

Ethnic disproportionality in the identification of Social, Emotional and Mental Health (SEMH) Needs: A national longitudinal cohort age 4-11

Paper presented to the National Pupil Database (NPD) User Group, University of Bristol, 19 September 2018

Professor Steve Strand & Dr. Ariel Lindorff

University of Oxford

Department of Education

steve.strand@education.ox.ac.uk



Disproportionality in Identification

- Incongruence between proportion of a group in the population and proportion identified with SEN
 - 10% pop. & 20% SEN: Over-representation (LR/RR= 2:1)
 - 10% pop. & 5% SEN: Under-representation (LR/RR= 0.5:1)
- With individual level data can use the Odds Ratio (OR) rather than Likelihood Ratio (LR) / Relative Risk (RR), but interpretation of the statistic is broadly the same
- Can apply to any grouping (e.g. gender, SES etc.), but ethnicity has been a key focus - particularly on Black students and 'subjective' SEN i.e. Learning Difficulties (LD/MLD) and Emotional & Behavioural Needs (ED/EBD/SEMH)

Previous research SEMH

- **US:** Black American students OR's = **2.5:1** for 'Mental Retardation' and **1.6:1** for 'Emotional Disturbance' relative to White students. Hispanic students (Puerto Rican/Cuban/Mexican) under-represented 0.80 & 0.60 respectively (Donovan & Cross, 2002)
- **England:** Strand & Lindsay (2009) analysed 2005 census for 6.4M pupils aged 5-16: Black Caribbean & MWBC students over-represented **1.32:1** for MLD & **2.3:1** for BESD relative to White British (Black African and Asian students substantially under-represented).
- **Europe:** Denmark - BME twice as likely to be in Special Education (Berhau & Dyson, 2012); same for Germany re. immigrant background (Werning at al, 2008).

Does ethnic disproportionality matter?

- Two views of special education
 - **(a) Compensatory intervention**
 - Identification & clarification of students' need
 - Access to specialist input and resources
 - Individual Action Plan
 - **(b) Stigmatization / Labelling**
 - Restricted and inappropriate curriculum
 - Lowered and limiting expectations
 - Feelings of stigmatization / labelling
- Whichever view, ethnic disproportionality may perpetuate inequalities in educational outcomes. The question is whether the identification is accurate?

Explanations for disproportionality

- Two broad explanations proposed for Black over-representation among SEN (Coutinho et. al., 2002)
 - More at-risk because of greater socio-economic deprivation (and/or low prior attainment / behaviour)
 - Inappropriate interpretations of cultural differences, low expectations and teacher and institutional racism
- Much previous work is small scale or based on aggregate data with poor or non-existent controls. Strand & Lindsay (2009) demonstrated Black Caribbean/MWBC over-representation (OR=1.50) after control for poverty
- However some recent controversial research suggests Black American students under-represented for a range of SEN when accounting for prior attainment

Recent Controversy

- Hibel et. al. (2010) & Morgan et. al. (2015) use ECLS-K, claim no ethnic over-representation for SEN at age 9&11, and indeed under-represented after control for on-entry attainment & behaviour
- Morgan et. al. (2017) review suggests true across eight 'gold standard' studies & for five SEN types
- BUT – small samples (e.g. ED at 0.60% and African American at 15%, even in sample of n=20,000 is just 18 students); worrying variance from population estimates (before controls); self-report & retrospective data; over-control for concurrent attainment & behaviour?

Dataset needed

- Focus on specific types of SEN (here SEMH)
- Avoid crass (Black/White) categorisation
- Pupil level data (ecological fallacy, Robson, 1950)
- National populations > samples (low incidence issues)
- Administrative records not self-report / recall
- Controls for confounding (SES, prior attainment)
- Developmental analyses – model dynamic development of SEN over time
- Recent data

ESRC funded project (ES/P000991)

1. Charting trends in incidence & disproportionality 2005-16
2. Comprehensive analysis of 2016 national data for all pupils' age 5-16, all SEN types and SES covariates
3. Separate analyses within primary (age 5-11) and secondary (age 11-16) phases to explore role of LA and (mainstream) school composition factors
4. Analysis of LSYPE to control for wider-range of SES variables (parental occupation, education & income)
5. **Longitudinal analyses of 2008/09 Reception cohort tracked age 5-11, and Y7 cohort tracked age 11-16, to control for attainment/PSED on-entry**
6. LA data pack to feed OR's and questions back to LAs

Data sources and variables

- England School Census Jan. 2005 onwards
 - Pupil level for entire maintained school population aged 5-16 years, over 6 million pupils annually
- Ethnic group
 - 19 main categories, parent selected at primary school (5-11) and student selected at secondary (11-16)
- Type of SEN
 - Schools asked to record the primary and secondary type of SEN (from 12 categories)
 - Type only required for pupils with greatest need (SAP & Statemented) 2009-2014, but for all SEN pupils' 2015
 - SEMH (previously BESD) second highest incidence primary need, 17% of all identified SEN (age 5-16) in 2015

Ethnic group age 5-16 (2016)

Ethnic group	Number age 5-16	% total pupils	% pupils of known ethnicity	Agg- regated
White British	4512620	69.4	70.0	
White Irish	19097	0.3	0.3	
Traveller Irish	4902	0.1	0.1	
Traveller Gypsy/Roma	21822	0.3	0.3	
White other groups	368070	5.7	5.7	6.4
Mixed White & African	45148	0.7	0.7	
Mixed White & Caribbean	96261	1.5	1.5	
Mixed White & Asian	79078	1.2	1.2	
Any other mixed background	122854	1.9	1.9	5.3
Indian	179357	2.8	2.8	
Pakistani	275616	4.2	4.3	
Bangladeshi	108647	1.7	1.7	
Any other Asian	110537	1.7	1.7	10.5
Black African	236022	3.6	3.7	
Black Caribbean	80170	1.2	1.2	
Black other groups	47083	0.7	0.7	5.6
Chinese	26037	0.4	0.4	
Any other ethnic group	111310	1.7	1.7	2.1
Unknown	60632	0.9	--	--
Total	6505263	100.0		

SEN type 2016 (Y1-Y11)

Primary type of SEN	N	% of all pupils	% of those with SEN	% at stage:	
				SEN Support	EHC
None	5,470,700	84.3	--	-	-
MLD	260,295	4.0	25.5	89.9	10.1
SEMH	180,463	2.8	17.7	84.9	15.1
SLCN	176,809	2.7	17.3	84.2	15.8
SpLD	142,397	2.2	14.0	94.2	5.8
ASD	86,018	1.3	8.4	43.2	56.8
Other Need	50,271	0.8	4.9	90.8	9.2
NSA	33,793	0.5	3.3	99.3	0.7
PD	27,750	0.4	2.7	60.9	39.1
SLD	24,389	0.4	2.4	10.4	89.6
HI	17,932	0.3	1.8	71.6	28.4
VI	9,983	0.2	1.0	71.9	28.1
PMLD	7,871	0.1	0.8	6.8	93.2
MSI	1,944	0.0	0.2	73.6	26.4
Total	6,490,615	100	--	12.8	3.0

Longitudinal Study

- Previous research cross-sectional, but this study will track a cohort of 560,000 pupils from YR-Y6

Primary longitudinal Cohort (approx. n=570,000)	Secondary longitudinal cohort (approx. n=570,0000)
Y6 in 2014/15	Y11 in 2014/15
Y5 in 2013/14	Y10 in 2013/14
Y4 in 2012/13	Y9 in 2012/13
Y3 in 2011/12	Y8 in 2011/12
Y2 in 2010/11	Y7 in 2010/11
Y1 in 2009/10	Y6 in 2009/10
YR in 2008/09	

- *Survival Analysis / Event History Analysis / Logit Hazard modelling* used to incorporate time dimension

Confounding variables

- Gender (Male/Female)
- Age within year (autumn, spring or summer born)
- Socio-economic disadvantage (SED)
 - Entitlement to Free School Meal (FSM)
 - Income Deprivation Affecting Children Index (IDACI)
- On-entry profile (age 5)
 - Communication, Language & Literacy (4-32)
 - Problem Solving, Reasoning & Numeracy (3-27)
 - Personal Social & Emotional Development (3-27)
- School (at age 5) – type, %FSM, % ethnic etc.

