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Disability among young children

Prevalence, heterogeneity and socio-economic disadvantage

Sam Parsons and Lucinda Platt

CLS Working Paper 2013/11

November 2013



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First published in 2013 by the
Centre for Longitudinal Studies
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20 Bedford Way
London WC1H 0AL
www.cls.ioe.ac.uk

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ISBN 978-1-906929-71-8

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Abstract

This paper highlights the socio-economic disadvantage experienced by disabled young children in England. Establishing cause or effect is always complex, but by using multiple measures from a longitudinal birth cohort study, we are able to shed new light on the lives of disabled children. We use the Millennium Cohort Study (MCS) to first enhance understanding of what constitutes disability, showing the prevalence of disability among children using three different definitions: developmental delay (DD), long-standing limiting health conditions or illnesses (LSLI) and special education needs (SEN). We found surprisingly little overlap between these three measures of disability. This highlights the heterogeneity among disabled children and the implications of using different forms of grouping or classifications to mark boundaries between disabled and non-disabled. More disabled children, however defined, were born into socio-economically disadvantaged circumstances that continued through their early years. Looking longitudinally, by age seven the disparities between disabled and non-disabled children had widened. The large sample size available also allowed us to highlight differences in the experience of socio-economic disadvantage among children identified with different special education needs. We found that socio-economic disadvantage was strongly associated with certain SEN conditions, such as behaviour, learning or speech and language difficulties, but was not associated with dyslexia.

Introduction

There is a growing evidence base that shows childhood disability to be firmly associated with disadvantaged family circumstances, such as family poverty and lone parenthood (Prime Minister's Strategy Unit 2005; Hills et al. 2010). Exploratory examination of MCS data by Hansen and Jones (2010) also indicated that children identified with Special Educational Needs (SEN) at age seven were more likely to experience socio-economic disadvantage and Neale (2010) found that longstanding conditions and general health are both more common among children living in families with parents with lower qualifications and in poor families. However, our understanding of the relationships between children's socio-economic context and their disability and how these relationships emerge or develop remains limited. It has been suggested that the presence of a disabled child leads to greater family stress and marital breakdown, as well as increasing the risks of family worklessness through caring responsibilities. However, as Clarke and McKay (2008) demonstrate, there is inconclusive evidence on whether disadvantaged circumstances faced by disabled children change or intensify as they grow older, and therefore the relevance of support at 'critical' ages. There is also little research that shows how the experience of socio-economic disadvantage differs for children identified with different disabilities.

The fastest increase in disability since 1975 has been among children under 16 (Prime Minister's Strategy Unit 2005), with an estimated 770,000 disabled children in 2002. Rates of childhood disability in the UK vary somewhat according to the source, the definition and the ages of the children considered. The most common definition of disability is based on the Disability Discrimination Act (DDA) and subsequently (from October 2010) the Equality Act (EA), which focuses on physical or mental impairments that have a substantial and long-term adverse effect on a person's ability to carry out normal day-to-day activities.

The very definition of disability is, however, a contested area. Many surveys have employed questions that align with the EA definition, as well as questions about impairments (i.e. medical or functional) and activities and participation (Porter, et al., 2008; Read, 2007). Other studies adopt definitions based on the classifications of SEN used in schools. Yet these questions are not necessarily consistent across studies. This has resulted in different studies using different definitions to estimate prevalence.

The Life Opportunities Survey identified nine per cent of children aged 11 to 15 in Great Britain as disabled (Office for Disability Issues 2011); while a study using slightly older data (from 2004/05) that included a wider developmental range of children but employed a different definition of disability indicated that about 7 per cent of children from birth to 18 years in the UK are disabled (Blackburn, Spencer, & Read, 2010). School-aged children are defined as having SEN if they have a significantly greater difficulty in learning than the majority of children of their age, which calls for additional or different educational provision to be made for them. Around 17 per cent of school-age children have SEN, with around 3 per cent having sufficiently acute needs that they have a statement (DfE 2011b). This, however, varies with age, with younger children being less likely to have identified SEN. In the age 7 survey of the Millennium Cohort Study (MCS) 9 per cent of children had SEN and around 3 per cent had statements (Hansen and Jones 2010). Nineteen per cent were reported to be suffering from a long-term health condition (Neale 2010).

Porter et al (2008) have estimated that approximately three-quarters of 'disabled' children are also identified as SEN, but there is limited information on how different definitions of disability do or do not map on to one another. What we do know is that childhood disability affects a sizeable proportion of children and that disabled children are a heterogeneous group who experience a wide range of conditions at varying levels of severity. There are thus challenges in categorising children according to disability for analytic purposes.

Some existing research suggests that whether and how children's needs are identified and, in turn, met is influenced by a number of factors, including their family socio-economic circumstances (for further details see Dockrell et al, 2002). However, little of this research is based on UK or large-scale data sources. The exception is Sacker et al (2001) who used the 1958 and 1970 birth cohort data. Looking at children identified by their teacher with educational needs, they show that although children with fathers in manual occupations were more likely to be in receipt of special help at school, once their education attainment and psycho-social adjustment has been taken into account, the social class gradient was reversed: children with fathers in professional occupations were now more likely than average to be in receipt of special help in school.

There is also a popularly held view that children with a Statement of Needs are relatively less disadvantaged than children identified with SEN. That it is the 'pushy' middle-class parents who can play the system better to get the additional support that their child needs. This is backed up by research carried out with 100 parents of children with SEN (Audit Commission, 2002) which suggests that parents with the knowledge, resources and confidence to challenge staff in schools and LEAs are more likely to get their child's needs assessed and to secure a more generous package of provision. However, this needs to be more rigorously examined.

Aims

In this paper, we aim to enhance understanding of the relationship between socio-economic position and childhood disability. In particular we exploit the longitudinal nature of the multi-purpose Millennium Cohort Study to show how these experiences persist or develop over time by utilising different measures of childhood disability collected at different times alongside indicators of socio-economic disadvantage collected at each sweep of the study. This enables us to go some way to disentangling a core question of whether disadvantage associated with families with disabled children increases over time – and is thus, in part, potentially a consequence of family disability. It also enables us to discuss whether those children who become defined as disabled have experienced more persistent disadvantage, implicating the experience of such disadvantage in the child's own difficulties. We are able to examine whether and how this varies according to the measure of disability used. Specifically, we highlight:

- the prevalence of child disability using different definitions and measures, and what the overlap is between them
- the association between child disability and socio-economic disadvantage, and whether this strengthens over time
- how the socio-economic profiles of children differ by individual special education needs.

