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The impact of psychological distress on the educational achievement of adolescents at the end of compulsory education

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Abstract

Background—Poor academic performance at school can have a substantial effect on opportunities in adult life and as such it is imperative that researchers establish the chief causes of underachievement. This paper examines performance at the General Certificate of Secondary Education (GCSE), examined at age 16, with reference to psychological distress and depressive symptoms as measured at age 13-14.

Methods—The data come from a school based prospective epidemiological study of a representative multiethnic sample of adolescents attending East London secondary schools in Tower Hamlets, Hackney, and Newham. Logistic regression analysis was carried out using STATA to test for differences in the impact of different types of psychological distress on achievement.

Results—The overall score for psychological distress, as measured by the Strengths and Difficulties Questionnaire (SDQ), was negatively associated with achievement at GCSE for both boys (OR=0.41, 95% CI 0.24 to 0.69) and girls (OR=0.60, 95% CI 0.41 to 0.87). There was evidence for an association between achievement and depressive symptoms, as measured by the Short Moods and Feelings Questionnaire (SMFQ), for boys only (OR=0.58, 95% CI 0.43 to 0.79). There was weak evidence for an interaction between ethnicity and SMFQ for girls. Results from a subset of analyses adjusting for prior achievement suggested that the association between psychological distress at age 13-14 and GCSE achievement could not be explained simply by achievement at age 13-14.

Conclusions—The results suggest that psychological distress is associated with educational achievement. Low achievement at school can have a substantial effect on opportunities in adult life. This implies a greater need for support within the school for children with psychological difficulties in order to achieve the best possible outcomes in the long-term.

Keywords

adolescents; mental health; SDQ; SMFQ; achievement

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Introduction

Closing the gaps in educational achievement has now been widely acknowledged as a pressing concern of international importance. In Britain, the tone for educational reform throughout the late 1990s and into the twenty-first century was set by the White Paper *Excellence in Schools*. In his forward the Secretary of State for Education and Employment described "the Government's core commitment" as "equality of opportunity and high standards for all" [Department for Education and Employment 1997]. This document acknowledged the fact that inequality of educational achievement is a key factor in placing young people at risk of isolation, non-participation and social exclusion later in life. The failure of some pupils to fulfill their academic potential has implications in terms of wasted human capital as well as on social cohesion. The factors that contribute to educational inequalities are therefore an important topic for study.

Inequalities in educational performance occur across gender, ethnic and social class groupings. Recent research on the achievements of boys and girls in GCSE examinations has indicated that the performance of girls is stronger than that of boys [Arnot et al. 1998;Connolly et al. 2006;Department for Education and Skills 2006]. Although the gap has been narrowing in recent years, it remains significant [Owen 2006;Smithers 2006]. Various explanations have been advanced for this, but no firm conclusions have been reached [Gray et al. 2004;Warrington et al. 2000;Younger et al. 1999]. Ethnicity and social class have also been shown to be important predictors of examination results [Connolly et al. 2006;Connolly et al. 2006;Demack et al. 2000;Demack et al. 2000;Department for Education and Skills 2006;Heath 2000;Jonsson and Mills 1993;Jonsson and Mills 1993;Owen et al. 2000]. One possible explanation for achievement differentials that remains under researched in the British context is that of the association between psychological distress and academic attainment. The ability to use the ethnically diverse and deprived sample provided by the RELACHS project offers an ideal opportunity to examine these gender and ethnic differences in achievement and its predictors in detail.

A number of authors have found evidence of a negative association between depressive symptoms and academic achievement at school [Fergusson and Woodward 2002;Forsterling and Binser 2002;Reinherz et al. 1991;Shahar et al. 2006;Wiest et al. 1998]. There is also evidence that conduct disorders, hyperactivity, and peer relationship problems can contribute to low performance [Biederman et al. 2004;Fergusson and Woodward 2000;Prior et al. 2005;Rucklidge and Tannock 2001;Wilson and Marcotte 1996;Woodward and Fergusson 2000]. Differences have been found in the impact that such problems can have by gender, but the research findings have not been consistent [Feshbach and Feshbach 1987;Kessler et al. 1995;Miech et al. 1999;Preiss and Franova 2006;Shahar et al. 2006]. Poor achievement at school has also been found to contribute to psychological difficulties in later life [Power and Manor 1992].

