

## How does the association between special education need and absence vary overtime and across special education need types?

Suzet Tanya Lereya, Sarah Cattan, Yeosun Yoon, Ruth Gilbert & Jessica Deighton

To cite this article: Suzet Tanya Lereya, Sarah Cattan, Yeosun Yoon, Ruth Gilbert & Jessica Deighton (2022): How does the association between special education need and absence vary overtime and across special education need types?, European Journal of Special Needs Education, DOI: [10.1080/08856257.2022.2059631](https://doi.org/10.1080/08856257.2022.2059631)

To link to this article: <https://doi.org/10.1080/08856257.2022.2059631>



© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



[View supplementary material](#)



Published online: 02 Apr 2022.



[Submit your article to this journal](#)



Article views: 958



[View related articles](#)



[View Crossmark data](#)

# How does the association between special education need and absence vary overtime and across special education need types?

Suzet Tanya Lereya<sup>a</sup>, Sarah Cattan<sup>b</sup>, Yeosun Yoon<sup>c</sup>, Ruth Gilbert<sup>d</sup> and Jessica Deighton<sup>a</sup>

<sup>a</sup>Evidence-Based Practice Unit, University College London and Anna Freud National Centre for Children and Families, London, UK; <sup>b</sup>Institute for Fiscal Studies, London, UK; <sup>c</sup>School for Policy Studies, University of Bristol, UK; <sup>d</sup>UCL Great Ormond Street Institute of Children Health, London, UK

## ABSTRACT

School absenteeism is a significant social and public health problem, and it has considerable negative consequences on the development of children and adolescents not only in the short term but also in the long term. We investigated special education needs (SEN) as a risk factor for absenteeism. For 418,455 mainstream secondary school students from 151 local authorities in England, multilevel linear regression models were run to investigate the association between SEN, SEN types and absenteeism during their secondary school period from year 7 to year 11. Local authority level variation was also investigated. Adolescents with SEN were more likely to be absent than their peers without SEN. Of adolescents with SEN, those with physical disability, followed by those with behavioural, emotional and social difficulties had the highest rates of absenteeism. Absenteeism rates increased as adolescents grew older. The association between absenteeism and having any SEN varied substantially across Local authorities. The results suggest that early interventions/preventative measures could mitigate loss of schooling due to absence. Moreover, the substantial variation in attendance for children across different local authorities suggest that there may be scope for local authorities to influence absence rates among adolescents.

## ARTICLE HISTORY

Received 25 October 2021  
Accepted 22 March 2022


## KEYWORDS

Absenteeism; school absence; special educational needs; secondary schools; longitudinal; emotional and behavioural difficulties

## Introduction

School absenteeism is a significant social and public health problem and it has considerable negative consequences on the development of children and adolescents not only in the short term but also in the long term (Pflug and Schneider 2016). Problematic school absenteeism is associated with various life-course problems, such as risky sexual behaviour, teenage pregnancy, psychiatric disorders, suicide attempt, delinquency, and alcohol, tobacco, marijuana, and other substance abuse (e.g. Chou et al. 2006; Egger, Costello, and Angold 2003; Henry 2007; Mounteney, Haugland, and Skutle 2010; Gubbels, van der Put, and Assink 2019). It is also one of the leading predictors of school dropout (Kearney

**CONTACT** Suzet Tanya Lereya  [T.Lereya@ucl.ac.uk](mailto:T.Lereya@ucl.ac.uk)

 Supplemental data for this article can be accessed [here](#).

© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

2008) which may lead to economic deprivation and mental, social, occupational, and marital problems in adulthood (Kogan et al. 2005). Missing school has been identified as a habit-forming behaviour especially during adolescence (Heyne et al. 2001) and 15% of secondary school students missed 10% or more of their possible session which is much higher than primary school pupils (i.e. 11.2%) in 2019/20 autumn (DfE 2021). To reduce the risk for these problems and stop absenteeism before it turns into a habit, it is important to gain insight into risk factors for school absenteeism.

Previous studies have shown that school absence can be affected by several factors. For example, age has been frequently recognised as a key factor to predict school absence; as children become older, the risk for school absenteeism increases (e.g. Gubbels, van der Put, and Assink 2019). Family related factors, such as history of child abuse and poverty (Echeverría et al. 2014; Hagborg, Berglund, and Fahlke 2018) or low parental school involvement and low levels of parental control (Gubbels, van der Put, and Assink 2019) and risky health behaviour including smoking, drinking and substance use have been shown to influence absence rates (e.g. Chou et al. 2006; Perelman, Leão, and Kunst 2019).

Special education needs (SEN) have repeatedly been shown as another important risk factor associated with higher levels of absenteeism compared to those who do not have SEN (DfE 2011, 2019). SEN covers a spectrum of health conditions that require adaptations in school, including learning difficulties, autistic spectrum disorder, sensory impairment, speech language and communications need, physical disability, and behaviour, emotional & social difficulties. Despite clear evidence for an association between SEN and school absenteeism, there has only been few longitudinal research which explore the association between SEN and school absenteeism over time. Moreover, limited studies investigated different types of SEN and rather focused on a single SEN type (e.g. Totsika et al. 2020; Hatton 2018). The aim of this study is to investigate the association between absenteeism and SEN among adolescents and to explore how the association between SEN and absenteeism varies over time and depending on the type of SEN.

There are several reasons why children with SEN may be more likely to miss school. Children with SEN are frequently differentiated from their peers by formal and informal processes involving identification and assessment procedures and school arrangements (Priestley 2001). While the aim of these processes are to support the children, there is a risk of these children being viewed in a negative light (Rose and Shevlin 2010) and being less accepted by their peers (Koster et al. 2007). Furthermore, children with SEN have been found to be acutely aware of feeling different and being treated differently by their peers and teachers (McArthur et al. 2007), potentially putting them at an increased risk of social exclusion, being bullied and having lower levels of support from parents, classmates and friends (Humphrey and Symes 2010; Flynt and Morton 2004). Rejection and bullying may take away the sense of belonging at school and even foster feelings of dislike towards school (McCoy and Banks 2012). This is particularly true with children with multiple disabilities. Those with emotional and behavioural difficulties and those with learning disabilities were found to be much more likely to dislike school compared with children with other types of SEN (such as those with physical, visual, hearing and speech difficulties) (McCoy and Banks 2012). This is also seen by their attendance records that SEN children with difficulties in social skills and social communication or learning difficulties

have higher rates of absenteeism than other children with SEN (Totsika et al. 2020; Hatton 2018). Lastly, children with SEN may have more absenteeism due to illnesses and medical appointments (Hatton 2018).

