

# Early adult outcomes for suspended and excluded pupils

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# Contents

Executive summary .....	5
What are the outcomes in early adulthood for pupils who have been suspended at least once? ....	5
What are the outcomes in early adulthood for pupils who have been suspended multiple times? .	5
How do the outcomes of pupils with multiple suspensions differ from those who are permanently excluded? .....	6
What role does GCSE attainment play in the association between suspension and outcomes in early adulthood? .....	6
Recommendations .....	7
Introduction .....	9
Policy context.....	9
Literature review.....	14
Research questions .....	16
Methodology.....	17
Data .....	17
Participants .....	18
Measures.....	19
Suspension .....	19
Outcomes.....	19
Analytical approach .....	22
Sensitivity analysis .....	23
Strengths and limitations of our approach .....	23
Results.....	25
What are the outcomes in early adulthood for pupils who have been suspended at least once? ..	25
What are the outcomes in early adulthood for pupils who have been suspended multiple times?26	
How do the outcomes of pupils with multiple suspensions differ from those who are permanently excluded? .....	27
What role does GCSE attainment play in the association between suspension and outcomes in early adulthood? .....	29
Discussion.....	31
Summary of results .....	31
Implications.....	31
Recommendations .....	33
References .....	35
Appendices.....	39

Appendix A: Predictors of missing data .....	39
Appendix B: Descriptive statistics .....	41
Appendix C: The rare-outcome assumption. ....	43
Appendix D: Predicted probability of outcomes.....	45
Appendix E: Testing alternative cohorts .....	47
Appendix F: Logit, probit and the linear probability model.....	49
Appendix G: The effect of removing permanently excluded pupils from our sample .....	51

## Executive summary

In this report we investigate the association between secondary school suspensions and late adolescent and early adult outcomes in England. Specifically, we examine the likelihood of achieving Level 3 qualifications by age 19, entering higher education by age 24, and being in sustained education, employment, or training by age 24. Our research also introduces a novel analysis of state welfare use, exploring the receipt of out-of-work benefits and health-related benefits by age 24, an area previously unexamined in this context, thanks to new data linking pupils' education and state-welfare records.

Using the newly linked Longitudinal Education Outcomes (LEO) administrative dataset, we study a cohort of 576,000 students who started year 7 in state schools in 2006, tracking their time through secondary school and into their mid-20s. We find that approximately 16 per cent of pupils were suspended at least once in secondary school. We also find that suspended pupils have poor educational, occupational, and health-related outcomes in early adulthood which seem mostly related to their GCSE grades. In other words, the link between suspension and outcomes in adulthood may be indirect, as suspended pupils have lower GCSE grades, on average, which may, in turn, limit access to further education opportunities.

It is important to note that our study has several limitations inherent to non-experimental research. Although the LEO dataset contains socio-demographic information and we made statistical adjustments to account for as much confounding as possible, our findings show strong associations rather than definitive causal effects. We cannot distinguish between the impact of the behaviour leading to the suspension and the suspension itself. It is also possible that the associations may still be related to unmeasured pupil factors (e.g. attitudes towards learning) and contextual factors (e.g. family support). Therefore, we present the average (unadjusted) outcomes for suspended pupils.

### What are the outcomes in early adulthood for pupils who have been suspended at least once?

Outcomes in early adulthood for pupils who are suspended are poor. Compared to pupils who are not suspended, pupils suspended at least once during secondary school are:

- 2.1 times as likely to not achieve Level 3 qualifications by age 19.
- 1.6 times as likely to not attend higher education by age 24.
- 2.0 times as likely to not be in sustained education, employment or training at age 24.
- 2.5 times as likely to receive out-of-work benefits by age 24.
- 2.7 times as likely to receive health-related benefits by age 24.

### What are the outcomes in early adulthood for pupils who have been suspended multiple times?

Multiple suspensions tend to be cumulatively associated with poor early adult outcomes, as seen in Table 1.

**Table 1: Risk ratios for pupils suspended multiple times**

Outcome	Suspended once	Suspended 5 times	Suspended 10+ times
Not achieving Level 3 qualifications by 19	1.8 times	2.4 times	2.6 times
Not attending higher education by 24	1.4 times	1.8 times	1.8 times
Not in sustained education/employment/training at 24	1.6 times	2.4 times	2.8 times
Receiving out-of-work benefits by 24	1.9 times	3.1 times	3.6 times
Receiving health-related benefits by 24	1.8 times	3.5 times	4.9 times

### How do the outcomes of pupils with multiple suspensions differ from those who are permanently excluded?

Pupils suspended ten or more times appear to have just as poor, if not poorer, outcomes compared to those who experience permanent exclusion, as seen in Table 2.

**Table 2: Proportion of pupils achieving a given outcome by school exclusion status<sup>1</sup>**

Outcome	Cohort average	Suspended once	Suspended five times	Suspended 10+ times	Permanently excluded
Not achieving a Level 3 qualification by 19	44%	67%	90%	96%	94%
Not attending higher education by 24	58%	76%	92%	97%	94%
Not in sustained education, employment, or training at 24	25%	34%	53%	60%	63%
Receiving out-of-work benefits by 24	21%	32%	52%	60%	61%
Receiving health-related benefits by 24	7%	10%	20%	27%	25%

Whilst multiple suspensions may have the short-term effect of reducing disruption in the classroom for the teacher and other pupils, they do not appear to be a sustained behaviour corrective or route to securing good academic and later-life outcomes for the pupils who experience them.

### What role does GCSE attainment play in the association between suspension and outcomes in early adulthood?

- Pupils' attainment at GCSE plays a significant role in the relationship between suspension and outcomes. Once we account for suspended pupils' GCSE grades in our statistical models, the association between suspension and adult outcomes virtually disappears.

<sup>1</sup> Note that these categories are *not* ranges and that suspended and permanently excluded groups are not mutually exclusive as some permanently excluded pupils may have been suspended and some suspended pupils may later become permanently excluded. The impact of this is discussed in Appendix G: The effect of removing permanently excluded pupils from our sample.

- Additionally, the 'qualification gap' widens as the level of qualification increases from Level 1 to Level 3. This gap represents the difference in the proportion of suspended pupils achieving a qualification compared to their not-suspended peers.
- This suggests that the factors contributing to suspension, as well as the suspension itself, may have influenced GCSE performance, which in turn is related to outcomes in adulthood. In other words, the association between suspension and outcomes in adulthood may be indirect, accounted for by lower GCSE grades which limit opportunities for higher study.