This paper assesses the effect of psychological distress and depressive symptoms at age 13-14 on GCSE performance at age 15-16, using a school based study of adolescents attending schools in East London in 2001, followed-up in 2003 and 2005. The study is able to take advantage of the benefits of a longitudinal dataset by examining the relationship between psychological distress and the factors that lead to academic achievement over a two year period.

Methods

The data come from the Research with East London Adolescents: Community Health Survey (RELACHS), a school based epidemiological study of a representative sample of

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2790 adolescents from year 7 (11-12 years) and year 9 (13-14 years) attending 28 comprehensive schools in Hackney, Newham, and Tower Hamlets in 2001 [Stansfeld et al. 2003]. These adolescents were followed up in 2003 and 2005.

Psychological distress at age 13-14 was measured using the self report version of the Strengths and Difficulties Questionnaire (SDQ) [Goodman 1997]. The questions form five scales (each made up of 5 items): emotional symptoms, conduct problems, hyperactivity/ inattention, peer relationship problems, and prosocial behaviour. A total SDQ score ranging from 0-40 was generated by adding together the scores for all of the scales, apart from prosocial behaviour. The higher the total score, the higher the level of measured distress. A score of 18 was chosen as the threshold for a high scorer on the SDQ as this was equivalent to prevalence rates in national data using multi model assessments [Meltzer et al. 2003]. The measure has been used previously in ethnically mixed youth samples which support the SDQ as a valid instrument for ethnically diverse samples [Leavey et al. 2004;Meltzer et al. 2003;Mullick and Goodman 2001;Muris et al. 2003].

Depressive symptoms were measured using the Short Moods and Feelings Questionnaire (SMFQ). There are 13 items in this scale: “true”, “sometimes true”, or “not true”. The scores for these items were summed to produce an overall score, with 8 or above indicating the presence of depressive symptoms. In the original validation against the Diagnostic Interview Schedule for Children – Depressive Scale this threshold yielded a positive predictive value to 80% and a negative predictive value of 68% [Angold et al. 1995].

General Certificate of Secondary Education examinations (GCSEs) now form the first important “branching point” at the end of compulsory education, taken at age 15-16. Taking GCSE examinations is not obligatory, although schools enter the majority of their pupils for them. It is therefore possible to analyse the attainments of almost the entire ability range of a cohort through looking at GCSE results. Under the National Curriculum, all students cover a similar range of subjects. All pupils study the “core” subjects of English, mathematics, science, technology, religious education and physical education (although they may not take examinations in all of these). They can take a number of additional options including humanities subjects, modern languages and creative and artistic subjects. Typically, students study 8 or 9 subjects. These are assessed partly by examination and partly by coursework. Pass grades range from G to A*, but measures of attainment by school are usually measured by the number of pupils who attain 5 or more A*-C grades; this is the measure used here. It is also the threshold used by the Department of Education and Skills as a performance indicator [Department for Education and Skills 2006]. In 2005 55.7 per cent of pupils nationally achieved 5 or more A* to C grades at GCSE or equivalent. In London the figure was 54.1 per cent.

Data on educational achievement at GCSE obtained from the Local Education Authorities were merged with the data collected by the RELACHS team. Schools varied in the way in which they recorded GCSE results. Regardless of the way in which GCSE results were recorded, a binary variable was created (achieved 5 or more A*-C grades or not). Some schools provided a measure stating the number of GCSEs gained at grade C and above; this was recoded into a binary variable measuring whether or not 5 A*-C grades had been obtained. Other schools provided a “total points” variable whereby an A* grade is allocated 58 points, an A is allocated 52 points, a B is allocated 46 points, and so on. Six hundred and ninety scores for the 5 of more A*-C grades variable were created using SPSS from a “total points” at GCSE measure, using the Expectation-Maximisation (EM) Algorithm. This alternates between performing an expectation (E) step, which computes an expectation of the likelihood by including the latent variables as if they were observed, and a maximisation (M) step, which computes the maximum likelihood estimates of the parameters by

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maximizing the expected likelihood found on the E step. The parameters found on the M step are then used to begin another E step, and the process is repeated.

Ethnicity was categorised as follows using a revised version of the 2001 census: white UK, Bangladeshi, Pakistani, Asian Indian, black African, black Caribbean and black British. Pupils are eligible for free school meals if their parents receive Income Support, Income Based Jobseekers' Allowance, support under part VI of the Immigration and Asylum Act 1999 or Child Tax Credit (under certain circumstances). Eligibility for free school meals was the best proxy available for social class; the dataset did not contain any occupational measures.

