***
Medical outcomes Short-Form (SF-12) mental wellbeing subscale score (p<0.001)	0.97 (0.96,0.98)	2,280

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: how mother kept during pregnancy; whether mother had any illness in pregnancy; whether smoked cigarettes during pregnancy; whether drank alcohol during pregnancy; whether child was born early, late or on time; type of delivery; whether child was single or multiple birth; any time spent in neonatal or special care baby unit; family type (couple or lone parent); main carer's general health; whether main carer has long-standing illness; respondent's score on SF12 mental wellbeing scale

Table 2.77 Multivariate analysis of ease of arranging childcare at age three

Covariates	**Odds ratios (95% Confidence limits)**	***N (unweighted)***
General health status (p=0.019)		
Excellent	1	351
Very Good	1.40 (0.89,2.20)	616
Good	1.48 (0.94,2.33)	393
Fair or poor	2.29 (1.35,3.89)	211
Medical outcomes Short-Form (SF-12) mental wellbeing subscale score (p<0.001)	0.97 (0.96,0.99)	1,571

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: how mother kept during pregnancy; whether mother had any illness in pregnancy; whether smoked cigarettes during pregnancy; whether drank alcohol during pregnancy; whether child was born early, late or on time; type of delivery; whether child was single or multiple birth; any time spent in neonatal or special care baby unit; family type (couple or lone parent); main carer's general health; whether main carer has long-standing illness; respondent's score on SF12 mental wellbeing scale

Pre-school

2.98 Parents were asked if they were using statutory pre-school provision for the cohort child, and also the type of provision attended (e.g. nursery class attached to a primary school, private nursery) at age four.

2.99 Questions about the perceptions of accessibility/availability of pre-school and barriers to access were similar to those asked about childcare. Parents were asked how much choice they felt they had when selecting their pre-school provider and whether they would prefer to be using a different provider.

2.100 A question at age four assesses the parent's satisfaction with the standard of care and education provided by their pre-school provider.

2.101 A smaller proportion of disabled children attended pre-school than their non-disabled counterparts at age four (89% compared with 93%). The types of provider used were similar however, with around 60% of disabled children and non-disabled children enrolled in a nursery class attached to a local authority primary school (62% and 61% respectively, difference not significant; Table 2.78, Table 2.79).

2.102 There was no significant difference between parents of disabled children and parents of non-disabled children in the proportion who felt they had no choice at all for pre-school providers, nor in the proportion who felt they had a great deal of choice. There was also no significant difference between the two groups in the proportion who said they would use a different pre-school provider (Table 2.80, Table 2.81).

2.103 Both groups were also equally likely to say they were very satisfied with their pre-school provider (75% of parents of disabled children said this and 79% of parents with non-disabled children, difference not significant; Table 2.82).

2.104 Multivariate analysis of the satisfaction with pre-school provider found that parents were more likely to be less than very satisfied if they were in good, fair or poor health compared with being in excellent heath, they had a lower mental wellbeing score (SF-12), and they were private renting as opposed to being an owner-occupier of their accommodation (Table 2.83).

Summary of multivariate analysis results: factors associated with being less than very satisfied with pre-school provider at age four
Main carer had good, fair or poor health Main carer had lower mental wellbeing Accommodation was rented from private landlord

Table 2.78 Disability by whether attends pre-school

Currently attends pre-school (age 4)	**Non-disabled children**	**Disabled children**
	%	%
Yes	93	89
No	7	11
Bases		
Unweighted	3336	654
Weighted	3318	671

Table 2.79 Disability by type of pre-school used

Type of pre-school used (age 4)	**Non-disabled children**	**Disabled children**
	%	%
Nursery class attached to a local authority primary school	61	62
Nursery class attached to an independent school	1	1
Local authority nursery school	15	16
Private day nursery or nursery school	17	15
Community/voluntary nursery	1	1
Community/Voluntary playgroup	1	2
Local authority playgroup	2	2
Private playgroup	1	1
Family Centre	1	-
Bases		
Unweighted	3102	585
Weighted	3076	595

