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Research article

School absence and (primary) school connectedness: evidence from the Millennium Cohort Study

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Abstract

School-mandated exclusion, or school absence, is on the increase in England. Earlier analyses focused on the characteristics of children, rather than the relationship with school. Using the Millennium Cohort Study, we explore the relationship between school exclusion/school absence and school satisfaction. The Millennium Cohort Study is a UK birth cohort study of around 19,000 children born at the start of the twenty-first century and includes measures relating to school satisfaction, including *liking* school, being *interested* in school and *being happy*. We ask: What are the exclusion risk factors?

What is the predictive relationship between school satisfaction and school exclusion and school absence? And what is the predictive relationship between school exclusion and school absence and subsequent school satisfaction over time? Our analysis applied fixed effect models based on within-child comparisons across time (age 11, 14 and 17). Results confirm that Millennium Cohort Study children miss school through exclusion (9 per cent) and absence (14 per cent), are disproportionately male and have special educational needs. School satisfaction was protective; a high level of satisfaction with school at age 7 and 11 reduced the likelihood of exclusion and truancy at age 14 in secondary school. Girls who experienced primary school exclusion reported significantly lower satisfaction with secondary school. We discuss the relationship between school satisfaction and school connectedness measures, with a view to a more nuanced understanding of the interaction between school attitudes to children and children's attitudes to school. We conclude with tentative implications for policy and future research.

Keywords exclusion; truancy; primary school; secondary school; school connectedness; Millennium Cohort Study; school absence; inclusion; special educational needs

Introduction

In England, there is a persistent and growing problem with children not attending school, especially in relation to school-mandated exclusion and school absence. The number of children missing school time has risen since the Covid-19 pandemic lockdowns, but this was following a trend of rising rates of both permanent and fixed-term exclusion (now called suspension) and unauthorised school absence, or truancy (National Statistics, 2024). Persistent school absence is defined as non-attendance for 10 per cent of the time or more (DfE, 2022) over a school year. School exclusion is a legal option available to schools if a child contravenes the behaviour policy (DfE, 2024). Fixed-term exclusions are temporary and cannot exceed 45 days in a school year. Permanent exclusions prevent a child from returning to that school. Excluded children have a legal right to be educated elsewhere. Reasons for both exclusions and school absence vary widely (Timpson, 2019), but both denote a consequent social exclusion from the school community (Macrae et al., 2003). A small, but not insignificant, proportion of school-aged children, about 7 per cent, especially in special schools, but also in secondary and primary schools, are missing out on their right to education (Unicef, 1989). Among some groups, such as those eligible for free school meals, around a third of school-age children are persistently absent (Long and Roberts, 2025). Exclusion and persistent absence have profound longer-term negative consequences for young people in terms of their educational qualifications, employment and mental health (Attwood and Croll, 2015; Ford et al., 2018; Timpson, 2019).

While child and family factors are consistently associated with school absence, such as being at a socio-economic disadvantage, being male, coming from some ethnic minority groups, having special educational needs and low attainment, some school-based factors are also important, such as being bullied, having poor relationships with teachers (Graham et al., 2019) or simply disliking school (Attwood and Croll, 2015).

Exclusion, whether permanent or temporary, is a sanction for 'serious and persistent breaches of the school's behaviour policy' to be implemented only where remaining in school is likely to 'seriously harm' students or staff (DfE, 2017: 13). Such official guidance has not reduced rates of exclusion, however. Rates of permanent exclusion rose from 0.06 per cent of all children in 2012 to 0.08 per cent (6,495 in total) in 2021/2, and fixed-term exclusions rose from 3.5 per cent in 2013 to 6.91 per cent (a total of 578,280) in 2021/2 (National Statistics, 2024). This equates to over 3,000 children being suspended each school day. Post-Covid-19 increases in school exclusion have been driven by exclusions from secondary schools, while increases in fixed-term exclusion have occurred across school types (National Statistics, 2024).

Absence, whether authorised or unauthorised by school leaders, has largely replaced the term 'truancy' in government guidance on school attendance (DfE, 2017). 'Truancy' was dropped due to an association of truanting with images of misfits with psychological problems (Shute and Cooper, 2015)

or adolescents simply being mischievous, exacerbated by the common phrase 'playing truant'. Recent attempts to describe deliberate school absence include 'emotionally based school avoidance', which was intended to highlight the reciprocal relationship between school and student (Lester and Michelson, 2024). However, the term quickly became focused on the child's psychological affect (McDonald et al., 2023), rather than locating responsibility for the child's non-attendance within the school and wider context. We have used the more neutral term 'school absence' to denote school avoidance and permanent exclusion from school. However, 'truancy' is used in our data source, the Millennium Cohort Study (MCS), to denote children who miss school without parental permission. We have therefore used this term in discussion of the data below.

In addition to exclusion from school, exclusion happens inside school, by removing children to particular spaces within school to 'reflect', 'cool off' or access a particular curriculum and staff (sometimes called a 'nurture' facility) (Power and Taylor, 2020). There is also 'off-rolling': the illegal removal of a student from a school roll in order to enhance academic performance data (Done and Knowler, 2022). Using internal spaces and 'off-rolling' are consequences of the enactment of the behaviour policy and attempts to avoid the sanctions that schools attract when they use the exclusion option (Menzies and Angus, 2021). Menzies and Angus (2021) conclude that official exclusion figures do not include over 60,000 school learners who are 'pushed out' each year into alternative provision, have left state education and are not recorded elsewhere, or who are off-rolled.