Logistic regression analysis was conducted using STATA. Because the primary sampling unit for the study was the school, it was necessary to make adjustments for the clustered survey design in the analyses. Failing to adjust for this would result in an overstatement of precision by ignoring the possible lack of independence of observations within the same school. This would lead to standard errors that are too small. Adjustments were made for survey design using the svy suite of commands in Stata. An equal number of classes was selected in each school regardless of school size, so that probability of selection varied by school. To adjust for this, data were reweighted. This ensured that the data were representative of all adolescents attending comprehensive schools in the three boroughs at the time of the baseline survey. Analysis was carried out for boys and girls separately (tables 2 and 3). In Models 1 and 3 SDQ and SMFQ were entered as predictor variables adjusted for cohort (whether the pupil was in year 7 or year 9 in the first wave of data collection). In models 2 and 4 adjustments were made for ethnicity and eligibility for free school meals. Classical (Mantel-Haenszel) analysis was employed to investigate whether there was any evidence for interaction.

There was some data missing for GCSE achievement and smaller amounts of data missing for the other variables in the analysis. Analysis of the missing cases suggested that those who had high scores on the SDQ and the SMFQ were less likely to have GCSE results recorded. Pupils receiving free school meals were also more likely to have missing GCSE data. The final N was 1718 for the analyses looking at the association between SDQ and achievement and 1636 for the analyses looking at the association between SMFQ and achievement. To assess the extent to which the missing data might have affected the results, sensitivity analysis was carried out whereby it was assumed in one model that all those for whom results were not reported gained the benchmark and in the second model that they did not.

A limited amount of data was available on achievement at age 13-14. The benchmark used for educational achievement at age 13-14 was the attainment of level 5 or above in English, mathematics and science in the Key Stage 3 examinations. These are national tests are intended to indicate if a student is working at, above or below the target level for their age. A subset of analyses were carried out on the respondents for whom there was information on achievement at baseline (Key Stage 3) in order to determine whether the relationship between psychological distress at baseline and achievement at follow-up could simply be explained by a correlation between achievement and psychological distress at baseline. The N for these analyses was 1073 for the analyses with SDQ as the dependent variable and 1008 for the analyses with SMFQ as the dependent variable.

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Results

The descriptive statistics (table 1) show that 48.1 per cent of boys and 64.2 per cent of girls achieved 5 or more A*-C grades at GCSE. The proportion of boys and girls in the dataset was similar, as was the number of students in the younger and older cohorts.

As stated in the introduction, the sample was both ethnically diverse and deprived. Almost half of the respondents received free school meals. The largest ethnic group was Bangladeshi (26.5 per cent); in England and Wales, this group represents 0.5 per cent of the population although 33.4 per cent are located in Tower Hamlets. The white UK group is the second largest group at 18.1 per cent of the sample; 87.5 per cent of people in England and Wales described themselves as white British in the 2001 Census [http://www.statistics.gov.uk/census2001/profiles/commentaries/ethnicity.asp].

9.7 per cent of boys and 11.5 per cent of girls were high scorers on the SDQ. 17.6 per cent of boys and 30.3 per cent of girls were high scorers on the SMFQ.

Tables 2 and 3 report the regression analyses. Table 2 shows the regression analyses with SDQ as the dependent variable. Table 3 shows the same analysis with SMFQ as the dependent variable. There was strong evidence for an association between SDQ and achievement at GCSE for boys (OR=0.41, 95% CI 0.24 to 0.69) and for girls (OR=0.60, 95% CI 0.41 to 0.87) adjusting for year group only. There was strong evidence for an association between SMFQ score and achievement at GCSE for boys (OR=0.58, 95% CI 0.43 to 0.79) but no evidence for an association for girls (OR=0.83, 95% CI 0.59 to 1.16). Tests for interaction showed no evidence for a true difference between the odds ratios for boys and girls (test for homogeneity of odds ratios for SDQ: p-value=0.32, test for homogeneity of odds ratios for SMFQ: p-value=0.16). In Models 2 and 4 eligibility for free school meals and ethnicity were adjusted for. These adjustments resulted in only a small change in the odds ratio.

