RESEARCH

Special Educational Needs and Ethnicity: Issues of Over- and Under-Representation

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EXECUTIVE SUMMARY

Introduction

There have been concerns for some time about the attainment and progress of children from minority ethnic groups in the UK. One specific concern has been about their over-representation among pupils identified as having special educational needs (SEN). This report addresses that issue but adopts a wider perspective. Because the majority of pupils are White British (about four in five pupils) they also form the majority in absolute numbers for SEN. We have therefore investigated the evidence for both over- and under-representation of different categories of SEN (defined as receiving support at School Action Plus or through a Statement of SEN) among different minority ethnic groups compared with the prevalence among White British pupils, the general term for which is disproportionality.

Analysis of the 2005 Pupil Level Annual School Census (PLASC) data on 6.5 million pupils in maintained schools shows clear evidence of over- and under-representation of some minority ethnic groups among the SEN group in general and among certain categories of SEN. A literature review enabled us to identify possible reasons for these disproportionalities. A survey of Local Authorities and two focus groups with survey respondents provided further perspectives, including local factors impacting on disproportionality.

Key Findings

- Socio-economic disadvantage (poverty) and gender have stronger associations than ethnicity with overall prevalence of SEN and of certain categories of SEN. However, after controlling for the effects of socio-economic disadvantage, gender and year group significant over- and under-representation of different minority ethnic groups relative to White British pupils remain. The nature and degree of these disproportionalities varies across both category of SEN and minority ethnic group.

After controlling for year group, gender and socio-economic disadvantage, and relative to White British pupils:

- Black Caribbean and Mixed White & Black Caribbean pupils are around 1 ½ times more likely to be identified as having Behavioural, Emotional and Social Difficulties (BESD) than White British pupils. The literature suggests teacher and school factors

including racist attitudes and differential treatment of Black pupils as a reason for their over-representation in the BESD category. However, the PLASC data has not shown similar over-representation for all Black pupils, suggesting differences between Black Caribbean pupils and Mixed White & Black Caribbean pupils compared with other Black pupils. Further work to investigate this over-representation is needed. The focus needs to be on distinguishing the different needs of these pupils. Positive approaches to engage the pupils and their parents and to focus on success, perhaps modelling on 'Aiming High' but with a specific additional SEN focus, should be considered.

- Bangladeshi pupils are nearly twice as likely to be identified as having a hearing impairment than White British pupils, and Pakistani pupils are between 2 – 2 ½ times more likely to be identified as having Profound and Multiple Learning Difficulties, a Visual Impairment, Hearing Impairment or Multi-sensory Impairment than White British pupils. The literature suggests a greater incidence of genetic factors related to consanguinity (where parents are blood relations) as an important factor in the over-representation of Pakistani and Bangladeshi children for these SEN categories. However, care must be taken not to over-attribute developmental difficulties to this factor. The Department of Health needs actively to address this issue and to develop a sensitive strategy to engage the community in a consideration of risk associated with consanguinity.

- Asian and Chinese pupils are less likely than White British pupils to be identified as having Moderate Learning Difficulties, Specific Learning Difficulties and Autistic Spectrum Disorder. The literature suggests that this could be because of difficulties in disentangling learning difficulties from issues associated with English as an Additional Language (EAL) and therefore work is needed to assess whether these children's needs are being met appropriately or whether their EAL status is leading to an under-estimation of the nature and severity of cognition and learning needs. The literature also suggests that lack of early take-up of health care among EAL groups may be an additional risk factor.

- Traveller of Irish Heritage and Gypsy/Roma pupils are over-represented among many categories of SEN, including Moderate, and Severe Learning Difficulties, and BESD. The literature suggests a number of factors ranging from those associated with school such as negative teacher attitudes, racism and bullying, and a curriculum

perceived as lacking relevance to factors associated with Traveller cultures, such as high mobility, poor attendance and early drop out from school. However, the research base on this group is limited and therefore these conclusions are indicative only.

Methods

The evidence has been derived from four sources.

Analysis of PLASC

We analysed the 2005 Pupil Level Annual School Census data for all children in maintained schools in England, about 6.5 million pupils. Our analyses have used a measure of effect size, the *odds ratio*, a measure of the likelihood of pupils in a minority ethnic group being identified as having a particular category of SEN compared with the likelihood of White British pupils being identified as having that category of SEN. As year group, gender and socio-economic disadvantage are associated with both SEN and ethnicity, we have analysed the relationship between SEN and ethnicity after having taken account of these other factors.

We have chosen as a cut-off for indicating substantial, and hence important, differences those odds ratios where pupils from a minority ethnic group are 1.5 times *more* likely than White British pupils to be identified with a particular category of SEN (a ratio of 1.50:1 or more) or, conversely, are 1.5 times *less* likely to be identified with that SEN (a ratio of 0.67:1 or less). These measures indicate *over*-representation and *under*-representation respectively.

Literature review

We undertook a review of literature published mainly in the period 1990-2005 primarily in the US and UK. This focussed on publications that address the relationship between SEN and ethnicity although we also include some literature that examines the attainment and progress of the full range of pupils from different minority ethnic groups.

LA Survey & focus groups

In addition the current perspectives of senior practitioners in Local Authorities (LAs) were identified by use of a survey and two focus groups. The survey comprised a postal

questionnaire to the SEN adviser (or comparable role) and Principal Educational Psychologist for each of the 150 LAs in England (response rate 27% of LAs).

Additionally, two focus groups were organised one for the north (in Manchester) and one in the south (in London) attended by those among survey respondents who expressed interest in contributing further and who were available, a total of 13 senior professionals representing 10 LAs. The focus groups focussed on participants' local knowledge and explored the nature of over- and under- representation in their LAs; data collection and analysis; perspectives on reasons for any disproportionality in the LAs; and both local and national issues in general. Given the relatively small sample size for both survey and focus groups, these findings are indicative only.

Detailed Findings

- Analysis of PLASC data identified that socio-economic disadvantage (poverty) and gender have stronger associations than ethnicity with overall prevalence of SEN and of certain categories of SEN, and that year group is also associated. For example, **among all ethnic groups**:

    - The identification of SEN is highest in Y6, with both younger pupils and older pupils being less likely to have identified SEN

    - Boys are over-represented relative to girls for most categories of SEN[1]. The differences are most pronounced for ASD where boys are over-represented relative to girls 6:1 and BESD where boys are over-represented 4:1. For SpLD and SLCN boys are overrepresented 2.5:1 and for MLD/SLD by about 1.75:1. There is no over-representation of boys in the more clearly 'physiological' categories of SEN, i.e. sensory or physical needs and PMLD.

    - The most prevalent categories of SEN (BESD and MLD), which together account for 52% of pupils with SEN, are the most strongly associated with socio-economic disadvantage. Some categories have a significant but lower level of association (SLD, PMLD, PD, MSI, SpLD, and SLCN) and others have a weak relationship with socio-economic disadvantage (ASD, HI and VI).

[1] MLD: Moderate Learning Difficulties; SLD: Severe Learning Difficulties; PMLD: Profound and Multiple Learning Difficulties; SpLD: Specific Learning Difficulties; BESD: Behavioural, Emotional and Social Difficulties; SLCN: Speech, Language and Communication Needs; ASD: Autistic Spectrum Disorder; VI: Visual Impairment; HI: Hearing Impairment; MSI Multi-sensory Impairment; PD: Physical Disability.

The associations with year group, gender and socio-economic disadvantage need to be taken into account when examining the relationship between ethnicity and SEN. When this is done in our 'adjusted models', significant over- and under-representation of different minority ethnic groups relative to White British pupils remain but the associations between SEN and ethnic group are reduced. The extent of the remaining disproportionality varies by minority ethnic group and by category of SEN.

With respect to overall rate of being at School Action Plus or with a Statement

After controlling for year group, gender and socio-economic disadvantage, and compared to White British pupils:

- Traveller of Irish heritage and Gypsy/Roma pupils are 2.7 and 2.6 times more likely than White British pupils to have SEN
- Black-Caribbean pupils a have similar rate of identification to White British pupils;
- Black African pupils are less likely than White British to have identified SEN.
- Indian, Bangladeshi and Chinese pupils are less likely than White British pupils to have SEN; Pakistani pupils are under-represented but not to a substantial extent.

With respect to particular categories of SEN

After controlling for year group, gender and socio-economic disadvantage, and compared to White-British pupils:

- Traveller of Irish heritage pupils are more likely to have SEN in relation to MLD, SLD, SpLD and BESD, and less likely to have SEN in relation to ASD.

- Gypsy/Roma pupils are more likely to have SEN in relation to MLD, PMLD, HI and SLD and less likely to have SEN for ASD.

- Indian pupils are less likely to have SEN in relation to BESD, SpLD, ASD and MLD.

- Bangladeshi pupils are more likely to have SEN in relation to HI and less likely to have SEN in relation to BESD, ASD, SpLD, MLD and PD.

- Pakistani pupils are more likely to have SEN in relation to PMLD, VI, HI and MSI, and less likely to have SEN in relation to BESD, SpLD and ASD.

- Black Caribbean and Mixed White & Black-Caribbean pupils are more likely to have SEN in relation to BESD.

- Black African pupils are less likely to have SEN in relation to MLD, SpLD, BESD and PD.

- Black Other pupils are less likely to have SEN in relation to MLD, VI and PD.

- Chinese pupils are more likely to have SEN in relation to SLCN, but less likely to have SEN in relation to BESD, SpLD, MLD and PD.

- Past evidence of over-representation of Black Caribbean pupils in the MLD category has not been supported by the PLASC analysis: Black Caribbean (and Mixed White & Black Caribbean) pupils are represented in comparable proportions to White pupils.

Reasons for disproportionality

- There is strong evidence from our analysis of two broad groupings of SEN which differ with respect to the relative influences of physiological and societal/contextual factors.
    - Those categories where the nature of the SEN has a stronger physiological element e.g. profound hearing loss, and where the context is a relatively less important factor in the cause of the difficulties (although it is, of course, of great importance in terms of action to address the SEN).
    - Those categories of SEN that are more related to context, e.g. BESD. There are two relevant factors. Firstly, these SEN are defined in terms of the pupil's actions within a context, mainly the school and classroom. Furthermore, these needs are socially constructed in the sense that pupils' behaviour is interpreted in terms of expected patterns (norms) of behaviour. Secondly, there is evidence of a strong relationship for these categories with social disadvantage.

- The PLASC analysis shows that Black Caribbean pupils (and to a lesser extent Mixed White & Black Caribbean pupils) have a higher likelihood of being identified as

having BESD than White British pupils; there is also evidence from national statistics (DfES, 2005c) of similar patterns of over-representation of Black Caribbean pupils among excluded and low-attaining pupils. The literature has suggested teacher and school factors including racist attitudes and differential treatment of Black pupils as a reason for their over-representation within the BESD category. However, the fact that the PLASC analysis shows no over-representation for other Black groups raises questions about any simple conclusions based on this research. Rather, an interaction between a number of inter-related, and often self-perpetuating, factors seems more likely, including: teachers' perceptions and expectations of minority ethnic pupils, their understanding of different cultures, pupils' responses and reactions to this, and teachers' reactions to behaviours which they consider challenging.

- The research suggests greater incidence of genetic factors related to consanguinity as an important causative factor in the over-representation of Pakistani children for VI, HI, MSI, and PMLD and Bangladeshi pupils for HI. However, this is a complex field and care must be taken not to over-attribute these difficulties to consanguinity.

- The under-representation of all Asian groups and Chinese pupils for SpLD and ASD could suggest that there are sometimes problems in distinguishing learning difficulties from issues associated with English as an Additional Language.

- Late and low levels of take-up of health care among Asian groups because of poor communication (which could be due to EAL), low levels of knowledge of services and delays in diagnosis have been identified as additional risk factors.

- The high levels of SEN among Traveller groups appear to have a number of determining factors. These factors range from factors associated with school such as negative teacher attitudes, racism and bullying, and a curriculum perceived as lacking relevance, to factors associated with Traveller cultures, such as high mobility, poor attendance and early drop out from school. However, the research base is limited and so conclusions for this group can only be indicative.

- Parent support within minority ethnic groups overall is equally as high (if not higher) than for the White population but some parents may experience barriers to involvement as a result of language difficulties.

- Poverty and socio-economic disadvantage are supported as important factors in those categories of SEN that are strongly associated with context: BESD and MLD.

- Poverty and socio-economic disadvantage appear not to be as important for those categories of SEN with strong physiological (within-child) causes, particularly sensory and physical needs, PMLD and ASD.

- The above results give a picture of the national situation regarding over- and under-representation of different minority groups with regard to SEN identification. However there is also substantial variation between LAs in these data. For example, while in general Pakistani pupils and White British pupils do not differ substantially in the likelihood of having an identified SEN, in 10 LAs Pakistani pupils are half as likely as White British pupils to have an identified SEN while in four LAs Pakistani pupils were 1.5 times more likely than White British pupils to have an identified SEN. Identifying and exploring such variation may help us to better understand the reasons for over- or under-representation.

Recommendations

Where possible we present recommendations targeted either at the Local Authority/Children's trust or at the national level, primarily DfES but also Department of Health (DH) and Teacher Development Agency (TDA). However, generally for all of these recommendations it will be important to ensure engagement at national and local levels and to engage all education practitioners including teachers, educational psychologists, advisory and support staff and health professionals (e.g. speech and language therapists, paediatricians).

Developing strategies within each Local Authority/Children's Trust

Local Authorities/Children's Trusts should:

- work together to consider the LA's analysis of its PLASC data against the national dataset in order to identify local patterns of over- and under-representation and to formulate appropriate action.

- make more use of the extended codes to examine the particular characteristics of their communities at a level of detail (e.g. the origin and demographics of groups such as Black African and Black Other will vary in different areas).

- examine the SEN-ethnicity interactions for their locality, seek to identify whether there are local factors of importance, and address emerging issues.

- Ensure that training and support is provided to schools to optimise the accuracy of identification of category and level of SEN.

- establish a two-way flow of information between those responsible for collecting and analysing PLASC data and other sections of the LA who provide services where the data are relevant. Thus (1) those delivering services (e.g. School Improvement Services, School Improvement Partners, Educational Psychology Services, Ethnic Minority Advisory Services and Education Welfare Services etc) should receive appropriate analyses of SEN and ethnicity data and (2) the services should provide feedback to help the LA/Children's Trust in the interpretation of the data.

- use the evidence produced in this report to support the development of Children's Services that meet the needs of children with SEN from minority ethnic groups.

- use the evidence to plan resources and commissioning strategies for pupils from minority ethnic groups identified as over-represented, e.g. Pakistani and Bangladeshi pupils for sensory impairment and PMLD.

Developing initiatives at a national level

- The DfES should work together with the Teacher Development Agency and the National Strategies to ensure that initial teacher training and guidance to schools include information about the influence on the identification of SEN of poverty, gender and ethnicity and to develop and disseminate strategies to address disproportionality.

- As the groups most characterised by over-representation, special attention is required to address the needs of Travellers, both those of Irish heritage and Gypsy-Roma, particularly with respect to Cognition and Learning Needs and BESD. A

national approach is required to support teachers in further developing their understanding of the Travellers' cultures, including the variation within these two groups, and the development of positive curricular and teaching approaches to enhance these pupils' learning and reduce disaffection. In addition, further work is necessary with Traveller families on the value of education and access to education during periods of mobility.

- Further work is required to reduce the over-representation of Black Caribbean and Mixed White and Black Caribbean pupils identified as having BESD. As this is not the case for Black African or Black Other pupils, an approach focussing on reducing racism against Black pupils generally is insufficiently focussed. Attention is necessary to distinguish the different needs of these groups. Positive approaches to engage the pupils and their parents and to focus on success, perhaps modelling on 'Aiming High' but with a specific additional SEN focus should be considered.

- The over-representation of Pakistani children for SEN concerning sensory needs (VI, HI and MSI) and PMLD, and of Bangladeshi children for HI, requires the active engagement of the Department of Health (DH). If, as appears to be the case, these children are at particular risk of sensory impairment as a result of consanguinity then this requires a sensitive strategy engaging the community in a consideration of risk associated with current practices.

- The over-representation of Pakistani pupils for sensory impairment and PMLD requires consideration in the national/regional planning of resources to meet the needs of children with these developmental difficulties.

- The over-representation of Chinese pupils with SLCN requires attention by the DfES and DH. The suitability and accuracy of assessments and intervention by speech and language therapists and educationists requires further research to ensure that different needs arising from the children having English as an Additional Language, compared with or in addition to developmental language difficulties, are recognised and addressed appropriately.

- The under-representation of all Asian and Chinese groups with respect to MLD, SpLD and ASD requires investigation of whether these children's needs are being appropriately recognised, or whether their EAL status is leading professionals to

under-estimate the nature and severity of cognition and language needs. This will require investigation of the processes of identification and assessment, particularly those at School Action Plus and SEN statutory assessment.

- The PLASC dataset provides an important source of information and should be continued; DfES guidance to LAs/schools should be reviewed on a regular basis to optimise levels of accurate submission of SEN and ethnicity data.

- The effectiveness of LAs in providing training and support to schools regarding their PLASC data should also be monitored.

- Further research is necessary to utilize fully the unique national dataset offered by PLASC. For example investigation of the significant variations across LAs could provide a rich seam for better understanding of some of the origins and causes of disproportionality.

- A full analysis of PLASC can also be used to formulate specific research questions to be explored by further research. Examples of possible studies include:

    - The reasons for differential rates of BESD among different Black groups.
    - The effectiveness of support for Travellers.
    - The effectiveness of provision for parents with EAL, including inter-agency collaboration.
    - The effectiveness of provision for pupils newly arrived from other countries.
    - Patterns of different over- and under-representation for particular categories of SEN between LAs and an examination of the reasons for these.

1. INTRODUCTION

1.1 The present study

Concerns about the attainment and progress at school of children from minority ethnic groups have been evident in the UK for some time, at least since the 1970s. Studies by some LEAs at local level and research studies led to two major government initiatives namely the Rampton Committee followed by the Swann Committee (Great Britain: Committee of Inquiry into the Education of Children from Ethnic Minority Groups 1981, 1985). These were significant reports which highlighted the importance of this issue but also its complexity.

One element within this general concern about the progress of minority ethnic groups has been the specific issue of over-representation among pupils designated as having special educational needs (SEN). A number of actions have taken place since this period both at local level where LAs and schools have developed a variety of approaches, and also by the government, e.g. Aiming High: Raising the Achievement of Minority Ethnic Pupils (DfES, 2003) is an over-arching initiative to raise the achievement of minority ethnic pupils. As part of this initiative there are a range of projects, including the African-Caribbean Achievement Project, the Black Pupils' Achievement Programme and Primary National Strategy EAL Programme
(see http://www.standards.dfes.gov.uk/ethnicminorities/raising_achievement/) Meanwhile, more research has been carried out in the UK, US and other countries. More recently large scale statistical analyses of pupil level data have been possible, particularly of the Pupil Level Annual School Census (PLASC) dataset held by the Department for Education and Skills (DfES).

This report presents the findings of a study carried out in 2005-6 whose purpose was to investigate the nature of the relationship between SEN and ethnicity within England. The aim was:

> *To identify whether there is a need for further action in the area of the links between ethnicity and special educational needs and to suggest ways in which these actions could be taken.*

Evidence has been drawn from four sources. First, the 2004 and 2005 PLASC datasets were analysed to examine not only the relationship between SEN and ethnicity but also gender and social disadvantage. Second, a comprehensive review of the research literature

was also conducted. Third, because we considered it important to explore practitioners' perspectives on the issues, we carried out a survey of all English LAs. Finally, to gather practitioner views in depth, we organised focus groups of LA officers.

In this report we first, briefly, elaborate on the background (Section 1) and the methodology of the study (Section 2). We then present the analysis of PLASC data (Section 3). This sets the scene by indicating the nature of the SEN-ethnicity relationships including the extent to which these are also related to gender and social disadvantage. Section 4 then presents a review of the literature. This covers a wide range of material including that which attempts to identify possible reasons for differential representation and how this has been addressed. Lastly in Section 5 we explore the main challenges arising from our study and, in Section 6, present the main conclusions and recommendations from the research.

In presenting this evidence we identify both under- and over-representation of different groups of pupils designated as having SEN. We recognise that such statistical factors must be considered within a values-related debate. For example, put simply, is it a 'positive' or a 'negative' to be designated as having SEN? This is important for several reasons. The possible negative outcomes associated with inappropriate SEN identification include:

- Restriction of opportunities because of lowered expectation or inappropriate curriculum
- A feeling of stigmatisation
- Inappropriate interventions
- Inaccurate data on which to plan resource type and allocation.

In contrast, the positive outcomes include identification and clarification of pupils' educational needs and individual action plans to address these needs.

These factors may be associated with either over- or under-representation. For example, if children with developmental language difficulties are considered not to have SEN because English is an additional language (EAL) they may miss out on potentially important speech and language therapy; on the other hand a child considered to have SEN because of impaired intellectual development on the basis of insensitive assessment methods may receive inappropriate curriculum challenge. Furthermore, both over- and under-representation (disproportionality) may have an important role not only at the level of individual pupils but, cumulatively, at the minority ethnic group level. This may lead to

inappropriate resourcing but, in addition, to group generalisation and stigmatisation, including racism.

The present study therefore explores the nature of disproportionality, and possible reasons. We then make recommendations for further analysis/research and how the factors identified might be addressed.

1.2 Special Educational Needs (SEN)

The definition of 'special educational needs' (SEN) is set out in the Education Act 1996 Section 312: 'children have special educational needs if they have a learning difficulty which calls for special educational provision to be made for them. Children have a learning difficulty if they…

a) have more significant delay in learning than children of the same age

b) Have a disability which prevents or hinders them from making use of educational facilities generally provided for children of the same age in schools within the area of the local education authority.

c) Are under compulsory school age and fall within the definitions a) or b) above, or would do so if special educational provision was not made for them.

Children must not be regarded as having a learning difficulty solely because the language or form of language of their home is different from the language in which they will be taught'

In addition: Special educational provision means:

a) for children of two or over, educational provision which is additional to, otherwise different from, the educational provision made generally for children of their ages in schools maintained by the LEA, other than special schools, in their area
b) for children under two, educational provision of any kind

A conceptual tension that has been central to the implementation of SEN legislation since the Education Act 1981 concerns the interaction of within child and environmental factors. The Warnock Report (DES, 1978) argued against attributing children to categories as research had demonstrated that many had two or more areas of problems such as a hearing impairment and physical disability (e.g. Rutter, Tizard & Whitmore, 1970). Furthermore, although some SEN are clearly attributable to within child factors (e.g. profound hearing

impairment) others are to varying degrees socially constructed, e.g. both moderate learning difficulties (MLD) and behavioural, emotional and social difficulties (BESD) – for a Glossary of terms see Appendix 1. Furthermore, there are degrees of severity and these do not necessarily relate simply to a physical causation. Even among children with unambiguous organic impairments, there can be variations in their academic and social development. The conceptualisation deriving from this analysis is that of *compensatory interaction* (Wedell, 1978) which stresses the need to examine interactions between factors and also stresses that difficulties in one domain may be compensated for by strengths in another domain. Consequently the nature of children's SEN must be considered as the results of an *interaction* between within child and environmental factors, and these in turn may vary individually and in interaction over time (Wedell and Lindsay, 1980).

Returning to the legal definition of SEN, it is apparent that a 'difficulty in learning' could be attributed to either a within child factor alone, *or* an environmental factor (e.g. poor teaching) alone, *or* an interaction between the two. It is intended that SEN is always conceptualised within a context and is not a specific category or diagnosis. In practice, however, 'learning difficulty' is often seen as a 'within child' factor, and this has been reinforced by the increased use of diagnostic categories since the Warnock Report, especially in recent years e.g. dyslexia, Autistic Spectrum Disorder (ASD) and Attention Deficit with Hyperactivity Disorder (ADHD), ironically in contradiction to the Warnock Committee's arguments.

This set of issues is important as background to the present purpose for several reasons. Firstly, it indicates that determining 'SEN' is not simply a matter of objective 'truth'. As a result, any attempt to analyse data on SEN must take into account that attributing this or any specific label to children is a social process. Furthermore, different categorisations may be more or less objective or socially constructed: compare a visual impairment with BESD. Secondly, these factors influence the technical determination of thresholds i.e. the point at which a category may be attributed to a child. In the absence of clear diagnostic distinctions, a higher reliance is made on professionals' judgements as to whether a child meets criteria. Thirdly, there may be differential values placed on different categories which in turn may have an impact on their use. For example, in the US, there has been a substantial increase in the number of children with 'learning disabilities' but reduction in those attributed the category 'educable mentally retarded'. Hosp and Reschly (2001) report that differential rates of learning disability and mental retardation are a function of different funding formulae between states.

In short, although we now have the benefit of large databases to analyse rates of different SEN, it is important to consider the possible influences on what may be regarded as objective numerical data.

1.3 Ethnicity

Analysis of patterns of SEN among different ethnic groups is a recent phenomenon following the collection of pupil level data from schools. Ethnic categorisation in itself has evolved over the years, largely reflecting 20th century immigration patterns to the UK, with categories being extended to include a wider and more diverse population. As a statutory requirement, schools have been instructed to report to the DfES on ethnicity and guidelines on collection of such data had been issued detailing ethnic categories based on Pupil Level Annual Schools Census (PLASC) ethnic codes (Appendix 2).

Developments have led to a much more variegated (and hence longer) set of categories that fit more closely to individuals' identities. However, this approach has inherent difficulties. Firstly, the concept of 'ethnicity' is itself contentious. It has replaced race as a variable as the latter's scientific standing has been subject to major criticism (Spencer, 1996) but similar criticisms have been made of ethnicity (Phinney, 1996). Ethnicity concerns not only inherited, biological elements, but also elements of culture. It is made further complex by the increase in the number, and range, of children of mixed parentage. Hence, especially over generations, the notion of 'ethnicity' becomes increasingly complex.

Secondly, there is the practical issue of the collection of data. It is now expected that ethnicity will be defined by the parent not the teacher, but does this always occur? The Guidance notes accompanying PLASC specify that if parents are reluctant to provide information they should be encouraged to do so, although parents have the right to refuse to provide such data. Schools should accept the responses provided by parents or pupils. In addition, as the pupil may also complete the form this introduces another source of variation.

In summary, just as there are significant issues concerning SEN categorisation, so too are there for ethnicity. These issues will be re-addressed in Section 5 after the evidence from the analysis of PLASC and the literature review has been presented.

1.4 Concerns about over-representation

England has a long history of attracting immigration. In the recent past, significant groups of immigrants have included groups from the Caribbean, Africa and Indian Sub-continent, predominantly from countries of the Commonwealth. These included people from the Caribbean in the late 40s to early 70s; those from newly independent countries mainly for the purpose of higher education and technical training in the post-1960s independence period (from countries like Ghana, Nigeria, Sierra Leone); because of political unrest (in countries like Somalia, the Democratic Republic of Congo and Angola); and from Pakistan and Bangladesh. The Caribbean population in Britain rose from around 30,000 in 1941 to over half a million four decades later (Malde, 2005). More recently there have been significant numbers of immigrants from Eastern Europe.

Earlier concerns in the 1970s around overt and covert racism and its impact on low self-esteem in minority ethnic Black pupils from the Caribbean, is reflected in work by Bernard Coard (1971). The Macpherson report on the Steven Lawrence Inquiry (1999), 28 years later, highlighted similar findings which sparked a more vigilant public commitment to addressing equality in educational provision. The spotlight fell on children from minority ethnic groups[2] who were reportedly underachieving (e.g. Troyna, 1984; Gillborn and Gipps, 1996; Lawrence et al, 1999; Gillborn and Mirza, 2000). Following the publication of the inquiry report in February 1999, the government accepted most of the recommendations made. Among other outcomes, this led to the passing of the Race Relations (Amendment) Act in 2000, which extended to LAs and schools a general duty to avoid discrimination on racial grounds and to promote good race relations. This heightened awareness, coupled with significant increases in the number of minority ethnic pupils in maintained primary and secondary schools[3], led to an official investigation into LA and school responses (OFSTED, 1999), which subsequently gave rise to increased funding and support to raise the achievement of pupils from minority ethnic groups. Recent government initiatives include:

- The Excellence in Cities/Ethnic Minority Achievement Grant (EIC/EMAG) initiated in 2002 (now ended);

[2] The term 'minority ethnic' will be used, as opposed to 'ethnic minority'. Minority ethnic categories (as per Ethnic Minority Standards site) include all groups other than White British. This includes Black Caribbean, Black African and Black Other, Indian, Pakistani, Asian Other, Chinese, Irish, Travellers of Irish heritage, Gypsy/Roma and other white backgrounds, and those from mixed backgrounds.

[3] The most recent statistics (January 2005) indicate that in primary schools 81.7% of pupils are White (including the two Traveller groups) and 16.4% from non-White minority ethnic groups (1.9% unclassified; at secondary 83.6% of pupils were White, and 13.4% were from non-White minority ethnic groups and 3.0% unclassified (see www.dfes.gov.uk/gateway/DB/SFR/s000606/SFR42-2005.pdf)

- Aiming High: Raising the Achievement of Minority Ethnic Pupils (March 2003); which includes:
    - A Primary National Strategy EAL programme involving 21 LAs, to support bilingual pupils for whom English is a first language and to support teachers of these children
    - African Caribbean Achievement project
    - Black Pupils Achievement project

The SEN Code of Practice (DfES, 2001) sets out the statutory framework for identification, assessment and provision for all children and young people with special educational needs, including those from minority ethnic groups. The SEN Code suggests a graduated approach through School Action, School Action Plus and statements of special educational needs.

In addition, there are guidelines developed by professionals and LAs to support schools, parents and carers, schools and SEN governors, teachers, professionals and teaching assistants in providing relevant and effective support for the special educational needs of individual pupils... A new government strategy 'Removing Barriers to Achievement: The Government's Strategy for SEN' (DfES, 2004) has been introduced which aims to further support the learning of children with SEN.

Analysis of the Pupil Level Annual School Census (PLASC) data for 2004 suggested that in comparison with White British pupils there was a significantly higher incidence of minority ethnic pupils whose needs were being met at School Action Plus or who had a statement of special educational needs (DfES, 2005c). In addition, evidence was found of under-representation in some cases, e.g. Asian groups were under-represented among those with Autistic Spectrum Disorder (ASD). The DfES report was an exploratory analysis, and one reason for the DfES commissioning the current research was to undertake a more sophisticated analysis of the PLASC data (see Section 3). However a key point to emerge is that although in the past concern has focussed on *over*-representation it is also necessary to examine *under*-representation, as each has potentially negative impacts. In the report we shall use the term *disproportionality* as a generic reference to both of these factors.

An overview of available studies investigating disproportionality reveals a wealth of research and theory on the lives and needs of children from different minority ethnic groups, dating back to the Swann Report (1985) to a more recent literature review of the experiences and needs of refugee and asylum seeking children in the UK. All provide valuable insight for further development of policies and practice to raise achievement and increase participation

in schools (e.g. Tizard and Phoenix, 1993; Troyna and Griffiths, 1995; Parker-Jenkins, 1995; Chambers et al, 1996; Lloyd et al, 1999; Haque, 2000; Katz, 2001; Jones and Rutter, 2001; Dwivedi, 2002; DfES, 2004; O'Hanlon and Holmes, 2004; Tyler, 2005). However, there is a paucity of research which specifically explores the needs of minority ethnic pupils with special educational needs, exemplified in a statement by Diniz:

> *'The issue of race[4] in SEN is in 'limbo', that is, it has remained invisible or is left implicit in research and practice in Scotland and England.'* (1999:213)

This review attempts to pull the issues of SEN and ethnicity together in a coherent manner.

1.4.1 UK and US

A major difference in the cultural context between England and the US for education in general is the history in the US of segregated schooling. This was challenged by the landmark *Brown v Board of Education* decision by the US Supreme Court in 1954. In a unanimous decision, Chief Justice Earl Warren wrote that separate-but-equal (segregated) public schools were unconstitutional, a decision of profound importance for the future of schooling and also of social organisation in general (Pickren, 2004).

Although this ruling concerned the whole US public school system there is a particular resonance for special education. The Supreme Court decision was concerned with social justice and addressed *segregation* which in an appendix to the appellants' briefs in the case 32 social scientists defined in terms of 'restriction of opportunities…. supported by the action of an official body or agency representing some branch of government' (Clark et al, 2004: 495). A major theme in discussions of SEN and inclusion has raised exactly this concern, that (segregated) special schooling is *de facto* a restriction and hence wrong. Such concerns assume even greater power when special education also appears to be characterised by over-representation of one or more minority ethnic groups.

The UK context does not have this history of an educational system segregated by ethnicity but there is the more distant influence of the development of the Empire and colonisation, with the implicit, if not explicit assumptions, of differences in worth. Suggestions of group[5]

[4] The use of the term 'race' implies minority ethnic groups in general, evident in the work of Diniz in this area.
[5] In the US literature 'race' is the more common term.

differences in general intelligence between different ethnic groups have added to the sensitivity of the issue (e.g. see the Swann Report, 1985).

Hence, any consideration of SEN and ethnicity must take into account both the culture-specific differences and the conceptual similarities regarding the attributes of impairment, disability and special educational needs. It is important, but not easy, to disentangle issues of evidence per se from reasons for the findings and value judgements about the meaning and implications of the evidence.

2. METHODOLOGY

The study comprised four elements. The major strands comprised a statistical analysis of the 2005 PLASC data and a systematic literature review. In addition practitioners' knowledge and perspectives were sought through a questionnaire and focus groups.

2.1 Statistical analysis

The research involved a detailed statistical analysis of national data to explore the complex interrelationships between SEN, socio-economic disadvantage, gender and ethnicity. The 2005 Pupil Level Annual School Census (PLASC) data for 6.5 million pupils aged 5-16 in England were analysed. Supplementary data on the Income Deprivation Affecting Children Index (IDACI) were also provided by the DfES. Logistic regression analyses were completed to calculate the odds-ratios of having an identified SEN (either School Action Plus or a statement of SEN) for overall SEN and for each individual type of SEN, as defined within PLASC. These odds ratios tell us how much more (or how much less) likely an outcome is for one group relative to a comparator group. For ethnicity, these ratios contrast the odds for each ethnic group relative to the White British majority group. The analyses were completed both for ethnic group alone (unadjusted model) and also after adjusting for the influence of three other factors namely year group, gender and socio-economic disadvantage (entitlement to Free School Meals and IDACI).

2.2 Literature Review

Literature was searched systematically using the following parameters:

Country:	England and US
Date:	1990-2005
Language:	English
Subject area:	Social sciences and medical (including social care)

Systematic searches were conducted of the main databases. In addition, earlier work considered of particular importance, as well as material traced from references within publications identified during the searches, were also reviewed. A detailed description of the methods used is presented in Appendix 3 and the template for analysing each publication in Appendix 4. The majority of the literature identified was published in the US (52%) and typically addressed that country's population, with UK publications close behind (45 %).

2.3 Survey

A questionnaire (Appendix 5) was distributed to both the SEN adviser (or comparable role) and the Principal Educational Psychologist for each of the 150 local authorities (LAs) in England. A total of 46 returns representing 41 LAs produced an LA response rate of 27%. Coverage was generally satisfactory, although there was a lower than expected response rate from LAs with higher percentages of pupils from minority ethnic groups. Respondents to the questionnaire were asked, based on their professional opinions, if were any ethnic groups over-represented or under-represented within the SEN population in their LAs. The majority (22) answered 'no' to this question, and a further nine were unsure because they did not have data. However 10 LAs (24% of the sample) responded positively. Their individual responses concurred largely with the analysis of the national PLASC data. Where they did not, this may reflect a genuine but specific local situation.

2.4 Focus Groups

Focus groups were organised for those expressing an interest when returning the questionnaire. In the event, 13 senior professionals attended focus groups in London and Manchester representing 10 LAs in London, the South East and South West; and the North West respectively (for membership, see Appendix 6).

The focus groups were mainly organised to obtain expert practitioners' knowledge and perspectives about their *local* situation as distribution of minority ethnic groups varies considerably between LAs, also raising different challenges. The discussion was focussed on issues of over- and under-representation; data collection and analysis; perspectives on reasons for disproportionality if it occurred; and their views on local issues in general as well as the national system for PLASC.

The sessions were tape recorded with the permission of participants, and field notes were made by the two focus group facilitators from the research team (GL, SP). Confidentiality was assured.

The results of the survey and focus groups were used to inform, and add local perspectives to, the PLASC analysis and literature review. The results are of these two strands are not, therefore, presented separately but are referred to at appropriate places within the report.

3. ANALYSIS OF DATA FROM PUPIL LEVEL ANNUAL SCHOOL CENSUS (PLASC)

3.1 Introduction

Differences in the proportion of pupils identified as having special educational needs (SEN) across ethnic groups has been reported in a recent topic paper from the Department for Education and Skills (DfES) (DfES, 2005c). The report analysed 'raw' data, including cross tabulations with gender and entitlement to Free School Meals (FSM). However as it was an exploratory analysis it did not employ statistical models to isolate the impact of ethnicity (and other variables) on SEN. This section reports a detailed analysis of the 2005 PLASC data for over 6.5 million pupils aged 5-16 years in maintained schools in England. Logistic regression is used to explore the impact of ethnic group, gender and socio-economic disadvantage on the identification of different categories of SEN.

3.2 Methodology

3.2.1 Ethnic Group

The DfES main ethnic codes were utilised in the analysis. Because the extended codes were only used by some LEAs we have restricted the analysis to the 19 main ethnic codes, as listed in Table 1. This also allows consistent comparison with previous reports from the DfES.

3.2.2 SEN

The Pupil Level Annual School Census (PLASC) asked schools to identify the category of SEN for each pupil identified at School Action Plus (SAP) or with a statement of SEN. Teachers identified both the primary nature of the pupil's need and a secondary need if relevant. The rationale for selecting only pupils at SAP or those with a statement is that these pupils:

'have educational provision which is additional to, or different from, the educational provision made generally for children of their age - support has been sought from external sources'. (DfES, 2003b, p2)

Schools were not required to identify category of SEN for pupils on School Action (SA). While some schools have done so others have not, so the data on category of need for SA are incomplete. There is also substantial variation between schools in the proportion of

pupils identified at SA which does not appear to relate consistently to other demographic factors of the school population. This suggests that the identification of a pupil at SA may say as much about the policy of the school as it does about the relative needs of the individual pupils.

