

The Impact of Academies on School Connectedness, Future Aspirations and Mental Health in
Adolescents from Areas of Deprivation in London

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Abstract

Background. Research shows that school environment impacts significantly on students' mental health, future aspirations and feelings of school connectedness, which in turn can improve academic outcomes. The UK has seen rising numbers of academy schools in recent years which have been scrutinised for academic performance but overlooked in terms of important aspects of school environment.

Aim. This study compares outcomes for mental health, school connectedness and future aspirations in low-socioeconomic status adolescents attending academy and non-academy schools.

Sample. Data came from 1,284 11-16yr olds attending one of 67 academy or non-academy schools from areas of deprivation in London. 639 complete cases were analysed.

Method. Self-reported measures of school connectedness, future aspirations and mental health, including self-esteem, were analysed and compared using linear regression clustered at school level, adjusting for the effects of gender, ethnicity, school year and affluence.

Results. Adolescents attending academies were found to have significantly higher levels of school connectedness than those at non-academy schools. No direct effect of academies on mental health or aspirations was found, however school connectedness had a significant, mediating effect on pro-social mental health scores. Academies in this sample can therefore be said to indirectly increase levels of mental health by increasing levels of school connectedness.

Conclusion. These findings highlight the importance of school connectedness for adolescent wellbeing and suggest that academies can be more successful in promoting levels of school

connectedness which can then impact positively on individual mental health. More work needs to be done on identifying the structures and processes at work.

Introduction

The significance of positive relationships in the development of emotional wellbeing and self-esteem in children has long been understood (Bowlby, 1980), as has the need for a sense of group membership, particularly in adolescence, and its importance in promoting interest and confidence in learning (Deci, Vallerand, Pelletier & Ryan, 1991). In 1998, The World Health Organisation has also recognised the importance of the role of the school community in society and called for Health Promoting Schools (HPS) which “strive to improve the health of school personnel, families and community members as well as students” (WHO, 1998). Since then there have been a flurry of interventions directed at schools and aimed at improving specific aspects of physical and mental health (Bonnell, Jamal, Harden, Wells, Parry, Fletcher, Petticrew, Thomas, Whitehead, Campbell, Murphy & Moore, 2013).

Children spend a greater proportion of each day in the school environment than they do at home and students’ perception and experience of school has been found to affect many aspects of behaviour (Wang, & Holcombe, 2010) as well as being positively related to academic achievement (Jia, Way, Ling, Yoshikawa, Chen, Hughes, Ke & Lu, 2009). Students’ perceptions of their school environment have often been measured using a construct called ‘school connectedness’, described as “the extent to which students feel personally accepted and respected, included and supported by others in the school social environment” (Goodenow, 1993, p. 80).

While a variety of school connectedness measures have been used by researchers, common items include: teacher supportiveness, peer relationships, engagement in education, safety and discipline, and feelings of belonging (Libbey, 2004). School connectedness has been shown to have a significant impact on adolescent depression and future mental health problems (Shochet, Dadds, Ham & Montague, 2006; Resnick, Bearman, Blum, Bauman, Harris, Jones, Tabor, Beuhring, Sieving, Shew & Ireland, 1997) as well as self-esteem (Osterman, 2000; Maddox & Prinz, 2003) and risk behaviours (McNeely & Falci, 2004). Shochet et al's (2006) study reported sizeable correlations between school connectedness and mental health in their sample of Australian 8th grade students, leading them to add that school connectedness could be an "under-emphasised parameter in adolescent depression" (p.177).

