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Ethnic disproportionality in the identification of speech language and communication needs (SLCN) and autism spectrum disorders (ASD): 2005-2011

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This research report was commissioned before the new UK Government took office on 11 May 2010. As a result the content may not reflect current Government policy and may make reference to the Department for Children, Schools and Families (DCSF) which has now been replaced by the Department for Education (DfE).

The views expressed in this report are the authors' and do not necessarily reflect those of the Department for Education.

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EXECUTIVE SUMMARY

Background

The Better Communication Research Programme (BCRP) was commissioned as part of the Better Communication Action Plan¹, the government's response to the Bercow review of services for children and young people with speech, language and communication needs (SLCN)². This recommended a programme of research 'to enhance the evidence base and inform delivery of better outcomes for children and young people' (p.50). This is one of 10 publications reporting the results from individual BCRP projects. These contribute to a series of four thematic reports and the main report on the BCRP overall in which we integrate findings and present implications for practice, research and policy from the BCRP as a whole (see Appendix 1 for full details).

This report presents an analysis of the Department for Education's (DfE's) national school censuses completed in January 2005, 2007, 2009 and 2011 to consider the issue of ethnic disproportionality in the identification of SEN. There has been a long standing general concern about the progress and achievement of some minority ethnic groups in England (e.g. Swann, 1985) and one element within the general concern has been the specific issue of disproportionate representation among pupils designated as having special educational needs (SEN). A major report for the Department for Education and Skills (a predecessor of the DfE) on ethnicity and SEN (Strand & Lindsay, 2009)³ used the 2005 school census and identified significant disproportionality. In relation to SLCN, Chinese, Black African, Black Caribbean, Black Other and Bangladeshi pupils were all substantially more likely to have identified SLCN than their White British peers, in some cases more than twice as likely. In contrast, for ASD, Indian, Pakistani, Bangladeshi and Other Asian groups were under-represented, being around half as likely to have identified ASD as their White British peers.

In this report we are interested in the overall prevalence of SLCN and ASD, how these rates have changed over time, and any factors that may be associated with their identification. The study seeks to determine whether these patterns of *disproportionate representation*⁴ are still present in the most recent data, whether the patterns can be explained in terms of other

¹ https://www.education.gov.uk/publications/eOrderingDownload/Better_Communication.pdf

² Bercow, J. (2008). *The Bercow Report: A review of services for children and young people (0-19) with speech, language and communication needs*. Nottingham: DCSF.
<https://www.education.gov.uk/publications/eOrderingDownload/Bercow-Report.pdf>

³ See also Lindsay, Pather & Strand (2006) for the original report

⁴ Either over-representation or under-representation in relation to White British pupils.

factors associated both with SEN and ethnicity, such as poverty and socio-economic disadvantage, and to what extent disproportionate ethnic representation varies across Local Authorities.

Data source

The School Census collects pupil level data on every pupil at a state funded school in England, over 6.4 million pupils on each occasion. As a national census, these data are comprehensive and powerful. Of particular interest in this study are the data collected on Special Educational Needs (SEN). These record two key pieces of information: level and type of SEN. First, the pupil's *level* of special educational needs is identified, i.e. whether the need is addressed at School Action (SA), School Action Plus (SAP) or the pupil requires a statement. The latter two levels, SAP and statement, are more intense needs that cannot be met from within the schools own resources and the school is involving some external support (e.g. the involvement of a speech and language therapist or an Educational Psychologist). For these two levels of need, the census also asks the school to record the pupil's type of special educational need, defined within twelve broad categories. Of primary interest in this analysis are the two types of need, Speech, Language and Communication Needs (SLCN) and Autism Spectrum Disorders (ASD), which are grouped under "communication and interaction needs".

Key findings

- Ethnic disproportionality for SLCN is pronounced:
 - For **SLCN** there is substantial *overrepresentation* of Black, Bangladeshi and Chinese pupils
 - For **ASD** there is substantial *underrepresentation* of Indian, Pakistani and Bangladeshi pupils but *overrepresentation* of Black Caribbean pupils
- These disproportionalities reduce for SLCN when factors including social disadvantage are taken into account but the level of overrepresentation for ASD *increases* for Black African and Black Caribbean pupils and the level of *underrepresentation* remains high for Indian pupils

Detailed findings

- **Rates of identification** of both SLCN and ASD as a primary need at School Action Plus (SAP) or with a statement have increased substantially over the period 2005 - 2011, from 0.94% to 1.61% for SLCN and from 0.48% to 0.87% for ASD.
 - The drivers behind these increases are not revealed in the school census data. The same trend for ASD has been noted in the US and a recent US review has concluded that:

“There is evidence that the broadening of the definition of ASD, the expansion of diagnostic criteria, the development of services and improved awareness of the condition have played a major role in explaining this increase, although it cannot be ruled out that other factors might also have contributed to the trend” (Fombonne, 2009, p 591).
 - Whatever the cause, it is important that provision and resources keep pace with this increased need.
- **Many SLCN identified in the early years of primary school appear temporary and transient**, with levels of identification at SAP decreasing substantially from 2.7% in Y1 to 0.6% in Y7.
 - However the level of stated need for SLCN is fairly consistent at around 0.4% across the full age range 5-16. In contrast the level of identified ASD is broadly consistent across the age range 5-16 at 0.3% SAP and around 0.6% stated.
- **Gender** is associated with the greatest increase in risk for both SLCN and ASD, with boys over-represented relative to girls 2.5:1 for SLCN and over 6:1 for ASD.
- There is a strong **social gradient** for SLCN, with the odds of having identified SLCN being 2.3 times greater for pupils entitled to FSM and living in more deprived neighbourhoods. For ASD the socio-economic gradient is less strong (Odds Ratio (OR) =1.63) but still present.
- **Birth season effects** are strong for SLCN. Pupils who are summer born (May-August) and therefore the youngest within the year group are 1.65 times more likely to have identified SLCN than autumn born (September-December) pupils.

- **Ethnic disproportionality for both SLCN and ASD is pronounced.**
 - There are some reductions in ethnic disproportionality over the period 2005-2011, e.g. Pakistani pupils are no longer overrepresented for SLCN and the overrepresentation of Chinese pupils is much reduced.
 - However the overrepresentation of Black, Bangladeshi and Chinese pupils for SLCN, and the underrepresentation of Indian, Pakistani, Bangladeshi and Other Asian pupils for ASD, are stable and pronounced across all years.
 - There are also some increases in disproportionality between 2005 and 2011, for example a trend for Black pupils to be increasingly overrepresented for ASD, particularly among Black Other pupils.

- **Social disadvantage and ethnic disproportionality for SLCN:** To some extent the ethnic disproportionality for SLCN reflects the strong social gradient.
 - Thus after controlling for age, gender, entitlement to FSM and neighbourhood deprivation, the over-representation of Black and Bangladeshi pupils was substantially reduced (though Chinese pupils remained over-represented and Black Caribbean pupils were still more likely to be identified than their White British peers).
 - By contrast, Indian pupils were underrepresented for SLCN after controlling for socio-economic disadvantage.
 - Being recorded as having English as an Additional Language (EAL) had only a very weak association with identification of SLCN after social disadvantage, age and gender are taken into account.

- **Social disadvantage and ethnic disproportionality for ASD:** Adjusting for socio-economic deprivation had little or no impact on the under-representation of Asian pupils for ASD, who were still about half as a likely as White British pupils to have identified ASD even after adjusting for poverty.
 - The consistent under-representation across the Indian, Pakistani, Bangladeshi and Asian Other groups was largely captured by the EAL factor.
 - This impact of EAL on ASD identification varied substantially with age, with no difference related to EAL in identification in Y1/Y2, but from Y3 onwards those pupils with English as a first language being increasingly *more* likely to be identified whereas EAL pupils were simultaneously *less* likely to be identified.
 - The reasons for this variation with age are not clear.

- It is important to note that EAL as recorded in the School Census is a measure of exposure (either at home or in the community) to another language in addition to English, *irrespective of the pupil's proficiency in English*. The association with EAL may therefore be as likely to reflect a wide range of cultural differences as much as limited fluency in English.
- **The causes of ethnic disproportionality in identification of ASD** are likely to be varied.
 - Less extreme needs on the autistic spectrum can be subtle, identified by nuances in the use of language for social communication. These may be more difficult to identify if the first language of the assessor and pupil are not congruent.
 - Alternatively, it may also be that the relationship with EAL reflects communities with lower awareness of autism, parents' rights and relevant services, or where cultural or linguistic barriers impede access to services, or where the services available do not meet their needs (Corbett & Perapa, 2007).
 - In any event, there is a need to raise awareness of ASD among Asian communities, improve outreach and review the extent to which the services are configured appropriately.
- **Variation in ethnic disproportionality by Local Authority:** There was substantial variation between LAs in the extent of disproportionality for SLCN.
 - Overall, 36 LAs showed substantial underrepresentation (OR < 0.75) of Black pupils for SLCN whereas 56 LAs showed substantial overrepresentation (OR > 1.33).
 - In contrast there was much less variation across LAs in the under-representation of Asian pupils with ASD. A total of 115 LAs showed substantial underrepresentation (OR < 0.75) of Asian pupils and only five showed substantial overrepresentation (OR > 1.33).
 - This consistency suggests that variation in LA policy and practice play a limited role in the under-representation of Asian pupils with ASD, but a sizeable role in the disproportionate identification of Black pupils with SLCN.
 - Further research on LA variation is required. In the United States, school boards (the equivalent of LAs) are required by national legislation to monitor disproportionality in special education identification by ethnic group (the Individuals with Disabilities Education Improvement Act or IDEA).

Implications for policy and practice

- Local Authorities should be mindful of their duties under the Equalities Act and should monitor ethnic disproportionality in the identification of SEN. LAs with particularly high levels of disproportionality should further investigate practices in their LA area.
- There is a need to raise awareness of ASD among Asian communities, improve outreach and review the extent to which the services are configured appropriately for access by ethnic minority groups.
- Teachers need to be aware of the significant over-identification of summer born pupils for SLCN and to consider carefully whether they are making sufficient allowance for the age of the child when forming their judgements.
- The definition of EAL in the school census is not a measure of fluency in English. The DFE might give consideration to the collection of national data on pupils' stage of fluency in English to allow clearer interpretation of the impact of limited English fluency on identification of SLCN and ASD.

1. BACKGROUND

The Better Communication Research Programme (BCRP) was commissioned as part of the Better Communication Action Plan⁵, the government's response to the Bercow review of services for children and young people with speech, language and communication needs (SLCN)⁶. This recommended a programme of research 'to enhance the evidence base and inform delivery of better outcomes for children and young people' (p.50). This is one of 10 publications reporting the results from individual BCRP projects. These contribute to a series of four thematic reports and the main report on the BCRP overall in which we integrate findings and present implications for practice, research and policy from the BCRP as a whole (see Appendix 1 for full details).

The SEN system has been described as one "characterized by high variability and a lack of equity (DFE, 2010, p5)". One important equity dimension is the unequal representation of different ethnic groups for different categories of special educational need. In 2005, the pupil level School Census (SC) introduced for the first time⁷ recording of the primary type of Special Educational Need (SEN) for all children identified at school action plus or with statements. An investigation using the 2005 data (Strand & Lindsay, 2009) indicated evidence of disproportionate representation of certain ethnic groups among those identified with SLCN and ASD.

- In relation to SLCN, Chinese, Black African and Black Caribbean pupils were over-represented relative to White British pupils. Controls for socio-economic disadvantage, gender and age reduced the degree of over-representation of the Black groups somewhat, although they remained over-represented, but did not affect the identification of Chinese pupils who remained twice as likely to be identified with SCLN as their White British peers.
- A different pattern emerged with respect to ASD. Chinese and Black pupils were not over-represented in relation to ASD; however Indian, Pakistani, Bangladeshi and Other Asian groups were under-represented, being around half as likely to be

⁵ https://www.education.gov.uk/publications/eOrderingDownload/Better_Communication.pdf

⁶ Bercow, J. (2008). *The Bercow Report: A review of services for children and young people (0-19) with speech, language and communication needs*. Nottingham: DCSF.
<https://www.education.gov.uk/publications/eOrderingDownload/Bercow-Report.pdf>

⁷. The SEN type of need was first requested in the January 2004 census but there was a high level of non-completion, often for whole schools, as schools became familiar with the data they needed to collect and record. Hence the January 2005 census is the more reliable baseline.

identified as their White British peers. This under-representation was even more marked when socio-economic disadvantage, gender and age were controlled.

- Pakistani and Bangladeshi pupils were over-represented in relation to Hearing Impairment, being almost twice as likely to be identified as White British peers, both before and after controls for socio-economic factors, gender and age.

International comparative data are problematic, not least because definitions are not necessarily congruent across countries. For example there is no unambiguous comparator in the US to the SLCN group in England. However there is greater commonality in the definition of ASD between the US and England. This is not to say that data from the school census are comparable to clinical definition, but they do allow for comparison to US research on ethnic disproportionality in ASD. Reviews of research from the US on ethnic differences in ASD prevalence have concluded that little information is available and results are inconclusive (Newschaffer et al, 2008, p240). National surveys of parental reports of autism diagnosis have suggested comparable frequencies in Black and White groups, but significantly lower frequencies for Hispanic children (CDCP, 2006), although other studies have also reported a substantial Black - White difference (Kogan et al, 2009).

More detailed data from the US Autism and Developmental Disabilities Monitoring (ADDM) Network suggest ASD prevalence rates among 8-year olds for White pupils (0.90%) are somewhat higher than among Black or African American pupils (0.72%) but in particular are higher than among Hispanic pupils (0.59%) (CDCP, 2009). Thus the odds for having an identified ASD are about 35% lower for Hispanic pupils (a relative risk ratio of 0.65:1) compared to the odds for White pupils. Mandell et al (2009) have also reported that the under-representation of Black and Hispanic groups remained after control for gender, IQ, birth weight and maternal education. Ethnic group classifications are clearly not comparable across countries, but Hispanic groups are the most likely to have English as an Additional Language, as do Asian groups in England. Indeed Kogan et al (2009) report that identification of ASD is particularly low for Hispanic children from households in which the primary language is Spanish.

The research in England by Strand & Lindsay (2009) was completed using the 2005 school census. An important question addressed in the current research is whether this disproportionality is a continuing feature in more recent datasets, and whether there are any trends in the data over the last six years? There are important questions to address about variability, for example why might Black African and Chinese pupils be overidentified with

SLCN? Are schools conflating language learning needs with SEN? Equally, why do ASDs appear to be unrecognized or overlooked within certain ethnic communities? Additionally, are there any school level factors systematically related to the likelihood of identification of SLCN/ASD? We know there is considerable variation between Local Authorities (LA) in the proportion of pupils identified with SLCN/ASD, but how does ethnic disproportionality vary across LAs? What are the implications for policy and service delivery, for example should information and the provision of services for ASD be enhanced in areas with high concentrations of pupils of Asian heritage?

Research Questions

In summary the following research questions were asked:

- What is the relationship between ethnicity and identification of SLCN and ASD as the primary SEN need? Do any patterns vary between levels of need (SAP and Statemented)?
- How has the absolute level of identification of ASD and SLCN changed over the last six years? Has there been any increase in identification, and if so for which needs in particular? Have patterns of disproportionality in ethnic representation changed over the same time period?
- Can patterns of over- or under- representation among different ethnic groups be explained by other demographic or 'risk' factors, such as socio-economic circumstances, gender or age within year group?
- Do school factors have an influence over and above pupil factors?
- What is the extent of variation in disproportionality across LAs?

2.1 WHAT WE DID

2.1 The School Census

This analysis is based on the Department for Education (DFE) January School Census previously referred to as the Pupil Level Annual School Census or PLASC) which is a pupil level census of all pupils in state schools (primary and secondary) in England. The School Census data set contains a range of pupil-level background characteristics, such as ethnicity, gender, month of birth, whether the pupil is eligible for Free School Meal (FSM), whether s/he has English as an Additional Language (EAL), and whether s/he is classified as having a Special Educational Need (SEN). This dataset has features that make it ideal to use in this context, since it is a complete census that provides information on *all* children in state schools in England⁸. This ensures the results are general and not specific to a particular sample of the population.

2.2 The measures of SEN

The two key measures of SEN recorded in the school census are the *level* of the SEN and the *type* of SEN. Regarding *level*, the SEN Code of Practice recommends a graduated approach to helping children who are deemed to have needs that require special educational provision. The first stage is at the discretion of the school which identifies the pupil and decides the type of provision from within the school's own resources (*School Action*). The second stage (*School Action Plus*) reflects the school involving some external professional in providing for the child's needs. For pupils with the greatest needs, the school may request a statutory assessment, which may lead to a *statement* of special educational needs for the child. This statement imposes a statutory duty on the Local Authority and the school to meet the needs as defined in the statement. Regarding *type* of SEN, for pupils with the higher levels of need, i.e. those recorded at SAP or with a statement of SEN, schools also record the type of SEN within twelve broad categories. The particular categories we are interested here are those pupils identified with Speech, Language and Communication Needs (SLCN) or Autistic Spectrum Disorders (ASD).