## Recommendations

- The case for early intervention to address the factors leading to suspension, respond to the underlying behavioural issues and prevent low GCSE attainment is bolstered by our research, which suggests that neglecting to address these factors could contribute to long-term consequences for the individual and materialise in wider costs to society, e.g. contact with the welfare system. Behavioural issues are influenced by various factors, including those beyond the classroom, such as pupils' mental health and parental support, and there is growing causal evidence that such support can reduce suspension rates and antisocial behaviour.<sup>2</sup> Therefore, the Department for Education (DfE) should consider conducting a programme of work which sets out how to best respond to behaviour that reflects the evidence on in-school and out-of-school drivers. Given the poorer long-term trajectories of these children, suspension could be considered an important indicator for schools and wider services that more significant intervention may be necessary. Schools, colleges, and wider services will need to be adequately resourced to deliver these early intervention programmes to support at-risk pupils to remain engaged in education without disrupting the learning of others. Monitoring and evaluating these programmes will likely be key in ensuring they are effective.
- DfE should develop the evidence base on what works to support pupils who experience multiple suspensions. Existing guidance provides little direction on how to effectively support pupils experiencing repeated suspensions beyond a recommendation to implement "additional strategies".<sup>3</sup> This lack of guidance is concerning, given that the number of pupils in secondary school experiencing one or more suspensions is increasing, the risk of negative outcomes grows with the number of suspensions, and the outcomes for students with multiple suspensions can be as poor as, if not poorer than, those for permanently excluded pupils. Our findings highlight the need for a specific focus on understanding how to appropriately support pupils who face multiple suspensions, moving beyond the current reliance on repeated exclusionary measures that may fail to tackle the root issues.
- Future research should continue to better understand causal relationships. Since randomised control trials are unethical and impractical in this context, researchers should

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<sup>2</sup> Cattan et al., 'The Impact of Area Level Mental Health Interventions on Outcomes for Secondary School Pupils'; Toth et al., 'From a Child Who IS a Problem to a Child Who HAS a Problem'; Scott et al., 'Randomised Controlled Trial of Parent Groups for Child Antisocial Behaviour Targeting Multiple Risk Factors'; Scott et al., 'Which Type of Parenting Programme Best Improves Child Behaviour and Reading? Follow-up of the Helping Children Achieve Trial'.

<sup>3</sup> Department for Education, 'Suspension and Permanent Exclusion from Maintained Schools, Academies and Pupil Referral Units in England, Including Pupil Movement Guidance for Maintained Schools, Academies, and Pupil Referral Units in England'.



continue to explore quasi-experimental methods that mimic random allocation to suspension from the perspective of the pupil, including changes in behaviour policies (e.g. local authority boundary changes, governing structure changes, etc.), to add to the growing body of literature on the causal effects of suspension and permanent exclusion.

- Future research should also aim to understand outcomes for the peers of pupils who are suspended. Much research, including our own, has focused on the outcomes for pupils who are excluded rather than those of their peers. Whilst the effects of disruptive behaviour on peers have been widely discussed, to our best knowledge, no research has yet empirically explored or quantified this effect in an English context. Quantifying such ‘spill-over’ effects (if any) may be key for devising national policy to inform school leaders’ decisions to exclude pupils.
- Future research should also explore protective factors that enable some suspended pupils to succeed in later life. Although suspended pupils on average experience poorer outcomes, it is worth acknowledging that some do go on to achieve favourable results. Studies could investigate the individual (e.g. motivation), family (e.g. support for learning), school (e.g. inclusive approaches), and community (e.g. access to early intervention) characteristics that contribute to more positive outcomes for the pupils who experience them. Understanding these protective factors could inform more effective interventions and support to improve long-term outcomes for at-risk pupils.
- Given that the suspension rate in secondary school is increasing, more research is needed to understand the drivers of this recent rise. Young people’s mental health has been worsening for a decade.<sup>4</sup> Rates of persistent and severe absence have risen in the same period.<sup>5</sup> Understanding of the drivers of suspension could include using existing cohort studies or exploring the feasibility of collecting new cohort data. This could allow researchers to investigate and compare drivers across successive cohort studies to understand determinants and how these may have changed over time. By deepening our understanding of underlying factors, this research could inform more effective interventions to address the circumstances that led to the suspension as well as appropriately respond to challenging behaviour. Resourcing alternative approaches, such as off-site and in school alternative provision, and wider support systems will likely be essential in the meantime.

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<sup>4</sup> NHS England, ‘Mental Health of Children and Young People in England 2023 - Wave 4 Follow up to the 2017 Survey’, 4.

<sup>5</sup> Hunt, ‘Examining Post-Pandemic Absences in England’.

## Introduction

Schools deploy a range of approaches to manage pupil behaviour. Sanctions include verbal reprimands and detentions, ‘internal exclusion’, suspension, multiple suspensions, and, in the most serious cases, permanent exclusion or a ‘managed move’ to another school. Amongst these, school suspensions— or temporary removal from school – are widely used. In fact, suspensions from secondary school in England are at their highest level since public records began.<sup>6</sup> We previously published a report which showed that increasing numbers of suspensions in secondary school were associated with worse attainment at key stage 4.<sup>7</sup> This report extends this research to investigate associations between suspensions and outcomes in early adulthood, using data from the Longitudinal Education Outcomes (LEO) dataset.

### Policy context

In England, headteachers can suspend pupils for up to 45 days of the academic year. Data suggests that school leaders are increasingly using suspension; the suspension rate in secondary schools has been steadily increasing since 2013/14, reaching its highest point since public records began in 2022/23, the latest year of data, as shown in Figure 1. There is a significant time delay in releasing these statistics, but real-time absence data also suggests that this trend is set to continue in 2023/24.<sup>8</sup>