Table 2.80 Disability by level of choice for pre-school

Level of choice for pre-school (age 4)	**Non-disabled children**	**Disabled children**
	%	%
A great deal of choice	9	9
Quite a lot of choice	39	37
Not very much choice	38	38
None at all	14	16
Bases		
Unweighted	3024	574
Weighted	2997	585

Table 2.81 Disability by whether respondent would use a different pre-school provider

Respondent would use a different pre-school provider (age 4)	**Non-disabled children**	**Disabled children**
	%	%
Yes	10	12
No	90	88
Bases		
Unweighted	3091	583
Weighted	3065	593

Table 2.82 Disability by satisfaction with pre-school

Satisfaction with pre-school (age 4)	**Non-disabled children**	**Disabled children**
	%	%
Very satisfied	79	75
Neither satisfied or dissatisfied, fairly dissatisfied, or very dissatisfied	21	25
Bases		
Unweighted	3098	584
Weighted	3073	594

Table 2.83 Multivariate analysis of satisfaction with pre-school

Covariates	**Odds ratios (95% Confidence limits)**	***N (unweighted)***
General health status (p=0.005)		
Excellent	1	643
Very Good	1.11 (0.89,1.39)	1,354
Good	1.60 (1.23,2.07)	1,054
Fair or poor	1.50 (1.08,2.07)	512
Tenure (p=0.044)		
Owner occupied	1	2,550
Social rented	1.12 (0.89,1.40)	765
Private rented	1.43 (1.00,2.05)	166
Other	1.67 (0.97,2.86)	82
Medical outcomes Short-Form (SF-12) mental wellbeing subscale score (p=0.012)	0.99 (0.98,1.00)	3,563

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: how mother kept during pregnancy; whether mother had any illness in pregnancy; whether smoked cigarettes during pregnancy; whether drank alcohol during pregnancy; whether child was born early, late or on time; type of delivery; whether child was single or multiple birth; any time spent in neonatal or special care baby unit; family type (couple or lone parent); main carer's general health; whether main carer has long-standing illness; respondent's score on SF12 mental wellbeing scale; agree/disagree with statement 'Nobody can teach you how to be a good parent, you just have to learn for yourself'

The impact of limiting disability

2.105 Further multivariate analysis was undertaken to assess whether or not having a limiting disability was associated with the selected outcomes and characteristics of interest. To do so, those children identified as disabled in the original analysis were further categorised according to whether or not their disability was reported as having a limiting effect on their day to day activities.

2.106 On indicating that the child has a long-standing illness or disability, parents are then asked the following question:

Does this (do these) condition(s) or health problem(s) limit ^him at play or from joining in any other activity normal for a child ^his age?
1 Yes
2 No

2.107 Those children whose parent answered yes to this question were defined as having a limiting disability. The (weighted) number and proportion of children with a disability, using the original definition, and with a limiting disability, at each sweep, are defined in Table 2.84[15].

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[15] Note that limiting disability cannot be defined in the sweep 1 data

Table 2.84 Number and percent of children with a disability and with a limiting disability by age

Age	Children with a disability		Children with a limiting disability	
	n	% of all children*	*n*	% of all children*
Age 2	491	11	94	2
Age 3	607	15	134	3
Age 4	672	17	144	4
Age 5	681	18	167	4
Age 6	680	19	167	5

2.108 As shown in the table, the number of children with a limiting disability is quite small. This, combined with the often small number of cases having the outcome of interest (e.g. dissatisfaction with pre-school provider), will contribute to the results that follow.

2.109 Outcomes of children with a limiting disability were compared to those of all other children using the same multivariate models utilised in the original analysis shown in the preceding sections.