Previous studies have also noted links between mental health problems and absenteeism, with disruptive behaviour disorders, depressive and anxiety disorders being most commonly linked with absenteeism (Wood et al. 2012). Kearney and Albano (2004) showed that the most common primary diagnoses associated with absenteeism were separation anxiety disorder (22.4%), generalised anxiety disorder (10.5%), oppositional defiant disorder (8.4%), and depression (4.9%). Other studies have also shown remarkable consistency with respect to type of diagnosis most commonly seen in youths with problematic absenteeism, which mainly involves depression, anxiety, and disruptive behaviour disorder (Tramontina et al. 2001; Kearney 2008; Silove, Manicavasagar, and Drobny 2002).

While a number of studies highlighted that children with high levels of externalising and internalising difficulties are more prone to absenteeism, still little is known about the association between school absence rates and different types of SEN. Another shortcoming in the existing research is that many studies investigating absenteeism in relation to SEN often did not control for individual-level characteristics such as free school meals (DfE 2016). Previous research has shown that children with SEN are more likely to be exposed to deprivation and other factors that are associated with higher absence rates from school (DfE 2019; Pflug and Schneider 2016; Zhang 2003). Not all schools regularly collect information on mental health difficulties of their students using a standardised measure, but every school is required to have systems in place to identify children who are in need of support and to assess, monitor and secure appropriate support for any SEN they may have (Department of Education and Science 2007). If children with SEN and especially those with emotional and behavioural difficulties indeed have higher rates of absenteeism compared to other children, schools can use this information to channel extra attention and resources to lower absenteeism rates of children with SEN. Therefore, longitudinal studies that control for individual-level risk factors are crucial to understand the association between absenteeism and SEN types over time.

Furthermore, local area context has been identified as a risk factor for school absenteeism in youth. Lewer et al. (2020) argued that local areas with high rates of child poverty had a high frequency of adverse childhood experiences and school absenteeism. However, the operational measurement of 'neighbourhood' is relatively different between studies, partly due to the fact that the concept of 'neighbourhood' can vary across countries. Local authorities (LA) in the UK have an education welfare service responsible for liaising with schools and other agencies, and for provides support to pupils who need supportconnected with absence such as disaffection with school, poverty, inadequate housing and poor health and each local authority tackles absenteeism differently (National Audit Office 2005; Reid 2010). Examining the local authority level variation of absenteeism especially for those with SEN and for those with emotional and behavioural difficulties is the first step and can serve as a foundation for future research to investigate whether local policy might have a role in mitigating the effect of SEN on absence.

In England, school attendance has become a focus of government interest in recent decades and within the last months of 2021, government attendance advisors started to help local areas and school trusts to implement new plans to increase attendance (DfE, and Robin Walker 2021). Considering that the habit-forming nature and the consequences of absenteeism, it is important to identify if certain groups of children are more likely to have higher absenteeism rates. The aim of this study is to investigate the association between absenteeism and SEN among adolescents and to explore how the association between SEN and absenteeism varies over time and depending on the type of SEN. We excluded children who have SEN and attend special schools because absenteeism processes might be different in special education needs schools. As existing literature consistently highlighted the significant association between disruptive behaviour disorders, depressive and anxiety disorders and absenteeism (Wood et al. 2012), we hypothesised that children with SEN and especially those with emotional and behavioural difficulties would have higher rates of absenteeism compared to other children with SEN and those without SEN.

The study aimed to answer the following research questions: 1) Are adolescents with SEN at increased risk of absenteeism compared with peers and how does this vary by age?; 2) How do absence rates vary among adolescents with different types of SEN?; 3) Does the strength of the relationship between SEN types and absenteeism increase over time?; 4) How does absenteeism vary between local authorities among adolescents with and without SEN and according to type of SEN?

## Methods

### *Data source and study population*

The data used for analysis mainly come from the National Pupil Database (NPD), which is an administrative dataset collected by the Department for Education (DfE) on all state-educated pupils in England born since 1986. This study mainly used data from the Pupil Level Annual School Census (PLASC), pupil-level absenteeism records, data on children's contacts with social care services including in the Children in Need (CIN) and Children Looked After (CLA) census. These data are provided in the form of cross-sectional files, each containing millions of records on individual children enrolled in English schools (excluding privately funded schools). Each child has an anonymised ID number that is constant over time, which allowed us to construct longitudinal pupil-level files for each school cohort. Schools in the NPD are identified by a unique reference number (URN) but data on type of school (e.g. mainstream, special school) is not included within the NPD. Get Information About Schools (GIAS), which is a publicly available dataset with information on basic school characteristics like school phase, type and location in each year, has been merged to the NPD using the URN to identify the type of school (e.g. whether a school is a special school, maintained school).

Using longitudinal school census data, a cohort of 418,455 mainstream secondary school pupils from all 151 local authorities in England were included in the analysis. This cohort is the pupils who were in Year 7 (aged 11–12) in 2012/13 and stayed continuously in a mainstream secondary school until year 11 (aged 15–16) in 2016/17. The adolescents who moved to non-mainstream schools during this study period were excluded in the analysis.

## Measures

The outcome variable, absence rate, was constructed from authorised absence (absence with permission from a teacher or other authorised representative of the school) and unauthorised absence (absence without permission from a teacher or other authorised representative of the school) aggregated from three school terms – autumn, spring, and summer. The total is then divided by the overall number of sessions available and timed by 100. The absence rate was constructed for each year from year 7 until year 11.

Adolescents with SEN, with or without statement, in 2012/13 spring census, were considered as having SEN as this is the first year of secondary school and the aim was to track the association between SEN and school absenteeism from year 7 to year 11.