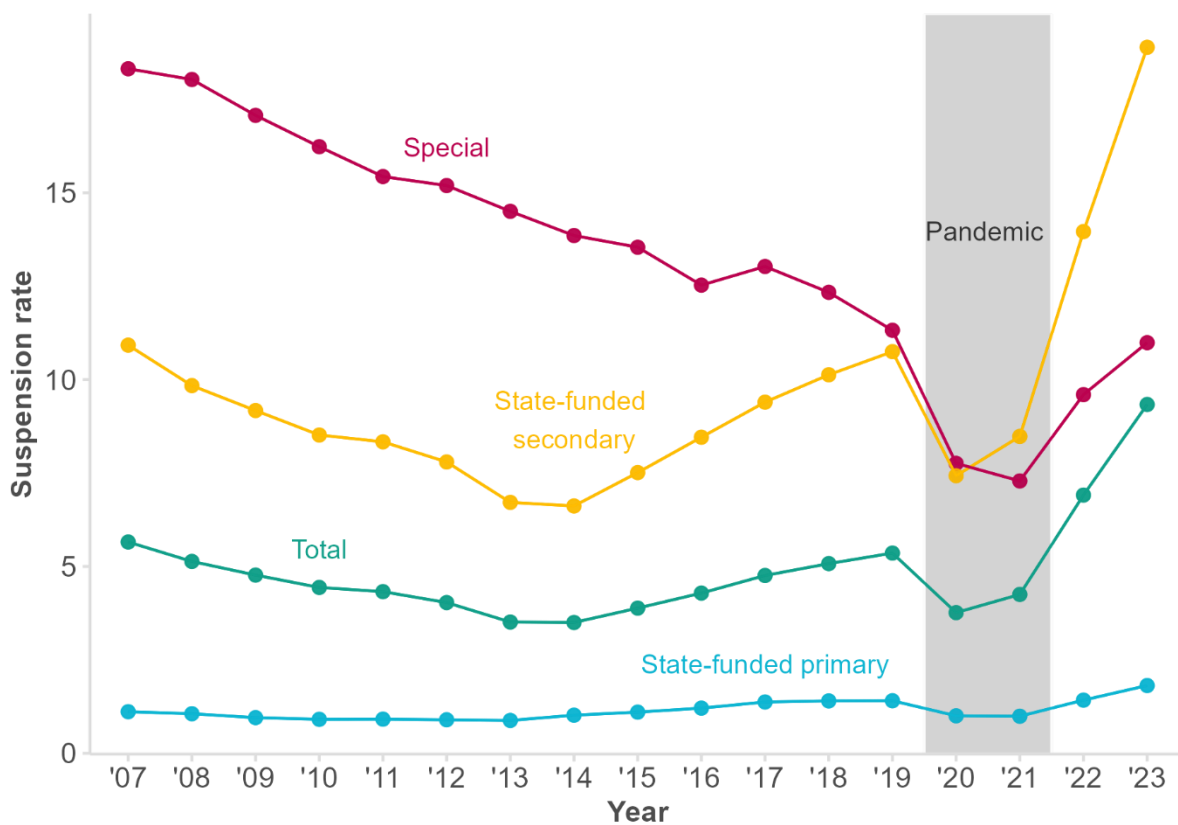
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<sup>6</sup> Department for Education, ‘Suspensions and Permanent Exclusions in England, Spring Term 2022/23’.

<sup>7</sup> Joseph and Crenna-Jennings, ‘Outcomes for Young People Who Experience Multiple Suspensions’.

<sup>8</sup> Thomson, ‘Exclusion and Suspension Rates in Autumn and Spring Term 2023/24’.

**Figure 1: Suspension rate by school type**



Source: Suspensions and permanent exclusions in England, Explore Education Statistics  
 Notes: Suspension rate = Total number of suspensions / Total number of pupils x 100

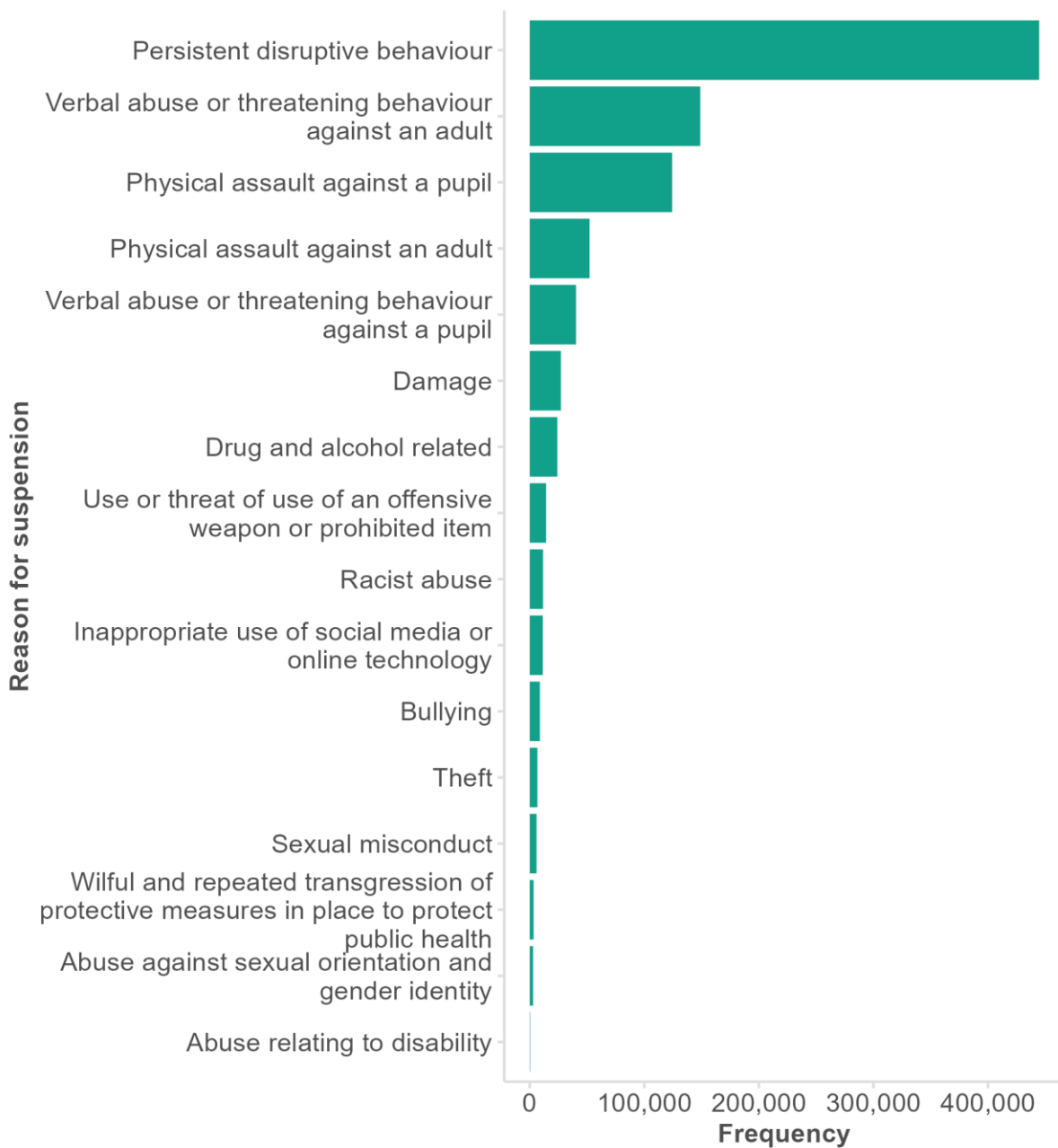
Most suspensions are short, typically lasting 1-2 days. Nonetheless, suspensions can accumulate in number and as time spent outside of school. Our previous research has highlighted that a significant proportion of pupils receive multiple suspensions – around 41 per cent of suspended pupils had more than two suspensions.<sup>9</sup>

Persistent disruptive behaviour is the most commonly recorded reason, as shown in Figure 2, and this is a consistent finding year after year.<sup>10</sup>

<sup>9</sup> Joseph and Crenna-Jennings, ‘Outcomes for Young People Who Experience Multiple Suspensions’.