Methods and data

There is a lack of specialised studies that focus both on childhood and on disability. The exception is The Life Opportunities Survey which focuses on children aged 11 to 15. Here we use the multi-purpose longitudinal *Millennium Cohort Study* (MCS), which is an on-going survey of c19,000 babies born between September 2000 and January 2002 into families living in the UK (Hansen, 2010). Data collections took place at ages 9 months and 3, 5, 7 and most recently 11 years. In this research we use data from the first four waves of data collection, from age 9 months in 2001/2 to age 7 in 2007/8. The latest wave of data will be available for researchers by early 2014. Data have been collected from parents, children, teachers and health visitors, comprising personal interviews and self-completion questionnaires. The data include information on socio-demographic family characteristics, children's cognitive, social, emotional and behavioural development, gender roles, health and well-being. There are a range of measures of disability, including developmental delay (at 9 months), long term health conditions and whether they limit daily activity, subjective health status, and the experience of specific health problems and special education needs.

Defining disability

In this research disability was captured in three ways. These were:

- mild or more severe developmental delay [DD] at 9 months of age (parent reported)
- a long-standing limiting illness [LSLI] at 3, 5 or 7 years (parent reported)

- identification of Special Educational Needs¹ and/or a Statement of Needs [SEN] at age 7 (parent or teacher reported).

By using these three measures we have a unique advantage of using a prospective measure [DD], a longitudinal measure [LSLI] that enables us to be equivalent with the Disability Discrimination Act (DDA) definition, and a measure based on evaluation at the latest time point [SEN].

Developmental Delay [DD]

Eight questions from the Denver Developmental Screening Test were used to assess fine and gross motor coordination typical for a 9 months old child, and five items from a UK adaptation of the MacArthur Communicative Development Inventories were used to identify early communicative gestures. The questions are outlined in figure 1. From the overall score across the 13 variables, a child was identified with mild 'developmental delay' [MDD] if their total score was either one standard deviation below the average [mean] score or with more severe 'developmental delay' [SDD] if their score was two standard deviations below the average score. We did not take age of child into account when identifying developmental delay, as adopted by Sacker et al (2006)², however, when relating measures of disability to later educational outcomes, age will be controlled for in the models.

Figure 1: Developmental Delay

All children develop at their own pace so I would like to ask whether [name of child] does certain things yet. Please say whether s/he does each thing **often**, has only done it **once or twice**, or whether s/he has **not started to do this yet**:

- S/he smiles when you smile at her/him
- S/he can sit up without being supported
- S/he can stand up while holding onto something such as furniture
- S/he puts her/his hands together
- S/he grabs objects using the whole hand
- S/he can pick up a small object using forefinger and thumb only
- S/he passes a toy back and forth from one hand to another
- S/he can walk a few steps on her/his own
- S/he reaches out and gives you a toy or some other object that s/he is holding
- S/he waves bye-bye on her/his own when someone leaves
- S/he extends her/his arms to show s/he wants to be picked up
- S/he nods her/his head for 'yes'

For the final question the answer options were **yes** or **no**.

- If you put child down on the floor, can s/he move about from one place to another?

¹ Excludes Gifted and Talented

² In Sacker et al (2006), delay in the developmental milestones was determined when an infant has not reached a milestone that 90% of singleton MCS infants in that age group have reached. For example, only 88% can move around the floor at 8 months, but 92% can do this by 9 months, so an 8-month-old infant does not have a delay if he or she cannot move around, but an infant who is 9 months or older and cannot move around the floor is identified as having a delay on this milestone.

Longstanding Limiting Illness [LSLI]

Parents were asked if their child had a long-standing illness [LSI] and if so, whether this illness limited the activities they could do [LSLI]. This was asked at age 3, 5 and 7 and is detailed in Figure 2. The question has also been asked at age 11. A child was identified as having a LSLI if they have been identified with a LSLI at any age. Changes in whether a child was reported to have a LSLI over time and the number of times in total a child was reported with a LSLI has also been captured by the longitudinal data.

Figure 2: Longstanding illness questions

CLSI

I'd now like to ask about any longstanding health conditions that [name of child] may have. Does [name of child] have any longstanding illness, disability or infirmity? By longstanding I mean anything that has troubled [name of child] for a period of time or is likely to affect [name of child] over a period of time.

1 Yes

2 No

IF has longstanding health condition [CLSI = 1]

CLSL

Does this illness or disability limit [name of child]'s activity in any way?

1 Yes

2 No

SEN and Statements

We identified children with a SEN from both parent (figure 3a) and teacher (figure 3b) reports at sweep 4 (age 7). Parents were asked to report on any special education needs they had been told their child had by the school, not that they thought their child had a special education need. The reporting of a SEN was higher among teachers than parents. There was also quite a lot of disparity in the children that were identified with a specific SEN when parent and teacher reporting were compared³. Children only identified as being gifted and talented by a parent or teacher were not identified as having a SEN in this analysis.

³Additional funding has been sought to look into this potentially very interesting aspect of the data.

Figure 3a: parent reported SEN questions

CSEN

Has [name of child]'s school or the [local education authority/ education board] ever told you [s/he] has special educational needs/additional support needs?

1 Yes 2 No

IF child has special needs [CSEN = 1]

SENS

Does [name of child] have a statement of special educational needs/coordinated support plan?

1 Yes

2 No

97 SPONTANEOUS: Child is currently being assessed to see if they need a statement/coordinated support plan.

RSEN

What are the reasons for [name of child]'s special educational needs?

CODE ALL THAT APPLY

1 Dyslexia

2 Learning difficulties (including dyspraxia and dyscalculia)

3 Attention Deficit and Hyperactivity Disorder (ADHD)

4 Autism, Asperger's syndrome or autistic spectrum disorder

5 Behavioural problems/hyperactivity

6 Problem with speech or language

7 Problem with sight

8 Problem with hearing

9 Other physical disability

10 Medical or health problem

11 Mental illness/depression

12 Gifted/High IQ/More able and talented/Highly Able

95 Other reason (PLEASE SPECIFY)

Figure 3b: teacher reported SEN questions

41 Has this child ever been recognised as having Special Educational Needs (SEN)?

Yes → Go to Q42

No → Go to Q44

42 Does this child have a full statement of SEN?

Yes

No

43 Do these specific problem(s) apply to this child?

Tick one box in each row

	Yes	No
Dyslexia	<input type="checkbox"/>	<input type="checkbox"/>
Learning difficulties (including dyspraxia / dyscalculia)	<input type="checkbox"/>	<input type="checkbox"/>
Attention Deficit and Hyperactivity Disorder (ADHD)	<input type="checkbox"/>	<input type="checkbox"/>
Autism, Asperger's syndrome or autistic spectrum disorder	<input type="checkbox"/>	<input type="checkbox"/>
Behavioural problems / hyperactivity	<input type="checkbox"/>	<input type="checkbox"/>
Other difficulties with reading, writing, spelling or maths	<input type="checkbox"/>	<input type="checkbox"/>
Problem with speech or language	<input type="checkbox"/>	<input type="checkbox"/>
Problem with sight	<input type="checkbox"/>	<input type="checkbox"/>
Problem with hearing	<input type="checkbox"/>	<input type="checkbox"/>
Other physical disability	<input type="checkbox"/>	<input type="checkbox"/>
Mental illness / depression	<input type="checkbox"/>	<input type="checkbox"/>
More able / highly able / talented / gifted / high IQ	<input type="checkbox"/>	<input type="checkbox"/>
Others (please describe)	<input type="checkbox"/>	<input type="checkbox"/>