2.110 Only two ‘new’ relationships between disability and parent/child outcomes were found:

- Parents whose children had a limiting disability at age five were more likely to report low warmth in the parent-child relationship ($p < 0.001$, Table 2.85)
- Parents whose children had a limiting disability at age five were more likely to report high parenting stress. (Note that this finding was borderline significant ($p = 0.08$). The standard threshold for accepting statistically significant results is $p <= 0.05$, Table 2.86)

2.111 Disability continued to be associated with the likelihood of the child having moderate or severe social, emotional and behavioural difficulties at age five. The strength of this association increased for children with limiting disability. The odds of children with a limiting disability at age five of having an SDQ total difficulties score in the moderate or severe range were four times higher than those of children who did not have a limiting disability.

2.112 Limiting disability was not significantly associated with any other outcome considered.

Table 2.85 Multivariate analysis of warmth of parent-child relationship at age five with limiting disability included as a covariate

Covariates	**Odds ratios (95% Confidence limits)**	***N (unweighted)***
Limiting disability (p < 0.001)		
No	1	3620
Yes	2.20 (1.45, 3.32)	152
Sex (p<0.001)		
Male	1	1,890
Female	0.74 (0.63,0.86)	1,824
Tenure (p<0.001)		
Owner occupied	1	2,665
Social rented	1.38 (1.11,1.72)	771
Private rented	1.39 (1.01,1.90)	212
Other	0.96 (0.46,2.01)	66
Parental stress (p<0.001)		
High stress	1	1,374
Medium stress	0.80 (0.66,0.98)	1,092
Low stress	0.59 (0.49,0.70)	1,248
Scottish Index of Multiple Deprivation 2006 Quintiles (p<0.05)		
0.9449 - 7.7446 - least deprived	1	833
7.7472 - 13.5627	0.94 (0.76,1.17)	830
13.5640 - 21.0436	1.24 (0.99,1.56)	751
21.0521 - 33.6982	1.03 (0.81,1.31)	668
33.7252 -89.0941 - most deprived	1.26 (1.01,1.58)	649

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: whether smoked cigarettes during pregnancy; whether drank alcohol during pregnancy; level of parenting stress; family type (couple or lone parent); whether used childcare; main carer’s general health; whether main carer has long-standing illness; score on SF-12 mental wellbeing component

Table 2.86 Multivariate analysis of parental stress when child is aged five with limiting disability included as a co-variate

Covariates	**Odds ratios (95% Confidence limits)**	**N (unweighted)**
Limiting disability (p = 0.08)		
No	1	3620
Yes	1.39 (0.96, 2.03)	152
Employment status (p<0.001)		
In full-time paid employment or self-employment	1	902
In part-time paid employment or self-employment	1.27 (1.05,1.53)	1,589
On Maternity / parental leave from an employer	1.17 (0.77,1.78)	126
Looking after home or family	1.68 (1.39,2.05)	979
Not in paid work	1.57 (1.09,2.27)	208
Sex of the child (p=0.06)		
Male	1	
Female	0.85 (0.74,1)	
Main carer's consumption of alcohol (p = 0.08)		
2+ times a week	1	1006
Once a week	0.88 (0.72, 1.08)	753
3 times a month or less	0.77 (0.63, 0.94)	1,542
Do not drink at all	0.81 (0.64, 1.02)	485
Respondent uses regular childcare (p=0.014)		
Yes	1	3,207
No	0.78 (0.64,0.96)	597
Medical outcomes Short-Form (SF-12) mental wellbeing subscale score (p=0.005)	0.93 (0.92,0.94)	3,804

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: how mother kept during pregnancy; whether mother had any illness in pregnancy; whether smoked cigarettes during pregnancy; whether drank alcohol during pregnancy; whether child was born early, late or on time; type of delivery; whether child was single or multiple birth; any time spent in neonatal or special care baby unit; family type (couple or lone parent); any use of childcare; main carer's general health; whether main carer had longstanding illness; main carer's consumption of alcohol; score on SF12 mental wellbeing scale.