Table 1: Ethnic categories contained within PLASC 2005

Ethnic Group	Number pupils aged 5-16	% of all pupils	% of known ethnicity
White British	5,191,517	80.1	82.0
White Irish	23,963	0.4	0.4
Traveller-Irish heritage	4,040	0.1	0.1
Traveller-Gypsy/Roma	6,895	0.1	0.1
Any other white groups	137,756	2.1	2.2
Mixed White & Black African	18,908	0.3	0.3
Mixed White & Black Caribbean	67,975	1.0	1.1
Mixed White & Asian	37,064	0.6	0.6
Any other mixed background	63,908	1.0	1.0
Indian	141,858	2.2	2.2
Pakistani	180,203	2.8	2.8
Bangladeshi	73,779	1.1	1.2
Any other Asian	48,782	0.8	0.8
Black African	129,552	2.0	2.0
Black Caribbean	93,121	1.4	1.5
Black Other	28,038	0.4	0.4
Chinese	21,692	0.3	0.3
Any other ethnic group	60,703	0.9	1.0
Unclassified	150,294	2.3	-
Total pupils	6,480,048		

For these reasons the analysis is restricted to those pupils identified at SAP or with statements of SEN. For each primary category of SEN, pupils at SAP or with statements of SEN are contrasted with those who are not at SAP or statemented[6].

[6] The outcome could be considered to have three levels (No SEN/SA vc SAP vs Statemented). However for all types of SEN the proportions within the later two groups were extremely small, causing significant problems of empty cells in analyses that attempted to simultaneously evaluate the association between ethnicity, gender, socio-economic disadvantage and SEN type. Pre-testing using separate models for SAP and for statements indicated a similar pattern of results for both cases, supporting the validity of combining these two outcomes.

3.2.3 Definition of under- or over-representation

Because the proportion of pupils identified with SEN has a very low base rate, group differences in identification rates can appear small in an absolute sense. For example differences between identification rates of 1% and 3% may seem 'trivial' to a general audience. Several other problems exist with definitions based on percentages, as summarised in relation to the US literature by Coutinho & Oswald (2000). For example if an ethnic minority constitutes 10% of the population, but 15% of the minority are identified with SEN, does this represent an over-representation of 5% (15% - 10% = 5%) or 50% over-representation (15%-10% / 10% = 0.50)?

In contrast to percentages, a powerful 'effect size' measure is the odds ratio. This tells us how much more (or less) likely an outcome is for one group relative to a comparator group. The current analysis will use odds and odds-ratios rather than a direct comparison of percentages to make clear the relative differentials in identification of SAP / Statemented pupils for each ethnic group relative to White British pupils.

While technically more robust and less ambiguous to interpret than percentages, odds ratios have their own interpretation issues. There is no absolute level at which an odds-ratio may be considered 'significant' in an educational sense. Odds-ratios have to be considered in relation both to the absolute likelihood of the outcome, and the stakes or impact of the outcome (a value judgement). For example, an odds ratio of 3:1, although indicating a threefold increase in the odds, may not be considered significant if this raise the odds from 1 in a million to 3 in a million. We may not consider the effect substantial since the event is still very unlikely to occur. A second factor concerns the 'stakes' we attach to the outcome. Suppose I am told that smoking increases my chance of catching a cold by 3:1 compared to a non-smoker. This may not greatly affect my smoking behaviour since, although the increase in odds is high, I attach relative low stakes to getting a cold. However if I am told smoking increase my chance of a heart-attack by 1.25:1 this may have a big impact on my behaviour, because although the increase in risk is small the stakes for this outcome are so high.

We can see therefore that the interpretation of the odds ratio is not necessarily straightforward. In the analysis reported here we have chosen to highlight any instances in which pupils from an minority ethnic group are 1.5 times more likely to be identified with a particular category of SEN (a ratio of 3:2 or above), or conversely 1.5 times less likely to be

identified with that SEN (a ratio of 0.67:1 or less), relative to pupils from the majority White British group.

3.3 Factors impacting on SEN

The relationship between ethnicity and SEN is the focus of this report. However in order to fully map the nature of the relationship it is important to consider other measured pupil factors that are associated with SEN. In relation to other variables contained in the PLASC dataset, and related demographic data, the following factors need to be considered.

3.3.1 Gender

There is a substantial body of research showing that boys tend to be over-represented relative to girls for many categories of special educational need. For example boys tend to be over-represented among those identified with specific learning difficulties and reading difficulties (e.g. Rutter, 1976). Research relating to educational attainment and progress at school has also suggested that gender differences may vary across ethnic groups. For example, Strand (1999) identified that it was boys of Black Caribbean heritage, but girls of Pakistani heritage, who made particularly poor progress in the early years of Key Stage 1.

3.3.2 Socio-economic disadvantage

We will see later that there are significant associations between SEN and socio-economic disadvantage. Pupils from economically disadvantaged circumstances tend to have higher rates of SEN identification than those from less economically disadvantaged circumstances. However there are also significant interactions between socio-economic disadvantage and ethnicity. For example Table 2 shows the percentage of pupils entitled to FSM by ethnic group. Thus while 14% of White British pupils are entitled to FSM, this rises to 30% for Black Caribbean, 44% for Black African, 47% for Bangladeshi, and 65% for Traveller of Irish heritage pupils. Thus Socio-economic disadvantage is a ‘confounding’ variable that needs to be controlled in any analysis of the relation between ethnicity and SEN.

3.3.3 Income Deprivation Affecting Children Index (IDACI)

The 17% of pupils entitled to FSM are relatively homogenous with regard to levels of economic deprivation, since all come from families who experience severe levels of economic disadvantage. However the group not entitled to FSM (around 83% of the school

population) is extremely heterogeneous. It will include some families who are only just above the threshold for entitlement to FSM, right through to those from extremely affluent homes. Entitlement to FSM is therefore a 'blunt instrument' in estimating the extent of socio-economic disadvantage for the majority of pupils.

We have been able to supplement the data on entitlement to FSM with further data on the Income Deprivation Affecting Children Index (IDACI). This IDACI is a supplementary index to the Indices of Multiple Deprivation produced by the Office of the Deputy Prime Minister (ODPM). It measures the proportion of children under the age of 16 in an area living in low income households The measure is still focused on disadvantage, rather than advantage, but has a wider 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 (Standard Deviation=70). The correlation at the SOA level between %FSM and mean IDACI normal score is very high, r=.86. In sum, entitlement to FSM has the advantage of being measured at the pupil level but is relatively blunt. In contrast, IDACI score is a more differentiated measure but is area rather than pupil based. However using the combination of both entitlement to FSM and IDACI score greatly increases the purchase we can get on the influence of socio-economic disadvantage.

To simplify interpretation, IDACI score has been subject to a normal score transformation to give a mean of 0 and standard deviation (SD) of 1. High scores indicate more disadvantaged circumstances and low scores less disadvantage circumstances. Table 2 shows how IDACI score also covaries with ethnic group.

Table 2: Socio-economic disadvantage by ethnic group

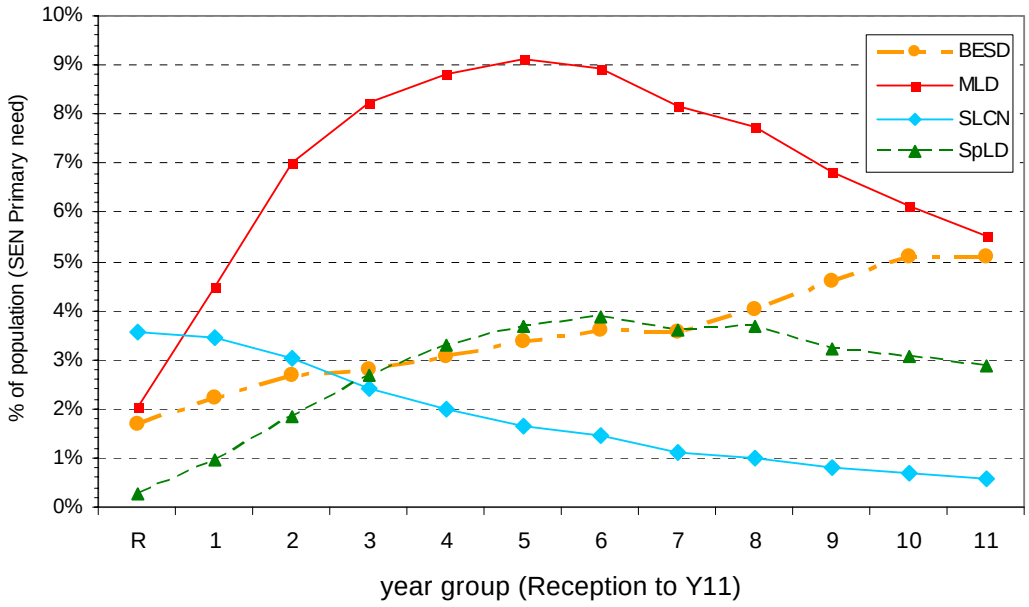
	Free School Meals	Income Deprivation Affecting Children Index (IDACI)	
Ethnic Group	% entitled	Mean score	(Standard Deviation)
White British	14.1%	-0.11	0.97
White Irish	20.5%	0.13	1.04
Traveller of Irish heritage	64.8%	0.59	0.99
Gypsy/Roma	50.8%	0.29	0.84
White Other groups	21.3%	0.14	1.07
Mixed White & Black African	28.8%	0.43	1.00
Mixed White & Black Caribbean	32.8%	0.51	0.95
Mixed White & Asian	19.1%	-0.03	1.02
Any other mixed background	24.1%	0.25	1.02
Indian	11.9%	0.15	0.84
Pakistani	33.8%	0.67	0.73
Bangladeshi	47.1%	1.08	0.82
Any other Asian	21.2%	0.29	0.92
Black African	43.8%	0.95	0.83
Black Caribbean	30.0%	0.85	0.82
Black Other groups	35.9%	0.82	0.89
Chinese	11.0%	0.04	1.07
Any other ethnic group	38.5%	0.63	1.02
Unclassified	16.8%	-0.07	0.95
TOTAL	16.8%	0.00	1.00

3.3.4 Year group

While not directly related to ethnicity, there are large variations across year groups in the prevalence of some categories of SEN. Figure 1 shows the variation across year groups for four categories of SEN that show consistent patterns. These show the proportion of pupils with identified SEN at any level, including School Action. We can see that the proportion of pupils with Behaviour, Emotional and Social Difficulties (BESD) increases systematically from around 2% of the population in Reception up to 5% at Y11. Specific Learning Difficulties (SpLD) also show a steep rise during primary school, from less than 1% in

Reception to 4% in Y6, although the percentage then remains fairly stable at 4% across the whole of the secondary phase. In contrast Speech, Language and Communication Needs (SLCN) decrease from 3.5% at Reception to around 0.5% of the population at Y11. Finally Moderate Learning Difficulties (MLD) has an inverted 'U' shape, starting at 2% in reception, peaking at 9% in Y5/Y6 and declining to 5.5% in Y11.

Figure 1: Proportion of the school population with an identified SEN (School Action or above) by category of need Reception to Y11



3.3.5 Statistical modelling

All the factors discussed above impact on SEN, and are also interrelated. If we want to identify the independent association of SEN with ethnicity, net of the other factors, then we need a statistical model to help us disentangle the associations. For this purpose binary logistic regressions are completed for two nested analytic models:

1. Unadjusted: The initial model includes only ethnic group as an explanatory variable in order to assess the simple odds-ratios associated with each ethnic group, relative to the White British majority group;

2. Adjusted: A second model is created by adding year group, gender, entitlement to FSM and IDACI score to show the ethnic group odd-ratios after accounting for the associations with these factors.

The same approach is used consistently for the statistical analysis of all the different categories of SEN.

3.3.6 Why is EAL not included in the models?

Limited Information on English as an Additional Language (EAL) is collected within PLASC. Specifically PLASC asks whether 'English was the language to which the pupil was exposed during initial language learning'. However this indicates nothing about the pupil's degree of *fluency* with English: pupils may range from those who are fully fluent in English through to those who may be total beginners in learning English. The measure is therefore of limited usefulness conceptually and practically (see Strand & Demie, 2005). Furthermore, this binary EAL measure has high multi-co linearity / redundancy with ethnicity. Thus 98% of Bangladeshi, 94% of Pakistani, 85% of Indian, 82% of Chinese, 80% of Any other group and 71% of Black African pupils are identified as EAL. When we included EAL alongside ethnicity in the models, the effect of EAL status was not significant. Therefore EAL status is excluded from the models.

3.4 Results

3.4.1 Overall rate of SEN identification

The first analysis examines overall rates of SEN identification, both those pupils at SAP and those with statements, for any category of SEN. The results are presented in Table 3. As a baseline, unadjusted odds-ratios (OR) were calculated for a model including only ethnic group. Adjusted odds-ratios were then calculated including all variables (ethnic group, year group, gender, entitlement to FSM and IDACI) in which the coefficients for each variable are simultaneously adjusted for the influence of all other variables.

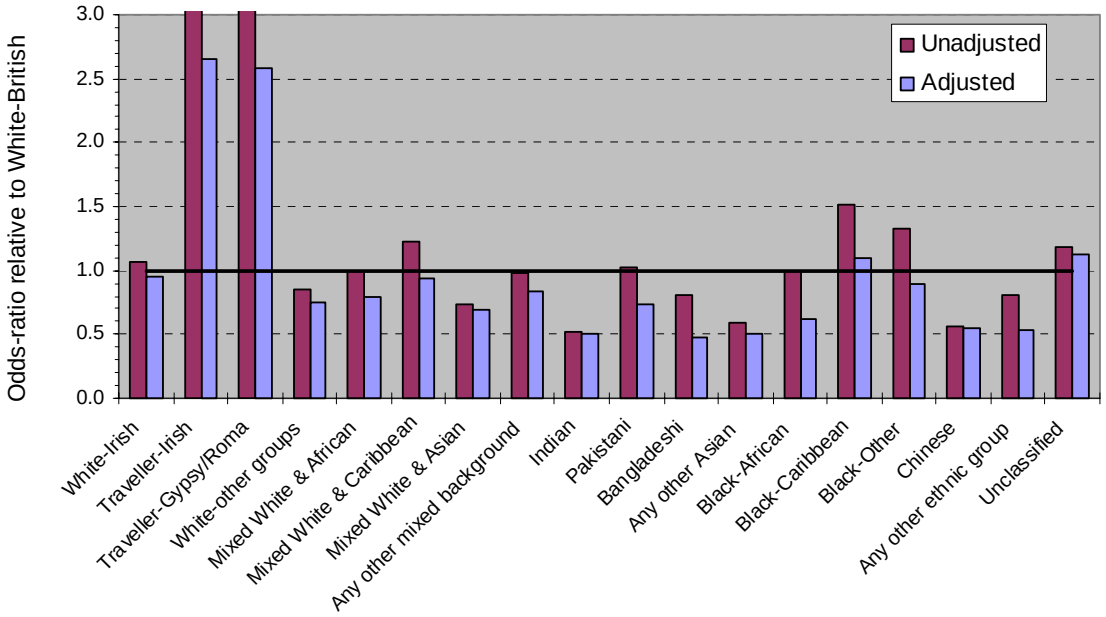
Table 3: Logistic regression analysis for overall rate (SAP or statemented) for any category of SEN

Variables		Model 1 Unadjusted OR	Model 2 B	Sig.	Adjusted OR
Ethnicity	White Irish	1.07	-0.04	ns	0.96
	Traveller of Irish heritage	***4.21***	0.98	0.000	***2.66***
	Gypsy/Roma	***3.52***	0.95	0.000	***2.58***
	White Other groups	0.85	-0.29	0.000	0.75
	Mixed White & African	0.99	-0.24	0.000	0.79
	Mixed White & Caribbean	1.23	-0.07	0.000	0.93
	Mixed White & Asian	0.73	-0.37	0.000	0.69
	Any other mixed background	0.99	-0.18	0.000	0.83
	Indian	***0.52***	-0.69	0.000	***0.50***
	Pakistani	1.03	-0.30	0.000	0.74
	Bangladeshi	0.81	-0.74	0.000	***0.48***
	Any other Asian	***0.60***	-0.69	0.000	***0.50***
	Black African	1.00	-0.47	0.000	***0.63***
	Black Caribbean	***1.52***	0.10	0.000	1.10
	Black Other	1.33	-0.11	0.000	0.90
	Chinese	***0.56***	-0.61	0.000	***0.54***
	Any other ethnic group	0.80	-0.62	0.000	***0.54***
	Unclassified	1.18	0.11	0.000	1.12
Year Group	Y2 vs. Y1	-	0.27	0.000	1.31
	Y3 vs. Y1	-	0.40	0.000	***1.50***
	Y4 vs. Y1	-	0.49	0.000	***1.63***
	Y5 vs. Y1	-	0.55	0.000	***1.73***
	Y6 vs. Y1	-	0.58	0.000	***1.78***
	Y7 vs. Y1	-	0.45	0.000	***1.57***
	Y8 vs. Y1	-	0.45	0.000	***1.56***
	Y9 vs. Y1	-	0.43	0.000	***1.53***
	Y10 vs. Y1	-	0.42	0.000	***1.53***
	Y11 vs. Y1	-	0.39	0.000	1.48
Gender	Girls vs. boys	-	-0.91	0.000	***0.40***
FSM	entitled to Free School Meal	-	0.74	0.000	***2.09***
IDACI	Income Deprivation Affecting Children (2SD)	-	0.24	0.000	***1.60***
	Constant	-	-2.56	0.000	0.08
Estimated R squared (Nagelkerke):		0.073			

Note: ns=not statistically significant; Red indicates ratios >1.5:1, blue ratios <0.67:1, relative to White British.

Figure 2 compares the odds-ratios for each ethnic group, relative to White British, both before and after adjusting for the impact of the other background factors (unadjusted versus adjusted results). The thick horizontal line is included to give a visual guide to complete parity with White British (OR=1).

Figure 2: Overall SEN rate: Comparison of odds-ratios for each ethnic group before and after adjusting for other pupil background factors



The y-axis has been capped so 3.0 indicates an odds-ratio of **at least** 3:1.

The analysis reveals that, after controlling for all background characteristics included in the model:

- Gender has a very strong association with SEN, with an odds ratio of 0.4:1 for girls relative to boys, i.e. 0.4 girls are identified for every one boy. This under-representation of girls can also be expressed as the equivalent over-representation of boys. 0.4:1 is equivalent to 1:2.5, i.e. 2.5 boys are identified for every one girl[7].

- Socio-economic disadvantage is strongly related to overall SEN. There were two measures of socio-economic deprivation used here. When used together these show that (a) pupils entitled to FSM are twice as likely to have an identified SEN as those

[7] The way odd-ratios are expressed depends on the base or reference category. The ration A:B can also be expressed as the ration B:A. Thus a ratio of 0.5:1 (A half as likely as B) is symmetrical and equivalent to a ratio of 1:2.0 (B is twice as likely as A). See Appendix 8 for tables of the equivalencies between rations <1 and ratios >1.

not entitled to FSM[8], and (b) a two standard deviation increase in the IDACI increases the likelihood of an identified SEN by 1.6 times[9].

- Compared to Y1, the rate of identification of SEN exceeds 1.5:1 in Y3 and peaks at 1.78:1 in Y6. The rate drops back slightly through secondary school to 1.5:1 in Y11.

- After adjusting for the above factors, the following results for minority ethnic groups were noted:
    - Pupils from the two Traveller groups are 2.5 times more likely to have an identified SEN than White British;
    - Bangladeshi (0.48:1), Indian (0.50:1), Asian-Other (0.50:1) and Chinese (0.54:1) pupils are around half as likely to have an identified SEN as White British;
    - Black African pupils (0.63:1) are also less likely to have an identified SEN than White British;
    - Black Caribbean (1.1:1) and Mixed White and Black Caribbean (0.93:1) have similar rates of identification of SEN compared with White British[10].

[8] If entitlement to FSM was the only measure of socio-economic disadvantage (i.e. if IDACI were not simultaneously included) entitlement to a FSM is associated with a threefold increase in the likelihood of identified SEN.

[9] Because IDACI is a continuous variable, its effect is estimated by comparing the probabilities for a pupil scoring one standard deviation below the mean with the probabilities for a pupil scoring one standard deviation above the mean, i.e. a two standard deviation (2SD) range (see Strand, 2004).

[10] Allowing for interactions between ethnicity and other factors did not substantially increase the explanatory power of the model, increasing the proportion of explained variation in SEN by only 0.1% (Nagelkerke R2). While this increase was statistically significant because of the huge sample size, the minimal increase in R2 could not justify the greatly increased complexity of the resulting model. Goodness of fit tests are not reported for the models here because the inclusion of a continuous explanatory variable (IDACI) and the large number of cells (ethnic (19) x year (9) x gender (2) x FSME (2) x IDACI (100) X SEN (2) = 167,200 cells) produced many cells with zero or small expected values. In this situation it is not possible to provide a dependable goodness of fit test (Norusis, 2005, p78).

3.5 Analyses by category of SEN

The results for overall SEN indicate relatively small differences between ethnic groups: after adjusting for gender and socio-economic disadvantage, Bangladeshi, Chinese, Indian, Asian-Other and Black African groups are less likely than White British to have identified SEN (SAP or statemented) and the Traveller groups are more likely than White British to be so identified. However this information is of limited usefulness without knowing the specific category of SEN identified. The next section presents an analysis separately for each primary category of SEN.

Table 4 gives a breakdown of the primary category of need of all pupils at SAP or with a statement of SEN.

Table 4: Percentage of pupils at School Action Plus/Statemented by category of primary need - sorted in descending order

Primary category of SEN	number of pupils	% of population	% of primary category
Not SAP or statemented	5,923,047	91.4%	-
Moderate Learning Difficulty	165,383	2.6%	29.7%
Behaviour, Emotional & Social Development	124,844	1.9%	22.4%
Specific Learning Difficulty	81,277	1.3%	14.6%
Speech, Language & Comm. Needs	60,633	0.9%	10.9%
Autistic Spectrum Disorder	30,860	0.5%	5.5%
Severe Learning Difficulty	24,639	0.4%	4.4%
Physical Disability	21,147	0.3%	3.8%
Hearing Impairment	11,819	0.2%	2.1%
Visual Impairment	6,485	0.1%	1.2%
Profound & Multiple Learning Difficulty	5,735	0.1%	1.0%
Multi-Sensory Impairment	769	0.0%	0.1%
Other Difficulty/Disability	22,791	0.4%	4.1%
Total at SAP or with a Statement	556,497	8.6%	
Total Roll	6,479,544		

The results of the analysis for each category of need are reported in Appendix 7. For each outcome, the appendix gives details on:

- The unadjusted odds-ratio;
- the overall fit of the statistical model, indicated by the estimated R^2;
- The regression coefficient (B) associated with each variable, the level of statistical significance of the coefficient and the adjusted odds-ratio;
- A graphic representation of both the unadjusted and adjusted odds-ratios.

3.5.1 Summary of results

A summary of the results for each of the twelve categories of SEN primary need is given in Tables 5a and 5b. **Table 5a** shows the results from model 1 (unadjusted) and **Table 5b** shows the results from Model 2 (adjusted for year group, gender and socio-economic disadvantage).

The tables show the odds-ratios whenever these are statistically significant at $p<.01$. Given the size of the sample (6.5 million pupils) statistical significance is not a good guide to educational significance, since the huge sample ensures that the majority of estimates will be statistically significant. Therefore odds-ratios (ORs) are highlighted only wherever they exceed the ratio 3:2. Ratios showing over-representation in excess of this ratio (i.e. >1.5:1) are highlighted in red, while ratios showing under-representation in the same proportion (i.e. <0.67:1) are highlighted in blue. (*Appendix 8* is a conversion table to show the symmetry between OR>1 and OR<1).

It must be remembered that, with regard to ethnic group, over-representation or under-representation simply indicates whether pupils from that ethnic group are more likely or less likely to be identified with SEN relative to the White British group. It carries no implicit positive or negative guide to action. For example, because fewer Indian pupils are identified with MLD than White British pupils, this does not imply that more Indian pupils should be identified with MLD.

Table 5a: Unadjusted odds-ratios by type of SEN and ethnicity - pupils aged 5 -16, January 2005

Unadjusted Ratios	Cognition & Learning Needs				Behaviour, Emotional & Social Difficulties	Communication & Interaction Needs		Sensory and/or Physical Needs				Other Difficulty/ Disability
Ethnic Group	**MLD**	**SLD**	**PMLD**	**SpLD**	**BESD**	**SLCN**	**ASD**	**VI**	**HI**	**MSI**	**PD**	**Other**
White Irish	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Traveller of Irish heritage	*5.96*	*3.35*	ns	*2.49*	*2.92*	*2.06*	**0.20**	ns	*2.21*	ns	ns	*6.08*
Gypsy/Roma	*5.19*	*2.19*	*3.11*	*2.54*	*2.27*	*1.97*	**0.42**	ns	*2.16*	ns	ns	*4.08*
White other groups	0.77	0.76	ns	0.84	0.72	1.37	ns	ns	ns	ns	0.73	ns
Mixed White & African	0.76	ns	ns	0.75	1.46	ns	ns	ns	ns	ns	ns	ns
Mixed White & Caribbean	ns	ns	ns	ns	*2.03*	ns	ns	ns	ns	ns	0.83	ns
Mixed White & Asian	**0.64**	ns	ns	**0.56**	0.69	ns	ns	ns	ns	ns	ns	0.71
Any other mixed background	0.79	ns	ns	0.78	1.23	1.24	1.25	ns	ns	ns	ns	ns
Indian	0.67	0.83	ns	**0.32**	**0.23**	0.81	**0.43**	ns	ns	ns	0.84	**0.54**
Pakistani	1.46	*1.62*	*2.70*	**0.42**	**0.45**	1.30	**0.46**	*2.85*	*2.71*	*2.66*	1.37	ns
Bangladeshi	ns	1.34	*1.71*	**0.54**	**0.35**	*1.62*	**0.38**	ns	*1.97*	ns	0.69	0.74
Any other Asian	**0.56**	ns	1.46	**0.34**	**0.31**	1.30	**0.61**	ns	ns	ns	0.77	0.72
Black African	0.84	1.23	1.36	**0.56**	ns	*1.95*	ns	ns	ns	*1.97*	0.74	ns
Black Caribbean	1.32	1.17	*1.55*	ns	*2.28*	*1.66*	ns	ns	ns	ns	0.74	ns
Black Other groups	ns	1.35	ns	ns	*1.85*	*1.82*	1.36	ns	ns	ns	**0.63**	1.50
Chinese	**0.31**	ns	ns	**0.29**	**0.18**	*2.09*	ns	ns	ns	ns	**0.36**	ns
Any other ethnic group	0.81	ns	1.46	**0.56**	**0.63**	1.45	**0.53**	ns	1.29	ns	0.76	ns
Unclassified	1.09	ns	ns	1.25	1.39	1.13	ns	ns	ns	ns	0.84	1.18

(1) OR= Odds-Ratio for being identified at SAP or statemented relative to White-British. (2) ns= non-significant OR at the 1% level (i.e. p>.01). (3) Ratios >1.5:1 in red italic, ratios < 0.67:1 in blue bold.

Table 5b: Odds-ratios adjusted for year group, gender and socio-economic disadvantage – pupils aged 5-16 January 2005

Adjusted Odds Ratios	Cognition & Learning Needs				Behaviour, Emotional & Social Difficulties	Communication & Interaction Needs		Sensory and/or Physical Needs			
Ethnic Group	**MLD**	**SLD**	**PMLD**	**SpLD**	**BESD**	**SLCN**	**ASD**	**VI**	**HI**	**MSI**	**PD**
White Irish	0.86	ns	ns	ns	0.91	ns	1.25	ns	ns	ns	ns
Traveller of Irish heritage	*3.30*	*2.03*	ns	*2.05*	*1.73*	ns	**0.19**	ns	ns	ns	ns
Gypsy/Roma	*3.48*	*1.50*	*2.38*	*2.19*	*1.59*	1.38	**0.38**	ns	*1.96*	ns	ns
White other groups	**0.65**	0.69	ns	0.82	**0.61**	1.19	ns	ns	ns	ns	0.70
Mixed White & African	**0.56**	ns	ns	0.71	1.14	ns	ns	**0.41**	ns	ns	0.71
Mixed White & Caribbean	0.68	0.74	ns	0.87	1.48	0.82	ns	ns	ns	ns	0.75
Mixed White & Asian	**0.60**	0.74	ns	**0.57**	0.67	ns	ns	ns	ns	ns	ns
Any other mixed background	**0.63**	ns	ns	0.74	ns	ns	1.22	ns	ns	ns	0.87
Indian	**0.65**	0.83	1.20	**0.31**	**0.22**	0.78	**0.44**	ns	ns	ns	0.85
Pakistani	ns	1.25	*2.39*	**0.36**	**0.29**	ns	**0.46**	*2.52*	*2.46*	*2.19*	1.23
Bangladeshi	**0.51**	0.90	1.41	**0.43**	**0.18**	1.12	**0.39**	ns	*1.67*	ns	**0.58**
Any other Asian	**0.46**	ns	1.39	**0.32**	**0.25**	1.13	**0.60**	ns	ns	ns	0.73
Black African	**0.47**	0.85	ns	**0.47**	**0.60**	1.38	1.12	0.74	ns	1.49	**0.63**
Black Caribbean	0.85	ns	1.43	0.92	1.50	1.38	1.15	ns	ns	ns	0.68
Black Other groups	**0.58**	ns	ns	0.80	1.11	1.42	1.39	**0.55**	ns	ns	**0.56**
Chinese	**0.30**	ns	ns	**0.29**	**0.17**	*2.16*	ns	ns	ns	ns	**0.37**
Any other ethnic group	**0.50**	0.74	ns	**0.48**	**0.38**	1.11	**0.53**	ns	ns	ns	**0.67**
Unclassified	ns	ns	ns	1.17	1.24	1.25	ns	ns	ns	ns	0.83
Girls	**0.56**	**0.58**	0.80	**0.40**	**0.24**	**0.43**	**0.17**	0.74	0.94	0.74	0.74
FSM	*2.28*	*2.30*	*1.90*	1.42	*2.42*	1.49	1.08	1.36	1.30	*1.50*	*1.61*
IDACI (2 SD range)	*1.95*	1.19	0.91	1.23	*1.97*	1.31	0.87	1.18	1.16	1.25	ns
% of variance accounted for (Nagelkerke R^2)	5.8%	2.0%	0.9%	4.2%	9.8%	5.3%	5.2%	0.7%	0.6%	1.1%	0.6%

(1) OR= Odds-Ratio for being identified at SAP or statemented relative to White-British. (2) ns= non-significant OR at the 1% level (i.e. p>
Ratios >1.5:1 in red italic, ratios < 0.67:1 in blue bold. (4) Year group is included in the model but not shown because of space limitations.
Appendix 7 for full details of year group coefficients.

Based on Table 5b, the results from the adjusted model after controlling for pupil background characteristics can be summarised as follows:

- Socio-economic disadvantage is strongly related to some categories of SEN but not to others. Three categories of SEN (BESD, MLD and SLD) are relatively strongly associated with measured socio-economic disadvantage but the others are markedly less so. In particular for sensory or physical needs and for ASD very little of the variance can be explained by measured socio-economic disadvantage factors.

- Girls are under-represented for every SEN with the exception of sensory or physical needs and PMLD. The differences are most pronounced for ASD where 0.17 girls are identified for each boy and BESD where 0.25 girls are identified for each boy. For SpLD and SLCN around 0.4 girls are identified for each boy, and for MLD/SLD around 0.57 girls are identified for each boy. Interestingly there is no substantial difference in likelihood of identification between boys and girls in the more clearly constitutional or 'organic' SEN categories, i.e. sensory or physical needs and PMLD.

Given these strong relationships between SEN and gender, and between SEN and socio-economic disadvantage, conclusions in relation to ethnic group are based on the adjusted odds-ratios as given in Table 5b. That is, in all cases, the following relationships of ethnicity with category of SEN were found once other characteristics had been taken into account. First we present results by ethnic group and then by category of SEN.

By minority ethnic group

The results indicate that after adjusting for year group, gender and socio-economic disadvantage and in ***comparison with White British pupils***:

- Traveller of Irish heritage pupils are more likely to have SEN in relation to MLD (3.3:1), SLD and SpLD (2.0:1) and BESD (1.7:1), and less likely to have SEN in relation to ASD (0.19:1). Gypsy/Roma pupils are more likely than White British pupils to have SEN in relation to MLD (3.5:1), PMLD (2.4:1), HI (2.0:1) and SLD (1.5:1) and less likely to have SEN for ASD (0.38:1);

- All Asian groups (Indian, Pakistani, Bangladeshi and Any Other Asian) are less likely than White British pupils to have SEN in relation to BESD, SpLD, ASD and MLD.

- Bangladeshi pupils are more likely to have SEN in relation to HI (1.7:1) and less likely than White British pupils to have SEN in relation to BESD (0.18:1), ASD (0.39:1), SpLD (0.43:1), MLD (0.51:1) and PD (0.58:1).

- Pakistani pupils are more likely to have SEN in relation to PMLD (2.4:1), VI (2.5:1), HI (2.5:1) and MSI (2.2:1), and less likely than White British pupils to have SEN in relation to BESD (0.29:1), SpLD (0.36:1) and ASD (0.46:1).

- Black Caribbean and Mixed White & Black Caribbean pupils are more likely than White British pupils to have SEN in relation to BESD by around 1.5:1.

- Black African pupils are less likely than White British pupils to have SEN in relation to MLD and SpLD (0.47:1), BESD (0.60:1) and PD (0.63:1).

- Black Other pupils are less likely than White British pupils to have SEN in relation to MLD, VI and PD by a ratio of about 0.60:1.

- Chinese pupils are more likely to have SEN in relation to SLCN (2.2:1), but less likely than White British pupils to have SEN In relation to BESD (0.38:1), SpLD (0.29:1), MLD (0.30:1) and PD (0.37:1).

By category of SEN

The results indicate that after adjusting for year group, gender and socio-economic disadvantage and ***in comparison with White British pupils***:

<u>Cognition and Learning Needs</u>

- MLD: Only the two Traveller groups are more likely to be identified. Pupils from the Black African, Black Other, Indian, Bangladeshi, Any other Asian, Chinese, Mixed White and Asian, Mixed White and Black African and Any Other ethnic origin groups were all less likely to be identified. Pupils from the Black Caribbean, Mixed White and Black Caribbean, White Irish and Pakistani groups are no more or less likely to be identified than White British.

- SLD: The two Traveller groups are more likely to be identified; no groups are less likely to be identified.

- PMLD: Gypsy/Roma and Pakistani pupils are more likely to be identified; no groups are less likely to be identified.

- SpLD: The two Traveller groups are more likely to be identified. All Asian groups (Indian, Pakistani, Bangladeshi and Other Asian), Mixed White and Asian, Chinese and Black African pupils are less likely to be identified.

Behaviour, Emotional and Social Development

- BESD: The two Traveller groups and Black Caribbean pupils are more likely to be identified. All Asian groups (Indian, Pakistani, Bangladeshi, and Other Asian), and Chinese pupils and Black African pupils are less likely to be identified.

Communication and Interaction

- SLCN: Chinese pupils are more likely to be identified.

- ASD: No ethnic group is more likely to be identified. Both Travellers groups and all Asian groups (Indian, Pakistani, Bangladeshi, and Other Asian) are less likely to be identified.

Sensory and/or Physical Needs

- VI: Pakistani pupils are more likely to be identified; Mixed White and Black African and Black Other pupils are less likely to be identified.

- HI: Pakistani, Bangladeshi and Gypsy/Roma pupils are more likely to be identified; no minority ethnic group is less likely to be identified.

- MSI: Pakistani pupils are more likely to be identified; no minority ethnic group is less likely to be identified.

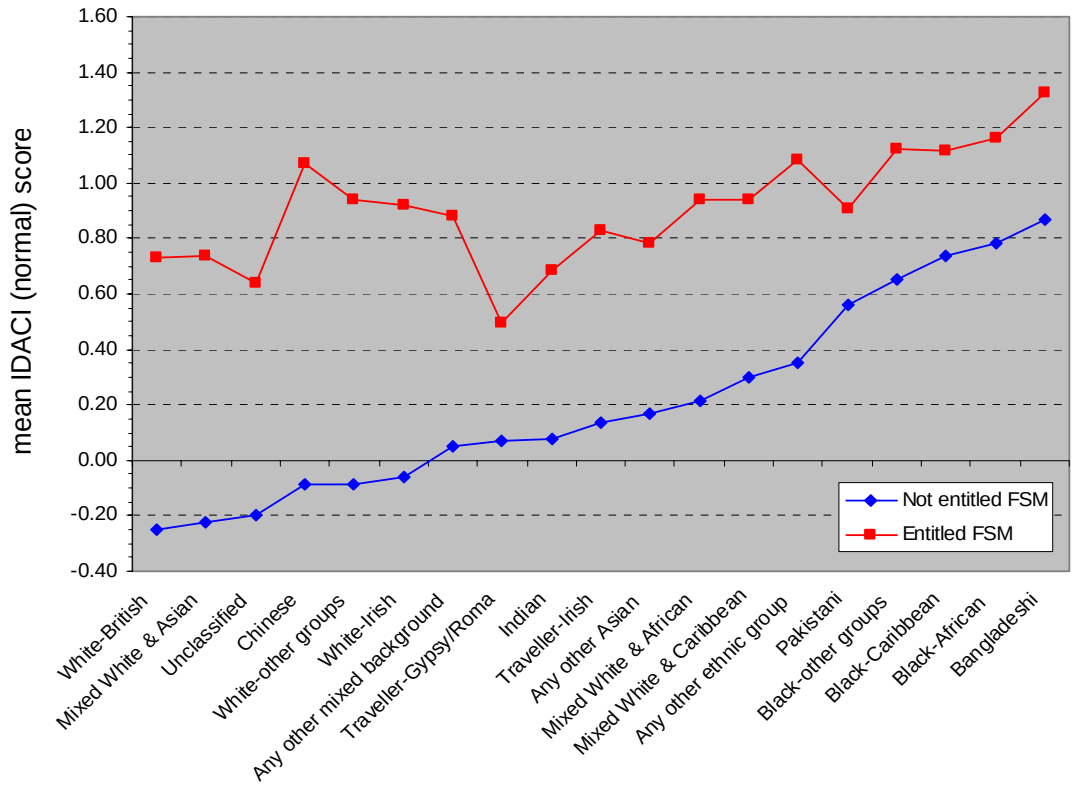
- PD: no minority ethnic group is more likely to be identified. Bangladeshi, Black African, Black Other, and Chinese pupils are all less likely to be identified.