Analytic sample

This research is part of a wider study focusing on disabled children and young people in England, thus is restricted to families living in England. At wave 1 of the MCS, 11,533 families lived in England. Of these families, 7,387 (63%) have taken part in the first four waves of data collection and form the basis of the analytic sample. In terms of inclusion, we found that families with children with developmental delay at 9 months (sweep 1) or a longstanding limiting illness at age 3 (sweep 2) were as likely to have been continuously involved in MCS as families with children with no disability. ‘Drop-out’ of the study is associated with measures of family socio-economic disadvantage but not childhood disability. Clearly we cannot identify if those subsequently identified with SEN were more likely to be associated with attrition, but the evidence from the DD and LSLI measures provide reassurance that they haven’t. The MCS therefore provides a balanced resource for studying the opportunities and challenges met by disabled children as they develop over time⁴.

⁴ A separate paper will focus specifically on the inclusion and attrition associated with disability and participation in MCS.

Results

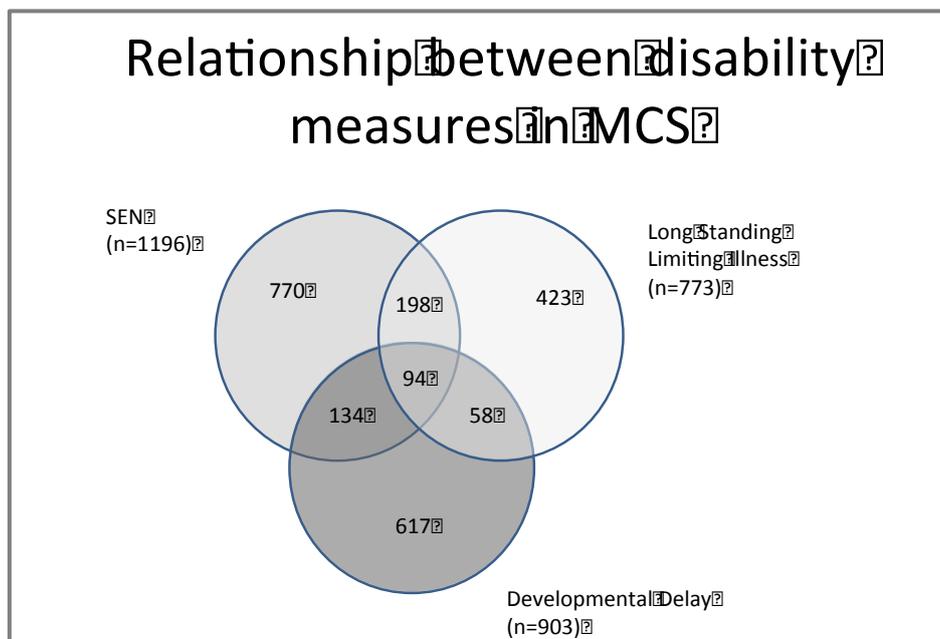
Prevalence of disability

Looking at the measures separately, we identified:

- 10% of children with mild developmental delay (MDD) and 2% with more severe developmental delay (SDD) at 9 months
- 11% of children with a longstanding limiting illness (LSLI) at age 3, 5 or 7 years; 3% with a LSLI at more than one age, and
- 13% of children were reported by either their parent or teacher to have a special educational need (SEN) and a further 4% of children had a Statement of Needs.

What was surprising when looking at how these measures related to each other, was how little overlap there was between them. Within the longitudinal sample of families in England, 1 in 3 children (31%) were identified as disabled by one of the three measures reported on here. Of the 31% (n=2,294)⁵ children with a disability, just 4% (n=94) were identified as such by all three measures, 17% (n=390) by two of the three measures and a huge 79% by one of the three measures. As such, although the correlation coefficients between the three measures were each significant at the p<.01 level, they were quite small in size. The strongest correlation was between longstanding limiting illness and SEN (.25) and the weakest was between developmental delay and longstanding limiting illness (.09). SEN and developmental delay had a similarly weak correlation coefficient (.12). Figure 4 highlights how the three measures overlap in more detail.

Figure 4: relationship between disability measures in MCS



⁵ Within the longitudinal sample of families living in England, the three disability measures identified n=2,314 individual children with a disability. Of these complete data across the three measures were available for n=2,294.

Socio-economic disadvantage

We now turn to the relationship between childhood disability and socio-economic disadvantage. We first take a snapshot of the family circumstances across a range of measures that a wide body of research evidence has associated with disadvantage. This snapshot is taken when the child was 9 months old and then we used the data longitudinally to see if any differences between disabled and non-disabled groups increase over time. We therefore are able to address the question of whether children who are disabled start life in more disadvantaged circumstances and whether childhood disability is associated with disadvantage that has developed over their lifetime.

The socio-economic profile at 9 months shows that children with a disability, however and whenever defined, are more likely to be born into disadvantage. This provides further support to the growing body of evidence that shows childhood disability to be firmly associated with disadvantaged family circumstances (e.g. Prime Minister's Strategy Unit 2005; Hills et al. 2010). Although differences were apparent between non-disabled and disabled children, whether defined by developmental delay, longstanding limiting illness or special education needs, socio-economic disadvantage appeared more entrenched for children subsequently identified with SEN. In tables 1 to 3, statistically significant differences between non-disabled and disabled groups of children and between the two disabled groups of children are indicated, e.g. mild and more severe developmental delay, SEN and a statement of need. We see that no differences were significant by developmental delay, whether mild [MDD] or more severe [SDD], but that many differences were significant for children with a longstanding limiting illness [LSLI], special education needs or a statement of need. In summary, children with a LSLI, SEN or a statement of needs were significantly more likely to have less qualified parents, to live in a single parent or non-working households, to live in rented social housing and to experience income poverty. Children with a statement of need were also significantly less likely to live in owner occupied accommodation and more likely to live in poverty compared with children with SEN.

