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School poverty effects on trajectories of child behaviour: Do they depend on gender and ethnicity?

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ABSTRACT

This study examined English school poverty effects on trajectories of child behaviour across ages 3, 5, 7 and 11, and the moderating roles of ethnicity and gender. School poverty predicted internalising and externalising problems concurrently, and internalising problems longitudinally. In poor schools, girls had a steeper incline in internalising problems, but made greater reductions in externalising problems. Ethnic differences were also found in the association between school poverty and child adjustment. Gender and ethnic background may influence how a child responds emotionally and behaviourally to the composition of peers at school.

1. . Introduction

Much research has explored the role of school socio-economic composition on educational achievement (Hutchison, 2003; Konstantopoulous and Borman, 2011; Sammons et al., 1997; Schagen and Schagen, 2005; Van Ewijk and Sleegers, 2010). However, its influence on child emotional (internalising) and behavioural (externalising) problems has received less attention, despite evidence that mental health problems in childhood and adolescence may compromise academic functioning (Bub et al., 2007; Needham et al., 2004). Like academic outcomes, child behaviour outcomes are antecedents to mental health problems in adulthood (Hofstra et al., 2001) along with a host of other adult outcomes including lack of education (Colman et al., 2009), unemployment (Knapp et al., 2011) and relationship problems (Colman et al., 2009).

School-composition effects capture the collective influence of pupil peer groups at school. Composition refers to the aggregation (at the school-level) of pupils' characteristics, including demographic, socio-economic or academic/intellectual (Coleman et al., 1966; Jencks and Mayer, 1990; Konstantopoulos and Borman, 2011; Rumberger, 2011; Rumberger and Palardy, 2005). One of the main theories linking school composition effects to individual child outcomes is 'contagion theory' (Jencks and Mayer, 1990). According to contagion theory, the socio-economic composition of a school determines what kind of behavioural norms are transmitted through peer influence. This contagion of behaviours and attitudes from peers within the school may impact the behaviours of individual children (Dishion and Tipsord, 2011; Gaviria and Raphael, 2001). A second theory says that schools with disadvantaged socio-economic intakes have certain institutional characteristics that may relate unfavourably to child behaviour. For example, schools with lower social class compositions have been shown to have higher teacher turnover (Dolton and Newson, 2003; Smithers and Robinson, 2004). Other characteristics of disadvantaged schools may include lower parental involvement in schooling, less effective management processes within schools and a less rigorous curriculum (Thrupp et al., 2002).

There is some evidence that disadvantaged socio-economic intakes predict negatively pupil emotional and behavioural adjustment in primary school (Flouri and Midouhas, 2016; George and Thomas, 2000; Humphrey and Wigelsworth, 2012; Humphrey et al., 2010) and in secondary school (Coley et al., 2017). In England, using multilevel regression models accounting for clustering of children within schools and amount of time in school, Flouri and Midouhas (2016) found a small but robust effect of state school socio-economic composition at ages 5 and 7 on pupils' internalising and externalising problems at age 7, using data from the UK's Millennium Cohort Study. The intraclass correlations (ICCs), a measure of how much variation at the individual level is attributable to differences at the cluster (in this case, school) level, ranged from 0.02 to 0.06 depending on the problem type. Indeed, most studies have found small school effects on child behaviour and well-being outcomes. Sellström and Bremberg's (2006) review identified six school effect studies with a focus on 'problem behaviour/well-being'. They found that ICCs ranged from 0.01 to 0.25. Existing research has not, however, explored whether school socio-economic composition is associated with change in internalising and externalising problems *over time*. Understanding the longitudinal impact on internalising and externalising problems across the primary school period would allow us to get closer to understanding whether this is a causal relationship.

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Furthermore, little is known about whether the relationship between school socio-economic composition effects and internalising and externalising problems depends on individual pupil characteristics such as gender and ethnicity. Children with particular characteristics attending schools with lower socio-economic compositions may have better than expected emotional and behavioural adjustment. Girls, in general, are at lower risk of behavioural problems and higher risk of internalising problems than boys (Egger and Angold, 2006; Gutman et al., 2015). A fair amount of research finds that boys (relative to girls) are more vulnerable to environmental risk factors including family poverty and stress in early life (Hetherington and Elmore, 2003; Werner and Smith, 2001), though these differences appear to lessen with age.