3.5.2 Are there interactions between ethnicity and entitlement to FSM?

Previous research (Strand, 1999) has indicated the importance of considering interactions between ethnic group, gender and socio-economic disadvantage in relation to educational attainment and progress. Early analysis of the current data indicated significant interactions between ethnic group, gender and entitlement to FSM in the identification of SEN. Most prominent were interactions between ethnicity and FSM. We found few differences in SEN identification between ethnic groups among those pupils entitled to FSM, but quite large differences between ethnic groups among those pupils not entitled to FSM.

These interactions are not a significant feature of the current analyses because of the inclusion of IDACI alongside FSM to give a more sensitive measure of economic disadvantage. On its own entitlement to FSM offers no differentiation within the majority (83%) of pupils who are not entitled to FSM, effectively treating this as one homogenous, equivalent group. The inclusion of IDACI allows further differentiation to be made and reveals a substantial difference in IDACI score between ethnic groups within those pupils not entitled to FSM, as shown in the lower line of Figure 3. In particular this shows the very low level of disadvantage for the White British group, and the very high levels of disadvantage for Black Caribbean, Black Other and Pakistani groups, despite the fact that they are not entitled to FSM. Furthermore the lines for the FSM and non-FSM groups are not parallel, and show that the FSM ‘gap’ is larger for White British than for almost all the other ethnic groups, which is the basis of the interaction. In conclusion, where only fairly blunt measures of socio-economic disadvantage such as entitlement FSM are available, spurious interaction effects may arise.

Figure 3: Mean IDACI score by ethnic group and entitlement to FSM



3.5.3 Prediction and individual cases

The models described above show there are statistically significant associations between ethnic group and SEN identification, even after adjusting for gender and socio-economic disadvantage. However all the models are poor at prediction or classification for individual pupils. Even the model for BESD shows that ethnicity, gender and socio-economic disadvantage account for only around 10% of the variance in identification. One issue is the large amount of variation in identification that appears to exist at the level of the LEA, which is described further below. Given the very low base rate for pupils at SAP or with statements for BESD (approximately 2% of the population) the most accurate prediction for any given individual pupil is that they do not have BESD, and this is still the most accurate prediction even after entering ethnicity, gender and socio-economic disadvantage and National Curriculum (NC) year group. In short, these results say nothing about the likelihood of having SEN for any individual pupil.

3.5.4 Relative influence of different variables

It is also informative to consider the relative influence of ethnic group *vis a vis* the other measured variables in the associations with SEN. The analyses presented above have entered all the explanatory variables together to construct a single 'adjusted' model. However this does not mean all the variables are equal in terms of their associations with SEN. Table 6 shows the results of stepwise logistic regression analyses. In forward stepwise regression, explanatory variables are added one at a time, starting with the variable explaining the greatest amount of variance in the outcome. Then the next most important variable is added and so on in descending order of influence. Table 6 shows the results of stepwise analyses for the two highest frequency SEN types, MLD and BESD, and for overall rate of SEN identification.

For MLD this stepwise regression indicates that ethnic group is actually the last variable to be entered, after entitlement to a FSM, gender, IDACI score and NC year group. After these variables were accounted for, ethnic group explained only an additional 0.5% of the variance in MLD. For BESD, the stepwise regression shows that gender was actually the best single best predictor of BESD, explaining 4.2% of the variance. This was followed by entitlement to FSM and NC year group. Only then did ethnic group add any further to the model, explaining an additional 1% of the variance in BESD. IDACI score (including the squared term) added a further 1.1%. Similar results are reported for overall SEN Identification with gender and poverty (both entitlement to FSM and IDACI score) being the strongest predictors.

In summary, while ethnic group does explain some additional and independent part of the variance in SEN outcomes it is in fact one of the less influential of the measured variables.

Table 6 Results of stepwise logistic regressions for BESD, MLD and overall SEN.

Step	variable entered	Cumulative amount of variance explained (R^2)	stepwise increase in R^2
MLD			
1	Entitlement to a FSM	2.8%	2.8%
2	Gender	3.7%	0.9%
3	IDACI score	4.5%	0.8%
4	NC year group	5.3%	0.8%
5	Ethnic group	5.8%	0.5%
6	IDACI squared term	5.9%	0.1%
BESD			
1	Gender	4.2%	4.2%
2	Entitlement to a FSM	6.8%	2.6%
3	NC year group	7.8%	1.0%
4	Ethnic group	8.8%	1.0%
5	IDACI score	9.8%	1.0%
6	IDACI squared term	9.9%	0.1%
All SEN Types			
1	Gender	3.2%	3.2%
2	Entitlement to FSM	5.8%	2.6%
3	IDACI score	6.4%	0.6%
4	Ethnicity	6.9%	0.5%
5	NC Year group	7.3%	0.3%
6	IDACI squared term	7.3%	0.0%

Note. Each step includes all variables entered on previous steps, e.g., BESD Step 3 includes gender + entitlement to a FSM + NC year group.

3.5.5 Variation between Local Authorities

The results presented here give a picture of the national situation regarding over and under-representation of different minority groups with regard to SEN identification. However there is substantial LA variation in these data. For example, further analysis of PLASC indicates that, among the 102 LAs with at least 100 Pakistani pupils, the unadjusted odds ratio for overall SEN for Pakistani pupils is 0.88:1, not significantly different from White British pupils. However in 10 LAs Pakistani pupils are half as likely as White British pupils to have an SEN (OR <0.50:1) while in four LAs Pakistani pupils were 1.5 times more likely than White British pupils to have an identified SEN (OR>1.5:1). The pattern suggests strong local variation among these 14 LAs compared with national averages. Identifying and exploring such variation may help us to better understand the reasons for over or under identification, and was one of the reasons for the questionnaire and focus group elements to this study. Further research to systematically analyse LA variation in disproportionality should be conducted.

Levels of identification of SEN are extremely variable across Local Authorities (LA) in England & Wales. For example the variation between LAs in the proportion of pupils who received statements is fivefold (Audit Commission, 2002, p13). Previous research has reported only a weak relationship between the incidence of SEN and the level of deprivation in an LA area. For example the Audit Commission (2002) reported a correlation of only 0.20 between deprivation ratings drawn from the ODPM's Index of Multiple Deprivation and the overall incidence of SEN. The LA variation may therefore be explained in part by different local histories and policy decisions, resulting in different criteria for statutory assessment, funding arrangements and so on.

Previous research such as that described by the Audit Commission (2002) has focussed on the overall level of SEN identification. No research to date has explored the extent of LA variation within different categories of SEN. The current data revealed substantial differences between LAs. For example, across LAs the proportion of pupils identified at SAP/Statement for BESD ranged from 0.8% to 4.4%.

We can ask whether this variation reflects differences between LAs in the nature of their populations. We therefore saved the predicted values from the logistic regressions (based on ethnic group, gender & socio-economic disadvantage) and compared these predicted values with the observed values for each LA. An example for BESD is shown in Figure 4. Actual rates of identification are correlated with the predicted values (aggregate level $r = 0.34$, $p < .001$) but still show substantial variation. Some of this variation appears to be systematic. For example the LAs with the highest rates of identification, and also with rates of identification higher than predicted on the basis of ethnic group, gender and socio-economic disadvantage, were all inner London boroughs (identified as 12, 8, 10, 1, 2 and 3 in Figure 4) and LA 33 was an adjoining outer London borough.

However it is not always the case that there is a clear basis for differences across LAs. For example Figure 5 plots the same comparison as was completed for BESD but this time for MLD. Again there is only a low correlation between the predicted and actual rates of identification at the LA level ($r = 0.36$, $p < .001$). However there is no clear or systematic pattern in the types of LA that vary from the 'expected' levels, other than a slight tendency for LAs with high mean deprivation scores to have higher than predicted levels of MLD ($r = 0.33$), despite the inclusion of FSM and IDACI in the pupil level model used to calculate the LA prediction.

We conclude that the likelihood of being identified at SAP/statement is influenced not only by the characteristics of the individual pupil, but also by the LA in which the pupil resides. Variation in funding, level of delegation and different histories of professional practice and judgement may all play a role in this variation. Further research is needed to more fully explore the implications of the LA level variation.

Figure 4: Variation between predicted and observed proportion of pupils identified with BESD (SAP & Statemented combined).

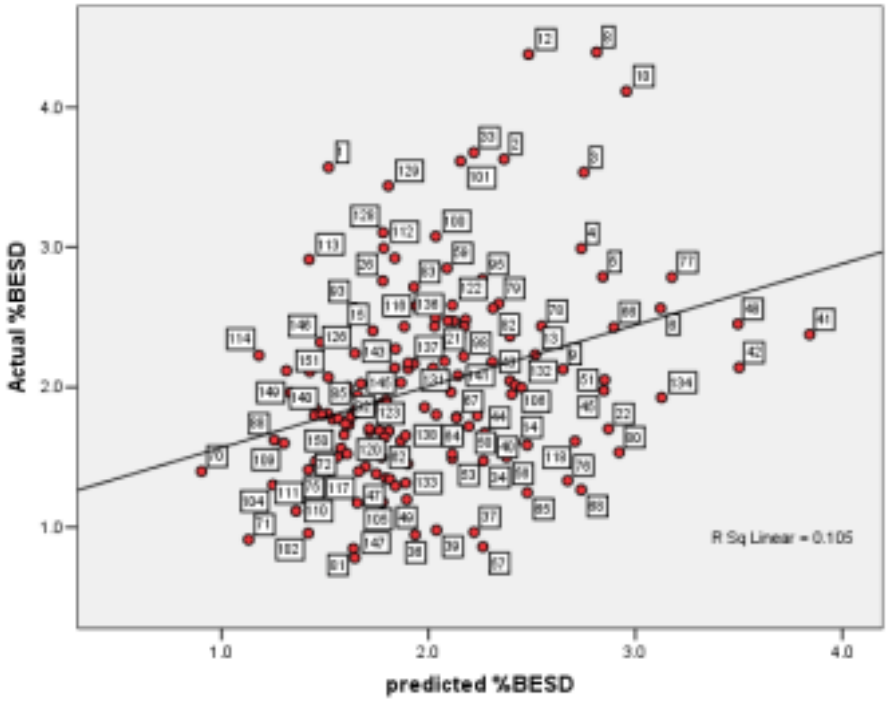
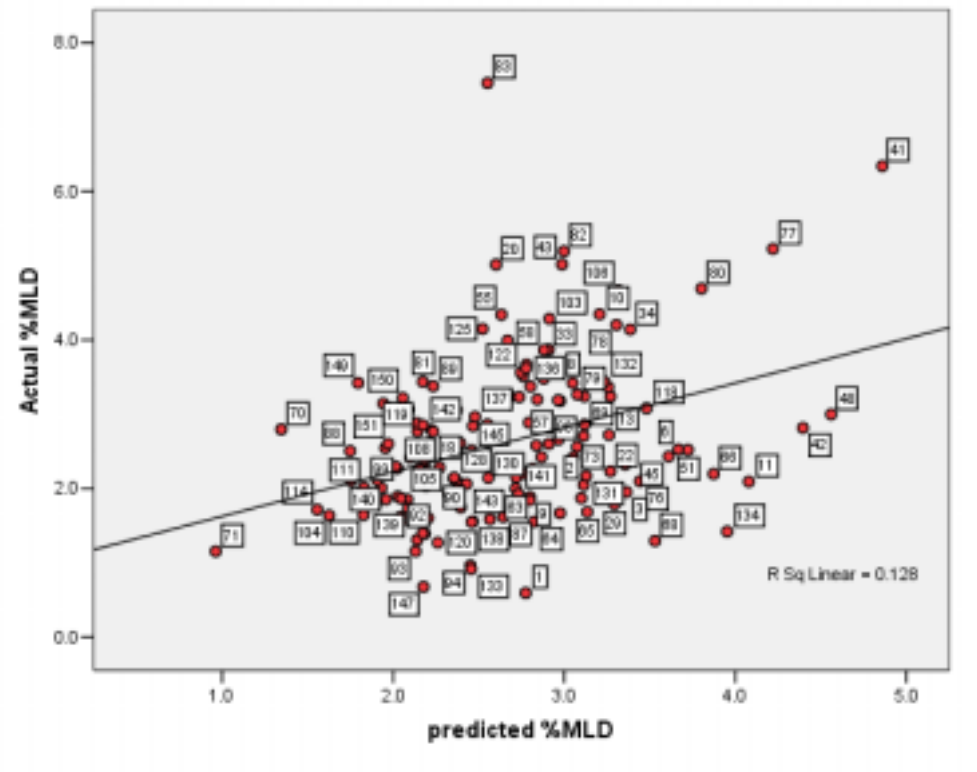


Figure 5: Variation between predicted and observed proportion of pupils identified with MLD (SAP & Statemented combined)



3.6 Conclusion

In these analyses we have explored not only the relationships between SEN and ethnicity, but also the effects of other factors (year group, gender and social disadvantage). The use of odds ratios relative to the White British group indicates the likelihood of pupils from each minority ethnic group being designated as having SEN, defined as at School Action Plus (SAP) or with a statement, relative to White British pupils. The odds ratios have been presented to indicate two important criteria: statistical significance ($p < .01$) and importance (a ratio of 1.5:1 or greater).

The results reveal:

- strong relationships between gender and SEN with boys over-represented across most SEN relating to Cognition and Learning, BESD and Communication and Interaction, but with no substantial gender differences for Sensory and/or Physical Needs.

- strong relationships between SEN and socio-economic disadvantage for categories of SEN that have a major element of social definition (BESD, MLD) but much weaker relationships between SEN and socio-economic disadvantage for categories of SEN with a stronger constitutional (organic) element (sensory and physical needs and PMLD).

- strong relationships between different minority ethnic groups and different categories of SEN which are set out in detail in 3.5.1.

In addition, the results also reveal:

- It is important to combine blunt pupil level measures of socio-economic disadvantage like entitlement to FSM with more differentiated area based measures such as IDACI. Nationally 83% of pupils are not entitled to FSM. Treating all these pupils as if they experience the same level of socio-economic disadvantage can give rise to misleading results (see section 3.5.2).

- Although there are statistically significant associations between ethnic groups and SEN identification, even after adjusting for gender and socio-economic disadvantage, these models are all poor at prediction for individual pupils.

- Even where ethnic group is significantly associated with SEN it is less influential than socio-economic disadvantage and gender.

- There are substantial variations in the identification of different categories of SEN between LAs. There is evidence that this variation may be systematic in some cases (e.g. BESD) but not in others (MLD). Identifying and exploring such variation may help us to better understand the reasons for over or under identification.

4. LITERATURE REVIEW

4.1 Introduction

In this section we present the findings of the literature review by minority ethnic group. It will be seen that the amount of literature available varies considerably with respect to SEN by particular minority ethnic group. Furthermore, the amount of literature does not necessarily reflect issues of over and under-representation identified in Section 3.

The literature search revealed that although there are many studies on different categories of SEN and ethnicity respectively, there are only a small number which link the two as a joint focus, and even fewer focusing on over- and under-representation of minority ethnic groups in SEN. The link between SEN and ethnicity was one of the key criteria for selection used in our methodology (Appendix 3), to minimise the danger of drawing assumptions about different ethnic groups within the SEN population, where there were no direct links or connections. Many of the studies which do link the two dimensions, with a focus specifically on over-and under-representation, are to be found in the US literature. Given the contextual variation in terminology and understanding, and its questionable applicability to the UK, inclusion of such studies had to be limited. Furthermore, studies which did focus on ethnicity and special educational needs within schools, particularly in the UK, related largely to underachievement and low attainment, and not specifically to pupils on School Action, School Action Plus, or with statements of SEN.

Selected studies were largely qualitative. Hence, conclusions based on such data relied heavily on research interpretation and perception. There were relatively few studies with a quantitative dimension and these have been included.

Overall, the largest amount of literature was found for Black children[11], reflecting the significant concerns about this group and apparent over-representation in SEN both in the UK and US. However, this is not an uncomplicated category, with variations both within and between the UK and US with respect to use of this term. The other major categories in this section are Asian (Pakistani, Bangladeshi and Indian) and Travellers of Irish heritage or Gypsy/Roma. No separate review is presented of Chinese pupils owing to the dearth of relevant literature.

[11] Includes Black Caribbean, African Caribbean or Afro-Caribbean, Black African, African American and Black Other.

These issues of terms used, their meaning and consistency, will be revisited in Section 5. The arrangement for the present Section is to start with UK usage of terminology and discuss variations within the UK and elsewhere especially the US, from this starting point. It is important to stress that the literature has been reviewed with reference to its original terminology which reflects the location of the study and/or publication. Similarly, SEN terminology reported here is that used in the original. This is also potentially problematic as terminology has changed over the last 100 years, and particularly over the past 30-40 years as well as differences between the UK and US, and other countries. Again, our 'standard' is the DfES categorising system which is relatively new (see Glossary).

4.2 Black or Black British

The statistical analysis of the PLASC data (Section 3) adjusted for gender and socio-economic disadvantage indicates the following patterns of over-representation (where the likelihood of having a category of SEN is more than that for White British pupils) and under-representation (where the likelihood of having a category of SEN is less than that for White British pupils) for Black and Black British children:

Over-representation:	BESD: Both Black Caribbean, and Mixed White and Black Caribbean pupils (1.5:1)
Under-representation:	MLD: Black African pupils (0.47.1); Black Other pupils (0.60:1) SpLD: Black African pupils (0.47:1) BESD: Black African pupils (0.60:1) Physical Difficulties: Black African pupils (0.63:1); Black Other pupils (0.60:1) Visual Impairment (Black Other pupils 0.60:1)

This summary indicates a complex pattern with only one SEN category (BESD) showing over-representation and that for Black Caribbean and Mixed White and Black Caribbean pupils only. There is, however, evidence of *under*-representation for Black African and Black Other pupils across several SEN categories[12].

[12] It should be noted that this evidence indicates the likelihood of the Black or Black British group experiencing these special educational needs relative to the White British group. It does not indicate a prediction for any individual pupil, since variation from pupil to pupil is far greater than any group differences (see section 3.5.3).

These results above provide some confirmation of the long-standing concern about over-representation of Black Caribbean pupils for BESD, both in England and the US (Coutinho & Oswald, 2000; Dunn, 1968; Ferri & Connor, 2005) but not for other Black groups. On the other hand, the concerns about over-representation for MLD evident in the early 1970s (Coard, 1971) are not supported for any Black group.

In relation to the literature, studies appear to focus primarily on over-representation of Black groups in relation to 'behaviour problems' or 'challenging behaviour'. There were no studies identified covering under-representation of Black pupils in any of the other SEN categories as indicated in PLASC.

4.2.1 Terminology

'Black or Black-British' is a category established in line with the national population census 2001. It incorporates individuals from Black Caribbean, Black African or any other Black background. 'Black British' refers specifically to those born in Britain and are second generation (or later) Black Caribbean, Black African, or other Black background. These subcategories have been further attached extended (see DfES guidelines to LAs, Appendix 2). The sub-category 'Black Caribbean' refers to those who originate from the Caribbean islands of Antigua and Barbuda, Bahamas, Barbados, Dominica, Grenada, Guyana, Jamaica, St Kitts and Nevis, St Lucia, St Vincent and Grenadines, Trinidad and Tobago. 'Black African' is broken down into further categories which differentiate Black individuals from Angola, Congo, Ghana, Nigeria, Sierra Leone, Somalia, and Sudan. The latter would also include Sudanese of Egyptian origin. Individuals from 'any Other Black Backgrounds' would refer to Black Europeans, Black North Americans (including those from Canada), and those from any other Black backgrounds not included in the preceding categories.

Given that the above sub-categories have only been established since 2003 for the benefit of PLASC, there are a few inconsistencies in terms of categorisation when comparing those used in the literature before 2003. Firstly, although the category 'African Caribbean' is not a PLASC category, it is referred to very often in the literature, suggesting that the term 'African' may be used as a substitute for 'Black' and may not necessarily refer to country of origin i.e. Africa, but rather the skin colour or race. It is assumed therefore, that the terms 'Afro-Caribbean' or 'African Caribbean' are used more with reference to Black people originating from the Caribbean islands. Secondly the term 'Black' is often used in the literature interchangeably with 'Black Caribbean', 'African Caribbean'. For example, Daniels et al

(1999) in a study in England uses ‘Black’ to include ‘African Caribbean’ and ‘Black other’. In view of these inconsistencies in the use of terms, it must be noted that caution is exercised in presenting any comparisons and conclusions where these inconsistencies exist.

In relation to studies in the US the terms 'African American', ‘Black’, ‘Hispanic’ and ‘Asian’ are most often used as reference to minority ethnic groups. The literature suggests that 'Black' is often used synonymously with 'African American' (Bondy, 1998), based on an argument supported by Ferri and Connor (2005) that the term 'African American' does not incorporate people of Caribbean descent or African immigrants, and that the term ‘Black’ may be more appropriate to address this. There is an added warning however, not to view all Black children as the same 'monolithic, undifferentiated group’ (Irvine, 1990), although possible differentiation within this group is unclear.

4.2.2 Over-representation

4.2.2.1.1 *United States*

Concerns about under- and over- representation of minority ethnic students have been at the forefront of discussions in special education in the US over the last decade. The disproportionate representation of African American students in special schools is well documented across various states in the US. African American students are said to be largely over-represented in special education and under-represented in gifted education (Education Watch, 2003a-d). Of equal concern is the over-representation of minority-group students in school suspensions, expulsions, and non-academic ‘tracks’ (Williams, 2003). An analysis of statistical data regarding the over-representation of African American students in special education programs in the US suggested that African American males were disproportionately referred for behaviour and learning problems compared to their majority ethnic group counterparts (Talbert-Johnson, 1998). Efforts have been made to understand the extent of the ‘problem’ particularly in relation to African American students and to a lesser extent Hispanic and other minorities, and possible causes (Eitle, 2002; Handy, 1999; Meyer & Patton, 2001).

Explanations for the over-representation of Black Students in special schools are said to be rare (Eitle, 2002). A few available reviews have proposed a host of possible causes which included race, culture, class, gender, socio-economic status, stereotypes, and definitions of disability (Meyer and Patton, 2001; Handy, 1999). In a review of evidenced-based research in the area, Meyer and Patton (2001) concluded that in some schools, systemic factors

related to teacher effectiveness, biased perceptions, and student opportunities influence over-representation. They argued that location, school size, services available, urbanicity, and specific disability also influence educational practices, as do inadequate and inappropriate referral, assessment, and evaluation procedures. They added that ineffective teaching can also result in underachievement.

Handy (1999) asserts that poverty, racism, cultural differences between Black and White people, and inferior socioeconomic conditions are the main causal factors that result in Black children being 'labelled' as exceptional and placed in special education classes at an alarmingly disproportionate rate. It is argued that the Black families' child-rearing practices and cultural differences may be viewed with contempt by the majority race and that the unfavourable view of Black culture has created hurdles for Black students which result in low self-esteem and low academic performance.

An in-depth qualitative study by Skiba et al (2003), which included interviews with 66 educators i.e. teachers, principals, school psychologists and special education directors in urban and near-urban districts in a Mid-Western city in the state of Indiana, investigated reasons for disproportionate referral and placement of minority students in special education. Although the study did not focus on specific categories of SEN, apart from reference to behavioural problems, it was found that in terms of socio-demographic factors, poverty, violence and low-income were judged to be key influences. In general education, it was the lack of classroom and behavioural management skills and language barriers. In terms of special education process, the researchers concluded, based on the interview data, that the effects of ethnic bias, as they judged it, on referral and assessment and the process-oriented nature of special education led to the disproportionate referral and placement of minority students in special education. Other related findings revealed that teachers felt challenged, particularly in dealing with African American and Hispanic students with 'behavioural problems', and with insufficient resources to support these challenges. Classroom behaviour was seen as the main challenge and was confounded by cultural gaps and misunderstandings. High stakes testing, it was argued, contributes to referral of disadvantaged students, given increased pressure on teachers to access resources for low-achieving students. There were also concerns over the effectiveness of pre-referral and intervention teams. Special education was widely perceived as the only resource for supporting under-achieving students. Finally, it is interesting to note that there was a reticence to discuss issues of race among many of the respondents.

Eitle (2002) in a study of 981 public school districts which focussed on educable mentally handicapped (EMH) programmes argued that racial differences in educational placement were related to structural issues concerning opportunity in school districts and in the communities which they served. It was argued that the size of the district and school influences the representation of African American students in special schools; the smaller the district or school, the higher the representation. Eitle also reported that the proportion of Black students enrolled in the district was negatively correlated with the black students EMH representation ratio, and that in districts with high percentages of black adults in positions of power, the number of black students entering special education was limited.

4.2.2.2.1 UK

Evidence available in the UK in the 1980s suggested that Black Caribbean students, particularly boys, were over-represented in special educational provision, particularly in the categories of emotional and behavioural difficulties (EBD)[13] and moderate learning difficulties (MLD) (see Cooper et al, 1991 for a review). Supporting evidence was also found almost a decade later in a survey on gender and ethnic imbalances in SEN provision in mainstream schools in one LA in England: Black children were more likely to be allocated to the category 'general learning difficulty' than 'reading difficulty', particularly when compared with their White peers (Daniels et al, 1996). Further evidence for over-representation, in absolute terms of Black pupils among the SEN population was presented in the Ethnicity and Education topic paper published by the DfES (2005c).

Findings on over-representation in SEN in the early 90s were considered consistent with those of related studies which found Afro-Caribbean pupils to be overrepresented in permanent exclusions (Cooper et al, 1991). In 1997, the rate of exclusion in general was reported to have risen since the 1970s, and within this, Black students' over-representation had been sustained, or had increased (Gillborn, 1997). The Social Exclusion Unit report (1998) reflected that African Caribbean children were excluded from school at six times the overall rate. Four years on, a 2-year DfES research project beginning in 2002, revealed that the disproportionate rates of exclusion amongst Black Caribbean pupils and those from Black Other backgrounds, had in fact fallen over the previous 6 years (Parsons et al, 2005). Despite the fall in exclusion rates, the study revealed that Black Caribbean pupils were still being excluded at just over three times the rate of White pupils and 2.7 times for Black Other in comparison to White pupils. The study involving 12 LAs drew on national exclusions data,

[13] The common term that preceded BESD.

a wide range of official documentation and data from visits to 85 secondary, primary and special schools and Pupil Referral Units (PRUs). National figures in 2003-2004 confirmed this finding showing that rates per 10,000 of pupils permanently excluded to be 41 for Black Caribbean pupils (3:1 in comparison to White pupils), 42 for Black Other (3:1) and 16 for Black African pupils (1:1) as opposed to 14 for White pupils. (DfES, http://www.dfes.gov.uk/trends). In comparison to the exclusion figures, our analysis of PLASC 2005 data, unadjusted for the effects of socio-economic disadvantage (Table 5a) also showed higher rates for the groups with regard to BESD, with over-representation of Black Caribbean (2.3:1) and Black Other (1.9:1) groups relative to White British, but no over-representation of Black African pupils (1:1). When adjusted for socio-economic disadvantage and gender the rates reduced but remained at high levels for Black Caribbean pupils only (1.5:1) – see Table 5b.

In terms of gender, findings in the UK by Daniels et al (1996) were consistent with evidence in the 80s that gender differences were greatest in the emotional and behavioural difficulties (EBD) category, with an over-representation of boys in relation to girls. Furthermore these gender differences across different categories of special need (EBD, MLD and SpLD), were much greater in the White group (includes White British and White Irish) than the Black group (African Caribbean and 'Black other').

Evidence from our focus groups indicated that boys continue to be more likely to be designated as having behavioural difficulties. Participants also commented that Black Caribbean boys were performing at a level equivalent to White boys at school entry and reception, with behavioural difficulties and poorer educational progress becoming evident later. This view was supported by evidence on baseline assessment in a number of LAs (see Lindsay & Desforges, 1998; Strand, 1999b). One London LA claimed that 'Afro-Caribbean girls are doing well'.

4.2.3 Reasons for Over-representation

Proposed reasons for over-representation of Black pupils, based on evidence (which is quite limited) and opinion, cover a range of issues which can be grouped into 6 main areas: systemic factors, ethnic bias in identification and assessment of SEN, teacher ethnicity, parental and school support, socio-economic environment, and health care and related matters. These areas are by no means mutually exclusive as there are many overlaps between them.

4.2.3.1 Systemic Factors

The incidence of social, emotional and behavioural difficulties among students is argued to be associated with in-school organisation and interactional factors and in some cases it is suggested these are more important than characteristics of pupil intake (see Cooper et al, 1991 for a review). These in-school factors include teacher attitudes and expectations, teacher representation, teaching, teacher training, culturally sanctioned behaviour versus acceptable school behaviour, curriculum, marketisation and resources.

(a) Teacher Attitudes and interactions with Black pupils

One group of studies in the US has suggested that a teacher-based factor is inaccurate expectations (Weinstein, Gregory & Strambler, 2004). These include societal stereotypes, negative perceptions about the behaviour of Black pupils and underestimation of ability. Expectations of students in the US, it is argued, are built on values and conditions representative of highly motivated, achievement-oriented, White middle-class students from two-parent families. This stereotype is thought to be fast dying in most schools where student populations are increasingly diverse i.e. students from urban, rural, suburban, families faced by divorce, delayed marriage and influx of immigrants (Talbert-Johnson, 1998). Talbert-Johnson's analysis is based on an examination of documents and statistical information regarding the overrepresentation of African American students in special education programs and the increasing representation of students of colour in the public school population. Myths built on such stereotypes held by teachers are that Black pupils fail because they are unmotivated and uncooperative and because they grow up with fewer literacy experiences (Strand, 1999, Bondy and Ross, 1998). Such teacher attitude is thought to be a significant factor in explaining over-representation of pupils identified as under-achieving or with behavioural problems (Gardner and Miranda, 2001; Talbert Johnson, 1998). These assertions are supported by UK reviews (Tennant, 2004; Coard, 1971; Gillborn, 1990; Vance, 1997).

It was suggested in the 1970s that racism and middle-class assumptions in the UK, to a large extent accounted for the over-representation of children from minority ethnic backgrounds in terms of exclusion in schools (Coard, 1971). More than twenty years later, there were reports of negative descriptions of disaffected African Caribbean boys held by teachers, based on observations and interviews with teachers in a Raising Achievement

project in Lambeth which included interpretation of teachers' voices about disaffected African Caribbean pupils (Vance, 1997). The limitation in this project is that the pupils' voices were represented by teachers and not the students themselves, thereby reinforcing rather than challenging teachers' stereotypes of African Caribbean pupils. Nevertheless, Vance notes,

> *'Even though our authority, Lambeth, has an established African Caribbean community many teachers are ignorant of today's cultural projections. This is particularly true of dual heritage, where on occasions, staff react with surprise when these children 'act Black', use Creole and firmly identify themselves with Black culture.'* (Vance, 1997:32)

In a more recent study, Black Caribbean and Black African students felt that teachers had low expectations of their achievement and that there was a lack of encouragement from teachers who did not challenge them to work (Jones & Flynn, 2002). They were interviewed as part of a project evaluating the effects of EMAG (Ethnic Minorities Achievement Grant) on raising achievement of minority ethnic groups. Few minority ethnic pupils made the top sets after Year 9. One of the criteria for setting, acknowledged by teachers, was the behaviour of the students. The study involved pupil interviews, teacher questionnaires, staff interviews, analysis of documents including resources and schemes of work, and observation of the climate of the school environment and parent meetings. Black Caribbean and Black African pupils were included in the sample although the exact numbers are unclear. This was one of very few studies reflecting the voices of students.

It has also been suggested that institutionalised racism and scepticism are present in SEN provision and serve as key exclusionary pressures facing African Caribbean children in schools in Britain (Sewell, 2001). Teachers are 'favouring' other ethnic groups over African Caribbean pupils and are unaware of this (Tennant, 2004). Tennant's study of differential classroom interactions by ethnicity across ten London schools revealed that African-Caribbean children were interacting with teachers at a greater rate than other children, mostly for disciplinary and administrative purposes, and to a much lesser extent for teaching purposes. Rates of interaction were consistent within schools, but varied considerably from school to school. Similar findings on inconsistent interaction in terms of time and purpose were revealed in an earlier study by Gillborn (1990) which involved observing teacher-pupil interactions in schools in a Midlands multi-ethnic inner-city. The ethnographic study which constituted visits three times a week, observed students as they moved through from third to final year of schooling. Gillborn (1990) perceived the disciplinary actions meted out to African Caribbean boys as harsher than those issued for White boys. Whilst accepting that teachers were not overtly racist, Gillborn contended:

> *'the teachers' ethnographic perceptions led to actions which were racist in their consequences: as a group, Afro-Caribbean pupils experienced more conflictual relationships with teachers; they were disproportionately subject to the school's reporting and detention systems; they were denied any legitimate voice of complaint*. (Gillborn, 1990:44)

(b) Teacher perceptions of behaviour and identification of BESD

Linked to teacher attitude is the mismatch between culturally sanctioned and expected school behaviour (Webb-Johnson, 2002; Sherwin & Schmidt, 2003) and its impact on identification of BESD. Peagam (1994) concluded from his analysis of minority ethnic pupils identified with emotional and behavioural difficulties (EBD) that poor conduct was the main measure of EBD and teachers identified this as being more prevalent among Afro-Caribbean children. Peagam's research found that when teachers were given a free choice to identify pupils as having EBD, the numbers of Afro-Caribbean pupils identified were consistent with already existing figures of those formally identified in the system, and that three times as many Afro-Caribbean children were identified in comparison to their Black Asian peers. The study was conducted in a large Midlands authority and involved 176 primary schools where Afro-Caribbean and Black Asian pupils (the terms used in the study) were included on the roll. Data were gathered through teacher questionnaires investigating how teachers identified pupils with EBD and the ethnicity of these pupils. The results were compared with the EBD school population and general population data in the authority.

The mismatch between perceived behaviour and culturally appropriate behaviour is argued to influence the over-identification of African American males in special education in the US (Sherwin and Schmidt, 2003). This was based on an examination of communication codes amongst African American males in the US conducted through observation as well as interviews in two Kids Clubs in a Southern California community. The study revealed that staff members and the young people promoted activities and a culture in which aggressiveness served a pro-social communication function. Verbally aggressive greetings and ritualistic mock-battle greeting aggressiveness among males, they argued, could be viewed as discrete cultural communication codes among the African American participants. 'Mock greeting posturing' is described in this example as follows:

> *'a male African American participant meeting a peer might face the other in close proximity, pull away, and take a fighting stance, and then utter a combative challenge. The challenged male would strike at the air near the 'aggressor's' face*

while the other returned the mock blows; then they shook hands or embraced and proceeded to an activity together'. (Sherwin and Schmidt, 2003:49)

Sherwin and Schmidt conclude that while such greeting rituals are not understood by the participants as intent to harm, they can easily be misunderstood by others.

Earlier literature in England supports claims that teachers misunderstand pupils' behaviour and suggests that teachers often devalue or misinterpret the cultural meanings underlying the behaviour of Black pupils and construct deviant identities for these pupils on this mistaken basis (e.g. Cooper et al 1991). More recent evidence suggests that teacher perceptions of challenging behaviour amongst Black pupils impacts on the way they deal with this in comparison to the way they deal with other pupils (Gillborn, 1997). Gillborn claims there is a growing body of ethnographic work arguing that White teachers tend to assume that Black students will present a more frequent and severe challenge to their authority, leading them to act against African Caribbean students more often and for 'offences' that might go unpunished were the student White or South Asian (see Gilborn, 1997 for a review).

Evidence in England has also shown that school students who become labelled in some way as deviant often have highly negative views of teachers in mainstream schools. Such students often describe their mainstream teachers as treating them in disrespectful and inhumane ways, and that such behaviour is seen as an impetus to 'deviant' behaviour. (Rosser and Harre, 1976; Tattum, 1982; Cooper 1989)

With respect to SEN, a basic issue concerns whether young people exhibiting such behaviours should be seen as having special educational needs, or as being disaffected or whether the issue is one of misunderstanding or misclassification by teachers and others. Depending on which view is taken, a young person presenting difficulties could enter different administrative systems and experience different provision. This was exemplified by one of our focus group participants who suggested that Black students identified with behaviour problems were more readily excluded than placed in special education provision:

'If we look at our exclusions, Black Caribbean and Black African pupils lead the tables in percentages. They are under-represented in our PRUs and EBD schools.' (School Improvement Officer, London)

(c) Teacher Training and Pressure on Teachers

Teacher preparation programs in the US, it is argued, are exclusively 'Eurocentric' (Talbert-Johnson, 1998) with few teachers equipped to deal with different cultures, languages, lifestyles and values in their classrooms. As a result, they expect their students to 'conform to the norm'. The challenge for teachers has been to maximise the 'fit' between instruction and students' learning and meeting diversity of learning needs in the class in terms of cultural pluralism.

The same pressures on teachers are allegedly evident in the UK. Gillborn (1997) argues that the publication of examination league tables, for example, adds pressure on teachers to improve attainment. Based on evidence from research in schools in Croydon, he asserts that the rate of exclusion, particularly of Black students who were over-represented in the figures, had risen as the result of the introduction of a number of new policies which resulted in education taking on some characteristics of market systems. In particular, he refers to the introduction of state system initiatives to 'raise standards', increased autonomy of schools to decide on how to spend their budgets, the National Curriculum, and accountability in the form of 'league tables' etc.

4.2.3.2 Ethnic bias in identification and assessment of SEN

It has been suggested that teacher perceptions of conduct and its impact on SEN identification is underpinned by 'ethnic bias' (Peagam, 1994). The nature of bias i.e. whether unintentional, or consciously discriminatory, is however unclear in Peagam's report. The author nevertheless surmises that the mismatch in perceptions about conduct could be a genuine attitudinal position or a trans-cultural communication failure and proposes the need for more research in this area. An additional factor in the process of identification and assessment, he postulates, might be a possible mismatch between school and parent perceptions.