PSED items

Personal Development	Social development	Emotional development
1 Shows an interest in classroom activities through observation or	1 Plays alongside others	1 Separates from main carer with support
2 Dresses, undresses & manages own personal hygiene with adult support	2 Builds relationships through gestures & talk	2 Communicates freely about home and community
3 Displays high levels of involvement in self-chosen activities	3 Takes turn with adult support	3 Expresses needs and feelings in appropriate ways
4 Dresses & undresses independently and manages own personal hygiene	4 Works as part of a group taking turns, sharing fairly	4 Responds to significant experiences, showing a range of feelings when appropriate
5 Selects & uses activities & resources independently	5 Forms good relationships with adults & peers	5 Has a developing awareness of own needs, views & feelings and is sensitive to the needs, views & feelings of others
6 Continues to be interested, motivated & excited to learn	6 Understands need for agreed values & codes of behaviour	6 Has a developing respect for own culture & beliefs and those of other
7 Is confident to try new activities, initiated ideas & speak in a familiar group	7 Understands people have different needs, views, cultures & beliefs	7 Considers the consequences of words and actions for self and others
8 Maintains attention & concentration	8 Understands can expect others to treat his/her needs with respect	8 Understands what is right, what is wrong, and why
9 Sustains involvement & perseveres, particularly when trying to solve a problem or reach a satisfactory conclusion	9 Achieve all the above, plus takes into account the ideas of others	9 Displays a strong & positive sense of self-identity and is able to express a range of emotions fluently & appropriately

- For full guidance and exemplars see: QCA (2008) [Early Years Foundation Stage Profile Handbook 2008](#). London: Qualifications & Curriculum Authority.

Defining over and under-representation

- **Odds Ratios (OR)**

- Likelihood/Risk Ratios (LR/RR) problematic for low base rate & proportional change - OR's natural for pupil level data
- Statistical significance meaningless criteria when $N=550,000$. No formal OR threshold, highlight **OR >1.33** (or conversely **OR <0.75**), as ratio 4:3 or 33% raised odds
- Enables direct comparison of OR before & after adjustment for contextual variables in regression analyses (**Unadjusted vs. Adjusted ORs**)

- **Hazard Ratios (HR)**

- like OR but additionally show raised risk *per unit time* (here year) i.e. compounded year on year to show differential rates of *growth* in risk of SEN identification

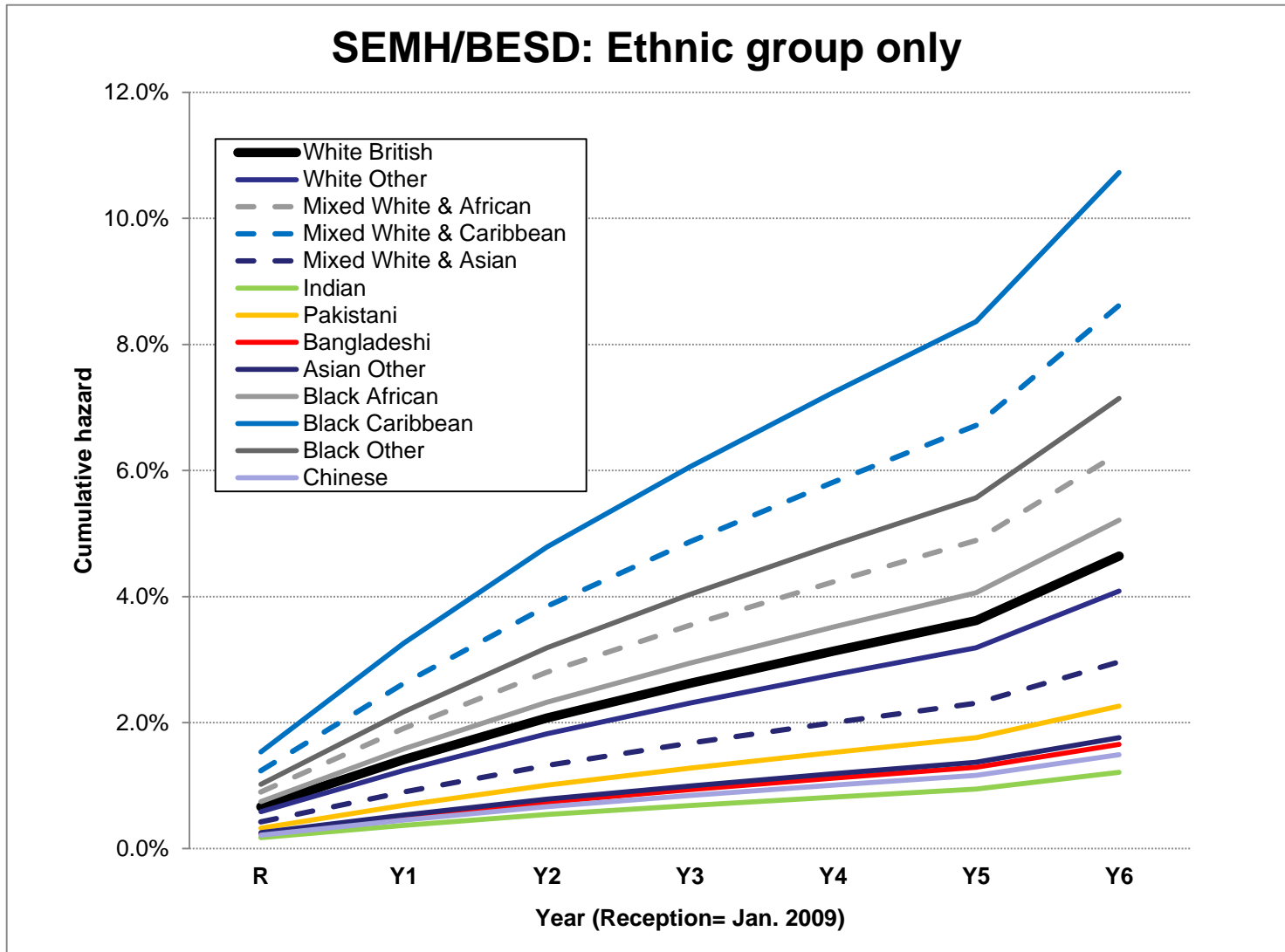
Descriptives - Primary Cohort R-Y6 (2009-15)

Ethnic group	N	% known ethnicity	Ever MLD	Ever SEMH	Ever ASD	%FSM	IDAC1	Age 5 Literacy	Age 5 Maths	Age 5 PSED
White British	352,330	74.7	6.6	4.8	1.5	13.9	20.0	0.06	0.09	0.05
White Irish	1,330	0.3	4.8	4.7	1.1	17.8	23.2	0.14	0.18	0.20
Traveller Irish	440	0.1	21.6	10.2	0.7	51.4	30.0	-1.14	-1.20	-0.78
Traveller Gypsy/Roma	840	0.2	20.0	7.1	1.3	34.6	26.9	-1.06	-1.09	-0.66
White other groups	20,218	4.3	5.2	3.9	1.3	11.9	26.0	-0.20	-0.20	-0.10
Mixed White & African	2,741	0.6	5.1	6.2	1.6	22.1	31.0	0.00	0.02	0.00
Mixed White & Caribbean	6,117	1.3	7.9	8.9	1.6	32.2	31.7	-0.06	-0.04	-0.05
Mixed White & Asian	4,946	1.0	4.1	3.1	1.1	15.7	22.0	0.14	0.13	0.15
Any other mixed	8,256	1.7	5.5	5.6	1.8	21.7	28.6	0.00	0.00	0.00
Indian	12,115	2.6	3.4	1.3	0.6	5.7	27.4	0.08	0.04	0.05
Pakistani	17,462	3.7	8.2	2.3	0.7	17.3	38.0	-0.37	-0.42	-0.32
Bangladeshi	6,206	1.3	5.5	1.8	1.1	21.2	45.1	-0.38	-0.44	-0.32
Any other Asian	7,300	1.5	4.1	1.8	1.0	11.8	29.8	-0.12	-0.13	-0.12
Black African	14,453	3.1	5.6	5.0	1.8	34.6	43.1	-0.22	-0.24	-0.24
Black Caribbean	5,762	1.2	8.6	10.6	2.2	30.1	41.2	-0.20	-0.20	-0.24
Black other groups	3,174	0.7	7.2	6.8	2.2	31.6	42.0	-0.25	-0.27	-0.24
Chinese	1,593	0.3	1.8	1.4	1.1	9.1	25.9	-0.02	0.07	0.00
Any other ethnic group	6,684	1.4	6.1	3.4	1.1	24.6	37.6	-0.31	-0.33	-0.24
Unknown	90,614	-	7.0	4.6	1.5	18.6	27.7	-0.03	-0.02	-0.02
TOTAL	562,581		6.5	4.6	1.5	15.9	24.1	0.00	0.00	0.00