There was strong evidence for an association between eligibility for free school meals and achievement at GCSE for both boys (Model 2: OR=0.55, 95% CI 0.35 to 0.85; Model 4 OR=0.56, 95% CI 0.35 to 0.89) and girls (Model 2: OR=0.61, 95% CI 0.44 to 0.85; Model 4: OR=0.59, 95% CI 0.42 to 0.82). For girls there was evidence for an association between ethnicity and achievement at GCSE; in Model 2 Bangladeshi (OR=2.38, 95% CI 1.23 to 4.60), Indian (OR=2.20, 95% CI 1.07 to 4.50), and Black African (OR=1.84, 95% CI 1.06 to 3.18) girls performed better than the white UK reference group at GCSE. In Model 4 there was a similar pattern although in this case there was also evidence for higher performance by Black British girls, (OR=2.32, 95% CI 1.03 to 5.23). For boys, there was no evidence for an association between ethnicity and achievement at GCSE.

Interactions between the two measures of psychological distress (SDQ and SMFQ) and eligibility for free school meals and ethnicity were tested for. There was weak evidence for an interaction between SMFQ and ethnicity for girls (test for homogeneity of odds ratios p-value=0.06). Bangladeshi girls who were depressed had about a third of the odds of achieving the benchmark at GCSE compared to Bangladeshi girls who were not depressed (stratum-specific OR=0.29, 95% CI 0.17 to 0.52). Amongst girls in the other ethnic groups, there was no evidence that SMFQ score was associated with GCSE achievement.

In a subset of analyses conducted on those respondents for whom there was data available on achievement at age 13-14, evidence remained for an association between SDQ and achievement at GCSE for boys (OR=0.32, 95% CI 0.15-0.67) and for girls (OR=0.54, 95% CI 0.29-1.00) after adjustment for achievement at age 13-14. There was no evidence for an

association between SMFQ and achievement at GCSE after adjustment for achievement at age 13-14.

Discussion

This paper has prospectively examined the role of psychological distress in predicting educational outcomes at GCSE using data from a school based study of children from East London schools. The key aim of the analysis has been to determine the extent to which psychological distress at age 14 impacted on achievement at the end of compulsory education. These issues were examined using logistic regression analysis with controls for the confounding factors of free school meals and ethnicity.

Main findings

Strong evidence was found for an association between psychological distress at age 13-14 (as measured by the SDQ) and achievement at GCSE in both boys and girls. There was also evidence for an association between depressive symptoms at age 13-14 (as measured by the SMFQ) and achievement at GCSE for boys, but this association disappeared in sub-analyses which adjusted for achievement at age 13-14. There was weak evidence for an interaction between ethnicity and SMFQ for girls.

Strengths and limitations

The main strengths of the study lie in its use of a representative sample of young people in schools in East London, the availability of standardised and previously validated measures of psychological distress and the fact that the longitudinal nature of the data meant that prospective analysis was possible. The large minority ethnic component of the sample enabled a detailed analysis by gender-ethnic grouping; this has often been a problem in analysis of educational differentials by ethnicity [Demack et al. 2000;Drew and Gray 1990]. The data is also unusual in that it provides comprehensive measures of psychological distress alongside information on educational achievement at age 16; few British datasets provide this. The study takes full advantage of the benefits of a longitudinal dataset by examining the relationship between psychological distress and the factors that lead to academic achievement over a two year period.

A weakness of the study lies in the fact that there was a reasonable amount of GCSE data missing. Analysis of the missing cases suggested that those who have high scores on the SDQ and the SMFQ are less likely to have GCSE results recorded. Pupils receiving free school meals were also more likely to have missing GCSE data. Given that these groups were less likely to achieve the academic benchmark, it is likely that the overall achievement of the sample has been overestimated here. It may also be the case that the impact of scoring highly on the SDQ and SMFQ has been underestimated; those pupils not recording GCSE results at all may be those that suffer from the greatest psychological distress and for whom the academic impact is more devastating.

However, the fact that the magnitude of the missing data was the same for boys and girls in the study makes bias in terms of gender differences less likely. Sensitivity analysis was carried out whereby it was assumed in one model that all those for whom results were not reported gained the benchmark and in the second model that they did not. The key results remained the same.

There was only a limited amount of data available on achievement at age 13-14. A subset of analyses were therefore carried out in order to investigate whether the association found between psychological distress at age 13-14 and GCSE achievement could be wholly explained by achievement at age 13-14. Ideally, the full analysis would have been adjusted

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for earlier achievement but this would have reduced the N to an unacceptably low level. It is therefore not possible to say with certainty that the associations found are not entirely due to prior achievement. However, the subanalyses that were carried out suggest that psychological distress at age 13-14 is an important predictor of achievement at GCSE even once prior achievement has been taken account of.