<sup>10</sup> Timpson, ‘Timpson Review of School Exclusion’; Joseph and Crenna-Jennings, ‘Outcomes for Young People Who Experience Multiple Suspensions’; Department for Education, ‘Suspensions and Permanent Exclusions in England, Academic Year 2018/19’; Department for Education.

**Figure 2: Recorded reasons for suspensions in 2022/23**



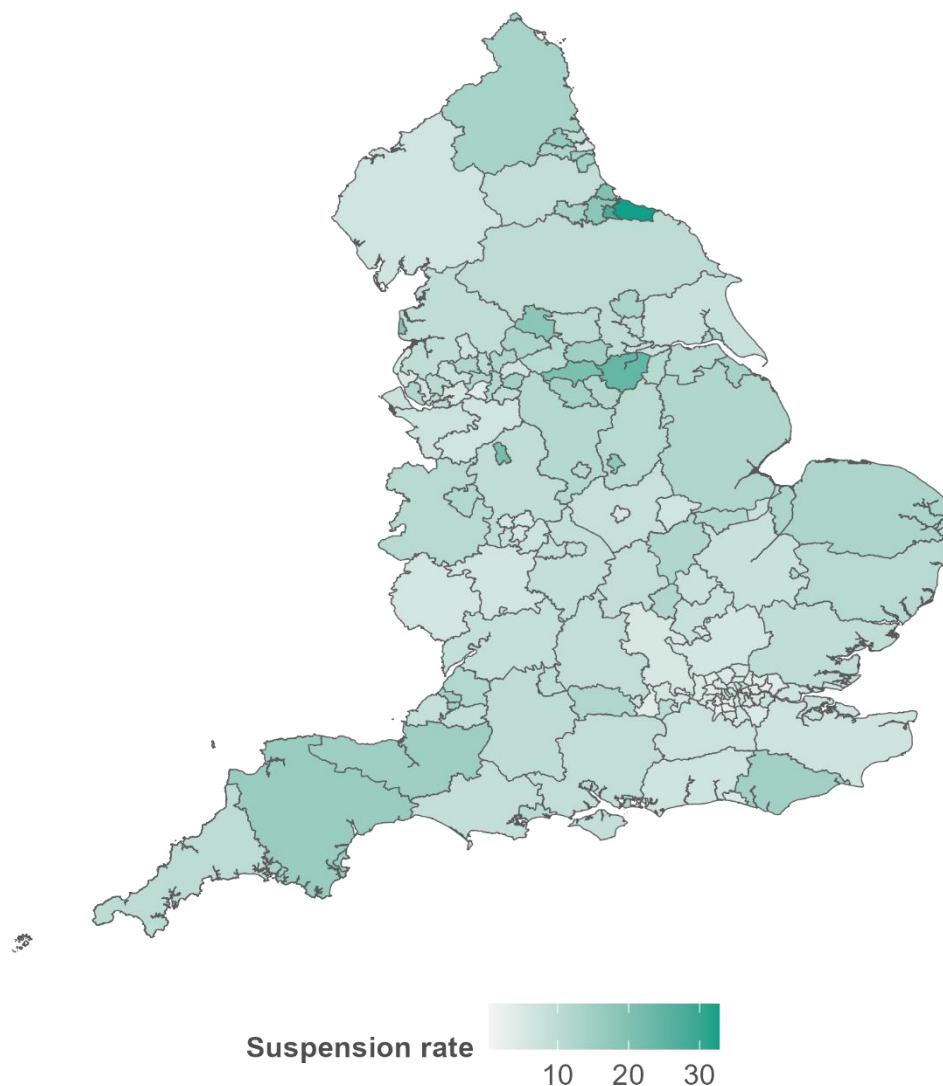
Note that multiple reasons can now be recorded so the underlying data refer to a total of 927,000 reasons given for the 787,000 suspensions in 2022/23

In England, there is substantial variation in suspensions by local authority (as shown in Figure 3) and by school.<sup>11</sup> Whether this reflects differences in school systems and practice (e.g. disciplinary policies, levels of support for children with additional needs, etc.) or differences in the wider environment and context (e.g. the local authorities’ influence on the disciplinary policy in schools in their area, regional socio-economic conditions and the characteristics of pupils a school serves, etc.)

<sup>11</sup> Hodge and Cruikshanks, ‘The Features of Effective School Groups: Measuring Pupil Inclusion and Attainment at School-Group Level’; Hodge et al., ‘The Features of Effective School Groups’; Strand and Fletcher, ‘A Quantitative Longitudinal Analysis of Exclusions from English Secondary Schools’.

requires further investigation. Nonetheless, this raises the possibility that the same behaviour may result in different sanctions depending on where a pupil lives.