SEMH Hazard Ratios (HR)

Variable	Model 1	
White Irish	0.86	
White other groups	0.88	*
Mixed White & African	1.35	*
Mixed White & Caribbean	1.86	*
Mixed White & Asian	0.64	*
Any other mixed	1.22	*
Indian	0.26	*
Pakistani	0.49	*
Bangladeshi	0.36	*
Any other Asian	0.38	*
Black African	1.12	*
Black Caribbean	2.31	*
Black other groups	1.54	*
Chinese	0.32	*
Any other ethnic group	0.73	*
Boy		
Spring born		
Summer born		
Entitled to FSM		
Normalised IDACI (2SD) (IDACI 1SD+FSM)		
Age 5 literacy (1SD)		
Age 5 maths (1SD)		
Age 5 PSE (1SD)		
Deviance (null=568253)	566776	
Δ -2LL from prev. model	1478	

Raw Results



SEMH Hazard Ratios (HR)

Variable	Model 1	Model 2
White Irish	0.86	0.81
White other groups	0.88 *	0.81 *
Mixed White & African	1.35 *	1.10
Mixed White & Caribbean	1.86 *	1.35 *
Mixed White & Asian	0.64 *	0.60 *
Any other mixed	1.22 *	0.99
Indian	0.26 *	0.25 *
Pakistani	0.49 *	0.37 *
Bangladeshi	0.36 *	0.24 *
Any other Asian	0.38 *	0.34 *
Black African	1.12 *	0.69 *
Black Caribbean	2.31 *	1.55 *
Black other groups	1.54 *	0.97
Chinese	0.32 *	0.32 *
Any other ethnic group	0.73 *	0.50 *
Boy		3.33 *
Spring born		1.04 *
Summer born		1.08 *
Entitled to FSM		2.21 *
Normalised IDACI (2SD)		1.73 *
(IDACI 1SD+FSM)		2.91 *
Age 5 literacy (1SD)		
Age 5 maths (1SD)		
Age 5 PSE (1SD)		
Deviance (null=568253)	566776	554784
Δ -2LL from prev. model	1478	11992

SEMH Hazard Ratios (HR)

Variable	Model 1	Model 2	Model 3
White Irish	0.86	0.81	0.93
White other groups	0.88 *	0.81 *	0.74 *
Mixed White & African	1.35 *	1.10	1.17
Mixed White & Caribbean	1.86 *	1.35 *	1.46 *
Mixed White & Asian	0.64 *	0.60 *	0.65 *
Any other mixed	1.22 *	0.99	1.05
Indian	0.26 *	0.25 *	0.26 *
Pakistani	0.49 *	0.37 *	0.32 *
Bangladeshi	0.36 *	0.24 *	0.21 *
Any other Asian	0.38 *	0.34 *	0.30 *
Black African	1.12 *	0.69 *	0.66 *
Black Caribbean	2.31 *	1.55 *	1.42 *
Black other groups	1.54 *	0.97	0.91
Chinese	0.32 *	0.32 *	0.31 *
Any other ethnic group	0.73 *	0.50 *	0.45 *
Boy		3.33 *	2.46 *
Spring born		1.04 *	0.90 *
Summer born		1.08 *	0.78 *
Entitled to FSM		2.21 *	1.80 *
Normalised IDACI (2SD)		1.73 *	1.39 *
(IDACI 1SD+FSM)		2.91 *	2.12 *
Age 5 literacy (1SD)			0.96 *
Age 5 maths (1SD)			1.23 *
Age 5 PSE (1SD)			0.39 *
Deviance (null=568253)	566776	554784	539073
Δ -2LL from prev. model	1478	11992	15711

Adjusted results

- **SED:** Entitled to FSM and 1 SD above mean IDACI - **HR= 2.12**
- **Gender:** Boys' **HR= 2.46**
- **Prior development:** 1 SD below mean PSED at age 5 - **HR= 2.60**
- **Age:** effect minimal
- **Ethnicity:** attenuated but still large - BCRB/MWBC **HR= 1.42-1.46**

Model 4 (School Variability)

- High %FSM and top %BCRB/MWBC raised risk, though very small change to $-2LL/R^2$. OR's for BCRB and MWBC reduce slightly. No interaction with student ethnicity.
- Pupil HR's robust, but school composition sensitive to specification (e.g. if filter to only schools with 2+ BCRB pupils, %BCRB Q1 drops to HR=1.09).
- ML analysis for SEMH all primary pupils indicates 13% variance at school level & 1.5% LA. Comparing ethnic ORs in single level vs. ML models shows negligible effect for primary, though a significant reduction for BCRB/MWBC at secondary school (& robust to 2+ filter)
- **Conclusion:** School high %FSM and high %Black slightly raises overall risk for SEMH but little impact on disproportionality in primary, though does matter for BCRB/MWBC at secondary school

Model 4 - School measures

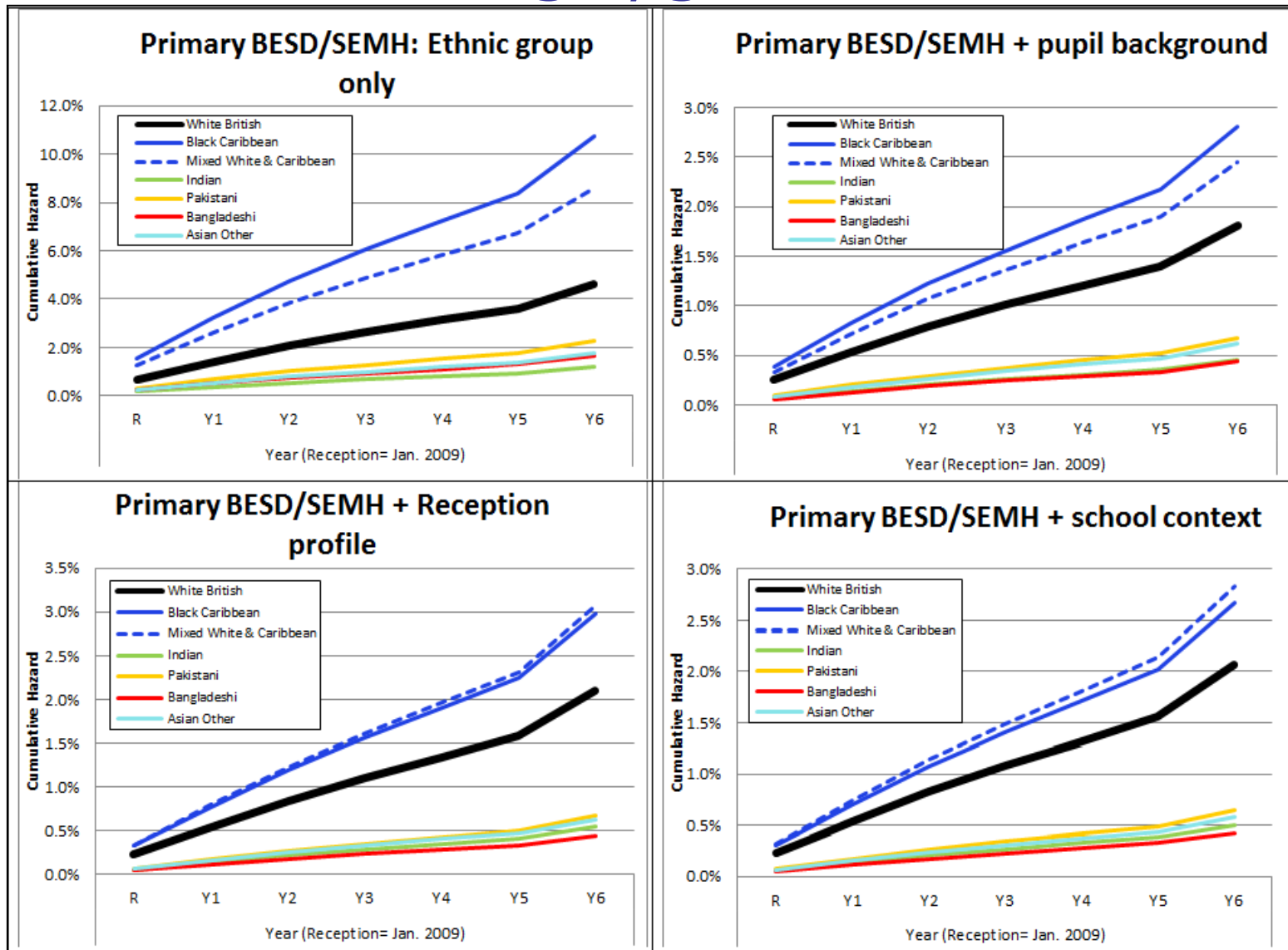
School Type	Foundation	1.04
	Church	0.93
School % FSM	Highest	1.25
	High	1.22
	Average	1.09
	Low	1.08
	Lowest	Reference
School % BCRB / MWBC	Highest	1.21
	High	1.08
	Average	1.03
	Low	1.00
	Lowest	Reference
School Size	Largest	0.80
	Large	0.85
	Average	0.88
	Small	0.94
	Smallest	Reference