Experiencing a sense of connectedness to school was found to be particularly important for students transitioning from primary to secondary school having a positive impact on symptoms of depression and anxiety (Lester, Waters, & Cross, 2013). Another study found school connectedness to have a significant effect on prosocial behaviour (Oldfield, Humphrey & Hebron, 2016). Research suggests that adolescents in particular are strongly influenced by their peer groups (Wentzel & Muenks, 2016; Lynch, Lerner, & Leventhal, 2013). While this influence may be either positive or negative, there is no doubt that the experience of being bullied by peers can have long-term negative implications for adolescents' self-esteem as well as impacting negatively on academic achievement (Arseneault, 2017) with bullying in childhood or adolescence found to be associated with greater use of mental health services (Evans-Lacko, Takizawa, Brimblecombe, King, Knapp, Maughan, & Arseneault, 2017). Cyber-bullying can be particularly harmful as bullies can remain anonymous and desensitised to the effect they are having, while messages may be passed on and revived again and again (Fahy, Stansfeld, Smuk, Smith, Cummins, & Clark, 2016).

It has generally been accepted that adolescents who feel safe and have a sense of belonging within their school also tend to have higher educational aspirations and do better academically than those who don't (Anderman & Freeman, 2004; Goodenow, 1993).

However, recent research into a similar population of adolescents from areas of deprivation in London found the opposite; that students who felt the least connected to school actually had higher educational aspirations (Frostick, Phillips, Renton & Moore, 2016). Aspirations have been found to be linked positively to academic achievement in a number of studies (Rothon, Head, Klineburg, Stansfeld, 2011; Schoon & Parsons, 2002) although other research suggests that high educational aspirations do not always necessarily predict high academic achievement (Khattab, 2014), particularly for students from low socioeconomic status (SES) backgrounds (Alexander, Entwisle & Bedinger, 1994).

The UK education system is full of inequalities. Those with means can exercise greater choice in their child's schooling by accessing private schools, supplementing with private tuition or paying a premium to live within the catchment area of a 'good' school.

Consequently there is heated debate around how best to support children from lower income families to maximise their potential, particularly those who may lack other important social support systems. Studies of adolescents in the US suggest that a sense of connectedness with school may be particularly important to students from areas of deprivation, with a strong sense of school community relating positively to student attitudes, motivation and behaviour (Battistich, Solomon, Kim. & Watson, 1995). More specifically, Niehaus, Rudasill & Rakes (2012) found perceived connectedness to school protected against some of the more negative outcomes often found in 11-12 year olds transitioning to middle school.

While outcomes relating to student future aspirations and feelings of school connectedness have been well documented in the literature, less is known about the influence of school-level factors on these outcomes (Waters, Cross & Shaw, 2010). A recent systematic review into the

effects of school environment health interventions pointed to the lack of studies looking at differences in school type on health outcomes, and specifically highlights the recent diversification of school models represented by academies and Free Schools in the UK (Bonnell et al. 2013).

The state school system in the UK has undergone a huge transformation in recent years with the introduction of academies and Free Schools across the country. Similar to the Charter School model in the United States, schools in the UK that adopt academy status become more autonomous with greater control over their finances and teaching contracts, and to some degree, pupil admissions. Academies are funded directly from central government rather than their local authority and in many cases receive extra funding from private sponsors such as charitable trusts, businesses, church groups and private schools. Free schools operate in the same way as academies in terms of funding and regulation but are new rather than replacement state schools. They are set up by groups (for example, parents or religious organisations) who can demonstrate that there is a demand for a new school in the area.

Influenced by the current neo-liberal political climate, emphasis on choice and free market economics have led to the deregulation and privatisation of schools and an increasingly competitive environment for both pupils and educators in an effort to raise standards and improve educational attainment. While this may have encouraged a greater degree of scrutiny into the relationships and interactions between teachers and students (Robertson, 2007); critics argue that an entirely self-regulating market is a myth and still requires the state to take an active role, while people and labour are reduced to mere commodities (Polanyi, 1944). Robertson argues that in the UK “choice policies have tended to favour the middle and ruling classes who are able to use their social, economic and cultural capital in order to secure an education at a private school, or at one of the high status publicly-funded comprehensives” (Robertson, 2007p.13).