There are three features of the data which should be borne in mind here. First, schools are not required to report the type of SEN a child has if they are identified only as needing

8. The data do not include children in independent (private) schools. However state schools account for 93% of all pupils in England.

School Action, so the analysis of SLCN / ASD is only for children who have more significant needs. The figures will underestimate the total prevalence of SLCN/ASD that would result if children at School Action were also classified by type of need. Second, pupils may have a primary need, but needs are often diverse and not restricted to a single domain. For example a child's primary need might be a moderate learning difficulty (MLD) but they might also have an ASD. Provision is made in the SC to record a secondary SEN need (if relevant) as well as a primary need, but for reasons of comparability we focus here mainly on the primary need. This may also underestimate the total level of need in the population, although our analysis suggests this is unlikely. Last, it must be borne in mind that we are dealing here with the school recorded definition of primary need. There are no detailed diagnostic data, assessment evidence or other records available for pupils at a national level. These data are not therefore equivalent to a clinical diagnosis, which for ASD for example would involve a medical evaluation and draw on multiple sources of evidence (Volker & Lopta, 2008).

2.3 Filtering the data

In the following analysis we have excluded the data for pupils in reception classes (those for children aged 4+ in September who will have their 5th birthday during the course of the school year). In January of Reception pupils have been attending school for a relatively short period, and at this early stage relatively few pupils have an identified SEN. For example only around 9% of reception pupils have any form of SEN identification in January of Reception year, though this rises to 17% in Y1 and around 22% thereafter.

We have also excluded data on pupils in post-compulsory education (aged 16-18, Y12-Y14) since this is necessarily selective, including only those who have remained in full-time education in school, rather than the full population. Our analysis is therefore on the total population of pupils in Y1-Y11 (aged 5-16 years) in maintained schools in England each January, roughly 6 million pupils at each census date.

3. WHAT WE FOUND

3.1 Analysis of primary and secondary educational needs

3.1.1 Primary need

Table 1 presents the frequency of different types of primary need. Overall 10.3% of pupils aged 5-16 (i.e. in Y1 – Y11) were at SAP or above and had an identified primary need. The most frequently identified needs were Moderate Learning Difficulties (MLD) and Behavioural, Emotional and Social Difficulties (BESD), which together accounted for almost half (48%) of all pupils with an identified need. SLCN needs was the third most frequently identified primary need, accounting for 15.7% of those identified.

Table 1: Pupils by type of primary need – 2011

Primary need	<i>n</i>	% of all pupils	% of those with a primary need
No SEN	5,534,905	89.7	-
MLD: Moderate Learning Difficulty	153,787	2.5	24.3
BESD: Behavioural, Emotional & Social Difficulties	149,882	2.4	23.7
SLCN: Speech, Language & Communication Needs	99,288	1.6	15.7
SPLD: Specific Learning Difficulty	74,885	1.2	11.8
ASD: Autistic Spectrum Disorder	53,780	.9	8.5
OTH: Other Difficulty/Disability	27,642	.4	4.4
PD: Physical Disability	22,806	.4	3.6
SLD: Severe Learning Difficulty	22,341	.4	3.5
HI: Hearing Impairment	13,980	.2	2.2
VI: Visual Impairment	7,557	.1	1.2
PMLD: Profound & Multiple Learning Difficulties	6,994	.1	1.1
MSI: Multi-Sensory Impairment	783	.0	0.1
Total	6,168,630		633,725

3.1.2 Secondary need

Of those pupils at SAP or above, 73% only had a primary need identified. This may be because there is no secondary need, but may also be because it is not essential to specify one. Table

2 presents the breakdown of secondary need among those at SAP or above. The rank ordering among the different types of need was substantially the same as for primary need.

Table 2: pupils by type of secondary need - 2011

Secondary need	<i>n</i>	% of all pupils	% of those with a primary need
Only primary need identified	461,872	-	72.9
MLD: Moderate Learning Difficulty	39,916	.6	6.3
BESD: Behavioural, Emotional & Social Difficulties	39,140	.6	6.2
SLCN: Speech, Language & Communication Needs	34,988	.6	5.5
SPLD: Specific Learning Difficulty	15,309	.2	2.4
OTH: Other Difficulty/Disability	12,530	.2	2.0
ASD: Autistic Spectrum Disorder	9,623	.2	1.5
PD: Physical Disability	7,681	.1	1.2
SLD: Severe Learning Difficulty	4,953	.1	0.8
VI: Visual Impairment	3,239	.1	0.5
HI: Hearing Impairment	3,198	.1	0.5
PMLD: Profound & Multiple Learning Difficulties	9	.0	0.1
MSI: Multi-Sensory Impairment	637	.0	0.1
Total with a secondary need	171,853	100.0	27.1

Appendix 1 presents the crosstabulation of primary and secondary needs.

- For those with a primary need of SLCN, the most common secondary needs were none (71%), MLD (12.2%), BESD (6.9%) and SpLD (3.5%).
- For those with a primary need of ASD the most common secondary needs were none (66.2%), SLCN (9.0%), BESD (8.1%), MLD (6.0%) and SLD (4.9%).

SLCN was the most common secondary need among those with SLD (13.3%) and ASD, HI and PD (each at around 9%). ASD was the secondary need most frequently among those with SLD (12.1%). In short, SLCN seems to be most frequently associated with MLD and SLD, while ASD is most frequently associated with SLCN and SLD. We can also see from Appendix 1 that BESD is recorded as a secondary need for around 7%-8% of those whose primary need is SLCN or ASD.

These data are cross-sectional, covering the age range 5-16. The companion BCRP report by Meschi et al, (2012)⁹ follows a single national cohort over time from Y2 through to Y11 which provides data on changes in the SEN status of individual pupils recorded as they age. Readers are referred to that report for a description of pupils that change or switch categories of SEN over time.

3.1.3 Total prevalence

If we put the primary and secondary needs together, then this suggests that 2.2% of pupils aged 5-16 have an SLCN and 1.1% have an identified ASD. While these percentages of 2.2% and 1.1% are small, they translate to totals among the 6.17 million pupils age 5-16 of 135,700 with SLCN and 67,850 with ASD, not inconsiderable numbers of young people.

However there are problems working with combined primary and secondary need data, not least because of the low frequency of identifying a secondary need and because it is unclear whether a secondary need should be equally weighted compared to a primary need. **To be consistent, all subsequent analyses will consider only primary SEN need in the analysis of data.**

3.2 Prevalence by year group

Lindsay, Strand & Pather (2005) reported substantial differences in level and type of special need by year group. The 2011 data were analysed in the same way and showed very similar patterns. Figure 1 below shows the results for SLCN by year group and level of need (SAP or Statement).

⁹ Meschi, E., Mickelwright, J., Vignoles, A., & Lindsay, G. (2012). *The transition between categories of special educational needs of pupils with speech, language and communication needs (SLCN) and autism spectrum disorder (ASD) as they progress through the education system*. London: DfE.

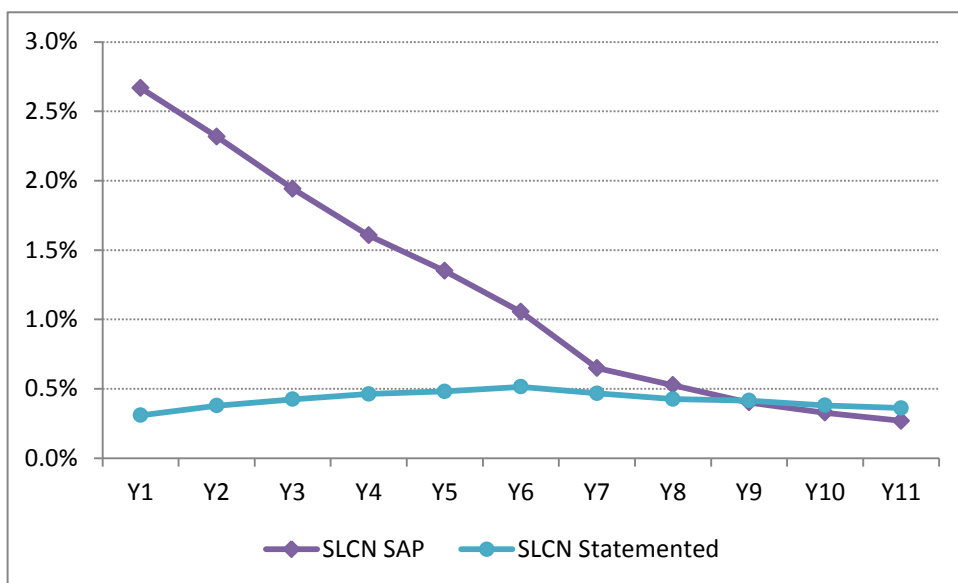


Figure 1: Prevalence of SLCN across year groups - 2011

Note: SAP= School Action Plus.

It is apparent that averages across the entire age 5-16 range need to be considered carefully in relation to the year group of the pupils. The prevalence rates for pupils with SLCN at SAP are much higher at the start of primary school at Y1 (2.6%) but reduce substantially to 0.6% at Y7 and to 0.35% by Y11. This suggests that for many pupils SLCN is a transitory need that is either overcome or recedes (or at least is seen by schools to recede) as the child ages. We can conclude that some forms of non stated SLCN are more frequent for young children and as children grow, particularly from Y1 to Y7, these problems reduce. However at the same time the proportion of pupils with more significant SLCN (with Statements) remains stable at around 0.4% at all ages, suggesting the presence of a group with significant long term problems.

The trend in the prevalence for pupils with ASD is different. First in contrast to SLCN there are consistently more pupils with statements than there are at SAP (see Figure 2). Thus although the total prevalence of SLCN (SAP or above) is much higher the level of stated need for SLCN and ASD is more similar (around 0.4% and 0.6% respectively). Second, there is less substantial change across year groups for ASD, though the proportion of pupils with statements for ASD does increase slightly with age from around 0.4% at Y1 to around 0.7% at Y9 before dropping back to 0.6% at Y11.

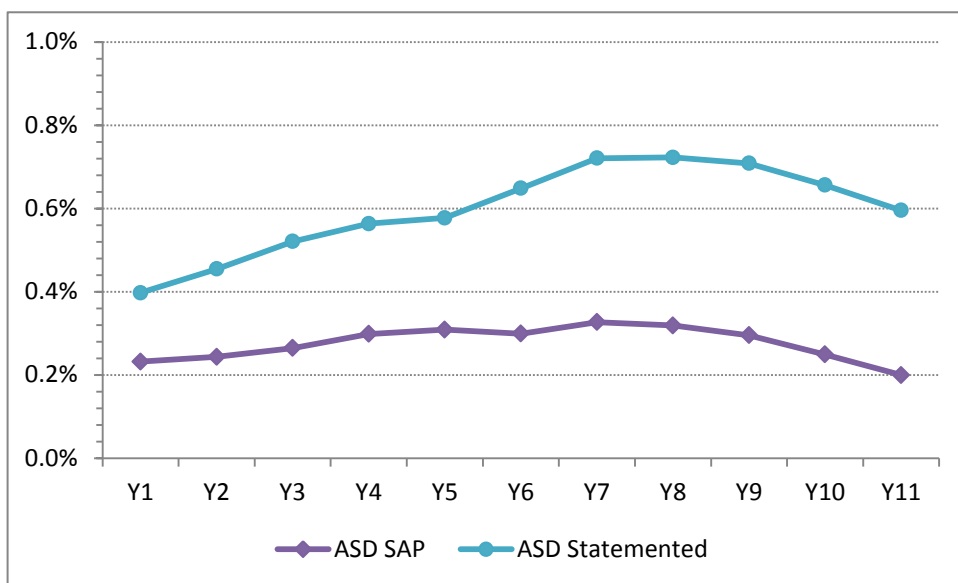


Figure 2: Prevalence of ASD across year groups - 2011

Note: SAP= School Action Plus.

3.3 Prevalence over time by ethnic group and type of need

This section analyses trends in the data between 2005, when reliable data on type of need were first recorded, and 2011. The full January School Census data are analysed every two years, i.e., 2005, 2007, 2009 and 2011. *Appendix 2* presents the complete data by ethnic group for all types of SEN for each year. The tables below present just the data for SLCN and ASD.

3.3.1 SLCN

We can see that the total prevalence of SLCN has increased from 0.94% of the population in 2005 to 1.61% in 2011, a proportionate rise of 72% (Table 3). It is apparent from these data that some ethnic groups have higher rates of identification than others. For example in looking at the 2011 data, the proportion of SLCN among White British pupils stands at 1.5%, but is substantially higher among Bangladeshi (2.4%), Chinese (2.2%) and the three Black groups (average 2.6%). The increase in prevalence from 2005 to 2011 has been less marked among Chinese pupils (21%) although they are still substantially over-represented (we shall look at the prevalence data in the form of Odds Ratios in a subsequent section).

Table 3: Prevalence (% of all pupils aged 5-16) of identified SLCN by ethnic group and year 2005 -2011

Ethnic Group	2005	2007	2009	2011	% increase
White British	0.88	1.10	1.32	1.49	70%
White Irish	0.93	1.12	1.13	1.40	52%
Traveller Irish	1.81	1.98	2.62	3.27	81%
Traveller Gypsy/Roma	1.70	2.26	2.43	2.93	72%
White other groups	1.19	1.56	1.66	1.86	56%
Mixed White & African	1.04	1.13	1.83	1.95	89%
Mixed White & Caribbean	0.91	1.41	1.41	1.69	86%
Mixed White & Asian	0.98	1.13	1.35	1.45	48%
Any other mixed background	1.08	1.37	1.62	1.83	69%
Indian	0.70	0.89	1.09	1.27	80%
Pakistani	1.13	1.38	1.70	1.81	61%
Bangladeshi	1.41	1.80	2.19	2.38	69%
Any Other Asian	1.13	1.26	1.46	1.67	48%
Black African	1.69	2.03	2.32	2.65	57%
Black Caribbean	1.45	1.85	2.36	2.53	75%
Black other groups	1.58	1.97	2.38	2.64	68%
Chinese	1.81	1.81	1.99	2.19	21%
Any other ethnic group	1.27	1.72	1.91	2.32	83%
Unclassified/Refused	0.98	1.19	1.36	1.51	53%
All pupils	0.94	1.18	1.42	1.61	72%

Note: the data for traveller groups are not discussed in detail because of the very small numbers in these groups.

3.3.2 ASD

For ASD there has also been an overall rise in identification from 0.48% of the population in 2005 to 0.87% in 2011, a proportionate rise of 83% (Table 4). In contrast to SLCN, the predominant picture here is of *under*-representation among minority ethnic groups. For example in looking at the 2011 data, the proportion of SLCN among White British pupils stands at 0.9%, but is substantially lower among all Asian (Indian, Pakistani, Bangladeshi and Other Asian groups) at around 0.5%. Putting aside the traveller groups, for whom numbers are very small, the increase in prevalence has been higher among the Bangladeshi (166%) and Black Caribbean (120%) groups, and relatively lower less marked among White Other (36%) and Chinese groups (49%).

Table 4: Prevalence (% of all pupils aged 5-16) of identified ASD by ethnic group and year 2005 - 2011

Ethnic Group	2005	2007	2009	2011	% increase
White British	0.49	0.63	0.76	0.91	85%
White Irish	0.60	0.72	0.77	1.02	69%
Traveller Irish	0.10	0.17	0.18	0.31	211%
Traveller Gypsy/Roma	0.20	0.22	0.28	0.31	54%
White other groups	0.48	0.59	0.65	0.65	36%
Mixed White & African	0.56	0.57	0.74	0.91	62%
Mixed White & Caribbean	0.50	0.61	0.76	0.95	91%
Mixed White & Asian	0.55	0.70	0.77	0.89	62%
Any other mixed background	0.62	0.79	0.92	1.10	76%
Indian	0.22	0.29	0.37	0.43	98%
Pakistani	0.23	0.30	0.36	0.45	98%
Bangladeshi	0.19	0.26	0.38	0.50	166%
Any Other Asian	0.30	0.40	0.44	0.57	87%
Black African	0.54	0.68	0.91	1.09	102%
Black Caribbean	0.53	0.73	0.95	1.17	120%
Black other groups	0.66	0.87	1.17	1.38	107%
Chinese	0.49	0.57	0.62	0.73	49%
Any other ethnic group	0.27	0.33	0.47	0.58	118%
Unclassified/Refused	0.47	0.67	0.85	1.14	141%
All pupils	0.48	0.61	0.73	0.87	83%

3.4 Ethnic disproportionality as Odds Ratios 2005 - 2011

In this section we consider the odds of being identified with SLCN or with ASD for each ethnic group against the odds of being identified for White British pupils, and express these as an Odds Ratio (OR). This identifies how much greater or lower the odds of being identified with a specified SEN are for each ethnic group relative to the majority White British group.

With population data from all pupils in England, criteria of 'statistical significance' in identifying disproportionate identification will be a poor guide, since many comparisons, even if showing very small differences, will be statistically significant because of the huge sample size. We need to consider the actual size of the disproportionality as indicated through the Odds Ratio (OR). In the original analysis of the 2005 School Census (Lindsay et al, 2005) we took a threshold of an OR of 1.5:1 to identify overrepresentation, and conversely an OR of 0.67:1 or less to represent underrepresentation, and highlighted these in red and blue

respectively. However on reflection this set the bar very high, and we would now consider an OR of 1.33:1 or above (or conversely 0.75:1 or less) as substantial, since this represents odds that are one third (or 33%) higher (or lower) than for White British pupils, arguably representing marked disproportionality.