Table 2.87 Multivariate analysis of factors associated with child scoring in the moderate or severe range of SDQ total difficulties at age five

Covariates	**Odds ratios (95% Confidence limits)**	**N (unweighted)**
Limiting disability (p < 0.001)		
No	1	3620
Yes	4.92 (3.33, 7.29)	152
Scottish Index of Multiple Deprivation 2006 Quintiles (p=0.005)		
0.9449 - 7.7446 - least deprived (p < 0.001)	1	833
7.7472 - 13.5627	1.19 (0.75,1.88)	830
13.5640 - 21.0436	2.06 (1.34,3.17)	751
21.0521 - 33.6982	1.76 (1.13,2.74)	668
33.7252 -89.0941 - most deprived	1.85 (1.20,2.87)	649
Sex (p<0.001)		
Male	1	1,905
Female	0.52 (0.41,0.64)	1,826
Housing tenure (p<0.05)		
Owner occupied	1	2,666
Social rented	1.70 (1.25, 2.32)	785
Private rented	1.31 (0.84, 2.03)	212
Other	1.34 (0.63, 2.83)	68
Annual equivalised household income quintile (p<0.05)		
Bottom Quintile (<£12,217)	1	694
2nd Quintile (>=£12,217 <£19,643)	0.71 (0.52, 0.99)	782
3rd Quintile (>=£19,643 < £29,126)	0.79 (0.51, 1.24)	634
4th Quintile (>=£29,126 < £37,857)	0.63 (0.42, 0.95)	837
Top Quintile (>=£37,857)	0.46 (0.28, 0.74)	580
Missing	0.91 (0.56, 1.48)	204
How mother kept during pregnancy (p<0.01))		
Very well	1	1,949
Fairly well	1.48 (1.13, 1.94)	1,305
Not very well	1.80 (1.25, 2.59)	355
Not at all well	1.86 (1.02, 3.38)	122
Ethnicity of child (p<0.001)		
White	1	3,603
Other ethnic group	2.50 (1.57, 3.98)	128
Family type (p = 0.01)		
Couple family	1	3236
Lone parent	0.70 (0.53, 0.93)	597

Note: Other than the standard independent variables (see appendix), the following variables were also included in the model: how mother kept during pregnancy; whether mother had any illness in pregnancy; whether smoked cigarettes during pregnancy; whether drank alcohol during pregnancy; whether child was born early, late or on time; type of delivery; whether child was single or multiple birth; any time spent in neonatal or special care baby unit; family type (couple or lone parent)

3 CONCLUSION

3.1 It is clear that there are differences between disabled and non-disabled children in their early years, in terms of their characteristics, circumstances and experiences, and those of their families. However, these differences are often small, typically being of the scale of around five to six percentage points.

3.2 Some of the largest differences found were in relation to the socio-economic characteristics of the two groups of children. Children with a disability were significantly more likely than non-disabled children to be in lower income households, live in areas with higher deprivation, and have parents who were not working. It appears that many of the differences observed between disabled and non-disabled children are driven by these key socio-economic distinctions rather than the presence of a disability.

3.3 For example, the higher level of couple separation amongst parents of disabled children reflects a higher prevalence of this amongst families in more disadvantaged circumstances shown in other research[16]. Indeed, the multivariate analysis applied throughout the report confirms this; after controlling for socio-economic differences between disabled and non-disabled children, only one independent association was found between disability and the various outcomes considered. Instead, most of the models showed a significant relationship between the outcome of interest and measures of socio-economic status such as household income, parental employment and housing tenure.

3.4 Only the child's social, emotional and behavioural development – as measured by the total difficulties scale of the SDQ – was independently associated with disability. This is perhaps unsurprising given that the difficult behaviour and emotional problems identified by the SDQ may themselves be considered disabilities using the definition applied in this report - in that they are conditions which may have an adverse effect on the child's day to day life.

3.5 The definition of disability used in the analysis was very broad, encompassing everything from asthma to mental illness. The nature of each individual illness or disability is quite specific and whilst conditions that are similar may similarly affect the children and families involved, it is perhaps unexpected that on considering, in depth, *all* children with *any* sort of disability, we find them to be quite a heterogeneous group. In other words, it is possible that had the analysis compared, for example, children with a more specific physical disability with those who did not, greater – or different - distinctions may have been found. In addition, existence of a physical disability may have been shown to affect certain child and family outcomes independently of socio-economic background.