Table 1: Socioeconomic characteristics by DD

	No DD	MDD (1sd)	SDD (2+sd)
% white	84.1	87.4	86.1
% parent with a degree+ [NVQ4+]	42.8	45.3	40.2
% no quals or overseas quals only	10.2	9.6	13.8
% speak English only	88.5	89.9	88.9
% own home	62.3	63.3	63.1
% rent LA/HA	21.7	23.9	27.8
% overcrowded [1+ per room]	25.1	23.4	29.6
% <60% income poverty	28.9	30.4	32.3
% living with both natural parents	86.5	85.5	89.0
% living with 2 parent/guardian	86.8	86.0	89.0
% living with lone parent/guardian	13.2	14.0	11.0
% 2-parents in work	45.4	41.0	36.9
% 2-parents out of work	6.1	7.0	7.9
% 1-parent family out of work	9.9	11.2	10.1
	<i>6434</i>	<i>727</i>	<i>181</i>

* indicates statistically significant differences between non-disabled and disabled groups of children at the p<.05 level; ^ indicates statistically significant differences between the two disabled groups of children at the p<.05 level

Table 2: Socioeconomic characteristics by LSLI

	No LSLI	LSLI 1+ sweeps
% white	84.6	83.4
% with a degree + [NVQ4+]	43.7	37.1
% no quals or overseas quals only	9.7	14.6*
% speak English only	88.6	89.0
% own home	63.9	51.3*
% rent LA/HA	22.4	32.1*
% overcrowded [1+ per room]	24.7	26.9
% <60% income poverty	28.0	38.4*
% living with 2 parent/guardian	87.6	80.7*
% living with lone parent/guardian	12.4	19.3*
% 2-parents in work	45.8	37.2*
% 2-parents out of work	5.9	9.7*
% 1-parent family out of work	9.4	15.8*
	<i>6605</i>	<i>782</i>

* indicates statistically significant differences between non-disabled and disabled groups of children at the p<.05 level; ^ indicates statistically significant differences between the two disabled groups of children at the p<.05 level

Table 3: Socioeconomic characteristics by SEN

	No SEN	SEN	STATEMENT
% white	84.6	88.4	82.9
% parent with a degree+ [NVQ4+]	45.5	33.5*	26.4*
% no quals or overseas quals only	9.2	12.7	19.5*
% speak English only	88.1	91.8	89.4
% own home	65.5	51.4*	40.1*^
% rent LA/HA	21.1	31.9*	40.9*
% overcrowded [1+ per room]	23.2	33.3*	30.7
% <60% income poverty	26.4	38.2*	50.4*^
% living with 2 parent/guardian	87.8	83.2*	81.3*
% living with lone parent/guardian	12.2	16.8*	18.7*
% 2-parents in work	46.8	37.7*	33.3*
% 2-parents out of work	5.4	9.4*	12.2*
% 1-parent family out of work	8.9	14.3*	17.6*
	6140	917	285

* indicates statistically significant differences between non-disabled and disabled groups of children at the p<.05 level; ^ indicates statistically significant differences between the two disabled groups of children at the p<.05 level

Given many of these socio-economic characteristics are clearly implicated in or associated with each other we estimated multivariate logistic regression models predicting identification of SEN (including statements) or LSLI from the family socio-economic characteristics that were significantly associated with childhood disability at the bivariate level. The following measures were included concurrently in the model:

- Highest parental qualification (reference category: NVQ4 or higher)
- Housing tenure (reference category: home owner)
- Income poverty (reference category: not in poverty)
- Family type (reference category: two-parent family)
- Non-working household (reference category: working household)

For SEN, low-level parental qualifications, rented housing, income poverty and being part of a non-working household all increased the 'odds' of a child being identified with SEN. Once other aspects of socio-economic disadvantage had been controlled, lone-parenthood decreased the odds, highlighting the strong association between the measures of disadvantage included in the models. For LSLI, rented housing and a non-working household increased the 'odds' of identification. The full set of results is included in the appendix.

We now look at the accumulating experience of disadvantage. Figures 5 to 7 show the percentage of children who have ever experienced lone-parenthood, income poverty and living in a workless household between 9 months and 7 years. (Please note the different scales used on the vertical axis for presentation reasons.) Although an increasing number of families experienced all three disadvantages over time, increases in lone parenthood was most associated with SEN, more severe DD and LSLI, increases in parental worklessness

with Statements and more severe DD. Income poverty increased across all groups. For example, 20% more children with SEN (17%-37%) or more severe DD (11%-31%) experienced lone parenthood between 9 months and 7 years compared with 15% of children with no disability. Importantly, although more disabled children experienced socio-economic disadvantage at 9 months, such increases over time for children with more severe DD clearly highlight the additional stress factor childhood disability holds for families. Since these children's families appeared most similar to non-disabled in their circumstances at nine months, when the disability was assessed, we can rule out reverse causality. That is, there is little evidence on this measure that disabled children are born into more disadvantaged families; and rather that the childhood disability is linked to increasing family disadvantage. This is not necessarily the case for the other measures.