To calculate the ORs we have used a multi-nomial (MN) regression model. This is an efficient means of comparing the prevalence of each SEN against a reference group of pupils with no SEN within a single model. The alternative would require separate logistic regression models for each of the 12 SEN primary needs, which is inefficient¹⁰. The use of a multi-nomial regression makes the assumption of Independence of Irrelevant Alternative (IIA), namely that the probability of having a given SEN is not influenced by the other types of SEN included in the analysis, and this is not an unreasonable assumption for this data.

Appendix 3 presents full ORs for all types of SEN for all ethnic groups for each of the four years 2005 - 2011. Table 6 below presents the data just for the SLCN and ASD outcomes which are the focus here.

3.4.1 SLCN

For SLCN, ORs have reduced substantially for Pakistani pupils (from 1.56 in 2005¹¹ to 1.21 in 2011), and for Chinese pupils (from 2.18 in 2005 to 1.39 in 2011). ORs have also reduced for Any other Asian and White other groups.

However there is consistent over-representation across all years for Bangladeshi, Black African, Black Caribbean, Black Other and Chinese groups compared to White British pupils. This over-representation is substantial, for example in 2011 the odds for Black Caribbean pupils being identified with SLCN are 1.80 times higher than the odds for White British pupils (i.e. the odds for Black Caribbean pupils are 80% higher than the for White British pupils). Black African (OR=1.78) and Black Other groups (OR=1.83) are over-represented to a similar extent.

¹⁰ There are very small differences that occur between multinomial regression and logistic regression. However these differences are minor and outweighed by the efficiency of the model.

¹¹. The multinomial regression gives slightly different results to the separate logistic regressions reported in Strand & Lindsay (2009). These arise because the multinomial regression compares NO SEN vs. SLCN, whereas the logistic regression compares Not SLCN / vs. SLCN and therefore include in the base group pupils with other forms of SEN. However the differences are small as stated above.

Table 5: Unadjusted Odds Ratios for SLCN and ASD by ethnic group and year 2005 - 2011

Ethnic Group	SLCN				ASD			
	2005	2007	2009	2011	2005	2007	2009	2011
White Irish	0.98	1.03	0.86	0.94	1.18	1.15	1.01	1.12
Traveller Irish	3.11	2.28	2.56	2.76	<i>0.31</i>	<i>0.34</i>	<i>0.30</i>	<i>0.42</i>
Traveller Gypsy/Roma	2.92	2.48	2.21	2.23	<i>0.61</i>	<i>0.42</i>	<i>0.44</i>	<i>0.39</i>
White other groups	1.45	1.40	1.24	1.22	0.93	0.92	0.83	<i>0.70</i>
Mixed White & African	1.23	1.05	1.39	1.31	1.13	0.93	0.97	1.00
Mixed White & Caribbean	1.07	1.29	1.11	1.17	1.02	0.97	1.03	1.08
Mixed White & Asian	1.08	1.01	1.00	0.95	1.04	1.08	0.99	0.95
Any other mixed	1.22	1.25	1.23	1.23	1.25	1.24	1.20	1.20
Indian	0.96	0.78	0.79	0.81	<i>0.39</i>	<i>0.44</i>	<i>0.46</i>	<i>0.44</i>
Pakistani	1.56	1.26	1.29	1.21	<i>0.46</i>	<i>0.47</i>	<i>0.47</i>	<i>0.49</i>
Bangladeshi	1.64	1.61	1.63	1.57	<i>0.36</i>	<i>0.40</i>	<i>0.49</i>	<i>0.54</i>
Any Other Asian	1.44	1.10	1.06	1.07	<i>0.54</i>	<i>0.61</i>	<i>0.55</i>	<i>0.60</i>
Black African	1.78	1.86	1.77	1.78	1.03	1.07	1.20	1.20
Black Caribbean	1.54	1.77	1.90	1.80	1.09	1.22	1.32	1.36
Black other groups	1.64	1.86	1.89	1.83	1.35	1.42	1.60	1.56
Chinese	2.18	1.58	1.44	1.39	0.84	0.86	0.78	0.76
Any other ethnic group	1.59	1.54	1.43	1.54	<i>0.51</i>	<i>0.52</i>	<i>0.60</i>	<i>0.63</i>
Unclassified/Refused	1.15	1.11	1.05	1.02	1.00	1.07	1.12	1.27

Note: Odds Ratios (OR) compare the identification rates for each ethnic group to the odds of identification for White British pupils. **Red bold** indicates over-representation (OR > 1.33) *Blue italic* indicates under-representation (OR < 0.75)

3.4.2 ASD

For ASD, only the Black Other and Black Caribbean groups are over-represented. The predominant picture, as mentioned in relation to prevalence rates, is under-representation of Indian, Pakistani, Bangladeshi, and Other Asian pupils. On average the odds of identified ASD for these four Asian groups are about half the odds for the White British group, a substantial under-representation. These patterns seem quite stable, although disproportionality for Bangladeshi pupils has decreased slightly from 0.36 in 2005 to 0.54 in 2011.

It might be assumed that the data would indicate substantial stability, since while for each analysis two new Y1 and Y2 groups are added the Y3-Y11 pupils in the analysis were also included in the previous analysis (a turnover of 18%). However in comparing 2011 and 2005 results, six of the 11 year groups (55%) are different pupils. Even where the same pupils are included in multiple years other research in the BCRP tracking a single cohort over time age 7-16 have demonstrated quite significant change in individual pupils' primary needs, as recorded by the school, as pupils age particularly across the primary-secondary transfer period (Y6-Y9)¹². In short where we see stable results this is not just an artefact to expect because of the nature of the sampling.

3.5 Pupil factors associated with disproportionate representation

The above analysis identifies significant patterns of disproportionality by ethnicity. *Appendix 3* looks at all SEN types and indicates significant issues not discussed above, such as the fact that Black Caribbean and Mixed White and Black Caribbean pupils are twice as likely as White British pupil to be identified with BESD. However the focus here is on the SLCN and ASD outcomes.

Examination of ethnic disproportionality with respect to SEN must take account of the overlap between ethnicity, SEN and poverty. Absolute differences in rates of poverty among different ethnic groups have been well established in England: 14% of White British pupils are eligible for a free school meal (a commonly used indicator of poverty) compared to 29% of Black Caribbean, 34% of Pakistani, 42% of Black African and 47% of Bangladeshi pupils (Department for Education and Skills, 2006). Socioeconomic disadvantage may have a direct influence on children's development, through limited resources and increased risk of a range of health and developmental problems, including low birth weight and increased risk of injuries and ill health (Spencer, 1996); and an indirect influence through parental education, expectations and quality of school (e.g., Phillips et al, 1998).

Disproportionality for SEN is also related to socio-economic disadvantage although the relationship is contested. Donovan and Cross (2002) highlight the importance of poverty both as a direct influence and also as a factor mediating risk of biological and social factors. This position has been challenged by O'Connor & Fernandez (2006) who argue that

¹² Meschi, E., Mickelwright, J., Vignoles, A., & Lindsay, G. (2012). *The transition between categories of special educational needs of pupils with speech, language and communication needs (SLCN) and autism spectrum disorder (ASD) as they progress through the education system*. London: DfE.

disproportionality 'plagues judgmental but not non judgmental categories of special education' (p.6)¹³. Furthermore, it has been argued that poverty, rather than ethnicity, is the main factor and that ethnicity is in essence a proxy for poverty. Strand & Lindsay (2009) have identified that poverty is related to identification, for example pupils entitled to FSM are twice as likely to have an identified SEN of some type, so it is important to control for poverty. However they also found that ethnicity is also an independent factor relating to disproportionality, in addition to poverty.

This section analyses the most recent data (2011) to identify characteristics associated with identification of SLCN and ASD. The pupil level variables included are:

- Ethnic group
- Gender (boys vs. girls)
- Age within year group (September - December = autumn born; January - April = spring born; May - August = summer born)
- Year group (Y1-Y11)
- Entitlement to a Free School meal (FSM) - This is a commonly used measure of poverty since only families largely dependent on state benefits are entitled to a FSM
- Income Deprivation Affecting Children Index (IDACI) - This measures the proportion of children under the age of 16 in an area living in low income households. The measure has a wide base including families in receipt of income support, job seekers allowance, and working families tax credit/disabled persons tax credit, if below 60% of national median income. The indicator is available for very small localised areas called super output areas (SOA), of which there are 32,000 in England, each containing approximately 200 children (SD=70). The variable is normalised to have a mean of 0 and SD of 1.
- English as an Additional Language (EAL).

All these variables were included in a multinomial logistic model. Importantly this analysis controls for all measured variables simultaneously, so each coefficient represents the unique effect for that variable, after the variation in the outcome associated with all other explanatory variables in the model is controlled. The results are presented in Table 6 below¹⁴.

¹³ Non-judgemental categories are those associated with clearly biologically related SEN e.g. sensory impairment and physical disabilities; judgemental categories are those where interpretation of behaviour is related more substantially to identification, e.g. BESD and ASD.

¹⁴ See Appendix 4 for the analyses of unadjusted odds ratios by ethnic group for 2005, 2007, 2009, and 2011.

Table 6: Adjusted Odds Ratios for all SEN types age 5-16

Unadjusted Ratios	Cognition & Learning Needs				Behaviour, Emotional & Social Difficulties	Communication & Interaction Needs		Sensory and/or Physical Needs				Other Difficulty/ Disability
	MLD	SLD	PMLD	SpLD	BESD	SLCN	ASD	VI	HI	MSI	PD	Other
IDACI	1.41	1.10	1.01	1.14	1.40	1.25	1.06	1.17	1.08	1.03	1.06	1.25
White Irish	.74	.85	1.18	1.10	.88	.90	1.10	1.02	.98	2.44	1.10	1.04
Traveller Irish	3.60	1.45	1.65	2.37	1.86	1.58	.37	.81	1.42	1.85	1.32	2.84
Traveller Gypsy/Roma	2.87	1.63	.83	2.23	1.76	1.52	.44	1.23	.87	.00	.98	1.94
White other groups	.68	.81	1.12	.84	.83	.97	.99	.76	.44	1.32	.73	.96
Mixed White & African	.67	.74	1.04	.78	1.06	.94	1.06	.64	.58	.84	.72	.76
Mixed White & Caribbean	.84	.67	.80	.94	1.39	.88	1.01	.81	.80	.57	.83	.94
Mixed White & Asian	.63	.68	1.10	.57	.74	.80	1.00	.71	.71	1.01	.80	.71
Any other mixed background	.66	.92	1.30	.74	.99	.95	1.29	.82	.68	1.18	.82	.88
Indian	.60	.85	1.08	.33	.33	.69	.67	1.03	.53	1.06	.82	.51
Pakistani	1.00	1.39	2.41	.46	.47	.81	.73	2.31	1.01	2.58	1.30	.71
Bangladeshi	.50	.89	1.56	.45	.36	.91	.81	1.07	.66	1.35	.75	.61
Any Other Asian	.51	1.10	1.63	.39	.42	.85	.91	.73	.48	1.81	.79	.65
Black African	.55	.96	1.30	.53	.71	1.06	1.53	.76	.39	1.59	.66	.64
Black Caribbean	.89	.87	1.07	.87	1.46	1.29	1.26	.89	.81	1.13	.64	.85
Black other groups	.72	1.18	1.42	.79	1.09	1.17	1.65	.84	.44	.72	.72	.84
Chinese	.30	.67	1.30	.39	.29	1.32	1.23	.44	.31	.55	.45	.85
Any other ethnic group	.63	.81	1.32	.56	.65	.99	.90	.94	.48	.53	.64	.96
Unclassified/Refused	.90	1.25	1.15	1.09	1.03	1.01	1.29	.92	.67	1.09	.98	1.04
FSM	2.52	2.71	1.98	1.74	2.84	1.84	1.55	1.50	1.44	1.53	1.84	1.88
Boy	1.87	1.87	1.36	2.31	3.26	2.55	6.21	1.40	1.10	1.80	1.47	1.52
Summer	1.65	1.19	1.06	1.47	1.06	1.46	1.06	1.02	1.08	1.34	1.10	1.24
Spring	1.28	1.10	1.02	1.21	1.02	1.20	1.02	.99	1.06	1.21	1.06	1.12
Y1	.35	.63	1.33	.18	.27	4.22	.74	.70	.61	1.18	.94	.42
Y2	.65	.70	1.39	.37	.37	3.92	.84	.82	.69	1.63	1.03	.50
Y3	.91	.78	1.35	.61	.44	3.49	.96	.84	.78	1.82	1.00	.55
Y4	1.09	.91	1.31	.83	.50	3.10	1.07	.92	.81	1.95	1.01	.57
Y5	1.27	.99	1.38	1.04	.55	2.79	1.11	.91	.81	1.88	1.01	.59
Y6	1.34	1.03	1.36	1.16	.58	2.42	1.19	.88	.82	1.55	1.00	.59
Y7	1.17	1.00	1.08	1.12	.60	1.71	1.29	.92	.96	1.09	.98	.79
Y8	1.12	1.04	.99	1.09	.71	1.47	1.29	1.00	.95	1.01	1.02	.83
Y9	1.07	1.01	1.02	1.03	.82	1.27	1.25	.96	1.01	1.16	1.00	.86
Y10	1.01	.98	1.12	.99	.91	1.11	1.13	.98	.99	.81	.93	.89
EAL	.90	.88	.91	.71	.59	1.09	.54	.90	2.35	.57	.84	.94
Deprivation (FSM + IDACI)	3.57	2.97	2.00	1.99	3.97	2.30	1.64	1.75	1.54	1.57	1.96	2.36

Notes: Multi-nomial logistic model base = No SEN. SEN type is the primary need recorded for all SAP and statemented pupils. EAL = English as an additional Language; FSM = entitled to Free School Meal; IDACI = Income Deprivation Affecting Children Index. Outcome is SAP and statemented combined. **Red bold** indicates overrepresentation (OR>1.33) **Blue italic** indicates underrepresentation (OR <0.75)

3.5.1 SLCN

Gender has the strongest single association with SLCN identification, with boys 2.5 times more likely to be identified than girls (Table 6).

There is a strong social gradient for SLCN. Pupils entitled to FSM are 1.8 times more likely to be identified, and a 1SD change in IDACI is associated with increased odds of 1.3. If we combine the estimates for FSM and IDACI to get an estimate of the total impact of socio-economic disadvantage, then pupils entitled to FSM and living in a deprived area (+1SD on IDACI) are 2.3 times more likely to be identified with SLCN than those not so socio-economically disadvantaged¹⁵.

We have seen previously that the prevalence of identified SLCN decreases substantially across year groups, so we control for this by including year group as a variable. Pupils in Y1 are over four times more likely to be identified with SLCN compared to pupils in Y11 (the base group). The coefficients for the other explanatory variables therefore represent effects after the year group variation is controlled.

Importantly there is also a strong age effect within year group. So pupils who are young for their year group (summer born) are 1.5 times more likely to be identified with SLCN than the oldest (autumn born) pupils, with spring born pupils 1.2 times more likely to be identified. This is a remarkably strong effect. It indicates that children who are young for their year group (summer born) are at substantially increased risk of identification for SLCN. In areas of the curriculum such as reading and mathematics achievement we know there are strong age gradients reflecting significant maturation effects, hence the use of standard age scores (rather than raw scores) in most nationally standardised tests. It would appear that teachers are failing to make sufficient age adjustments in their assessment of SLCN (and also in relation particularly to MLD & SpLD) see Table 6.

EAL is only weakly related to SLCN, after taking into account ethnicity, social deprivation, gender and age, with a slight increase in the Odds Ratio (OR=1.09) for those identified as EAL compared to those whose first language was recorded as English.

¹⁵. Combined effects are found by adding the B coefficients (not shown in the table because of space) and taking the exponent. For SLCN the FSM B coefficient is .61 and the IDACI B coefficient is .22, so the combined effect is $\text{Exp}(.83)$ which is equivalent to an Odds Ratio of 2.3.

Controlling for the above variables changes some ethnic coefficients substantially. Bangladeshi, Black African and Black other groups are no longer over-represented. The only raised odds to remain are for Black Caribbean (though the OR has reduced substantially from 1.80 to 1.29) and Chinese (1.39 to 1.32) pupils.

3.5.2 ASD

Gender has perhaps the strongest single association with ASD, with the odds of identification for boys over six times the odds for girls (Table 6).

The social gradient for ASD is less strong than for SLCN, in fact along with Hearing Impairment (HI) and Multi-sensory impairment (MSI) it is one of the lowest, but it is present. Pupils entitled to FSM are 1.5 times more likely to be identified with ASD, and a 1SD change in IDACI is associated with increased odds of 1.06. If we combine the estimates for FSM and IDACI to get an estimate of the total impact of deprivation, then pupils entitled to FSM and living in a deprived area (+1SD on IDACI) are 1.6 times more likely to be identified with SEN.