**Figure 3: Suspension rate by local authority in 2022/23**

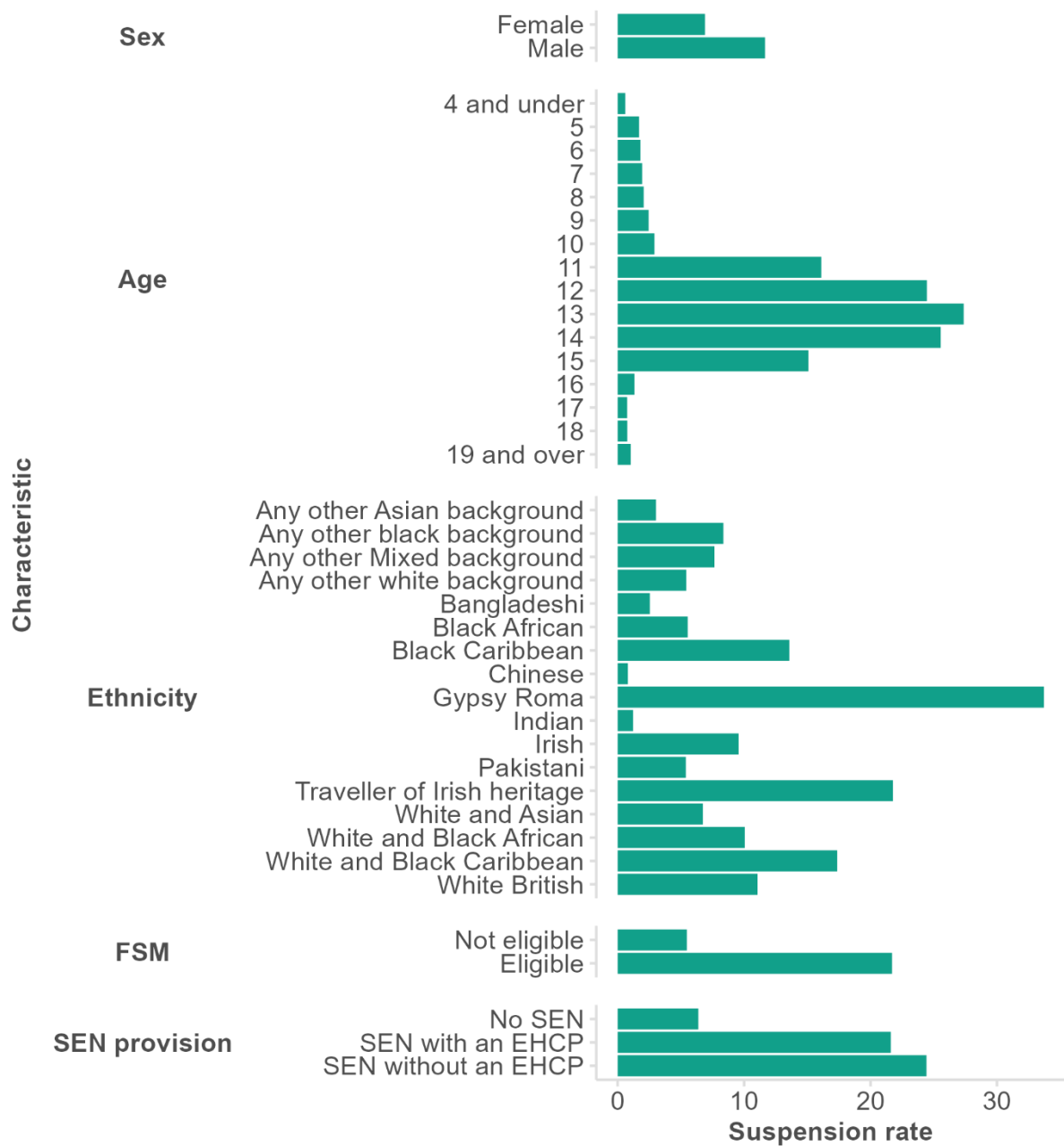


Source: Suspensions and permanent exclusions in England, Explore Education Statistics; Office for National Statistics licensed under the Open Government Licence v.3.0 Contains OS data © Crown copyright and database right 2024

Moreover, young people with particular characteristics are more likely to be suspended from school, as shown in Figure 4. Sex, age, ethnicity, free school meal eligibility, and special educational needs and disabilities are key axes of inequality: being male, of Gypsy/Roma/Traveller origin, from a low-income family and having a special educational need and/or disability all increase the likelihood of receiving suspensions.<sup>12</sup>

<sup>12</sup> Strand and Fletcher, 'A Quantitative Longitudinal Analysis of Exclusions from English Secondary Schools'; Ford et al., 'The Relationship between Exclusion from School and Mental Health'; Department for Education, 'Suspensions and Permanent Exclusions in England, Academic Year 2018/19'; Department for Education, 'Suspensions and Permanent Exclusions in England, Spring Term 2022/23'; Department for Education, 'Timpson Review of School Exclusion: Technical Note'.

**Figure 4: Suspension rate by pupil characteristics in 2022/23**



Source: Suspensions and permanent exclusions in England, Explore Education Statistics  
 Notes: Suspension rate = Total number of suspensions / Total number of pupils x 100

Taken together, these findings paint a clear picture: the suspension rate in secondary school is rising and there are longstanding disparities in suspension rates between groups. This emphasises the need to explore the effectiveness of suspension in responding to behaviour issues whilst considering its associated consequences for the individual; their peers, teachers, and school; and wider society.

## Literature review

A wealth of evidence suggests that the outcomes for pupils who experience school exclusion, encompassing both suspensions and permanent exclusions, are poor.<sup>13</sup> Whilst this report focuses on suspensions, we draw from the literature on both forms of exclusion due to the fact that these practices are not mutually exclusive and the pupil groups at risk of them often overlap. This broader approach is necessary because the vast majority of studies have largely centred on permanently excluded pupils, with comparatively less research on suspended pupils.

The poor outcomes for excluded pupils extend across various domains including lower academic attainment, higher school drop-out rates, lower rates of employment, lower earnings, poorer physical and mental health, and increased contact with the criminal justice system. The challenge lies in determining whether school exclusions directly *contribute to* these negative outcomes or if other underlying factors drive both the school exclusion and the outcomes. In this section, we explore alternative methods that have been used to study the causal impact of exclusion on outcomes, the mechanisms that may underpin this relationship, and the limitations of the current literature.

Some researchers have adopted quasi-experimental approaches, including using naturally occurring variations in exposure to suspension — e.g. a change in a school’s behaviour policy — or more indirectly — e.g. a change in a headteacher — to assess the causal impact of school exclusion on outcomes.<sup>14</sup> Alternatively, matching techniques have been used to allow researchers to create a comparison group by pairing suspended pupils with non-suspended pupils who have similar (measurable) characteristics.<sup>15</sup> Although these studies can never definitively attribute cause, together these methods offer valuable insights into the potential causal effects of suspension on outcomes when the strongest forms of evidence (randomised control trials) are impractical and unethical.

For instance, Madia et al. (2022) used propensity score matching to match and compare permanently excluded pupils with non-excluded pupils who had similar observable characteristics. They found that excluded pupils were more likely to be NEET at the age 19 and remain NEET at age 25.<sup>16</sup> Similarly, Cathro et al. (2023) used an instrumental variable approach, examining the impact of a shift in school governance structures on exclusion rates and subsequent youth justice involvement.<sup>17</sup> They found that permanent exclusion led to a significant 33 percentage point increase in the likelihood of being in custody between ages 15-17, whilst suspension increased this

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<sup>13</sup> Madia et al., ‘Long-Term Labour Market and Economic Consequences of School Exclusions in England’; Obsuth et al., ‘The Impact of School Exclusion in Childhood on Health and Well-Being Outcomes in Adulthood’; Cathro, Tagliaferri, and Sutherland, ‘School Exclusions and Youth Custody’; Noltemeyer, Ward, and Mcloughlin, ‘Relationship Between School Suspension and Student Outcomes’; Wolf and Kupchik, ‘School Suspensions and Adverse Experiences in Adulthood’; Novak, ‘The Association between Experiences of Exclusionary Discipline and Justice System Contact’; Rosenbaum, ‘Educational and Criminal Justice Outcomes 12 Years After School Suspension’.