Figure 5: % ever experiencing lone parenthood between 9 months and 7 years

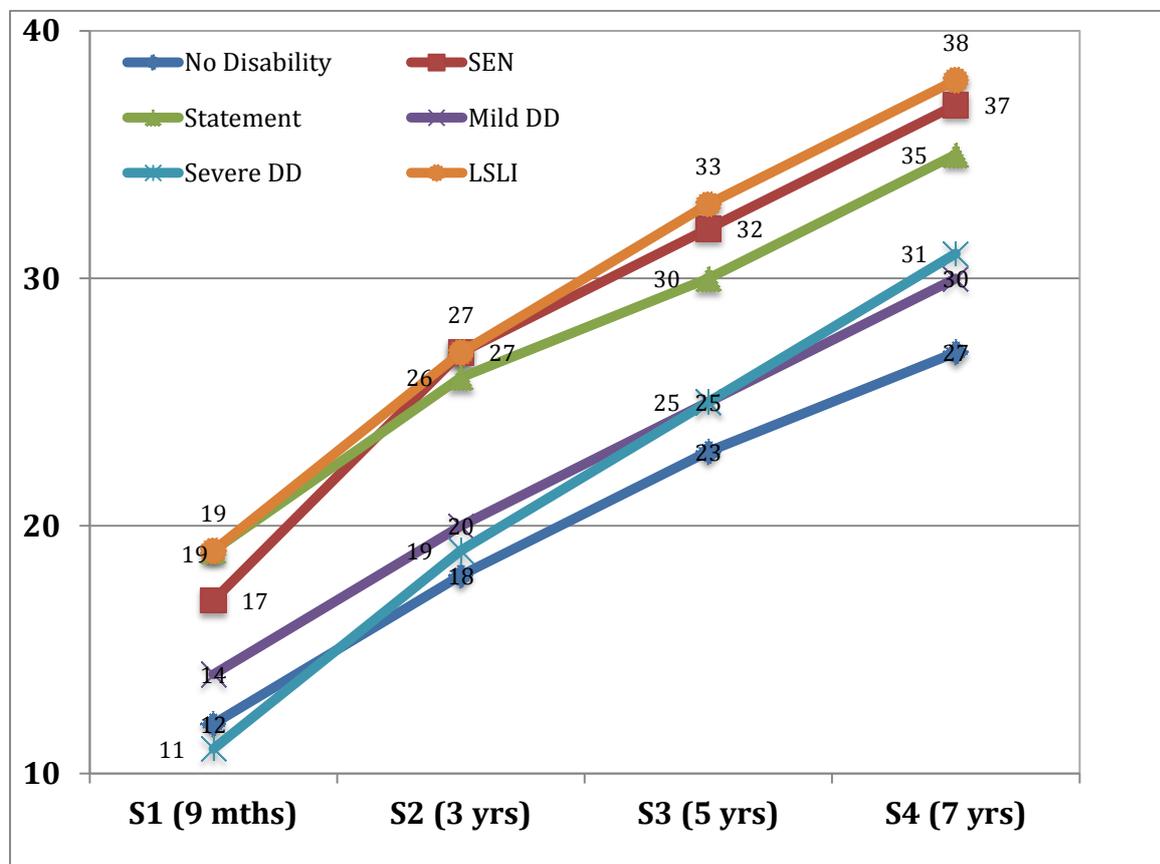


Figure 6: % ever experienced income poverty between 9 months and 7 years

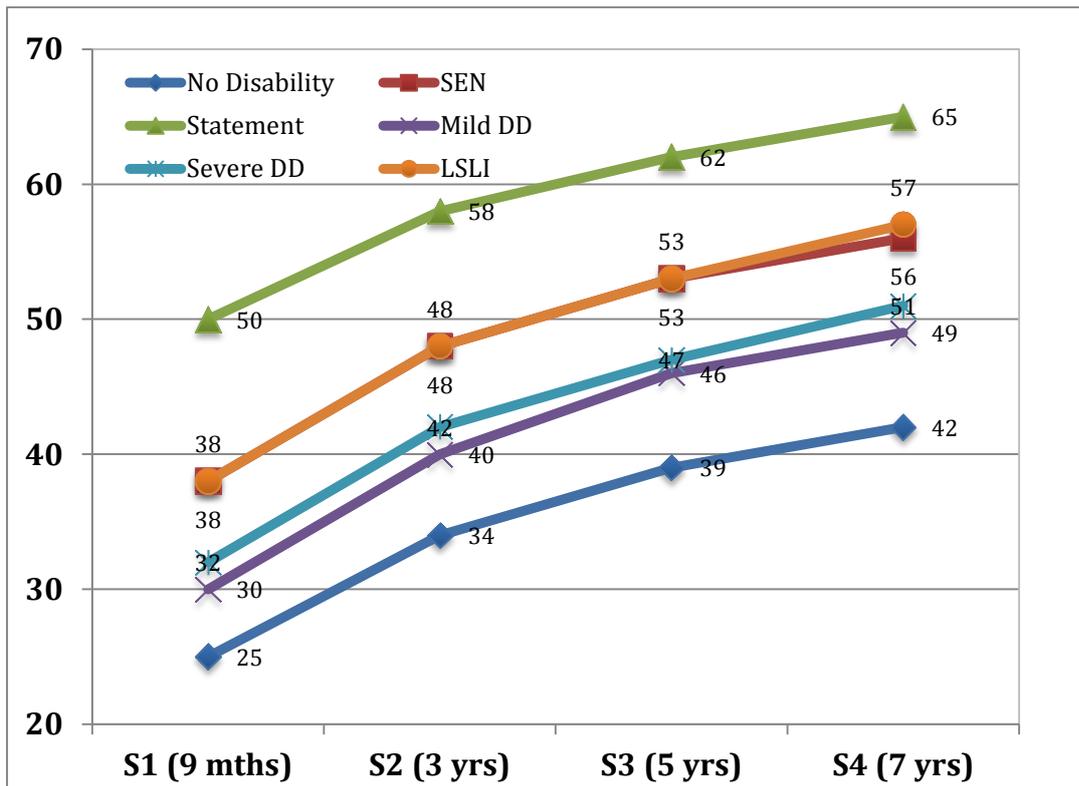
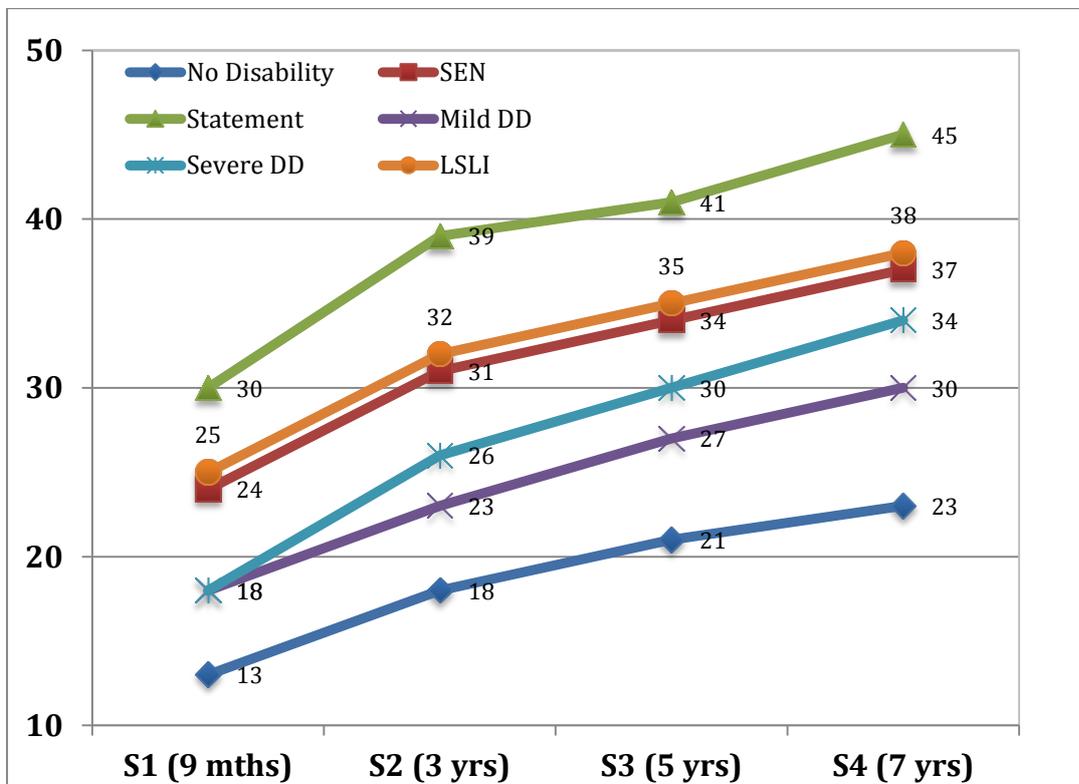
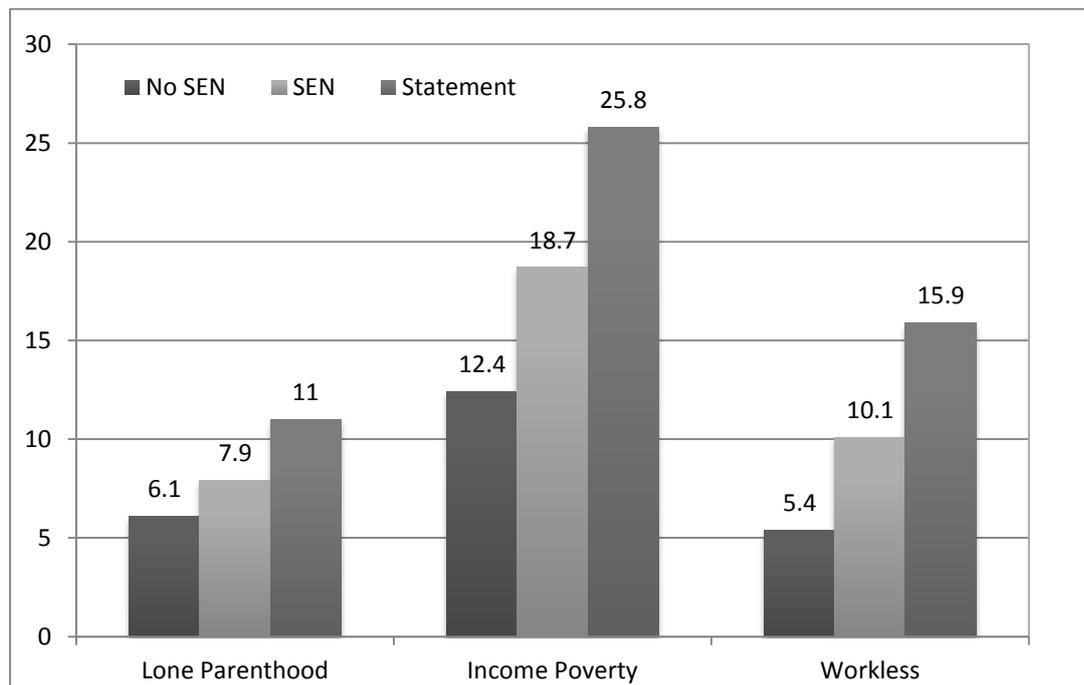