Similar alleged ethnic bias was identified in assessment processes involving students in a small scale qualitative study in 2 rural, elementary schools in the US with a large majority of African Americans (64% of total student population, the rest being White) (Knotek, 2003). This was an in depth, 'micro-ethnographic' study of a small number of individuals in a naturalistic setting and involved participant observation of students in their settings and of multi-disciplinary team (MDT) meetings involved in the assessment process, analysis of transcriptions of student study team (SST) meetings, and interviews with members of MDTs

which included SSTs. Knotek claims that social processes and context of MDTs inhibited the teams' thorough and unbiased discussion of some African American students' psycho-educational functioning. Ethnic bias was identified in relation to four main themes – teacher's focus of concern, the referral process, members' social status both in the multi-disciplinary team and student study team, and conceptualisations of the problem

4.2.3.3 Teacher Ethnicity

It has been argued that where there are low numbers of Black teachers, there are greater numbers of Black pupils identified with SEN (Herrera, 1998; Talbert-Johnson, 1998). The study by Herrera of ten US cities revealed that cities with the highest percentage of White teachers had the highest percentage of Black students identified as 'special', suggesting that there was a relationship between the number of Black male students placed in special education and the number of White teachers in the school system. All the cities in the study exhibited excessive Black male special education placement. Cities with the lowest proportion of Black teachers, it was claimed, were the least receptive to cultural, racial, and gender differences. In these school districts, at least one out of every six Black males would end up in special education. The same pattern of correlation between low representation of Black teachers and over-representation of African American, particularly male students in special education, was found in a separate analysis of documents and statistical information (Talbert-Johnson, 1998).

4.2.3.4 Parental and School Support

One evidence-based UK study (Jones & Flynn, 2002) includes the voices of students about their perceptions of parent support, although parents' voices were not included. The findings challenged the general perception held in the US (Bondy and Ross, 1998; Gardner & Miranda, 2001) that poor Black pupils fail because of a lack of parental and community support. Jones and Flynn's (2002) evidence, based on a study of the effects of the Ethnic Minority Achievement Grant (EMAG) at a secondary school in Bristol, revealed that while teachers felt Black pupils underachieved because of lack of parental support, students felt that parents were supportive and that teachers were more the cause. Further support is provided by Moon and Ivins (2004) in their survey of parents and carers of pupils aged 5-16. Moon and Ivins report a higher level of parents from minority ethnic groups feeling involved with their child's education (53% compared with 38% in a general population sample). This was the case for all minority ethnic groups but even more common among Black African

parents. Both studies challenge the alleged lack of engagement and support by Black parents, although neither was specifically concerned with SEN.

4.2.3.5 Socio-economic Environment

The relationship between social disadvantage and some forms of SEN is well established (e.g. Green et al, 2005). A different issue concerns whether social disadvantage correlates with disproportionality of rates of SEN across different minority ethnic groups. Social circumstances are claimed to have an effect on the apparent over-representation of Black pupils, for EBD, for example (Cooper et al, 1991; Talbert-Johnson, 1998; Peagam, 1994) The analysis of PLASC data presented in Section 3 supports this contention that socio-economic disadvantage does have an impact on BESD, since the odds-ratios for Black Caribbean pupils decreases from 2.3:1 to 1.5:1 when socio-economic factors are taken into account. However poverty does not completely explain the over-representation of Black Caribbean and Mixed White & Caribbean students, since these adjusted odds-ratios are still substantial.

Within the US literature, the link between poor socio-economic status and SEN is often inferred from studies of poverty and risk of school failure or low attainment rather than studies related to SEN per se. Furthermore, in the US, race is sometimes used as a 'proxy' for poverty, as exemplified in a quotation from a special education director in one study: 'I am not sure that what we say is disproportionality of race is not more disproportionality based on poverty' (Skiba et al, 2005:131). Studies which link poverty and SEN in relation to minority ethnic groups, suggest that a disproportionate number of African American children and families live below the poverty level, especially in urban areas (Talbert-Johnson, 1998). This analysis however was based on an examination of documents and a review of statistical information, and there is no indication of how poverty levels were defined here. Newacheck (2003) argued that Black children had higher rates of disability than White children primarily because of their increased exposure to poverty. This was based on an examination of racial differences in disability due to chronic conditions using data from the National Interview Survey over 2 years (1999-2000) collected from 400,000 households. These included 419,843 children (22,758 with a disability). It was suggested that Black-White differences in disability prevalence could be explained entirely by differences in poverty status. However, the data were collected from households through interviews and the definition of poverty levels or status is unclear.

In the UK, Peagam (1994) reported that schools which identified high numbers of Afro-Caribbean pupils with EBD tended to be concentrated in low socio-economic areas, a view supported by our focus groups. Two thirds of Afro-Caribbean children identified as having EBD in Peagam's study (1994), were from single parent families, 73% lived in municipal accommodation. In almost half of the cases, the main providers were unemployed. Of those in employment, 23% were unskilled manual workers. Sixty four per cent of the pupils identified were entitled to free school meals. In summary, the typical child identified as having EBD was a male child of an unskilled or unemployed manual worker parent(s), living with a single parent or in a reconstituted family in council housing with an income sufficiently low to entitle him to free dinners.

A large scale study of the relationship between poverty and ethnic disproportionality in special education in the US analysed district-level data for all 295 school corporations in a Midwestern state (Skiba et al, 2005). Both poverty and race were correlated with special education placement. However, poverty was only weakly correlated with disproportionality, a finding at variance with our findings (Section 3).

A major weakness with the studies reported above is that the data were analysed at an aggregate level, proportions for schools or districts, not at the level of the individual pupil. Any analysis, no matter how sophisticated statistically, is therefore inherently limited and problematic. For example if data show that 30% of the population of a school have identified SEN, 30% are entitled to FSM, and 30% are from minority ethnic groups, it is impossible to tell from aggregate data whether there is complete overlap between the three variables (all and only minority ethnic pupils are entitled to FSM and identified with SEN) or complete separation between the variables (no minority ethnic pupils are entitled to FSM or identified with SEN) or what level in between these extremes. Similar ambiguity is present in a measure of the proportion with identified SEN. In contrast, the PLASC dataset represents extremely powerful data not just because of the range of variables and the size of the sample but because these data are collected at the level of the individual pupil. Indeed it is a virtually unique resource in these terms.

Our analysis of the PLASC data indicates that poverty is a clear and strong predictor of SEN (see Section 3). Poverty (as indicated by FSME and IDACI scores) also accounts for a significant element of disproportionality in SEN identification for some ethnic groups relative to the White British majority. For example the odds ratio (OR) for Black Caribbean pupils for BESD reduces from 2.3:1 to 1.5:1 after controlling for poverty. However for other groups this adjustment increases the disproportionality relative to the majority group (e.g. the OR for

Bangladeshi pupils for MLD changes from 1:1 to 0.5:1 after control for poverty, from a level similar to that of White British pupils to a level that is significantly less. It is important to note that controlling for poverty reduces the odds of being identified as having BESD for all ethnic groups, including White British pupils. Also, White British pupils constitute the largest group of pupils with BESD because they are the majority, about four in five of all pupils. This illustrates that it does not make sense to consider 'disproportionality' as a single construct; it depends on which minority ethnic group is being considered, against which baseline group and in relation to which SEN. In general poverty reduces but does not eliminate differences between ethnic groups, so poverty reduces but does not completely explain disproportionality.

4.2.3.6 Health care and related issues

A lack of health care may contribute adversely to a child's long-term development. The early identification of a number of developmental conditions provides the opportunity for action to ameliorate or even overcome such difficulties. Conversely, a lack of intervention at this stage may lead to enhanced risk of developmental difficulties.

In the UK, children and young people from Black and South Asian groups tend to access health mental health services rather late in the history of their problems and then sometimes in a crisis (Malek and Joughin, 2004). Furthermore, differences in referral patterns have also been found with White children being referred by GPs while Black and South Asian children are referred by specialist doctors and education services (Daryanani et al 2001). They suggest that the higher level of referral of Black groups by teachers and social services can be attributed to differences in perception by parents and those professionals about the BESD cluster of problems.

Studies in the US have identified increased risk to children from minority ethnic groups as a result of lower and/or later access to health care. Newacheck (2002) in a study of 57,553 children under 18 found that children from minority groups were more likely than White children to be without health care insurance coverage and usual source of care and to report inability to get medical care. White children were more likely than their minority counterparts to have used physician services. Several disparities remained even after socio-economic disadvantage factors were taken into account.

Other issues linked to overall health conditions of Black children are considered by Newacheck (2003) in a review of research on overall health conditions. Death rates are

higher for Black than white children throughout most of childhood and particularly in adolescence; life expectancy continues to be higher for white than for African American infants and children; asthma prevalence rates are higher in African American children than in white children; and African American children are more likely to be born prematurely, be born at a lower birth weight, and die in infancy. These phenomena are related at least in part to social disadvantage/poverty and similar findings have been made in the UK. For example, Spencer (1996) in a review of evidence on poverty and child health indicates the consistent social class gradients across a range of childhood events including, death in infancy and childhood, injuries, higher levels of illness and adverse sequelae from illnesses, low birth weight, and growth. Furthermore, in many cases the gradient is not uniform but becomes steeper for the lowest social class group indicating even higher levels of risk.

4.2.4 Summary

Analysis of PLASC indicates that both Black Caribbean and Mixed White and Black Caribbean pupils are over-represented for BESD. This is the only category of SEN for which there is over-representation for these groups. The concern of the early 1970s in the UK regarding over-representation of Black Caribbean pupils for MLD has not been substantiated through our analysis of PLASC.

Black African pupils, by contrast, are *under*-represented for BESD, suggesting the need to separate possible causal factors amongst the Black groups: Black Other groups were also under-represented for some categories of SEN, and not over-represented for any.

The literature suggests a range of contextual factors having an impact, but, both in the UK and US, the evidence has concerned over-representation of Black groups. A major relationship has been shown to be socio-economic disadvantage/poverty. This also comes out strongly in our analysis where the unadjusted PLASC model reveals an even higher over-representation of Black Caribbean pupils designated as having BESD if socio-economic disadvantage is not removed: the ratio of Black Caribbean pupils with BESD rises from 1.5:1 to 2.3:1 compared with White Pupils. However, the explanation cannot simply be socio-economic disadvantage: while 30% of Black Caribbean pupils and 32.8% of Mixed White and Black Caribbean pupils were eligible for free school meals, the proportion of Black African pupils (43.8%) was substantially higher, yet this group were *under*-represented for BESD.

School factors have also been indicated as causal influences on the over-representation of Black Caribbean pupils for BESD. These include teacher misinterpretation of pupil behaviour and teacher racism. Again, the difference between the Black Caribbean and Black African pupils in our analysis of PLASC raises interesting issues. If these factors are operating, and several well conducted qualitative studies present some persuasive evidence, then it appears that they may operate differentially for different Black groups. A likely factor concerns different cultural factors between the Black Caribbean and Black African groups. The recruitment of more Black Caribbean teachers may be expected to improve cultural understanding, but this too is an under-researched area. However, a further factor concerns differences in the actual behaviour of Black Caribbean and Black African pupils, which may present different challenges to teachers. Our analysis, of PLASC and the review of the literature does not allow a judgement on this point. For example, the national study of mental health of children in Great Britain (Green, McGinnity, Meltzer, Ford, & Goodman, 2005) indicates that Black children (aged 5-16) have a higher proportion of conduct disorders than Pakistani/Bangladeshi children (see Section 4.3.2.1), but does not distinguish between different Black groups. Furthermore, it is important to stress that these groups are not homogeneous. For example, there is substantial diversity between different subgroups of African heritage. The differences between the Black groups, therefore, is an area that requires further research.

4.3 Asian or Asian British (including Pakistani, Bangladeshi and other Asian groups) and Chinese

The statistical analysis of PLASC data, after adjusting for gender and socio-economic disadvantage, indicates the following patterns of under-representation (where the likelihood of having a category of SEN is less than that for White British pupils) and over-representation (where the likelihood of having a category of SEN is more than that for White British pupils) (among the Asian grouping of pupils and the Chinese pupils:

Under-representation	BESD: All Asian groups, i.e. Indian (0.22:1), Pakistani (0.29:1), Bangladeshi (0.18:1), and Other Asian pupils (0.25:1), Chinese pupils (0.38:1) SpLD: All Asian groups. i.e. Indian (0.31:1), Pakistani (0.36:1), Bangladeshi (0.43:1); Chinese (0.29:1)

	ASD: All Asian groups i.e. Indian (0.44:1), Pakistani (0.46:1), Bangladeshi (0.39:1) MLD: Indian pupils (0.65:1) Bangladeshi pupils (0.51:1); Chinese pupils (0.30:1) PD: Chinese pupils (0.37:1).
Over-representation	Hearing Impairment: Pakistani pupils (2.5:1); Bangladeshi pupils (1.7:1) Visual Impairment: Pakistani pupils (2.5:1) Multi-sensory Impairment: Pakistani pupils (2.2:1) PMLD: Pakistani pupils (2.4:1) SLCN: Chinese pupils (2.2:1)

The PLASC data indicate two different patterns of noticeable over- and under-representation. Particular factors are the over-representation of both Pakistani and Bangladeshi groups for Hearing Impairment, the more general susceptibility to low incidence sensory and profound intellectual impairment for Pakistani pupils, and the under-representation among all Asian groups and Chinese across the higher incidence categories (BESD, MLD) and also ASD. Again, as with the Black group, it must be noted that the evidence suggests only a *likelihood* of Asian and Chinese pupils experiencing, or not experiencing, these special educational needs.

4.3.1 Terminology

The category 'Asian or Asian British', according to current DfES ethnic codes, includes individuals from Indian, Pakistani, Bangladeshi and any other Asian background. 'Asian British' refers specifically to those born in Britain and are second or later generation Indian, Pakistani, Bangladeshi or other Asian background. Extended codes are also available (Appendix 2). The sub-category 'Pakistani' includes 'Mirpuri Pakistani', 'Kashmiri Pakistani' (both denoting specific areas of origin in Pakistan), and 'Other Pakistani'. Individuals from 'any other Asian background' include those from Africa, Kashmiri, Nepal, Sinhale, Sri Lanka, all denoting the specific country of origin, and 'Other Asian'. The sub-category 'Bangladeshi' remains without extended codes. No studies in the literature relate only to Bangladeshi children, but there are those that look at Pakistani and Bangladeshi children. The category 'Chinese' includes Hong Kong Chinese, Malaysian Chinese, Singaporean Chinese, Taiwanese, and other Chinese.

The ‘Asian’ group in the US, according to the 2000 Race Census, refers to people having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent. It includes people who indicate their race or races as ‘Asian Indian‘, ‘Chinese‘, ‘Filipino‘, ‘Korean‘, ‘Japanese‘, ‘Vietnamese‘, or ‘Other Asian’, or wrote in entries such as Burmese, Hmong, Pakistani, or Thai. Some of these groups within the ‘Asian’ category were often referred to as ‘Asian American’ which replaced ‘oriental’, a term previously used.

Given that there are distinct differences in categorization of ‘Asian’ in the US and the UK, particularly the inclusion of ‘Chinese’ which is a separate category in the UK, drawing comparisons based on the literature findings, is problematic. Even comparing literature found in the UK, is problematic. Before PLASC 2003 revisions which enabled guidance on subcategories, ‘Asian’ was often treated as a homogenous group. Some literature therefore referred to ‘Asian’, without specifying the subcategory, whereas others referred directly to ‘Pakistani’, ‘Bangladeshi’ or ‘Bengali’ groups. It is for these reasons, that this section will include literature with respect to ‘Asian’, ‘Pakistani’ and ‘Bangladeshi’. Where the distinctions between each group are clearly drawn in the literature, these will be separated within this section. As noted in the Methodology, we have refrained from reclassification and report on categories as they appear in the literature.

4.3.2 Over and Under-representation

Tomlinson (1989) reported the over- and under-representation of Asian children in certain categories of SEN in England during the 1980s. In Inner London, for example, it was suggested that Asian pupils were over-represented in schools for visually impaired pupils and under-represented in schools for those with emotional and behavioural difficulties, those with autism, and in units for the language impaired. Reasons proposed by Tomlinson, based on a review of literature at the time, pointed largely to language problems, cultural bias evident in assessment and identification processes, lack of real involvement of parents in these processes involving professionals, and a limited and narrow curriculum for Asian students identified with SEN (Tomlinson, 1989). However, it is not clear how these factors can account for both under- and over-representation rates apparent at that time.

A recent analysis of health records of children at the Child Development Centre (CDC) in South Derbyshire (Morton et al, 2002) supported the findings of our analysis regarding the higher prevalence of Pakistani children with disabilities. There were 53 children in the Pakistani group, 20 in the Indian group and 764 in a mixed group, of which 95% were of

European origin. It was estimated that all children with severe disability in the area of the Health Authority had notes at the CDC, except for 10% of the mixed group living on the periphery. The numbers of children with different disabling conditions were recorded, together with a measure of the level of individual disability. The researchers also noted if the condition was genetic or chromosomal in origin. The analysis revealed that Pakistani children showed a higher prevalence of severe learning difficulties, severe and profound hearing loss and severe visual problems. They also had a slightly increased prevalence of cerebral palsy and a lower prevalence of language disorder. One interesting finding was that this group had a slight increase in prevalence of autism, whereas analysis of PLASC data showed that they were under-represented for ASD. This may reflect different definitions as ASD covers a much broader group than autism, although it could reflect the specific characteristics of this area.

Focus group members offered several perspectives on disproportionality of Asian and Chinese pupils. However, these factors concern general attainment and progress rather than SEN. A London LA focus group member suggested that Chinese, Indian, and in recent years Bangladeshi pupils, were performing well in that LA, adding that the recent success of Bangladeshis *'could not be related to any intervention we are doing.'* Support for higher levels of achievement by Indian and Chinese pupils in the UK is provided by studies by Demie (2001) and Connolly (2006), and by the 2005 Key Stage test results for England (DfES, 2006, see also: www.dfes.gov.uk/rsgateway/DB/SFR/s000640/SFR09_2006.pdf), with Francis and Archer's (2005) interview study of 80 Chinese pupils providing insights into the differences between this group and other minority ethnic students. No support, however, is given for the reportedly high levels of attainment for Bangladeshi pupils by the 2005 national statistics; this may be a local phenomenon where their attainment may be high compared with a disadvantaged White comparator group. Alternatively, it could reflect progress rather than absolute levels of achievement. Bangladeshi (and Pakistani) pupils perform consistently below the national average at all Key Stages and with respect to achieving 5 or more grades A* - C at GCSE or equivalent. However, Bangladeshi pupils make good progress between Key Stage 2 and Key Stage 4, better than the average for all pupils (a Value Added score of 1016.9 compared with 987.9).

4.3.2.1 Factors affecting under-representation

(a) Home factors and Parent Perception: BESD

Some related reasons for under-representation in behavioural and emotional disabilities indicated in a review by Shah et al (2004), relate to parent perception and treatment of behaviour. It was argued that Asian parents focus on personal responsibility for behaviour and place more emphasis on family respectability and cohesion, and are therefore less likely to seek 'outside' help. Some argue further that deviant behaviour is seen as a manifestation of physical illness rather than as a symptom of psychological distress (e.g. Shah et al, 2004). It is argued also that deviant behaviour may be perceived by Asian parents as a result of processes belonging to the spirit world and they therefore respond to such behaviour through religious practices (Hatfield et al, 1996). Deviant behaviour in children, it is suggested, is perceived by Bangladeshi and Pakistani communities as due to 'badness' and thus dealt with through punishment rather than treatment (Stern, et al, 1990). Asian parents are also thought to have low levels of tolerance for deviant behaviours and therefore take responsibility for ensuring that that their children do not exhibit such behaviour at school and in public (Hackett et al, 1996; Sahibzada, 1992).

Parent perceptions about SEN are also considered as having an effect on identification of SEN, and hence under-representation. Three LAs in our focus groups regarded Asian families as being reluctant to identify SEN, *'[Asian parents] don't like labels, especially genetic-based categories'*.

Participation of families in support programmes for Pakistani and Bangladeshi families often rely on the decision and approval of the father or extended family, which is considered a challenge to advocates working on such programmes (Fazil, 2004). Fazil bases his argument on experience with 19 Pakistani and Bangladeshi parents of children with severe disabilities, on a 20-month project carried out between 2000 and 2001. This action research project evaluated an advocacy project designed to improve the quality of life for Pakistani and Bangladeshi families with at least one child with severe disabilities. The project uncovered a discrepancy between the advocates' actions to 'empower' and the families' perceptions of these actions. Some mothers' decisions to negotiate their own lives which were based on advice from the advocate were overturned when discussed with the husband or extended family. Reasons for this were unclear. In some cases, the father's approval needed to be sought if the mother was to be escorted by advocates to the hospital to seek assistance for their disabled child or for mothers to attend the women's support group. This resulted in low attendance throughout the duration of the project.

Shah et al (2004) in a questionnaire study with 79 mothers of children aged 0-2 years described as Pakistani or Caucasian, found that Pakistani mothers who identified behaviours

as problematic were less likely to seek treatment from local child and adolescent mental health services. The most common reason was the long waiting queues followed by communication difficulties with professionals because of the language differences. They suggest the need for improved access to translator services and increased number of minority ethnic clinicians to encourage greater use of health services by those who need it. The mothers were asked to fill in the questionnaire while visiting a local community health centre in Luton. The study lasted a year.

(b) Prevalence of Mental Health problems

The 2004 'Mental Health Survey of Children and Young People in Great Britain' (Green et al, 2005) using structured interviews with parent, child and teacher found only about 3% of Indian children had a mental disorder compared with 10% of White children. However, a combined Pakistani/Bangladeshi group had a rate of 7.8%. Also of interest is the finding that this includes similar proportions with emotional disorders (4.3%) and conduct disorders (4.0%), compared with the combined Black group (including those of mixed heritage) of whom 3.3% had emotional disorders and 5.9% had conduct disorders. Although mental health problems cannot be seen as equivalent to SEN, this large-scale study suggests a similar prevalence of mental health problems and SEN identification for the Pakistani and Bangladeshi children and young people. This is strengthened by the 2004 survey reporting similar findings to the 2000 survey (Meltzer et al, 2000).

(c) Parental Involvement

Parental involvement of Asian parents in the statutory assessment process has been raised as a concern. In one study a project co-ordinator reported through her experiences with parents of a 'Contact-A-Family' project in Southall, West London that often Asian parents claimed they were not told why their children were undergoing statutory assessment (Rai, 1990). They claimed they were also not informed of their right to be involved and the decisions are almost always made by professionals.

> *'Even if parents display strong dissatisfaction and even disagreement with a decision, their concerns are not taken on board.'* (Rai, 1990: 11)

Rai (1990) proposed that one of the difficulties may be language. She argued that information was often not in Asian languages and translation facilities were not supplied by the LA at that time, a situation which has now been addressed by many LAs. This report however, preceded the 1994 Code of Practice on the Identification and Assessment of

Special Educational Needs (DfE, 1994), the Grants for Education Support and Training (GEST) funding for Parent Partnership Officers and the 2001 statutory requirement on LAs to provide Parent Partnership Services and access to independent Parental Supporters.

Recent evidence suggests that the level of parental support amongst Asian parents and carers is high. In a large-scale survey of parent involvement in education, Moon and Ivins (2004) reported that while three quarters (76%) of all participating minority ethnic parents and carers believe it is important to help their child with homework, the figure is higher for parents and carers from Asian ethnic backgrounds (86%) than other minority ethnic groups. Hence the difficulties of engaging Asian parents in the statutory assessment process appears to relate not to their general levels of interest and commitment in their children's education but rather to specific aspects of the process, including difficulties with English.

(d) Classroom Support

Tennant's study (2004) across ten London schools of differential classroom interactions by ethnicity revealed that Asian children, in contrast to African Caribbean children, were interacting less with the teacher overall, but relatively highly for teaching purposes. Hence, the Asian children were thought to be more favoured by teachers as a group. This suggests that those with difficulties would have these addressed more positively, but as this was not a study of SEN its findings are only indicative.

(e) Perception and labels

Asian students in the US are reportedly under-represented in SEN. One suggested reason is the monolithic view of Asian American academic competence and the labelling of Asian Americans as 'whizz kids' or model minorities, which is said to preclude many students from being identified and assessed appropriately (Poon-McBrayer, 2000). It must be noted, from the ethnic category descriptions earlier, that the category 'Asian' differs from the one used in the UK. For example, in this study the sample comprised 46% Asian Indian, 27% Vietnamese, 19% Chinese and 8% Korean pupils and so the findings from this study may not be transferable.

4.3.2.2 Factors affecting Over-representation

(a) English as an Additional Language

Pupils for whom English is an Additional Language (EAL[14]) pose a particular challenge to professionals seeking to identify SEN and distinguish these from needs associated with a child's having EAL (Troyna & Siraj-Blatchford, 1993). Pupils should not be assumed to have SEN on the basis of EAL, although such pupils may face greater challenges to access the curriculum and so be more likely to have lower levels of attainment, at least in the early stages of their education. Some evidence for this view is provided by Sammons et al (2003). On the basis of a large scale study of cognitive and social development from pre-school to the end of Year 1, they reported that children with EAL showed greater likelihood of being at risk of being designated as having SEN at pre-school compared with those for whom English was their first language. Hence, at this stage, Pakistani and Bangladeshi children were more likely to be identified as 'at risk' with respect to cognitive development and developing peer relationships. Pupils with EAL have also been found to have lower scores compared with non-EAL children on baseline assessment at the age of about 5 years (Lindsay & Desforges, 1998; Strand, 1999b), although Strand (1997,1999) has also shown that EAL children tend to make greater rates of progress from baseline assessment to the end of Key Stage 1.

It is important to note that there is a very substantial overlap between EAL and ethnicity (see Section 3.3.6) with 98% of Bangladeshi pupils, for example, identified as having EAL. However, also of importance is the evidence that pupils with a language other than English as the first language make more progress throughout school than those whose first language is English, e.g. Bangladeshi pupils have particularly good value added scores (a measure of progress rather than absolute levels of attainment) as noted in 4.3.2. Also, and returning to SEN rather than general levels of attainment, the PLASC analysis (Section 3) does not find an increased likelihood of SEN with respect to either Cognition and Learning Needs or Communication and Interaction for any Asian group. However, members of our focus groups reported the practice of placing children with EAL inappropriately in bottom sets, a practice previously identified by Troyna and Siraj-Blatchford (1993). The focus group members who raised this argued that the practice was due to lack of resources available to address EAL needs and hence SEN support was often sought as an alternative.

[14] Previously referred to as English as a Second Language (ESL or E2L)

In summary, while pupils with EAL may face greater challenges at the start of their schooling in terms of accessing the curriculum, they are not more likely to have SEN in the cognitive/learning and communication/interaction sections. There is some evidence, however, of apparently inappropriate practice whereby attempts to meet EAL needs are made by using SEN support.

(b) Genetic factors: Visual and Hearing Impairment, PMLD and other disabilities

Genetic factors causing disability were found to be 10 times more common in Pakistani children in a study that analysed health records of children up to the age of 19 at a Child Development Centre in South Derbyshire (Morton et al, 2002). The study included records of Indian children (20), Pakistani children (53), children from mixed backgrounds (764) and of European origin (95% of the total sample). Categories of disabilities ranged from severe physical disabilities (including cerebral palsy), severe learning disability (IQ below 50), severe language disorders, all autistic spectrum except Asperger's syndrome, partially sighted and registered blind, and severe hearing loss (over 80 DB in the better ear).

Morton et al (2002) argue that the incidence of genetic factors causing disability in this study was as a result of consanguineous marriages (usually occurring between first cousins). This is a common link also made by survey respondents and participants in the focus groups in our study. For example, one focus group member reported increased incidence of visual and hearing impairment among Indian and Pakistani families and considered that consanguinity could account for this.

In the Morton et al study (2002), the rate of consanguinity was around 60% and their conclusion that disability could be linked to consanguinity was based on these relatively high rates. This conclusion was supported by similar evidence in other areas in England. For example, a similar 10-fold increase in genetic inborn errors of metabolism (IEM) in Pakistanis in the West Midlands was found by Hutcheson et al (1998), where the rate of consanguinity was 70%. A study by Sinha et al (1997) revealed a three-fold increase in children with spastic athetoid cerebral palsy, concluding that there was an inherited (genetic) factor affecting Pakistani children in Bradford that could be linked to consanguinity, the rate there being 50%.

Further evidence for the high incidence of hearing impairment among Pakistani and Bangladeshi children being linked to risk attendant upon consanguineous marriages comes from a study by Yoong and Spencer (2005) of 47 children diagnosed with sensori-neural

hearing loss. A high proportion of the Pakistani children were from consanguineous marriages with a family history of deafness but only 29.8% of the total group had been identified through the Newborn Hearing Screening Programme and 70.2% through hearing surveillance programmes. In a larger study of 214 deaf children where the demographic profile of Pakistani and White children was similar, there was a statistically significant and substantial difference between the groups for consanguineous marriage: 86.4% Pakistani, 1.5% White (Yoong, Feltbower, Spencer & McKinney 2005).

It is important to note that there are a number of causes for hearing impairment across the population in general, and hence consanguineous marriages are not the only risk factor. Certain of these risk factors were also found by Yoong et al (2005) to be more common for Pakistani children: family history of deafness (66.4% Pakistani, 38.8% White) family size (birth order >5: 12.8% Pakistani, 4.5% White). On the other hand Pakistani children were less likely to have had post-meningitis deafness (1.4% Pakistani, 13.4% White), or to have had congenital infections or to have dysmorphic features (5.0% Pakistani, 13.4% White).

Hence, with respect to hearing impairment and Pakistani children, there is evidence for consanguineous marriages as an important risk factor. Research is continuing to explore the nature of the genetic basis for this relationship (e.g. Park et al, 2003). There are however significant arguments for caution to avoid over-attributing consanguinity as the reason for genetic disorders and for disability amongst certain minority ethnic groups, for example, Pakistanis, Bangladeshi and other Asian groups. Firstly, more studies are needed of neurological conditions amongst different ethnic groups, to enable identification of patterns of disorders and disability amongst certain groups e.g. Pakistanis and not others. Morton et al (2002) assert, based on their review of studies in the area, that there were only a few studies investigating such differences and rates of incidence.

Further evidence on the importance for consanguinity comes from an epidemiological study in Bangladesh (Durkin et al, 2000). This studied 10299 children aged 2-9 years in a two-stage project: screening followed by assessment at stage 2 by a physician and psychologist. This study addressed ‘mild’ and ‘serious mental retardation’ (approximating to MLD and PMLD respectively). Consanguinity was found to be a very significant factor in serious mental retardation in rural but not urban populations. Durkin et al argue that there was an interaction with socio-economic status. In rural areas, children from consanguineous marriages were more advantaged and affluent relative to children from non-consanguineous marriages; in urban areas this relationship was reversed. This study indicates the importance of identifying inter-relationships of potentially causative factors as well as the

impact of each factor alone. This is the approach we have taken with the PLASC data when both adjusted and unadjusted relationships have been identified.

The situation is further complicated by the fact that Pakistanis are under-represented in attendance at genetic clinics. Furthermore, a report to the Department of Health on Learning Difficulties and Ethnicity (Mir et al, 2001), reported misinformation and bias concerning consanguineous (first cousin) marriages as a cause of impairment and its effects on professional practice which alienate families (Baxter et al, 1990; Chamba et al, 1998). The report was based on a review of relevant literature and interviews with key respondents. A study of parents of children with thalassaemia[15] (Atkins and Ahmed, 2000) found that health professionals often relate the condition explicitly to consanguineous marriages; a view which affects their unsympathetic approach to parents as they believe this condition to be self-inflicted (Baxter, 1998; Butt & Mirza, 1996).

This is a fast-moving field, and evidence may be expected to be accumulated on the genetic basis for a number of disorders over the next five years (e.g. Park et al, 2003). It is also important to note that there are genetic factors evident in the White population as well as there being other causes of hearing impairment (e.g. rubella).

(c) Early intervention and Support Services for Hearing Impairment

Before the turn of the century, there was a history of a general lack of educational services for Asian under-fives with hearing impairment in the UK (Turner, 1996). Turner's survey of all LA services for hearing-impaired children in England revealed South Asian children (9%) constituted the largest minority ethnic group with hearing impairment, many of whom were located in Inner London (14% in total), and came from homes where English was not predominantly the first language. It was found that 23% of responding educational services were not supporting any minority ethnic children under 5 and there was a lack of staff able to converse in the family's language. Of those who could, half were not teachers of the deaf. Turner concludes that the challenge for small boroughs, particularly in Inner London was *'to keep informed about languages and customs in clients' families.'* (Turner, 1996:97).

Following a systematic review of the role of neonatal hearing screening in the identification of hearing impaired and deaf children in 1997, the Department of Health in England commissioned a national programme of newborn hearing screening in 2001. It was

[15] An inherited form of anaemia caused by faulty synthesis of haemoglobin

anticipated that all areas would by 2004-2005 be participating in the programme (Davis, 2003). The DfES has issued guidance to LAs on developing early intervention and support services for deaf children and their families to support this initiative (DfES, 2003). Although the guidelines contain some exemplars of practice, no mention is made of children from any specific ethnic group.

(d) Health care and related issues

The total health care package of services for screening, surveillance and monitoring provides the opportunity to identify developmental difficulties early and take appropriate action (Hall, 1996). Children will be at increased risk of developing SEN if they are not provided with timely access to these services. A disparity in access and utilization of health care services at an early age among Asian groups and white children with disability, are offered as possible explanations for over-representation.

Mir et al (2001) review the literature on the relationship between ethnicity and learning difficulties mainly for Asian children and adults. They identify a large number of factors that can mitigate against members of the minority ethnic communities accessing appropriate health care and, although their report does not focus on children, a number of the issues raised are relevant to the present discussion as access to health care for young children is made by parents and carers. If they do no feel comfortable and confident, access may not occur. The relevant factors Mir et al identify include low levels of knowledge of services available for children with disabilities and their carers; poor standards of communication; delays in diagnosis; isolation, lack of support and high levels of carer stress; and low levels of access to benefits and/or receipt of lower levels of benefits compared with White claimants with comparable needs. While some of these factors are related to social disadvantage, others are more specific to minority ethnic status.

4.3.3. Summary

The Asian group (Pakistani, Bangladeshi and Indian) were under-represented for BESD, SpLD and ASD, and all except the Pakistani group were under-represented for MLD. On the other hand, Pakistani children were over-represented for HI, VI, MSI and PMLD, with Bangladeshi pupils also over-represented for HI. The PLASC analysis suggests two distinct sets of causal factors. Under-representation is linked with SEN categories which have a relatively strong contextual influence while over-representation is found for those categories

with a relatively strong constitutional basis. The former appear to be associated with home and cultural influences, with strong religious affiliation and code of expected behaviour.

Two factors have been identified as contributors to areas of SEN where the Asian groups were over-represented. Firstly, genetic factors have been proposed. Furthermore, it has been suggested that the higher proportion of genetically-based problems is linked to consanguinity. However, care must be taken to recognise that there are other factors, including socio-economic disadvantage which interact with this factor as well as being important in their right. Secondly, lower levels of engagement with health service provision has been suggested to lead to later identification and hence intervention, putting children at additional risk. Language factors appear important, with parents (especially mothers) often having limited English and so being disadvantaged in securing health service support.

The PLASC analysis indicates that all four Asian groups (Indian, Pakistani, Bangladeshi and Asian Other Groups) were found to have comparable levels of SLCN which were not significantly different from the White British pupils, while Chinese pupils were more likely than White British pupils to have SLCN. On the other hand, all four Asian groups (but not the Chinese) were less likely than White British to have ASD.

Speech, Language and Communication Needs (SLCN) are not equivalent to EAL and there is no reason to expect higher levels of SLCN, amongst groups for whom English is not the First Language. It is unclear, therefore, why this should be the case for Chinese students, or why all Asian groups and Chinese pupils should be less likely to be considered to have ASD. We have some evidence that this reflects doubts about distinguishing ASD from other language difficulties (Lindsay, Dockrell, Mackie, & Letchford, 2005) but this requires further study.

4.4 Travellers of Irish Heritage and Gypsy/Roma

The PLASC analysis indicates the following for Traveller of Irish heritage and Gypsy/Roma pupils:

Under-representation:	ASD: Traveller of Irish heritage pupils (0.19:1), Gypsy/Roma pupils (0.38:1)
Over-representation:	MLD: Traveller of Irish heritage pupils (3.3:1); Gypsy/Roma pupils (3.5:1) SLD: Traveller of Irish heritage pupils (2:1); Gypsy/Roma pupils (1.5:1) SpLD: Traveller of Irish heritage pupils (2.1:1); Gypsy/Roma pupils (2.2:1) PMLD: Gypsy/Roma pupils (2.4:1) BESD: Traveller of Irish heritage pupils (1.7:1); Gypsy/Roma pupils (1.6:1) Hearing Impairment: Gypsy/Roma pupils (2:1)

Both groups of Traveller children are over-represented across the learning and BESD categories but are under-represented for ASD. These are both very small groups, representing only about 0.1% of pupils each. Also, as shown below, there are a number of subgroups. Both of these factors suggest some caution in interpreting the data: on the other hand, there is a consistent pattern which suggests areas for further investigation.

It must also be noted that according to OFSTED (DfES, 2005c) there is likely to be a significant under-reporting of pupils in the two Traveller groups in PLASC, since the figures do not include Fairground children, children travelling with circuses, children of New Age Travellers, Bargees and children of families living on boats. OFSTED also estimates that around 12000 Traveller pupils are not registered at school, most of them of secondary school age.

4.4.1 Terminology

From 2003, for the first time, Gypsy/Roma and Traveller of Irish Heritage pupils were included as categories in their own right in the PLASC data (the two largest groups within the Gypsy and Traveller communities). According to PLASC ethnic codes (Appendix 2), the

category ‘Traveller of Irish Heritage’ does not include a description of extended codes. The group ‘Gypsy/Roma’ however includes pupils who identify themselves as:

- Gypsies
- and/or Romanies
- and /or Travellers,
- and/or Traditional Travellers,
- and/or Romanichals,
- and/or Romanichal Gypsies,
- and/or Welsh Gypsies/Kaale, and/or Scottish Travellers/Gypsies,
- and/or Roma.

This group includes all children of a gypsy ethnic background or Roma ethnic background, irrespective of whether they are nomadic, semi nomadic or living in static accommodation. As noted earlier, although OFSTED recognises the following children as part of the Traveller population (DfES, 2005c), the PLASC codes indicate that schools should not include Fairground children; the children travelling with circuses; or the children of New Travellers or Bargees in this category unless, of course, their ethnic status is that which is mentioned above.