<sup>14</sup> Cathro, Tagliaferri, and Sutherland, ‘School Exclusions and Youth Custody’.

<sup>15</sup> Rosenbaum, ‘Educational and Criminal Justice Outcomes 12 Years After School Suspension’.

<sup>16</sup> Madia et al., ‘Long-Term Labour Market and Economic Consequences of School Exclusions in England’.

<sup>17</sup> Cathro, Tagliaferri, and Sutherland, ‘School Exclusions and Youth Custody’.

probability by 1.3 percentage points. Taken together, these studies provide insight into the causal effects of school exclusion on outcomes.

Various pathways linking school exclusion to adverse outcomes in later adolescence and early adulthood have been proposed. These have focused on the individual (e.g. lost learning; the trajectory associated with being labelled as a ‘troublemaker’; social isolation and loneliness that may prevent young people from seeking support), relational (eroded contact with pro-social peers and adults; increased contact with negative antisocial peers; closer association with similarly situated young people) and environmental factors (the loss of time structures; estrangement from the school environment in which aspects of social life are acquired; increased time spent in alternative provision/pupil referral units).<sup>18</sup>

Three key considerations are of note: firstly, there is no apparent reason why these pathways would not apply to suspensions as well as permanent exclusions, given their interconnected nature and the overlap of pupil groups at risk; secondly, while these mechanisms have largely been studied in the context of criminal justice outcomes, they appear plausible for education and related economic, occupational, and health outcomes; and thirdly, although these mechanisms are perhaps difficult to quantify and compare in magnitude, there are likely multiple interacting processes through which suspension specifically could lead to poorer post-16 outcomes.

Taken together, these studies underscore the importance of considering the broader outcomes for suspended (and permanently excluded) pupils, both at the individual and societal levels. The challenges faced by excluded or suspended children may compound over time, leading to greater disadvantages in later life stages. To this end, we contribute to this growing body of literature by exploring a broad set of later educational, occupational, and health outcomes, up to eight years after leaving secondary school, for suspended pupils. Specifically, we examine the likelihood of not achieving Level 3 qualifications by age 19, not entering higher education by age 24, and not being in sustained education, employment, or training by age 24. Furthermore, our research introduces a novel analysis of state welfare use, exploring the receipt of out-of-work benefits and health-related benefits by age 24, an area previously unexamined in this context, thanks to new data linking pupils’ education and state-welfare records.

We also aim to address limitations of previous studies, including the reliance on self/parent-reported school exclusion and outcomes, the grouping of suspension and permanent exclusion together for statistical power, and the potential bias that arises from attrition typical in longitudinal cohort data. Furthermore, analysing average outcomes for suspended pupils hides differences between pupils suspended once and pupils suspended multiple times, inadvertently obscuring whether the outcomes for pupils who experience *multiple* suspensions are similar to those who experience permanent exclusion. Our study aims to address these limitations by leveraging the detailed pupil

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<sup>18</sup> Madia et al., ‘Long-Term Labour Market and Economic Consequences of School Exclusions in England’; Obsuth et al., ‘The Impact of School Exclusion in Childhood on Health and Well-Being Outcomes in Adulthood’; Kent et al., ‘School to Prison Pipelines’; Sanders, Liebenberg, and Munford, ‘The Impact of School Exclusion on Later Justice System Involvement’; Arnez and Condry, ‘Criminological Perspectives on School Exclusion and Youth Offending’; Pyle et al., ‘Social Risk Factors of Institutionalized Juvenile Offenders’; Novak, ‘The Association between Experiences of Exclusionary Discipline and Justice System Contact’; Rosenbaum, ‘Educational and Criminal Justice Outcomes 12 Years After School Suspension’; Novak, ‘The School-To-Prison Pipeline’; Novak and Krohn, ‘Collateral Consequences of School Suspension’.



records and large sample in LEO. This new data resource also allows us to disaggregate outcomes for suspended and permanently excluded pupils separately but also by the number of suspensions, for the first time. Lastly, the improved availability of linked administrative data has enabled the study of additional outcomes, such as state welfare use, in a way that does not rely on self-reports.

The reviewed studies highlight the need for further research to understand the underlying mechanisms driving outcomes associated with suspensions. Although there are likely to be many pathways that can explain relationships, some pathways may be more amenable to intervention than others. In this report, we look at the role played by GCSE grades in the relationship between suspensions and post-16 outcomes. Our previous research has shown that even pupils with one suspension are, on average, not achieving a standard pass at GCSE, which in conjunction with evidence that GCSE attainment is a strong predictor of later earnings lends credibility to this as a plausible mechanism: suspension contributes to poor attainment which in turn limits access to additional further study, job prospects, and earning potential.<sup>19</sup> For example, in the case of health-related benefits, researchers have speculated that fewer and less optimal educational opportunities following suspension limits educational and/or vocational options leading to a compounding of pre-existing disadvantage and escalation of health issues.<sup>20</sup>

## Research questions

This report investigates two overarching research questions, addressing some limitations of previous research:

1. What are the associations between suspension and educational, occupational, and health outcomes in young adulthood?
2. What role does GCSE attainment play in these relationships?

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<sup>19</sup> Hodge, Little, and Weldon, 'GCSE Attainment and Lifetime Earnings'; Joseph and Crenna-Jennings, 'Outcomes for Young People Who Experience Multiple Suspensions'.