SEMH Hazard Ratios (HR)

Variable	Model 1	Model 2	Model 3	Model 4
White Irish	0.86	0.81	0.93	0.92
White other groups	0.88 *	0.81 *	0.74 *	0.70 *
Mixed White & African	1.35 *	1.10	1.17	1.13
Mixed White & Caribbean	1.86 *	1.35 *	1.46 *	1.38 *
Mixed White & Asian	0.64 *	0.60 *	0.65 *	0.64 *
Any other mixed	1.22 *	0.99	1.05	1.01
Indian	0.26 *	0.25 *	0.26 *	0.25 *
Pakistani	0.49 *	0.37 *	0.32 *	0.32 *
Bangladeshi	0.36 *	0.24 *	0.21 *	0.21 *
Any other Asian	0.38 *	0.34 *	0.30 *	0.29 *
Black African	1.12 *	0.69 *	0.66 *	0.61 *
Black Caribbean	2.31 *	1.55 *	1.42 *	1.30 *
Black other groups	1.54 *	0.97	0.91	0.85 *
Chinese	0.32 *	0.32 *	0.31 *	0.29 *
Any other ethnic group	0.73 *	0.50 *	0.45 *	0.42 *
Boy		3.33 *	2.46 *	2.47 *
Spring born		1.04 *	0.90 *	0.89 *
Summer born		1.08 *	0.78 *	0.77 *
Entitled to FSM		2.21 *	1.80 *	1.73 *
Normalised IDACI (2SD)		1.73 *	1.39 *	1.23 *
(IDACI 1SD+FSM)		2.91 *	2.12 *	1.91 *
Age 5 literacy (1SD)			0.96 *	0.97
Age 5 maths (1SD)			1.23 *	1.21 *
Age 5 PSE (1SD)			0.39 *	0.39 *
Deviance (null=568253)	566776	554784	539073	538437
Δ -2LL from prev. model	1478	11992	15711	636

Logistic regression Nagelkere Pseudo R²= 1.0%; 9.0%; 16.2% & 17.2%
for Models 1-4 respectively)

BESD/SEMH



Overall Conclusions

- Ethnic disproportionality in identification of SEN is 'real' in England. For Black Caribbean/MWBC raw over-representation (HR=2.1) reduces after adjustment for SED, low attainment & low PSED at age 5, but still substantial (HR=1.42). Result is direct counter to Hibel et al & Morgan et al.
- However, Black African are not over-represented and under-represented in adjusted models. The most positive attitudes to school and the highest levels of educational aspirations and motivation of all ethnic groups (Strand, 2011). A key differentiator may lie in patterns of immigration to England and distinction between voluntary/involuntary minorities.
- LA's are not a major driver of ethnic disproportionality, but variability between schools is important for SEMH. High %FSM and %Black explains a little of the over-representation, but most cannot be explained by the variables we have.

Policy implications

- National

- Explanations need to be differentiated both in relation to ethnicity (e.g. 'Black' & 'Asian' are over generalisations) and type of SEN (SEMH different from MLD, SLCN, ASD, VI/HI etc.)
- Raise profile of ethnic & type of SEN data in DFE publications
- Include disproportionality in OfSTED LA SEND Inspections
- Funding for SEN services reflect LA ethnic density

- Local Authorities

- Identify risk ratios and local issues
- Support materials, raise awareness & access
- Linking health, social care and education services

- Schools

- Review identification processes and procedures

References

- Strand, S. (2011). The limits of social class in explaining ethnic gaps in educational attainment. *British Educational Research Journal*, 37(2), 197-229. <http://dx.doi.org/10.1080/01411920903540664>
- Strand, S. (2012). The White British-Black Caribbean achievement gap: Tests, tiers and teacher expectations. *British Educational Research Journal*, 38(1), 75-101. <http://dx.doi.org/10.1080/01411926.2010.526702>
- Strand, S. (2012). Disproportionate identification of Black students with special educational needs (SEN): Recent national data from England. *Paper presented to the Annual Conference of the BERA, University of Manchester, 4-6 September 2012.*
- Strand., S. & Fletcher, J. (2014). *A Quantitative Analysis of Exclusions from English Secondary Schools*. Oxford: University of Oxford. http://www.education.ox.ac.uk/wordpress/wp-content/uploads/2015/02/Exclusion-from-Secondary-schools_small.pdf
- Strand, S. & Lindsay, G. (2009). Evidence of ethnic disproportionality in special education in an English population. *Journal of Special Education*, 43, (3), 174-190. [link to journal article](#)
- Strand. S. & Lindsay, G. (2012). *Ethnic disproportionality in the identification of Speech Language and Communication Needs (SLCN) and Autistic Spectrum Disorders (ASD): 2005-2011*. London: Department for Education. Available from www at: <https://www.education.gov.uk/publications/eOrderingDownload/RR247%20-%20BCRP15%20Report.pdf>
- Lindsay, G. & Strand, S. (2016). Children with language impairment: Prevalence, associated difficulties and ethnic disproportionality in an English population. *Frontiers in Education*, 1(2), 1-14. <http://dx.doi.org/10.3389/feduc.2016.00002>