One of the key concerns relating to the collection of data on pupils in this category is that they may be constantly mobile and may be registered in more than one school in any given school year. Dual registration is allowed to ensure the continuity of learning for Traveller children. (DfES website: http://www.standards.dfes.gov.uk/ethnicminorities). This may therefore affect exact numbers of children in this category.

4.4.2 Over-representation

Evidence on the experiences of Traveller children in schools in the UK echoes many of the messages from research on Black pupils. There is some research which provides an understanding of the quality and relevance of the educational experience they receive. This has been a serious cause for concern given their relative underachievement in schools (OFSTED, 1996, 1999). An ethnographic research study by Derrington and Kendall (2003), for example, identified underachievement amongst Gypsy/Roma pupils in both primary and secondary national assessment results and set out to explore possible reasons for this. Although these studies do not relate directly to children with statements of SEN in any

particular category, they do shed some light on possible reasons for over-representation of Traveller children with SEN.

4.4.2.1 Poor Attendance and Early drop-out

Poor attendance at school among Traveller pupils was identified as a key factor in their under-achievement by O'Hanlon (2004). The evidence was based on the reflections of contact with schools from a Traveller advisor in one LA and a SENCO in another LA in England. A study in Northern Ireland (DENI, 2005), which aimed to provide the Department of Education with evidence on Traveller children's experiences of integration and social inclusion in post-primary schools, revealed the same findings. Many teachers in this study noted frequent absenteeism or non-attendance amongst Traveller children with little or no explanation provided by the pupils. When reasons were given, these were described as standard, such as being ill or having to attend a medical appointment. However, there were many incidents reported by Traveller pupils of absence due to family events, such as weddings, funerals, christenings or simply visiting relatives. On some occasions this would last a few days or even a full week. Furthermore, pupils provided examples of absence from school due to helping out with domestic duties or with their father's work. Data were obtained from interviews with Traveller children, their parents, small focus groups with representatives from the five Education and Library Boards (ELBs), the Council for Catholic Maintained Schools, and Traveller Support Groups, teacher and principal interviews and questionnaires.

Jordon's (2001a & b) review of Travellers' enrolments and attendances in Scotland over a 6 year period reveals a similar picture. Jordan argues that the findings indicate that institutional racism, together with staff attitudes, undoubtedly contribute to some Travellers' self-exclusion from schools since few stay long enough to be formally excluded. Jordan highlighted the following examples of institutional discrimination - the need to make subject choices at the end of Year 2 secondary while the children were out of school and the unavailability of reserved places in their subject choices on their return, coupled with the Standard Grade (Scottish national qualification system at Year 4 secondary) requirement for continuous assessment and the development of portfolios through the academic session. These are key factors which reportedly prompt drop-out of occupational Travellers in Years 3 and 4; measures ironically introduced in Scotland to increase student participation. The study involved an analysis of information from annual returns from all schools in Scotland, school registers, written information requests to local authority personnel, case studies of 5 schools, and face-to-face interactions with 100 Gypsy/Roma and Traveller of Irish heritage pupils.

Early drop-out rates are also linked to parents' assumption that their children would be out of school by the age of 14 since the age at which childhood ends and adulthood begins within the Traveller community, is a fluid, social and cultural construct in comparison to childhood constructs reinforced by a rigid curriculum (Derrington & Kendall, 2003). Derrington and Kedall argue that

> *'in the UK the raising of the school leaving to 16 and subsequent developments in education policy towards an increasingly academic curriculum over the past twenty years has effectively defined and consolidated this particular cultural boundary. Recent moves towards a more flexible and vocational curriculum at key stage 4 may help to mediate that boundary, although this may come too late for some pupils if they leave the system before the end of key stage 3'.*

Derrington and Kendall (2003) suggest there has been an improvement in retention rates since Ofsted's's report in 1996, i.e. just over half as compared to one in five in 1996. This claim is based on findings from their longitudinal study between 2000 and 2003 which tracked and recorded the educational progress and experiences of a sample of 44 Gypsy/Roma pupils of secondary school age. Data were collected twice a year throughout the duration of the study via in-depth interviews involving all relevant groups of participants, informal reviews with pupils and families and postal surveys to schools and Traveller Education Services. The researchers acknowledged, however, that the study focused on 'settled' Travellers. The majority of pupils who took part in this study largely lived on established plots or in housing. Only three of the pupils lived on unauthorised encampments. The authors acknowledged that this was a deliberate feature of the research design but, had a larger and more representative sample of Travellers (including more mobile families) been considered, the findings might have revealed a less encouraging picture. The reflections from O'Hanlon's work (2004) and the DENI project (2005) since then, reveal that frequent absenteeism is a persistent challenge.

Despite the poor attendance and early drop-out, the vast majority of pupils in the DENI study thought that school and gaining an education were important and the ability to read and write was essential for obtaining a job and for being able to carry out tasks in everyday life, from reading a letter to passing the driving theory test. Many pupils felt education was important for obtaining a job later in life but very few attached any importance to achieving qualifications (DENI, 2005).

4.4.2.2 Curriculum Mismatch

Teachers in the study in Northern Ireland (DENI, 2005) argued that the present curriculum is irrelevant to the educational needs of Traveller children and stressed that a greater emphasis should be placed upon a more vocationally based curriculum. English and mathematics were deemed to be the most relevant subjects, mainly because these subjects enabled them to read, write, spell, count money and measure. These skills were seen to be useful in successfully completing tasks associated with using tools, completing the driving theory test, reading letters or filling out forms and shopping. Some pupils felt technology and design was relevant, especially in situations where they have to use tools to make things. From the research it was evident that Traveller girls considered such occupations as hairdressing, beauty therapy and childcare appropriate career aspirations. However, other girls felt that they were destined to marry, have children and raise a family rather than pursue a career. Many Traveller boys aspired to enter vocational, trade-related jobs, such as plumbing, joinery or bricklaying and frequently this was linked to working alongside fathers or other family members.

Schools are thought to ignore and devalue the children's home learning of interdependence and independence and only learn dependence and institutional exclusion at school (Jordon, 2001a). Jordon argues further (Jordon, 2001b) that this, together with the fact that research on Travellers in a Traveller-only school (Kenny, 1997) reveals the extent to which a formal education is an irrelevance in the lives of many Travellers and results in a mismatch between these pupils' particular learning needs and the provision made for a settled, local community. This leads to reduced self-esteem, demotivation, disaffection and eventual dropout for some.

In the 1990s, the achievement of Traveller pupils was reported to be enhanced by Traveller Education Services (TES) working in close partnership with schools to ensure that Traveler children receive a broad and balanced curriculum (OFSTED, 1996). Since then, there has been variation in the way in which schools are responding to the needs of Traveller children (OFSTED, 2003). On the one hand, very few schools are reported to have even undertaken any audit of curriculum provision to identify opportunities to promote positive images of Travellers. In a few cases there is deliberate avoidance of the issue; and a 'culture-blind' approach is used, with schools responding to Traveller children in the same way as they do other children. Several schools are reported also to have an ambivalent attitude towards and little understanding of the legitimacy of the Traveller pupils' minority ethnic status. In such cases, Traveller pupils were unwilling to affirm their ethnic identity.

On the other hand, some schools are reported to be adopting an imaginative and creative approach to dealing with the situation (OFSTED, 2003). In one particular secondary school it was noted that when a pupil's behaviour resulted in a temporary or permanent exclusion, staff, with support from the Traveller Education Service, responded by putting together a package of work for the pupil to do outside school, linking home, community and the local further education or agricultural college. The school enjoyed some success with pupils who were disaffected by the mainstream curriculum; they successfully completed courses at a local agricultural college in blacksmithing, farrier work and game-keeping. The school was regarded by the Traveller families as *'one which took seriously the meeting of the particular needs and preferences of their children'* (OFSTED, 2003: 18).

4.4.2.3 Racism, Bullying and its Effects

Traveller Support Groups in the Northern Ireland study identified racism and bullying as two major issues that discouraged Traveller pupils from staying at school until the compulsory school leaving age (DENI, 2005). Half of the 44 pupils interviewed in this study had experience of being bullied at school, either verbally or physically, and many felt it was because of their ethnicity. Two parents stated that they had a child who had left school early because of bullying. Half of the Traveller pupils interviewed had experienced some form of bullying at school. This ranged from other pupils making fun of their accents to name-calling and even physical violence. Fifteen per cent of pupils were experiencing bullying at the time the interviews were conducted, with half of those being bullied attributing it to the fact that they were Travellers.

The majority of pupils (almost 80%) in the study by Derrington and Kendall (2003) said they were sometimes called racist names or were subjected to bullying in school. Such treatment by peers was attributed to their lack knowledge about the culture, lifestyle and identity of travelling children. In almost two-thirds of cases this was not reported to teachers because pupils had little faith in this approach. Despite this culture of non-reporting, teachers were aware that pupils' coping strategies included physical or verbal retaliation. Almost half the pupils in this study had been reprimanded or punished for physical acts that were, according to the pupils, responses to racist name-calling or bullying. More than a third of the pupils believed that certain teachers harboured and sometimes conveyed racist attitudes towards them. The study also found a high level of exclusion. A quarter of the pupils (9 boys and 3 girls) had been excluded from school at least once, usually for acts of physical aggression

towards peers or verbal abuse towards staff. Many parents and pupils felt that Traveller pupils were excluded for retaliating to other pupils' racist behaviour.

To avoid discrimination, Traveller children, when in the minority, learn to adopt copying strategies, e.g. hiding, masking or denying their cultural and ethnic identity at secondary school (Derrington and Kendall, 2003). The students in the study found themselves straddling two cultural worlds and different (sometimes contradictory) expectations from home and school which resulted in cultural dissonance.

4.4.2.4 Perceptions of Teachers and Identification of SEN

Teacher viewpoints on their expectations of Traveller children's academic achievement, was found to be divided in the DENI, (2005) study. Half (28) believed teachers had lower expectations and they justified low expectations of Traveller pupils because of their poor attendance record, early school leaving age and non-participation in examinations. The remaining half of questionnaire respondents and most of the teacher interviewees, however, emphasised that they or their school did not have low expectations of Traveller pupils' academic achievement.

The majority of teachers in this study also felt that they required further training on minority ethnic groups, including Travellers, in order to raise their awareness of Traveller culture, life and traditions; to help them in their teaching of Traveller children; and to update their knowledge of the Traveller pupils' circumstances.

Half of the pupils (22) in the Derrington and Kendall study (2003) study were considered by their teachers to have special educational needs, based on their achievement levels. Irregular attendance was a concern in many cases and this factor was thought to impact directly on levels of attainment. Under-achievement was particularly apparent in the area of literacy.

4.4.2.5 Support

There is evidence from two studies that support to help with the teaching of Traveller pupils came from a number of sources, including special educational needs co-ordinators (SENCos) (DENI, 2005; O'Hanlon, 2004). In O'Hanlon's study, the primary responsibility for organising their individual learning needs was left to the SENCO. However, support also came from Traveller support teachers and teaching assistants, according to teachers in the

DENI study (2005) who completed the questionnaire, while teachers interviewed referred to support being provided mainly by education welfare officers and Education Library Board officers.

4.4.2.6 Limited Parent-School Contact

Evidence suggests that there is poor parent contact with the school. In the DENI study (2005) many parents of the Traveller pupils had little or no contact with the school on matters associated with their children's education. Those parents who had contact with the school did so through parents' nights or an appointment with a teacher to discuss a child's report or incidents of misbehaving. O'Hanlon (2004) reported that although the SENCO found that parents showed willingness to work alongside teachers in supporting their children's education, the Traveller advisor found it difficult to contact parents because of their constant movement and work commitments.

4.4.3 Summary

Both groups of Travellers were found to be over-represented across MLD, SpLD, BESD and SLD. The only category where they were under-represented was for ASD. In addition, the Gypsy/Roma group were over-represented for HI.

Traveller children make up the smallest ethnic categories with Traveller of Irish heritage pupils and Gypsy/Roma pupils each numbering about 0.1% of pupils. Furthermore, it is known that there is diversity within the categories and also that some travelling children are not included (e.g. Fairground children). However, the levels of odds ratios in our analysis of PLASC suggest that confidence can be placed in the general findings.

The factors identified in the literature review, which largely addresses general attainment and progress rather than SEN issues, are largely concerned with contextual and lifestyle dimensions, including poor school attendance and early drop out, curriculum mismatch, racism and bullying, and limited parent-school contact. Investigations of curriculum mismatch have suggested the need for a more vocationally relevant curriculum as suitable for Traveller children's aspirations and expectation post-school.

Services have been developed to attempt to support Travelling pupils and increase their attendance and attainment. However, the high levels of over-representation among the

learning and behaviour domains suggest these initiatives have had limited success. Also of interest, is the over-representation for SLD and, in the case of Gypsy/Roma children, HI.

4.5 Refugees and Asylum Seekers

Although this category falls outside the remit of this project's framework of investigation by virtue of its category, we have chosen to include this group, given that refugees and asylum seekers originate from anywhere in the world, including countries of origin for the categories of minority ethnic groups described in preceding sections. Hence, issues pertaining to this group found in the literature may relate to any of the previous groups, particularly if the child has recently migrated into the country. This is clear in a Norwegian study of refugees including Indian and Pakistani children (among other ethnicities) (Oppedal, 2005).

A 'refugee' is defined as a person who has been granted refugee status by a host country, having been judged to have a 'well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion.' (Rutter, 2001:14-15). Rutter and Jones (2001) also define asylum-seekers as 'those who have crossed international borders in search of safety and refugee status, in another country. In Britain, asylum seekers are those who are waiting Home Office decisions as to whether they can remain.' (p.14).

4.5.1 Emotional difficulties

The literature points to distress experienced by children identified as recent immigrants, both in the UK and elsewhere. The evidence therefore may be relevant to understanding possible risk factors for SEN, particularly for newly arrived children and those who are in the minority in schools and communities, and particularly those who arrive as refugees or asylum seekers. In a review of three studies of 45 refugees in London, Hodes (2005) suggests that some severely affected young refugees experienced isolation, psychosis and social impairment. The key limitation of this paper however, is its lack of clarity on methodology, and small sample size, limiting its representativeness. However, the propensity to risk is supported by evidence on Southeast Asian refugee youth and children entering Canada (Hyman et al, 2000). They reported post-migration stresses with respect to school adjustment (marginalisation and cultural conflict); parent-child relationships (communication difficulties and parental expectations); and internal conflicts (acculturation, values, and ethnic identity).

Some further support is provided by a large-scale UK study of 2790 male and female students (11-14 years) from a representative sample of 28 east London secondary schools in an area of high socio-economic disadvantage, using the Strengths and Difficulties Questionnaire (SDQ) – self report version and the Short Moods and Feelings Questionnaire (SMFQ) (Stansfield et al, 2004). Refugee status was not examined as such, but there was indicative evidence from analyses which showed entrants to the UK within the previous five years to have poorer mental health than the rest of the sample. Although a substantial study, the findings are suggestive of increased risk rather than providing evidence of direct causality. Another substantial study (Oppedal, 2005) of 1275 immigrant 10th graders with 11 different ethnic origins in Norway using the SDQ suggested a more complex picture. There were ethnic groups with low psychiatric problem scores among children of the labour migrants (Moroccans and Indians) and among the migrants from the conflict countries (Somalis, Sri Lankan, and Yugoslavians). The groups that in general reported most problems were also found both in the labour and the refugee groups (Turkish and Pakistanis in the former, Iraqis, Iranians and Vietnamese in the latter). Furthermore, first-generation girls and second-generation boys were identified as particularly vulnerable to psychiatric problems. Second-generation youth reported significantly fewer emotional and peer problems than first-generation youth. The researchers note that future studies should examine how cultural factors contribute both to resilience and to an increased vulnerability to psychiatric problems. They add, in conclusion:

> *'Information about national origin includes much more than merely the denomination of a geographical area and specific physical traits. The ethnic label entails a biography and a family history of migration experiences, interpersonal relationships and interaction patterns, in addition to distinctive frames of references concerning values and traditions. The ethnic label is an indicator of culture in social context. To better understand how psychiatric problems develop and are expressed we need insight into the stories that are embedded in these ethnic classifications.'* (p. 657)

A similar study, reported to be the first school-based study in the UK to compare the emotional and behavioural problems of migrant and refugee children with those of their UK peers, was undertaken by Leavey (2004). This examined the prevalence of psychological problems among refugee and migrant schoolchildren compared to their UK-born peers, in the context of factors such as age, gender, use of alcohol and language ability, and involved a cross-sectional investigation. The sample included 123 UK born, 89 Turkish, 28 Somalians and 21 Kosovan young people. The study found migrant and refugee children showing greater psychological distress on a number of the sub-scales of the SDQ: for example, peer problems were reported more frequently among the refugee children, particularly the

younger group and boys. Results supported the likelihood of greater psychological distress among migrant and refugee children as described by Hodes (1998) and Hyman et al (2000). Migrant children, particularly young boys, despite better results for pro-social behaviour and fewer conduct and hyperactivity problems than their UK peers, fared less well on the measures of emotional symptoms and peer problems.

In a Danish study, refugee children aged between 3-15 years old from the Middle East, arriving in Denmark were found to experience trauma and sleep disturbance (Montgomery, 2001). A family history of violence (e.g. a grandparent's violent death before the birth of the child or parental exposure to torture) as well as a stressful present family situation (father scolds the child more than previously) were the strongest predictors of prevalent sleep disturbance in the children. Arriving in Denmark with both parents rather than one was a modifying factor, so the effect of traumatic experience on sleep patterns later in childhood was mediated through parental presence and behaviour.

A further risk factor concerns the mother's mental health as depression in mothers has been identified as an important factor in the prevalence and persistence of mental health problems in children (Green et al, 2005).

Such studies are subject to particularly difficult methodological problems. Not only are there the common issues of the validity of measures standardised on the home population and the language used to administer the instrument. For example, Stansfield et al (2004) note limitations with using the self report version of the SDQ. In addition, the timing of such studies is crucial as the normal period of acclimatisation to the new culture also has the added factor of trauma resulting from the original reason to leave the home country and, indeed, the journey to the new place of residence. Nevertheless, taken together, these studies suggest increased risk is a feature of migration when it is a result of stressful circumstances such as seeking refugee and asylum status rather than economic migration.

4.5.2 Funding and Support

Under-representation of different minority ethnic groups for certain categories of SEN could be attributed to the fact that it takes time to access funding because of cultural and language issues which affect the assessment process (Clarke, 2003). Asylum seekers may therefore be under-represented in certain categories of SEN and may not qualify for formal learning support. In Clarke's account of asylum seekers in schools in an East Oxford project, these

children were currently being supported informally along with other children requiring support, by the SEN team.

Focus group participants from two LAs, related the same scenario regarding newly arrived children, emphasising difficulties to provide appropriate support for these children due to the lack of adequate and relevant information. One claimed that in her authority where there are large numbers of refugee children from Sierra Leone, for example, there are huge 'mental problems' since the children come from war zones, having confronted sexual abuse, violence and death. This raises the vexed issue of confidentiality. Professionals, as here, often feel frustrated when not made aware of information they regard as potentially helpful in addressing the needs of pupils. The Home Office does not disclose information, so teachers and schools rely on the children to provide such information. *'We don't know what we're working with.'* Hence, the support from psychologists for meeting the mental health needs of these children is compromised. However, it is also important to respect the rights of parents and young people to maintain confidentiality. The issue, therefore, is to gain the trust of both parents and children so that they might inform relevant professionals of information on a 'need to know' basis.

4.5.3 Summary

These pupils are not a separate minority ethnic group and so no data are available from our PLASC analysis. However, they present particular challenges with respect to SEN, and the overlap with ethnicity. What refugee and asylum seeks typically share is a history of varying degrees of trauma, disrupted education (or no education at all) and family disruption (ranging from separation to death of parent(s) sibling(s) or other close relatives). This history typically differs from that of migrants moving to the UK for economic reasons.

The evidence for refugees and asylum seekers has largely focussed on mental health problems, but it may be expected that educational difficulties will be experienced by many, and also that a lack of appropriate health care will have added to the risk factors these children experience.

5. CHALLENGES IN STUDYING ETHNICITY AND SEN

Sections 3 and 4 have presented a review of SEN and ethnicity in terms of statistical analysis of the PLASC data on about 6.5 million children in England and a review of relevant literature. In this Section we consider some of the limitations revealed by this study.

5.1 Terminology

Clarity of data on SEN by ethnicity is complicated by the complexity of categorisation and challenges facing the collection, analysis and monitoring in both areas, i.e. SEN and ethnicity. The use of any particular term implies that those to whom it refers both a) have a degree of similarity and, b) are different in important respects from those not in that category. This is a significant challenge here as both category systems (SEN and ethnicity) are contentious.

5.1.1 SEN

The 1945 Regulations defined 11 categories of handicap. Dissatisfaction with this approach led the Warnock Committee (DES, 1978) to argue against categorisation. Research has consistently demonstrated challenges for any category system. Firstly, children may have more than one area of difficulty, e.g. visual impairment and learning difficulties (Rutter, Tizard & Whitmore, 1970), Subsequent legislation and guidance (e.g. the SEN Code of Practice: DfES, 2001) have addressed this issue. The SEN Code of Practice considers four main areas of need: communication and interaction, learning and cognition, difficulties in behavioural, emotional and social development, and sensory and/or physical needs. Co-occurrence of different categories of difficulties (comorbidity) and hence frequently of different types of need is clearly recognised in the SEN Code of Practice which states at 7:53 'although needs and requirements can be usefully organised into areas, individual pupils may well have needs which span two or more areas.' This concept is also recognised by the PLASC system which allows additional needs to be specified.

Secondly, children's needs may be difficult to categorise or prioritise. This has been particularly evident recently in the perceived overlap between specific speech and language difficulties (SSLD) and autistic spectrum disorder (ASD). (Dockrell et al, in press; Lindsay et al, 2005a, b). This is also addressed by the Code which states that 'This guidance does not assume that there are hard and fast categories of special educational need' (para 7:52). The Code stresses the importance of regarding each child as unique, that there is a wide

spectrum of needs that are often inter-related but also that needs often 'relate directly to particular types of impairment' (para 7:52).

While the SEN Code of Practice makes appropriate recognition of these factors for practice and PLASC has a facility for more than one type of need, any system that requires individual children to be allocated to specific categories for the purpose of data management is inevitably confronted with problems of ambiguity. Data recording requires forced choice, even if more than one category (e.g. primary and secondary need) is allowed. Evidence for these problems was also provided by the survey and focus groups. In the former, nine LAs specifically mentioned problems with SEN data. For example focus group members made the following comments:

> *'SEN data is always dubious, given the lack of agreed definitions / thresholds etc.'*
> *'SEN returns are still seen by schools as a 'positive' factor in relation to their PANDA, this can therefore lead to over-identification.'*
> *'(PLASC SEN data is) very variable, not linked to SEN records or checked with EP/Support services.'*
> *'(PLASC SEN data is) unmoderated, schools make judgements without reference to any external criteria. Pupils are placed at SAP when they are not even SA (School Action), or identified with SEN when they just have EAL. Until the data is accurate it is impossible to make any factual comments / comparisons.'*
> *'(We are) concerned at the lack of objectivity in classifications of 'type of need' as schools are classifying without external verification.'*

These issues are wider than the specific question of 'type of SEN' and reflect a broader unease about the rigour of the criteria for judgments about SEN and the absence of external moderation of judgments. This has led to some LAs introducing a formal moderation process for pupils judged to be at School Action Plus in the autumn preceding the January PLASC data collection.

These opinions from LAs can be challenged. For example, 'dubious' may be too strong a term for the level of inaccuracy, but that was the view of that focus group member. Certainly statement rates do vary across LAs from about 1% to 4% reflecting, at least in part, resourcing policy. Also, it is expected that LAs will work with schools to address these concerns (as was happening among our focus group member LAs), including monitoring how schools use resources to support pupils at School Action and School Action Plus. Furthermore, the DfES expect that new guidance issued in 2005 will clarify when schools

should record children as having particular categories of SEN and that this will improve further the quality of returns from schools – our focus groups were held after the introduction of the new guidance but before the members had built up experience of the new system.

Nevertheless, members of the focus groups argued that in their experience there was a lack of clear understanding and consistent application of different SEN categories for PLASC. One participant reported attempts to gain a shared understanding between LA, schools and the health system about the definitions of SEN categories i.e. *'which box it falls in'* to enable the most appropriate intervention, adding that schools are confused, for example, with the category SpLD and they consult with SEN advisors for clarification. As a result of this lack of clarity, dyspraxia was reported as not being included in the category SpLD, but in the physical disability category instead: *'It depends on who is responsible in the school and what grasp they have of it.'* The problem was being addressed through discussion with schools on SEN guidelines. Open discussions are held with the school headteachers and at the LA's SENCO forum about submitted SEN data, during which incidence across each category is questioned and clarity is sought about who fills in the data.

Focus group members reported that Learning Difficulties is generally defined by achievement but can lead to odd patterns of higher achievers with Learning Difficulties at School Action Plus. When such issues are raised with schools, they amend the data submitted, suggesting concerns about validity of this category and practice. In relation to the MLD category, one participant felt it was difficult for schools to define the category. All participants agreed that the categories MLD and BESD needed to be unpicked in terms of how they are classified

Secondly, parents' influence on the process was also suggested as a contributing factor in over-representation in certain SEN categories. Based on anecdotal evidence, a focus group participant who had worked in two North West LAs, claimed that in relation to dyslexia and SpLD, there is a middle class push for this label. This has been a common concern over many years among professionals although our data do not support this view (Section 3). A less frequent preference was reported by one focus group participant who claimed that there was a history in that LA of particular White families with the experience of several generations having attended MLD schools and now actively seeking these placements for current children.

A third concern, noted by focus group participants, as reportedly shared by medical staff and other related professionals, was the different confidence levels in diagnostic analysis for different SEN categories. For example, one focus group member stated:

> *'For ASD, it's a lot more problematic. There's a huge argument nationally whether there is an increase in incidence or an increase in identification and we haven't got to ethnic issues where there's a huge rise…'*

These concerns reflect the research literature which have recently addressed the difficulties in distinguishing between ASD and specific speech and language difficulties (e.g. Dockrell et al, in press) and also the distinction between higher functioning autism and Asperger's Syndrome (e.g. Baird, Cass & Slomins, 2003; Szatmari et a, 1995).

Explanations provided by focus group members for the lower confidence levels amongst professionals in relation to ASD as opposed to, say, hearing impairment, was related to the subjectivity of assessment using interviews and schedules, '*this is where their confidence is less'* (see also Dockrell et al, in press). Diagnosis is by constructs from a scale not as with Hearing Impairment, for example, where there are objective markers. Out of borough diagnosis was also regarded as adding to the lower confidence levels amongst professionals in one LA.

In summary, LAs through the questionnaires and focus groups raised a number of practical problems in categorising pupils with respect to SEN. For present purposes our focus is on PLASC rather than meeting needs, where a holistic assessment can elaborate on the full range of a child's needs. Some limitations are inherent in any categorisation process per se. With respect to PLASC, accuracy of categorisation might be expected to be higher for pupils with statements, who have been through a multi-professional assessment, compared with those at School Action Plus. We have no evidence of systematic bias in categorisation of SEN by ethnicity, however. This requires further research. The additional guidance and further support and training by LAs may be expected to increase accuracy in the future.

5.1.2 Ethnicity

Earlier attempts to categorise by ethnicity and hence monitor trends were criticised because the categories were too broad and led to inappropriate grouping of different minority ethnic groups (e.g. The Rampton Report: Great Britain. Committee of Inquiry into the Education of Children from Ethnic Minority Groups, 1981). The categorisation system has developed and

is now highly differentiated with major categories and extended codes (Appendix 2). This has clear benefits for increased appropriateness (validity) but there are also drawbacks.

Firstly, as indicated by Appendix 2, there is a need for more guidance because of increasing complexity. Secondly, the increased choice may confuse rather than assist, for example parents preferring one designation when another might appear more appropriate, or where the pupil might disagree with their parent in terms of their sense of identity. Thirdly, the use of 'mixed' or 'joint' heritage, while allowing greater validity at first generation, presents difficulties for some at second or later generations when more than two heritages may be relevant. Finally, the greater range of categories provides potentially useful statistics at school and LEA level on each group but limits the use of more sophisticated analyses. Even with the national data set of almost 6.5 million, some analyses were not possible owing to very small or empty cells (Section 3). At LA level this may be even more problematic. For example, in a research study of schools successfully challenging underachievement among three different ethnic groupings of boys, the low number of Black African and Black Caribbean boys in some schools required combining the data to allow multi-level modelling; this was in contradiction to the aims of the study to identify the characteristics of each group separately (Lindsay & Muijs, in press). This problem of very small numbers limiting statistical analyses in some LAs was also raised in the focus groups.

A further issue concerns consistency of categories. Godfrey (2004) presents an analysis of the 2002 and 2003 PLASC ethnicity data with respect to changes between each year and also between LAs in any one year. The former reflected changes in the category definitions, including the introduction of Mixed background in 2003 leading to 2.5% of pupils then being so classified. Use of extended codes, a matter for LA discretion, varied greatly: 65% of Black African pupils but 39% of Pakistani and 24% of Other Mixed background. Godfrey argues that there was evidence of much misunderstanding of the 2002 and 2003 codes. Comparison between cohorts for PLASC data can therefore be problematic, although stability in the codes will address this problem.

Another factor concerns the attribution of ethnicity status. For the PLASC 2005 data, 85% of the ethnic identification was collected from parents on their children, 5% was collected directly from the pupils (usually older pupils in KS4) and around 10% was ascribed by the school. This raises the issue of agreement between these different sources in attributing ethnic status, a matter for further research.

Findings from LAs' responses to our questionnaire and the focus groups suggest that ethnicity data collection is still a challenge and may in part be attributed to parents' refusal to complete forms sent home. High levels of information not obtained or refused made it problematic for LAs to interpret differences or trends (a problem also reported by the Special Educational Needs and Disability Tribunal, 2006). In these instances there is provision for schools to supply a coding for ethnicity, however one focus group participant commented that its schools failed to make use of this option. Another mentioned that some groups, particularly Travellers, were unwilling to identify themselves as such while a further participant reported that Gypsy/Roma pupils often identified themselves as Polish, while Travellers of Irish heritage identified themselves as Irish, but not Travellers.

If a school anticipates that the response rate from parents will be too low for ethnic monitoring to be effective, they may consider whether it would be appropriate to undertake ascription of an ethnic background. If the decision to ascribe ethnic categories is made, a number of safeguards must be complied with in order that the process meets the requirements of Data Protection legislation, for example informing parents of the consequences of non-submission of information. Nevertheless, non-submission by parents and lack of self-identification may lead to judgements on categorisation made by schools, which may be questionable.

Despite PLASC and the DfES guidelines, a number of concerns with the PLASC data were expressed by respondents in this project: 16 LAs (39% of the total number of questionnaire respondents) reported they believed the PLASC SEN/ethnicity data for their LA were not accurate compared to 11 (27%) who considered it was accurate and three (7%) who simply commented that the quality of the data was improving. The remaining 11 LAs gave no overall judgment on the accuracy of the data. Although all members of the focus groups felt that analysing SEN data by ethnicity was helpful, there were a few reservations about the rigour of the PLASC data. For example, a North West LA participant claimed that since:

> *'FSM (free school meals) as a proxy indicator for need and its correlation with funding encourages 'inactive' schools and hence a greater number of pupils identified with SEN. Hence PLASC from this LA needs to be taken with a pinch of salt. Therefore, School Action Plus (SAP) in one setting tells us as much about the school.'*

5.2 SEN and EAL

A further challenge concerns the determination of whether a child for whom English is an Additional Language (EAL) has special educational needs or needs arising only from their EAL status.

A questionnaire respondent from a South East LA supported the claim by Osler and Morrison (2002) that the distinction between pupils with SEN and those for whom English is an additional language, is not always clear. stating that:

> *'Ethnicity should not be seen as the only issue here. The analysis should also take into consideration first language and EAL as key factors….[There is an] assumption that a child's difficulties with learning can invariably be attributed to their limited fluency in English.'*

Hart and Travers' (1999) investigated possible misinterpretation of behaviour of bilingual children, which may lead to misdiagnosis of SEN in the London Borough of Enfield. Teachers were reluctant to identify bilingual children as having SEN but had concerns about whether their interpretation was correct

Concern about the quality of reporting on EAL provision in schools where the number of pupils needing such provision was small, was noted in the focus groups as a possible contribution to under-representation of some minority ethnic groups, particularly those who were recent migrants (see also Osler and Morrison, 2000). One North West focus group participant made the connection, also argued by Hart and Travers (1999,) between behaviour and learning needs, but indicated a problem of that arose out of parental perception. The community in this authority apparently challenged why a school with predominantly EAL learners was being targeted for bad behaviour and SEN when the LA was trying to increase resources to meet EAL needs. Furthermore, three LAs in our questionnaire survey specifically mentioned the confounding of EAL and SEN by some schools, resulting in an over-representation of EAL pupils within MLD and an under-representation within SpLD such as dyslexia.

In a review of the literature on language needs and SEN, Cline and Shamini (2000) identified the lack of overlap in research on EAL and reading difficulties: the literature on reading difficulties and dyslexia rarely referred to children learning EAL, while the literature on children with EAL learning to read rarely referred to learning difficulties. They also argue

that children with EAL were under-represented among children with Statements of SEN and among those receiving specialist support for pupils with specific literacy difficulties. There are also long standing concerns among educational psychologists about the validity of assessments of children with EAL, particularly those assessments which rely on English language ability (e.g. tests of literacy and of verbal cognitive ability).

Hence there are a number of tensions when considering the possible special educational needs of children with EAL, both conceptual and practical. Many practitioners therefore find it difficult to make judgements of a child's needs.

5.3 The Importance of similarities and differences

Central to the discussions in this report is the *importance* of differences between minority ethnic groups. Statistically significant differences are interesting and potentially of educational importance but this importance must be examined separately. That is, differences may be statistically significant but are they meaningful indicators of differences? For example, in an analysis of a large number of meta-analyses of gender differences Hyde (2005) argues that over three quarters of effect sizes were in the small range. From this Hyde argues the evidence is in favour of gender similarities rather than differences.

The same issue concerns us. To what extent can the results of studies of differences between minority ethnic groups in terms of SEN be considered important, even if statistically significant? The latter can occur with very small differences when sample sizes are large. The use of national datasets (PLASC 2005 had 6.5 million pupils with ethnic status recorded) allows very small differences to be statistically significant but, as we argued in Section 3, this is an insufficient criterion. The approach we adopted was to consider *odds ratios*. These compare the chances of occurrence in one group (a specific minority ethnic group) compared with the chances in another (the white majority). However, the argument does not stop there as it has been argued that even apparently small effect sizes can be important and reflect substantial applied effects (Rosenthal, 1991). This raises the question of the 'real life' importance of an effect. For example, Rosenthal and Rubin (1982) indicated how a small effect size for a treatment compared with placebo for patients with cancer translated into a survival rate of 66% compared with 34% for the untreated group.

We have discussed this general issue of exploring differences to contextualise our current concern: SEN and ethnicity. In this case, although the differences are not between treatments but between designations of different categories of SEN, the question of

importance must still be asked: what do differences mean in terms of action, either at the level of the child or group? The former relates to base rates for the pattern of occurrence in a community, so providing potentially useful information for individual practitioners. The latter concerns local and national service planning and delivery. For example, the over-representation of hearing impairment among children of Pakistani heritage provides useful information to guide service planning related to the ethnic make up of different authorities. The evidence we present here, therefore, should give indicators for service delivery for Local Authorities, trusts and the DfES.

However, such decision-making should be carried out with care as the *reason* for differences are still important. For example, we have argued that a child's developmental problem is a result of the influences of the environment as well as any within child impairment, and that these interactions change over time. Consequently we need also to examine the evidence for the balance of factors. This balance is likely to vary depending in part on the nature of the difficulty. For example, profound hearing loss or physical disability will have a high level of within-child explanation, whereas this is much lower, in general, for BESD where behaviour will be more situationally specific. For example, Rutter and Nikapota (2002) have reviewed the occurrence of a number of mental health problems by ethnicity and report different perspectives between parents and teachers with teachers reporting more disruptive behaviour than the parents (see also Lindsay & Dockrell, 2000 for similar findings with a sample of children with specific speech and language difficulties).

A second factor, also highlighted in Section 4 concerns the social process of the designation of both SEN and Ethnicity labels. The former is influenced by the 'value' attributed to a category. This may be in terms of resources, e.g. to be identified as dyslexic by an LA may open access to resources not available to children with literacy difficulties but without this designation. Secondly, some labels are not welcomed, being seen as negatively stigmatising a child, whereas others are welcomed. Views may change over time, with designations going out of favour ('old' terms used in the past have included idiot, imbecile, maladjusted, educationally subnormal) while others such as autism (or autistic spectrum disorder, ASD) have come into favour; there may be also variations among different parents, teachers and children for different labels.

The evidence for causation has indicated a wide range of factors, with different degrees if impact and substantial interaction effects as well as variations across cultures. The main focus of this report is England, but comparison with other countries and cultures is important in this respect for which is indicated about causal factors. For example, there is evidence

that the overall rates of BESD are very similar in Thailand and the USA, despite very different cultures, but the pattern varies with emotional difficulties being more prevalent in the USA (Weisz et al, 1997 cited in Rutter & Nikapota, 2002).

In considering the evidence for similarities and differences between different minority ethnic groups it is important to continue to bear in mind the question of the meaning behind the statistics, and the reasons behind the behaviours and outcomes.

5.4 Identification and Assessment

The designation of a child as having SEN requires two processes. The first, identification, may be seen as indicative or suggestive. For example, screening programmes provide indicators of a problem or disorder. Assessment is then necessary to provide a higher level of certainty as identification processes for psycho-educational developmental problems typically have substantial rates of false positives (those identified as at risk when they are not) and false negatives (those identified as progressing satisfactorily when they are in fact at risk), see Lindsay (1984), Lindsay & Desforges, (1998). Earlier literature, particularly in the US, raised the question also of biased assessments resulting from two main sources: inappropriate instruments and assessors (e.g. psychologists) from a different ethnic group; typically this literature considered Black students assessed by a white tester.