Initiated by the Labour government in the early 2000's, academies (or City Academies as they were originally termed) were intended to take over from failing state schools, usually found in areas of deprivation. At the same time, the ambitious Building Schools for the Future (BSF) program was implemented, designed to replace ageing school buildings across the country. While BSF was scrapped by the in-coming coalition government in 2010, the roll-out of academies was enthusiastically adopted and the controversial Academies Bill was pushed through. These "converter" academies as they are now known, differ from their predecessors in that they allow all schools judged to be OFSTED outstanding the opportunity to convert to academy status, rather than the previously targeted failing schools. However, a recent proposal to convert all state schools in England to become academies by 2022 met with strong opposition from many sources and has been withdrawn. Despite this, numbers of academies and Free Schools continue to increase in the UK as new schools are required to set up as academies or Free Schools, and existing failing schools are converted. There are now over 2000 academies at primary and secondary level, only a third of which are sponsored academies with a remit to improve failing schools (Hutchings, Francis & Kirby, 2016).

The evidence that academies make a significant difference in terms of educational outcomes is mixed and in most cases relates to the early academies which replaced failing schools as opposed to the later 'converter' schools, which were already deemed to be high performing. Early research on sponsored academies found an improvement in their results compared to the national average (PWC Report 2008; Machin and Vernoit, 2011; Eyles & Machin, 2015). In another study looking at recently converted academies, results also improved in just over half surveyed (Finch et al. 2014, cited in NFER, 2016). Sceptics however, argue that measures of success are flawed and that academies are no more effective than other state schools (Gorard, 2014). Critics are also unhappy with what they see as attempts to privatise

the state education system, potentially increasing social segregation and inequality (Woods, Woods & Gunter, 2007).

More recently, a report on the impact of academy chains on low-income students, found that while “a handful of chains have performed consistently above the mainstream average for attainment across the last three years” there were also consistently underperforming chains of academies (Hutchings, Francis & Kirby, 2016). The authors of the report express alarm at the findings that academy chains are consistently performing below average and the negative impact this will have on disadvantaged young people, although London academies where three of the most successful chains were located, outperformed the rest of the UK by achieving significantly higher attainment in all measures. This may reflect the current trend of all London schools to outperform schools nationally, possibly as a result of targeted interventions such as ‘The London Challenge’, a government initiative in 2003 aimed at improving state schools in London.

Present study

The aim of this study is to compare outcomes for a population of low socio-economic status (SES) adolescents from academy and non-academy schools in areas of deprivation in London (there were no Free Schools represented in the participating sample of academies. This is unsurprising given that these were early academies replacing existing failing schools). Unlike other studies which primarily focus on academic success, it examines in more detail other measures of wellbeing such as adolescents’ feelings of connectedness to their school, mental health and aspirations for their future. The unique dataset of adolescents from uniformly deprived areas of London enables us to look at how low-SES adolescents fair in both academies and non-academies in the same areas of high deprivation during the same time period and thus exposed to many of the same external environmental influences. Taking into

account previous research which suggests that academy chains in London perform consistently higher than non-academy schools across the country (Hutchings, Francis & Kirby, 2016) and links found between school connectedness and aspirations, we hypothesise that there will be a small but significant increase in aspirations and feelings of school connectedness for adolescents attending academies compared to those attending non-academy schools. Previous research also suggests feelings of school connectedness have a positive impact on mental health outcomes. We therefore also hypothesise that participants from academy schools will have improved self-esteem and pro-social scores and lower total difficulties, as measured by the Strengths and Difficulties Questionnaire (Goodman, 1997), than the non-academy participants in the sample.