3.6 One obvious extension to the initial analysis conducted therefore, was to consider a more focussed definition of disability. Unfortunately, the small

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[16] For example, see Chanfreau, J., Barnes, M., Tomaszewski, W., Philo, D., Hall, J. and Tipping, S. (2011) *Growing Up in Scotland: Change in early childhood and the impact of significant events,* Edinburgh: Scottish Government

numbers involved would prevent any such definition from being *too* focussed. However, it was possible to exclude those children with less serious conditions. The GUS data asks parents whose children have a disability whether that disability is in any way limiting to the child's day to day life. This was a simple way of narrowing the group of interest. However, only around 10-20% of those children with a disability at any single sweep (about 2% of all children) are reported as having a limiting illness making this group relatively small for focussed consideration especially combined with the low numbers of families who achieve the outcomes of interest.

3.7 After running the same multivariate models using the revised definition, limiting disability was found to be independently associated with only a small number of outcomes. The association with the child's social, emotional and behavioural development remained and was stronger for children with a limiting disability compared with those whose disability was not necessarily perceived as being limited. Having a limiting disability was also associated with low warmth in the parent-child relationship and with high parenting stress suggesting that having a child with a limiting disability has a clear impact on the parenting role. No further associations were found.

3.8 The lower warmth in the parent-child relationship may be related to certain conditions which make parent-child interactions more challenging. Higher stress amongst parents of children with limiting disabilities is perhaps unsurprising. These parents face the daily challenges faced by all parents of young children along with those additional challenges presented by a child with a limiting condition.

3.9 Otherwise there is little in the data to distinguish the experiences of parents of disabled and non-disabled children. This does not correspond with research elsewhere which reports clear differences between these two groups. We do not suggest that these differences do not exist but rather that they do not occur here because of the definition of disability used, how differences in experiences were measured and the size of the sample.

3.10 Further alternative, and more precise, definitions of disability are possible using GUS data though some further scoping work would be necessary to consider what other definitions may be possible and useful. It may be reasonable, for example, to draw on additional variables to further define disability. For example, cut-off scores on the SDQ or on the cognitive assessments could be used to identify children with difficulties associated with their social, emotional and behavioural development or cognitive development which may be considered disabilities but are not otherwise reported by parents.

3.11 Not all relationships were tested using multivariate analysis and it is possible that further models may show disability to be independently associated with some of the untested outcomes. However, having already undertaken a large number of multivariate models, by extending the multivariate analysis it is likely, simply by chance, that disability will emerge as statistically significant in at least one model. Therefore, it would be necessary to have a reasonable explanation of why we may expect disability to be associated with the additional outcomes to justify compiling and running these additional multivariate models.

3.12 There are other ways in which disabled children could be further differentiated. GUS is a longitudinal study, following a single group of children over time. However, the analysis undertaken for this report is wholly cross-sectional. That is, it considers each time point individually. It does not, therefore, allow for children who were reported as having a disability at several time points – for example, over several years. Whilst the definition of disability used here requires that the child has had, or is likely to have, the condition 'over a period of time', that period will not always extend to one year. Those children who have a 'persistent' disability are likely to have different experiences (and potentially different characteristics and outcomes) to those whose disability is brief and certainly to those without any disability. It is possible to use GUS data to identify children who were reported as having a disability at multiple ages, either in succession (e.g. at 10 months, age two and age three), or intermittently (e.g. at ages two, four and six). Once defined, these children could be compared with the remainder on the various indicators considered within this report – or a more focussed selection of those indicators.

3.13 In addition, this longitudinal approach could be used to consider whether 'age of onset' of disability affects children's experiences. For example, are children who develop a disability in the earliest period of life (from birth to age three, for example) distinct in characteristics and outcomes from those who develop a disability later (between ages three and five)? Analysis to explore this would consider outcome data at a fixed, later, time point – at age five or six – and make comparisons on those outcomes between children in the two onset groups.