SEN type was recorded for all pupils on roll on spring census day and defined on the basis of the primary need of SEN. To avoid small numbers, seven categories were created from the 12 specific types of need from the 2012/13 spring census (specific learning difficulty, moderate learning difficulty, severe learning difficulty, profound & multiple learning difficulty, behaviour, emotional & social difficulties, speech, language and communication needs, hearing impairment, visual impairment, multi-sensory impairment, physical disability, autistic spectrum disorder, and other difficulty/disability). We combined hearing impairment, multi-sensory impairment & visual impairment into a single category of sensory impairment, and moderate learning difficulty, profound & multiple learning difficulty, severe learning difficulty, & specific learning difficulty into a single category of learning difficulty.

Sex, ethnicity (Asian, Black, Chinese, Mixed, White or any other ethnic group) and the Income Deprivation Affecting Children Index (IDACI) were derived from the NPD 2012/13 records as baseline data. The IDACI ranks neighbourhoods according to the proportion of children living in low-income households (McLennan et al. 2011). IDACI scores are on a metric between 0 and 1 with higher scores reflecting higher levels of deprivation. If pupils ever had free school meal (FSM) eligibility, child in need (CIN) or child looked after (CLA) status up until 2012/13 (i.e. while in primary school), these records were used to construct ever being eligible for FSM, ever having a CIN status and ever having a CLA status.

In terms of Local Area Level context, in England, the Department for Education and Skills sets policy on attendance at school and allocates funding to local authorities to work with schools in order to tackle absenteeism. In England, the term 'local authority' (LA) refers to the tier of local government responsible for the provision of a range of municipal services, including aspects of education. The jurisdiction of these authorities may be a single town, city or small urban area. All local authorities provides support to pupils who need it by helping address the factors connected with absence such as disaffection with school, poverty, inadequate housing and poor health and each local authority tackles absenteeism differently (National Audit Office 2005; Reid 2010). Therefore, examining the local authority level variation of absenteeism especially for those with SEN is the first step and can serve as a foundation for future research to investigate whether local policy might have a role in mitigating the effect of SEN on absence.

## Analysis

In order to investigate the absenteeism rates of children with and without SEN overtime multilevel modelling employed. Multilevel modelling is advantageous when repeated measurement occasions (level 1) are nested within participants (level 2) (Singer and Willett 2003). This is because multilevel modelling accounts for dependence of residuals due to covariance between the levels in the data. Ignoring such effects gives biased estimates of standard error, which could ultimately lead to wrong inferences about the effects in the data.

The primary dependent variable was absenteeism rates. Repeated observations of absenteeism within each child were Level 1 units and child characteristics (i.e. SEN) used to explain the growth trajectory were Level 2 units. The primary independent variable (and Level 2 unit) of interest in this study was SEN.

The analyses were carried out in several stages. First, the longitudinal association between adolescents with SEN at year 7 and their school absence across secondary school period (i.e. year 7 to year 11) have been investigated by multilevel linear regression models (Table 1). That is, we estimate the following equation:

$$A_{iy} = \alpha + \beta SEN_i + X_i' \gamma + \rho_y + \epsilon_{iy} \quad (1)$$

Where  $A_{iy}$  is pupil  $i$ 's absence rate in year  $A_{iy}$  ( $y = 7, \dots, 13$ );  $SEN_i$  is a variable that equals 1 if pupil  $i$  had a SEN statement in year 7;  $SEN_i$  is a vector of individual level characteristics measured in year 7 (indicators for the pupil's gender and ethnicity, indicators for whether pupil  $i$  was ever eligible for FSM up to year 7, ever CLA, ever CIN, and the deprivation level associated with the pupil's LSOA of residence in year 7); and  $\rho_y$  is a set of academic year indicators (to control for an age profile in absence rates during primary school).  $\epsilon_{iy}$  is an error term. We cluster the standard errors at the Local Authority level in order to allow the unobservable determinants of individual absences to be correlated within pupils across time and across pupils in the same Local Authority.

**Table 1.** The association between any SEN, SEN types and absenteeism in mainstream secondary schools (year 7–11; aged 11–16 years).

|                                              | Model A<br>$\beta$ (SE) | Model B<br>$\beta$ (SE) |
|----------------------------------------------|-------------------------|-------------------------|
| <b>Any SEN</b>                               |                         |                         |
| Any SEN (ref. No)                            | 2.12 (0.06) ***         | 1.34 (0.05) ***         |
| Constant                                     | 4.61 (0.03)             | 3.10 (0.04)             |
| <b>SEN Types</b>                             |                         |                         |
| SEN Types (ref. None)                        |                         |                         |
| Autistic spectrum disorder                   | 0.60 (0.13) ***         | 0.17 (0.13)             |
| Behaviour, emotional and social difficulties | 3.43 (0.12) ***         | 2.22 (0.11) ***         |
| Sensory impairment                           | 1.18 (0.13) ***         | 0.62 (0.13) ***         |
| Learning difficulty                          | 2.07 (0.08) ***         | 1.32 (0.08) ***         |
| Speech, language and communications need     | 0.93 (0.10) ***         | 0.40 (0.09) ***         |
| Physical disability                          | 4.25 (0.23) ***         | 3.41 (0.23) ***         |
| Other difficulty/disability                  | 2.93 (0.22) ***         | 2.23 (0.21) ***         |
| Constant                                     | 4.61 (0.03) ***         | 3.10 (0.05) ***         |

N = 418, 455; \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ ; Model A: Unadjusted model; Model B: Controls for time, sex, ethnicity, ever FSM before year 7, ever CLA before year 7, ever CIN before year 7 & IDACI score.



Secondly, the association between adolescents with different types of SEN and their school absence have been examined by multilevel linear regression models (see Table 1). That is, we estimate the following equation:

$$A_{ity} = \alpha + \sum_{t=1}^7 \beta_t SEN_{it} + X'_i \gamma + \rho_y + \epsilon_{iy} \quad (2)$$

where we now include a different indicator for each of the seven different types of SEN statements. The variables  $SEN_{it}$  ( $t = 1, \dots, 7$ ) are binary variables that take the value 1 if pupil  $i$  has a SEN statement of type  $t$ , and 0 otherwise in year 7.