Method

Data collection: The Well London Adolescent Survey

The data was collected between January 2008 and July 2009 as part of the follow-up phase of the Well London Adolescent Survey (the survey also comprised of an earlier baseline data collection not included in this study). The Well London Project used an area-based community engagement model to target a range of interventions aimed at improving healthy eating, healthy physical activity and mental health outcomes. Participants were selected on the basis of residence in one of 40 areas of deprivation across 20 London boroughs. These areas were measured at the LSOA level (Lower Super Output Area) and comprise of 5-10 streets with a mean population of 1,500 people in each LSOA. Neighbourhoods (LSOA's) were selected by identifying the 20 London boroughs containing the most deprived 11% of LSOAs. Within each of these 20 boroughs, the four most deprived LSOAs based on the Indices of Multiple Deprivation (IMD, 2004) were identified and local authorities and health

professionals were asked to select two LSOAs, within each London borough, to take part in the Well London Project. Details of the original design are provided in Wall, Hayes, Moore, Petticrew, Clow, Schmidt, Draper, Lock, Lynch and Renton (2009) and are summarised and in Phillips, Renton, Moore, Bottomley, Schmidt, Lais, Yu, Wall, Tobi, Frostick and Clow (2012).

Schools and participants

Adolescent participants were aged between 11 and 16 years and attended one of the 67 state secondary schools across 20 boroughs that took part in the follow-up stage of the Well London Adolescent Survey. The 11 academy and 56 non-academy schools comprised of both mixed and single-sex, faith schools and community schools, these numbers reflect the newness of academy schools and their relative scarcity at the time. Although participants accessed the survey via their school, they were recruited at the area (LSOA) level. In some cases schools had participants from only one LSOA and other schools had participants from several different LSOAs. Parents were contacted by letter prior to surveying allowing them to withdraw consent before the session. Surveying took place in 45min sessions, within school hours and students completed the questionnaire independently under the supervision of a researcher in a classroom environment. Very few parents and children refused to take part, the majority of the children who did not participate were unavailable due to exams, other school activities or were absent on the day (Frostick, Phillips, Renton & Moore, 2016).

All procedures were subject to ethical review by the University of East London Ethics Review Committee.

Measures

Socioeconomic status Family affluence levels were assessed using items from the Family Affluence Scale (FAS II; Currie, Elton, Todd, & Platt, 1997; 2004). Items include: whether adolescents have their own bedroom; how many times they have been on holiday in the last 12 months; if they have access to a computer; and if their family owns a car (with a maximum score of 6 indicating greater affluence.) This is a validated, self-report measure and responses were coded using the standard codes with the exception of ownership of a computer and ownership of a car or a van. These items were coded as yes or no responses rather than scaled (Frostick et al. 2016).

Aspirations. This construct is made up of 16 questions relating to adolescents educational and occupational expectations. Similar questions have previously been used in the Research with East London Adolescents: Community Health Survey (Stansfeld, Haines, Booy, Taylor, Viner & Head, 2003). These included items such as: “I want to be successful in my school work and achieve good qualifications” and “I expect eventually to get a well-paid job.” (see Appendix 1 for full list of questions.) Participants are asked to respond to the individual questions using a 3-point scale of: not true (1), somewhat true (2) and certainly true (3). A composite score made up of the responses to all 16 questions was calculated.

School Connectedness. This measure explores adolescents’ experiences of the school environment and specifically, their sense of connection with their school. It uses five questions taken from Resnick’s (1997) School Connectedness Scale. Sample items include: “I feel safe in my school”; “I feel I am part of this school”; “I am happy to be at this school”; “I feel close to people at school” and “do your teachers care about you?” A composite score for the 5 items was calculated.

Mental health. The Strengths and Difficulties Questionnaire (Goodman, 1997) measures psychological distress and is well-validated having been used previously in studies of ethnically mixed samples of adolescents (RELACHS: Stansfeld et al., 2003). The self-report version was used in this study and participants were asked to respond to 25 statements, relating to five scales: emotional problems; conduct problems; hyperactivity; peer relationship problems; and pro-social behavior, using a 3-point scale. The scores for each scale (with the exception of the pro-social scale) are added together to generate a total SDQ score with higher scores indicating a higher level of overall distress. A total score for the pro-social scale was analysed separately to give an overall score of positive mental health.