End of Presentation

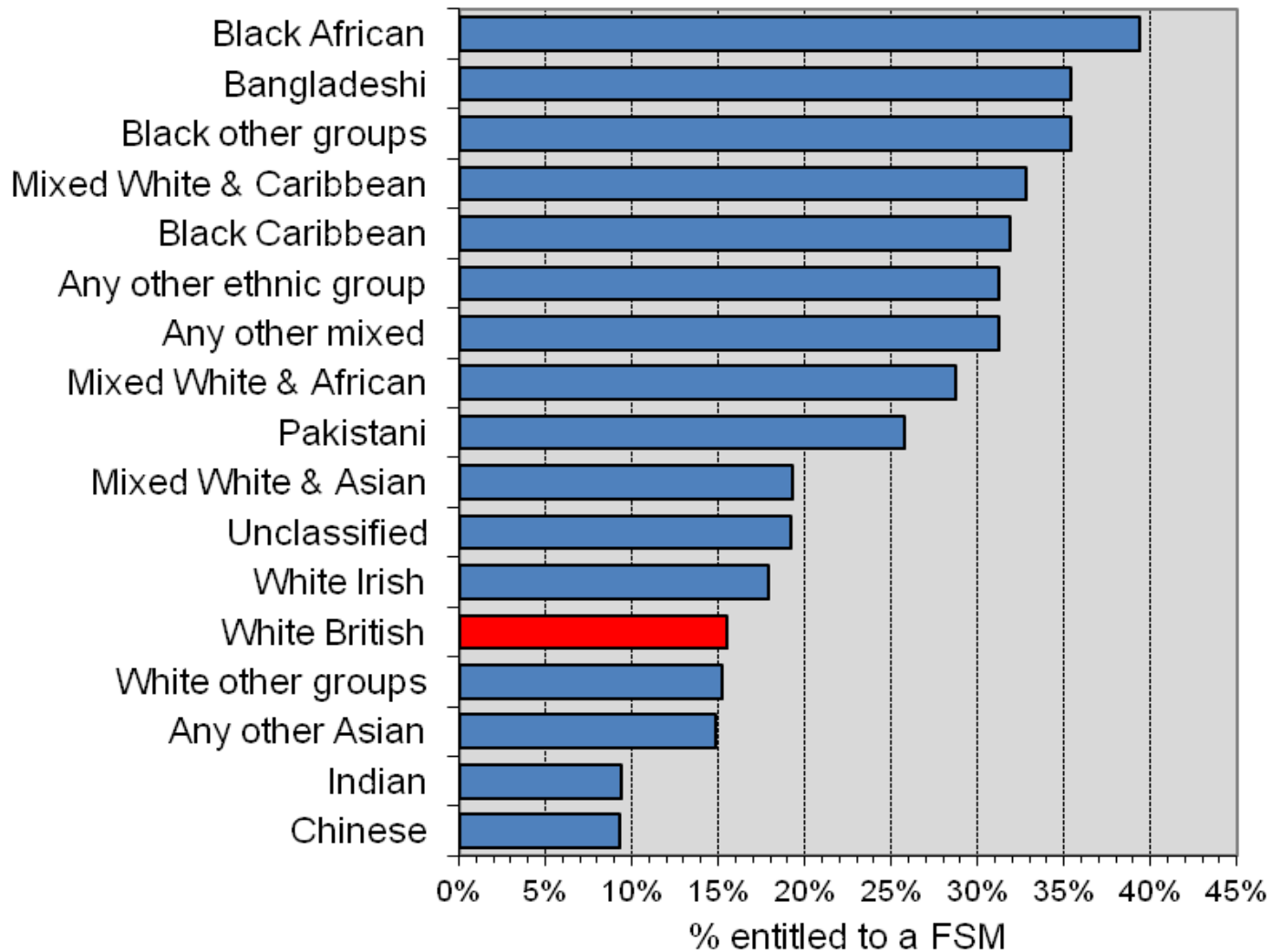
Drivers - Black Caribbean/MWBC & SEMH

- **Out of school cultural factors:** *Black Caribbean* youngsters experience considerable peer pressure to adopt norms of 'street' sub-culture, prestige to unruly behaviour rather than academic success (e.g. Ogbu, 1978; Sewell, 1997). *Black African* students and families have the most positive attitudes to school and the highest levels of educational aspirations and motivation of all groups (Strand, 2011). A key differentiator may lie in patterns of immigration to England and distinction between voluntary/involuntary minorities.
- **School processes:** BESD involves a greater degree of social construction than many SEN, interpretation against expected patterns or norms. Room for school processes e.g. greater surveillance, pre-emptive discipline (Gillborn, 1990) and effect of teacher expectations (Strand, 2012). However Black African result mitigates against any simple recourse to teacher racism.

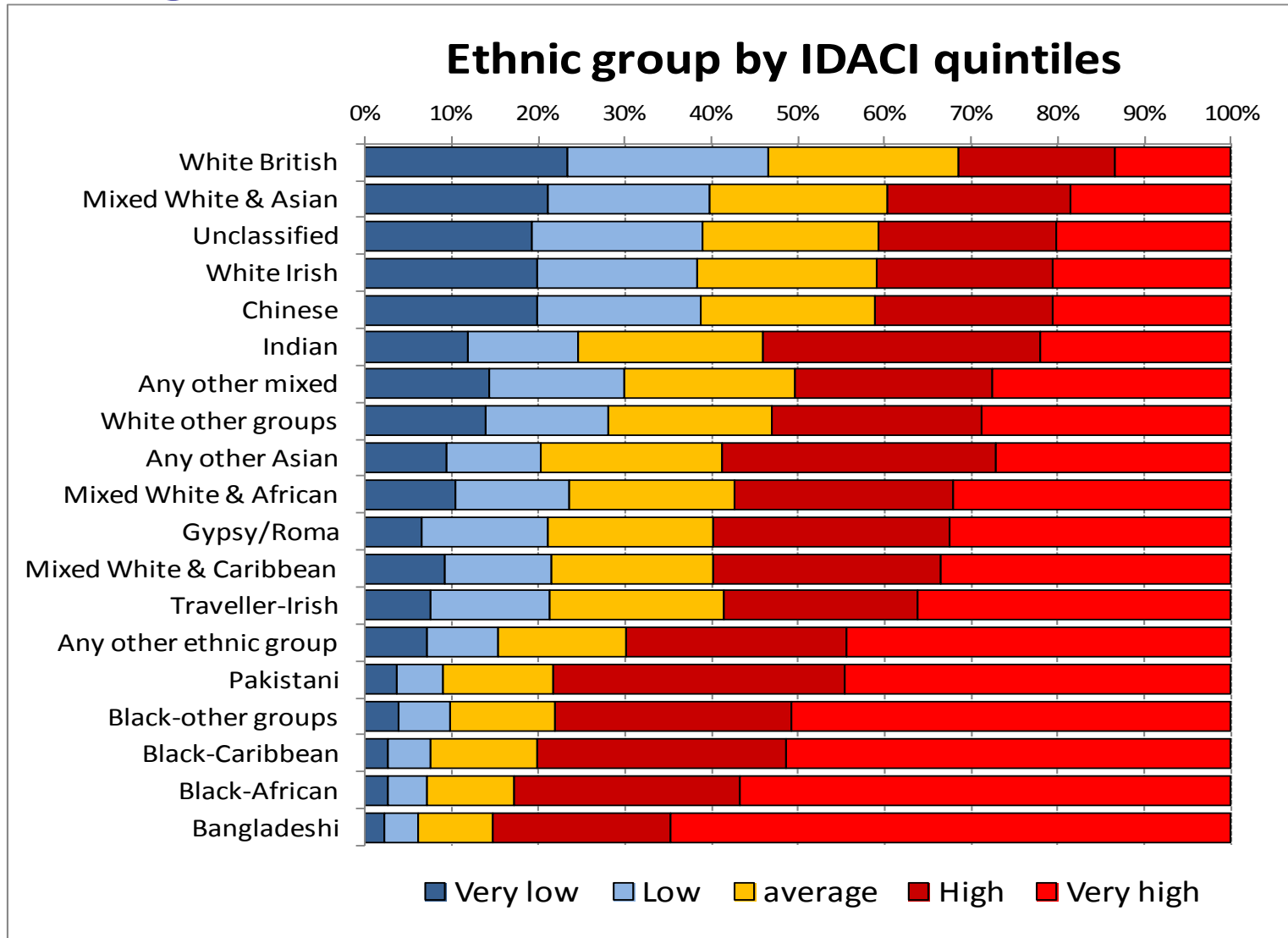
Ethnic group age 5-16 (2011)

Ethnic Group	Number pupils aged 5-16	% of all pupils	% of known ethnicity	agg-regated
White British	4,614,744	74.8	75.5	
White Irish	19,942	0.3	0.3	
Traveller Irish	4,218	0.1	0.1	
Gypsy/Roma	12,815	0.2	0.2	
White Other groups	235,929	3.8	3.9	4.5
Mixed White & African	29,114	0.5	0.5	
Mixed White & Caribbean	81,540	1.3	1.3	
Mixed White & Asian	55,566	0.9	0.9	
Any other mixed background	91,869	1.5	1.5	4.2
Indian	150,597	2.4	2.5	
Pakistani	228,044	3.7	3.7	
Bangladeshi	94,147	1.5	1.5	
Any other Asian	83,503	1.4	1.4	9.1
Black African	184,055	3.0	3.0	
Black Caribbean	85,531	1.4	1.4	
Black Other groups	36,122	0.6	0.6	5.0
Chinese	22,090	0.4	0.4	
Any other ethnic group	85,235	1.4	1.4	1.8
Unclassified	53,569	0.9	-	-
Total pupils	6,168,630			

% entitled to FSM by ethnicity (2011)



Neighbourhood Deprivation (IDACI)



Prior attainment

- Three key areas of learning from EYFSP

EYFSP elements	Raw score range	HR if 1 SD above mean			HR if 1 SD below mean		
		MLD	BESD / SEMH	ASD	MLD	BESD / SEMH	ASD
Communication, Language and Literacy	0-27	0.40	0.97	0.94	2.50	1.03	1.06
Problem Solving, Reasoning & Numeracy	0-36	0.67	1.20	1.10	1.49	0.83	0.91
Personal, Social & Emotional Development	0-27	1.14	0.38	0.31	0.88	2.63	3.23
<i>Nagelkerke pseudo R²</i>		23.6%	17.0%	21.9%	23.6%	17.0%	21.9%