Relative to Y11 the rate of identification is lower in Y1/Y2 and highest in Y7-Y9. However there is no birth season effect, with little difference between summer born and autumn born pupils.

EAL is associated with significant under-representation, even after controlling for social disadvantage, gender, age, and ethnicity, with an OR of 0.54, i.e. pupils identified as EAL are almost half as likely to be identified with ASD as those with English as their first language.

Even after accounting for EAL, there is still substantial under-representation of Indian (0.67) and Bangladeshi (0.73) pupils. There also now appears to be over-representation of Black African (1.53) and Black Other (1.65) pupils. However the relationship between ethnicity and EAL is complicated, and this is explored in detail below.

3.5.3 Interpreting the results for EAL

The EAL measure needs to be interpreted with considerable caution. The School Census asks schools to record the pupil's 'first language' defined as follows:

“A first language other than English should be recorded where a child was exposed to the language during early development and continues to be exposed to this language in the home or in the community. If a child was exposed to more than one language (which may include English) during early development the language other than English should be recorded, irrespective of the child's proficiency in English.”

It is therefore not a measure of the pupil's fluency in English: pupils recorded as EAL may speak no English at all or they may be fully fluent in English. EAL is also largely coterminous with ethnicity, thus in primary schools 96% of Bangladeshi, 89% of Pakistani, 80% of Chinese and 79% of Indian pupils are recorded as EAL, as are 70% of Black African and 69% White Other pupils, compared to 5% of Black Caribbean and 0.4% of White British pupils. To a large extent then the EAL variable acts as a proxy for ethnicity and may simply soak up ethnic variation, rather than providing information about the role of fluency with English, which is how it is often interpreted.

To seek to understand the relationship between the EAL variable, ethnicity and disproportionality the analysis was repeated both excluding and including EAL. The ethnic coefficients for the major ethnic groups are presented in Table 7.

Table 7: Adjusted Odds Ratios for SLCN and ASD excluding and including the EAL variable

Main ethnic groups	SLCN			ASD		
	Raw	Adj. without EAL	Adj. with EAL	Raw	Adj. without EAL	Adj. with EAL
White Other	1.22	1.03	.97	<i>.70</i>	<i>.69</i>	.99
Indian	.81	<i>.75</i>	<i>.69</i>	<i>.44</i>	<i>.44</i>	<i>.67</i>
Pakistani	1.21	.88	.81	<i>.49</i>	<i>.45</i>	<i>.73</i>
Bangladeshi	1.57	.99	.91	<i>.54</i>	<i>.47</i>	.81
Other Asian	1.07	.91	.85	<i>.60</i>	<i>.58</i>	.91
Black African	1.78	1.13	1.06	1.20	1.06	1.53
Black Caribbean	1.80	1.30	1.29	1.36	1.25	1.26
Black Other	1.83	1.22	1.17	1.56	1.42	1.65
Chinese	1.39	1.41	1.32	.76	.78	1.23
EAL	-	-	1.09	-	-	.54

Note: Odds Ratios (OR) compare the identification rates for each ethnic group to the odds of identification for White British pupils. **Red bold** indicates over-representation (OR > 1.33) *Blue italic* indicates under-representation (OR < 0.75)

As EAL has only a very weak association with SLCN the ethnic ORs hardly change at all when it is included. For ASD however the association with EAL is strong, as noted above. The ORs for all four Asian groups become less extreme (i.e. closer to 1.0), although Indian and Pakistani pupils are still very much under-represented. However the big changes occur for White other groups (OR increases from 0.69 to 0.99) and Black African (OR increases from 1.06 to 1.53). If the EAL variable is reflecting an ethnic effect for ethnic groups that are 80% EAL or above, is this biasing the estimates for the Black African and White Other ethnic groups?

To check this, the analysis was repeated just including White Other and Black African pupils alone. The aim was to determine whether EAL had an association with identification *within* these two groups. The analysis indicates that the magnitude of the EAL association with SLCN and ASD within these two ethnic groups (1.12 for SLCN and 0.46 for ASD) was similar to that for the whole population. Thus EAL had the same association with SLCN/ASD *within* these two ethnic groups as in the whole population. Consequently we retain EAL in the model, though it is important **not to interpret it as a measure of fluency in English but as a marker of exposure (at home or in the wider community) to a language other than English.**

It is important to understand how to interpret the ethnic coefficients when EAL is included in the model. The estimates for ethnicity and EAL are additive. Thus Bangladeshi pupils identified as EAL (which is over 96% of Bangladeshi pupils) would have an OR of 0.44¹⁶, indicating substantial under-representation relative to White British non-EAL pupils. The ethnic coefficients indicate *additional effects* over and above the effect of EAL. Thus while there may be little additional effect for ASD uniquely associated with being Bangladeshi, Bangladeshi pupils as a whole will be under-represented¹⁷. However in addition to the EAL effect, there does seem to be additional under-representation for Indian and Pakistani pupils, and in the opposite direction over-representation of Black African pupils. For Black African pupils this reflects high levels of identification (Raw OR = 1.20) despite the fact that a high proportion (70%) are EAL.

3.5.4 EAL and age

Why should EAL be associated with reduced identification of ASD? It may be that EAL reflects communities with lower awareness of autism, parents rights and relevant services, or where cultural or linguistic barriers impede access to services, or that services that are available are not accessible or do not meet their needs (Corbett & Perapa, 2007). It may also be that teachers have greater difficulty in identifying less extreme needs on the autism spectrum that are more subtle (we explore this further below).

It is notable though that the impact of EAL interacts significantly with year group, as shown in Figure 3. In fact when absolute identification rates for ASD are relatively low in Y1-Y2, there is no significant difference in identification between English and EAL pupils. However while identification rates for ASD rise among first language English pupils from Y3 onwards, identification rates for EAL pupils decline. Thus the under-representation of EAL pupils for ASD is reflected in odds ratios of only 0.95 and 0.89 for pupils in Y1 and Y2 respectively, but decreases to 0.63 in Y3, 0.47 in Y6 through to 0.33 in Y10.¹⁸

¹⁶. Combined effects are found by adding the B coefficients (not shown in the table because of space) and taking the exponent. For ASD, the Bangladeshi B coefficient is -.21 and the EAL B coefficient is -.62, so the combined effect is $\text{Exp}(-.83)$ which is equivalent to an OR of 0.44.

¹⁷. This also explains why Pakistani and Bangladeshi pupils who are substantially over-represented for Hearing Impairment in the raw data (OR = 2.3 and 1.7 respectively) no longer appear to be over-represented in the adjusted model. This is because the associations with ethnicity are essentially captured by the EAL variable, showing the odds for pupils with EAL are over 2.4 higher than for those pupils with English as first language.

¹⁸. Odds Ratios <1 indicate under-representation and the smaller the OR the more extreme the degree of under-representation.

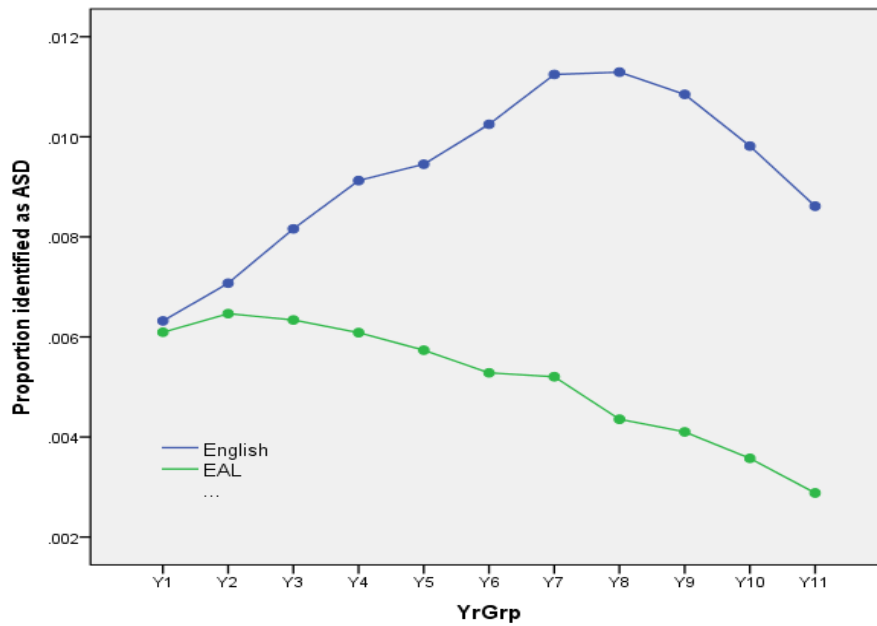


Figure 3: Prevalence rates for ASD (SAP & stated) by year group and EAL

It may be that pupils with the most extreme needs, which are clearly observable through the nature of pupil's behaviour, are identified at an early age (Y1/Y2) regardless of EAL status. However less extreme needs on the autism spectrum, identified by nuances in the use of language for social communication, may be more difficult to identify if the first language of the assessor and the pupil are not congruent. This is partly borne out by looking at the data for stated pupils only (Figure 4). Differences in identification between pupils with English first language and EAL are not strong over the period Y1-Y4, but subsequently a divergence in identification for EAL pupils is apparent. Why this identification declines for pupils with EAL while it increases for those with English as a first language remains to be explained.

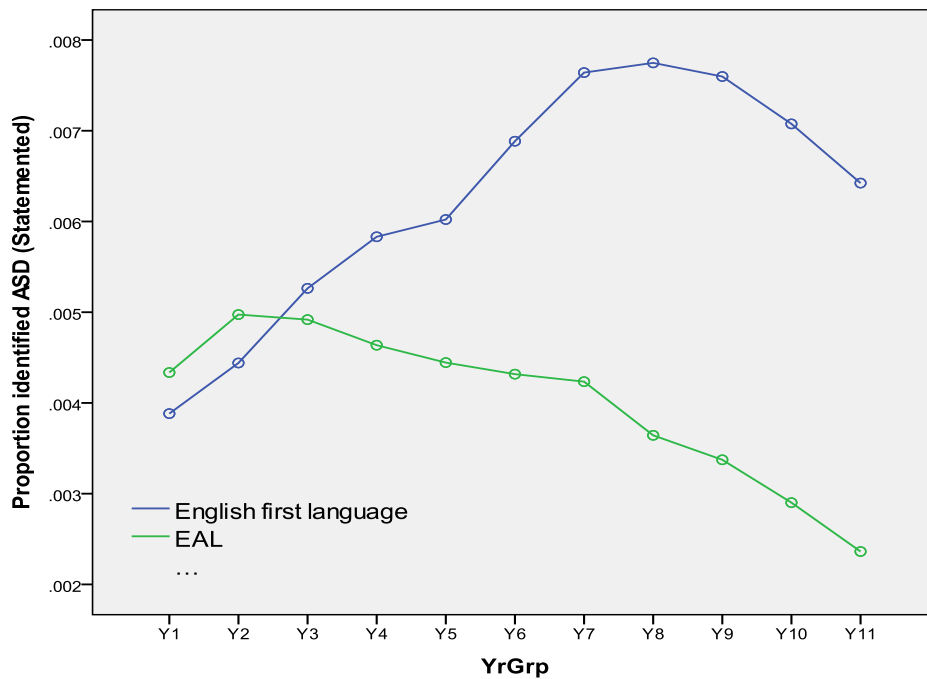


Figure 4: Prevalence rates for ASD (Statemented pupils only) by year and EAL.

It is worth noting that these patterns do not apply to SLCN, as shown in Figure 5. The pattern of identification over year groups for English first language and EAL pupils mirror each other, for both SAP and statemented need, although it is notable that the very small over-representation for EAL pupils that does exist (OR 1.09) is apparent only for SAP not for statemented need (compare Figure 5a with Figure 5b). Note also that the trajectory of the reduction in the proportion of pupils with SLCN who have EAL matches that for non-EAL pupils. This indicates that the reduction in prevalence of SLCN at School Action Plus found over the period Year 1 to Year 7 in particular (Figure 1) is a characteristic of both EAL and non-EAL pupils.

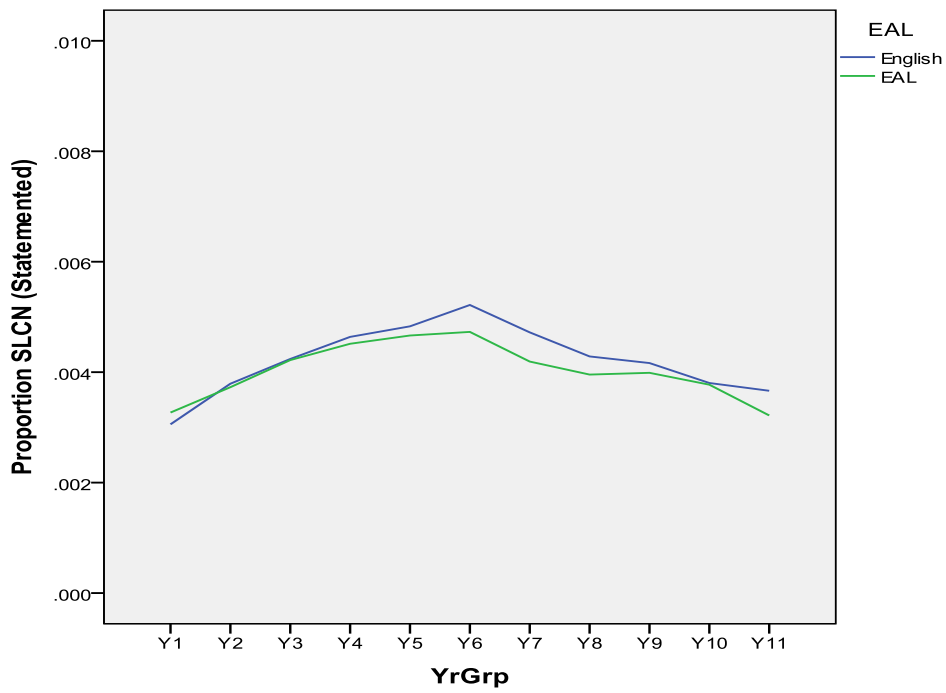
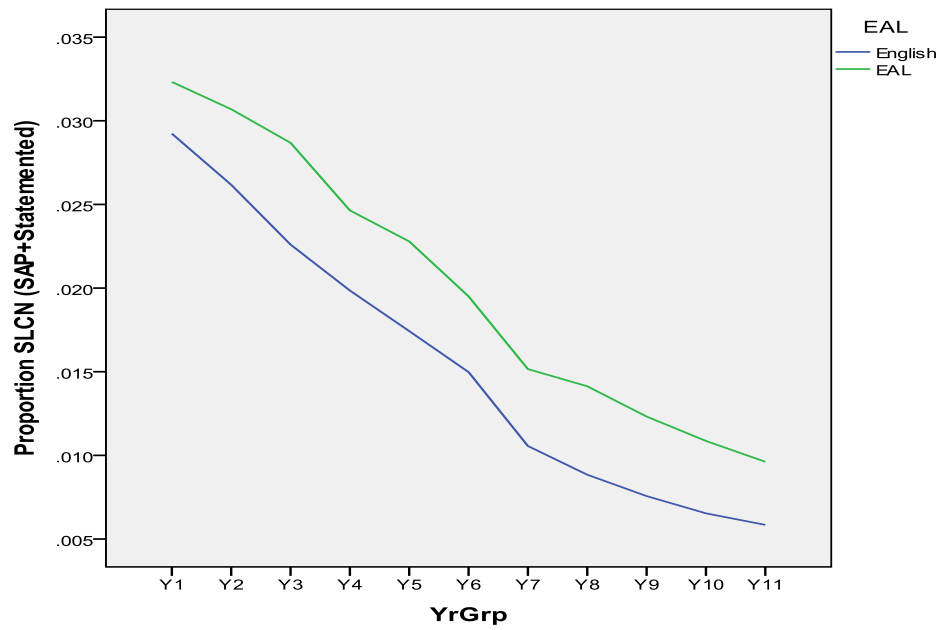


Figure 5: Identification rates for SLCN by year group and EAL (a) SAP & Statemented (b) Statemented only.

3.6 School characteristics

3.6.1 Special or mainstream school

Table 8 below shows that only 3.8% of pupils with SLCN at SAP and above were attending special schools. However the proportion was far higher (27.4%) among those pupils identified with ASD. Even among only those pupils with statements, a greater proportion of pupils identified with ASD (40%) were attending special schools compared to those with SLCN (14%).

Table 8: Proportion of pupils with SLCN & ASD in special or mainstream schools

SEN	School	SAP		Statemented		Total	
SLCN	Special school	9	0.0%	3716	14.6%	3725	3.8%
	Mainstream	72595	100.0%	21784	85.4%	94379	96.2%
	All	72604		25500		98104	
ASD	Special school	63	0.4%	14461	39.8%	14524	27.4%
	Mainstream	16617	99.6%	21890	60.2%	38507	72.6%
	All	16680		36351		53031	

3.6.2 School characteristics associated with identification

We can ask whether, in addition to pupil level characteristics, any features of the school are also associated with the likelihood of identification of SLCN/ASD. To investigate the effect of school characteristics, over and above pupil factors, the pupil level analysis was repeated adding selected school factors. The analysis was completed separately for primary and secondary schools, since factors such as school size, admissions policies etc. vary systematically between phases. Special schools were excluded from the analysis since they will *a priori* have high levels of SEN identification since they specifically cater for pupils with substantial special educational needs. Also small schools (<20 pupils) were excluded since percentage figures for school composition measures are likely to be very unreliable for very small schools. The results are presented in Table 9.