Self-esteem. The Rosenberg Self-Esteem Scale (Rosenberg, 1965) asks participants to respond to ten statements related to overall feelings of self-worth or self-acceptance. For this study, a 5-point scale was used with possible responses ranging from strongly disagree (1), to strongly agree (5). However, different point scales have been used effectively in other studies. Extensive reliability and validity information exists for the Rosenberg Self-Esteem Scale (Blascovich & Tomaka, 1991).

Analysis

Analyses were conducted using STATA version 14.2. The purpose of the analysis was to identify the effect of academy schools on student measures of aspiration, school connectedness, mental health and self-esteem. We had information on 1284 pupils and their school type; however, the analyses were restricted to a smaller subset of data (N=639) with complete information on all variables used. Since most of the missing data were outcome measures, multiple imputation would not have contributed more information (Von Hippel, 2007). Table 1 shows a comparison of the distributions of variables in all available data and the dataset with complete information. There were no significant differences between them

except for the distribution of ethnicities – the complete data had lower proportions of British White, Black African, Bangladeshi and other Asian while a larger proportion of Other ethnic groups.

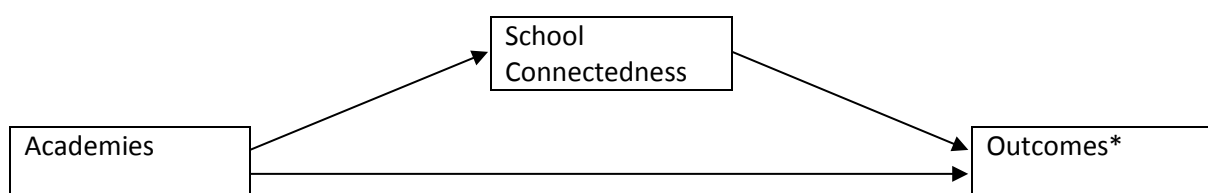
The data was treated as complex, with pupils clustered within schools and a linear regression analysis conducted on the survey data at school level to identify any associations between the type of school and each of the outcome measures. This was done first with a crude analysis and then by adjusting for gender, ethnicity, school year (age) and FAS. In order to provide standardised beta co-efficients as an indicator of comparable effect sizes between outcomes, the regression analysis was re-run after standardising the variables.

A mediation analysis was also carried out to test whether school type had an indirect effect on the outcomes of aspirations, mental health and self-esteem, through school connectedness.

The mediation analysis included identifying coefficients for three paths between a) exposure (academy school) and mediating variable (school connectedness), b) between the mediating variable and outcome (self-esteem, mental health or aspirations), and c) exposure and outcome (Figure 1). Path coefficients are standardised beta coefficients and therefore regressions used standardised variables. All models were adjusted for gender, ethnicity, school year (age) and FAS. The product of paths a and b gave the indirect effect.

Bootstrapping was used with 200 replications to identify the 95% credibility limits for the indirect effect.

Figure 1. Potential mediating effect of school connectedness on aspirations, mental health and self-esteem.



*Aspirations, mental health and self-esteem.

Results

[Table 1 here]

Associations with levels of school connectedness

We found a significant, positive effect on levels of school connectedness among participants attending academy schools compared to those attending non-academy schools (0.314, 95%CI 0.059, 0.570, $p=0.017$). This finding holds true even after controlling for gender, school year, ethnicity and FAS scores. Levels of school connectedness were also found to decrease significantly as the participants progressed through the school years in both the academy and non-academy groups (Coef.= -0.112; 95%CI -0.212 to -0.012; $p=0.029$).

[Table 2 here]

Associations with levels of aspiration

There was no significant difference in levels of aspiration between participants in the academy sample and the non-academy sample. However, there were some significant findings amongst the sample as whole. Girls had higher aspirations than boys (Coef.=0.784; 95%CI: 0.070 to 1.1.498; $p=0.032$).