Figure 7: % ever lived in a workless household between 9 months and 7 years



The graphs show some evidence of disadvantage being experienced by more families with children with disabilities over time, but more disabled children also experienced long-term repeated disadvantage. We concentrate here on children with SEN. Figure 8 shows the percentage of children who experienced the three measures of socio-economic disadvantage at each of the four sweeps of data collection between 9 months and 7 years. In comparison to children who did not have SEN, more children with SEN experienced lone parenthood, income poverty and being part of a workless household at every sweep. Entrenched disadvantage was, however, most apparent for children with a Statement of Need who were around twice as likely as non-disabled children to experience long-term lone parenthood and three times as likely to be living in a long-term workless household.

Figure 8: % of children experiencing long-term disadvantage by SEN



Socio-economic disadvantage by individual special education needs

In the previous section, we have shown that the suggestion that children with a Statement Of Needs are relatively less disadvantaged than children identified with SEN is not supported from analysis of the MCS data. The snapshot of family socio-economic circumstances when the cohort child was 9 months of age clearly shows that families with a child who receives a Statement Of Needs are relatively disadvantaged and importantly that this increased disadvantage continues through the child's early years. It could still be that, relative to their needs, more advantaged children are more likely to gain a Statement, but the picture unequivocally demonstrates that in absolute terms it is those children with the greatest increase in disadvantage who are most likely to be accorded the additional support associated with a Statement. There is also little research that shows how the experience of socio-economic disadvantage differs for children identified with different disabilities. What we are able to do here is look at how the socio-economic circumstances differ for children identified with different SENs.

It is important to point out that the categories of need are not necessarily mutually exclusive. Among the 1,202 children identified with a SEN (excluding gifted and talented) by their parent or teacher, 55.7% had been identified with one SEN⁶, 23.5% with two, 12.1% with three and 8.7% with four or more SENs.

Table 4 details socio-economic characteristics of families at Sweep 1 by the individual SEN conditions and suggests that the profile of families differs quite considerably by the particular SEN a child has. Children identified with learning, behaviour or speech difficulties experience the most socio-economic disadvantage, in terms of parental education, housing conditions, being part of a non-working household and income poverty. Children with behaviour difficulties are also more likely to be in a lone-parent household. More children with sight problems or ADHD are also disadvantaged in terms of parental education, housing conditions and income poverty. Conversely, children identified with dyslexia have a similar socio-economic profile to the majority of children with no SEN, but are more likely to be white and to only speak English at home. This is also true for children identified with ADHD.

Figures 9 to 11 then detail longitudinal disadvantage, or specifically, the proportion of families experiencing lone parenthood, income poverty and household worklessness at some point between 9 months (sweep 1) and 7 years (sweep 4) by SEN status. We see that the experience of families with children with dyslexia remains very similar to families with children with no SEN over time. The disadvantage is heightened amongst all families with children identified with a SEN, but this is most apparent among families with a child with behaviour difficulties who continue to experience the most lone parenthood, income poverty and worklessness over time. ADHD is also associated with greater experience of worklessness and lone parenthood, and speech and language problems with income poverty. Alongside the earlier suggestive evidence that child disability (measured by DD) leads to an increase in family disadvantage, these findings are suggestive of the direction also working the other way: persistent challenging family circumstances are plausibly associated with an increase in behavioural difficulties in particular, and the evidence supports this interpretation.

⁶ N=68 children were identified with SEN by their teacher but they did not know which particular SEN. These children are included with children who had one identified SEN.

Table 4: Profile of SES characteristics at Sweep 1 by type of SEN (not exclusive categories)

	No SEN	Dyslexia	ADHD	Learning diffs	Autism	Behaviour / hyper	Sight	Hearing	Speech / lang	Physical diffs
% White	84.6	96.4*	94.6*	89.0	88.1	86.5	90.9	85.6	83.8	82.8
% only speak English at home	88.1	97.3*	97.8*	92.0	92.0	91.8	93.0	94.2	91.0	87.8
% with a degree or higher [NVQ4+]	45.5	38.0	31.0*	28.5*	42.4	29.4*	28.7*	32.0*	33.2*	40.7
% no quals or overseas quals only	9.2	5.2	12.0	16.1*	9.3	16.6	17.5*	9.4	15.3*	18.3
% own home	65.5	65.6	46.7*	45.6*	53.4	37.9*	47.8*	43.5*	43.3*	44.7*
% rent LA/HA	21.1	21.4	41.4*	42.2*	33.6	44.7*	37.2*	35.2	38.9*	36.1
% overcrowded [1+ room]	23.2	29.4	32.0	36.5*	25.3	38.5*	36.4*	29.4	35.0*	24.4
% income poverty [<60% mean]	26.4	29.8	41.7*	42.2*	40.4*	51.1*	42.4*	40.0	45.3*	54.0*
% living with 2 parents	87.8	90.2	75.6	82.6	83.9	73.2*	82.5	91.4	86.8	74.6
% lone parent household	12.2	9.8	22.5	17.4	16.1	26.8*	17.5	8.7	14.7	25.4
% 2 parents in work	46.8	54.0	35.7	36.1*	38.5	28.7*	31.7*	38.0	30.6*	25.4*
% 2 parents out of work	5.4	4.3	14.7	12.6*	10.4	10.1	11.9	9.4	12.1*	9.2
% lone parent out of work	8.9	9.3	15.2	15.0*	15.1	24.3*	15.2	8.7	12.8	25.4*
N(100%)	6140	128	61	308	92	197	98	67	329	45