Thirdly, separate multilevel growth curve has been run to investigate the association between SEN, SEN types and absenteeism during their secondary school period from year 7 (2012/13) to year 11 (year 2016/17) (Figures 1 & 2; Supplementary Tables 1, 2 & 3). That is, we estimate equations (1) and (2), this time also including interactions between the SEN indicator(s) and indicators for each academic year:

$$A_{ity} = \alpha + \sum_{y=7}^{11} \sum_{t=1}^7 \beta_{ty} SEN_{iyt} + X'_i \gamma + \rho_y + \epsilon_{iy} \quad (3)$$

Lastly, local authority level variation was investigated for adolescents with SEN (Figure 3) and for adolescents with emotional and behavioural difficulties (Figure 4). To do so, we estimate equation (1) separately in each LA subsample (i.e. the sample of pupils going to secondary school in a particular LA). That is:

$$A_{iyI} = \alpha + \beta_{1I} SEN_{i7} + X'_{i7I} \gamma + \rho_{yI} + \epsilon_{iyI} \quad (4)$$

where the parameters of equation (4) are also indexed by  $I$ , the local authority in which the pupil attends secondary school.

For all unadjusted and adjusted (adjusted for sex, ethnicity, ever being eligible for FSM, ever having a CIN status and ever having a CLA status and IDACI score) regression models, unstandardised Bs, standard errors and p-values are reported. Standard errors have been clustered at the local area level. All analysis were completed using STATA version 16.

## Results

Out of 418,455 pupils in our sample, 48.9% were male and 79.4% of pupils were White. 27% were eligible for FSM at least once until from 2012/13; FSM is frequently used as an indicator of low family income since only families on income support are eligible. 9.9% had CIN status at least once until 2012/13, most frequently due to the concerns of abuse or neglect, acute family stress or familial dysfunction. Lastly, 0.9% of pupils had been CLA status at least once before 2012/13; 'looked after' status is determined by services the children receive from the local authority.

In Year 7, 35,389 (8.5%) had any SEN. 3,337 (0.8%) had autistic spectrum disorder; 6,666 (1.6%) had behavioural, emotional and social difficulties; 1,620 (0.4%) had sensory impairment; 15,780 (3.8%) had learning difficulty, 4,843 (1.2%) had speech, language and communications need; 1,343 (0.3%) had physical disability and 1,800 (0.4%) had other difficulties/disability.



The overall absence rate (Year 7 – Year 11 averaged) was higher for adolescents with SEN (Mean = 6.72, SD = 7.12) than those without SEN (Mean = 4.61, SD = 4.71). In other words, the adolescents with SEN missed 7% of total available sessions while those without SEN missed about 5% of total available session. In particular, it was highest for those with physical disability (Mean = 8.86, SD = 8.62), followed by those with behavioural, emotional and social difficulties (Mean = 8.04, SD = 8.38), other difficulties/disability (Mean = 7.54, SD = 8.28), learning difficulty (Mean = 6.68, SD = 6.82), sensory impairment (Mean = 5.79, SD = 5.50), speech, language and communications need (Mean = 5.54, SD = 5.84), and autistic spectrum disorder (Mean = 5.21, SD = 6.01).

We first investigated the association between SEN and absenteeism. The unadjusted results showed that adolescents with SEN were at increased risk of absenteeism compared with adolescents who never had SEN. Specifically, across all Years 7 through 11, the absence rate of pupils with a SEN provision in 2012/13 was 2.12 percentage points higher than that of pupils without such a provision (Table 1, Model A). The association between SEN and absence rate decreased by 63% (from 2.12 to 1.34 percentage points) but remained statistically significant when controlling for child level characteristics (i.e., gender, ethnicity, ever being eligible for FSM, ever having CLA or CIN status and IDACI score) (see Table 1, Model B).

Secondly, differential associations between absenteeism and types of SEN were investigated. The results showed that, among all adolescents with SEN, those with physical disability had the highest absence rates, followed by those with behavioural, emotional and social difficulties. Estimates of the coefficients on the covariates (Supplementary Table 1) showed that being a female, being of White ethnicity, ever being eligible to FSM, ever having CIN status and having a higher score on IDACI were associated with higher risk of absenteeism. On the other hand, children who were ever looked after in primary school (CLA status) were less likely than their peers to be absent from school (see Supplementary Table 1 for more information). As with the previous results, the magnitudes of the associations between absenteeism and different types of SEN decreased at the inclusion of the control variables, but the coefficients remained statistically significant at the 1% level.

Thirdly, the association between age and absenteeism was investigated, and the results confirmed the finding that absence rates increase with age (Heyne et al. 2001). In line with the literature, absence rates increased with the pupil's year group. For example, the absence rate of pupils in Year 9 is 0.58 (1.66) percentage points higher than the absence rate of pupils in Year 7, conditional on the other control variables included in the regression. The association remained significant despite controlling for individual level characteristics or even when the relationship between the covariates and time was taken into account (Figure 1). Next, the authors wanted to identify whether adolescents with the absenteeism of different SEN types followed different trajectories as adolescents grew older. The results showed that adolescents with behavioural, emotional and social difficulties did not start with the highest rates of absenteeism, but they had the steepest increase with age so that by Year 11 they were the group of SEN children with the highest absenteeism (Figure 2).

Lastly, the authors investigated the extent of local authority variation in the likelihood of adolescents with SEN to miss school. They re-estimated Model B (with control variables) separately for each local authority. They ranked the coefficients associated with the

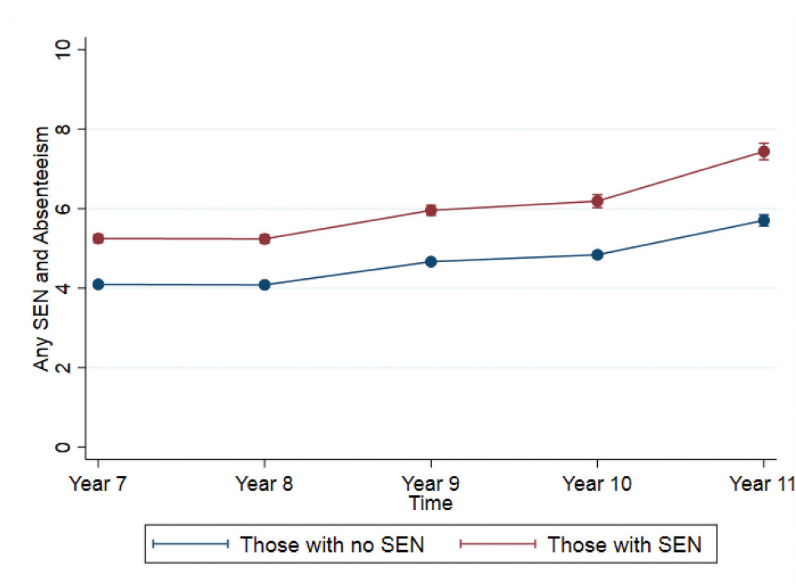


Figure 1. Association between Any SEN and Absenteeism.