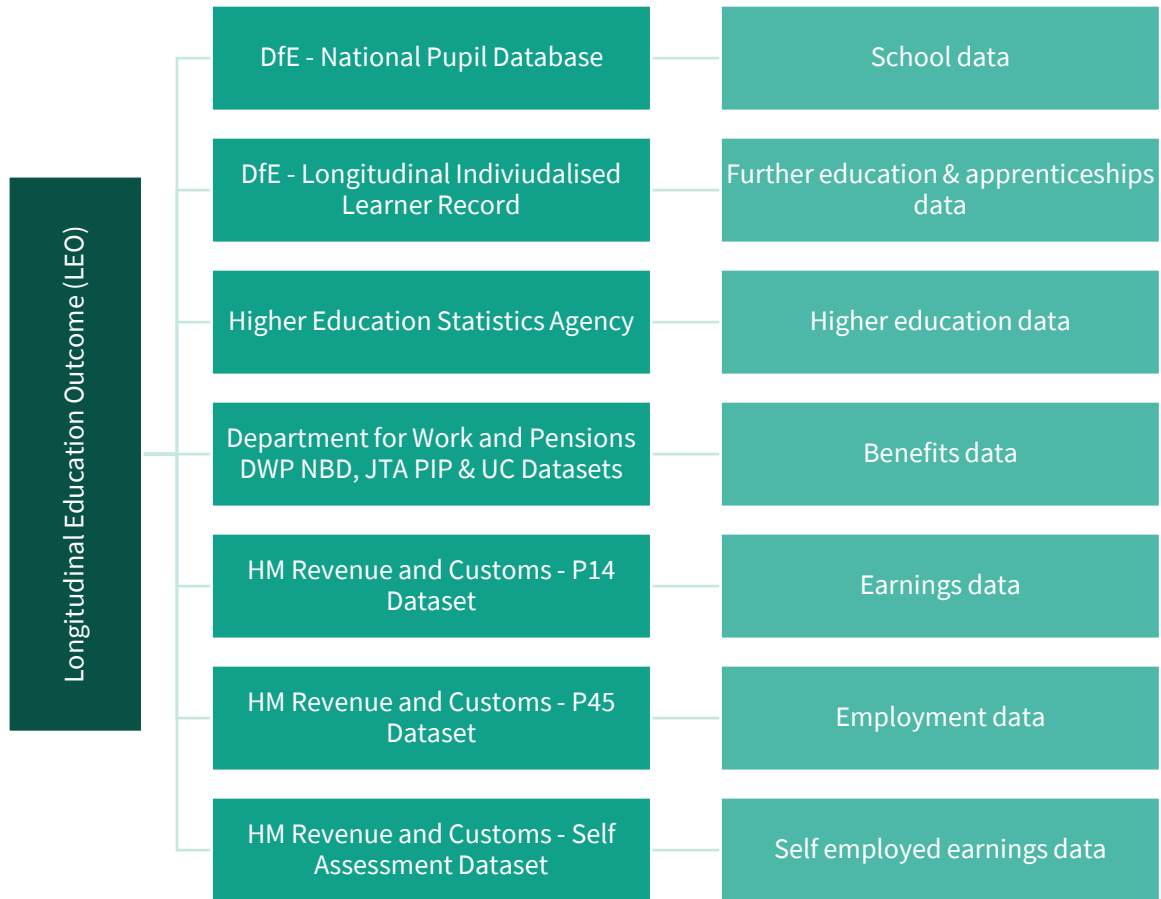
<sup>20</sup> Obsuth et al., 'The Impact of School Exclusion in Childhood on Health and Well-Being Outcomes in Adulthood'.

# Methodology

## Data

We used the Longitudinal Education Outcomes (LEO) dataset to answer our research questions.<sup>21</sup> LEO is an administrative dataset which links pupil records from the National Pupil Database (NPD) with further education, higher education, employment, earnings, and welfare benefit claims data. Figure 5 shows the data sources we used to address our research questions.

**Figure 5: Data sources for the components of LEO data**



The NPD covers all pupils in state-funded schools in England.<sup>22</sup> It contains comprehensive data on recorded pupil characteristics, such as their gender, ethnicity, Free School Meal (FSM) eligibility, as well as data on their permanent exclusion and suspension history, and attainment data. The population-level coverage makes it a useful resource to inform public policy.

<sup>21</sup> We used the second interaction (LEO i2) of the LEO dataset

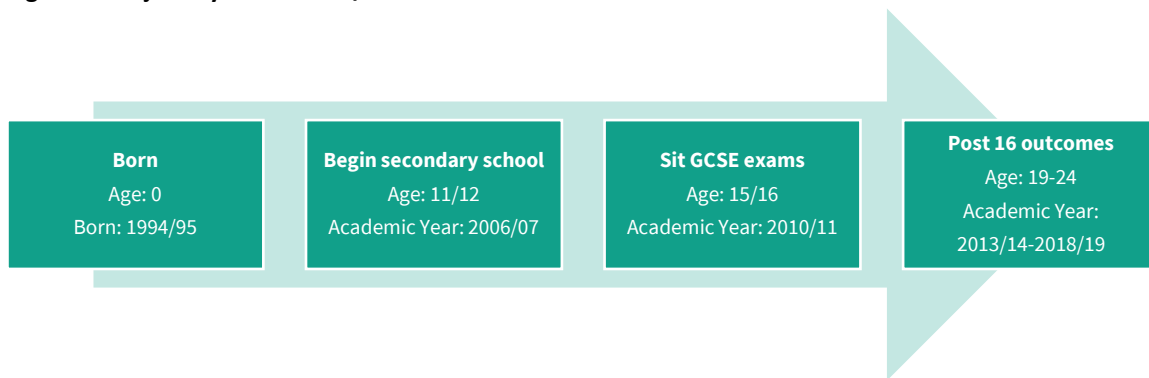
<sup>22</sup> Unless pupils later moved to England, the NPD does not include pupils who attended school in Scotland, Wales and Northern Ireland.

## Participants

We studied the 1994/95 birth cohort, following their time through secondary school into early adulthood up to age 24.<sup>23</sup>

Figure 6 shows the ‘journey’ of our cohort. We used the 1994/95 birth cohort specifically because this was the earliest group for whom data on suspensions was available, and it allowed us to study the outcomes of our cohort over an extended period into their mid-twenties.<sup>24</sup>

**Figure 6: Trajectory of the 1994/95 birth cohort**



We first identified the correct birth cohort, focusing on pupils born between September 1994 and August 1995. Using school census records from the beginning of secondary school onwards, we filtered our sample to include only those pupils whose national curriculum year matched their chronological age.<sup>25</sup> This ensured that we solely studied pupils who appeared at any point in the NPD during secondary school and met our birth cohort criteria. Given that primary schools rarely issue suspensions, we focused on pupils’ time in secondary school and the suspensions they received during this period.<sup>26</sup> After identifying the correct cohort, we matched data on school exclusions, attainment, employment, earnings, and benefits, merging this information into our dataset.<sup>27</sup>

We conducted a complete-case analysis of our cohort. We identified an initial sample of 598, 260 pupils from the school census. After linking pupils’ exclusion history as well as data on their attainment, employment, earnings and benefits and removing cases with missing data, we were left

<sup>23</sup> In our report, pupils' ages are referenced by the age they turn at the end of the academic year.

<sup>24</sup> We used a 2018/19 cohort, despite the existence of more recent data, to avoid the effects of the Covid-19 pandemic.

<sup>25</sup> For example, a pupil born in this cohort should have been in year 7 in the 2006/07 files, year 8 in 2007/08 files, and so on.

<sup>26</sup> Joseph and Crenna-Jennings, ‘Outcomes for Pupils Suspended in Primary School’.