Figure 9: % in lone parent household between 9 mths and 7 years by type SEN

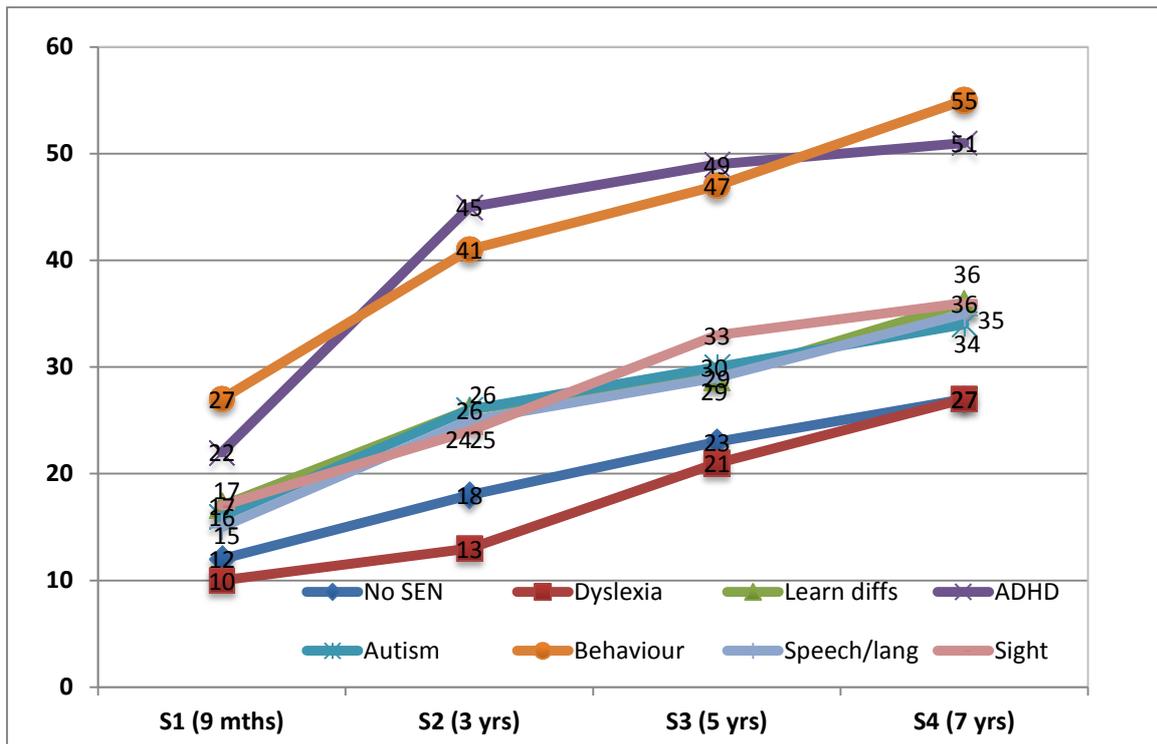


Figure 10: % in income poverty between 9 mths and 7 years by type SEN

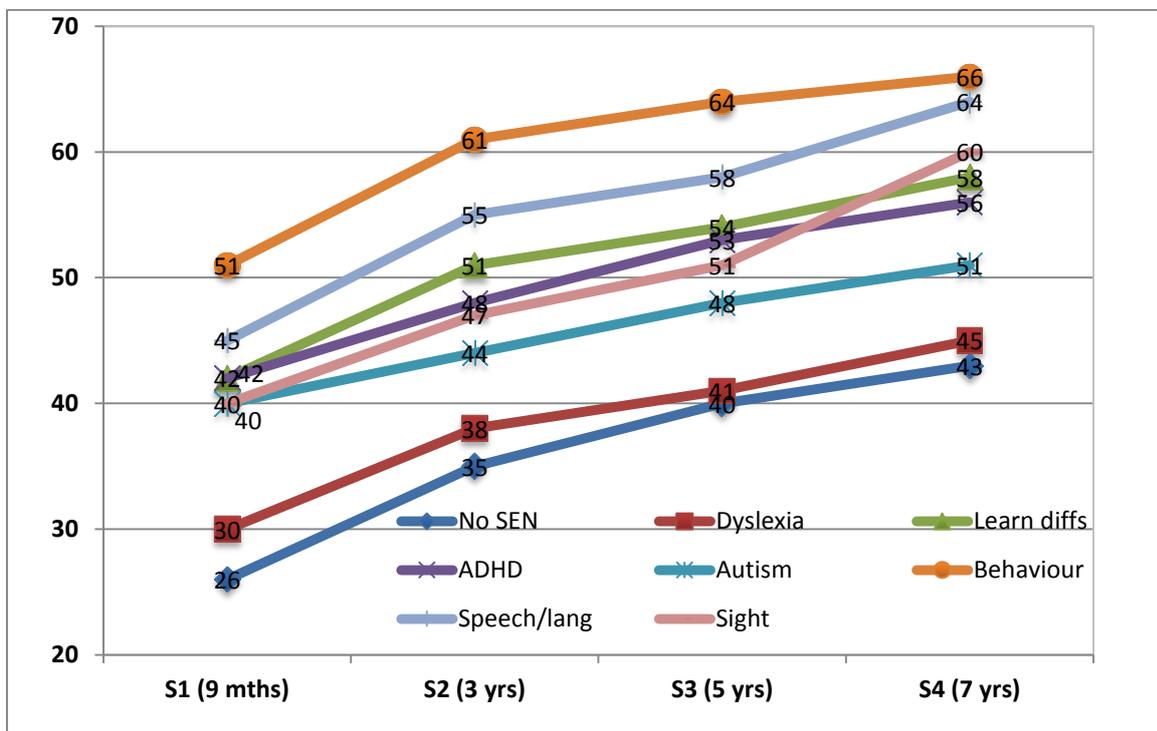
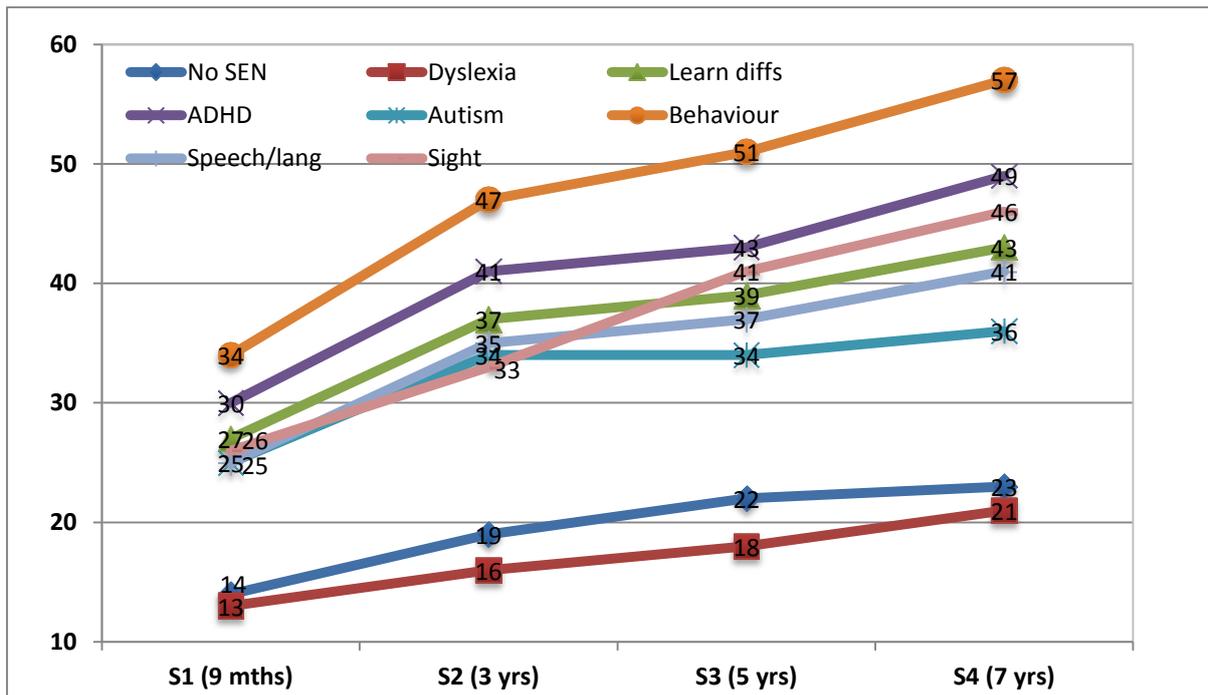