Concern about inappropriate instruments has focussed mainly on measures of ability, particularly general cognitive ability (intelligence). Here the instrument measures a hypothetical construct unlike an attainment test which assesses the target skill, e.g. reading. Nevertheless, both are subject to potential bias by the nature of their content. In the US, landmark court cases have challenged the use of certain forms of assessment procedures because they were judged to produce biased results, typically to misclassify Black students. The most well known case if probably *Larry P. v Riles* in California which declared that the disproportionate representation of African American students in school programmes for mild mental retardation was discriminatory; it also banned the use of IQ tests with African American students (Coutinho & Oswald, 2000). However, three subsequent cases involving similar complaints produced different judgements: two declared that over-representation *per se* was not sufficient evidence of differential treatment, while the 1980 ruling, *PASE v Harmon* determined that IQ test bias was not a significant issue in the assessment process, a view supported by a review of studies, mainly using the Wechsler scales (Reynolds & Kaiser, 1990). Nevertheless, the finding that in the US African Americans come on average 15 points lower than Whites, and Hispanics score between the two on IQ scores (Neisser et

al, 1996) has presented an important challenge to the conceptualisation of intelligence and to instruments devised to measure it.

These issues are now central to discussion of and training in psychometric assessment of diverse populations (e.g. Prifitera & Saklofske, 1998; Reynolds & Kamphaus, 1990) and of psychological practice in general (American Psychological Association, 2003). In England, the practice of educational psychologists for many years has been to have a broader view of assessment than a primary focus on intelligence (Frederickson & Cline, 2002). Practice in some LAs with high proportions of minority ethnic pupils has developed to limit or even reject the use of psychometric instruments. This has also included a shift away from a predominant focus on child abilities and characteristics to assessments of the child in their context. Also, the statutory assessment procedures specified by successive Education Acts have required a range of types of advice (educational, psychological, medical and other relevant reports.

Identification and assessment practices, therefore, are inherently problematic when assessing diverse populations. A shift in focus to attainment rather than ability, as has been the recent trend, may help to some extent, but paradoxically may cause its own difficulties; recall that the original work by Binet was intended to identify children with low attainment but who were capable of higher levels of performance with appropriate education. Also, a study by Hosp and Reschly (2004) indicates that academic achievement was also related to disproportionality for children with learning disabilities in the US, although across racial/ethnic groups and categories of disability the academic attainment group of variables was the weakest compared with demographic and economic predictors.

In summary, the dangers of assessment processes contributing to disproportionality has been recognised by practitioners and policy-makers and steps have been taken to address this. The relationship is not simply one of bias which can be addressed by changes in practice; it also reflects inherent relationships between the factors concerned. Nevertheless, the current policy on assessment of SEN, as set out in the SEN Code of Practice (DfES, 2001) – See Section 1.2 - goes a long way to addressing the issues raised here, including the focus on needs rather than disabilities.

5.5 Administering the system

Although PLASC provides a rich source of data for comparative analyses, 25 (61%) of questionnaire respondents reported their LA did not analyse PLASC data by category of

SEN and ethnicity. Ten LAs reported that the number of minority ethnic pupils in their area was too small to enable any valid statistics to be generated. In many cases there was justification for this within a single age cohort, but often data from across the whole age range would still yield significant numbers of pupils, even though the proportion would be low when expressed against the population base. Some LAs were more proactive, seeing this as a reason to track the progress of each individual pupil with SEN from a minority group.

The lack of consistent analysis across LAs of SEN data by ethnicity was confirmed in our focus group responses. Half of the LAs represented had not formally embarked on analysis regarding categories of SEN by minority ethnic groups, although this information, it was said, could be analysed on request. Two reported they were just starting to analyse such data. Hence the evidence base regarding LA –level analysis is very limited.

5.6 Ethnicity and Poverty

Poverty is often suggested, as seen in studies mentioned earlier, as a causal factor of SEN (Handy, 1999; Talbert-Johnson, 1998; Newacheck, 2003; Skiba et al, 2005). This was supported by LA members in our focus groups. The poorest wards in a North West authority, for example, were reported to have the highest levels of SEN. Poverty was defined in this case in relation to the standard of housing these children and their families occupied:

'Often newly arrived families move into cheapest housing'.

'More children from these areas are on the SEN register.'

In a neighbouring authority, unemployment, low income and illiteracy were regarded as contributory factors. A participant from a third LA in this region reported a similar situation but said they had tried to move away from FSM entitlement as a proxy indicator of need and focused rather on the need itself because, it was argued, there was a low correlation between SEN and FSME and that funding encourages schools with high FSME not to be so proactive in addressing SEN.

The relationship between social disadvantage/poverty and SEN is very well established (Essen and Wedge, 1982; National Research Council 2002) but whether poverty can explain ethnic disproportionality for SEN is not clear. In the past, researchers have argued that race/ethnicity is effectively a proxy for poverty (Hodgkinson, 1995; MacMillan & Reschley, 1998). However, Skiba et al (2005) challenge this assumption. In a study of 295 school districts in Indiana they argue for a more complex set of relationships between poverty, race, achievement and special educational provision eligibility that are often counterintuitive. Their

data failed to find a consistent relationship between rates of poverty and disproportionate placement in special education. This is contrary to our analysis (Section 3) which showed a strong relationship between social disadvantage and overall SEN (at School Action Plus and Statement), e.g. pupils eligible for FSM were twice as likely to have SEN. However, this did not explain all the variation between all the ethnic groups as shown by the odds ratios in Table 5. Hence, disproportionality was related to ethnicity once social disadvantage and other factors had been taken into account. One reason for these different results may be that Skiba et al used district level and therefore aggregated data whereas our analysis is at pupil level.

5.7 Parental Involvement, language and cultural differences

A number of parental factors have been identified in Section 4. What is apparent is that several different factors are relevant here with respect to parental attitudes and involvement among minority ethnic parents. The evidence from recent large scale studies has extended our understanding derived from relatively small and local studies. For example, minority ethnic parents felt more involved than other parents, according to the findings of the study of Parental Involvement in Children's Education (Moon & Ivins, 2004). However, those for whom English was not their first language were less likely to attend parent meetings, suggesting that language is a barrier to parent participation. The recently published evaluation of the SEN parent partnership services in England (Rogers et al, 2006) supports this and reveals high proportions of LAs with limited support for parents for whom English is not their first language. For example, they conclude that probably fewer than half of Parent Partnership Services used community languages in leaflets. More positively, about two thirds made a translator available and three quarters a translator. However, as the authors point out, this does not address the problem of making initial contact with parents who do not have a good understanding of English.

These findings were supported in our study. In addition, parental beliefs, and cultural differences as well as language were reported by the focus groups to affect under-representation of minority ethnic groups in certain categories of SEN which one participant described as a '*no-go area for certain cultures and communities'*. Communication with the parent over identified SEN is challenged by the fact that cultural beliefs often mask the problem so adding to any communication difficulty with respect to language per se. The following anecdote highlights this as well as what happens when there is no early identification of language as a barrier in the learning process.

'There was a Chinese boy who was admitted to this school at the age of 5 and because he was born in the UK, it was assumed that he spoke English. But it wasn't until Year 5 that they realised English wasn't his first language. No wonder he was special educational needs by the time he was there. If it was picked up much earlier, you kept thinking he might not have been. Consulting with the parent, using an interpreter, was such a hard job. She was a very educated Chinese lady. Her tendency was to answer for him and to make him look better than he was. Her cultural thing was to mask any difficulties that were there because she didn't want him to be seen as a problem.'

The complexity of language used by professionals was also identified as a barrier to communication with parents. One focus group member from the North West, who had regular contact with parents in the local community, suggested that the language of communication between professionals and parents, for whom English is usually not their home language, was *'far too complex'*. The need for interpreters and translation was supported by all LAs as a way of addressing the language barriers experienced by minority ethnic parents and pupils, although cautionary notes were suggested. One focus group member noted that *'the interpreter may not be saying what the person is saying.'* Translation is also affected by reference to medical diagnosis and conditions, for example *'speech and language therapy is not easily translatable.'* There are also the issues of confidentiality and neutrality. Another claimed

'*You don't get the full story. This is often affected by the issue of status i.e. the status of the professional, parent or child and interpreter*'.

In this authority, it was reported, parents have expressed reluctance to have particular interpreters from the community. Hence, even where Parent partnership Services are available with translation and interpretation facilities, there are other barriers to overcome.

Professional apathy and parents' lack of trust and confidence were added pressures. One participant stated:

'There is professional apathy towards minority ethnic parents. There is a general lack of awareness of parents and their needs, as well as a lack of acceptance of parents, which limits their voice. Other groups have more articulate parents who are more accepted and confident in communicating with professionals. '

Another added,

'As a result, parents who don't speak English, don't trust the system. They lack confidence and therefore give up.'

A lack of continuity of personnel was another negative aspect identified as impeding communication and the building of trust between parents and professionals.

The scarcity of minority ethnic parents at the Special Educational Needs and Disability Tribunal (SENDIST) was noted in the focus groups. One focus group participant in an authority where there were majority Bangladeshi or Pakistani pupils, claimed she had never been to a tribunal for any pupil from these communities. She attributed this to the fact that such parents were poor, hence, they did not take the opportunity to challenge decisions because they lacked confidence and did not articulate. There was a general lack of acceptance and complacency, with many minority ethnic parents assuming that the professional 'knows best'. Another participant agreed stating that it was *'a question of power and choice. Minority ethnic parents are dependent on professionals"*.

Support for the under-representation of applicants to the SENDIST is provided by Rider (2006). Using data from the first five years of the Tribunal, Rider argues that both Black and Asian groups were under-represented compared with national statistics of the populations. Furthermore, no appeals were recorded on Pakistani children in 8 out of 10 regions, despite their forming the highest proportion of minority ethnic pupils in Yorkshire and the West Midlands. However, the 2004/5 Annual Report (SENDIST, 2006) reports that of applicants giving their ethnicity, the proportion of appeals from White applicants was 84% compared with the national incidence of 82% White pupils (see Table 1). However, the Report notes that in about 43% of all applications, ethnic group was not volunteered. The proportions of Pakistani and Black Caribbean appeals were each at about 2.5% of those declaring ethnic status, which compares with 2.8% pupils of Pakistani heritage and 1.5% of Black Caribbean children nationally. It appears, therefore, that the proportions of appeals to the SENDIST are currently generally in line with the national ethnic profile although the very substantial lack of data indicates the need for caution

5.8 School factors

A series of school factors have been identified pertaining both to the collection and monitoring of data and practices which might contribute to disproportionality. The former includes omissions, such as those identified by Ofsted (Osler & Morrison, 2000) as well as institutional practices which contribute to the development of what are then seen as BESD. The latter includes teacher attitudes and practices at the inter-personal, classroom level, which may also contribute of a pupil having SEN. In these cases, special educational needs are at least partly a function of the school's practices, whether by intention or default.

Examples were also provided by our focus group members. With respect to monitoring at school level, a South West LA participant claimed that schools were ignoring possible incidence of racism, leaving the minority ethnic child lacking the ability to engage with the school. The school was not linking issues of possible racism with SEN monitoring.

> *'Some schools were submitting a nil return. There are huge discrepancies with how schools are dealing with racism at schools and whether they're recognising them at all. Schools don't link up pockets of things that happen. …..Things happen in pockets in schools, unless there's somebody helping them to make those connections.'*

Another participant supported this claim, adding:

> *'I could give an example in this authority with under-representation in special education and over-representation in exclusion. There is obviously varying interpretation of particular types of behaviour. In one case a child might be described as seeking attention and in another as having a special need.*

Cultural differences relating to understandings of behaviour, were highlighted by others, e.g.

> *'Teachers want children to look at them. If a child looks away from the person addressing him/her, this may be construed as rude behaviour, but may be a sign of respect in other cultures.'*

Participants in the focus groups also questioned what was actually being taught and there was a feeling that teacher attitudes may reflect a subconscious racism. There can be a general lack of understanding of the child's background and how certain school practices may be meaningless to the child, e.g.:

> *'What's the value of a 'house point' to a child who's been walking around Africa for 14 years escaping war?'*

Identification of a need was also said to be dependent on the school culture and environment. One participant explained:

> *'A girl who was the only or one of very few Black children in a mainly white school… a school which hadn't realised she was EAL. She'd been there for a few years and then began to present (behaviour problems). One of the things they had against her was that she was loud. They got behaviour support in. This child was way on her way towards exclusion before there was any real understanding. If you put her in a different school somewhere else, it might have been different. It's the system, an unwitting institutionalised racism and it's about lack of experience, lack of a cultural environment to explore some of these issues that we actually all have.'*

Lack of communication about, and knowledge of how to accommodate different learning styles, was also identified by participants from four LAs in the focus groups, as a possible cause for over-representation of SEN amongst minority ethnic pupils. Teaching and learning styles were reported as not being culturally appropriate, and teachers did not prioritise continuing professional development in this area:

> *'There are very few requests from teachers and schools for diversity training. The only people interested are already thought to be working with minority ethnic groups and related services.*

The need for more minority ethnic teachers was raised in the literature review and also by the focus groups. One participant reported that through heir Black Education Network they were able to provide role models, for sharing cultural knowledge and understanding about minority ethnic issues and raising awareness within staff groups. The network was also said to be helpful in challenging street culture and reaffirming the need to succeed amongst Black students. Another claimed they were struggling to get minority ethnic teachers and there were few enrolments at specialist schools and colleges. Black minority ethnic individuals in the system were said to be currently holding lower status jobs with few minority ethnic individuals at strategic level, *'all managers are white'*. Another participant reported that most Black minority ethnic individuals in the system were Learning Support Assistants. The situation is made complicated by the fact that *'some resist being seen as the one minority ethnic children go to. Teaching assistants who know the community don't want children to know them.'*

Another participant however, disagreed that there may be a need for Black teachers as role models, claiming there were no real problems in that authority despite the overall lack of presence of Black professionals in the system, stating *'we're quite inclusive.'*

School factors, therefore, have been identified as important in SEN through the literature review and also by the professionals who contributed to our study. These are not simple matters, however,. For example, the recruitment of teachers from the local minority ethnic community may have many benefits including their contribution to teaching per se; the provision of role models by senior, successful staff; and important community links to engender respect, and gather local intelligence (Lindsay & Muijs, in press). However, there are no quick fixes or panaceas. Rather, the evidence suggests that a series of factors need to be addressed and by a number of different initiatives. Underlying all of these is a commitment to the development of inclusively.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

6.1.1 The nature of the evidence

This study comprised four main strands of evidence: a review of the literature; an analysis of the 2005 PLASC dataset; a survey of LAs; and focus groups of senior LA officers. Before turning to our conclusions regarding the substantive issue of over- and under-representation of minority ethnic pupils in SEN it is necessary to reflect on the evidence itself.

The PLASC analysis provides a comprehensive and possibly unique evidence base. It covers the whole of England and reports on about 6.5 million children in maintained schools. No other research was identified on that scale. We have identified a number of limitations with the dataset, but these must be kept in perspective. The size of the dataset renders the findings robust to a degree of unreliability in the coding and recording of data, and indeed all the analyses we present easily pass the test of statistical significance ($p < .01$). Also, we have chosen to go beyond simple statistical significance. By using odds ratios we have been able to present data which also provides information on the size of effects. This is not without some problems, the most important being the decision on where to draw the line to determine an odds ratio is important. We have set this cut-off at an odds ratio where pupils from a minority ethnic group are 1.5 times more likely to be identified than White pupils (3:2 or above) or, conversely where they are 1.5 times less likely to be identified (a ratio of 0.67:1 or less). We consider this level of difference is reasonable but we also present full tables of results to allow the complete picture to be seen.

The literature review has identified a number of limitations with the research base. Firstly, there are relatively few studies that address SEN and ethnicity jointly. There is, for example, a research base for general academic standards of pupils from minority ethnic groups and this provides some useful information. However, such studies typically do not address SEN per se. Second, many of the studies reviewed have been relatively small scale. Thirdly, there is a preponderance of qualitative studies. While these can provide useful and important evidence the question of generalisation is important. Furthermore, the quality of a number of studies is not always clear. For example, the nature of the sample and sometimes the measures are not always evident. Consequently, the reliance that may be placed on such studies is unknown.

Fourthly, there is a question of timeliness. Many of the studies are now quite old and this is particularly problematic in an area of substantial development. This is the case with respect to both of our focal concerns, SEN and ethnicity. The SEN system has seen a number of developments even since the 1981 Education Act. The 1994 Code of Practice on the Identification and Assessment of Special Educational Needs (DfE, 1994) was an important and influential document. The 2001 SEN Code of Practice (DfES, 2001) built upon the lessons learned and now guides practice. There have been many other changes including the Special Educational Needs and Disability Tribunal. A similar situation pertains to ethnicity. The main concern in the early 1970s was the apparent inappropriate placement of Black Caribbean pupils in what were then schools for the educationally subnormal (ESN(M)), a category that is comparable to moderate learning difficulties (MLD). Since that time concerns have included the apparent over-representation of this same population among pupils with BESD and those excluded from school. Furthermore, immigration has included a wide range of new groups while other groups are now well established with second or third generation children in the school system. In this regard it is interesting to note that our review suggests a more complex picture than some of the views previously promoted. A simple view that disproportionality is caused by racism, whether intentional or unintentional or institutional is challenged by our analysis of PLASC. For example, with respect to BESD, the different rates for Black Caribbean pupils, who are over-represented compared with White British pupils, compared with Black African pupils, who are under-represented compared with White British pupils, suggests a more complex scenario.

These issues are important as research that addressed the issue in, say, the 1980s may not be relevant now, even if the study was rigorous and appropriate at the time. Furthermore, there are difficulties in generalising from other countries as the nature of minority ethnic groups varies, so reducing the opportunity to generalise findings.

Lastly, we need to acknowledge the limitations of the survey of LAs and the focus groups. The information derived from these two sources was valuable, but indicative. For example, further analysis of PLASC indicates that among the 102 LAs with at least 100 Pakistani pupils, the unadjusted odds ratio for overall SEN for Pakistani pupils is 0.88:1, not significantly different from White British pupils. However in 10 LAs Pakistani pupils are half as likely as White British pupils to have an SEN (OR <.50:1) while in four LAs Pakistani pupils were 1.5 times more likely than White British pupils to have an identified SEN (OR>1.5:1). The pattern suggests strong local variation among these 14 LAs compared with national averages. The questionnaire and focus groups were designed to provide local perspectives and illumination of complex issues. The focus groups, in particular, provided

an opportunity to explore local experience. Furthermore, they allowed the collection of evidence of how the system actually operated in different LAs, so highlighting possible limitations and areas for development. Hence, these two sources of information allowed exploration of the local manifestations of the issues arising from the PLASC analysis and literature review.

6.1.2 The findings

Analysis of PLASC data allowed us to explore the over- and under- representation of certain minority ethnic groups in different categories of SEN, controlling for a range of variables (year group, gender and socio-economic disadvantage) – *adjusted model* (see Figure 5b). We have used odds ratios to explore the likelihood of pupils from different ethnic groups having each category of SEN compared with the likelihood of White British pupils having the same category of SEN. We have highlighted any instances in which pupils from a minority ethnic group are 1.5 times more likely to be identified with a particular category of SEN (a ratio of 3:2 or above) – *over-representation*; or conversely 1.5 times less likely to be identified with that SEN (a ratio of 0.67 or less) relative to pupils from the White British group – *under-representation*.

The literature review (and to a lesser extent the LA survey and focus groups) allowed us to explore potential explanations for these disproportionalities. The main findings from the study may be summarised as follows:

Key Findings

- Socio-economic disadvantage (poverty) and gender have stronger associations than ethnicity with overall prevalence of SEN and of certain categories of SEN. However, after controlling for the effects of socio-economic disadvantage, gender and year group significant over- and under-representation of different minority ethnic groups relative to White British pupils remain. The nature and degree of these disproportionalities varies across both category of SEN and minority ethnic group.

After controlling for year group, gender and socio-economic disadvantage, and relative to White British pupils:

- Black Caribbean and Mixed White & Black Caribbean pupils are around 1 ½ times

more likely to be identified as having Behavioural, Emotional and Social Difficulties (BESD) than White British pupils. The literature suggests teacher and school factors including racist attitudes and differential treatment of Black pupils as a reason for their over-representation in the BESD category. However, the PLASC data has not shown similar over-representation for all Black pupils, suggesting differences between Black Caribbean pupils and Mixed White & Black Caribbean pupils compared with other Black pupils. Further work to investigate this over-representation is needed. The focus needs to be on distinguishing the different needs of these pupils. Positive approaches to engage the pupils and their parents and to focus on success, perhaps modelling on 'Aiming High' but with a specific additional SEN focus, should be considered.

- Bangladeshi pupils are nearly twice as likely to be identified as having a hearing impairment than White British pupils, and Pakistani pupils are between 2 – 2 ½ times more likely to be identified as having Profound and Multiple Learning Difficulties, a Visual Impairment, Hearing Impairment or Multi-sensory Impairment than White British pupils. The literature suggests a greater incidence of genetic factors related to consanguinity (where parents are blood relations) as an important factor in the over-representation of Pakistani and Bangladeshi children for these SEN categories. However, care must be taken not to over-attribute developmental difficulties to this factor. The Department of Health needs actively to address this issue and to develop a sensitive strategy to engage the community in a consideration of risk associated with consanguinity.

- Asian and Chinese pupils are less likely than White British pupils to be identified as having Moderate Learning Difficulties, Specific Learning Difficulties and Autistic Spectrum Disorder. The literature suggests that this could be because of difficulties in disentangling learning difficulties from issues associated with English as an Additional Language (EAL) and therefore work is needed to assess whether these children's needs are being met appropriately or whether their EAL status is leading to an under-estimation of the nature and severity of cognition and learning needs. The literature also suggests that lack of early take-up of health care among EAL groups may be an additional risk factor.

- Traveller of Irish Heritage and Gypsy/Roma pupils are over-represented among many categories of SEN, including Moderate, and Severe Learning Difficulties, and

BESD. The literature suggests a number of factors ranging from those associated with school such as negative teacher attitudes, racism and bullying, and a curriculum perceived as lacking relevance to factors associated with Traveller cultures, such as high mobility, poor attendance and early drop out from school. However, the research base on this group is limited and therefore these conclusions are indicative only.

Detailed Findings

- Analysis of PLASC data identified that socio-economic disadvantage (poverty) and gender have stronger associations than ethnicity with overall prevalence of SEN and of certain categories of SEN, and that year group is also associated. For example, **across all ethnic groups**:

  - The identification of SEN is highest in Y6, with both younger pupils and older pupils being less likely to have identified SEN

  - Boys are over-represented relative to girls for most categories of SEN. The differences are most pronounced for ASD where boys are over-represented relative to girls 6:1 and BESD where boys are over-represented 4:1. For SpLD and SLCN boys are overrepresented 2.5:1 and for MLD/SLD by about 1.75:1. There is no over-representation of boys in the more clearly 'physiological' categories of SEN, i.e. sensory or physical needs and PMLD.

  - The most prevalent categories of SEN (BESD and MLD), which together account for 52% of pupils with SEN, are the most strongly associated with socio-economic disadvantage. Some categories have a significant but lower level of association (SLD, PMLD, PD, MSI, SpLD, and SLCN) and others have a weak relationship with socio-economic disadvantage (ASD, HI and VI).

The associations with year group, gender and socio-economic disadvantage need to be taken into account when examining the relationship between ethnicity and SEN. When this is done in our 'adjusted models', significant over- and under-representation of different minority ethnic groups relative to White British pupils remain but the associations between SEN and ethnic group are reduced. The extent of the remaining disproportionality varies by minority ethnic group and by category of SEN.

With respect to overall rate of being at School Action Plus or with a Statement

After controlling for year group, gender and socio-economic disadvantage, and compared to White British pupils:

- Traveller of Irish heritage and Gypsy/Roma pupils are 2.7 and 2.6 times more likely than White British pupils to have SEN
- Black-Caribbean pupils a have similar rate of identification to White British pupils;
- Black African pupils are less likely than White British to have identified SEN.
- Indian, Bangladeshi and Chinese pupils are less likely than White British pupils to have SEN; Pakistani pupils are under-represented but not to a substantial extent.

With respect to particular categories of SEN

After controlling for year group, gender and socio-economic disadvantage, and compared to White-British pupils:

- Traveller of Irish heritage pupils are more likely to have SEN in relation to MLD, SLD, SpLD and BESD, and less likely to have SEN in relation to ASD.
- Gypsy/Roma pupils are more likely to have SEN in relation to MLD, PMLD, HI and SLD and less likely to have SEN for ASD.
- Indian pupils are less likely to have SEN in relation to BESD, SpLD, ASD and MLD.
- Bangladeshi pupils are more likely to have SEN in relation to HI and less likely to have SEN in relation to BESD, ASD, SpLD, MLD and PD.
- Pakistani pupils are more likely to have SEN in relation to PMLD, VI, HI and MSI, and less likely to have SEN in relation to BESD, SpLD and ASD.

- Black Caribbean and Mixed White & Black-Caribbean pupils are more likely to have SEN in relation to BESD.

- Black African pupils are less likely to have SEN in relation to MLD, SpLD, BESD and PD.

- Black Other pupils are less likely to have SEN in relation to MLD, VI and PD.

- Chinese pupils are more likely to have SEN in relation to SLCN, but less likely to have SEN in relation to BESD, SpLD, MLD and PD.

- Past evidence of over-representation of Black Caribbean pupils in the MLD category has not been supported by the PLASC analysis: Black Caribbean (and Mixed White & Black Caribbean) pupils are represented in comparable proportions to White pupils.

Reasons for disproportionality

- There is strong evidence from our analysis of two broad groupings of SEN which differ with respect to the relative influences of physiological and societal/contextual factors.
    - Those categories where the nature of the SEN has a stronger physiological element e.g. profound hearing loss, and where the context is a relatively less important factor in the cause of the difficulties (although it is, of course, of great importance in terms of action to address the SEN).
    - Those categories of SEN that are more related to context, e.g. BESD. There are two relevant factors. Firstly, these SEN are defined in terms of the pupil's actions within a context, mainly the school and classroom. Furthermore, these needs are socially constructed in the sense that pupils' behaviour is interpreted in terms of expected patterns (norms) of behaviour. Secondly, there is evidence of a strong relationship for these categories with social disadvantage.

- The PLASC analysis shows that Black Caribbean pupils (and to a lesser extent Mixed White & Black Caribbean pupils) have a higher likelihood of being identified as having BESD than White British pupils; there is also evidence from national statistics (DfESc, 2005) of similar patterns of over-representation of Black Caribbean pupils among excluded and low-attaining pupils. The literature has suggested teacher and

school factors including racist attitudes and differential treatment of Black pupils as a reason for their over-representation within the BESD category. However, the fact that the PLASC analysis shows no over-representation for other Black groups raises questions about any simple conclusions based on this research. Rather, an interaction between a number of inter-related, and often self-perpetuating, factors seems more likely, including: teachers' perceptions and expectations of minority ethnic pupils, their understanding of different cultures, pupils' responses and reactions to this, and teachers' reactions to behaviours which they consider challenging.

- The research suggests greater incidence of genetic factors related to consanguinity as an important causative factor in the over-representation of Pakistani children for VI, HI, MSI, and PMLD and Bangladeshi pupils for HI. However, this is a complex field and care must be taken not to over-attribute these difficulties to consanguinity.

- The under-representation of all Asian groups and Chinese pupils for SpLD and ASD could suggest that there are sometimes problems in distinguishing learning difficulties from issues associated with English as an Additional Language.

- Late and low levels of take-up of health care among Asian groups because of poor communication (which could be due to EAL), low levels of knowledge of services and delays in diagnosis have been identified as additional risk factors.

- The high levels of SEN among Traveller groups appear to have a number of determining factors. These factors range from factors associated with school such as negative teacher attitudes, racism and bullying, and a curriculum perceived as lacking relevance to factors associated with Traveller cultures, such as high mobility, poor attendance and early drop out from school. However, the research base is limited and so conclusions for this group can only be indicative.

- Parent support within minority ethnic groups overall is equally as high (if not higher) than for the White population but some parents may experience barriers to involvement as a result of language difficulties.

- Poverty and socio-economic disadvantage are supported as important factors in those categories of SEN that are strongly associated with context: BESD and MLD.

- Poverty and socio-economic disadvantage appear not to be as important for those categories of SEN with strong physiological (within-child) causes, particularly sensory and physical needs, PMLD and ASD.

- The above results give a picture of the national situation regarding over- and under-representation of different minority groups with regard to SEN identification. However there is also substantial variation between LAs in these data. For example, while in general Pakistani pupils and White British pupils do not differ substantially in the likelihood of having an identified SEN, in 10 LAs Pakistani pupils are half as likely as White British pupils to have an identified SEN while in four LAs Pakistani pupils were 1.5 times more likely than White British pupils to have an identified SEN. Identifying and exploring such variation may help us to better understand the reasons for over- or under-representation.

Recommendations

Where possible we present recommendations targeted either at the Local Authority/Children's trust or at the national level, primarily DfES but also Department of Health (DH) and Teacher Development Agency (TDA). However, generally for all of these recommendations it will be important to ensure engagement at national and local levels and to engage all education practitioners including teachers, educational psychologists, advisory and support staff and health professionals (e.g. speech and language therapists, paediatricians).

Developing strategies within each Local Authority/Children's Trust

Local Authorities/Children's Trusts should:

- work together to consider the LA's analysis of its PLASC data against the national dataset in order to identify local patterns of over- and under-representation and to formulate appropriate action.

- make more use of the extended codes to examine the particular characteristics of their communities at a level of detail (e.g. the origin and demographics of groups such as Black African and Black Other will vary in different areas).

- examine the SEN-ethnicity interactions for their locality, seek to identify whether there are local factors of importance, and address emerging issues.

- Ensure that training and support is provided to schools to optimise the accuracy of identification of category and level of SEN.

- establish a two-way flow of information between those responsible for collecting and analysing PLASC data and other sections of the LA who provide services where the data are relevant. Thus (1) those delivering services (e.g. School Improvement Services, School Improvement Partners, Educational Psychology Services, Ethnic Minority Advisory Services and Education Welfare Services etc) should receive appropriate analyses of SEN and ethnicity data and (2) the services should provide feedback to help the LA/Children's Trust in the interpretation of the data.

- use the evidence produced in this report to support the development of Children's Services that meet the needs of children with SEN from minority ethnic groups.

- use the evidence to plan resources and commissioning strategies for pupils from minority ethnic groups identified as over-represented, e.g. Pakistani and Bangladeshi pupils for sensory impairment and PMLD.

Developing initiatives at a national level

- The DfES should work together with the Teacher Development Agency and the National Strategies to ensure that initial teacher training and guidance to schools include information about the influence on the identification of SEN of poverty, gender and ethnicity and to develop and disseminate strategies to address disproportionality.

- As the groups most characterised by over-representation, special attention is required to address the needs of Travellers, both those of Irish heritage and Gypsy-Roma, particularly with respect to Cognition and Learning Needs and BESD. A national approach is required to support teachers in further developing their understanding of the Travellers' cultures, including the variation within these two groups, and the development of positive curricular and teaching approaches to enhance these pupils' learning and reduce disaffection. In addition, further work is

necessary with Traveller families on the value of education and access to education during periods of mobility.

- Further work is required to reduce the over-representation of Black Caribbean and Mixed White and Black Caribbean pupils identified as having BESD. As this is not the case for Black African or Black Other pupils, an approach focussing on reducing racism against Black pupils generally is insufficiently focussed. Attention is necessary to distinguish the different needs of these groups. Positive approaches to engage the pupils and their parents and to focus on success, perhaps modelling on 'Aiming High' but with a specific additional SEN focus should be considered.

- The over-representation of Pakistani children for SEN concerning sensory needs (VI, HI and MSI) and PMLD, and of Bangladeshi children for HI, requires the active engagement of the Department of Health (DH). If, as appears to be the case, these children are at particular risk of sensory impairment as a result of consanguinity then this requires a sensitive strategy engaging the community in a consideration of risk associated with current practices.

- The over-representation of Pakistani pupils for sensory impairment and PMLD requires consideration in the national/regional planning of resources to meet the needs of children with these developmental difficulties.

- The over-representation of Chinese pupils with SLCN requires attention by the DfES and DH. The suitability and accuracy of assessments and intervention by speech and language therapists and educationists requires further research to ensure that different needs arising from the children having English as an Additional Language, compared with or in addition to developmental language difficulties, are recognised and addressed appropriately.

- The under-representation of all Asian and Chinese groups with respect to MLD, SpLD and ASD requires investigation of whether these children's needs are being appropriately recognised, or whether their EAL status is leading professionals to under-estimate the nature and severity of cognition and language needs. This will require investigation of the processes of identification and assessment, particularly those at School Action Plus and SEN statutory assessment.

- The PLASC dataset provides an important source of information and should be continued; DfES guidance to LAs/schools should be reviewed on a regular basis to optimise levels of accurate submission of SEN and ethnicity data.

- The effectiveness of LAs in providing training and support to schools regarding their PLASC data should also be monitored.

- Further research is necessary to utilize fully the unique national dataset offered by PLASC. For example investigation of the significant variations across LAs could provide a rich seam for better understanding of some of the origins and causes of disproportionality.

- A full analysis of PLASC can also be used to formulate specific research questions to be explored by further research. Examples of possible studies include:

    - The reasons for differential rates of BESD among different Black groups.
    - The effectiveness of support for Travellers.
    - The effectiveness of provision for parents with EAL, including inter-agency collaboration.
    - The effectiveness of provision for pupils newly arrived from other countries.
    - Patterns of different over- and under-representation for particular categories of SEN between LAs and an examination of the reasons for these.

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APPENDIX 1

GLOSSARY

DfES SEN Categories

ASD	Autistic Spectrum Disorders
BESD	Behavioural, Emotional and Social Difficulties
HI	Hearing Impairment
MLD	Moderate Learning Difficulties
MSI	Multi-Sensory Impairment
PD	Physical Disability
PMLD	Profound and Multiple Learning Difficulties
SLCN	Speech, Language and Communication Needs
SpLD	Specific Learning Difficulties
VI	Visual Impairment

Other SEN categories found in the literature review

EMR	Educable Mentally Retarded
EMH	Educable Mentally Handicapped
ESN(M)	Educationally Subnormal (Mild)
LD	Learning Disabilities
MiLD	Mild Learning Difficulties
MMR	Mild Mental Retardation

Other

DfES	Department for Education and Skills
EAL	English as an Additional Language
EMS	Education Management Systems
ESL	English Second Language
FSM	Free School Meals
FSME	Free School Meals Entitlement
IDACI	Income Deprivation Affecting Children Index
LA	Local Authority
OFSTED	Office for Standards in Education
PEP	Principal Educational Psychologist
PLASC	Pupil Level Annual School Census
PRU	Pupil Referral Unit
SA	School Action
SAP	School Action Plus
SEN	Special Educational Needs

APPENDIX 2

NEW ETHNIC CODES FOR PLASC*

* obtainable from:

http://www.standards.dfes.gov.uk/ethnicminorities/resources/DfES_Extended_CodesJan05.xls

DfES Extended Codes	Approved Extended Categories	DfES Main Code	Sub- Category	Main Category	Further Comments
WBRI	**White - British**	**WBRI**	**White - British**	**White**	**Main code (WBRI) may not be used if any of the extended categories below (WCOR-WWEL) are used.**
WCOR	White - Cornish	WBRI	White - British	White	
WENG	White - English	WBRI	White - British	White	
WSCO	White - Scottish	WBRI	White - British	White	
WWEL	White - Welsh	WBRI	White - British	White	
WOWB	Other White British	WBRI	White - British	White	If LEAs collect information for "White - British" pupils using any of the **extended** categories above (WCOR-WWEL), this category must be used as a catch all for all other White pupils within the main "White - British" category. If used, cannot have category "White - British" (WBRI).
WIRI	**White - Irish**	**WIRI**	**White - Irish**	**White**	
WIRT	**Traveller of Irish Heritage**	**WIRT**	**Traveller of Irish Heritage**	**White**	
WOTH	**Any Other White Background**	**WOTH**	**Any Other White Background**	**White**	**Main code (WOTH) may not be used if any of the extended categories below (WALB-WWEU) are used.**
WALB	Albanian	WOTH	Any Other White Background	White	Excluding Kosovan.
WBOS	Bosnian-Herzegovinian	WOTH	Any Other White Background	White	
WCRO	Croatian	WOTH	Any Other White Background	White	
WGRE	Greek/ Greek Cypriot	WOTH	Any Other White Background	White	If LEAs do not wish to distinguish between pupils of Greek and Greek Cypriot heritage they may place all Greek/ Greek Cypriot in this category. If used, cannot have categories "Greek" (WGRK) or "Greek Cypriot" (WGRC).
WGRK	Greek	WOTH	Any Other White Background	White	If used, cannot have category "Greek/ Greek Cypriot" (WGRE). If used, must also have category "Greek Cypriot" (WGRC).
WGRC	Greek Cypriot	WOTH	Any Other White Background	White	If used, cannot have category "Greek/ Greek Cypriot" (WGRE). If used, must also have category "Greek" (WGRK).
WITA	Italian	WOTH	Any Other White Background	White	
WKOS	Kosovan	WOTH	Any Other White Background	White	
WPOR	Portuguese	WOTH	Any Other White Background	White	
WSER	Serbian	WOTH	Any Other White Background	White	
WTUR	Turkish/ Turkish Cypriot	WOTH	Any Other White Background	White	If LEAs do not wish to distinguish between pupils of Turkish and Turkish Cypriot heritage they may place all Turkish/ Turkish Cypriot in this category. If used, cannot have categories "Turkish" (WTUK) or "Turkish Cypriot" (WTUC).
WTUK	Turkish	WOTH	Any Other White Background	White	If used, cannot have category "Turkish/ Turkish Cypriot" (WTUR). If used, must also have category "Turkish Cypriot" (WTUC).