Table 9: School characteristics and their associations (ORs) with SEN identification 2011

Primary schools		ASD	BESD	HI	MLD	MSI	OTH	PD	PMLD	SLCN	SLD	SPLD	VI
School type	Voluntary	0.85 *	0.89 *	0.78 *	0.92 *	0.98	1.00	0.97	0.87	0.91 *	0.91	1.02	0.93
	Foundation	0.95	1.01	0.81 *	1.05	1.01	0.95	0.99	1.23	1.03	0.99	0.96	0.79
	Academies	1.02	1.01	0.76 *	0.91 *	0.69	1.14	0.97	2.53 *	0.97	2.20 *	1.10 *	0.97
	Community												
School %FSM (Quintiles)	Very low	0.70 *	0.55 *	0.86 *	0.56 *	0.60	0.80 *	0.80 *	0.80	0.56 *	0.65 *	1.10 *	0.86
	Low	0.79 *	0.65 *	0.85 *	0.63 *	0.91	0.82 *	0.86 *	0.86	0.65 *	0.70 *	1.11 *	0.88
	Average	0.96	0.78 *	0.88 *	0.73 *	0.69	0.97	0.94	1.04	0.79 *	0.84 *	1.17 *	0.93
	High	0.98	0.92 *	0.98	0.90 *	0.68	0.95	1.04	0.99	0.91 *	0.98	1.07 *	1.02
	Very high												
School size (Quintiles)	Very small	1.20 *	1.57 *	1.02	1.33 *	1.28	1.43 *	1.03	3.16 *	1.30 *	2.79 *	1.67 *	1.16
	Small	1.11 *	1.26 *	0.96	1.17 *	1.11	1.15 *	1.01	1.93 *	1.10 *	1.52 *	1.25 *	1.21 *
	Average	1.04	1.13 *	1.03	1.08 *	1.06	1.12 *	1.00	1.71 *	1.08 *	1.41 *	1.14 *	0.99
	Large	0.97	1.09 *	1.04	1.05 *	1.02	1.05	0.93 *	1.33 *	1.03 *	1.17 *	1.06 *	1.03
	Very large												
School %WBRI	1 SD change	0.91 *	0.91 *	1.07 *	1.01	0.73 *	0.95 *	0.96 *	0.79 *	0.95 *	0.98	0.88 *	0.97
Secondary schools													
School type	Voluntary	1.06	0.71 *	0.89 *	0.79 *	0.85	1.01	0.98	1.24	0.97	0.86	0.93 *	0.97
	Foundation	1.03	0.97 *	0.90 *	1.03	0.76	1.06	1.00	1.11	0.98	1.00	0.95 *	0.96
	Academies	1.16 *	1.00	0.92 *	1.02	0.94	1.12 *	0.99	1.43	1.00	1.38 *	0.95 *	1.03
	Community												
School %FSM	Very low	1.13 *	0.76 *	0.98	0.56 *	0.73	0.49 *	1.03	0.37 *	0.92	0.58 *	0.88 *	1.45 *
	Low	1.09	0.83 *	0.98	0.66 *	0.79	0.58 *	1.14	0.43 *	0.93	0.71 *	0.87 *	1.56 *
	Average	1.15 *	0.97	1.02	0.76 *	1.39	0.66 *	1.03	0.66	0.95	0.85	0.85 *	1.45 *
	High	1.12 *	1.03	1.05	0.90 *	1.07	0.75 *	1.08	0.68	0.93 *	1.04	0.88 *	1.31 *
	Very high												
School size	Very small	1.28 *	1.15 *	0.99	1.18 *	1.34	1.03	1.10	2.47 *	1.12 *	2.00 *	1.15 *	0.96
	Small	1.07 *	1.19 *	0.98	1.16 *	0.88	1.30 *	1.04	0.74	1.06 *	1.13	1.18 *	0.98
	Average	1.06 *	1.09 *	1.04	1.11 *	0.88	1.08 *	1.01	1.24	1.06 *	1.05	1.04	0.91
	Large	0.96	1.03 *	0.99	1.05 *	1.02	1.04	0.95	0.94	0.96	1.00	0.99	0.87 *
	Very large												
School %WBRI	1 SD change	0.91 *	0.89 *	1.06 *	1.00	0.83	1.06 *	1.00	0.80 *	0.90 *	0.97	0.92 *	0.99
School gender	Boys	0.88 *	0.76 *	0.71 *	0.68 *	0.68	0.90	0.65 *	0.58	0.97	0.67 *	0.98	0.75 *
	Girls	1.00	1.22 *	1.02	0.96	1.17	0.94	0.95	1.39	1.12 *	1.09	1.30 *	1.11
	Mixed												
Selective Status	Grammar	0.34 *	0.27 *	0.57 *	0.02 *	0.39	0.48 *	0.45 *	0.00	0.10 *	0.02 *	0.15 *	0.90
	Modern	1.33 *	1.60 *	0.95	1.18 *	1.40	0.80 *	1.27 *	0.57	1.40 *	0.65 *	1.32 *	1.18
	Comprehensive												

Note: The model also controls for the pupil level measures shown in Table 6, but the coefficients are not reported here. EAL was not included in the analysis. * indicates statistically significant contrasts at $p < .05$.

3.6.3 SLCN

In relation to SLCN, in primary schools the proportion of pupils entitled to FSM was a significant predictor, over and above the FSM entitlement and IDACI score of the individual pupils. Pupils in schools in the lowest %FSM quintile were about half as likely to be identified as pupils in schools in the top %FSM quintile with a clear gradation across the quintiles. Interestingly however there was no significant association with %FSM for secondary schools. School size was also related to identification with higher levels of identification in small schools, and this was consistent across both phases. Voluntary aided/Controlled primary schools had lower levels of identification, although there was no association with school type for secondary schools.

The proportion of White British pupils in the schools was weakly related to identification with a 1 Standard Deviation (SD) increase in the percentage of White British pupils being associated with a 0.95 drop in the OR for identification. A similar trend, though slightly more marked, was apparent in secondary schools. Although girls were less likely to be identified with SLCN than boys, identification rates were higher in girls only schools (OR 1.12) than in mixed schools. This may reflect the higher proportion of ethnic minority girls educated in single sex schools compared to White British girls (3.4% of White British girls compared to 18% of Black girls, see Strand, 2007, p45). Selective school status was strongly related to identification, with much lower levels of identification in grammar schools (0.10) and higher levels of identification in secondary modern schools (1.40) compared to comprehensive schools.

3.6.4 ASD

In relation to ASD, there were again some significant associations with school characteristics. Voluntary aided primary schools were slightly less likely to identify ASD compared to Community schools and secondary academies slightly more likely. Schools with a low percentage of pupils on FSM were less likely to identify ASD, although this was not true for secondary schools. Smaller schools were more likely to identify ASD than the largest schools and this was consistent across both phases. Similarly, schools with a high proportion of White British pupils were slightly less likely to identify ASD, and this was again consistent across phases. Boys were 6 times more likely than girls to be identified with ASD, but the odds of identification in boys only schools was slightly lower than in mixed schools. Last, similarly to SLCN, selective school status was strongly related to identification, with

much lower level of identification in grammar schools (0.34) and higher levels of identification in secondary modern schools (1.33) compared to comprehensive schools.

We must be cautious in interpreting these data as association does not necessarily imply causation. However the results suggest there are school composition effects. For example in schools with a low proportion of pupils entitled to FSM the odds of having an identified SLCN were lower than in a school with a high proportion entitled to FSM, even after controlling for individual pupil level entitlement to FSM and IDACI score. This might reflect lower levels of need in such schools or possibly lower level of awareness of SLCN. There may also be contrast effects. For example boys with ASD in boys only schools may not 'stand out' to the same extent as they do in mixed sex schools, accounting for the reduced odds of identification of ASD in boys only schools, even after controlling for pupil gender.

3.6.5 Differences in disproportionality by school phase

The separate analyses by phase (primary vs. secondary) allows for identification of slightly different picture of disproportionality between phases. The results are presented in Table 10.

For SLCN, the patterns are largely consistent across phases. Chinese pupils are over-represented in both phases, although this is more marked in secondary and is not eliminated by the controls for pupil background. The picture is the same for the three Black groups, with greater disproportionality in secondary phase that is generally not eliminated by the controls for pupil background. Bangladeshi pupils are also over-represented in both phases, although this can be accounted for by pupil background, White other pupils are overrepresented in the secondary but not the primary phase.

For ASD the patterns for Black groups vary considerably by phase. All three Black groups are over-represented in primary but are not over-represented in secondary phase, and this overrepresentation remains after control for pupil background. The underrepresentation of Asian pupils is pronounced in both phases, although even more marked in secondary than in primary schools.

Table 10: ORs for ethnic group by phase for SLCN and ASD

SLCN	Primary schools			Secondary schools		
	Raw	Adj.	Adj. incl EAL	Raw	Adj.	Adj. incl EAL
White other groups	1.05	.94	.90	1.59	1.40	1.21
Indian	.76	<i>.73</i>	<i>.70</i>	.85	.79	<i>.67</i>
Pakistani	1.09	.86	.82	1.29	.95	.80
Bangladeshi	1.41	.95	.91	1.77	1.13	.94
Any Other Asian	.98	.87	.83	1.22	1.06	.90
Black African	1.67	1.11	1.06	1.81	1.23	1.07
Black Caribbean	1.68	1.20	1.20	2.13	1.65	1.63
Black other groups	1.61	1.12	1.10	2.18	1.60	1.49
Chinese	1.30	1.31	1.25	1.71	1.73	1.47
EAL			1.05			1.24

ASD	Raw	Adj.	Adj. incl EAL	Raw	Adj.	Adj. incl EAL
White other groups	.83	<i>.82</i>	1.19	<i>.58</i>	<i>.56</i>	.84
Indian	<i>.52</i>	.52	.81	<i>.37</i>	.36	<i>.58</i>
Pakistani	<i>.58</i>	.54	.90	<i>.41</i>	.35	<i>.61</i>
Bangladeshi	.77	<i>.68</i>	1.18	<i>.30</i>	.24	<i>.48</i>
Any Other Asian	.83	.82	1.29	<i>.37</i>	.34	<i>.59</i>
Black African	1.68	1.49	2.19	<i>.74</i>	.62	.95
Black Caribbean	1.69	1.54	1.54	1.07	.99	1.01
Black other groups	1.88	1.71	2.02	1.26	1.11	1.30
Chinese	1.02	1.07	1.71	<i>.54</i>	.55	.92
EAL			.54			<i>.46</i>

Note: Odds Ratios (OR) compare the identification rates for each ethnic group to the odds of identification for White British pupils. **Red bold** indicates over-representation (OR > 1.33) *Blue italic* indicates under-representation (OR < 0.75)

3.7 Local Authority (LA) variation in disproportionality

We know that the assignment of children to different types of SLCN and ASD provision is a discretionary decision of either teachers or other professionals such as educational psychologists augmented by parental preference and choice. For those with a statement of SEN the Local Authority (LA) makes a decision on the designation of the need as well as the provision to meet the need. Practices vary in different Local Authorities (LAs) and as a result there is substantial variation in SLCN and ASD identification and provision across Local Authorities, as there is for all categories of SEN.

The two major findings from this report are that:

- Black pupils (from all three Black groups) are over-represented relative to White British pupils for SLCN, and;
- Asian pupils (from all four Asian groups) are under-represented relative to White British pupils for ASD.

However there is substantial variation between LAs in the extent of this disproportionality. The results are described in detail below.

3.7.1 SLCN

Table 11 below shows the Relative Risk (RR) ratio¹⁹ for the 10 LAs with the lowest, and the 10 LAs with the highest, disproportionality for Black pupils with SLCN. In calculating LA level disproportionality only LAs with a minimum of 60 Black pupils in the Y1-Y11 population were included, covering 135 of the 152 LAs in England. The range of disproportionality is substantial, from zero (no Black pupils identified with SLCN) up to over-representation of Black pupils 3:1 relative to White British pupils. Overall the picture was very diverse, with 36 LAs showing substantial underrepresentation of Black pupils (RR < 0.75) and 56 LAs showing substantial overrepresentation of Black pupils (RR > 1.33).

While the absolute level of SLCN identification is correlated with socio-economic disadvantage (e.g. LA level correlations with %FSM and mean IDACI score were 0.51 and 0.50 respectively) socio-economic disadvantage is not strongly correlated with disproportionality (LA level correlations with %FSM and mean IDACI score of 0.17 and 0.10 respectively). Furthermore while the proportion of Black Pupils in the LA population is strongly correlated with the overall level of SLCN identification ($r = 0.67$) there is only a very weak relationship with disproportionality ($r = 0.15$). Other (unidentified) factors, presumably related to local policy and practice, underlie different levels of disproportionality across LAs.

¹⁹. The Relative Risk (RR) ratio is simply the prevalence for the minority group divided by the prevalence for White British pupils. The substantial interpretation of the RR ratio is the same as for the Odds Ratio described earlier.

Table 11: Disproportionality for Black pupils with SLCN by Local Authority

Rank	Local Authority	All Pupils	White British		Black		Relative Risk
			N	%	N	%	
1	Gateshead	1.4%	20,603	1.4%	161	0.0%	0.00
2	York	0.9%	17,389	0.9%	85	0.0%	0.00
3	Poole	1.7%	14,040	1.7%	65	0.0%	0.00
4	Somerset	1.1%	55,211	1.1%	102	0.0%	0.00
5	Kingston upon Hull, City of	1.9%	25,425	2.0%	298	0.3%	0.17
6	Central Bedfordshire	0.9%	27,539	0.8%	530	0.2%	0.22
7	Windsor and Maidenhead	1.9%	11,448	1.7%	227	0.4%	0.25
8	West Berkshire	1.2%	17,684	1.1%	254	0.4%	0.35
9	Plymouth	2.3%	27,320	2.4%	207	1.0%	0.40
10	Walsall	0.6%	25,114	0.7%	1018	0.3%	0.44
126	Bromley	1.6%	26,755	1.4%	3075	2.8%	2.02
127	Tameside	0.7%	24,075	0.7%	281	1.4%	2.12
128	Cumbria	1.3%	55,221	1.3%	70	2.9%	2.19
129	Bath and North East Somerset	1.6%	18,495	1.5%	143	3.5%	2.30
130	Haringey	3.1%	5,247	1.8%	8609	4.1%	2.31
131	Barnsley	1.4%	25,559	1.4%	120	3.3%	2.39
132	Durham	2.7%	55,920	2.7%	75	6.7%	2.48
133	North Tyneside	2.4%	21,775	2.3%	103	5.8%	2.51
134	Telford and Wrekin	1.5%	19,036	1.4%	291	4.1%	2.89
135	Wigan	0.9%	36,991	0.8%	235	2.6%	3.02
	Total	1.6%	4,614,744	1.5%	305708	2.6%	1.76

3.7.2 ASD

Table 11 presents a similar analysis of disproportionality for Asian pupils with regard to ASD. Table 12 below shows the Relative Risk ratio for the 10 LAs with the lowest and the 10 LAs with the highest disproportionality for Asian pupils with ASD. In calculating LA level disproportionality only LAs with a minimum of 100 Asian pupils in the Y1-Y11 population were included, covering 145 of the 152 LAs in England. The range of disproportionality is wide, from zero (no Asian pupils identified with ASD) up to overrepresentation of Asian pupils 2.2:1 relative to White British pupils. However there was much greater consistency in the under-representation than was the case for SLCN as in total 115 LAs showed substantial (RR < .75) under-representation of Asian pupils and only five showed substantial (RR > 1.33) over-representation. This consistency suggests that variation in LA policy and practice plays a less significant role in the underrepresentation of Asian pupils with ASD than it does for the disproportionality of Black pupils with SLCN. There were no substantial LA level correlations between overall %ASD and %FSM, %EAL or mean IDACI score. There was a small negative correlation (-.14) between the percentage of Asian pupils and ASD, but the correlation of percentage Asian pupils with disproportionality (RR) was negligible (-.04).