Some groups of children are much more likely to be excluded than others. As Graham et al. (2019) note, there is a clear association between having special educational needs (SEN) and/or mental health (SEMH) difficulties and school exclusion. SEN is an umbrella term describing learning difficulties such as dyslexia or dyspraxia, learning, sensory or physical disabilities, and it includes those with SEMH needs (Graham et al., 2019). In 2021/2, children with SEN who did not have an official statement of needs were five times more likely than those without SEN and twice as likely as those with a statement to be excluded from school (National Statistics, 2024). (Statements of Special Educational Needs were replaced by Education Health and Care Plans in the Children and Families Act 2014.) Moreover, having SEMH difficulties predicted school exclusion, especially for younger children, and the exclusion itself in turn exacerbated children's difficulties (Ford et al., 2018). In addition, bullying and being bullied are risk factors for exclusion, alongside factors such as family social disadvantage, mental health difficulties and low school engagement (Paget et al., 2018).

School absence, whether permanent or temporary, is indicative of a breakdown of school engagement. Children may be dissatisfied with or feel anxious in school. Behaviours that lead to school exclusions can be conceptualised as a disruption in the social bond (Catalano and Hawkins, 1996) necessary to establish a stake in conforming to the values and norms of the school community. Exclusion from school is both a consequence of and a reinforcement of more general social exclusion (Daniels et al., 2022).

The concept of school connectedness is potentially useful here, as it embraces the relationship between a school community and a child's perception of acceptance within that community. School connectedness does not have an established definition, but it has some relationship to humanistic constructs such as Carl Rogers's (1957) notion of unconditional positive regard. Rogers (1957) identified the importance not only of valuing a person, but also of conveying to that person the knowledge that they are valued. Similarly, an increased understanding of the role of attachment theory emphasises the importance of the relational aspects necessary for successful inclusion in the school community (Kennedy and Kennedy, 2004).

The Wingspread Declaration of School Connectedness defined it as a 'belief by students that adults in school care about their learning as well as about them as individuals' (Wingspread, 2004: n.p.). Monahan et al. (2010) emphasise two related, intersectional components underpinning school connectedness: meaningful and secure relationships at school, and a child's commitment to school ethos and values, motivating them to 'do well' at school. The Psychological Sense of School Membership (PSSM) is an 18-item measure of school connectedness which covers four categories: sense of belonging; being respected equally; being encouraged; and sense of acceptance/inclusion (Goodenow, 1993). A high psychological sense of school membership, indicating school connectedness, is associated with improved mental health and well-being in primary schools in England (Castro-Kemp et al., 2020). Similarly, Shochet et al. (2006) found an association between school connectedness in adolescents and reductions in levels of depression and future mental health problems.

The concept of school satisfaction (as measured by liking school, trying one's best, feeling happy, finding school interesting, a waste of time or tiring) overlaps with school connectedness, defined as occurring when children feel valued by peers and staff as an integral member of the school community, and when they are encouraged and supported to thrive. To investigate the relationship between school absence and school connectedness, this article uses the closest available cohort data items related to school connectedness: measures of school satisfaction. Demirhan and Kocak (2023) used the Positive Experiences at School Scale, the School Satisfaction Scale and the School Attachment Scale for Children and Adolescents to show that school satisfaction partially mediated both positive school experiences and attachment to schools. This study supports the location of school satisfaction as a partial component of school connectedness.

Using the UK's Millennium Cohort Study, a national birth cohort study following more than 19,000 children born around the millennium (September 2000–January 2002), we show a relationship between children's satisfaction with school (in terms of liking school, finding school interesting and being happy at school) and school absence (exclusion and truancy). Furthermore, we show that what happens in primary school is important to absence rates in secondary school. We conclude that these results imply a rethink of school environments and the consideration and development of school connectedness as a broader measure than school satisfaction that encompasses what school does to promote feeling valued and being supported to thrive. We draw inspiration from the continental European discipline of social pedagogy to suggest a reframing of primary education around inclusion, and, more specifically, the concept of connectedness of children and school as a means to inclusion.

Our approach

In this article, we refer to school absence as both exclusion and truancy as two outcomes of a process over time, which often begins with persistent low-level disruptive behaviour, and which is governed by specific, national, policy and procedures. Specifically, we look at 'missing school without permission' (or unauthorised absence) from the point of view of children, and temporary or permanent exclusions reported by parents. We report school absence (exclusion and truancy together) to maximise the use of population-level data, and because there are similarities across the two groups (those excluded and those truanting). We explore relationships between school absence and school connectedness using three analytic strategies: first, because both exclusion and truancy are potentially influenced by a range of factors (Paget et al., 2018), we examined the individual, family and school risk factors for school absence (exclusion and truancy) in the Millennium Cohort Study (see Joshi and Fitzsimons, 2016). The MCS was selected as offering a wide range of data items on a child population that was in or had recently left school. Second, the MCS enabled us to address the predictive relationship between our main school-related factor, which we termed school connectedness and school absence (exclusion and truancy), respectively. Third, since the MCS data are longitudinal, we were able to assess whether there is a reverse relationship between school absence and subsequent school connectedness over time.