Previous studies

The higher performance of girls was not surprising. As stated in the introduction, this is a trend that has been observed at the national level for some time now. The gender differences in the propensity to exhibit psychological distress in year 9 were also as expected. Previous analysis using the RELACHS dataset has indicated that there are gender differences in patterns of psychological distress [Stansfeld et al. 2003].

Scoring highly on the SDQ and the SMFQ would be expected to result in a lower likelihood of achieving the academic benchmark of 5 or more A*-C grades on the basis of previous research. The SDQ was negatively associated with achievement for both boys and girls, as would be expected. There was evidence for an association between SMFQ score and GCSE achievement for boys but this was not the case for girls. In the sub-analyses adjusted for achievement at age 13-14, there was no evidence for an association between SMFQ and achievement at GCSE for boys or girls. Other studies have found a strong negative relationship between depressive symptoms and achievement [Fergusson and Woodward 2002;Forsterling and Binser 2002;Reinherz et al. 1991;Shahar et al. 2006;Wiest et al. 1998]. It is possible, however, that the experience of psychological distress impacts differently on achievement with regard to stage of schooling.

Regarding the variables added in Models 2 and 4, the strong effect of the free school meals variable is what would be expected from previous research if eligibility for free school meals is taken as a proxy for social class. Indeed, a huge body of sociological research has shown a consistent relationship between low social class and poor academic achievement [Connolly et al. 2006;Connolly et al. 2006;Demack et al. 2000;Demack et al. 2000;Department for Education and Skills 2006;Heath 2000;Jonsson and Mills 1993;Jonsson and Mills 1993;Owen et al. 2000].

A slightly larger effect for ethnicity would have been expected for both genders. Some of the non-significant figures might be attributable to lack of statistical power in some groups. The hierarchy of achievement for boys generally agrees with previous research in that Asian Indians and the “other” group, usually made up primarily of Chinese pupils, perform better than whites and that Pakistanis, black Caribbean and black African groups perform worse. However, in nationally representative data Bangladeshis normally evince poor performance at GCSE. For girls, the odds ratios indicate that all non-white groups perform better than UK white pupils; this is not in line with national data where black, Pakistani and Bangladeshi pupils tend to exhibit lower performance [Demack et al. 2000;Owen et al. 2000].

Evidence was found for an interaction effect for Bangladeshi girls*SMFQ. As far as the authors are aware, little research has been carried out on the way in which psychological distress impacts differentially by ethnic group; this may be a promising area for future research.

Possible explanations for associations

The analyses show a much stronger association between the SDQ and achievement at GCSE than between the measure of depressive symptoms and achievement at GCSE. The constituents of the SDQ may have a more specific impact on achievement than emotional symptoms. In previous research, conduct, and peer relationship problems have been found to

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have a direct impact on school related behaviours; this may also have indirect effects leading to higher levels of truancy, early school leaving, interpersonal difficulties with teachers and school suspension [Woodward and Fergusson 2000]. It is possible that the study is underpowered and that stronger evidence would have been found for an association between SMFQ and achievement at GCSE with a larger sample.

The study finds slightly different patterns of performance by ethnicity to national samples, especially for girls. One possible reason for the low performance of the UK white adolescents in this particular sample is that they are more deprived than national samples; they also make up a relatively small proportion of the East London sample examined here, contributing to a reverse effect. The discrepancy may also be partly due to the fact that it has often not been possible to effectively analyse the Bangladeshi group in national data due to small numbers. The RELACHS study is unique in that this group represents the largest in the sample due to the location of the sample. It has also been suggested that a high concentration of co-ethnics, as is the case for Bangladeshis living in East London, might work to produce favourable educational outcomes [Portes and Zhou 2001], but it is beyond the scope of this paper to examine this issue in detail.

Testing for interaction effects revealed some differences in the impact of psychological distress on achievement by ethnicity. Some evidence was found for an interaction between ethnicity and SMFQ for girls. Without more detailed qualitative research it is difficult to establish why this should be the case; certainly this is an important area for future research as it could enable researchers to establish the factors which result in some groups being able to achieve academically despite experiencing psychological difficulties and direct policy towards developing this capacity amongst other pupils.