Table 12: Disproportionality for Asian pupils with ASD by Local Authority

Rank	LA	All	White British		Asian		Relative
		pupils	count	%	count	%	Risk
1	Knowsley	0.5%	16,180	0.6%	125	0.0%	0.00
2	Wirral	1.0%	36,966	1.0%	578	0.0%	0.00
3	Wigan	0.3%	36,991	0.3%	313	0.0%	0.00
4	Hartlepool	0.7%	11,670	0.7%	213	0.0%	0.00
5	Kingston upon Hull, City of	0.8%	25,425	0.8%	428	0.0%	0.00
6	East Riding of Yorkshire	0.5%	37,868	0.5%	136	0.0%	0.00
7	North Lincolnshire	0.6%	18,424	0.6%	712	0.0%	0.00
8	York	0.6%	17,389	0.6%	307	0.0%	0.00
9	Dorset	1.2%	42,279	1.2%	335	0.0%	0.00
10	Poole	0.9%	14,040	0.9%	300	0.0%	0.00
136	North East Lincolnshire	1.2%	18,179	1.2%	145	1.4%	1.16
137	North Tyneside	0.6%	21,775	0.6%	435	0.7%	1.17
138	Hammersmith and Fulham	1.2%	3,851	1.2%	958	1.5%	1.25
139	North Somerset	0.6%	22,227	0.6%	262	0.8%	1.30
140	West Berkshire	1.9%	17,684	1.8%	450	2.4%	1.31
141	Somerset	0.5%	55,211	0.5%	470	0.6%	1.38
142	Blackpool	0.7%	15,875	0.7%	295	1.0%	1.38
143	Sefton	1.0%	31,996	1.0%	207	1.9%	1.86
144	Darlington	1.3%	11,682	1.3%	265	2.6%	2.01
145	Cornwall	0.9%	56,336	0.9%	162	1.9%	2.15
Total		0.9%	461474	0.9%	55629	0.5%	
			4		1		0.54

In the United States, school boards (the equivalent of LAs) are required by national legislation to monitor disproportionality in special education identification by ethnic group (the Individuals with Disabilities Education Improvement Act or IDEA). LAs should be mindful of this in the context of their duties under the Equalities Act. LAs are advised to monitor ethnic disproportionality in SEN identification and those with particularly high levels of disproportionality should investigate practices in their LA area

4. CONCLUSIONS AND POLICY IMPLICATIONS

In presenting the above evidence we recognise that SEN must be considered within a values-related debate. For example, we do not think it inherently 'positive' or 'negative' to be designated as having SEN. The positive outcomes of SEN identification include: identification and clarification of pupils' educational needs; individual action plans to address these needs; and access to specialist input and resources. However there are possible negative outcomes associated with SEN identification which might include restriction of opportunities because of lowered expectations or inappropriate curriculum, feelings of stigmatisation or labelling.

Ethnic disproportionality in identification (either overrepresentation or underrepresentation) always needs to be explored carefully. For example, if children with developmental language difficulties are less likely to be identified with SEN because they have EAL then they may miss out on potentially important speech and language therapy; on the other hand if, for example, Black Caribbean children are more likely to have identified SEN for moderate learning difficulties on the basis of unrelated behaviour problems, they may receive inappropriate curriculum challenge. Importantly, if not addressed ethnic disproportionality may, through inappropriate resourcing, reinforce and perpetuate the same unequal outcomes in the future.

The main findings are:

Rates of identification: The prevalence rate of ASD identified here is broadly consistent with the current estimated prevalence of 1% from US research (e.g. Newschaffer et al, 2007; Fombonne, 2009). US research also identifies significant increases in ASD identification rates in the US. The current analysis of the school census indicates that in England the prevalence of both SLCN and ASD have also increased substantially over the period 2005 - 2011, from 0.94% to 1.61% for SLCN (an increase of 71%) and from 0.48% to 0.87% for ASD (an increase of 81%). No other category of SEN has shown a change in prevalence that even approaches the increases for SLCN and ASD (see Appendix 2). The closest is for BESD where prevalence increased from 1.93% (2005) to 2.43% (2011), an increase of 26%.

The drivers behind these increases for SLCN and ASD are not revealed in the school census data. A recent review has concluded that "There is evidence that the broadening of the definition of ASD, the expansion of diagnostic criteria, the development of services and

improved awareness of the condition have played a major role in explaining this increase, although it cannot be ruled out that other factors might also have contributed to the trend” (Fombonne, 2009, p591). Nevertheless, it is important that provision and resources keep pace with this increased identification.

Many SLCN identified in the early years of primary school appear temporary and

transient, with levels of identification at SAP decreasing from 2.7% in Y1 to 0.6% in Y7.

However the level of stated need for SLCN is fairly consistent at around 0.4% across the full age range 5-16. In contrast the level of identified ASD is broadly consistent across the age range 5-16 for both SAP and stated need.

Gender is associated with the greatest increase in risk for both SLCN and ASD, with boys over-represented relative to girls 2.5:1 for SLCN and over 6:1 for ASD.

There is a strong **social gradient** for SLCN, with the odds of having identified SLCN being 2.3 times greater for pupils entitled to FSM and living in more deprived neighbourhoods. For ASD the socio-economic gradient is less strong (OR = 1.63) but still present.

Birth season effects are strong for SLCN. Pupils who are summer born (May-August) and therefore the youngest within the year group are 1.65 times more likely to have identified SLCN than autumn born (September-December) pupils.

Ethnic disproportionality for both SLCN and ASD is pronounced. There are some reductions in ethnic disproportionality over the period 2005-2011, e.g. Pakistani pupils are no longer overrepresented for SLCN and the overrepresentation of Chinese pupils is much reduced. However the overrepresentation of Black, Bangladeshi and Chinese pupils for SLCN, and the underrepresentation of Indian, Pakistani, Bangladeshi and Other Asian pupils for ASD, are stable and pronounced across all years. There are also some increases in disproportionality, for example a trend for Black pupils to be increasingly overrepresented for ASD, particularly among Black Other pupils.

Social disadvantage and ethnic disproportionality for SLCN: To some extent the ethnic disproportionality for SLCN reflects the strong social gradient. Thus after controlling for age, gender, entitlement to FSM and neighbourhood deprivation, the over-representation of Black and Bangladeshi pupils was substantially reduced (though Chinese pupils remained over-represented and Black Caribbean pupils were still more likely to be identified than their White British peers). By contrast, Indian pupils were underrepresented for SLCN after

controlling for socio-economic disadvantage. Being recorded as having English as an Additional Language (EAL) had only a very weak association with identification of SLCN.

Social disadvantage and ethnic disproportionality for ASD: Adjusting for socio-economic deprivation had little or no impact on the under-representation of Asian pupils for ASD, who were still about half as likely as White British pupils to have identified ASD even after adjusting for poverty. The consistent under-representation across the Indian, Pakistani, Bangladeshi and Asian Other groups was largely captured by the EAL factor. This impact of EAL on ASD identification varied substantially with age, with no difference related to EAL in identification in Y1/Y2 (age 5-6), but from Y2 onwards monolingual English speakers being increasingly *more* likely to be identified whereas EAL pupils were simultaneously *less* likely to be identified. The reasons for this variation with age are not clear. It is important to note that EAL as recorded in the School Census is a measure of exposure (either at home or in the community) to another language in addition to English, *irrespective of the pupil's proficiency in English*. The association with EAL may reflect a wide range of cultural differences not necessarily poor fluency in English.

The causes of ethnic disproportionality in identification of ASD are likely to be varied. Less extreme needs on the autistic spectrum can be subtle, identified by nuances in the use of language for social communication. These may be more difficult to identify if the first language of the assessor and pupil are not congruent. Alternatively, it may also be that the relationship with EAL reflects communities with lower awareness of autism, parents' rights and relevant services, or where cultural or linguistic barriers impede access to services, or where the services available do not meet their needs (Corbett & Perapa, 2007). In either event, there is a need to raise awareness of ASD among Asian communities, improve outreach and review the extent to which the services are configured appropriately.

Variation in ethnic disproportionality by Local Authority: There was substantial variation between LAs in the extent of disproportionality for SLCN. Overall, 36 LAs showed substantial ($OR < .75$) underrepresentation of Black pupils for SLCN while 56 LAs showed substantial ($OR > 1.33$) overrepresentation. In contrast there was much less variation across LAs in the under-representation of Asian pupils with ASD. A total of 115 LAs showed substantial ($OR < .75$) underrepresentation of Asian pupils and only five showed substantial ($OR > 1.33$) overrepresentation. This consistency suggests that variation in LA policy and practice plays a less significant role in the under-representation of Asian pupils with ASD than it does for the disproportionate identification of Black pupils with SLCN. Further research on LA variation is required. In the United States, school boards (the equivalent of LAs) are required

by national legislation to monitor disproportionality in special education identification by ethnic group . LAs should be mindful of this in the context of their duties under the Equalities Act. LAs are advised to monitor ethnic disproportionality in SEN identification and those with particularly high levels of disproportionality should investigate practices in their LA area

Implications for policy and practice

- LAs should be mindful of their duties under the Equalities Act and should monitor ethnic disproportionality in the identification of SEN. LAs with particularly high levels of disproportionality should further investigate practices in their LA area.
- There is a need to raise awareness of ASD among Asian communities, improve outreach and review the extent to which the services are configured appropriately for access by ethnic minority groups.
- Teachers need to be aware of the significant over-identification of summer born pupils for SLCN and to consider carefully whether they are making sufficient allowance for the age of the child when forming their judgements.
- The definition of EAL in the school census is not a measure of fluency in English. The DFE might give consideration to the collection of national data on pupils' stage of fluency in English to allow clearer interpretation of the impact of limited English fluency on identification of SLCN and ASD.

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APPENDIX 1 – BCRP REPORTS

All the BCRP reports are available from the BCRP page on the Department for Education's website: <http://www.education.gov.uk/researchandstatistics/research> and also from the BCRP page in the CEDAR, University of Warwick website: <http://www.warwick.ac.uk/go/bettercommunication>

Main report

1. Lindsay, G., Dockrell, J., Law, J., & Roulstone, S. (2012). *Better communication research programme: Improving provision for children and young people with speech, language and communication needs*. London: DfE.

This report presents the main recommendations of the whole Better Communication Research Programme (BCRP). It draws on evidence provided in the thematic and technical reports. This report also considers the overall implications for policy, practice and research, and indeed seeks to bridge the gap between this substantial research programme and the policy and practice agenda.

Interim reports

2. Lindsay, G., Dockrell, J.E., Law, J., Roulstone, S., & Vignoles, A. (2010) *Better communication research programme 1st interim report DfE-RR070*. London: DfE. (70pp). <http://publications.education.gov.uk/eOrderingDownload/DFE-RR070.pdf>

This report presents interim findings from the project that had been underway between January and July 2010; best evidence on interventions; the academic progress of pupils with SLCN; economic effectiveness; the initial phase of the prospective longitudinal study of children and young people with language impairment (LI) and autism spectrum disorder (ASD); and the preferred outcomes of children and young people with SLCN, and of their parents.

3. Lindsay, G., Dockrell, J.E., Law, J., & Roulstone, S. (2011) *Better communication research programme 2nd interim report. DfE-RR 172*. London: DfE. (131pp). <https://www.education.gov.uk/publications/eOrderingDownload/DFE-RR172.pdf>

This report presents interim findings of the project that had been underway between July 2010 – January 2011. Further work is reported from analyses of the national pupil data sets examining development and transitions of pupils with SLCN or ASD between categories of special educational needs, the prospective study, and parents' preferred outcomes (an online survey). In addition, interim reports from new projects include: the initial phase of development of a Communication Supporting Classrooms Tool; a survey of speech and language therapists' practice regarding interventions; a study of language and literacy attainment during the early years through Key Stage 2, examining whether teacher assessment provides a valid measure of children's current and future educational attainment (led by Margaret Snowling and Charles Hulme); two studies of the relationship between SLCN and behaviour, with Victoria Joffe and Gillian Baird respectively; cost effectiveness of interventions; and the setting up of a prospective cohort study of speech and language therapy services for young children who stammer.

Thematic reports

4. Dockrell, J., Ricketts, J. & Lindsay, G. (2012). *Understanding speech, language and communication needs: Profiles of need and provision*. London: DfE.

This thematic report examines the nature of speech language and communication needs and the evidence from BCRP studies that have explained both the nature and needs encompassed by the category and the provision made to meet those needs. This report draws upon six projects (8, 9, 10, 11, 14 and 15).

5. Law, J., Beecham, J. & Lindsay, G. (2012). *Effectiveness, costing and cost effectiveness of interventions for children and young people with speech, language and communication needs*. London: DfE.

This thematic report first considers the nature of evidence based practice in health and education before reviewing the evidence for the effectiveness of interventions for children and young people with SLCN. The report also considers cost effectiveness and how it might be measured before examining the evidence of the cost effectiveness of SLCN interventions. The report draws on projects, 8, 10, 11 and 12.

6. Lindsay, G. & Dockrell, J. (2012). *The relationship between speech, language and communication needs (SLCN) and behavioural, emotional and social difficulties (BESD)*. London: DfE.

This thematic report explores the relationship between SLCN and behavioural, emotional and social difficulties. . We argue that there are different patterns of relationship between SLCN and ASD, and different types of behavioural, emotional and social difficulties. The report draws on the 2nd interim report (report 3) and project reports 9, 11 and 15.

7. Roulstone, S. & Lindsay, G. (2012). *The perspectives of children and young people who have speech, language and communication needs, and their parents*. London: DfE.

The BCRP ensured that the perspectives of parents and children were explored through a number of different projects. This project explores the evidence primarily from projects 9 and 12, drawing on evidence from a series of specific studies of parents' and children's perspectives and also those of the parents in our prospective study.

Technical reports

8. Dockrell, J. E., Bakopoulou, I., Law, J., Spencer, S., & Lindsay, G. (2012). *Developing a communication supporting classroom observation tool*. London: DfE.

This study reports the development of an observational tool to support teachers, SENCOs, speech and language therapists and others to examine the degree to which classrooms support effective communication. The report comprises a review of the evidence base for developing effective communication and an account of the empirical study to develop and determine the technical qualities of the tool.

9. Dockrell, J., Ricketts, J., Palikara, O., Charman, T., & Lindsay, G. (2012). *Profiles of need and provision for children with language impairment and autism spectrum disorders in mainstream schools: A prospective study*. London: DfE.

The prospective study was the most substantial project in the BCRP running throughout the whole period of the research. Focusing on children and young people initially 6-12 years old, we report on the nature of their abilities in language, literacy, behavioural, emotional and social development; the perspectives of the parents; the support provided as examined by classroom observations and specially created questionnaires completed by their teachers and SENCOs.

10. Law, J., Lee, W., Roulstone, S., Wren, Y., Zeng, B., & Lindsay, G. (2012). *“What works”: Interventions for children and young people with speech, language and communication needs*. London: DfE.

This report provides a review of 60 interventions for children and young people with SLCN, all evaluated against 10 criteria. The report will form the basis of a web-based resource to be developed by the Communication Trust for easy access by practitioners and parents.

11. Meschi, E., Mickelwright, J., Vignoles, A., & Lindsay, G. (2012). *The transition between categories of special educational needs of pupils with speech, language and communication needs (SLCN) and autism spectrum disorder (ASD) as they progress through the education system*. London: DfE.

Analyses of the School Census and National Pupil Database are used to examine the transition made by pupils with SLCN or ASD over time and by age. We examine factors that are associated with transition between levels of special educational need (School Action, School Action Plus and Statement) and having no special educational need (non-SEN), including having English as an Additional Language and attainment. We also explore school characteristics associated with different transitions to other categories of SEN.

12. Roulstone, S., Coad, J., Ayre, A., Hambley, H., & Lindsay, G. (2012). *The preferred outcomes of children with speech, language and communication needs and their parents*. London: DfE.

This report provides findings from four different studies addressing the perspectives of children and young people with SLCN, and those of their parents. Data are reported from arts-based participating workshops for children, focus groups and a survey for parents; and a systematic review of quality of life measures for children.

13. Roulstone, S., Wren, Y., Bakopoulou, I., Goodlad, S., & Lindsay, G. (2012). *Exploring interventions for children and young people with speech, language and communication needs: A study of practice*. London: DfE.

As a complementary study to our analysis of the evidence for interventions, we also carried out an interview study of speech and language therapy managers and educational psychology service managers, on the basis of which we conducted a national survey of speech and language therapists to examine prevalence of use of the different approaches.

14. Snowling, M. J., Hulme, C., Bailey, A. M., Stothard, S. E., & Lindsay (2011). *Better communication research project: Language and literacy attainment of pupils during early years and through KS2: Does teacher assessment at five provide a valid measure of children’s current and future educational attainments? DfE-RR172a*. London: DfE. <https://www.education.gov.uk/publications/eOrderingDownload/DFE-RR172a.pdf>

We report a study led by Margaret Snowling and Charles Hulme which explored whether teacher assessment and monitoring could be used to identify children with language difficulties in need of early interventions. This study was conducted to inform the Tickell Review of the Early Years Foundation Stage, in particular the proposals for a simplified framework and assessment process.

15. Strand, S., & Lindsay, G. (2012). *Ethnic disproportionality in the identification of speech, language and communication needs (SLCN) and autism spectrum disorders (ASD)*. London: DfE.

This report complements that of Meschi et al (number 11). Using School Census data from four years (2005, 2007, 2009 and 2011) the report examines the issue of ethnic disproportionality (i.e. over- and underrepresentation of pupils from different ethnic groups) with respect to SLCN and ASD.

16. Roulstone, S., Hayhow, R., White, P. & Lindsay, G. (2012). *Prospective cohort study of speech and language therapy services for young children who stammer*.

This prospective cohort study follows children referred to speech and language therapy services because of stammering. The study tracks the children's process through the system and their outcomes.