Methods

Data

The MCS collected survey data when cohort members were aged 9 months, and at 3, 5, 7, 11, 14 and 17 years of age. Information was collected about cohort members and their families, including their socio-economic circumstances, family structure, parental characteristics and childrearing environment, as well as measures at key child developmental stages on cognition, health and behaviours. In early childhood, parents were the main informants, and, as children aged, children themselves provided an increasing amount of information, including their experiences of and activities at and out of school. The main sample used in the current analyses consists of 11,829 cohort members who at the age of 14 had valid data for exclusion or truancy, and who had information on school connectedness at ages 7, 11 and 14. The analytical sample varies slightly in the analyses depending on the outcome being examined. The characteristics of the overall sample are shown in Table 1.

Table 1. Descriptive characteristics of the MCS sample (*N* = 11,829)

Gender	Percentage (%)
Male	47.7
Female	52.3
SEN (age 7 and 11 combined)	
No SEN	85.6
No statement	7.6
Statement	6.8
Ethnicity of child	
White	83.7
Mixed	3.6
Indian	2.1
Pakistani and Bangladeshi	4.9
Black	4.1
Other	1.6
Education of mother	
No qualifications	18.4
NVQ1 (GCSEs graded less than C)	10.0
NVQ2 (GCSEs graded C or above)	30.5
NVQ3 (A or AS level)	12.6
NVQ4 (Degree)	22.8
NVQ5 (Postgraduate)	2.6
Overseas qualifications	3.1
Single parent ever (9 months–age 11)	41.9
Free school meals (age 11)	18.9
Country	
England	82.6
Wales	4.9
Scotland	8.4
Northern Ireland	4.1

Note: Frequencies are weighted to adjust for survey design and attrition.

Measures

Outcomes and exposures

School exclusion

At age 11 and 14, parents reported whether their child had ever been excluded from school, either temporarily or permanently.

Truancy

This was self-reported by cohort members at age 11 and 14, after being asked whether they had missed school without parental permission ever at age 11, and in the past 12 months at age 14.

School satisfaction

Student sense of satisfaction with school was assessed at age 7, 11 and 14 using self-reports. At age 7, items were: 'How much do you like school?' (1 = *I like it a lot*, 2 = *I like it a bit*, 3 = *I don't like it*), 'How often do you try to do your best at school?', 'How often is school interesting?', 'How often do you feel unhappy at school?', 'How often do you get tired at school?', 'How often do you get fed up at school?' (1 = *all of the time*, 2 = *some of the time*, 3 = *never*). At age 11 and 14, items were: 'How often do you try your best at school?', 'How often do you find school interesting?', 'How often do you feel unhappy at school?', 'How often do you get tired at school?', 'How often do you feel school is a waste of time?' (1 = *all of the time*, 2 = *most of the time*, 3 = *some of the time*, 4 = *never*). For each of the measures at age 7, 11 and 14, the positive worded items were reverse-coded and all items were added up to form the overall continuous measure (see Table 2 for descriptives). A higher score indicated a higher level of school satisfaction. Scales demonstrated good inter-item reliability, as indicated using Cronbach's alpha (age 7: $\alpha = 0.66$; age 11: $\alpha = 0.77$; age 14: $\alpha = 0.70$). The main regression analyses use standardised scores, and age 7 and 11 were combined by first standardising each of these variables using z-scores, and then the overall measure was standardised.

Table 2. School satisfaction (raw scores)

Age	Mean	Standard deviation	Range
7	8.15	2.41	0–12
11	11.04	2.40	0–15
14	9.70	2.48	0–15

Other variables

Individual and family measures

To explore potential relationships with exclusion and truancy, we included a range of MCS measures in the analysis. Child individual characteristics are sex, ethnicity and pubertal development, as well as special educational needs and child mental health. Both general SEN and a more severe level of need, indicated by specialised assessment (Statement of SEN), are recorded. Child mental health (both internalising and externalising problems) at different ages was measured through the standardised Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). Family measures are socio-economic status (maternal education, maternal social class, housing, household income) and family characteristics (single parent, family disruption, maternal mental health). (Maternal measures are used as father data were incomplete.)

Most measures were reported by parents, with the exception of pubertal development at age 14. Childhood mental health was reported by parents at age 3, 5, 7 and 11; an average score across assessments was created for externalising (conduct problems, hyperactivity) and internalising (emotional problems, peer problems). Maternal mental health during childhood was assessed using the Malaise (Rutter et al., 1970) at the initial sweep at 9 months. In subsequent sweeps at age 3, 5, 7 and 11, the Kessler was administered (Kessler et al., 2003) and a composite measure was then created by harmonising scores from these two scales before combining and averaging all assessments of maternal mental health across childhood.

School measures

Measures of single-sex school and fee-paying school were reported by the parent at age 14. Being bullied at school was reported at age 7 by cohort members and by parents.

Analyses

First, the prevalence of school exclusion and inclusion are reported, both at age 11 and at age 14. Then, school exclusion and truancy at age 14 were examined in terms of their bivariate association with various child characteristics and other background factors. This was followed by multivariate logistic regression models that examined school connectedness (composite of age 7 and age 11 self-reports) as a predictor of age 14 school exclusion and truancy, respectively, while controlling for a range of potential confounders.