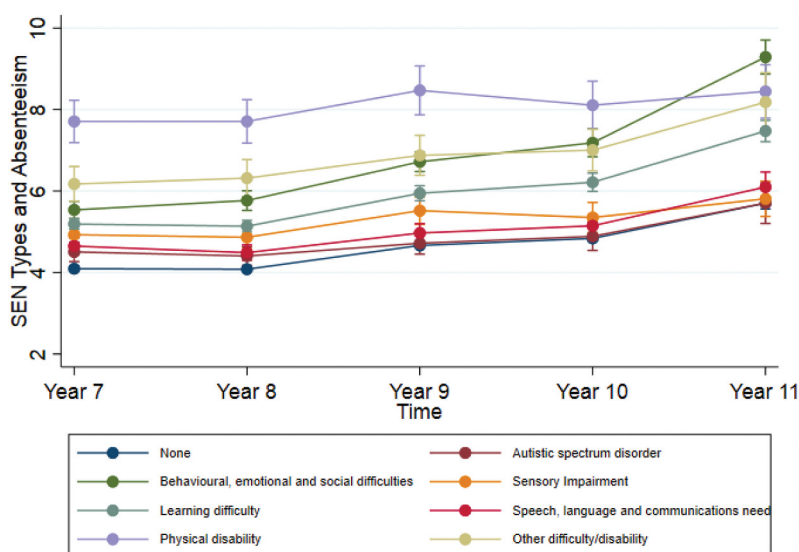
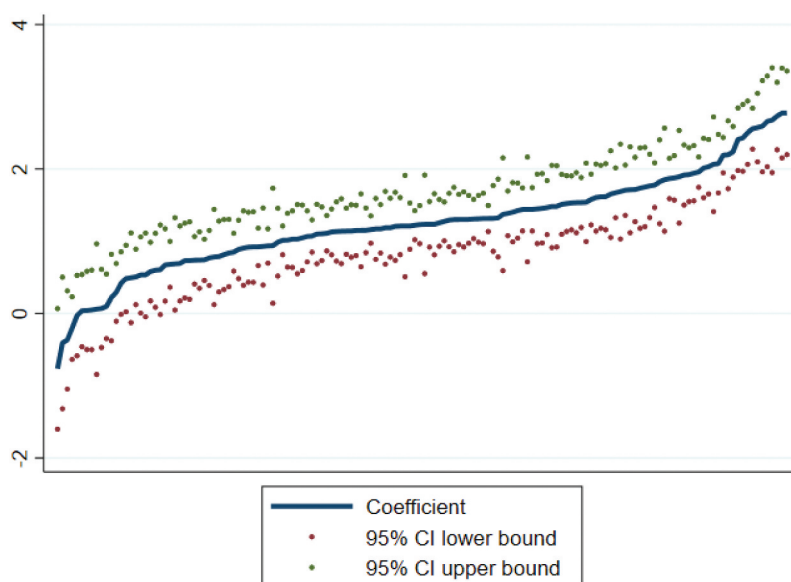


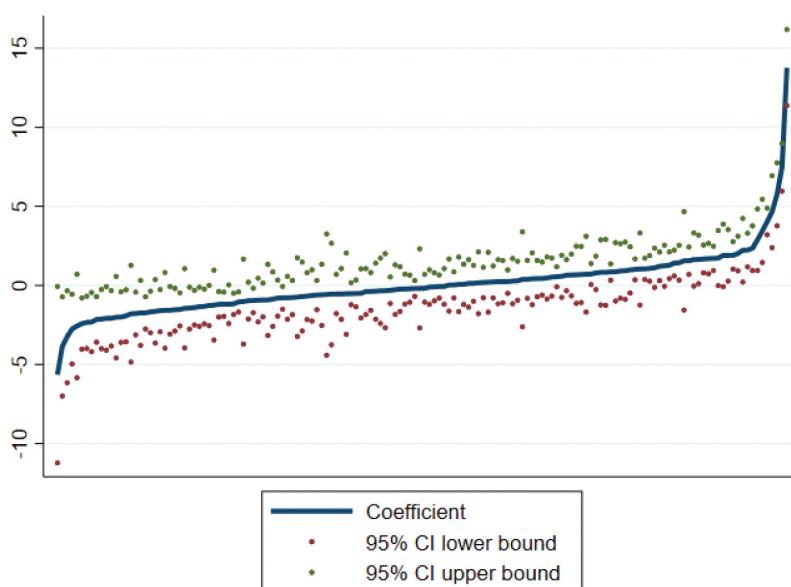
Figure 2. Association between SEN Types and Absenteeism.

indicator for whether the pupil had any SEN in each LA and plotted them in Figure 3 from the smallest to the largest. Confidence intervals for each estimate are shown in red and green.

The figure shows that the absence rate gap between SEN and non-SEN pupils varies substantially across Local Authorities. In some LAs, this gap is statistically insignificant, while in others it is as large as 2.5 percentage points.



**Figure 3.** Association between Any SEN and Absenteeism – Local Authority Variation.



**Figure 4.** Association between Behavioural, Emotional and Social Difficulties SEN Type and Absenteeism – Local Authority Variation.

The authors then repeated the same methodology, this time looking at the association between absence rate and SEN for behavioural, emotional and social difficulties (as opposed to not having an SEN) and also found large variations in this association across LAs (Figure 4).

While the raw variation in the link between SEN and absence could be driven by differential composition of the SEN and non-SEN population across LAs, the results shown in [Figure 3 and 4](#) are based on models controlling for the covariates included in Model B above. This suggests that the LA variation in the link between SEN and absenteeism shown here is not being confounded by LA variation in the relationships between absenteeism and the individual-level characteristics we control for. While there are surely other systematic differences in pupil characteristics across LAs that we do not observe in the NPD, the fact that the LA variation in SEN and absenteeism is robust to the inclusion of individual-level controls suggests that such variation may reflect, at least partly, differences in LA policies to mitigate the detrimental association of SEN on absenteeism.

