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ESTIMATING THE NUMBER OF CHILDREN IN ENGLAND  
WITH LEARNING DISABILITIES AND WHOSE BEHAVIOURS  
CHALLENGE

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## BACKGROUND

The aim of this report was to provide an estimate, for use in the CBF Briefing Paper *Early Intervention for children with learning disabilities whose behaviours challenge*, of the number of children in England in 2014 who have learning disabilities and whose behaviours challenge.

## THE PROCESS

Our attempt to estimate the number of children in England in 2014 that have learning disabilities whose behaviours challenge involved three stages.

### HOW MANY CHILDREN ARE THERE IN ENGLAND?

First, we needed an estimate of how many children (age 0-18) there are likely to be in England in 2014. To do this we used the most current (2012-based) principal population projections by single year age-group for 2014 produced by the UK's Office for National Statistics (available at <http://www.ons.gov.uk/ons/rel/npp/national-population-projections/2012-based-projections/rft-table-a3-1-principal-projection---uk-population-single-year-of-age.xls>).

### HOW MANY CHILDREN HAVE LEARNING DISABILITIES IN ENGLAND?

Second, we needed to estimate how many of these children are likely to have learning disabilities. We based these estimates on Special Educational Needs (SEN) data collected by the Department for Education. The latest data, from the year 2012/13, is published in *Children with Special Educational Needs 2013: An Analysis*<sup>1</sup> and associated statistical first releases.<sup>2,3</sup> From these data we calculated the percentage of children of a particular age who had either been identified at School Action Plus or had a Statement of Special Educational Needs and also had been identified as having a type of SEN associated with learning disabilities (moderate learning difficulties, severe learning difficulties or profound multiple learning disabilities). However, these estimates are not available for very young children and are likely to be unreliable for younger and older age groups due to: (1) the delay in identification of SEN (especially moderate and severe learning difficulties; and (2) the tendency for children, especially those with moderate learning difficulties, to leave school at age 16.<sup>4</sup> As a result, we applied an average rate calculated for the age groups whose accuracy we were most confident about to the age profile of the English child population. For moderate and severe learning difficulties were averaged across ages 8-15. For profound multiple learning disabilities were averaged across ages 5-15.

### HOW MANY CHILDREN SHOW BEHAVIOURS THAT CHALLENGE IN ENGLAND?

Third, we needed to estimate how many of children with and without learning disabilities are likely to have behaviours that challenge. No national information is collected on the prevalence of whose behaviours that challenge among children with learning disabilities (or any other children). To generate our estimate we analysed data from the UK's Millennium Cohort Survey (MCS).<sup>5-11</sup> The MCS is following a cohort of 18,000 children born in the UK in 2000/2001. Information was first collected on these children when they were 9 months old, and then again when they were 3 years, 5 years, 7 years and 11 years old.

At all ages apart from 9 months information was collected about their mental health and behavior using the Strengths and Difficulties Questionnaire (SDQ), a commonly used standardised measure of child mental health.<sup>12-16</sup> The SDQ contains 25 items, each of which can be recorded as being 'not

true', 'somewhat true' or 'certainly true'. We examined the extent to which items contained in the SDQ could be considered indicators of behaviours that challenge. We identified two such items; 'often has temper tantrums' and 'often fights with other children or bullies them'. We scored these by giving 1 point for an item being 'somewhat true' and 2 points for it being 'certainly true', giving each child a score in the range 0-4. Following preliminary analysis of the data we identified a child as showing behaviours that challenge if they scored 3 or 4 on this short scale (i.e., both items were recorded as being 'certainly true' or one item was recorded as being 'certainly true' and the other item was recorded as being 'somewhat true').