For the examination of school exclusion and truancy as a predictor of school satisfaction at age 14, a fixed effects (within-child) approach was used (Gunasekara et al., 2014). The sample used for these analyses was those who had valid data both at age 11 and at age 14 for exclusion or for truancy, and for school satisfaction, and who had never yet been excluded/truanted at age 11. This allowed examination of within-child change in exclusion/truancy to within-child change in their school connectedness between the two time points. Because any school exclusion or truancy will have occurred between age 11 and prior to the age 14 survey where the outcome school connectedness is measured, this mitigated against reverse causality. This allowed for a stronger causal approach than between individual analyses, as unobserved time-invariant confounding factors were accounted for by design. Potential threats to causality in these fixed effects analyses were changes that took place between age 11 and age 14, and therefore some time-variant covariates such as age of cohort member, maternal mental distress and family disruption were included. In all analyses, weights were used to adjust for the complex sample design of the initial survey and for attrition from the study over time (Mostafa, 2014). Analyses were carried out using STATA version 16.0 (StataCorp, 2019).

Results

Our first question was about the prevalence of school absence (exclusion and truancy) among MCS members (Table 3). At age 14, 9 per cent of cohort members had been excluded on a temporary or permanent basis, and nearly 14 per cent reported truanting from school. Most exclusion and truancy happened after age 11, when cohort members had started secondary school. Descriptive statistics of the school satisfaction measures at each age are shown in Table 2. Because the measures are not the same at age 7 as at age 11 and 14, we only compare these latter ages, and we here see a slight decline in school satisfaction from the end of primary school to the middle of secondary school.

Table 3. Prevalence of exclusion and truancy at age 11 and 14

School exclusion	Prevalence (%)	95% confidence interval	Sample size
Excluded by age 14 (ever)	9.0	8.2–9.8	*N* = 11,602
Excluded first time between age 11 and 14	6.5	5.8–7.3	*N* = 10,725
Truancy			
Truanted by age 14 (ever)	13.6	12.7–14.5	*N* = 11,453
Truanted first time between age 11 and 14	9.7	8.9–10.6	*N* = 10,177

Note: all estimates are weighted for survey design and attrition except sample size.

Table 4 shows the prevalence of exclusion and truancy at age 14 by individual characteristics, child mental health, family background factors and school factors. All results are bivariate relationships, unadjusted for other covariates, except survey design and attrition weights.

Table 4. Prevalence of school exclusion and truancy at age 14 by child individual characteristics and other background factors

		Exclusion (%)	*p*-Value	Truancy (%)	*p*-Value
CHILD INDIVIDUAL	**Gender**				
	Male	**12.4**	**<0.001**	**13.6**	**<0.001**
	Female	5.3	ref	11.4	ref
	Ethnicity of child				
	White	8.8	ref	12.7	ref
	Mixed	**14.8**	**<0.05**	13.7	ns
	Indian	**4.7**	**<0.05**	**8.1**	**<0.05**
	Pakistani and Bangladeshi	6.9	ns	13.3	ns
	Black	14.4	<0.10	10.5	ns
	Other	8.7	ns	8.6	ns
	Puberty (concurrent age 14)				
	Body hair has not yet started to grow	13.0	ref	11.1	ref
	Body hair has barely started to grow	8.3	ns	9.0	ns
	Body hair has definitely started to grow	8.7	ns	11.1	ns
	Body hair seems complete	**6.6**	**<0.05**	14.0	ns
	Special educational needs (age 7 and 11 combined)				
	No SEN	7.5	ref	11.7	ref
	No statement	**12.9**	**<0.01**	**16.6**	**<0.001**
	Statement	**20.0**	**<0.001**	**19.1**	**<0.001**
CHILD MENTAL HEALTH	**Externalising (age 3, 5, 7, 11 composite)**				
	Externalising clinical (10% highest score)	**28.3**	**<0.001**	**25.0**	**<0.001**
	Externalising non-clinical	6.1	ref	11.1	ref
	Internalising (age 3, 5, 7, 11 composite)				
	Internalising clinical (10% highest score)	**16.0**	**<0.001**	**19.1**	**<0.001**
	Internalising non-clinical	8.0	ref	11.7	ref
SOCIO-ECONOMIC	**Education of mother**				
	No qualifications	18.4	ref	19.3	ref
	NVQ1	**13.4**	**<0.05**	17.1	ns
	NVQ2	**8.4**	**<0.001**	**13.9**	**<0.001**
	NVQ3	**5.8**	**<0.001**	**10.6**	**<0.001**
	NVQ4	**3.2**	**<0.001**	**8.0**	**<0.001**
	NVQ5	**1.5**	**<0.001**	**10.0**	**<0.001**
	Overseas qualifications	**8.8**	**<0.001**	**10.9**	**<0.001**
	Social class (mother)				
	Managerial and professional	3.2	ref	8.0	ref
	Intermediate	4.1	ns	**11.0**	**<0.001**
	Small employers and self-employed	4.6	ns	**11.3**	**<0.01**
	Lower supervisory and technical	**8.6**	**<0.01**	**12.5**	**<0.001**
	Semi-routine and routine	**12.1**	**<0.001**	**15.7**	**<0.001**
	Housing (age 11)				
	Owns outright or with mortgage	3.6	ref	9.5	ref
	Renting	**15.1**	**<0.001**	**18.7**	**<0.001**