## Discussion

In this longitudinal study of 418,455 adolescents, we found that adolescents with SEN had a higher risk of being absent than adolescents of a similar age but without SEN. Of adolescents with SEN, those with physical disability, followed by those with behavioural, emotional and social difficulties had the highest rates of absenteeism. The increased risk remained despite controlling for child level characteristics.

This is in line with literature showing that adolescents with SEN are more likely to miss school (DfE [2019](#)). This could be explained by the fact that, as shown by previous research, adolescents with SEN, especially those with behavioural, emotional and social difficulties, are less likely to be engaged in schools (McCoy and Banks [2012](#)). This might be due to pupils with SEN often experiencing difficulties in being accepted by peers (Humphrey and Symes [2010](#); Anke et al. [2013](#)) and acquiring friendships (Koster et al. [2010](#)). Pijl, Frostad, and Flem ([2008](#)) showed that approximately 30% of pupils with disabilities have significantly fewer friends and are less accepted by their classmates than their typically developing peers. The rejection by peers may take away a sense of belonging at school (Pijl, Skaalvik, and Skaalvik [2010](#)) and it may lead to absenteeism.

The association between age and absenteeism showed that as adolescents grow older, their absence rates also increased. Particularly, our results showed that those with behavioural, emotional, and social difficulties had the sharpest increase of absence rates. These findings are consistent with a number of studies (Lawrence et al. [2019](#)). Previous literature has shown that anxiety of school increases with age among children and adolescents (Hansen et al. [1998](#)). This might be due to the release of pubertal hormones causing widespread changes in brain chemistry and these neural changes not only enhance social understanding and self-awareness but also have a significant impact on the systems that control individual reactivity to rewards and danger (Blakemore [2008](#)). Increased neural susceptibility to cortisol results in adolescents reporting elevated stress levels (Nelson et al. [2005](#)). Hence, it is possible that developmental changes during adolescence may increase the difficulty of coping with fears of school especially for children with SEN, resulting in greater avoidance and absenteeism. Moreover, it has been shown that the underlying reasons for absenteeism may vary. For example, anxiety disorders may manifest as somatic complaints about physical conditions whereas disruptive behaviours such as conduct disorder may have an impact on school attendance due to behaviour management issues (Lawrence et al. [2019](#)). Lastly, it is plausible that

older adolescents to be physically more able to challenge and overcome the attempts or demands of parents and teachers towards a return to school. Hence, strategies implemented to improve attendance also need to vary.

There is a new perspective especially in the Youth Justice System called Child-First philosophy (Case, Stephen, and Ann Browning 2021). This philosophy acknowledges the specific needs of children that are different from the needs of adults, according to their physical, psychological development and capacity. According to the Child-First philosophy, children may act devious due to unmet needs, distress and disadvantages. In line with this theory, children may be having more absenteeism due to unmet needs. Especially children with SEN are more likely to require additional support and if this is not provided, they may display negative behaviours such as absenteeism. Parents/careers, educators, professionals and/or schools have the duty to meet the needs of children and adolescents.

Lastly, local authority level variation has been investigated for adolescents with SEN. The results showed the association between any SEN and SEN for behavioural, emotional and social difficulties and absenteeism varied substantially across Local Authorities. These findings suggest that different strategies have been implemented across local authorities to tackle absenteeism (Reid 2010). Future research should investigate the reasons of difference between absence rates of children with SEN across Local Authorities and whether certain policies ameliorate the rates of absence for adolescents with SEN.

The strengths of this study include its prospective longitudinal design, large sample size, and ability to control for factors associated with SEN and absenteeism such as free school meals. It is important to note the methodological limitations of the study. SEN status and the control variables such as free school meals, child in need status and gender were only measured at the beginning of the study in year 7. Future studies should investigate how SEN status and control variables such as FSM change over time and whether these have an impact on absenteeism rates. Lastly, it is possible that adolescents to be identified with behaviour, emotional & social difficulties type of SEN partly due to truancy and poor school attendance patterns and these cases being missed may inflate the apparent relationship.

Results from this research and previous research have shown that absenteeism increases with age and given the detrimental consequences of non-attendance on learning and academic achievement and exacerbating academic and sociological risk factors identified (Reid 2009) suggest early intervention as soon as attendance problems emerge for those with social, emotional or behavioural difficulties may prevent these problems becoming engrained. Possible reasons for escalating absence in young people with these particular problems include potentially co-occurring physical health problems, somatic complaints that can accompany some mental disorders (such as anxiety and depression), anxiety around attendance and truancy related to conduct problems (Lawrence et al. 2019). Early intervention for these young people, therefore, might be focused more on support for management of mental health challenges than attendance per se.

It is also important to involve more extensive analysis on attendance data at the foundation (early years) and primary stages by the education social work/education welfare services (Reid 2009). In particular, Local Authorities can provide better support for health conditions that may lead to absenteeism and support learning at home when they are absent. Lastly, this study provides further evidence to the existing literature (e.g.

OfStEd 2003; Reid 2006) that pastoral support for adolescents, especially for those with special educational needs and learning, behavioural and attendance difficulties is greatly needed.

## Acknowledgments

With thanks also to our colleagues in the National Institute for Health Research (NIHR) Children and Families Policy Research Unit.

This work was produced using statistical data from ONS. The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Funding

.This study is funded by the National Institute for Health Research (NIHR) Children and Families Policy Research Unit. The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