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Table 1

Descriptive statistics by gender
Source: RELACHS study, waves 1 and 2 (2001 and 2003)

	Boys		Girls	
	%	N	%	N
GCSEs				
5+ A*-C grades	48.1	413	64.2	559
Less than 5 A*-C grades	51.9	446	35.8	312
		859		**871**
Cohort				
Younger	49.7	517	48.7	513
Older	50.3	523	51.3	540
		1040		**1053**
SDQ				
High scorer	9.7	99	11.5	120
Not high scorer	90.3	918	88.5	920
		1017		**1040**
SMFQ				
High scorer	17.6	166	30.3	299
Not high scorer	82.4	778	69.7	689
		944		**988**
Free school meals				
Eligible	49.6	506	46.9	486
Not eligible	50.4	515	53.1	551
		1021		**1037**
Ethnicity				
White UK	18.9	197	17.2	181
Bangladeshi	29.1	303	23.9	251
Asian Indian	8.3	86	10.6	111
Pakistani	7.7	80	5.5	58
Black Caribbean	5.6	58	6.7	70
Black African	9.5	99	12.2	128
Black British	3.3	34	4.8	51
Other	17.6	183	19.2	202
		1040		**1052**

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Table 2

Models of pupils gaining 5 or more A*-C grades with cohort SDQ score, eligibility for free school meals and ethnicity as predictor variables
Source: RELACHS study, waves 1 and 2 (2001 and 2003)

	MODEL 1 (boys)	MODEL 2 (boys)	MODEL 1 (girls)	MODEL 2 (girls)
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Cohort (older)	0.83 (0.61,1.16)	0.75 (0.55,1.03)	0.43 (0.30,0.60) ***	0.38 (0.27,0.55) ***
SDQ (high score)	0.41 (0.24,0.69) **	0.39 (0.23,0.66) ***	0.60 (0.41,0.87) **	0.61 (0.43,0.86) **
FSM (eligible)		0.55 (0.35,0.85) **		0.61 (0.44,0.85) **
Ethnicity (wh. UK)		1		1
Bangladeshi		1.10 (0.67,1.81)		2.38 (1.23,4.60) *
Asian Indian		1.71 (0.81,3.59)		2.20 (1.07,4.50) *
Pakistani		0.66 (0.31,1.40)		1.09 (0.67,1.78)
Black Caribbean		0.51 (0.25,1.07)		1.22 (0.60,2.45)
Black African		0.88 (0.35,2.20)		1.84 (1.06,3.18) *
Black British		0.57 (0.24,1.38)		2.21 (0.97,5.02)
Other		1.15 (0.63,2.11)		1.20 (0.61,2.36)
N	844	844	874	874

* statistically significant at 0.05 level,

** significant at 0.01 level,

*** significant at 0.001 level

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Table 3

Models of pupils gaining 5 or more A*-C grades with cohort, SMFQ score, eligibility for free school meals and ethnicity as predictor variables
Source: RELACHS study waves 1 and 2 (2001 and 2003)

	MODEL 3 (boys)	MODEL 4 (boys)	MODEL 3 (girls)	MODEL 4 (girls)
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Cohort (older)	0.74 (0.52,1.05)	0.68 (0.47,0.97) *	0.37 (0.25,0.55) ***	0.33 (0.22,0.51) ***
SMFQ (high score)	0.58 (0.43,0.79) **	0.56 (0.41,0.78) **	0.83 (0.59,1.16)	0.77 (0.57,1.05)
Free sch meals (eligible)		0.56 (0.35,0.89) *		0.59 (0.42,0.82) **
Ethnicity (white UK)		1		1
Bangladeshi		1.09 (0.66,1.81)		2.43 (1.19,4.95) *
Asian Indian		1.76 (0.82,3.78)		2.38 (1.19,4.76) *
Pakistani		0.62 (0.28,1.39)		1.17 (0.73,1.88)
Black Caribbean		0.57 (0.26,1.28)		1.22 (0.61,2.46)
Black African		0.88 (0.32,2.45)		1.70 (0.99,2.90)
Black British		0.55 (0.21,1.45)		2.32 (1.03,5.23) *
Other		1.11 (0.64,1.92)		1.43 (0.75,2.74)
N	798	798	838	838

* statistically significant at 0.05 level,

** significant at 0.01 level,

*** significant at 0.001 level