Table 4. *Cont.*

	Household income (age 9 months to 11 years average)				
	Lowest 20%	20.7	ref	21.4	ref
	20–40%	**15.5**	**<0.05**	18.8	ns
	40–60%	**8.3**	**<0.001**	**11.8**	**<0.001**
	60–80%	**3.3**	**<0.001**	**9.6**	**<0.001**
	Highest 80–100%	**1.7**	**<0.001**	**7.5**	**<0.001**
FAMILY	**Single parent (ever, age 9 months to 11 years)**				
	Single parent	4.9	ref	9.6	ref
	Never single parent	**14.7**	**<0.001**	**18.3**	**<0.001**
	Maternal mental distress (age 9 months to 11 years average)				
	Clinical levels (highest 10%)	**16.6**	**<0.001**	**20.4**	**<0.001**
	Non-clinical	8.0	ref	11.6	ref
SCHOOL	**Single-sex school (concurrent age 14)**				
	Single-sex school	6.9	<0.10	**8.3**	**<0.001**
	Mixed-sex school	9.2	ref	12.1	ref
	Fee-paying school (concurrent age 14)				
	No fees	9.3	ref	11.9	ref
	Fees	**2.5**	**<0.001**	9.5	<0.10
	Bullied at school at age 7 (parent and child combined report)				
	Never	6.2	ref	10.5	ref
	Sometimes	7.2	ns	11.2	ns
	Often	**14.9**	**<0.001**	**17.3**	**<0.01**
	Child school satisfaction age 7				
	Lowest 20%	12.9	ref	15.6	ref
	20–40%	**7.2**	**<0.001**	**10.6**	**<0.001**
	40–60%	**6.4**	**<0.001**	**11.2**	**<0.001**
	60–80%	**3.4**	**<0.001**	**10.0**	**<0.001**
	Highest 80–100%	**6.2**	**<0.001**	**10.0**	**<0.001**
	Child school age 11				
	Lowest 20%	15.5	ref	21.3	ref
	20–40%	**7.0**	**<0.001**	**12.2**	**<0.001**
	40–60%	**6.1**	**<0.001**	**9.5**	**<0.001**
	60–80%	**5.2**	**<0.001**	**8.3**	**<0.001**
	Highest 80–100%	4.5	<0.001	7.0	<0.001
	Truant from school by age 14				
	No	6.3	ref		
	Yes	**22.2**	**<0.001**		
	Excluded from school by age 14				
	No			10.1	ref
	Yes			**35.6**	**<0.001**

Notes: ns = non-significant; ref = reference category. Results are weighted to adjust for original survey design and attrition over time. Significant differences are in bold.

Table 5. Results of logistic regression: school satisfaction as predictor of school exclusion and truancy at age 14

	Exclusion at age 14 (*N* = 11,602)				Truancy at age 14 (*N* = 11,453)			
	Model A1		Model A2		Model B1		Model B2	
	OR	SE	OR	SE	OR	SE	OR	SE
School connectedness (age 7 and 11 combined)[a]	**0.62*** **	(0.03)	**0.79*** **	(0.04)	**0.67*** **	(0.03)	**0.72*** **	(0.03)
Bullied at school age 7 (parent and child reports combined) (ref: never)								
Sometimes			0.96	(0.14)			0.91	(0.09)
Often			1.19	(0.20)			0.88	(0.12)
Single-sex school at age 14			1.24	(0.26)			0.78	(0.13)
Fee-paying school at age 14			1.15	(0.31)			**1.54****	(0.26)
Males			**2.01*** **	(0.26)			0.99	(0.09)
Ethnicity (ref: White)								
Mixed			1.43	(0.34)			0.77	(0.19)
Indian			0.71	(0.29)			1.33	(0.56)
Pakistani and Bangladeshi			**0.62***	(0.13)			0.83	(0.13)
Black or Black British			1.54	(0.49)			0.63+	(0.16)
Other ethnic group			1.05	(0.42)			0.67	(0.26)
Special educational needs (ref: no SEN)								
SEN no statement			1.08	(0.19)			1.15	(0.17)
SEN with statement			0.96	(0.18)			1.12	(0.20)
Pubertal development at age 14 (ref: body hair has not started to grow)								
My body hair has barely started to grow			0.76	(0.26)			0.97	(0.29)
My body hair has definitely started to grow			0.86	(0.26)			1.31	(0.35)
My body hair growth seems completed			0.98	(0.32)			**1.90***	(0.54)
CM age in months at sweep 6			1.00	(0.01)			1.01	(0.01)
Childhood mental health (age 3–11)[a]								
Externalising problems during childhood			**1.95*** **	(0.13)			**1.27*** **	(0.06)
Internalising problems during childhood			0.92	(0.05)			0.95	(0.05)
Weekly household income in £100 (average age 9 months to 11 years)			**0.73*** **	(0.05)			**0.91***	(0.03)
Maternal education (ref: no education)								
NVQ level 1			0.82	(0.15)			0.85	(0.14)
NVQ level 2			0.79	(0.13)			0.89	(0.12)
NVQ level 3			0.73	(0.15)			**0.67****	(0.10)
NVQ level 4			0.73	(0.15)			**0.70***	(0.11)
NVQ level 5			0.53	(0.33)			1.10	(0.26)
Overseas qualifications			0.60	(0.19)			**0.51***	(0.16)
Maternal socio-economic status (ref: managerial and professional)								
Intermediate			0.70	(0.16)			1.16	(0.15)
Small employers and self- employed			0.84	(0.29)			1.32	(0.28)
Lower supervisory and technical			1.00	(0.26)			0.97	(0.19)
Semi-routine and routine			1.01	(0.20)			1.27+	(0.16)
Rented accommodation at age 11			**1.41***	(0.21)			1.12	(0.12)
Single parent ever (age 9 months to 11 years)			**1.33***	(0.17)			**1.33****	(0.13)
Maternal mental distress[a]			0.95	(0.05)			**1.13****	(0.05)
Pseudo R2	0.0356		0.212		0.0230		0.0858	

Notes: [a] standardised measure (*z*-score), *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$.