At all ages apart from 9 months children were tested on their cognitive ability and development. We used this information to identify whether MCS children were likely to have learning disabilities. Child cognitive ability was assessed at age three using the Bracken School Readiness Assessment<sup>17</sup> and Naming Subscale of the British Ability Scales (BAS)<sup>18</sup>, selected subscales of the BAS at ages five and seven, and the NFER Progress in Maths test at age seven<sup>5</sup>. At age eleven children were given three cognitive tests; verbal similarities (BAS), the Spatial Working Memory task and the Cambridge Gambling task, both from the Cambridge Neuropsychological Test Automated Battery. Of the age eleven tests, only verbal similarities is closely related to traditional measures of IQ.

For ages five and seven we extracted the first component ('g') from a principle component analysis of all age-standardised subscale/test scores. The first component accounted for 63% of score variance at age seven and 55% of score variance at age five. We identified children as having learning disability if they scored two or more standard deviations below the mean on the first principle component at age seven.

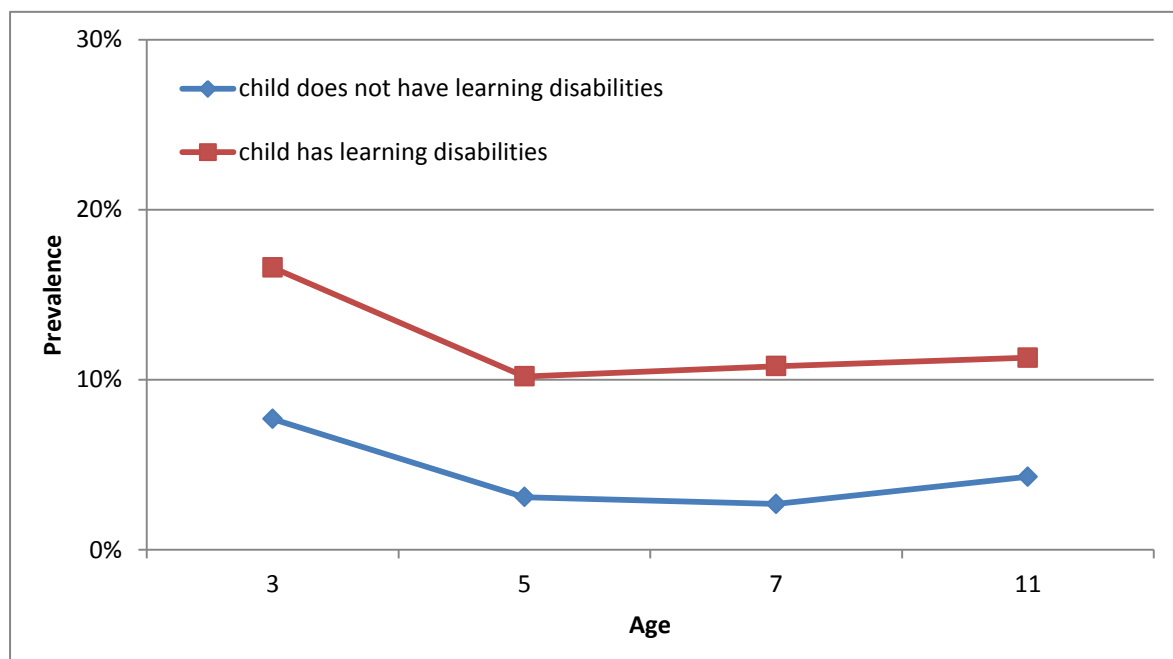
Interviewers did not administer the assessments if the child 'has a learning disability/serious behavioural problem (e.g., severe ADHD, autism) which prevents them from carrying out the assessments', 'is unable to respond in the required manner for each assessment, e.g., reading, writing, manipulating objects', 'is not able to speak or understand English (or Welsh if applicable)' or if consent and co-operation were not forthcoming. If cognitive test scores were missing at age seven, we identified children as having learning disability if they scored two or more standard deviations below the mean on the first principal component at age five. If cognitive test scores were missing at age five and at age seven, we identified children as having learning disability if they scored two or more standard deviations below the mean on the Bracken School Readiness Assessment at age three. If Bracken scores were not available, we identified children as having learning disability if they scored two or more standard deviations below the mean on the BAS Naming Subscale at age three.