WTUC	Turkish Cypriot	WOTH	Any Other White Background	White	If used, cannot have category "Turkish/ Turkish Cypriot" (WTUR). If used, must also have category "Turkish" (WTUK).
WEUR	White European	WOTH	Any Other White Background	White	If LEAs do not collect information on White European pupils on the basis of country of origin or East/ West European, they may place all White European pupils here.
WEEU	White Eastern European	WOTH	Any Other White Background	White	Including Russian, Latvian, Ukrainian, Polish, Bulgarian, Czech, Slovak, Lithuanian, Montenegran and Romanian.
WWEU	White Western European	WOTH	Any Other White Background	White	Including Italian, French, German, Spanish, Portuguese and Scandinavian.
WOTW	White Other	WOTH	Any Other White Background	White	If LEAs collect information for "Any Other White Background" pupils using any of the **extended** categories above (WALB-WWEU), this category must be used as a catch all for all other White pupils within the main "Any Other White Background" category. If used, cannot have category "Any Other White Background" (WOTH).
WROM	**Gypsy / Roma**	**WROM**	**Gypsy / Roma**	**White**	This category includes pupils who identify themselves as Gypsies and or Romanies, and or Travellers, and or Traditional Travellers, and or Romanichals, and or Romanichal Gypsies and or Welsh Gypsies / Kaale, and or Scottish Travellers / Gypsies, and or Roma. It includes all children of a Gypsy ethnic background or Roma ethnic background, irrespective of whether they are nomadic, semi nomadic or living in static accommodation. It should not include Fairground (Showman's) children; the children travelling with circuses; or the children of New Travellers or Bargees unless, of course, their ethnic status is that which is mentioned above.
MWBC	**White and Black Caribbean**	**MWBC**	**White and Black Caribbean**	**Mixed / Dual Background**	
MWBA	**White and Black African**	**MWBA**	**White and Black African**	**Mixed / Dual Background**	
MWAS	**White and Asian**	**MWAS**	**White and Asian**	**Mixed / Dual Background**	**Main code (MWAS) may not be used if any of the extended categories below (MWAP-MWAI) are used.**
MWAP	White and Pakistani	MWAS	White and Asian	Mixed / Dual Background	
MWAI	White and Indian	MWAS	White and Asian	Mixed / Dual Background	
MWAO	White and Any Other Asian Background	MWAS	White and Asian	Mixed / Dual Background	If LEAs collect information for "White and Asian" pupils using any of the **extended** categories above (MWAP-MWAI), this category must be used as a catch all for all other Mixed/Dual Background pupils within the main "White and Asian" category. If used, cannot have category "White and Asian" (MWAS).
MOTH	**Any Other Mixed Background**	**MOTH**	**Any Other Mixed Background**	**Mixed / Dual Background**	**Main code (MOTH) may not be used if any of the extended categories below (MAOE-MWCH) are used.**
MAOE	Asian and Any Other Ethnic Group	MOTH	Any Other Mixed Background	Mixed / Dual Background	
MABL	Asian and Black	MOTH	Any Other Mixed Background	Mixed / Dual Background	
MACH	Asian and Chinese	MOTH	Any Other Mixed Background	Mixed / Dual Backgrou	

			Background	Background	
MBOE	Black and Any Other Ethnic Group	MOTH	Any Other Mixed Background	Mixed / Dual Background	
MBCH	Black and Chinese	MOTH	Any Other Mixed Background	Mixed / Dual Background	
MCOE	Chinese and Any Other Ethnic Group	MOTH	Any Other Mixed Background	Mixed / Dual Background	
MWOE	White and Any Other Ethnic Group	MOTH	Any Other Mixed Background	Mixed / Dual Background	
MWCH	White and Chinese	MOTH	Any Other Mixed Background	Mixed / Dual Background	
MOTM	Other Mixed Background	MOTH	Any Other Mixed Background	Mixed / Dual Background	If LEAs collect information for "Any Other Mixed Background" pupils using any of the **extended** categories above (MAOE-MWCH), this category must be used as a catch all for all other Mixed/Dual Background pupils within the main "Any Other Mixed Background" category. If used, cannot have category "Any Other Mixed Background" (MOTH).
AIND	**Indian**	**AIND**	**Indian**	**Asian or Asian British**	
APKN	**Pakistani**	**APKN**	**Pakistani**	**Asian or Asian British**	**Main code (APKN) may not be used if any of the extended categories below (AMPK-AKPA) are used.**
AMPK	Mirpuri Pakistani	APKN	Pakistani	Asian or Asian British	
AKPA	Kashmiri Pakistani	APKN	Pakistani	Asian or Asian British	
AOPK	Other Pakistani	APKN	Pakistani	Asian or Asian British	If LEAs collect information for "Pakistani" pupils using any of the **extended** categories above (AMPK-AKPA), this category must be used as a catch all for all other Pakistani pupils within the main "Pakistani" category. If used, cannot have category "Pakistani" (APKN).
ABAN	**Bangladeshi**	**ABAN**	**Bangladeshi**	**Asian or Asian British**	
AOTH	**Any Other Asian Background**	**AOTH**	**Any Other Asian Background**	**Asian or Asian British**	**Main code (AOTH) may not be used if any of the extended categories below (AAFR-ASLT) are used.**
AAFR	African Asian	AOTH	Any Other Asian Background	Asian or Asian British	Including East and South African Asians.
AKAO	Kashmiri Other	AOTH	Any Other Asian Background	Asian or Asian British	Kashmiri respondents not wishing to be classified under Asian Pakistani should use this category.
ANEP	Nepali	AOTH	Any Other Asian Background	Asian or Asian British	
ASNL	Sinhalese	AOTH	Any Other Asian Background	Asian or Asian British	
ASLT	Sri Lankan Tamil	AOTH	Any Other Asian Background	Asian or Asian British	All other Tamil pupils should be placed wherever appropriate in the categories above.
AOTA	Other Asian	AOTH	Any Other Asian Background	Asian or Asian British	If LEAs collect information for "Any Other Asian Background" pupils using any of the **extended** categories above (AAFR-ASLT), this category must be used as a catch all for all other Asian pupils within the main "Any Other Asian Background" category. If used, cannot have category "Any Other Asian Background" (AOTH).

BCRB	**Black Caribbean**	**BCRB**	**Black Caribbean**	**Black or Black British**	**Including Antigua and Barbuda, Bahamas, Barbados, Dominica, Grenada, Guyana, Jamaica, St Kitts and Nevis, St Lucia, St Vincent & Grenadines, Trinidad and Tobago.**
BAFR	**Black - African**	**BAFR**	**Black - African**	**Black or Black British**	**Main code (BAFR) may not be used if any of the extended categories below (BANN-BSUD) are used.**
BANN	Black - Angolan	BAFR	Black - African	Black or Black British	
BCON	Black - Congolese	BAFR	Black - African	Black or Black British	
BGHA	Black - Ghanaian	BAFR	Black - African	Black or Black British	
BNGN	Black - Nigerian	BAFR	Black - African	Black or Black British	
BSLN	Black - Sierra Leonian	BAFR	Black - African	Black or Black British	
BSOM	Black - Somali	BAFR	Black - African	Black or Black British	
BSUD	Black - Sudanese	BAFR	Black - African	Black or Black British	Including Sudanese of Egyptian origin.
BAOF	Other Black African	BAFR	Black - African	Black or Black British	Including Black South African, Angolan, Zimbabwean, Ethiopian, Rwandan and Ugandan. If LEAs collect information for "Black - African" pupils using any of the **extended** categories above (BANN-BSUD), this category must be used as a catch all for all other Black African pupils within the main "Black - African" category. If used, cannot have category "Black - African" (BAFR).
BOTH	**Any Other Black Background**	**BOTH**	**Any Other Black Background**	**Black or Black British**	**Main code (BOTH) may not be used if any of the extended categories below (BEUR-BNAM) are used.**
BEUR	Black European	BOTH	Any Other Black Background	Black or Black British	
BNAM	Black North American	BOTH	Any Other Black Background	Black or Black British	Include Black North American and Canadian.
BOTB	Other Black	BOTH	Any Other Black Background	Black or Black British	If LEAs collect information for "Any Other Black Background" pupils using any of the **extended** categories above (BEUR-BNAM), this category must be used as a catch all for all other Black pupils within the main "Any Other Black Background" category. If used, cannot have category "Any Other Black Background" (AOTH).
CHNE	**Chinese**	**CHNE**	**Chinese**	**Chinese**	**Main code (CHNE) may not be used if any of the extended categories below (CHKC-CTWN) are used.**
CHKC	Hong Kong Chinese	CHNE	Chinese	Chinese	
CMAL	Malaysian Chinese	CHNE	Chinese	Chinese	
CSNG	Singaporean Chinese	CHNE	Chinese	Chinese	
CTWN	Taiwanese	CHNE	Chinese	Chinese	
COCH	Other Chinese	CHNE	Chinese	Chinese	If LEAs collect information for "Chinese" pupils using any of the **extended** categories above (CHKC-CTWN), this category must be used as a catch all for all other Chinese pupils within the main "Chinese" category. If used, cannot have category "Chinese" (CHNE).
OOTH	**Any Other Ethnic Group**	**OOTH**	**Any Other Ethnic Group**	**Any Other Ethnic Group**	**Main code (OOTH) may not be used if any of the extended categories below (OAFG-OYEM) are used.**
OAFG	Afghan	OOTH	Any Other Ethnic Group	Any Other Ethnic	

				Group	
OARA	Arab Other	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	Include Palestinian, Kuwaiti, Jordanian and Saudi Arabian.
OEGY	Egyptian	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OFIL	Filipino	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OIRN	Iranian	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OIRQ	Iraqi	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OJPN	Japanese	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OKOR	Korean	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OKRD	Kurdish	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	Include Kurdish pupils from Iraq, Iran and Turkey.
OLAM	Latin/ South/ Central American	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	Include all pupils from Central/ South America, Cuba and Belize.
OLEB	Lebanese	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OLIB	Libyan	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OMAL	Malay	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	Including Malaysian other than Malaysian Chinese.
OMRC	Moroccan	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OPOL	Polynesian	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	Including Fijian, Tongan, Samoan and Tahitian.
OTHA	Thai	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OVIE	Vietnamese	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	
OYEM	Yemeni	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	

OOEG	Other Ethnic Group	OOTH	Any Other Ethnic Group	Any Other Ethnic Group	If LEAs collect information for "Any Other Ethnic Group" pupils using any of the **extended** categories above (OAFG-OYEM), this category must be used as a catch all for all other pupils within the main "Any Other Ethnic Group" category. If used, cannot have category "Any Other Ethnic Group" (OOTH).
REFU	**Refused**	**REFU**	**Refused**	**Refused**	
NOBT	**Information Not Yet Obtained**	**NOBT**	**Information Not Yet Obtained**	**Information Not Yet Obtained**	

APPENDIX 2a

Changes in the way DfES has collected ethnicity data occurred between 2001 and 2002 and again between 2002 and 2003. Codes were revised in 2003 in line with the 2001 national population Census. In 2002, both old and new ethnic codes were in use. In 2003, the new ethnic codes were compulsory (Appendix 1). At this stage another level of extended codes were also added for optional use by LAs. Changes were also made so that recording the source of the classification – be it pupil, parent, current or previous school – was also compulsory. Four letter codes have been specified and the list will be a useful resource during school-to-school transfers between LEAs.

PLASC now allows for analysis of data on a national level and so allows exploration of reported minority ethnic pupils' underachievement (e.g. Gillborn and Gipps, 1996; Gillborn and Mirza, 2000), based on relatively consistent ethnic categorisation which was previously missing (Blair, 2002). Prior to this, Blair claims that data collection and use was inconsistent across LAs e.g. some differentiated between Bangladeshi, Indian and Pakistani pupils, while others used 'Asian' to incorporate all three. Some LAs and schools differentiated between African and Caribbean background pupils, and others did not. Some LAs and schools collected data but did not monitor it and others analysed the data but did not take the next steps to devise strategies for raising the achievement of pupils experiencing educational disadvantage. It was not until the establishment of consistent ethnic categories in PLASC 2004 that this was possible. Data could be analysed to provide a picture of levels of attainment and to cross reference with information on social class or social disadvantage indicated by free school meals, post codes, gender and so for example, ethnicity.

APPENDIX 3

THE LITERATURE REVIEW METHODOLOGY

Data Collection

A systematic, rigorous method of data collection, review and analysis was employed. Specific search criteria and parameters were used to find available and relevant information in various locations. The categories of ethnicity and of SEN used in the DfES report on PLASC 2002 and 2004 data (DfES, 2005) were used as criteria in the initial stages of the search for literature. These criteria were subsequently revised according to the results of our analysis of the PLASC data (refer Section 3 of this report), and provided a framework for investigation.

The following search parameters were used:
Country: England (and to a lesser extent the US)
Dates: 1990 – 2005 (including seminal work from the 1980s)
Language: English
Subject areas: Social Sciences and Medical (including Health and Social Care)

Searches were conducted in a range of social sciences and medical databases, on-line search sites, on-line abstracts, journals, reports, dissertations and relevant websites. The list of databases was potentially exhaustive and given the time constraints, the most significant and potentially useful were identified through consultation with identified professionals in the field, the university subject librarian and negotiation with the project team and members of the project Steering Group. These included:

- ASSIA (Applied Social Sciences Index and Abstracts)
- British Education Index
- CBCA Fulltext Education (Canada)
- CERUK – Current Educational Research in the UK
- ERIC
- ESDS (Economic and Social Data Service)
- Humanities Citation Index
- International Bibliography of the Social Sciences (IBSS)
- PsycINFO (for psychology and related fields)
- REGARD (social science research Funded by ESRC)

- Sociological Abstracts
- Social Sciences Citation Index
- Social Services Abstracts
- EBSCO EJS
- IngentaConnect
- ZETOC
- GoogleScholar
- Medline
- Cochrane Library
- PubMed Central (US)
- CliniWeb
- Medseek (UK)
- Meds Library
- MedicalWorld Search
- WebMedLit

'Grey' literature such as recent LEA and schools data e.g. PLASC guidelines and submissions, and LEA internal reports relating to ethnic monitoring and SEN were collected when contact was made with LEAs involved in the focus groups.

Citation lists and attached abstracts generated by various databases were scanned according to their relevance to the study. Hand searches were also carried out. As the books and articles arrived, the references cited in them were checked and further articles were obtained.

Criteria used to establish high relevance included the fact that firstly, it had to be evidence-based i.e. studies on 'SEN' or 'ethnicity' which addresses both these dimensions; secondly, that studies had to involve children of school-going age (i.e. approximately 16 and under) and/or parents of such children, and finally studies which raise issues linked to SEN and ethnicity.

Data Analysis

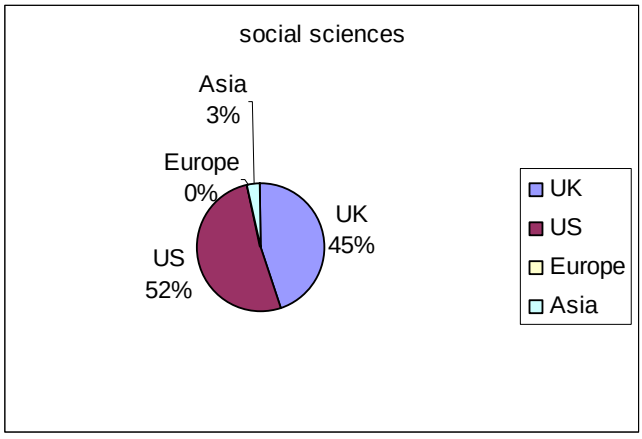
All retrieved texts underwent a preliminary review based on the key themes emerging from each one. The emerging themes were then categorised crudely, linking them to the main

SEN and ethnic category reflected in main areas for investigation. The process of categorization was gradually refined as a detailed review of each document was completed. Several pieces of work were rejected because they did not fall within the scope of their review. Some were deemed less relevant due to their discursive nature while others presented arguments which were not evidence-based, had weak methodologies, or findings that were questionable. These documents were nevertheless included in some way as part of the overall analysis.

Detailed reviewing was carried out using a template with relevant fields for analysis (refer Appendix 4). The following fields were analysed statistically - the year of publication, theme, design, country, type of area, and sample information (i.e. no. of participants, age group, sector of education, socio-economic status, gender, ethnicity, SEN, sample selection) and research methods. Remaining fields were analysed qualitatively, i.e. project description, purpose, main findings and implications. The findings were reported in line with emerging themes from the qualitative analysis and contextualized with quantitative details for each document or study pertaining mainly to research design and methods used, location, sample, age group and ethnic categories.

Table 1 represents the distribution of relevant documents found in relation to location/country.

Table 1: Percentage of documents per location

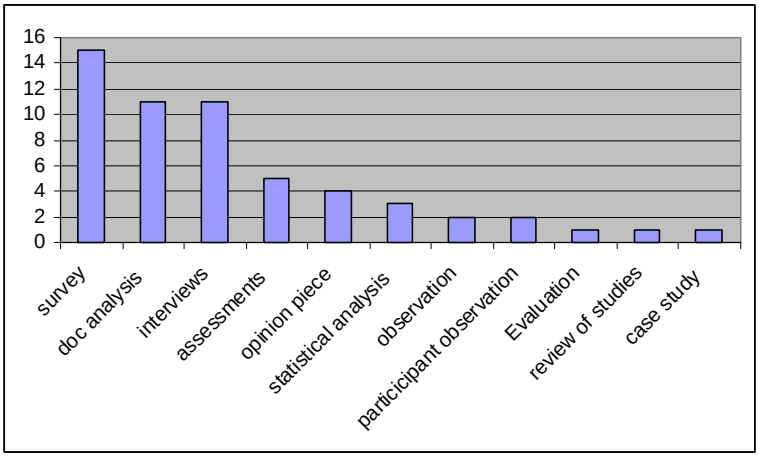


There is clearly a plethora of information regarding under- and over-representation of minority ethnic groups in special educational needs in the US. However, due to the parameters established at the outset, particularly in view of the differences in terms of ethnic and SEN categorization across geographical and political boundaries, it was decided to limit

the number of U.S material used. The total number of documents included the US is slightly more (52%) than those from the UK (45%) where there is clearly a paucity of research in this area. The UK documents are inclusive of England and to a limited extent Wales and Scotland. There were only 2 relevant documents selected from other countries in Europe e.g. Norway and Denmark on issues relating to refugee children.

Table 2 reflects the types of design and research methods used in the studies reported on. In some cases (10), different combinations of methods were used. Details are contained in Section 4.

Table 2: Design and Research methods



The majority (15 or 27%) of the studies involved surveys. Of these, there was an equal distribution of self-completion, face-to-face, telephone and assisted completion of questionnaires involving teachers, LAs, minority ethnic parents and other significant members of households. The second most used method was analysis of documents and information and interviews (both 20%). The former included resources and schemes of work, annual returns submitted schools, school registers, written information to LAs, case records, health care data for children with special health needs, and transcription of team meetings. Interviews were held with teachers, headteachers, LA officers and special education personnel, and to a lesser extent parents and pupils. Assessments (9%) included mainly teacher ratings and assessments of children's achievement levels, behaviour, social and cognitive attainment. There were only single cases of yearly self-reports and peer nomination type assessments. Remaining types of research methods included statistical analysis, observation, participant observation, evaluation, review of studies and a case study. A few significant opinion pieces (or non-studies and reflections) were added in the review.

APPENDIX 4

Individual document review framework

Full Reference				
Theme				
Purpose				
Design	Lit review	Opinion piece	Action research	Case study
	Experimental study	Evaluation		
Country/area	**country**		**Type of area (circle)** Rural / urban /	
Sample	**No. of participants**		**Age/year group**	
	Sector of education	Primary	**Socio-economic status**	**Gender balance** % Male: % Female: Mixed:
	secondary	Special	**Ethnicity**	
	Independent	Foundation	**SEN**	
	maintained		**How was sample selected?**	
Research methods	questionnaires	Rating scales	observation	assessments
	Other:	**Source of information (detail)**		
Project description				
Main findings	(in relation to area of interest/theme)			
Implications (as identified by authors)				
Reviewer's comments				

(adapted from NFER review framework)

CEDAR
Centre for Educational Development

Appraisal and Research

THE UNIVERSITY OF WARWICK

wie Warwick Institute of Education

Special educational needs and ethnicity: A brief questionnaire

Your name (optional): ……

Your full job title: ……

Your email address: …….. **Contact telephone no.**: ……

Code:

Documentation: In some of the questions below we ask if you can supply further information. This means either a copy of any relevant reports, papers, analyses etc. or a reference such as a webpage where we can access a copy.

1. National analyses of Pupil Level Annual School Census (PLASC) data indicate that certain ethnic groups are over-represented and others under-represented within the various types of SEN. In your professional experience, are any ethnic groups over-represented/under-represented within the SEN population in your LEA? If yes, which groups and for which types of SEN? (Please supply any relevant information).

2. The DfES started collecting data on type of SEN within PLASC 2004. Does your LEA analyse these data on type of SEN by ethnicity? If yes, have any local issues in relation to over-representation or under-representation been identified? (Please supply any supporting information).

3. If you have identified any groups in (1) or (2) above, are you able to offer any explanations as to the possible *causes* of the over-representation or under-representation?

4. If you have identified any groups in (1) or (2) above, have you undertaken any specific actions to further investigate / address the issue?

5. Do you have a view on the accuracy of the 2005 PLASC with reference to SEN and/or ethnicity data? Is there any reason to believe the data for your LEA could be misleading?

6. Are there any other issues/comments you would like to make regarding SEN and ethnicity?

7. We intend to organise a small number of focus groups to discuss these issues. Please indicate below if you would be interested in contributing to a focus group.
I **(would / would not)** be willing to participate in a focus group (delete as appropriate). (If you wish to nominate a colleague for possible participation in a focus group, please give their contact details below).

Thank you for your time in completing this questionnaire. Please return it in the pre-paid envelope provided to Mrs. Jean McElroy, CEDAR, University of Warwick, Coventry CV4 7AL by **1st October 2005.**	*For further information about this evaluation please contact:* ***Sulochini Pather, University of Warwick, Coventry CV4 7AL Tel: 024 7652 4174 Email: S.Pather@warwick.ac.uk***

Appendix 6

FOCUS GROUP MEMBERSHIP

LONDON – 7th Dec

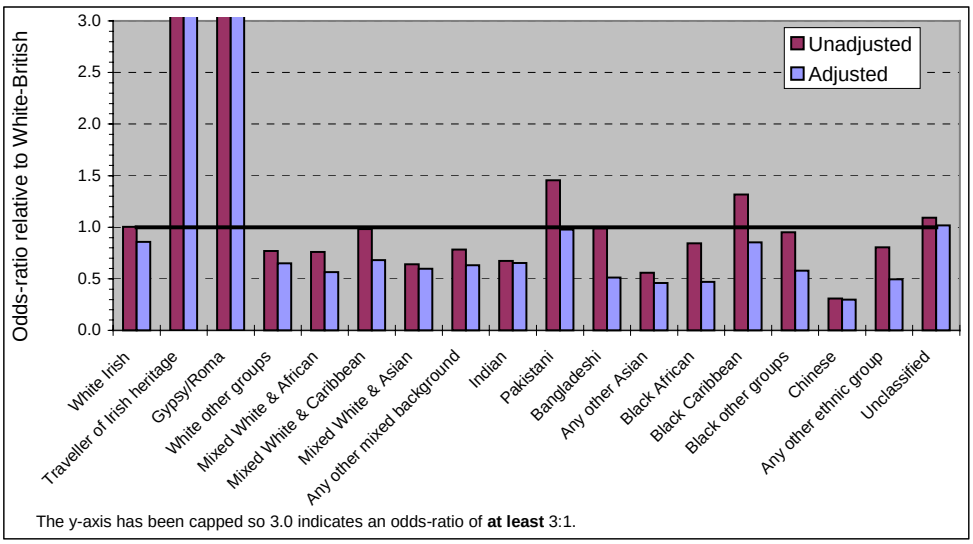
	Role	Region
1	Head of Special Educ & Client Services	Islington
2	Specialist Teacher Co-ordinator (Ethnic Minority Achievement Service)	Portsmouth
3	Senior Education Psychologist (Psychology Service)	City of Bristol
4	Assistant Principal EP	City of Bristol
5	Development Manager for Ethnic Minorities and Languages	Surrey
6	Consultant SEN Officer and Ed Psych	City of London
7	School Improvement Officer	Newham

MANCHESTER – 14th Dec

	Role	Region
1	Assistant District Coordinator	Manchester
2	Inclusion Development Officer – School Improvement	Liverpool
3	Ethnic Minority Community and Parent Links Officer	Liverpool
4	Deputy Head SEN/Manager SEN Advisory and teaching service	Oldham
5	Educational Psychologist	Oldham
6	Acting PEP	Bolton

APPENDIX 7

Moderate Learning Difficulties (School Action Plus or Statemented)

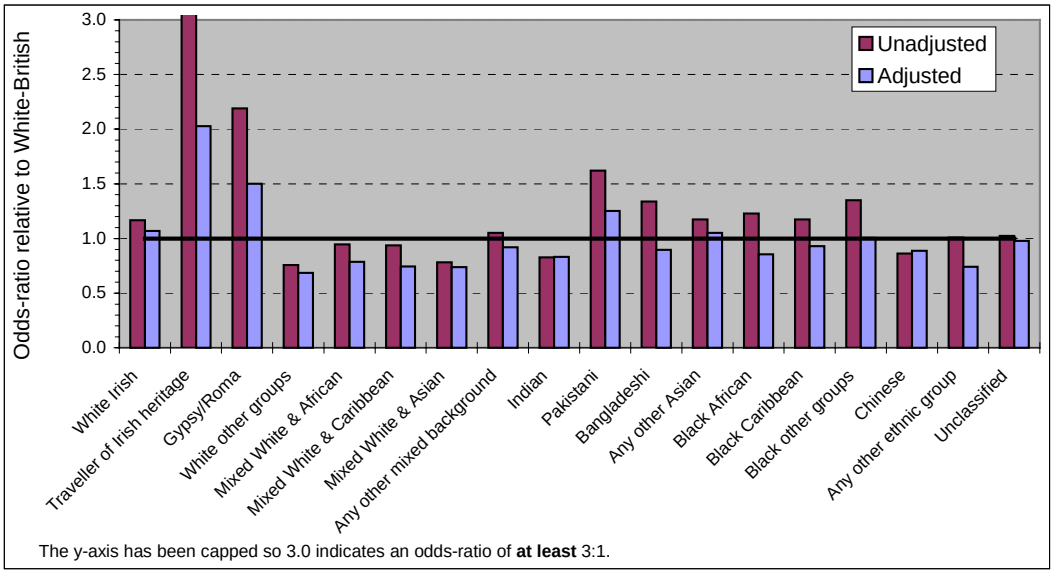


Logistic Regression

		Model 1	Model 2		
Variables		Unadjusted OR	B	Sig.	Adjusted OR
Ethnicity	White Irish	1.00	-0.15	0.000	0.86
	Traveller of Irish heritage	***5.96***	1.19	0.000	***3.30***
	Gypsy/Roma	***5.19***	1.25	0.000	***3.48***
	White other groups	0.77	-0.43	0.000	***0.65***
	Mixed White & African	0.76	-0.57	0.000	***0.56***
	Mixed White & Caribbean	0.98	-0.39	0.000	0.68
	Mixed White & Asian	***0.64***	-0.52	0.000	***0.60***
	Any other mixed background	0.79	-0.46	0.000	***0.63***
	Indian	0.67	-0.43	0.000	***0.65***
	Pakistani	1.46	-0.02	ns	0.98
	Bangladeshi	0.99	-0.67	0.000	***0.51***
	Any other Asian	***0.56***	-0.78	0.000	***0.46***
	Black African	0.84	-0.75	0.000	***0.47***
	Black Caribbean	1.32	-0.16	0.000	0.85
	Black other groups	0.95	-0.55	0.000	***0.58***
	Chinese	***0.31***	-1.21	0.000	***0.30***
	Any other ethnic group	0.81	-0.70	0.000	***0.50***
	Unclassified	1.09	0.02	ns	1.02
Year Group	Y2 vs. Y1	-	0.65	0.000	***1.91***
	Y3 vs. Y1	-	0.95	0.000	***2.58***
	Y4 vs. Y1	-	1.08	0.000	***2.93***
	Y5 vs. Y1	-	1.16	0.000	***3.18***
	Y6 vs. Y1	-	1.18	0.000	***3.24***
	Y7 vs. Y1	-	1.06	0.000	***2.90***
	Y8 vs. Y1	-	1.02	0.000	***2.77***
	Y9 vs. Y1	-	0.94	0.000	***2.55***
	Y10 vs. Y1	-	0.89	0.000	***2.43***
	Y11 vs. Y1	-	0.87	0.000	***2.38***
sex	Girls vs. boys	-	-0.57	0.000	***0.56***
FSM	entitled to Free School Meal	-	0.83	0.000	***2.28***
IDACI	Income Deprivation Affecting Children (2SD)	-	0.33	0.000	***1.95***
	Constant	-	-4.55	0.000	0.01
Estimated R squared (Nagelkerke):		0.058			

Notes: ns=not statistically significant; Red indicate ratios >1.5:1, blue ratios <0.67:1, relative to White-British.

Severe Learning Difficulties (School Action Plus or Statemented)

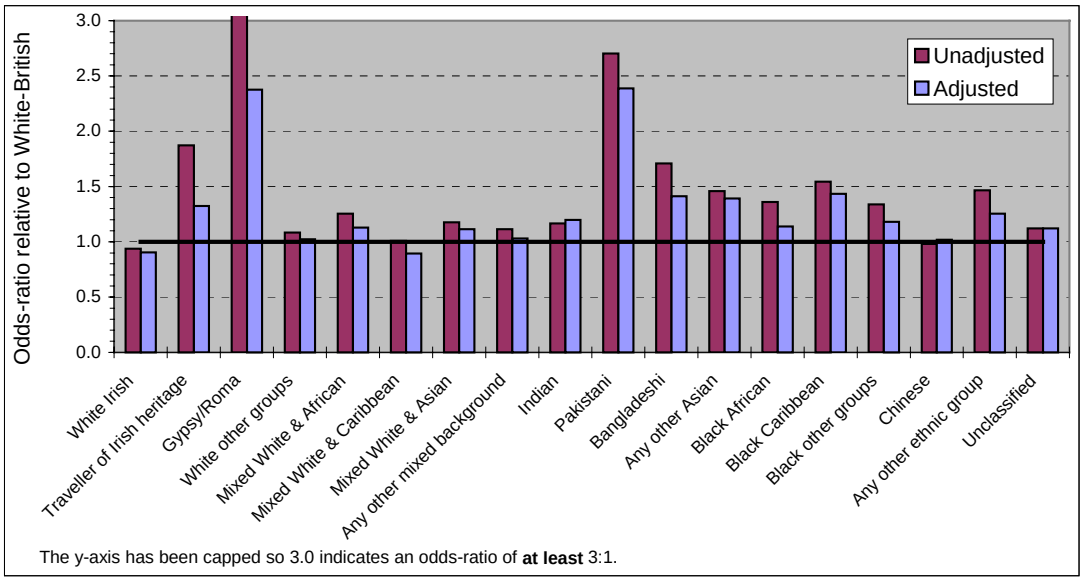


The y-axis has been capped so 3.0 indicates an odds-ratio of **at least** 3:1.

Logistic Regression		Model 1	Model 2		
Variables		Unadjusted OR	B	Sig.	Adjusted OR
Ethnicity	White Irish	1.17	0.07	ns	1.07
	Traveller of Irish heritage	***3.35***	0.71	0.000	***2.03***
	Gypsy/Roma	***2.19***	0.41	0.003	***1.50***
	White other groups	0.76	-0.38	0.000	0.69
	Mixed White & African	0.95	-0.24	ns	0.79
	Mixed White & Caribbean	0.94	-0.30	0.000	0.74
	Mixed White & Asian	0.78	-0.30	0.002	0.74
	Any other mixed background	1.05	-0.08	ns	0.92
	Indian	0.83	-0.18	0.000	0.83
	Pakistani	***1.62***	0.22	0.000	1.25
	Bangladeshi	1.34	-0.11	0.041	0.90
	Any other Asian	1.17	0.05	ns	1.05
	Black African	1.23	-0.16	0.000	0.85
	Black Caribbean	1.17	-0.07	ns	0.93
	Black other groups	1.35	0.01	ns	1.01
	Chinese	0.86	-0.12	ns	0.89
	Any other ethnic group	1.01	-0.30	0.000	0.74
	Unclassified	1.02	-0.02	ns	0.98
Year Group	Y2 vs. Y1	-	0.13	0.000	1.14
	Y3 vs. Y1	-	0.25	0.000	1.28
	Y4 vs. Y1	-	0.35	0.000	1.42
	Y5 vs. Y1	-	0.37	0.000	1.45
	Y6 vs. Y1	-	0.43	0.000	***1.53***
	Y7 vs. Y1	-	0.32	0.000	1.37
	Y8 vs. Y1	-	0.23	0.000	1.26
	Y9 vs. Y1	-	0.21	0.000	1.24
	Y10 vs. Y1	-	0.22	0.000	1.24
	Y11 vs. Y1	-	0.22	0.000	1.25
sex	Girls vs. boys	-	-0.55	0.000	***0.58***
FSM	entitled to Free School Meal	-	0.83	0.000	***2.30***
IDACI	Income Deprivation Affecting Children (2SD)	-	0.09	0.000	1.19
	Constant	-	-5.79	0.000	0.00
Estimated R squared (Nagelkerke):		0.020			

Notes: ns=not statistically significant; Red indicates ratios >1.5:1, blue ratios <0.67:1, relative to White-British.

Profound & Multiple Learning Difficulties (School Action Plus/Statemented)

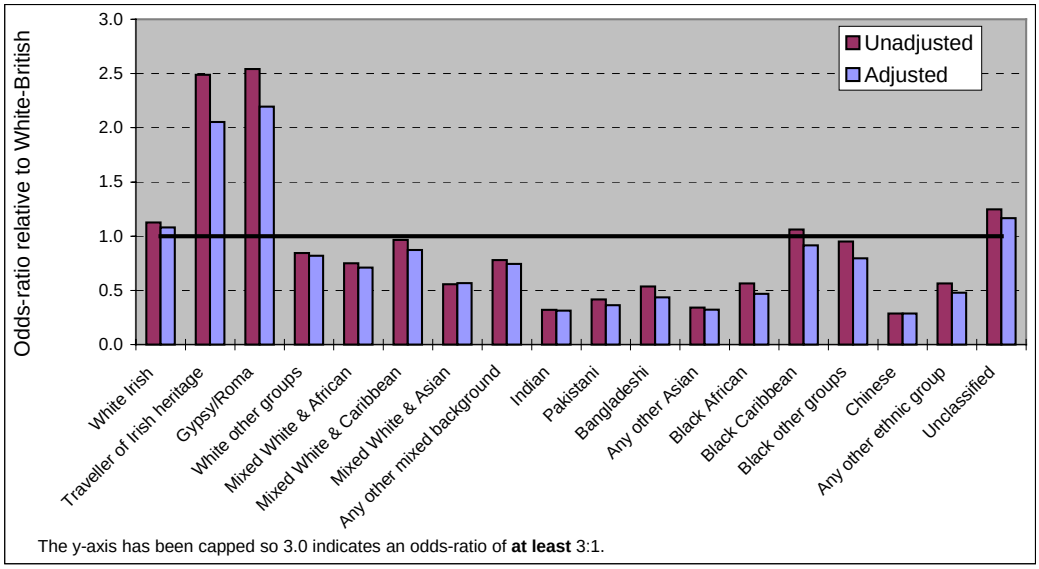


The y-axis has been capped so 3.0 indicates an odds-ratio of **at least** 3:1.

Logistic Regression		Model 1	Model 2		
Variables		Unadjusted OR	B	Sig.	Adjusted OR
Ethnicity	White Irish	0.94	-0.10	ns	0.90
	Traveller of Irish heritage	**1.87**	0.28	ns	1.32
	Gypsy/Roma	**3.11**	0.87	0.000	***2.38***
	White other groups	1.08	0.02	ns	1.02
	Mixed White & African	1.25	0.12	ns	1.13
	Mixed White & Caribbean	1.01	-0.11	ns	0.89
	Mixed White & Asian	1.18	0.11	ns	1.11
	Any other mixed background	1.11	0.03	ns	1.03
	Indian	1.17	0.18	0.041	1.20
	Pakistani	**2.70**	0.87	0.000	***2.39***
	Bangladeshi	**1.71**	0.35	0.001	1.41
	Any other Asian	1.46	0.33	0.014	1.39
	Black African	1.36	0.13	ns	1.14
	Black Caribbean	**1.55**	0.36	0.000	1.43
	Black other groups	1.34	0.17	ns	1.18
	Chinese	0.98	0.02	ns	1.02
	Any other ethnic group	1.46	0.23	ns	1.26
	Unclassified	1.12	0.11	ns	1.12
Year Group	Y2 vs. Y1	-	-0.05	ns	0.95
	Y3 vs. Y1	-	-0.16	0.007	0.85
	Y4 vs. Y1	-	-0.11	ns	0.89
	Y5 vs. Y1	-	-0.18	0.003	0.84
	Y6 vs. Y1	-	-0.21	0.001	0.81
	Y7 vs. Y1	-	-0.26	0.000	0.77
	Y8 vs. Y1	-	-0.26	0.000	0.77
	Y9 vs. Y1	-	-0.28	0.000	0.75
	Y10 vs. Y1	-	-0.26	0.000	0.77
	Y11 vs. Y1	-	-0.32	0.000	0.72
sex	Girls vs. boys	-	-0.22	0.000	0.80
FSM	entitled to Free School Meal	-	0.64	0.000	***1.90***
IDACI	Income Deprivation Affecting Children (2SD)	-	-0.05	0.002	0.91
	Constant	-	-6.95	0.000	0.00
Estimated R squared (Nagelkerke):		0.009			

Notes: ns=not statistically significant; Red indicates ratios >1.5:1, blue ratios <0.67:1, relative to White-British.