Notes

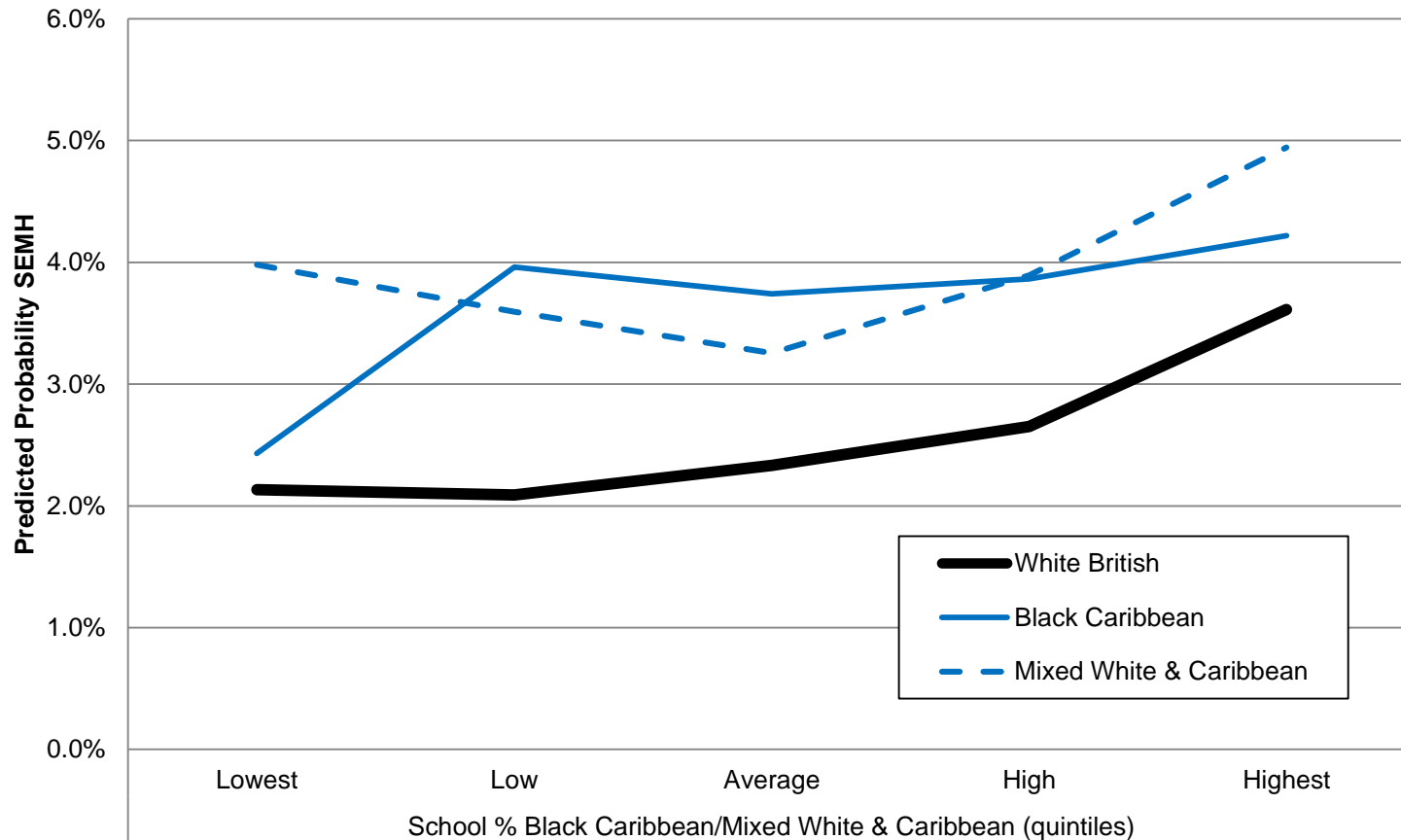
(1). HR= Hazard Ratio; EYFSP= Early Years Foundation Stage Profile.

(2). CLL has 3 scales, PSRN 4 scales and PSED 3 scales. Each scale consists of nine items: items 1-3 are hierarchical, items 4-8 assess Early Learning Goals (ELGs) and item 9 is beyond ELGs. Raw scores were normal score transformed prior to analysis.

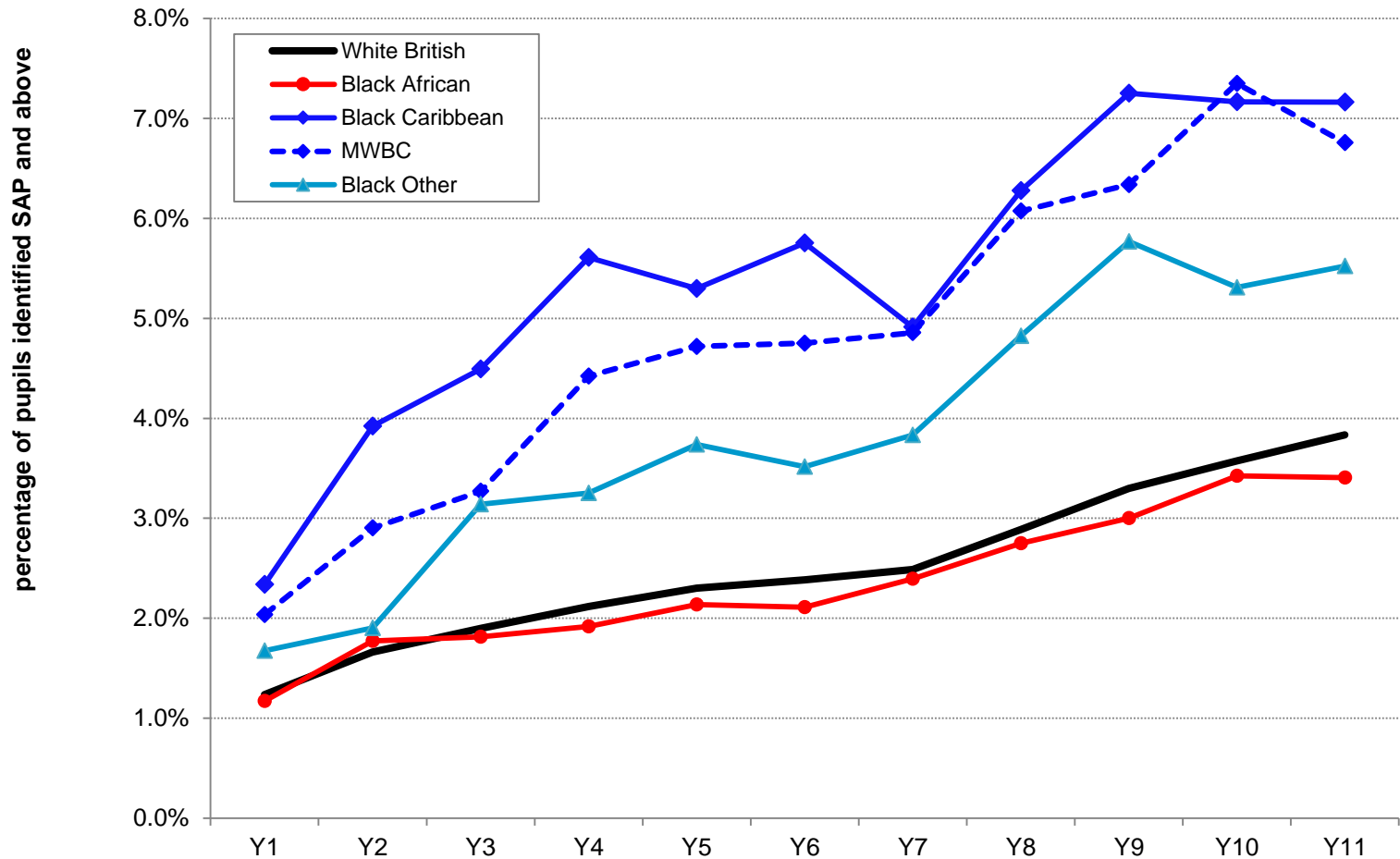
(3). See DFR SFR 2010-28 for national EYFSP results for the cohort.

SEMH

School % Black Caribbean & MWBC and individual ethnic group (excluding schools w/ 0%)