Males tended to be excluded and to truant more than females. By ethnic background, there were some differences; compared to those of White origin, children of mixed heritage had a higher prevalence of exclusion, and for Black children the pattern was similar, although not fully statistically significant. Those of Indian background had a lower prevalence of both exclusion and truancy. Cohort members who were furthest ahead in terms of pubertal development were less likely to be excluded (likely due to girls developing earlier than boys). For truancy, the pattern was reversed, with those most developed truanting more than those least developed, although results were not statistically significant. Children with SEN had a higher prevalence of both exclusion and truancy, with highest rates among those with a Statement of SEN. Children with clinical levels of both externalising and internalising problems during childhood (age 3 to 11), as separate from those with SEN (see Tables 5 and 6), were more likely to experience exclusion and truancy at age 14.

For all socio-economic and family measures, there was a clear pattern that children from the most disadvantaged backgrounds in terms of parental education, occupational status, income, housing situation, single parent status and maternal mental health were more likely to be excluded or to truant. In terms of school-related factors, those attending fee-paying schools had lower prevalence of exclusion, and those in single-sex schools had lower rates of truancy, while frequent bullying at school at age 7 was a risk factor for both outcomes. Children who reported low levels of school satisfaction at age 7, and especially so at age 11, were more likely to be excluded and to truant by age 14. There was an overlap between school exclusion and truancy at age 14, as those experiencing one of these were more likely to also experience the other.

The second question asked of the MCS data was about the relationship between school satisfaction and school exclusion over time. For this, we used multivariate regression focusing on school connectedness at age 7 and 11 combined as a predictor of age 14 exclusion (Models A1 and A2) and truancy (Models B1 and B2) (Table 5). Models A1 and B1 report the unadjusted relationship, and Models A2 and B2 show the fully adjusted models, controlling for other school-level factors, as well as for individual child characteristics, child mental health and socio-economic family circumstances.

As seen from Model A2, independent of all other variables in the model, school satisfaction was a protective factor in terms of school exclusion; for each standard deviation increase in school connectedness, the odds of being excluded from school reduced significantly (OR = 0.79, $p < 0.001$). A similar pattern was seen for truancy in Model B2 (OR = 0.72, $p < 0.001$). Income was another protective factor for both exclusion and truancy; for each £100 increase in weekly household income, the odds of these outcomes were reduced (exclusion: OR = 0.73, $p < 0.001$; truancy: OR = 0.91, $p < 0.05$). Risk factors included childhood externalising problems, with each standard deviation increase corresponding to nearly a doubling of the odds of exclusion (OR = 1.95, $p < 0.001$), and a substantial increase also in truancy (OR = 1.27, $p < 0.001$). Growing up in a single-parent family also increased the likelihood of both exclusion (OR = 1.33, $p < 0.05$) and truancy (OR = 1.33, $p < 0.01$). Other outcome-specific significant associations are marked in bold in Table 5. Additional analyses showed fairly similar results for males and females in terms of the association between school satisfaction and later exclusion and truancy.

Finally, we asked whether school exclusion and truancy predicted school satisfaction. Table 6 shows the fixed effects examinations of exclusion and truancy as predictors of school connectedness, exploiting the repeated measure of school exclusion at both age 11 and age 14, and information on school exclusion and truancy between these time points. Results are shown for the sample overall and for males and females separately, in both unadjusted and adjusted models. Results of the adjusted model with exclusion between age 11 and 14 as the predictor of school satisfaction at age 14 (Panel 1) showed no significant relationship for the sample overall. However, results by gender revealed that girls who had been excluded reported a significantly lower satisfaction with school ($\beta = -0.50$, $p < 0.001$), while for boys there was no such association ($\beta = -0.05$, ns). For truancy between age 11 and 14 as a predictor (Panel 2), the adjusted results showed an association with school satisfaction for the sample overall ($\beta = -0.48$, $p < 0.001$), with the association appearing stronger for boys ($\beta = -0.56$, $p < 0.001$) compared to girls ($\beta = -0.35$, $p < 0.001$).

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Table 6. School exclusion and truancy as a predictor of school satisfaction at age 14