## References

- Anke, D. B., S. J. Pijl, W. Post, and A. Minnaert. 2013. "Peer Acceptance and Friendships of Students with Disabilities in General Education: The Role of Child, Peer, and Classroom Variables." *Social Development* 22 (4): 831–844. doi:10.1111/j.1467-9507.2012.00670.x.
- Blakemore, S.-J. 2008. "The Social Brain in Adolescence." *Nature Reviews Neuroscience* 9 (4): 267–277. doi:10.1038/nrn2353.
- Case, Stephen, and Ann Browning. 2021. *Child First Justice: The Research Evidence-base [Full Report]*. Loughborough University Accessed 29 03 2022 <https://hdl.handle.net/2134/14152040.v1>.
- Chou, L. C., C. Y. Ho, C. Y. Chen, and W. J. Chen. 2006. "Truancy and Illicit Drug Use among Adolescents Surveyed via Street Outreach." *Addictive Behaviors* 31 (1): 149–154. doi:10.1016/j.addbeh.2005.04.011.
- Department of Education and Science. 2007. *Special Educational Needs: A Continuum of Support. Guidelines for Teachers*. Dublin: Stationery Office.
- DfE. 2011. "A Profile of Pupil Absence in England." [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/183445/DFE-RR171.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/183445/DFE-RR171.pdf)
- DfE. 2016. "Absence and Exclusions Additional Analysis for Pupils with Special Educational Needs (SEN)." <https://www.gov.uk/government/publications/sen-absences-and-exclusions-additional-analysis>
- DfE. 2019. "School Attendance and Absence."
- DfE. 2021. "Pupil Absence in Schools in England: Autumn Term." accessed 16 September. <https://explore-education-statistics.service.gov.uk/find-statistics/pupil-absence-in-schools-in-england-autumn-term#dataBlock-0b2a9ff7-c986-4677-9428-adb01016cd40-tables>
- DfE., and Robin Walker. 2021. "New Measures to Reduce Pupil Absence." accessed 27 January. <https://www.gov.uk/government/news/new-measures-to-reduce-pupil-absence>
- Echeverría, S. E., E. Vélez-Valle, T. Janevic, and A. Prystowsky. 2014. "The Role of Poverty Status and Obesity on School Attendance in the United States." *Journal of Adolescent Health* 55 (3): 402–407. doi:10.1016/j.jadohealth.2014.03.012.

- Egger, H. L., E. J. Costello, and A. Angold. 2003. "School Refusal and Psychiatric Disorders: A Community Study." *Journal of the American Academy of Child and Adolescent Psychiatry* 42 (7): 797–807. doi:[10.1097/01.Chi.0000046865.56865.79](https://doi.org/10.1097/01.Chi.0000046865.56865.79).
- Flynt, S., and R. Morton. 2004. "Bullying and Children with Disabilities." *Journal of Instructional Psychology* 31 (4): 330–333.
- Gubbels, J., C. E. van der Put, and M. Assink. 2019. "Risk Factors for School Absenteeism and Dropout: A Meta-Analytic Review." *Journal of Youth and Adolescence* 48 (9): 1637–1667. doi:[10.1007/s10964-019-01072-5](https://doi.org/10.1007/s10964-019-01072-5).
- Hagborg, J. M., K. Berglund, and C. Fahlke. 2018. "Evidence for a Relationship between Child Maltreatment and Absenteeism among High-school Students in Sweden." *Child Abuse & Neglect* 75: 41–49. doi:[10.1016/j.chiabu.2017.08.027](https://doi.org/10.1016/j.chiabu.2017.08.027).
- Hansen, C., S. L. Sanders, S. Massaro, and C. G. Last. 1998. "Predictors of Severity of Absenteeism in Children with Anxiety-based School Refusal." *Journal of Clinical Child Psychology* 27 (3): 246–254. doi:[10.1207/s15374424jccp2703\\_2](https://doi.org/10.1207/s15374424jccp2703_2).
- Hatton, C. 2018. "School Absences and Exclusions Experienced by Children with Learning Disabilities and Autistic Children in 2016/17 in England." *Tizard Learning Disability Review* 23 (4): 207–212. doi:[10.1108/TLDR-07-2018-0021](https://doi.org/10.1108/TLDR-07-2018-0021).
- Henry, K. L. 2007. "Who's Skipping School: Characteristics of Truants in 8th and 10th Grade." *J Sch Health* 77 (1): 29–35. doi:[10.1111/j.1746-1561.2007.00159.x](https://doi.org/10.1111/j.1746-1561.2007.00159.x).
- Heyne, D., N. J. King, B. J. Tonge, and H. Cooper. 2001. "School Refusal: Epidemiology and Management." *Paediatr Drugs* 3 (10): 719–732. doi:[10.2165/00128072-200103100-00002](https://doi.org/10.2165/00128072-200103100-00002).
- Humphrey, N., and W. Symes. 2010. "Perceptions of Social Support and Experience of Bullying among Pupils with Autistic Spectrum Disorders in Mainstream Secondary Schools." *European Journal of Special Needs Education* 25 (1): 77–91. doi:[10.1080/08856250903450855](https://doi.org/10.1080/08856250903450855).
- Kearney, C. A. 2008. "School Absenteeism and School Refusal Behavior in Youth: A Contemporary Review." *Clinical Psychology Review* 28 (3): 451–471. doi:[10.1016/j.cpr.2007.07.012](https://doi.org/10.1016/j.cpr.2007.07.012).
- Kearney, C. A., and A. M. Albano. 2004. "The Functional Profiles of School Refusal Behavior. Diagnostic Aspects." *Behav Modif* 28 (1): 147–161. doi:[10.1177/0145445503259263](https://doi.org/10.1177/0145445503259263).
- Kogan, S. M., Z. Luo, V. M. Murry, and G. H. Brody. 2005. "Risk and Protective Factors for Substance Use among African American High School Dropouts." *Psychology of Addictive Behaviors* 19 (4): 382–391. doi:[10.1037/0893-164X.19.4.382](https://doi.org/10.1037/0893-164X.19.4.382).
- Koster, M., S. J. Pijl, H. Nakken, and V. H. Els. 2010. "Social Participation of Students with Special Needs in Regular Primary Education in the Netherlands." *International Journal of Disability, Development and Education* 57 (1): 59–75. doi:[10.1080/10349120903537905](https://doi.org/10.1080/10349120903537905).
- Koster, M., S. J. Pijl, E. van Houten, and H. Nakken. 2007. "The Social Position and Development of Pupils with SEN in Mainstream Dutch Primary Schools." *European Journal of Special Needs Education* 22 (1): 31–46. doi:[10.1080/08856250601082265](https://doi.org/10.1080/08856250601082265).
- Lawrence, D., V. Dawson, S. Houghton, B. Goodsell, and M. G. Sawyer. 2019. "Impact of Mental Disorders on Attendance at School." *Australian Journal of Education* 63 (1): 5–21. doi:[10.1177/0004944118823576](https://doi.org/10.1177/0004944118823576).
- Lewer, D., E. King, G. Bramley, M. C. Suzanne Fitzpatrick, N. M. Treanor, M. Bullock, A. Hayward, A. Story, and A. Story. 2020. "The ACE Index: Mapping Childhood Adversity in England." *Journal of Public Health* 42 (4): e487–e495. doi:[10.1093/pubmed/fdz158](https://doi.org/10.1093/pubmed/fdz158).
- McArthur, J., S. Sharp, B. Kelly, and M. Gaffney. 2007. "Disabled Children Negotiating School Life: Agency, Difference and Teaching Practice." *International Journal of Children's Rights* 15: 1–22.
- McCoy, S., and J. Banks. 2012. "Simply Academic? Why Children with Special Educational Needs Don't like School." *European Journal of Special Needs Education* 27 (1): 81–97. doi:[10.1080/08856257.2011.640487](https://doi.org/10.1080/08856257.2011.640487).
- McLennan, D., H. Barnes, M. Noble, J. Davies, E. Garatt, and C. Dibben. 2011. "The English Indices of Deprivation 2010: Technical Report." Department for Communities and Local Government. <http://www.communities.gov.uk/communities/research/indicesdeprivation/deprivation10/>
- Mounteney, J., S. Haugland, and A. Skutle. 2010. "Truancy, Alcohol Use and Alcohol-related Problems in Secondary School Pupils in Norway." *Health Educ Res* 25 (6): 945–954. doi:[10.1093/her/cyq044](https://doi.org/10.1093/her/cyq044).