For 125 children no cognitive test results were available at any age. Cognitive testing was not administered for a variety of reasons including lack of parental consent, failure to co-operate with testing and severity of child disability. For these children we identified learning disability on the basis of parental report at age seven. A child was identified as having learning disability if both of the following two criteria were met: (1) the child was reported to be receiving special education due to their 'learning difficulty'; and (2) the child was reported to have 'great difficulty' in all three areas of reading, writing and maths. This led to the identification of another 11 children as having learning disability.

Finally, we used the normalised verbal similarities standard score at age eleven to attempt to address potential errors in classification in the W2-4 variables. Specifically, all children who had been

identified as having learning disabilities who scored at or above the population mean on verbal similarities at age eleven were reclassified as not having learning disabilities. Similarly, all children identified as not having learning disabilities but who scored three or more standard deviations below the population mean on verbal similarities at age eleven were reclassified as having learning disabilities.

On the basis of this information we could calculate the percentage of children with and without learning disabilities whose behaviours challenge at age 3, 5, 7 and 11. The following figure presents these estimates. As can be seen, at all ages children with learning disabilities were markedly more likely to show behaviours that challenge than their non-learning disabled peers.



**FIGURE 1: PREVALENCE OF BEHAVIOURS THAT CHALLENGE AT AGES 3, 5, 7 AND 11 YEARS**

Finally, we used these figures to estimate the prevalence of behaviours that challenge at ages 0-18. For ages 0 and 1 we assumed that prevalence would be the same as the lowest prevalence recorded at any age for that particular group. For ages 12-18 we assumed that prevalence would be the same as the prevalence recorded at age 11 for that particular group. For all other ages we took the average of the recorded or estimated prevalence for adjacent ages for that particular group. For example, we assumed that the prevalence rate at age 6 would be the average of the recorded rates at ages 5 and 7.

We believe these estimates to be relatively robust for behaviours that challenge which are associated with aggression towards others. However, for children with learning disabilities these estimates are likely to be somewhat conservative. The main reason for this is that the SDQ was developed for use with 'typically developing' children. As such, it does not include questions that could identify behaviours that challenge that are more specific to (and not uncommon among) children with learning disabilities (e.g., severe self-injury).

## OUR ESTIMATE

Our final estimates are given in Table 1.

<b>Table 1: Estimated Number of Children in England in 2014 with Learning Disabilities and whose Behaviours Challenge by Age</b>				
Age	Number of Children in England			
	Total	With Learning Disabilities	With Learning Disabilities and whose Behaviours Challenge	
0	688,180	20,046	2,265	
1	681,621	19,856	2,244	
2	698,339	20,343	2,838	
3	686,376	19,994	3,319	
4	676,588	19,709	2,641	
5	667,760	19,451	1,984	
6	674,635	19,652	2,063	
7	653,236	19,029	2,055	
8	640,159	18,648	2,037	
9	612,727	17,849	1,972	
10	602,002	17,536	1,960	
11	584,223	17,018	1,923	
12	573,081	16,694	1,886	
13	587,905	17,126	1,935	
14	603,531	17,581	1,987	
15	623,035	18,149	2,051	
16	633,226	18,446	2,084	
17	652,294	19,001	2,147	
18	654,650	19,010	2,155	
<b>All ages</b>	<b>12,193,568</b>	<b>355,199</b>	<b>41,547</b>	
<b>Age 0-5</b>	<b>4,098,864</b>	<b>119,400</b>	<b>15,291</b>	
<b>Age 0-7</b>	<b>5,426,735</b>	<b>158,080</b>	<b>19,409</b>	

As can be seen, we estimate that in 2014 just over 40,000 English children are likely to have learning disabilities and to also show behaviours that challenge. As noted above, however, we believe that these estimates are likely to be somewhat conservative due to the failure of the SDQ to identify behaviours that challenge that are more specific to (and not uncommon among) children with learning disabilities (e.g., severe self-injury).

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