3.14 However disability is further defined, the key factor determining the feasibility of further analysis is the size of the resultant sub-group. With too precise a definition, the disabled sub-group will be too small for separate consideration. With too broad a definition, it appears that disability will not show any relationship with children's experiences and outcomes.

3.15 In addition, the experiences enquired about in the Growing Up in Scotland study are many and varied - designed to capture broad variations in a general population. A survey more focussed on identifying variation between the parents of disabled and non-disabled children would perhaps use questions designed to explore in a more focussed fashion, known differences between these two groups.

APPENDIX

Multivariate analysis – logistic regression

Many of the factors we are interested in are related to each other as well as being related to the outcome variables of interest. For example, disabled children are more likely to live in lower income households, in areas of high deprivation and have parents who are not working. Simple analysis may identify a relationship between disability and parent-child activities, for example. However, this relationship may be occurring because of the underlying association between disability and household income. Thus, it is actually the lower average income level of families with disabled children which is associated with a lower likelihood of frequent parent-child activities rather than the fact that the child is disabled.

To take these possible confounds into account, in relation to parent-child activities and a range of other experiences and outcomes, multivariate regression analysis was used. This analysis allows the examination of the relationships between an outcome variable and multiple explanatory variables whilst controlling for the inter-relationships between each of the explanatory variables. This means it is possible to identify an independent relationship between any single explanatory variable and the outcome variable; to show, for example, that there is a relationship between disability and parent-child activities that does not simply occur because both income and disability are related.

The logistic regression analysis used employed a stepwise approach. Stepwise regression assesses each variable for significance, entering the most significant variable first and adjusting significance based on variables already entered into the equation, so that the final equation contains only those variables that remain significant when other variables are entered into the model.

All models contained the following independent variables:
- Child’s sex
- Mother’s age at child’s birth
- Household Equivalised income (quintiles)
- Mother’s employment status
- Mother’s ethnicity
- Housing tenure
- Area deprivation (quintiles of Scottish Index of Multiple Deprivation)

Other independent variables were selected for inclusion depending on the outcome variable of interest. Details of all variables entered in each model are provided alongside the results in the body of the report. As far as possible, all independent variables were selected from the sweep corresponding with the outcome variable, i.e. if the outcome was developmental milestones at age 2, the independent variables were taken from the age 2 survey.

Interpreting regression results

Regression results are given in odds ratios together with the probability that the association is statistically significant. The predictor variable was significantly associated with the outcome variable if p<0.05. The models determined the odds of being in the particular category of the outcome variable (e.g. in the lowest band for mother-child activities) for each category of the independent variable (e.g. household income quintile). Odds are expressed relative to a reference category, which has a given value of 1. Odds ratios greater than 1 indicate higher odds, and odds ratios less than 1 indicate lower odds.

To understand an odds ratio we first need to describe the meaning of odds. The definition of odds is similar but significantly different to that of probability. This is best explained in the form of an example. If 200 mothers out of a population of 1000 breastfed, the probability (p) of breastfeeding is 200/1000, thus p=0.2. The probability of not breastfeeding is therefore 1-p = 0.8. The odds of breastfeeding are calculated as the quotient of these two mutually exclusive events. So, the odds in favour of breastfeeding to not breastfeeding is therefore 0.2/0.8=0.25. Suppose that 150 out of 300 degree-educated mothers breastfeed compared to 50 out of 150 who have no qualifications. The odds of a degree-educated mother breastfeeding are 0.5/0.5=1.0. The odds of mother with no qualifications breastfeeding is 0.3333/0.6666=0.5. The odds ratio of breastfeeding is the ratio of these odds, 1.0/0.5=2.0. Thus the odds of breastfeeding are twice as high among degree-educated mothers (compared to mothers who have no qualifications – the ‘reference category’).

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