- National Audit Office. 2005. *Improving School Attendance in England*. London: Stationery Office.
- Nelson, E. E., E. Leibenluft, E. B. McClure, and D. S. Pine. 2005. "The Social Re-orientation of Adolescence: A Neuroscience Perspective on the Process and Its Relation to Psychopathology." *Psychological Medicine* 35 (2): 163–174. doi:[10.1017/S0033291704003915](https://doi.org/10.1017/S0033291704003915).
- OfStEd. 2003. *Excellence in Cities and Education Action Zones: Management and Impact*. London: OfStEd.
- Perelman, J., T. Leão, and A. E. Kunst. 2019. "Smoking and School Absenteeism among 15- to 16-year-old Adolescents: A Cross-section Analysis on 36 European Countries." *European Journal of Public Health* 29 (4): 778–784. doi:[10.1093/eurpub/ckz110](https://doi.org/10.1093/eurpub/ckz110).
- Pflug, V., and S. Schneider. 2016. "School Absenteeism: An Online Survey via Social Networks." *Child Psychiatry Hum Dev* 47 (3): 417–429. doi:[10.1007/s10578-015-0576-5](https://doi.org/10.1007/s10578-015-0576-5).
- Pijl, S. J., P. Frostad, and A. Flem. 2008. "The Social Position of Pupils with Special Needs in Regular Schools." *Scandinavian Journal of Educational Research* 52 (4): 387–405. doi:[10.1080/00313830802184558](https://doi.org/10.1080/00313830802184558).
- Pijl, S. J., E. M. Skaalvik, and S. Skaalvik. 2010. "Students with Special Needs and the Composition of Their Peer Group." *Irish Educational Studies* 29 (1): 57–70. doi:[10.1080/03323310903522693](https://doi.org/10.1080/03323310903522693).
- Priestley, M. 2001. *Disability and the Life Course: Global Perspectives*. Cambridge: Cambridge University Press.
- Reid, K. 2006. "Raising School Attendance: A Case Study of Good Practice in Monitoring and Raising Standards." *Quality Assurance in Education* 14 (3): 199–216. doi:[10.1108/09684880610678531](https://doi.org/10.1108/09684880610678531).
- Reid, K. 2009. "The National Behaviour and Attendance Review in Wales: Findings and Recommendations on School Attendance." *Research in Education* 81 (1): 20–42. doi:[10.7227/rie.81.3](https://doi.org/10.7227/rie.81.3).
- Reid, K. 2010. "Management of School Attendance in the UK: A Strategic Analysis." *Educational Management Administration & Leadership* 38 (1): 88–106. doi:[10.1177/1741143209352387](https://doi.org/10.1177/1741143209352387).
- Rose, R., and M. Shevlin. 2010. *Count Me In! Ideas for Actively Engaging Students in Inclusive Classrooms*. Dublin: JKP Publishers.
- Silove, D., V. Manicavasagar, and J. Drobny. 2002. "Associations between Juvenile and Adult Forms of Separation Anxiety Disorder: A Study of Adult Volunteers with Histories of School Refusal." *Journal of Nervous and Mental Disease* 190 (6): 413–415. doi:[10.1097/00005053-200206000-00013](https://doi.org/10.1097/00005053-200206000-00013).
- Singer, J. D., and J. B. Willett. 2003. *Applied Longitudinal Data Analysis: Modeling Change and Event Occurrence*. New York: Oxford University Press.
- Totsika, V., R. P. Hastings, Y. Dutton, A. Worsley, G. Melvin, K. Gray, B. Tonge, and D. Heyne. 2020. "Types and Correlates of School Non-attendance in Students with Autism Spectrum Disorders." *Autism* 24 (7): 1639–1649. doi:[10.1177/1362361320916967](https://doi.org/10.1177/1362361320916967).
- Tramontina, S., M. B. Silvia Martins, C. R. Michalowski, M. E. Ketzer, J. Biederman, L. A. Rohde, and L. A. Rohde. 2001. "School Dropout and Conduct Disorder in Brazilian Elementary School Students." *The Canadian Journal of Psychiatry* 46 (10): 941–947. doi:[10.1177/070674370104601006](https://doi.org/10.1177/070674370104601006).
- Wood, J. J., S. D. Lynne-Landsman, D. A. Langer, P. A. Wood, S. L. Clark, J. M. Eddy, and N. Ialongo. 2012. "School Attendance Problems and Youth Psychopathology: Structural Cross-lagged Regression Models in Three Longitudinal Data Sets." *Child Development* 83 (1): 351–366. doi:[10.1111/j.1467-8624.2011.01677.x](https://doi.org/10.1111/j.1467-8624.2011.01677.x).
- Zhang, M. 2003. "Links between School Absenteeism and Child Poverty." *Pastoral Care in Education* 21 (1): 10–17. doi:[10.1111/1468-0122.00249](https://doi.org/10.1111/1468-0122.00249).