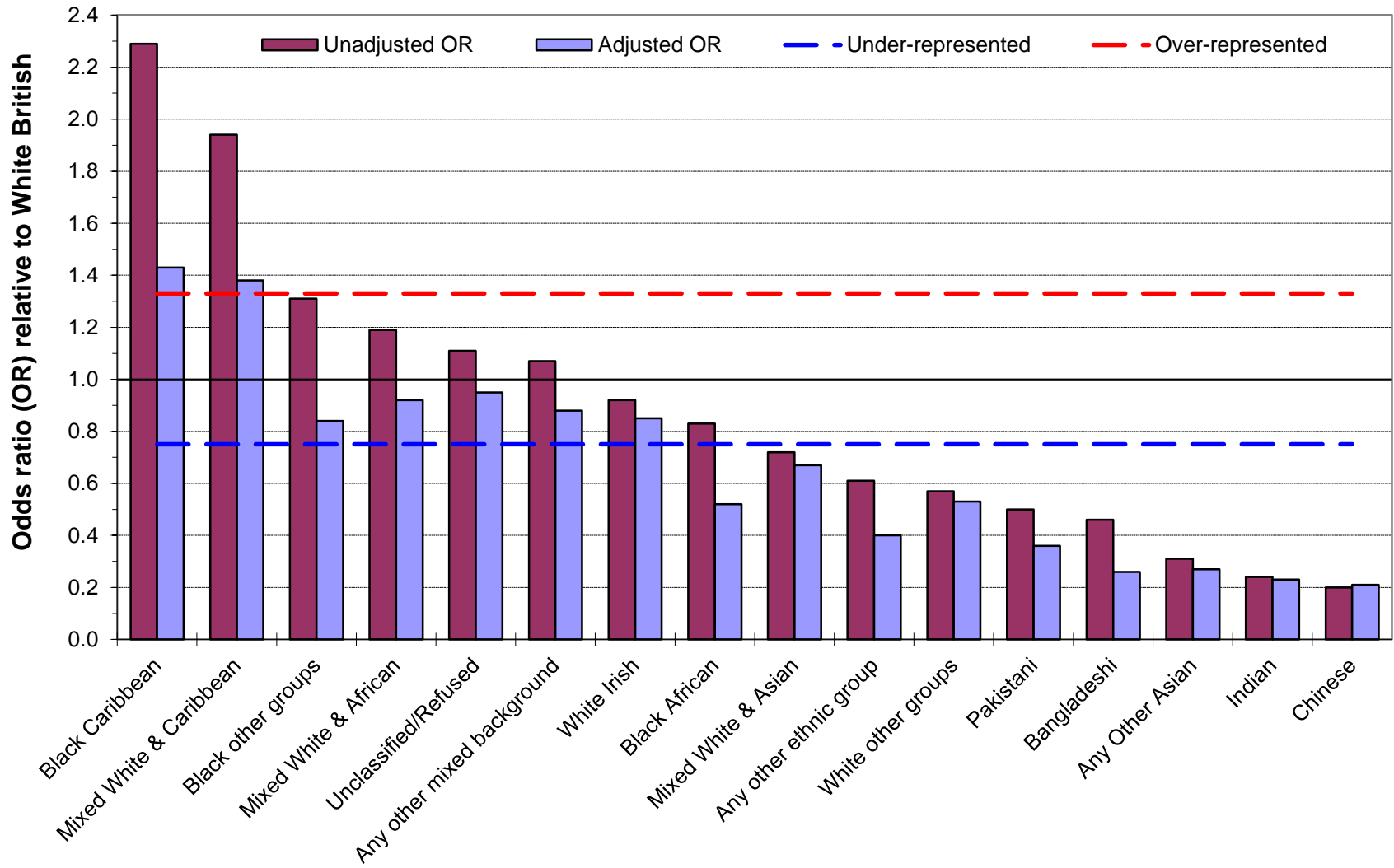


BESD - SAP/Statemented



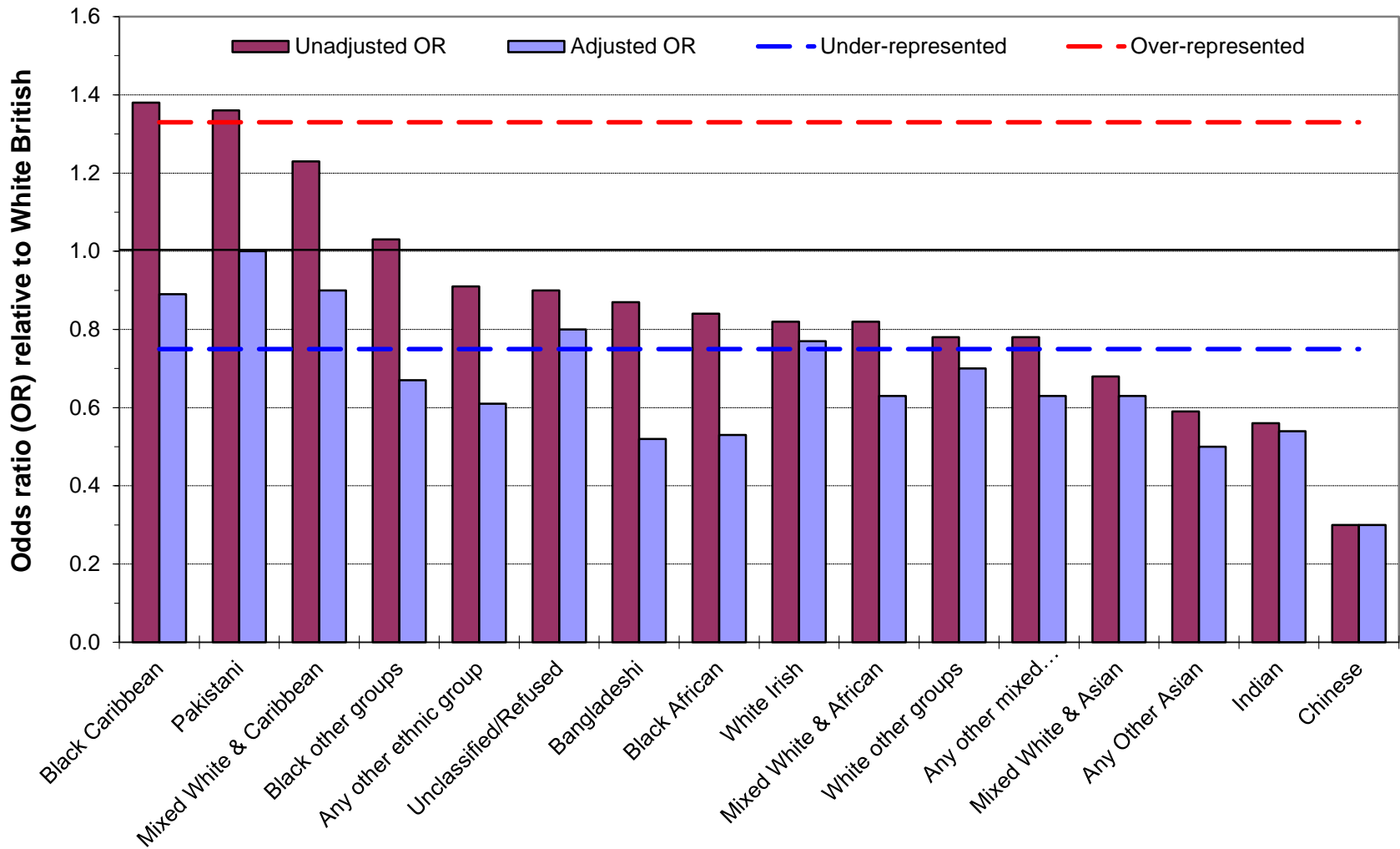
Source: Strand, calculated from 2011 School Census aged 5-16

BESD – Ethnic group OR's (2016)



Note: Traveller groups not included because of small sample size

MLD – Ethnic group OR's (2016)