Figure 11: % in a workless household between 9 mths and 7 years by type SEN



The graphs clearly suggest that children with specific needs who are more advantaged are more likely to be defined as dyslexic. Further research is needed to see whether this represents an over-identification of dyslexia among advantaged socio-economic groups or rather an under-identification of dyslexia among socio-economically disadvantaged groups. For example, if a child is struggling with aspects of reading but otherwise presents as bright and or has very interested parents this may lead to an earlier identification of dyslexia. However, if the child has behaviour difficulties and experiences more troubled family circumstances, dyslexia (or other SEN) may not get identified, as reading difficulties may be more expected, or disguised by the presenting 'behavioural' problems. Clearly, this is an important question and further research is needed to unpick this relationship.

Summary and concluding remarks

We have shown that the definition used to identify children with a disability will greatly influence the numbers identified. By using the longitudinal multipurpose Millennium Cohort Study (MCS) we have been able to look at disability defined by three measures at three different time points: developmental delay at nine months, longstanding limiting illness at age three, five or seven and special education needs at age 7. These three measures together suggest that as many as 1 in 3 children have some level of disability that can have an impact on their young lives. However, we have also shown how these different definitions of disability do not closely map on to one another, with low correlation coefficients existing between the three measures. Few children identified as disabled by one measure were also identified as disabled by another: just 17% of all the children identified as disabled were identified as such by two measures, and just 4% by all three. This highlights that definitions of disability need to be extremely broad, but also questions how meaningful a single label of 'disabled' can be in the face of such substantial heterogeneity. Different aspects of disability are captured by the different measures.

Existing research has shown that children's disability is socially patterned (Blackburn et al. 2010). This research has highlighted the strong association between childhood disability and family socio-economic disadvantage, and that this was particularly entrenched for children with SEN or a statement of needs. When we looked at differences in disadvantage among families by the type of SEN the child has, we found that socio-economic disadvantage was associated with all individual SEN at some level, although small sample sizes for some groups impacted on differences gaining statistical significance. Disadvantage across the widest range of measures was associated with learning, behaviour and speech difficulties. The exception was children identified with dyslexia who were not in a socio-economically disadvantaged family. However, it seems more likely that dyslexia is under-identified in children from socio-disadvantaged backgrounds, where 'reading' difficulties may be more expected, or disguised by presenting 'behavioural' problems. Teachers seem to particularly over-identify behaviour difficulties, which supports a commonly held view that teachers have a tendency to see the behaviour difficulty and not the underlying learning difficulty, or that specific difficulties are under-identified if children are thought to be working at or near expected levels. If there are questions about the accuracy of identification of SEN in young children, this raises questions about the appropriateness of the provision being offered to a child to help them fulfil their potential.

More positively, we have also been able to show that it is not 'pushy' parents with educational advantages that drive obtaining a Statement of Need for their child. Children with a statement of need experience more socio-economic disadvantage than children with SEN. It may be that more disadvantaged children with a Statement of Need are relatively more 'needy'. That is, relative to their more advantaged counterparts they may be less likely to receive a Statement for the same level of needs, which would be consistent with earlier research. However, without utilising an objective measure of needs, it is not possible to determine that. We will be attempting to explore this question in future research. Nevertheless, the point remains that it is the most disadvantaged children, and those who are persistently disadvantaged, who are more likely to have a Statement at age 7.

Appendix

Table A1: Logistic regression results

	Odds Ratios (95% CIs)	
	SEN	LSLI
<u>Highest Parental Qualification</u>		
NVQ4+ v NVQ3	1.23 (0.98-1.53)	0.88 (0.71-1.10)
NVQ4+ v NVQ2	1.42 (1.17-1.71)	1.09 (0.87-1.36)
NVQ4+ v NVQ1	1.58 (1.18-2.12)	1.05 (0.71-1.55)
NVQ4+ v No quals / overseas only	1.38 (1.06-1.79)	1.15 (0.84-1.58)
<u>Housing Tenure</u>		
Own v Social rent	1.58 (1.29-1.95)	1.39 (1.11-1.74)
Own v Private rent	1.45 (1.15-1.82)	1.45 (1.07-1.96)
Own v Other	1.46 (1.07-2.00)	1.08 (0.73-1.59)
<u>Income Poverty (OECD measure)</u>		
Above 60% median v Below 60%	1.23 (1.03-1.48)	1.05 (0.84-1.31)
<u>Family status</u>		
Two parent v Lone parent	0.73 (0.59-0.93)	1.05 (0.80-1.38)
<u>Working status</u>		
Working household v Non-working	1.35 (1.06-1.72)	1.38 (1.03-1.85)
Pseudo R ²	.04	.02

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