Specific Learning Difficulties (SpLD) (School Action Plus or Statemented)



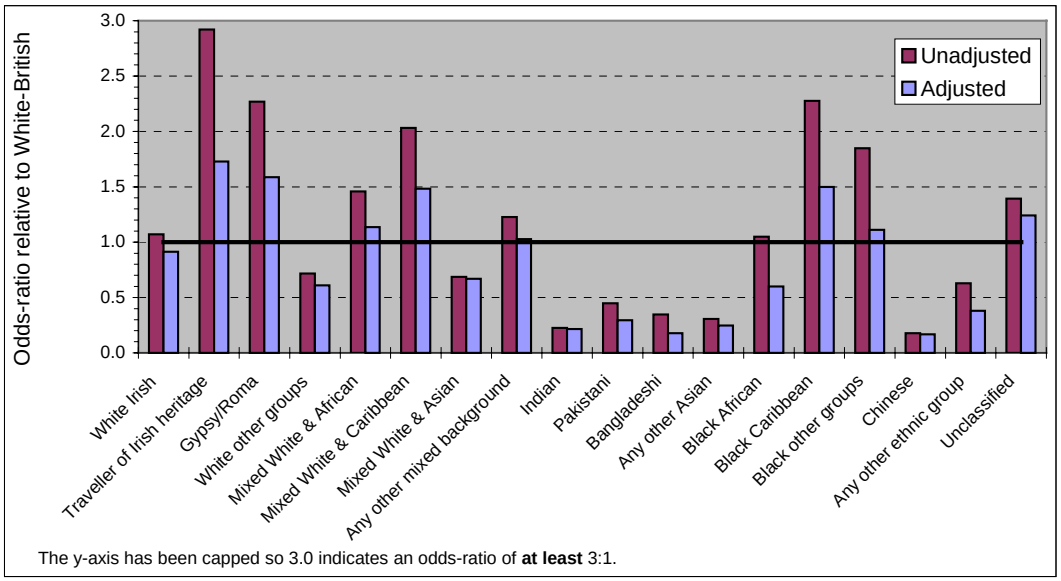
The y-axis has been capped so 3.0 indicates an odds-ratio of **at least** 3:1.

Logistic Regression		Model 1	Model 2		
Variables		Unadjusted OR	B	Sig.	Adjusted OR
Ethnicity	White Irish	1.13	0.08	ns	1.08
	Traveller of Irish heritage	***2.49***	0.72	0.000	***2.05***
	Gypsy/Roma	***2.54***	0.79	0.000	***2.19***
	White other groups	0.84	-0.20	0.000	0.82
	Mixed White & African	0.75	-0.34	0.000	0.71
	Mixed White & Caribbean	0.97	-0.14	0.000	0.87
	Mixed White & Asian	***0.56***	-0.57	0.000	***0.57***
	Any other mixed background	0.78	-0.30	0.000	0.74
	Indian	***0.32***	-1.16	0.000	***0.31***
	Pakistani	***0.42***	-1.01	0.000	***0.36***
	Bangladeshi	***0.54***	-0.83	0.000	***0.43***
	Any other Asian	***0.34***	-1.13	0.000	***0.32***
	Black African	***0.56***	-0.76	0.000	***0.47***
	Black Caribbean	1.06	-0.09	0.002	0.92
	Black other groups	0.95	-0.23	0.000	0.80
	Chinese	***0.29***	-1.25	0.000	***0.29***
	Any other ethnic group	***0.56***	-0.74	0.000	***0.48***
	Unclassified	1.25	0.15	0.000	1.17
Year Group	Y2 vs. Y1	-	0.88	0.000	***2.42***
	Y3 vs. Y1	-	1.43	0.000	***4.19***
	Y4 vs. Y1	-	1.74	0.000	***5.69***
	Y5 vs. Y1	-	1.90	0.000	***6.70***
	Y6 vs. Y1	-	1.97	0.000	***7.15***
	Y7 vs. Y1	-	1.75	0.000	***5.75***
	Y8 vs. Y1	-	1.75	0.000	***5.78***
	Y9 vs. Y1	-	1.66	0.000	***5.25***
	Y10 vs. Y1	-	1.64	0.000	***5.13***
	Y11 vs. Y1	-	1.59	0.000	***4.91***
sex	Girls vs. boys	-	-0.92	0.000	***0.40***
FSM	entitled to Free School Meal	-	0.35	0.000	1.42
IDACI	Income Deprivation Affecting Children (2SD)	-	0.10	0.000	1.23
	Constant	-	-5.61	0.000	0.00

Estimated R squared (Nagelkerke): 0.042

Notes: ns=not statistically significant; Red indicates ratios >1.5:1, blue ratios <0.67:1, relative to White-British.

Behaviour, Emotional and Social Development (School Action Plus/Statemented)



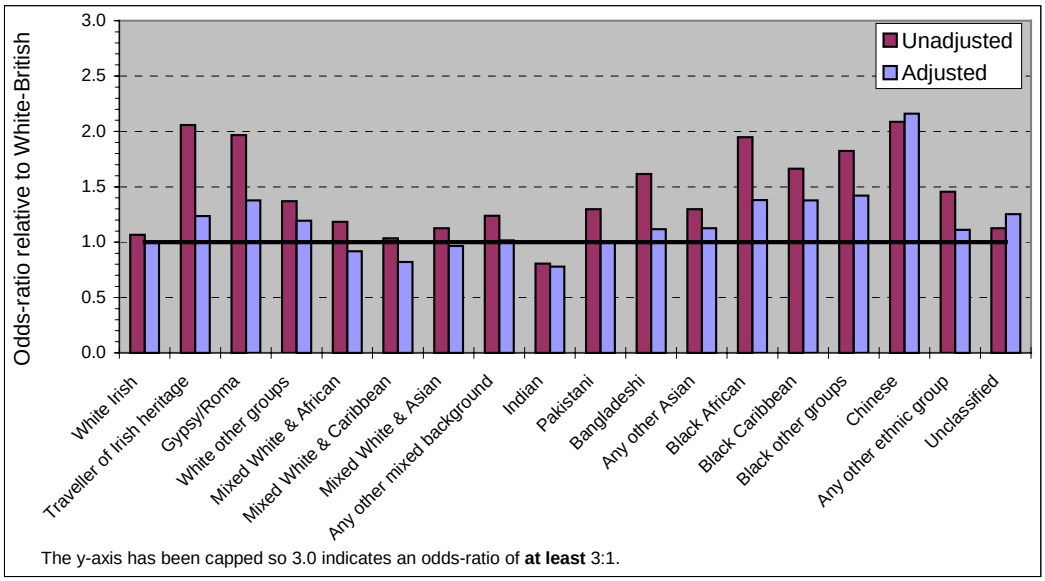
The y-axis has been capped so 3.0 indicates an odds-ratio of **at least** 3:1.

Logistic Regression		Model 1	Model 2		
Variables		Unadjusted OR	B	Sig.	Adjusted OR
Ethnicity	White Irish	1.07	-0.09	0.048	0.91
	Traveller of Irish heritage	***2.92***	0.55	0.000	***1.73***
	Gypsy/Roma	***2.27***	0.46	0.000	***1.59***
	White other groups	0.72	-0.49	0.000	***0.61***
	Mixed White & African	1.46	0.13	0.005	1.14
	Mixed White & Caribbean	***2.03***	0.39	0.000	1.48
	Mixed White & Asian	0.69	-0.40	0.000	0.67
	Any other mixed background	1.23	0.03	ns	1.03
	Indian	***0.23***	-1.53	0.000	***0.22***
	Pakistani	***0.45***	-1.22	0.000	***0.29***
	Bangladeshi	***0.35***	-1.73	0.000	***0.18***
	Any other Asian	***0.31***	-1.40	0.000	***0.25***
	Black African	1.05	-0.51	0.000	***0.60***
	Black Caribbean	***2.28***	0.40	0.000	***1.50***
	Black other groups	***1.85***	0.11	0.001	1.11
	Chinese	***0.18***	-1.79	0.000	***0.17***
	Any other ethnic group	***0.63***	-0.97	0.000	***0.38***
	Unclassified	1.39	0.22	0.000	1.24
Year Group	Y2 vs. Y1	-	0.28	0.000	1.33
	Y3 vs. Y1	-	0.37	0.000	1.44
	Y4 vs. Y1	-	0.50	0.000	***1.65***
	Y5 vs. Y1	-	0.61	0.000	***1.84***
	Y6 vs. Y1	-	0.71	0.000	***2.03***
	Y7 vs. Y1	-	0.68	0.000	***1.97***
	Y8 vs. Y1	-	0.81	0.000	***2.24***
	Y9 vs. Y1	-	0.96	0.000	***2.62***
	Y10 vs. Y1	-	1.07	0.000	***2.92***
	Y11 vs. Y1	-	1.06	0.000	***2.89***
sex	Girls vs. boys	-	-1.41	0.000	***0.24***
FSM	entitled to Free School Meal	-	0.89	0.000	***2.42***
IDACI	Income Deprivation Affecting Children (2SD)	-	0.34	0.000	***1.97***
	Constant	-	-4.38	0.000	0.01

Estimated R squared (Nagelkerke): 0.098

Notes: ns=not statistically significant; Red indicates ratios >1.5:1, blue ratios <0.67:1, relative to White-British.

Speech, Language & Communication Needs (School Action Plus/Statemented)

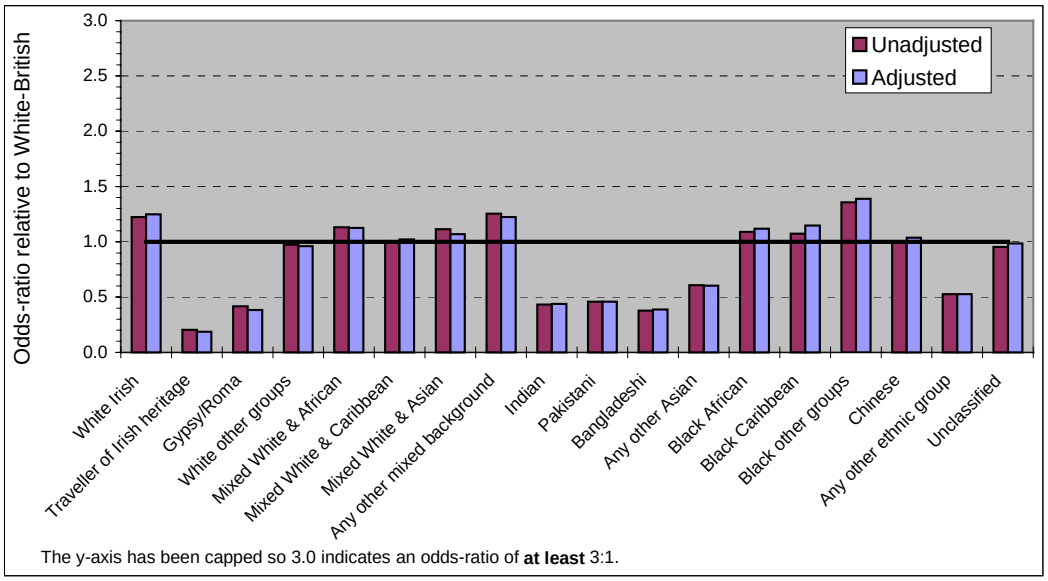


The y-axis has been capped so 3.0 indicates an odds-ratio of **at least** 3:1.

Logistic Regression		Model 1	Model 2		
Variables		Unadjusted OR	B	Sig.	Adjusted OR
Ethnicity	White Irish	1.07	0.00	ns	1.00
	Traveller of Irish heritage	***2.06***	0.21	ns	1.23
	Gypsy/Roma	***1.97***	0.32	0.001	1.38
	White other groups	1.37	0.18	0.000	1.19
	Mixed White & African	1.18	-0.09	ns	0.92
	Mixed White & Caribbean	1.03	-0.20	0.000	0.82
	Mixed White & Asian	1.13	-0.04	ns	0.97
	Any other mixed background	1.24	0.02	ns	1.02
	Indian	0.81	-0.25	0.000	0.78
	Pakistani	1.30	0.00	ns	1.00
	Bangladeshi	***1.62***	0.11	0.001	1.12
	Any other Asian	1.30	0.12	0.006	1.13
	Black African	***1.95***	0.32	0.000	1.38
	Black Caribbean	***1.66***	0.32	0.000	1.38
	Black other groups	***1.82***	0.35	0.000	1.42
	Chinese	***2.09***	0.77	0.000	***2.16***
	Any other ethnic group	1.45	0.10	0.005	1.11
	Unclassified	1.13	0.23	0.000	1.25
Year Group	Y2 vs. Y1	-	-0.11	0.000	0.89
	Y3 vs. Y1	-	-0.32	0.000	0.73
	Y4 vs. Y1	-	-0.54	0.000	***0.58***
	Y5 vs. Y1	-	-0.69	0.000	***0.50***
	Y6 vs. Y1	-	-0.81	0.000	***0.44***
	Y7 vs. Y1	-	-1.11	0.000	***0.33***
	Y8 vs. Y1	-	-1.30	0.000	***0.27***
	Y9 vs. Y1	-	-1.50	0.000	***0.22***
	Y10 vs. Y1	-	-1.67	0.000	***0.19***
	Y11 vs. Y1	-	-1.83	0.000	***0.16***
sex	Girls vs. boys	-	-0.84	0.000	***0.43***
FSM	entitled to Free School Meal	-	0.40	0.000	1.49
IDACI	Income Deprivation Affecting Children (2SD)	-	0.13	0.000	1.31
	Constant	-	-3.72	0.000	0.02
Estimated R squared (Nagelkerke):		0.053			

Notes: ns=not statistically significant; Red indicates ratios >1.5:1, blue ratios <0.67:1, relative to White-British.

Autistic Spectrum Disorder (SAP/Statemented)



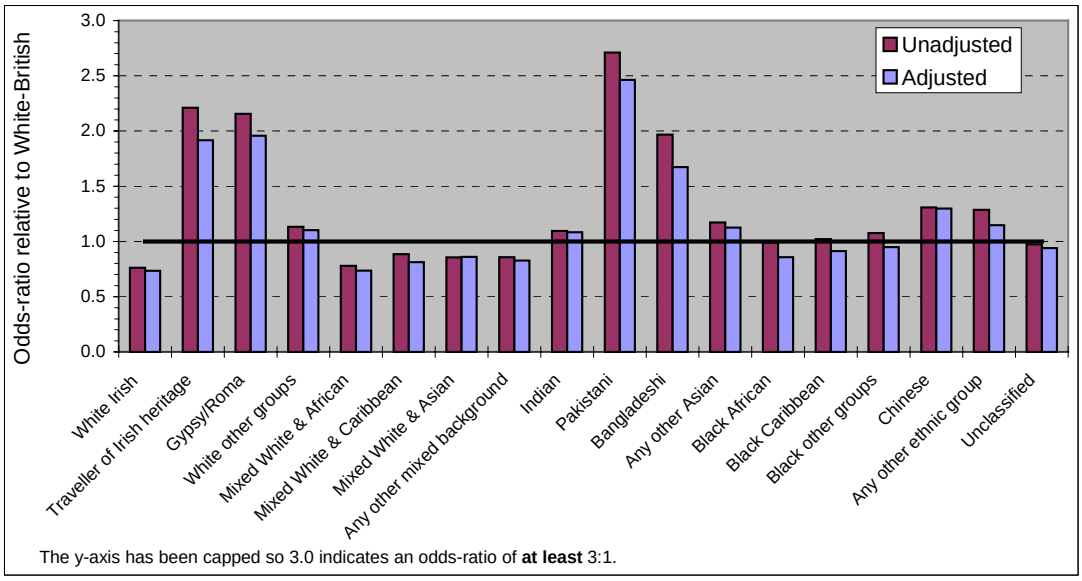
The y-axis has been capped so 3.0 indicates an odds-ratio of **at least** 3:1.

Logistic Regression		Model 1	Model 2		
Variables		Unadjusted OR	B	Sig.	Adjusted OR
Ethnicity	White Irish	1.22	0.22	0.008	1.25
	Traveller of Irish heritage	***0.20***	-1.69	0.001	***0.19***
	Gypsy/Roma	***0.42***	-0.96	0.000	***0.38***
	White other groups	0.97	-0.04	ns	0.96
	Mixed White & African	1.13	0.12	ns	1.13
	Mixed White & Caribbean	1.01	0.02	ns	1.02
	Mixed White & Asian	1.11	0.07	ns	1.07
	Any other mixed background	1.25	0.20	0.000	1.22
	Indian	***0.43***	-0.83	0.000	***0.44***
	Pakistani	***0.46***	-0.78	0.000	***0.46***
	Bangladeshi	***0.38***	-0.95	0.000	***0.39***
	Any other Asian	***0.61***	-0.51	0.000	***0.60***
	Black African	1.09	0.11	0.004	1.12
	Black Caribbean	1.07	0.14	0.003	1.15
	Black other groups	1.36	0.33	0.000	1.39
	Chinese	1.00	0.04	ns	1.04
	Any other ethnic group	***0.53***	-0.64	0.000	***0.53***
	Unclassified	0.95	-0.01	ns	0.99
Year Group	Y2 vs. Y1	-	0.13	0.000	1.14
	Y3 vs. Y1	-	0.17	0.000	1.18
	Y4 vs. Y1	-	0.10	0.000	1.11
	Y5 vs. Y1	-	0.10	0.000	1.11
	Y6 vs. Y1	-	0.07	0.010	1.07
	Y7 vs. Y1	-	-0.05	ns	0.95
	Y8 vs. Y1	-	-0.19	0.000	0.82
	Y9 vs. Y1	-	-0.31	0.000	0.73
	Y10 vs. Y1	-	-0.47	0.000	***0.62***
	Y11 vs. Y1	-	-0.63	0.000	***0.53***
sex	Girls vs. boys	-	-1.77	0.000	***0.17***
FSM	entitled to Free School Meal	-	0.08	0.000	1.08
IDACI	Income Deprivation Affecting Children (2SD)	-	-0.07	0.000	0.87
	Constant	-	-4.73	0.000	0.01

Estimated R squared (Nagelkerke): 0.052

Notes: ns=not statistically significant; Red indicates ratios >1.5:1, blue ratios <0.67:1, relative to White-British.

Hearing Impaired (SAP/Statemented)



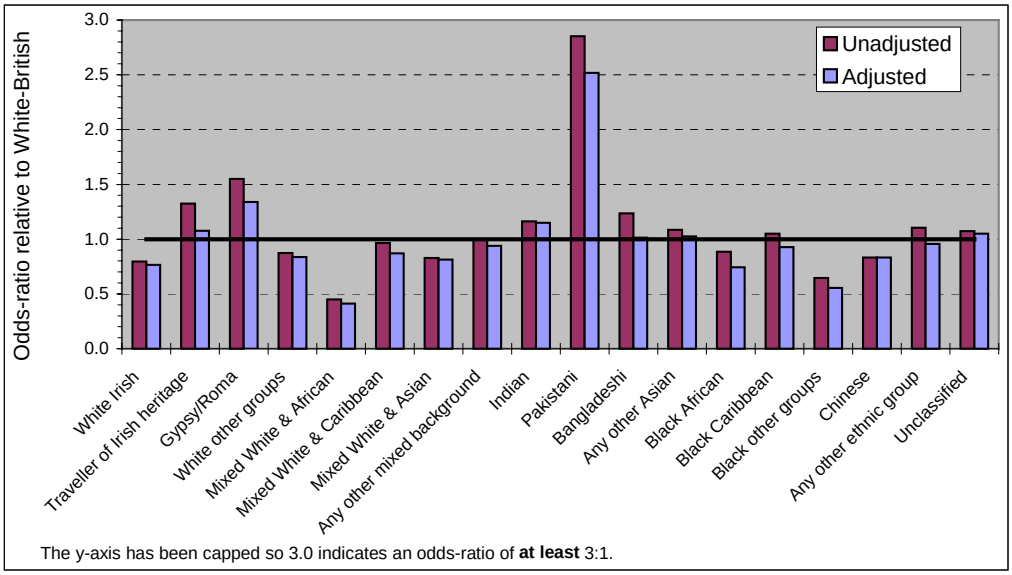
The y-axis has been capped so 3.0 indicates an odds-ratio of **at least** 3:1.

Logistic Regression		Model 1	Model 2		
Variables		Unadjusted OR	B	Sig.	Adjusted OR
Ethnicity	White Irish	0.76	-0.31	ns	0.73
	Traveller of Irish heritage	***2.21***	0.65	ns	***1.92***
	Gypsy/Roma	***2.16***	0.67	0.001	***1.96***
	White other groups	1.13	0.10	ns	1.10
	Mixed White & African	0.78	-0.31	ns	0.74
	Mixed White & Caribbean	0.88	-0.21	ns	0.81
	Mixed White & Asian	0.86	-0.15	ns	0.86
	Any other mixed background	0.86	-0.19	ns	0.83
	Indian	1.09	0.08	ns	1.08
	Pakistani	***2.71***	0.90	0.000	***2.46***
	Bangladeshi	***1.97***	0.51	0.000	***1.67***
	Any other Asian	1.17	0.12	ns	1.13
	Black African	0.99	-0.15	ns	0.86
	Black Caribbean	1.02	-0.09	ns	0.91
	Black other groups	1.08	-0.05	ns	0.95
	Chinese	1.31	0.26	ns	1.30
	Any other ethnic group	1.29	0.14	ns	1.15
	Unclassified	0.97	-0.06	ns	0.94
Year Group	Y2 vs. Y1	-	0.16	0.000	1.18
	Y3 vs. Y1	-	0.19	0.001	1.21
	Y4 vs. Y1	-	0.22	0.000	1.25
	Y5 vs. Y1	-	0.27	0.000	1.31
	Y6 vs. Y1	-	0.25	0.000	1.28
	Y7 vs. Y1	-	0.25	0.000	1.28
	Y8 vs. Y1	-	0.34	0.000	1.40
	Y9 vs. Y1	-	0.38	0.000	1.46
	Y10 vs. Y1	-	0.36	0.000	1.43
	Y11 vs. Y1	-	0.42	0.000	***1.52***
sex	Girls vs. boys	-	-0.06	0.000	0.94
FSM	entitled to Free School Meal	-	0.26	0.002	1.30
IDACI	Income Deprivation Affecting Children (2SD)	-	0.08	0.000	1.16
	Constant	-	-6.65	0.000	0.00

Estimated R squared (Nagelkerke): 0.006

Notes: ns=not statistically significant; Red indicates ratios >1.5:1, blue ratios <0.67:1, relative to White-British.

Visual Impairment (SAP/Statemented)

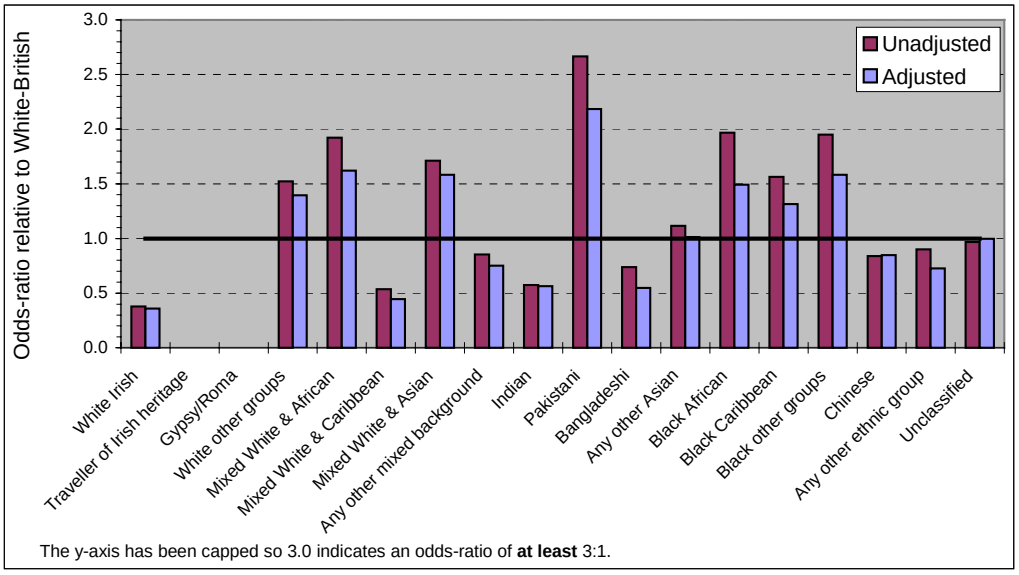


Logistic Regression		Model 1	Model 2		
Variables		Unadjusted OR	B	Sig.	Adjusted OR
Ethnicity	White Irish	0.80	-0.27	ns	0.76
	Traveller of Irish heritage	1.32	0.07	ns	1.07
	Gypsy/Roma	***1.55***	0.29	ns	1.34
	White other groups	0.87	-0.18	ns	0.84
	Mixed White & African	***0.45***	-0.89	0.012	***0.41***
	Mixed White & Caribbean	0.97	-0.14	ns	0.87
	Mixed White & Asian	0.83	-0.21	ns	0.81
	Any other mixed background	1.00	-0.06	ns	0.94
	Indian	1.16	0.14	ns	1.15
	Pakistani	***2.85***	0.92	0.000	***2.52***
	Bangladeshi	1.24	0.01	ns	1.01
	Any other Asian	1.09	0.03	ns	1.03
	Black African	0.89	-0.30	0.003	0.74
	Black Caribbean	1.05	-0.08	ns	0.93
	Black other groups	***0.64***	-0.59	0.015	***0.55***
	Chinese	0.83	-0.18	ns	0.83
	Any other ethnic group	1.10	-0.04	ns	0.96
	Unclassified	1.07	0.05	ns	1.05
Year Group	Y2 vs. Y1	-	0.16	0.008	1.18
	Y3 vs. Y1	-	0.19	0.002	1.21
	Y4 vs. Y1	-	0.21	0.001	1.23
	Y5 vs. Y1	-	0.22	0.000	1.24
	Y6 vs. Y1	-	0.14	0.028	1.15
	Y7 vs. Y1	-	0.17	0.005	1.19
	Y8 vs. Y1	-	0.26	0.000	1.30
	Y9 vs. Y1	-	0.13	0.039	1.14
	Y10 vs. Y1	-	0.23	0.000	1.25
	Y11 vs. Y1	-	0.18	0.004	1.20
sex	Girls vs. boys	-	-0.30	0.000	0.74
FSM	entitled to Free School Meal	-	0.31	0.000	1.36
IDACI	Income Deprivation Affecting Children (2SD)	-	0.08	0.000	1.18
	Constant	-	-7.04	0.000	0.00

Estimated R squared (Nagelkerke): 0.007

Notes : ns=not statistically significant; Red indicates ratios >1.5:1, blue ratios <0.67:1, relative to White-British.

Multi-Sensory Impairment (MSI) (SAP/Statemented)



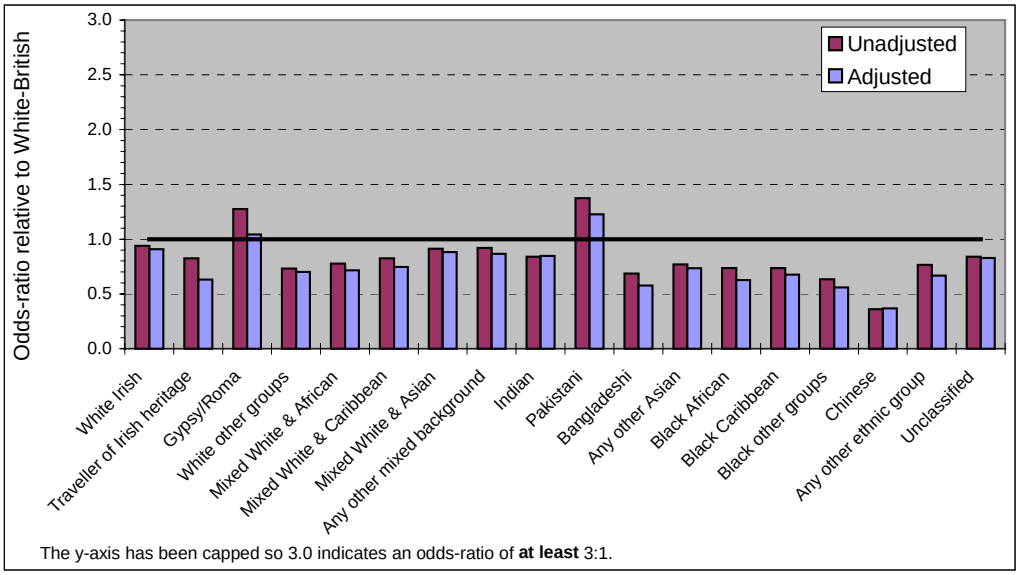
The y-axis has been capped so 3.0 indicates an odds-ratio of **at least** 3:1.

Logistic Regression		Model 1	Model 2		
Variables		Unadjusted OR	B	Sig.	Adjusted OR
Ethnicity	White Irish	***0.38***	-1.03	ns	***0.36***
	Traveller of Irish heritage	***0.00***	-12.46	ns	***0.00***
	Gypsy/Roma	***0.00***	-12.36	ns	***0.00***
	White other groups	***1.52***	0.33	ns	1.40
	Mixed White & African	***1.92***	0.48	ns	***1.62***
	Mixed White & Caribbean	***0.53***	-0.81	ns	***0.45***
	Mixed White & Asian	***1.71***	0.46	ns	***1.58***
	Any other mixed background	0.85	-0.29	ns	0.75
	Indian	***0.57***	-0.57	ns	***0.57***
	Pakistani	***2.66***	0.78	0.000	***2.19***
	Bangladeshi	0.74	-0.60	ns	***0.55***
	Any other Asian	1.12	0.01	ns	1.01
	Black African	***1.97***	0.40	0.043	1.49
	Black Caribbean	***1.56***	0.27	ns	1.31
	Black other groups	***1.95***	0.46	ns	***1.58***
	Chinese	0.84	-0.16	ns	0.85
	Any other ethnic group	0.90	-0.32	ns	0.73
	Unclassified	0.97	0.00	ns	1.00
Year Group	Y2 vs. Y1	-	0.06	ns	1.06
	Y3 vs. Y1	-	0.07	ns	1.08
	Y4 vs. Y1	-	0.11	ns	1.11
	Y5 vs. Y1	-	-0.01	ns	0.99
	Y6 vs. Y1	-	0.06	ns	1.06
	Y7 vs. Y1	-	-0.18	ns	0.83
	Y8 vs. Y1	-	-0.06	ns	0.94
	Y9 vs. Y1	-	-0.50	0.006	***0.61***
	Y10 vs. Y1	-	-0.74	0.000	***0.48***
	Y11 vs. Y1	-	-0.50	0.007	***0.60***
sex	Girls vs. boys	-	-0.30	0.000	0.74
FSM	entitled to Free School Meal	-	0.41	0.000	***1.50***
IDACI	Income Deprivation Affecting Children (2SD)	-	0.11	0.006	1.25
	Constant	-	-8.92	0.000	0.00

Estimated R squared (Nagelkerke): 0.011

Notes : ns=not statistically significant; Red indicates ratios >1.5:1, blue ratios <0.67:1, relative to White-British.

Physical Difficulty (SAP or Statemented)

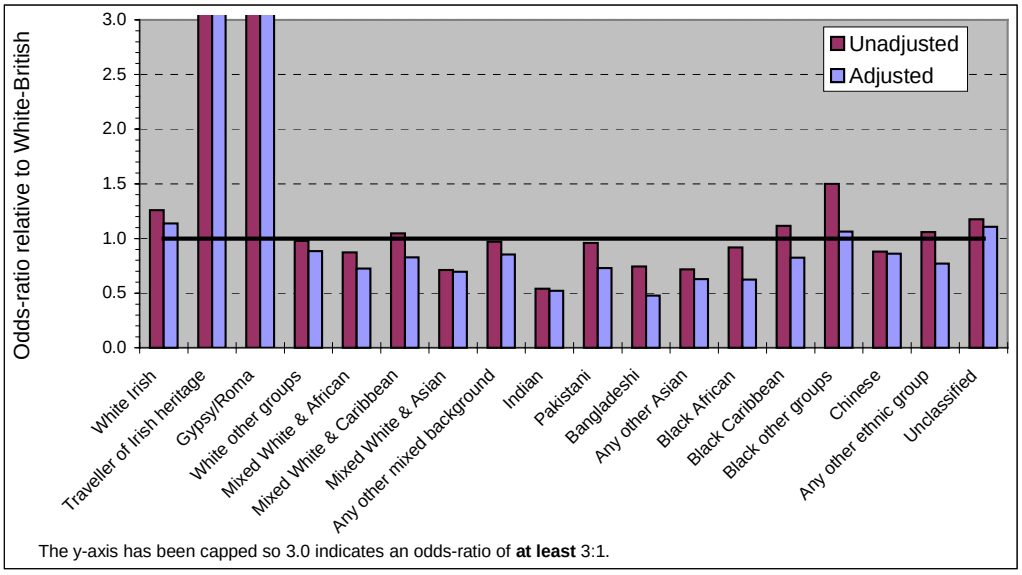


Logistic Regression		Model 1	Model 2		
Variables		Unadjusted OR	B	Sig.	Adjusted OR
Ethnicity	White Irish	0.94	-0.10	ns	0.91
	Traveller of Irish heritage	0.82	-0.46	ns	***0.63***
	Gypsy/Roma	1.27	0.04	ns	1.04
	White other groups	0.73	-0.36	0.000	0.70
	Mixed White & African	0.78	-0.34	0.019	0.71
	Mixed White & Caribbean	0.83	-0.29	0.000	0.75
	Mixed White & Asian	0.91	-0.13	ns	0.88
	Any other mixed background	0.92	-0.14	0.045	0.87
	Indian	0.84	-0.17	0.001	0.85
	Pakistani	1.37	0.20	0.000	1.23
	Bangladeshi	0.69	-0.55	0.000	***0.58***
	Any other Asian	0.77	-0.31	0.001	0.73
	Black African	0.74	-0.47	0.000	***0.63***
	Black Caribbean	0.74	-0.39	0.000	0.68
	Black other groups	***0.63***	-0.58	0.000	***0.56***
	Chinese	***0.36***	-1.00	0.000	***0.37***
	Any other ethnic group	0.76	-0.41	0.000	***0.67***
	Unclassified	0.84	-0.19	0.000	0.83
Year Group	Y2 vs. Y1	-	0.09	0.004	1.10
	Y3 vs. Y1	-	0.02	ns	1.02
	Y4 vs. Y1	-	-0.02	ns	0.98
	Y5 vs. Y1	-	-0.03	ns	0.97
	Y6 vs. Y1	-	-0.06	ns	0.95
	Y7 vs. Y1	-	-0.07	0.027	0.93
	Y8 vs. Y1	-	-0.10	0.002	0.90
	Y9 vs. Y1	-	-0.06	ns	0.94
	Y10 vs. Y1	-	-0.05	ns	0.96
	Y11 vs. Y1	-	-0.05	ns	0.95
sex	Girls vs. boys	-	-0.31	0.000	0.74
FSM	entitled to Free School Meal	-	0.48	0.000	***1.61***
IDACI	Income Deprivation Affecting Children (2SD)	-	0.00	ns	1.00
	Constant	-	-5.61	0.000	0.00

Estimated R squared (Nagelkerke): 0.006

Notes : ns=not statistically significant; Red indicates ratios >1.5:1, blue ratios <0.67:1, relative to White-British.

Other (SAP or Statemented)



The y-axis has been capped so 3.0 indicates an odds-ratio of **at least** 3:1.

Logistic Regression		Model 1	Model 2		
Variables		Unadjusted OR	B	Sig.	Adjusted OR
Ethnicity	White Irish	1.26	0.13	ns	1.14
	Traveller of Irish heritage	***6.08***	1.42	0.000	***4.13***
	Gypsy/Roma	***4.08***	1.15	0.000	***3.16***
	White other groups	0.98	-0.12	0.008	0.88
	Mixed White & African	0.87	-0.32	0.014	0.72
	Mixed White & Caribbean	1.05	-0.19	0.003	0.83
	Mixed White & Asian	0.71	-0.36	0.000	0.70
	Any other mixed background	0.97	-0.16	0.020	0.85
	Indian	***0.54***	-0.65	0.000	***0.52***
	Pakistani	0.96	-0.32	0.000	0.73
	Bangladeshi	0.74	-0.74	0.000	***0.48***
	Any other Asian	0.72	-0.46	0.000	***0.63***
	Black African	0.92	-0.47	0.000	***0.62***
	Black Caribbean	1.12	-0.19	0.000	0.82
	Black other groups	1.50	0.06	ns	1.06
	Chinese	0.88	-0.15	ns	0.86
	Any other ethnic group	1.06	-0.26	0.000	0.77
	Unclassified	1.18	0.10	0.012	1.11
Year Group	Y2 vs. Y1	-	0.27	0.000	1.31
	Y3 vs. Y1	-	0.41	0.000	***1.51***
	Y4 vs. Y1	-	0.44	0.000	***1.55***
	Y5 vs. Y1	-	0.45	0.000	***1.57***
	Y6 vs. Y1	-	0.44	0.000	***1.56***
	Y7 vs. Y1	-	0.50	0.000	***1.65***
	Y8 vs. Y1	-	0.61	0.000	***1.85***
	Y9 vs. Y1	-	0.57	0.000	***1.77***
	Y10 vs. Y1	-	0.49	0.000	***1.64***
	Y11 vs. Y1	-	0.60	0.000	***1.82***
sex	Girls vs. boys	-	-0.51	0.000	***0.60***
FSM	entitled to Free School Meal	-	0.52	0.000	***1.68***
IDACI	Income Deprivation Affecting Children (2SD)	-	0.24	0.000	***1.63***
	Constant	-	-5.99	0.000	0.00
Estimated R squared (Nagelkerke):		0.019			

Notes : ns=not statistically significant; Red indicates ratios >1.5:1, blue ratios <0.67:1, relative to White-British.

APPENDIX 8:

Symmetry in odds-ratios <1 and odds-ratios >1

An example

The way odd-ratios are expressed depends on the baseline or comparison category. For example consider the association of gender with overall SEN rate, as reported in Section 4. Suppose boys form the base or comparator category, the research reported here shows that the odd-ratios of girls:boys is 0.4:1, i.e. girls are substantially under-represented with 0.4 girls identified for every one boy. We can also simply invert the base category to be girls rather than boys. This gives a ratio of 1:2.5, i.e. boys are 2.5 more likely to be identified with SEN than girls. These two ratios (0.4:1 and 1:2.5) are symmetrical and exactly equivalent, they just differ in the base category.

The tables below show: (a) the equivalent OR <1 given a particular OR>1, and
(b) the equivalent OR >1 given a particular OR<1.

Upper Ratio (x)		Equivalent Lower Ratio (1/x)
1.25	:1	0.80
1.50	:1	0.67
1.75	:1	0.57
2.00	:1	0.50
2.50	:1	0.40
3.00	:1	0.33
3.50	:1	0.29
4.00	:1	0.25
5.00	:1	0.20
Lower Ratio (x)		Equivalent upper ratio (1/x)
0.25	:1	4.00
0.30	:1	3.33
0.35	:1	2.86
0.40	:1	2.50
0.45	:1	2.22
0.50	:1	2.00
0.60	:1	1.67
0.70	:1	1.43
0.80	:1	1.25
0.90	:1	1.11

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