Ethnicity is another characteristic that may be associated with differential effects of school socio-economic composition (Coley et al., 2017). Firstly, there are ethnic differences in emotional and behavioural problems in the UK. In general, research shows that the main ethnic minority groups in the UK have similar or lower rates of emotional, behavioural and hyperactivity problems than White British children (Goodman et al., 2008), despite experiencing more poverty (Platt, 2007). In the literature using data from the aforementioned MCS, the data analysed in the present study, some minority ethnic groups have been found to have greater internalising and externalising problems than White children but others demonstrate fewer problems, partly dependent on age. At age 3, using the MCS data, Platt (2012) found that children from Indian and Pakistani or Bangladeshi backgrounds had more, and Black African children had fewer, internalising and externalising problems, when measured with a composite score. Also using the MCS data, Zilanawala et al. (2015) showed that, among the same children, Pakistani and Black Caribbean children had significantly higher externalising problems scores at age 7, explained by their socio-economic backgrounds, and Black African children had lower scores, than their White peers. The better adjustment of Black African children was unexplained by family socio-economic and parenting factors. Furthermore, internalising problems were higher among Pakistani, Bangladeshi and Black Caribbean children relative to White children, only partly attenuated by their socio-economic position. Other research by Zilanawala et al. (2016) has found that Mixed ethnic children have better socio-emotional outcomes than their non-Mixed counterparts and that they followed different growth trajectories.

Ethnic differences in child behaviour may also exist for children depending on the socio-economic composition of peers in their school. Recent reports (Greaves et al., 2014) have shown that attainment and progress of pupils in disadvantaged urban areas of the UK is higher than other areas of the country (frequently termed the 'London effect' but it applies to other urban areas as well). Burgess (2014) identified that pupil ethnic background explains some, though not all, of this effect on attainment progress as non-white ethnic minorities tend to be clustered within urban schools. Burgess argued that families and their children from minority ethnic backgrounds may have higher aspirations, a superior work ethic and, especially for those from immigrant backgrounds, place greater hopes in the education system than White British families which translates to greater school engagement. As schools with disadvantaged socio-economic compositions are found within disadvantaged urban areas, we might find that children from minority ethnic backgrounds relative to White children in poor schools also have fewer internalising and externalising problems (not only higher attainment, given their associations, Bub et al., 2007; Needham et al., 2004). These children may have 'non-cognitive' skills such as self-regulation, work ethic and school engagement driven by their family values and aspirations that help to buffer the effects of a disadvantaged socio-economic composition.

On the other hand, children from ethnic minority backgrounds may do more poorly in schools with higher socio-economic intakes. In such schools where ethnic composition is overwhelmingly White, children with minority ethnic backgrounds may experience feelings of social inferiority (Crosnoe, 2009), which, in turn, may be associated negatively with mental health. Therefore, attending a more affluent school may have a detrimental, rather than positive, effect for children from minority ethnic backgrounds due to mechanisms of relative deprivation (Jencks and Mayer, 1990).

1.1. The present study

This study examined whether the socio-economic composition of schools relates to primary school children's internalising and externalising problems, concurrently and longitudinally. It also tested whether this relationship depends on gender and ethnicity. It modelled the relationship between school socio-economic composition, measured with the percentage of pupils in the school who are eligible for a free school meal (FSM), and children's trajectories of child adjustment problems across four timepoints (age 3, 5, 7 and 11). A number of possible confounders of the relationship between school composition and child behaviour were adjusted for including family socio-economic disadvantage, child eligibility for a FSM, maternal education, maternal psychological distress and child cognitive ability. By doing so, biases related to selection into schools were reduced. Accounting for selection into schools is important in order to ascertain whether school 'effects' are genuine or are due to individual pupil characteristics unaccounted for (Ginther et al., 2000). In this study, selection occurs if the sorting of pupils into schools is not independent from emotional/behavioural adjustment. For example, child cognitive ability at the beginning of school should be related to both emotional/behavioural adjustment and choice of school.

It was hypothesized that school socio-economic composition would predict internalising and externalising problems such that a greater intake of disadvantaged pupils would relate to more problems concurrently and longitudinally, even after accounting for key child and family background characteristics. However, it was expected that the remaining effect would be small relative to individual and parent/family characteristics. Furthermore, it was hypothesized that child gender and ethnicity would be associated with differential school composition effects on internalising and externalising problems.

2. Methods

2.1. Participants and procedure

The Millennium Cohort Study (MCS; www.cls.ioe.ac.uk/mcs) is a longitudinal survey of 19,244 families drawing its sample from all births in the UK over a year, beginning in September 2000. The MCS sample is disproportionately stratified to ensure adequate numbers in the four UK countries and electoral wards with disadvantaged or (in England) ethnic minority populations (Plewis, 2007). Ethical approval for MCS was gained from NHS Multi-Centre Ethics Committees, and parents gave informed consent before interviews took place. Data from Sweeps 2–5 were used, taking place when the children were around 3, 5, 7 and 11 years, respectively, starting in early childhood and moving through the phase of primary school education. Using records for only one child per family (the first-born where there were twins or triplets), the analytic sample (n = 7848) comprised children attending an English state school with data on school-level FSM-eligibility at age 7 (available for English state schools only) and with data on emotional and/or behavioural problems at minimally one of the four waves (age 3, 5, 7 or 11). Fig. 1 demonstrates how the analytic sample was derived.

2.2. Measures

School socio-economic composition ('School FSM') was measured with the percentage of pupils eligible for a free school-meal (FSM) in state-maintained schools in England. Data were collected during the January 2009 (corresponding with Sweep 4) census, obtained from the School Data Unit at the Department for Education. Percentages were