17. Meschi, E., Vignoles, A., & Lindsay, G. (2010). *An investigation of the attainment and achievement of speech, language and communication needs (SLCN)*.
<http://www.warwick.ac.uk/go/bettercommunication>

This technical report presents early analyses upon which the study reported in report number 11 is based.

APPENDIX 2: Cross-tabulation of primary and secondary need: age 5-16 2011

		Secondary need													
		No SEN	ASD Autistic Spectrum Disorder	BESD Beh, Emotional & Social Diff	HI Hearing Impairment	MLD Moderate Learning Difficulty	MSI Multi- Sensory Impairment	OTH Other Difficulty/Di sability	PD Physical Disability	PMLD Profound & Multiple LD	SLCN Speech, Language & Comm. Needs	SLD Severe Learning Difficulty	SPLD Specific Learning Difficulty	VI Visual Impairment	Total
Primary need	No SEN	5534905	0	0	0	0	0	0	0	0	0	0	0	0	5534905
	ASD Autistic Spectrum Disorder	35599	112	4375	128	3225	34	981	384	120	4830	2641	1237	114	53780
	BESD Beh, Emotional & Social Diff	112705	2066	343	371	16948	38	3746	651	22	5958	413	6379	242	149882
	HI Hearing Impairment	10260	88	471	26	957	12	245	209	13	1220	38	300	141	13980
	MLD Moderate Learning Difficulty	112705	1907	16773	869	659	61	2660	1959	30	13122	166	2195	681	153787
	MSI Multi-Sensory Impairment	464	4	27	13	40	0	12	57	48	53	33	22	10	783
	OTH Other Difficulty/Disability	22571	191	1523	103	1074	7	333	204	11	950	75	526	74	27642
	PD Physical Disability	14737	169	729	211	2617	59	512	32	165	1966	484	684	441	22806
	PMLD Profound & Multiple LD	4082	293	83	110	16	239	108	865	23	421	148	19	587	6994
	SLCN Speech, Language & Comm.	70328	1520	6811	604	12095	65	1890	1248	75	155	770	3460	267	99288
	SLD Severe Learning Difficulty	12871	2696	1002	383	111	69	421	1189	78	2964	40	91	426	22341
SPLD Specific Learning Difficulty	60251	487	6736	262	1461	33	1422	606	25	3112	47	200	243	74885	
VI Visual Impairment	5299	90	267	118	713	20	200	277	29	237	98	196	13	7557	
TOTAL		5996777	9623	39140	3198	39916	637	12530	7681	639	34988	4953	15309	3239	6168630
Row Percentages															
No SEN		100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
ASD Autistic Spectrum Disorder		66.2	0.2	8.1	0.2	6.0	0.1	1.8	0.7	0.2	9.0	4.9	2.3	0.2	100.0
BESD Beh, Emotional & Social Diff		75.2	1.4	0.2	0.2	11.3	0.0	2.5	0.4	0.0	4.0	0.3	4.3	0.2	100.0
HI Hearing Impairment		73.4	0.6	3.4	0.2	6.8	0.1	1.8	1.5	0.1	8.7	0.3	2.1	1.0	100.0
MLD Moderate Learning Difficulty		73.3	1.2	10.9	0.6	0.4	0.0	1.7	1.3	0.0	8.5	0.1	1.4	0.4	100.0
MSI Multi-Sensory Impairment		59.3	0.5	3.4	1.7	5.1	0.0	1.5	7.3	6.1	6.8	4.2	2.8	1.3	100.0
OTH Other Difficulty/Disability		81.7	0.7	5.5	0.4	3.9	0.0	1.2	0.7	0.0	3.4	0.3	1.9	0.3	100.0
PD Physical Disability		64.6	0.7	3.2	0.9	11.5	0.3	2.2	0.1	0.7	8.6	2.1	3.0	1.9	100.0
PMLD Profound & Multiple LD		58.4	4.2	1.2	1.6	0.2	3.4	1.5	12.4	0.3	6.0	2.1	0.3	8.4	100.0
SLCN Speech, Language & Comm. N		70.8	1.5	6.9	0.6	12.2	0.1	1.9	1.3	0.1	0.2	0.8	3.5	0.3	100.0
SLD Severe Learning Difficulty		57.6	12.1	4.5	1.7	0.5	0.3	1.9	5.3	0.3	13.3	0.2	0.4	1.9	100.0
SPLD Specific Learning Difficulty		80.5	0.7	9.0	0.3	2.0	0.0	1.9	0.8	0.0	4.2	0.1	0.3	0.3	100.0
VI Visual Impairment		70.1	1.2	3.5	1.6	9.4	0.3	2.6	3.7	0.4	3.1	1.3	2.6	0.2	100.0
TOTAL		97.2	0.2	0.6	0.1	0.6	0.0	0.2	0.1	0.0	0.6	0.1	0.2	0.1	100.0

APPENDIX 3: Prevalence of different types of SEN primary need (SAP and statement) by ethnicity: 2005 - 2011

Percentage of students by ethnic group and type of SEN (SAP or statemented) - January 2005

Ethnic Group	Number students	No identified need at SAP or above	Cognition & Learning Needs				Behaviour, Emotional & Social Difficulties	Communication & Interaction Needs		Sensory and/or Physical Needs				Other Difficulty/ Disability
			MLD	SLD	PMLD	SpLD	BESD	SLCN	ASD	VI	HI	MSI	PD	Other
White British	5,191,517	91.4	2.56	0.37	0.08	1.33	1.95	0.88	0.49	0.10	0.17	0.01	0.34	0.35
White Irish	23,963	90.8	2.58	0.43	0.08	1.49	2.09	0.93	0.60	0.08	0.13	0.00	0.32	0.45
Traveller Irish	4,040	71.6	13.49	1.24	0.15	3.22	5.42	1.81	0.10	0.12	0.37	0.00	0.30	2.18
Traveller Gypsy/Roma	6,895	75.1	11.95	0.81	0.25	3.28	4.35	1.70	0.20	0.15	0.36	0.00	0.44	1.42
White other groups	137,756	92.6	1.97	0.28	0.09	1.12	1.41	1.19	0.48	0.08	0.19	0.02	0.25	0.35
Mixed White & African	18,908	91.4	1.97	0.35	0.11	1.00	2.80	1.04	0.56	0.04	0.14	0.02	0.26	0.31
Mixed White & Caribbean	67,975	89.6	2.51	0.35	0.08	1.28	3.89	0.91	0.50	0.09	0.15	0.01	0.28	0.37
Mixed White & Asian	37,064	93.5	1.65	0.29	0.09	0.74	1.35	0.98	0.55	0.08	0.15	0.02	0.31	0.25
Any other mixed background	63,908	91.5	2.02	0.39	0.09	1.05	2.38	1.08	0.62	0.09	0.15	0.01	0.31	0.35
Indian	141,858	95.3	1.74	0.31	0.10	0.43	0.45	0.70	0.22	0.11	0.19	0.01	0.28	0.19
Pakistani	180,203	91.1	3.68	0.60	0.22	0.56	0.88	1.13	0.23	0.27	0.46	0.03	0.46	0.34
Bangladeshi	73,779	92.9	2.53	0.49	0.14	0.72	0.68	1.41	0.19	0.12	0.33	0.01	0.23	0.26
Any Other Asian	48,782	94.7	1.45	0.44	0.12	0.46	0.61	1.13	0.30	0.10	0.20	0.01	0.26	0.25
Black African	129,552	91.4	2.17	0.45	0.11	0.76	2.04	1.69	0.54	0.08	0.17	0.02	0.25	0.33
Black Caribbean	93,121	87.4	3.37	0.44	0.12	1.41	4.33	1.45	0.53	0.10	0.17	0.02	0.25	0.39
Black other groups	28,038	88.9	2.44	0.50	0.11	1.26	3.56	1.58	0.66	0.06	0.18	0.02	0.22	0.52
Chinese	21,692	95.0	0.81	0.32	0.08	0.39	0.35	1.81	0.49	0.08	0.23	0.01	0.12	0.31
Any other ethnic group	60,703	93.0	2.06	0.38	0.12	0.75	1.23	1.27	0.27	0.11	0.22	0.01	0.25	0.38
Unclassified/Refused	150,294	90.0	2.78	0.38	0.09	1.65	2.70	0.98	0.47	0.10	0.17	0.01	0.28	0.41
All students	6,480,048	91.4	2.55	0.38	0.09	1.25	1.93	0.94	0.48	0.10	0.18	0.01	0.33	0.35

All primary, secondary and special schools and PRUs. All ages 5-16 (Y1-Y11).

Percentage of students by ethnic group and type of SEN (SAP or statemented) age 5-16: January 2007

Ethnic Group	Number students	No identified need (SAP or above)	Cognition & Learning Needs				Behaviour, Emotional & Social Difficulties	Communication & Interaction Needs		Sensory and/or Physical Needs				Other Difficulty/ Disability
			MLD	SLD	PMLD	SpLD	BESD	SLCN	ASD	VI	HI	MSI	PD	Other
White British	4,986,437	90.7	2.62	0.37	0.09	1.27	2.22	1.10	0.63	0.11	0.18	0.01	0.35	0.36
White Irish	22,537	90.1	2.57	0.40	0.11	1.39	2.44	1.12	0.72	0.09	0.15	0.03	0.38	0.49
Traveller Irish	4,032	72.1	13.27	0.94	0.22	2.85	5.90	1.98	0.17	0.17	0.47	0.00	0.32	1.59
Traveller Gypsy/Roma	8,217	75.3	11.32	0.78	0.15	2.86	5.21	2.26	0.22	0.06	0.32	0.00	0.34	1.14
White other groups	175,422	92.0	1.92	0.32	0.09	0.95	1.57	1.56	0.59	0.08	0.19	0.01	0.25	0.44
Mixed White & African	72,934	88.5	2.83	0.30	0.08	1.28	4.43	1.13	0.57	0.09	0.15	0.01	0.33	0.34
Mixed White & Caribbean	21,733	90.4	2.23	0.38	0.08	1.06	3.02	1.41	0.61	0.06	0.17	0.02	0.26	0.31
Mixed White & Asian	42,435	92.8	1.83	0.33	0.11	0.69	1.56	1.13	0.70	0.09	0.16	0.01	0.32	0.27
Any other mixed background	72,152	90.6	2.09	0.42	0.11	1.03	2.67	1.37	0.79	0.08	0.15	0.01	0.29	0.38
Indian	144,643	95.1	1.69	0.32	0.09	0.35	0.51	0.89	0.29	0.12	0.19	0.01	0.29	0.19
Pakistani	194,122	90.7	3.72	0.58	0.23	0.50	0.96	1.38	0.30	0.30	0.50	0.02	0.48	0.31
Bangladeshi	79,545	92.3	2.63	0.48	0.16	0.55	0.79	1.80	0.26	0.13	0.33	0.01	0.26	0.27
Any Other Asian	61,483	94.2	1.54	0.42	0.16	0.40	0.70	1.26	0.40	0.10	0.23	0.02	0.25	0.29
Black African	150,336	90.4	2.44	0.48	0.12	0.73	2.25	2.03	0.68	0.10	0.17	0.02	0.25	0.36
Black Caribbean	88,963	86.2	3.32	0.40	0.10	1.44	4.95	1.85	0.73	0.09	0.17	0.01	0.26	0.44
Black other groups	30,173	87.9	2.70	0.48	0.11	1.07	3.87	1.97	0.87	0.10	0.20	0.02	0.31	0.40
Chinese	21,733	94.8	0.83	0.32	0.07	0.32	0.50	1.81	0.57	0.09	0.14	0.00	0.12	0.39
Any other ethnic group	69,013	92.2	2.21	0.40	0.12	0.71	1.30	1.72	0.33	0.11	0.24	0.01	0.26	0.39
Unclassified/Refused	91,062	89.1	2.85	0.41	0.11	1.57	2.96	1.19	0.67	0.13	0.19	0.01	0.32	0.52
All students	6,336,972	90.8	2.61	0.38	0.10	1.18	2.17	1.18	0.61	0.11	0.19	0.01	0.34	0.36

All primary, secondary and special schools and PRUs. All ages 5-16 (Y1-Y11).

Percentage of students by ethnic group and type of SEN (SAP or statemented) age 5-16: January 2009

Ethnic Group	Number students	No identified need (SAP or above)	Cognition & Learning Needs				Behaviour, Emotional & Social Difficulties	Communication & Interaction Needs		Sensory and/or Physical Needs				Other Difficulty/ Disability
			MLD	SLD	PMLD	SpLD	BESD	SLCN	ASD	VI	HI	MSI	PD	Other
White British	4,734,184	89.8	2.70	0.36	0.10	1.34	2.52	1.32	0.76	0.11	0.20	0.01	0.37	0.45
White Irish	21,017	89.5	2.63	0.30	0.09	1.47	2.85	1.13	0.77	0.13	0.18	0.02	0.39	0.51
Traveller Irish	3,962	70.0	13.86	1.03	0.18	2.78	6.46	2.62	0.18	0.15	0.35	0.00	0.53	1.82
Traveller Gypsy/Roma	9,623	75.0	11.37	0.71	0.16	2.97	5.10	2.43	0.28	0.08	0.32	0.00	0.37	1.22
White other groups	223,541	91.4	1.98	0.31	0.12	1.04	1.75	1.66	0.65	0.08	0.19	0.01	0.27	0.52
Mixed White & African	24,799	89.5	2.42	0.30	0.10	1.07	3.10	1.83	0.74	0.06	0.17	0.01	0.32	0.42
Mixed White & Caribbean	76,613	87.2	3.03	0.29	0.09	1.31	4.86	1.41	0.76	0.09	0.15	0.01	0.31	0.47
Mixed White & Asian	48,083	92.2	1.79	0.27	0.12	0.80	1.73	1.35	0.77	0.09	0.19	0.02	0.28	0.35
Any other mixed background	82,035	89.9	2.16	0.36	0.12	0.99	2.92	1.62	0.92	0.10	0.17	0.01	0.29	0.45
Indian	146,527	94.5	1.69	0.31	0.10	0.38	0.61	1.09	0.37	0.12	0.20	0.01	0.33	0.25
Pakistani	211,375	90.0	3.76	0.54	0.25	0.54	1.15	1.70	0.36	0.28	0.52	0.02	0.51	0.41
Bangladeshi	87,197	91.6	2.60	0.43	0.16	0.57	1.03	2.19	0.38	0.13	0.34	0.01	0.26	0.36
Any Other Asian	73,518	93.6	1.55	0.40	0.13	0.49	0.91	1.46	0.44	0.11	0.22	0.01	0.24	0.40
Black African	165,715	89.3	2.69	0.45	0.14	0.75	2.49	2.32	0.91	0.11	0.18	0.01	0.26	0.39
Black Caribbean	87,117	84.7	3.50	0.38	0.11	1.39	5.56	2.36	0.95	0.10	0.19	0.01	0.28	0.46
Black other groups	32,515	86.2	2.94	0.49	0.14	1.17	4.36	2.38	1.17	0.11	0.23	0.01	0.30	0.48
Chinese	21,792	94.3	0.88	0.26	0.10	0.38	0.64	1.99	0.62	0.08	0.14	0.00	0.14	0.48
Any other ethnic group	77,310	91.2	2.46	0.37	0.13	0.76	1.63	1.91	0.47	0.12	0.23	0.01	0.27	0.47
Unclassified/Refused	62,570	88.8	2.63	0.43	0.12	1.42	3.10	1.36	0.85	0.13	0.19	0.02	0.36	0.54
All students	6,189,493	89.9	2.68	0.36	0.11	1.23	2.44	1.42	0.73	0.12	0.21	0.01	0.36	0.44

All primary, secondary and special schools and PRUs. All ages 5-16 (Y1-Y11).