	Unadjusted						Adjusted					
	All		Females		Males		All		Females		Males	
	β	S.E.	β	S.E.	β	S.E.	β	S.E.	β	S.E.	β	S.E.
Panel 1: Exclusion												
Exclusion in secondary school between age 11 and 14	−0.16+	(0.09)	**−0.52****	(0.16)	−0.06	(0.10)	−0.14	(0.09)	**−0.50****	(0.16)	−0.05	(0.10)
CM age in years	**−0.17*****	(0.01)	**−0.24*****	(0.01)	**−0.10*****	(0.01)	**−0.17*****	(0.01)	**−0.24*****	(0.01)	**−0.10*****	(0.01)
Maternal mental distress							**−0.04***	(0.02)	**−0.05***	(0.03)	−0.02	(0.03)
Family disruption							−0.11+	(0.06)	−0.12	(0.08)	−0.07	(0.08)
Observations	19,389		9,884		9,505		19,389		9,884		9,505	
Adjusted *R*-squared	0.404		0.473		0.385		0.406		0.475		0.385	
Individuals	10,355		5,246		5,109		10,355		5,246		5,109	
Panel 2: Truancy												
Truancy in secondary school between age 11 and 14	**−0.49*****	(0.06)	**−0.58*****	(0.08)	**−0.36*****	(0.08)	**−0.48*****	(0.06)	**−0.56*****	(0.08)	**−0.35*****	(0.08)
CM age in years	**−0.17*****	(0.01)	**−0.24*****	(0.01)	**−0.10*****	(0.01)	**−0.16*****	(0.01)	**−0.23*****	(0.01)	**−0.10*****	(0.01)
Maternal mental distress							−0.02	(0.02)	−0.04	(0.02)	0.01	(0.03)
Family disruption							**−0.11***	(0.06)	−0.14+	(0.08)	−0.08	(0.07)
Observations	18,767		9,597		9,170		18,767		9,597		9,170	
Adjusted *R*-squared	0.416		0.482		0.392		0.416		0.483		0.392	
Individuals	9,882		5,040		4,842		9,882		5,040		4,842	

Notes: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.10$. Robust standard errors in parentheses. Dependent variables and maternal mental health have been standardised (*z*-scores). β = standard deviation change in the dependent variable for each unit change in the independent variable.

Discussion

This study set out to examine the relationship between a primary form of social exclusion for children (school absence as exclusion and truancy by age 14) and school satisfaction (in terms of liking school, trying one's best, feeling unhappy, finding school interesting, a waste of time, or tiring) at age 7, 11 and 14 using a nationally representative longitudinal data set of children born around 2000. We found that around 9 per cent of 14-year-old cohort members reported being excluded from school at some point in their school career and that nearly 14 per cent had truanted. For the majority, exclusion first occurred between the ages of 11 and 14. As with other studies (for example, Paget et al., 2018; Timpson, 2019), we found that children with certain individual characteristics and socio-economic and family backgrounds were more likely to be absent (excluded/truanted) from school. This individual and family profile confirms that children, especially boys, those with SEN and those who experience socio-economic disadvantage in their home lives, are more likely to be excluded from school than those from higher income families and children who did not have SEN. Young people with elevated mental health needs were also more likely to be excluded or truant; this is explored further in Villadsen et al. (2023).

In relation to our second question, we found that independent of individual and family risk factors, there was a relationship between school satisfaction and school absence (exclusion/truancy). A high level of satisfaction with school at age 7 and 11 in primary school reduced the likelihood of exclusion and truancy at age 14 in secondary school. In this study, school satisfaction was a composite score of data items concerned with the experience of being in school, and not about specific relationships, such as with teachers. The questions ask the child to reflect on the dynamics of school for them as an individual. By paying attention to what children say about their experiences of social exclusion, there is an option to adjust what is on offer, and so to improve inclusion. Moreover, what our study pinpoints is the importance of interactions and experiences in the earliest years of primary school. Being happy and interested at ages 7 and 11 helps to protect against later exclusion. This is particularly true for children from disadvantaged backgrounds.

The data items considered were conceptualised in the MCS as *satisfaction*, and satisfaction is a good starting point for considering the reasons for school absence (exclusion/truancy). However, satisfaction is limited to measuring a within-child affect and perception. Our findings indicate that a more nuanced approach, such as that of school connectedness, is warranted to acknowledge the role of schools themselves in promoting children's happiness at, interest in, and motivation to do well at school.

The role of teacher–student relations is one example of the domains of variation in what schools offer. Constructive teacher–student relationships support students' sense of connection to school, which in turn improves behaviour and attainment (for example, Wingspread, 2004). McLaughlin and Gray (2015) argue that with school connectedness, schools can establish a virtuous circle of student perceptions of relationships with adults, satisfaction and feelings of belonging to the learning community, to which they can make a contribution that is valued.

There is common ground with the health-promoting school ecological approach (Rowe et al., 2007), in which schools are situated within their local communities and partnerships and inhabit the values of participation, inclusiveness and democracy, in the classroom and in the broader school environment. It is not just the presence of a single positive relationship, but the holistic experience of being in school as one of bonds of trust and reciprocity between children, staff and others, such as parents (Rowe et al., 2007).

While horizontal inclusion is clearly essential, our findings point to the importance of vertical inclusion over time, and across transitions between school types. Critically, while primary schools do not exclude many children, the environment they create, and the extent to which children feel happy and invested in primary school, carries a legacy of connectedness into secondary school.

Our study showed that the relationship between school satisfaction and exclusion was reciprocal, as school absence was associated with a lower level of school satisfaction subsequently at age 14 (for girls, this was through exclusion; for both girls and boys, this was through truancy). This suggests that once a child is excluded in primary school, a sense of connection to school declines, putting academic trajectories at risk. Arguably, this puts even more onus on addressing inclusion in the primary years, to forestall later difficulties.