Associations with mental health

There was no significant difference in SDQ or self-esteem scores for participants in the academy sample and the non-academy sample. In terms of the sample as a whole, Girls

reported significantly higher total difficulties scores than boys (Coef. = 1.556; 95%CI: 0.745 to 2.367; $p < 0.001$), but also significantly higher pro-social scores (Coef. 0.854; 95%CI: 0.553 to 1.155; $p < 0.001$). Girls also reported significantly lower levels of self-esteem than boys (Coef. = -3.314; 95%CI: -4.464 to -1.985; $p < 0.001$). In addition, the white British group also had lower self-esteem than other ethnic groups (Coef. = -1.486; 95%CI: -2.608 to -0.365; $p = 0.010$).

Mediating effects of school connectedness

[Table 3 here]

[Table 4 here]

Table 3 shows the results of the association between school connectedness and other outcomes like self-esteem, mental health and aspirations. School connectedness was found to predict these outcomes with high significance. Taking these results and that the academies are associated with significantly higher school connectedness scores, we hypothesised that academy schools may exert an indirect effect on these outcomes through school connectedness. Table 4 shows the results of the mediation analysis where school connectedness was found to have an indirect effect on SDQ Prosocial scores (0.16, 95%CI 0.001, 0.031). Academies can therefore be said to indirectly increase levels of mental health in their students by increasing levels of school connectedness.

Discussion

The aim of this study was to compare outcomes in terms of mental health (including self-esteem), school connectedness and future aspirations in low-SES adolescents attending both academy and non-academy schools in London. The findings show that adolescents attending

academies reported significantly higher levels of school connectedness than adolescents attending non-academy schools. This holds true despite a decrease in reported levels of school connectedness in both samples for older adolescents as compared to the earlier school years for both academies and non-academies. There was no significant difference between adolescents attending academies and non-academies in terms of mental health and self-esteem outcome measures.

Previous research findings have found strong positive associations between the effect of school connectedness and other outcomes in adolescents, particularly mental health (Shochet et al., 2006). With this in mind, we decided to further investigate the relationship between school connectedness and the other outcome variables of aspiration and mental health. The results of this analysis showed school connectedness had a positive mediating effect on mental health. Academies in this sample can therefore be said to indirectly increase mental health by increasing levels of school connectedness. However, as it was a cross-sectional analysis we cannot be certain of a causal connection with any of the outcomes and it may be that participants with better mental health are more likely to feel connected to their school regardless.

Other secondary outcomes were that girls had significantly higher aspirations and expectations for the future than boys which is a common finding in the literature (Rothon, Arephin, Klineberg, Cattell, & Stansfeld, 2011) and White British reported the lowest aspirations than other ethnic groups. These findings are also supported in the literature (Walsemann & Bell, 2010; Strand & Wnston, 2008), although research by Rothon (2007) conducted on a sample of adolescents from East London, concluded that there was no specific “ethnic effect” on aspirations, rather that the ethnic group who remained living in the area of deprivation for longest reported the lowest aspirations for the future (in London this tends to be the White British population).

The significant improvement in school connectedness scores for academies in this sample is not surprising given that the early sponsored academies in particular tended to project strong new identities in order to distance themselves from the failing schools they had replaced. These academies often have strong branding and well-defined disciplinary structures both of which are likely to contribute to feelings of belonging to a community and safety within the school environment. Work by McNeally and Falci (2004) separated out different dimensions of school connectedness and found that pupils who perceived their teachers as supportive experienced a “conventional connectedness” which had a protective function against risk behaviours. This has been found to be particularly important for adolescents who, like the population represented in this study, are from areas of high deprivation (Battistich, Solomon, Kim. & Watson, 1995). However, no protective function against risk behaviours was found for students who enjoyed going to school and felt connected to their school. If the norms promoted by peer groups do not correspond to the pro-social behaviours encouraged by the school or teachers, this can promote an “unconventional connectedness” which makes risk-taking behaviours more likely. This could explain why a negative relationship has been found between school connectedness (without the measure of teacher support) and aspirations in a similar population of low-SES adolescents from London (Frostick et al., 2016).