Percentage of students by ethnic group and type of SEN (SAP or statemented) age 5-16: January 2011

Ethnic Group	Number students	No identified need (SAP or above)	Cognition & Learning Needs				Behaviour, Emotional & Social Difficulties	Communication & Interaction Needs		Sensory and/or Physical Needs				Other Difficulty/ Disability
			MLD	SLD	PMLD	SpLD	BESD	SLCN	ASD	VI	HI	MSI	PD	Other
White British	4,614,744	89.5	2.52	0.36	0.10	1.34	2.54	1.49	0.91	0.12	0.22	0.01	0.38	0.46
White Irish	19,942	89.6	2.10	0.32	0.12	1.56	2.53	1.40	1.02	0.13	0.22	0.03	0.43	0.52
Traveller Irish	4,218	71.3	12.78	0.64	0.19	3.03	6.16	3.27	0.31	0.09	0.31	0.02	0.55	1.38
Traveller Gypsy/Roma	12,815	78.9	8.61	0.62	0.09	2.61	4.30	2.93	0.31	0.14	0.27	0.00	0.37	0.91
White other groups	235,929	91.5	1.88	0.28	0.11	0.95	1.75	1.86	0.65	0.09	0.18	0.01	0.26	0.46
Mixed White & African	29,114	89.4	2.20	0.31	0.12	1.05	3.12	1.95	0.91	0.08	0.17	0.01	0.30	0.40
Mixed White & Caribbean	81,540	86.7	2.95	0.29	0.09	1.40	4.79	1.69	0.95	0.11	0.19	0.01	0.36	0.52
Mixed White & Asian	55,566	91.9	1.74	0.26	0.12	0.74	1.91	1.45	0.89	0.09	0.19	0.01	0.33	0.34
Any other mixed background	91,869	89.7	2.02	0.36	0.14	0.98	2.78	1.83	1.10	0.10	0.20	0.01	0.33	0.44
Indian	150,597	94.5	1.54	0.28	0.10	0.38	0.64	1.27	0.43	0.12	0.24	0.01	0.29	0.24
Pakistani	228,044	90.2	3.37	0.55	0.26	0.54	1.12	1.81	0.45	0.30	0.51	0.02	0.50	0.39
Bangladeshi	94,147	91.4	2.22	0.40	0.18	0.59	1.09	2.38	0.50	0.16	0.38	0.01	0.31	0.40
Any Other Asian	83,503	93.5	1.44	0.39	0.16	0.44	0.87	1.67	0.57	0.09	0.23	0.02	0.29	0.33
Black African	184,055	89.3	2.36	0.45	0.15	0.73	2.29	2.65	1.09	0.11	0.19	0.02	0.28	0.41
Black Caribbean	85,531	84.5	3.38	0.38	0.12	1.33	5.51	2.53	1.17	0.12	0.20	0.01	0.27	0.50
Black other groups	36,122	86.6	2.76	0.52	0.16	1.10	3.72	2.64	1.38	0.11	0.15	0.01	0.31	0.50
Chinese	22,090	94.3	0.73	0.22	0.13	0.42	0.53	2.19	0.73	0.05	0.14	0.00	0.16	0.39
Any other ethnic group	85,235	90.6	2.36	0.35	0.15	0.70	1.73	2.32	0.58	0.13	0.25	0.00	0.26	0.56
Unclassified/Refused	53,569	88.7	2.44	0.47	0.12	1.49	2.89	1.51	1.14	0.11	0.19	0.01	0.38	0.52
All students	6,168,630	89.7	2.49	0.36	0.11	1.21	2.43	1.61	0.87	0.12	0.23	0.01	0.37	0.45

All primary, secondary and special schools and PRUs. All ages 5-16 (Y1-Y11).

APPENDIX 4: Unadjusted Odds Ratios by ethnic group for all SEN 2005 - 2011

Unadjusted Odds-Ratios by type of SEN and ethnic group: Age 5-16 January 2005

Unadjusted Ratios	Cognition & Learning Needs				Behaviour, Emotional & Social Difficulties	Communication & Interaction Needs		Sensory and/or Physical Needs				Other Difficulty/ Disability
	MLD	SLD	PMLD	SpLD	BESD	SLCN	ASD	VI	HI	MSI	PD	Other
White Irish	0.89	1.12	0.96	1.04	1.02	0.98	1.18	0.79	0.92	<i>0.54</i>	0.90	1.01
Traveller Irish	6.24	6.04	3.02	3.21	3.71	3.11	<i>0.31</i>	1.57	2.90	<i>0.00</i>	1.10	5.31
Traveller Gypsy/Roma	5.00	3.57	4.52	2.79	2.72	2.92	<i>0.61</i>	1.83	2.38	<i>0.00</i>	1.59	4.06
White other groups	0.77	0.77	1.05	0.89	0.79	1.45	0.93	0.78	0.90	1.46	<i>0.68</i>	0.90
Mixed White & African	0.82	1.04	1.29	0.83	1.43	1.23	1.13	<i>0.52</i>	<i>0.64</i>	2.04	<i>0.74</i>	0.82
Mixed White & Caribbean	1.07	0.97	1.14	0.93	1.97	1.07	1.02	0.90	0.87	<i>0.69</i>	0.84	1.02
Mixed White & Asian	<i>0.68</i>	<i>0.72</i>	1.09	<i>0.59</i>	<i>0.73</i>	1.08	1.04	<i>0.72</i>	0.83	1.49	0.89	0.79
Any other mixed background	0.82	1.04	1.14	0.82	1.24	1.22	1.25	0.84	0.77	1.20	0.87	0.90
Indian	0.78	0.78	1.11	<i>0.37</i>	<i>0.35</i>	0.96	<i>0.39</i>	0.93	0.90	<i>0.55</i>	<i>0.71</i>	<i>0.63</i>
Pakistani	1.61	1.67	2.78	<i>0.46</i>	<i>0.64</i>	1.56	<i>0.46</i>	2.46	2.34	2.21	1.29	1.03
Bangladeshi	1.15	1.35	1.68	<i>0.62</i>	<i>0.46</i>	1.64	<i>0.36</i>	1.10	1.60	0.95	<i>0.62</i>	0.92
Any Other Asian	<i>0.67</i>	1.12	1.36	<i>0.46</i>	<i>0.42</i>	1.44	<i>0.54</i>	0.87	0.94	1.12	<i>0.67</i>	0.93
Black African	0.92	1.26	1.41	<i>0.63</i>	1.23	1.78	1.03	0.76	0.81	1.64	<i>0.65</i>	0.83
Black Caribbean	1.27	1.32	1.81	1.01	2.31	1.54	1.09	1.05	0.91	1.87	0.76	0.98
Black other groups	1.02	1.45	1.59	0.91	1.85	1.64	1.35	<i>0.60</i>	0.89	1.92	<i>0.72</i>	1.16
Chinese	<i>0.36</i>	0.78	0.93	<i>0.36</i>	<i>0.23</i>	2.18	0.84	<i>0.64</i>	0.95	<i>0.54</i>	<i>0.34</i>	0.90
Any other ethnic group	0.87	1.01	1.51	<i>0.65</i>	0.78	1.59	<i>0.51</i>	0.91	1.08	0.83	<i>0.68</i>	0.98
Unclassified/Refused	1.14	1.05	1.19	1.31	1.40	1.15	1.00	1.11	1.01	0.89	0.89	1.23

Note: **Red bold** indicates overrepresentation (OR > 1.33) and *Blue italic* indicates Underrepresentation (OR < 0.75).

Unadjusted Odds-Ratios by type of SEN and ethnic group age 5-16: January 2007

Unadjusted Ratios	Cognition & Learning Needs				Behaviour, Emotional & Social Difficulties	Communication & Interaction Needs		Sensory and/or Physical Needs				Other Difficulty/Disability
	MLD	SLD	PMLD	SpLD	BESD	SLCN	ASD	VI	HI	MSI	PD	Other
White Irish	0.99	1.10	1.26	1.10	1.11	1.03	1.15	0.88	0.80	2.13	1.11	1.36
Traveller Irish	6.36	3.24	3.16	2.82	3.34	2.28	<i>0.34</i>	2.06	3.24	<i>0.00</i>	1.17	5.49
Traveller Gypsy/Roma	5.19	2.56	1.98	2.71	2.82	2.48	<i>0.42</i>	<i>0.69</i>	2.08	<i>0.00</i>	1.18	3.79
White other groups	<i>0.72</i>	0.86	1.00	<i>0.74</i>	<i>0.69</i>	1.40	0.92	0.75	1.03	1.16	<i>0.70</i>	1.20
Mixed White & African	1.11	0.85	0.95	1.03	2.04	1.05	0.93	0.89	0.84	1.01	0.96	0.97
Mixed White & Caribbean	0.85	1.05	0.88	0.84	1.36	1.29	0.97	<i>0.52</i>	0.91	1.84	0.76	0.85
Mixed White & Asian	<i>0.68</i>	0.89	1.19	<i>0.53</i>	<i>0.68</i>	1.01	1.08	0.83	0.88	0.92	0.90	<i>0.72</i>
Any other mixed background	0.80	1.14	1.22	0.81	1.20	1.25	1.24	0.76	0.80	0.99	0.85	1.05
Indian	<i>0.62</i>	0.84	0.97	<i>0.27</i>	<i>0.22</i>	0.78	<i>0.44</i>	1.04	0.98	<i>0.52</i>	0.80	<i>0.49</i>
Pakistani	1.42	1.58	2.54	<i>0.39</i>	<i>0.43</i>	1.26	<i>0.47</i>	2.78	2.72	1.56	1.39	0.86
Bangladeshi	0.99	1.29	1.81	<i>0.42</i>	<i>0.35</i>	1.61	<i>0.40</i>	1.23	1.78	<i>0.69</i>	<i>0.73</i>	<i>0.73</i>
Any Other Asian	<i>0.56</i>	1.12	1.71	<i>0.31</i>	<i>0.30</i>	1.10	<i>0.61</i>	0.87	1.22	1.24	<i>0.68</i>	0.76
Black African	0.93	1.31	1.35	<i>0.57</i>	1.01	1.86	1.07	0.96	0.94	1.22	<i>0.71</i>	0.98
Black Caribbean	1.33	1.16	1.17	1.19	2.34	1.77	1.22	0.93	1.00	0.75	0.78	1.26
Black other groups	1.06	1.36	1.23	0.87	1.80	1.86	1.42	0.97	1.10	1.36	0.93	1.14
Chinese	<i>0.30</i>	0.83	0.79	<i>0.24</i>	<i>0.22</i>	1.58	0.86	0.83	<i>0.74</i>	<i>0.00</i>	<i>0.33</i>	1.03
Any other ethnic group	0.83	1.08	1.35	<i>0.55</i>	<i>0.57</i>	1.54	<i>0.52</i>	1.01	1.27	<i>0.57</i>	<i>0.73</i>	1.06
Unclassified/Refused	1.10	1.13	1.23	1.25	1.36	1.11	1.07	1.23	1.08	<i>0.71</i>	0.92	1.44

Note: **Red bold** indicates overrepresentation (OR > 1.33) and *Blue italic* indicates Underrepresentation (OR <0.75).

Unadjusted Odds-Ratios by type of SEN and ethnic group age 5-16: January 2009

Unadjusted Ratios	Cognition & Learning Needs				Behaviour, Emotional & Social Difficulties	Communication & Interaction Needs		Sensory and/or Physical Needs				Other Difficulty/Disability
	MLD	SLD	PMLD	SpLD	BESD	SLCN	ASD	VI	HI	MSI	PD	Other
White Irish	0.98	0.84	0.93	1.10	1.14	0.86	1.01	1.15	0.88	1.49	1.07	1.14
Traveller Irish	6.58	3.72	2.32	2.65	3.29	2.56	<i>0.30</i>	1.73	2.27	<i>0.00</i>	1.85	5.22
Traveller Gypsy/Roma	5.05	2.37	1.91	2.65	2.42	2.21	<i>0.44</i>	0.89	1.93	<i>0.00</i>	1.22	3.26
White other groups	<i>0.72</i>	0.85	1.20	0.76	<i>0.68</i>	1.24	0.83	<i>0.74</i>	0.92	0.82	<i>0.73</i>	1.15
Mixed White & African	0.90	0.85	1.00	0.80	1.24	1.39	0.97	<i>0.58</i>	0.85	0.95	0.88	0.94
Mixed White & Caribbean	1.16	0.83	0.92	1.01	1.99	1.11	1.03	0.83	0.79	<i>0.73</i>	0.88	1.09
Mixed White & Asian	<i>0.65</i>	<i>0.75</i>	1.22	<i>0.58</i>	<i>0.67</i>	1.00	0.99	0.81	0.92	1.58	<i>0.74</i>	0.76
Any other mixed background	0.80	1.00	1.20	<i>0.73</i>	1.16	1.23	1.20	0.86	0.87	<i>0.66</i>	0.79	1.01
Indian	<i>0.60</i>	0.82	0.98	<i>0.27</i>	<i>0.23</i>	0.79	<i>0.46</i>	1.03	0.96	<i>0.50</i>	0.84	<i>0.54</i>
Pakistani	1.39	1.51	2.55	<i>0.40</i>	<i>0.46</i>	1.29	<i>0.47</i>	2.53	2.58	1.43	1.40	0.91
Bangladeshi	0.95	1.17	1.65	<i>0.41</i>	<i>0.40</i>	1.63	<i>0.49</i>	1.13	1.68	<i>0.70</i>	<i>0.68</i>	0.78
Any Other Asian	<i>0.55</i>	1.08	1.31	<i>0.35</i>	<i>0.35</i>	1.06	<i>0.55</i>	0.94	1.05	<i>0.71</i>	<i>0.63</i>	0.85
Black African	1.00	1.26	1.47	<i>0.56</i>	0.99	1.77	1.20	0.95	0.92	0.85	<i>0.71</i>	0.89
Black Caribbean	1.38	1.13	1.25	1.10	2.34	1.90	1.32	0.91	0.99	<i>0.66</i>	0.81	1.09
Black other groups	1.13	1.43	1.51	0.91	1.80	1.89	1.60	1.03	1.19	1.00	0.86	1.12
Chinese	<i>0.31</i>	<i>0.70</i>	0.99	<i>0.27</i>	<i>0.24</i>	1.44	0.78	<i>0.66</i>	<i>0.68</i>	<i>0.34</i>	<i>0.37</i>	1.03
Any other ethnic group	0.90	1.03	1.33	<i>0.56</i>	<i>0.64</i>	1.43	<i>0.60</i>	1.03	1.12	0.79	<i>0.72</i>	1.04
Unclassified/Refused	0.98	1.22	1.29	1.06	1.24	1.05	1.12	1.18	0.97	1.63	0.98	1.23

Note: **Red bold** indicates overrepresentation (OR > 1.33) and *Blue italic* indicates Underrepresentation (OR <0.75).

Unadjusted Odds-Ratios by type of SEN and ethnic group age 5-16: January 2011

Unadjusted Ratios	Cognition & Learning Needs				Behaviour, Emotional & Social Difficulties	Communication & Interaction Needs		Sensory and/or Physical Needs				Other Difficulty/Disability
	MLD	SLD	PMLD	SpLD	BESD	SLCN	ASD	VI	HI	MSI	PD	Other
White Irish	0.83	0.89	1.18	1.16	0.99	0.94	1.12	1.06	1.02	2.43	1.12	1.13
Traveller Irish	6.37	2.26	2.35	2.84	3.05	2.76	<i>0.42</i>	1.01	1.79	2.41	1.78	3.79
Traveller Gypsy/Roma	3.87	1.97	0.96	2.20	1.92	2.23	<i>0.39</i>	1.35	1.43	<i>0.00</i>	1.08	2.25
White other groups	<i>0.73</i>	0.77	1.08	<i>0.69</i>	<i>0.67</i>	1.22	<i>0.70</i>	0.76	0.83	1.01	<i>0.67</i>	0.99
Mixed White & African	0.87	0.86	1.15	0.78	1.23	1.31	1.00	<i>0.70</i>	0.80	0.84	0.78	0.88
Mixed White & Caribbean	1.21	0.84	0.91	1.08	1.95	1.17	1.08	0.95	0.89	<i>0.62</i>	0.97	1.17
Mixed White & Asian	<i>0.67</i>	<i>0.71</i>	1.14	<i>0.54</i>	<i>0.73</i>	0.95	0.95	<i>0.71</i>	0.85	0.99	0.83	<i>0.73</i>
Any other mixed background	0.80	1.02	1.39	<i>0.73</i>	1.09	1.23	1.20	0.87	0.92	1.14	0.86	0.97
Indian	<i>0.58</i>	<i>0.75</i>	0.98	<i>0.27</i>	<i>0.24</i>	0.81	<i>0.44</i>	0.98	1.04	<i>0.71</i>	<i>0.71</i>	<i>0.50</i>
Pakistani	1.33	1.53	2.50	<i>0.40</i>	<i>0.44</i>	1.21	<i>0.49</i>	2.50	2.34	1.80	1.28	0.84
Bangladeshi	0.86	1.12	1.75	<i>0.43</i>	<i>0.42</i>	1.57	<i>0.54</i>	1.29	1.74	0.93	0.79	0.87
Any Other Asian	<i>0.55</i>	1.06	1.54	<i>0.31</i>	<i>0.33</i>	1.07	<i>0.60</i>	<i>0.72</i>	1.00	1.30	<i>0.72</i>	<i>0.69</i>
Black African	0.94	1.26	1.49	<i>0.54</i>	0.90	1.78	1.20	0.92	0.87	1.28	<i>0.74</i>	0.90
Black Caribbean	1.42	1.12	1.23	1.05	2.30	1.80	1.36	1.09	0.96	1.20	0.75	1.15
Black other groups	1.13	1.51	1.61	0.85	1.51	1.83	1.56	1.00	<i>0.71</i>	1.16	0.83	1.12
Chinese	<i>0.27</i>	<i>0.58</i>	1.19	<i>0.30</i>	<i>0.20</i>	1.39	0.76	<i>0.40</i>	<i>0.62</i>	<i>0.35</i>	<i>0.40</i>	0.81
Any other ethnic group	0.92	0.96	1.44	<i>0.52</i>	<i>0.67</i>	1.54	<i>0.63</i>	1.06	1.15	<i>0.38</i>	<i>0.66</i>	1.22
Unclassified/Refused	0.97	1.34	1.17	1.12	1.15	1.02	1.27	0.98	0.91	0.92	1.01	1.14

Note: **Red bold** indicates overrepresentation (OR > 1.33) and *Blue italic* indicates Underrepresentation (OR <0.75).

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