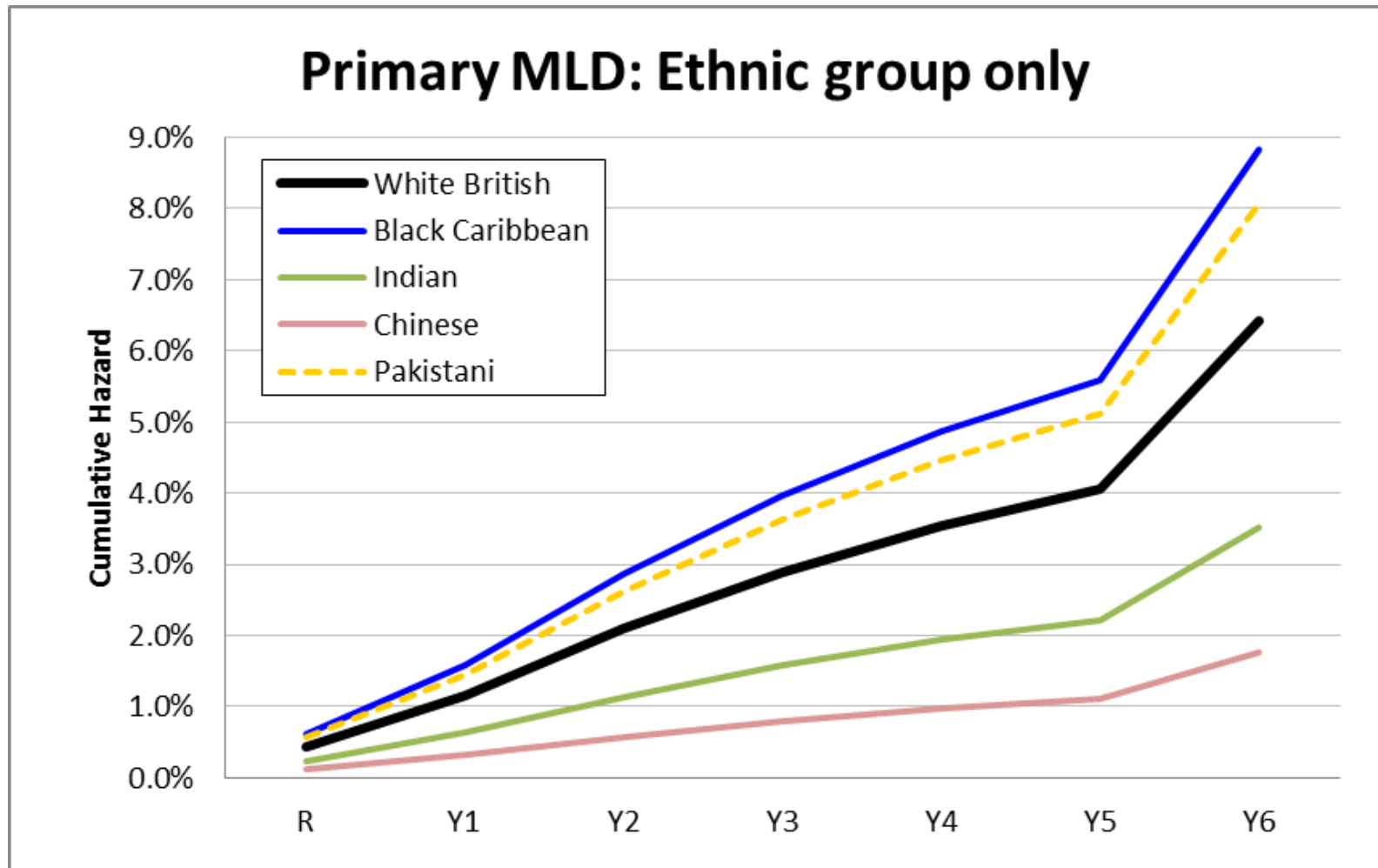


Note: Traveller groups not included because of small sample size

MLD – Primary Longitudinal

MLD		Model 1	Model 2	Model 3	Model 4
Variable	Values	Exp(B)	Exp(B)	Exp(B)	Exp(B)
Ethnic Group	White Irish	0.77	0.72	0.75	0.75
	Traveller Irish	4.69	3.05	0.97	0.94
	Traveller Gypsy/Roma	3.58	2.69	0.78	0.76
	White other groups	0.87	0.79	0.49	0.48
	Mixed White & African	0.77	0.61	0.65	0.65
	Mixed White & Caribbean	1.22	0.89	0.98	0.96
	Mixed White & Asian	0.62	0.58	0.58	0.57
	Any other mixed	0.85	0.68	0.69	0.68
	Indian	0.55	0.52	0.48	0.47
	Pakistani	1.26	0.95	0.60	0.58
	Bangladeshi	0.83	0.55	0.36	0.35
	Any other Asian	0.63	0.55	0.42	0.40
	Black African	0.84	0.51	0.46	0.45
	Black Caribbean	1.37	0.91	0.93	0.91
	Black other groups	1.16	0.73	0.63	0.61
	Chinese	0.28	0.26	0.21	0.20
	Any other ethnic group	0.96	0.66	0.45	0.44
	Unknown	1.11	0.94	0.89	0.88
FSM	Entitled to FSM		2.05	1.39	1.35
Gender	Boy		1.66	1.23	1.23
Birth	Spring		1.33	0.93	0.93
	Summer		1.84	0.90	0.89
Neigh'd	Normalised IDACI 2SD		1.81	1.23	1.15
EYFSP	CLL 1SD			0.40	0.41
	PSRN 1SD			0.67	0.67
	PSE 1SD			1.14	1.13

Cox's Regression – Hazard over time



Variability in SEN identification across levels

- How much does SEN identification vary between students, schools and LAs?

Level	Primary (Y1-Y6)			Secondary (Y7-Y11)		
	MLD	SEMH	ASD	MLD	SEMH	ASD
LA	5%	1%	5%	6%	2%	4%
School	25%	13%	11%	25%	15%	12%
Pupil/Student	70%	86%	84%	69%	83%	84%

Note: Excludes special schools and schools with <30 pupils on roll

- Very little variation explained at the LA level
- School level variability largest for MLD, is relatively small even for SEMH

Variability in SEN identification across levels

- How much does SEN identification vary between students, schools and LAs?

Level	Primary (Y1-Y6)			Secondary (Y7-Y11)		
	MLD	SEMH	ASD	MLD	SEMH	ASD
LA	5%	1%	5%	6%	2%	4%
School	25%	13%	11%	25%	15%	12%
Pupil/Student	70%	86%	84%	69%	83%	84%

Note: Excludes special schools and schools with <30 pupils on roll

- Very little variation explained at the LA level
- School level variability largest for MLD, is relatively small even for SEMH

EYFSP – Detailed guidance & exemplars

4 Works as part of a group or class, taking turns and sharing fairly.

When working as part of a large or small group, the child takes turns and shares fairly, for example waiting patiently for a turn to feed a baby animal, or sharing the resources when playing in the sandpit.

Nisha is working with a jigsaw. Derek asks if he can join her, explaining that he wants to do that puzzle too. Nisha wants to finish the puzzle herself and says Derek can have a turn after her. When she has finished the puzzle, she packs it away, finds Derek and gives him the puzzle to play with.

Anrika is playing a board game with a small group. The die rolls over and lands in front of her. When it is the next player's turn, Thomas says, 'Come on Anrika, your go.' However, knowing that it is not her turn, she passes the die back to Jen.

5 Forms good relationships with adults and peers.

The child forms good relationships with others, including adults and children within the setting. For example, when children and practitioners from other classes visit, s/he is friendly and welcoming. When selecting food at dinner time the child will speak to the adult serving the meals with some awareness of courtesy.

Sam takes the register back to the school office. He stays and talks to the secretary for a few minutes before returning to the classroom.

At break Miriam helps Rae to fasten her coat. In the playground Miriam plays tag and skipping games with the other children. She actively searches and holds hands with another child to make a line.

Krishan beckons to a new child visitor to come and see his painting. He takes the visitor by the hand while showing him the British Sign Language for 'painting'.

Social development

6 Understands that there need to be agreed values and codes of behaviour for groups of people, including adults and children, to work together harmoniously.

The child knows the classroom rules and can offer explanations about why it is important to try to keep to them. For example, s/he would understand that running in the classroom could cause an accident.

Corrine and William are dressing up. Corrine wants to carry on dancing to the music that has just started playing on the tape recorder. 'The music means it's tidy up time', reminds William. As they take off the dressing up clothes, they hang them on hangers and put them on the clothes rail and remember to put the hats back in the hat box.

7 Understands that people have different needs, views, cultures and beliefs that need to be treated with respect.

The child's behaviour indicates that s/he is developing awareness of the need to respect and value others. S/he enjoys sharing information about her/his own culture and beliefs and shows interest and enjoyment in cultural and religious differences.

While drawing a picture of himself and his friend, John selects a peachy skin tone to colour in his own face. 'I will need the light brown one after, to do Tilak's face', he explains.

Kylie understands that Cory (who has learning difficulties) finds it hard to line up. At the end of playtime, she quietly takes his hand and they walk together to the line.

Harry says, 'I can't understand what Kumari says - she's talking all funny.' Zoe replies, 'She's speaking her family's language. She talks in our language too.'

8 Understands that s/he can expect others to treat her or his needs, views, cultures and beliefs with respect.

The child has a positive self-image and shows that s/he is comfortable with her/himself.

Charlie is a wheelchair user. When the practitioner asks the group for help in finding the repeated phrase in the big book they are using, he volunteers. 'I can read it. I am a good reader.' He propels the wheelchair, unaided, up to the book where he points to and reads the words.

Umar sees Joely fingering the prayer mat which is on display. He tells her that it is a special mat, his Dad has one at home and he kneels on it to say his prayers.

Clustering impacts on disproportionality

- Compare the ethnic ORs in single level and multi-level models, tells us how much the school might impact *ethnic disproportionality*
- Negligible effects except - A significant part of the over-representation of BCRB/MWBC students at secondary school is school related

Adjusted OR's	OR (single Level)	OR (multi- Level)
SEMH - Secondary		
Black Caribbean	1.47	1.28
MWBC	1.47	1.11

Note: Models include controls for all other pupil level variables

- Robustness check with only those schools with 3+ BCRB/MWBC, same result