The fall in the levels of school connectedness in older adolescents may have been influenced by the relative newness of the academies; many of the children will have been pupils in the original failing schools, before they converted. This doesn't however explain the fall in school connectedness in non-academies among older adolescents, but suggests that interventions to raise levels of school connectedness may have most impact when targeted at adolescents in higher school years.

Previous research from the United States suggests that while students from high-poverty schools often feel less connected to their school, a school community that values supportive

relationships is also likely to benefit these students more than those from low-poverty schools (Battistich et al., 1995). As well as supportive relationships, factors such as classroom management climate, school size, discipline and participation in extracurricular activities have all been shown to be important in the promotion of school connectedness (McNeely, Nonnemaker & Blum, 2002) although the authors stress that it is important to recognise that strategies will impact differently on diverse groups within the student population.

The large and ethnically diverse population of adolescent participants, all recruited from similarly matched areas of deprivation, is a major strength of this study. The study is also unusual in comparing academies and non-academy schools during the same time period in the same city. However, there were limitations in the academy and non-academy samples in that they differed significantly in terms of ethnicity and FAS levels, despite being well matched for gender and school year.

There has been a strong interest in measuring (and trying to raise) levels of aspiration among low-SES populations of adolescents as research has found a positive association between aspiration levels and academic achievement (Rothon et al., 2011; Schoon & Parsons, 2002). However, previous research suggests that there is still some variability among low-SES populations of adolescents with those at the lower end of the population (in terms of FAS scores) still reporting lower aspirations than their peers (Frostick et al., 2016). Adolescents attending academies had significantly lower FAS scores suggesting that the baseline level for the academies was lower than that of the non-academy schools. This is to be expected given that these early academies were introduced into areas of deprivation to replace already failing schools, and may have impacted the results given the relationship between FAS and levels of aspiration. It is important to note that given that the data is 10 years old, the findings from this study may not hold true for today's academy schools as unlike the early academies, they must be rated by the regulator as 'outstanding' before converting to academy status.

Another potential limitation of this study is the wider context of interventions running concurrently with the introduction of these early academies. The most significant of these was probably the Building Schools for the Future (BSF) programme which was being rolled out in the same time period. Many schools across the country, but particularly academies, received new buildings with state of the art facilities. In London, this also coincided with preparations for the 2012 Olympic Games which may also have influenced the provision of new sports facilities in schools. Research has shown that new school buildings can have a positive impact on student wellbeing and even improve academic achievement (Barrett, Zhang, Moffat & Kobbacy, 2013). It is therefore possible that the new buildings alone, regardless of the type of school, could have had an impact on the outcomes of this study. It is possible that there were other confounding variables (for example, gender identity and disability) influencing the outcomes of this study, but as there was no information available on these variables, they could not be included in the analysis.

While it would seem there may be lessons to be learnt from the approach taken by successful academies, adopting academy status is not a pre-requisite to success and all schools are likely to benefit their students by putting in place strategies designed to improve teacher-student relationships, which are known to promote “conventional” feelings of school connectedness and to focus particularly on influencing peer group norms to prevent the development of an “unconventional connectedness” (McNealy & Falci, 2004). It is important to recognise that the process of converting to academy status can be stressful for both staff and students and in the short term this could have a negative impact on mental health and other outcomes. In terms of role of academies for the future, it seems likely that schools with strong leadership who understand the needs of their particular demographic of students are likely to be relatively successful given the increased freedom to allocate resources. However, the converse also applies in that the increased autonomy of academies with weak leadership is

likely to have the opposite effect making it particularly important to have robust checks and balances in place.