Study findings prompt consideration of policy. In England at present, policy on exclusion refers solely to behaviour (DfE, 2017) and not to more global issues such as the reasons for the behaviour, consideration of overall well-being or the organisation of the school. Scottish government (2017: 18) guidance recommends a whole-school ethos of inclusion, 'where everyone is valued', coupled with implementation of approaches that seek to resolve conflict, nurture and address bullying. Similarly, the Welsh government (2021: 5) issued statutory guidance that states: 'the whole-school approach seeks to support good emotional and mental well-being by promoting a positive cultural environment in schools, where children and young people form positive relationships with staff and other learners'. Relationships and absence of bullying are critical factors in enjoyment of school (Robinson, 2014). Arguably, there is a case, in England, for exclusion and behaviour policies, which most often promote 'respectful schools' (Brown, 2018) to join up with health and well-being policies so that the needs of students with SEN and SEMH, already likely to be at risk of exclusion, are seen as equal priorities. The Welsh guidance makes an explicit link: the 'school's behavioural and other policies should contain positive messages about the importance of learner wellbeing' (Welsh government, 2021: 35).

Furthermore, policy addressing exclusion could adopt a longer-term perspective. The transition between primary and secondary school is a potential fracture point for school satisfaction, especially for children with SEN (Timpson, 2019). Rates of exclusion treble between Years 6 (primary) and 7 (secondary) (Timpson, 2019). Our study findings suggest a structurally different approach from Key Stage 1 onwards. Rather than focus on 'at risk' individuals and their behaviour, schools could extend their whole-school approach to focus on children's well-being as a member of a complex and constantly varying system of relationships (Black et al., 2017). In this social pedagogic approach to learning, the teacher constantly reflects on their practice in the light of theory, experience and dialogue with her peers, and acts with compassion, showing empathy and respect for all students; is both practical and creative; shares the space of the classroom as mutually constituted; and values teamwork with students, staff and parents. The heightened attention to relationships, and the culture of mutual respect engendered, creates expectations of and responsibility on students as well as staff across a school, not just on teachers. Investing in school connectedness in this way in the early years of primary school may well reduce exclusions later, but at present the problem of exclusion does not sit with primary schools, hence the need for a longer-term view.

Conclusion

This study sought to understand the relationship between school satisfaction and school exclusion through analysis of the MCS for children aged 7, 11 and 14. Using a large and UK nationally representative longitudinal sample of children with rich information about their individual and family circumstances collected through childhood was a clear strength of the study. Best efforts were made to use the rich set of variables available in the MCS to control for confounding factors in the between-subjects analyses and to exploit the repeated measures in the within-subjects analyses. Nevertheless, as in all observational studies, a limitation remains the uncertainty as to whether associations are causal. Furthermore, as the data is longitudinal, they refer to children who were 14 some years ago, and policy contexts, and so practice, may have changed. Despite these limitations, our analyses add to evidence on the social characteristics of children at risk of exclusion. They also found that, independently of these characteristics, children who enjoy school and are motivated in primary school are less likely to be excluded when in secondary school. Moreover, girls who are excluded, and both girls and boys who truant, are less likely to feel connected to school when aged 14. These are striking findings that show the importance of a lifecourse perspective on schooling permitted with longitudinal designs. The social exclusion of children from school not only transgresses their rights to an education; it also incurs societal costs. To date, policy (in England) has relied on behavioural approaches that emphasise sanction and reward, and that culminate in exclusion, either within or beyond the school. Critically, findings show the limitations of current policy based on behaviour in the here and now, without consideration of either wider health and well-being contexts or the longer-term prospects for the children concerned. We add to the considerable weight of evidence on whole-school and relational based approaches in addressing not just exclusion, but also SEN and SEMH.

However, school satisfaction as a measure does not acknowledge the role of schools in sustaining children's liking for and motivation for doing well. Hence, we seek to extend the notion of school satisfaction to school connectedness to suggest ways in which schools and policymakers may address with greater urgency the importance of relationship building with students, and the policies and structures that would enable children to experience 'doing well' and being valued as an integral part of their school community.

The evidence of a causal link between school connectedness and positive adult outcomes is emerging, but it needs further investigation and localisation. McNeely et al. (2002) have examined data from over 75,000 students in the US National Longitudinal Study on Mental Health, and found that greater school connectedness reduced involvement in substance abuse, violence and early sexual activity. However, they identified a paucity of research into the in-school strategies and approaches most likely to enhance school connectedness.

Our findings go some way to suggesting that there may be a predictive link between school satisfaction and reductions in persistent school absence and permanent exclusions. However, further research is needed to explore the link between more refined measures of school connectedness and reductions in absence and exclusion, ideally in a longitudinal study. With the current limited set of school satisfaction measures, which associate with school connectedness rather than with wholly measuring this, our conclusions must be tentative. However, the correlative link between satisfaction and connectedness, and the predictive link in reducing school exclusion, provides a thought-provoking potential avenue for further study.

Data and materials availability statement

Data for the Millennium Cohort Study used in this article are available from the UK Data Service: https://www.ukdataservice.ac.uk/. Codes for our analysis are available on GitHub: https://github.com/AaseVilladsen/Mental-health-and-school-exclusion-and-truancy.git.

Declarations and conflicts of interest

Research ethics statement

The authors declare that research ethics approval was obtained for all waves of the Millennium Cohort

Study through the National Health Service (NHS) Research Ethics Committee (REC). The authors declare that research ethics approval for this article was provided by UCL IOE ethics board.

Consent for publication statement

The authors declare that research participants' informed consent to publication of findings - including photos, videos and any personal or identifiable information - was secured prior to publication.

Conflicts of interest statement

The authors declare no conflicts of interest with this work. All efforts to sufficiently anonymise the authors during peer review of this article have been made. The authors declare no further conflicts with this article.

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