Conclusion

The importance of a sense of connectedness to school, including teachers and peer groups, is becoming increasingly clear with research showing significant effects on student outcomes including mental health, self-esteem, aspirations and ultimately, academic achievement. For adolescents from areas of deprivation, the mediating effect of school connectedness on behavioural outcomes could be particularly beneficial. The present study supports these findings and suggests that the academy schools in this sample, may offer differences in structure or school ethos that can help promote school connectedness amongst pupils. Future research in this area is needed to identify more clearly the structures put in place by schools that successfully foster a strong sense of school connectedness among their students (whether they be academies or not), particularly in relation to teacher relationships and positive school ethos. In a climate of limited resources, interventions put in place to try to improve a sense of school connectedness may be most effective in older year groups and for adolescents from low-SES backgrounds who are likely to benefit most from positive relationships within the school community.

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Table 1

Comparison of completed dataset with all available data.

Variable	Complete data		All available data	
	N	n (%)	N	n (%)
Female	639	297 (46.5)	1270	648 (51)
Ethnicity	639		1227	
White British		131 (20.5)		222 (18.1)
Black African		137 (21.4)		304 (24.8)
Black Caribbean / other black		68 (10.6)		128 (10.4)
Indian/Pakistani		46 (7.2)		85 (6.9)
Bangladeshi/other Asian		89 (13.9)		184 (15.0)
Mixed		44 (6.9)		85 (6.9)
Other		124 (19.4)		219 (17.8)
School year	639			
Y7		133 (20.8)		280 (24.2)
Y8		160 (25.0)		289 (25.0)
Y9		152 (23.8)		267 (23.1)
Y10		128 (20.0)		211 (18.2)
Y11		66 (10.3)		111 (9.6)
Academy school	639	98 (15.3)	1284	214 (16.7)
FAS Mean (SD)	639	3.2 (1.3)	1235	3.3 (1.3)
School Connectedness	639	3.2 (1.5)	1163	3.3 (1.6)
Rosenberg self-esteem composite score	639	27.5 (7.2)	1057	27.2 (7.1)
SDQ total difficulties score ^b	639	12.0 (5.4)	1062	12.2 (5.6)
SDQ prosocial score	639	7.1 (2.0)	1192	7.1 (2.0)
Aspiration score	639	23.6 (4.7)	983	23.7 (4.8)

Table 2

Academy's association with School connectedness, adolescents' mental health, self-esteem and aspirations

	Coef.	95% CI	P-value	Beta
School Connectedness	0.314	0.059, 0.570	0.017	0.075
Rosenberg self-esteem composite score	0.650	-0.481, 1.781	0.255	0.034
SDQ total difficulties score ^b	0.526	-0.944, 1.995	0.477	0.035
SDQ prosocial score	-0.177	-0.546, 0.192	0.342	-0.032
Aspiration score	0.588	-0.809, 1.986	0.403	0.046

Table 3

Effect of school connectedness on adolescents' mental health, self-esteem and aspirations

	Coef.	95% CI	P-value	Beta
Rosenberg self-esteem composite score	1.213	0.801, 1.624	<0.001	0.267
SDQ total difficulties score ^b	-1.024	-1.275, -0.773	<0.001	-0.286
SDQ prosocial score	0.278	0.195, 0.360	<0.001	0.211
Aspiration score	0.820	0.585, 1.054	<0.001	0.266

Table 4

Indirect effect of Academy on adolescents' mental health, self-esteem and aspirations through school connectedness

Measure	Mean indirect effect	95% Conf. Interval
Rosenberg self-esteem composite score	0.020	-0.000, 0.405
SDQ total difficulties score	-0.022	-0.043, 0.000
SDQ prosocial score	0.016	0.001, 0.031
Aspiration score	0.020	-0.001, 0.041