<sup>27</sup> In most cases, we deleted duplicate pupil records based on file order to produce no more than one record per pupil at one point in time. In the case of the exclusions dataset, some pupils had duplicate suspensions, i.e. suspensions that started on the same day. Although they might have been genuine duplicates, sometimes the reasons for the duplicate suspension differed as did the end date. Therefore, we retained all duplicate suspensions to avoid creating arbitrary inclusion rules. Of note, this was only relevant to a small number of cases.

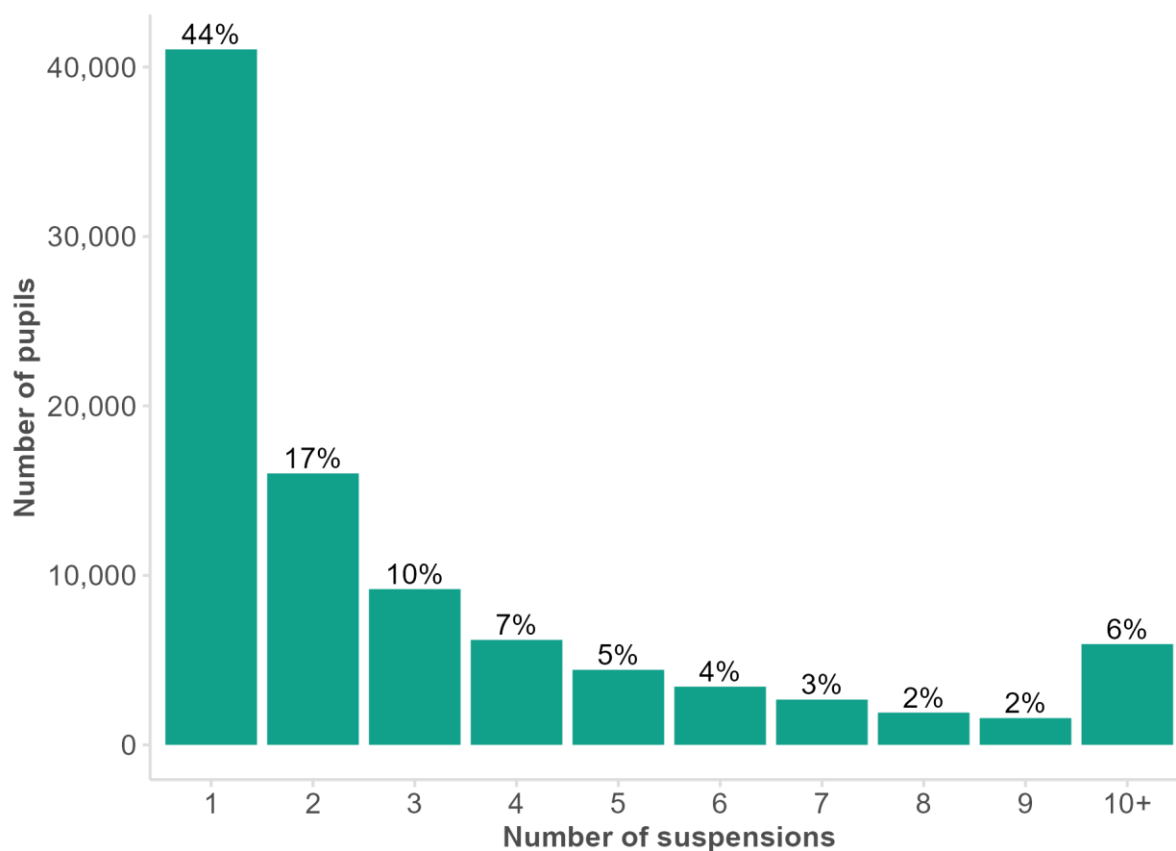
with a final sample size of 576, 317 pupils. In other words, we successfully matched the majority of pupils (96 per cent) to their outcomes.<sup>28</sup>

## Measures

### Suspension

We modelled suspension in two ways: binary (suspended or not) and ordinal (total number of suspensions). Approximately 16 per cent of pupils were suspended at some point during secondary school. Although the majority of these suspended pupils had one or two suspensions, a substantial number of pupils had three or more suspensions — see Figure 7.

**Figure 7: Total number of suspensions received amongst suspended pupils**



Percentages reflect the proportion of pupils who have been suspended at least once, not the entire cohort

### Outcomes

We focused on the following binary outcomes:

- Achieving Level 3 qualifications by age 19
- Entering higher education by age 24

<sup>28</sup> Although this meant our estimates were technically conditional on having complete data, the proportion of missing data was small and far smaller than what we could have expected had we used cohort study data. Our analysis of the predictors of being removed from the analysis suggested that ethnicity, joining the school system late (e.g., due to immigration), and to a lesser extent permanent exclusion were associated with being missing from the final sample (see Appendix A: Predictors of missing data). Notably, only a small number of permanently excluded pupils ( $n = 384$  or 0.06 per cent of the initial sample) were removed. The very small amount of missing data suggested that non-random linkage may not be a major biasing factor in our analysis.

- Being in sustained education, employment, or training at age 24
- Receipt of sustained out-of-work benefits by age 24
- Receipt of sustained health-related benefits by age 24

### Achieving Level 3 qualifications by age 19

Using the Young Persons Matched Administrative Database (YPMAD), available in the NPD, we used an existing binary variable that indicated that the young person had achieved Level 3 qualifications (e.g. equivalent to two A-levels at grades A\* to E) via any route. Approximately 56 per cent of our sample achieved Level 3 qualifications by age 19.

### Entering higher education by age 24

We considered students as having entered higher education if they appeared in the HESA dataset by the time they were 24. We looked for students enrolled in any course of Level 4 or above. We focused on this age as it allowed pupils to enter higher education later (e.g. because they took a gap year, as a mature student etc). Approximately 42 per cent of our sample entered higher education by age 24.

### Being in sustained education, employment, or training at age 24

To assess whether individuals were in sustained education, employment, or training (EET) at age 24, we constructed a measure in the LEO dataset, as no pre-existing measure for (N)EET status was available. We closely followed similar attempts to ensure consistency.<sup>29</sup>

We considered pupils to be in a sustained education, employment, or training destination if they were present in the relevant datasets for a substantial period. Specifically, we marked pupils as being in a sustained destination if they appeared in the relevant education datasets (e.g., school census, exams data) for the corresponding academic year. Additionally, those who were enrolled in further education/training (as indicated by a learning aim in the Individualised Learning Records Aims data) or in higher education (as indicated by a record in the Higher Education Statistics Agency data) for at least 180 days were also classified as being in a sustained destination.<sup>30</sup> Furthermore, we identified individuals as being in a sustained destination if they had a substantial employment period, defined as earning at least £1 and had at least one employment spell lasting 180 days or more.<sup>31</sup> Whilst the 180-day threshold was arbitrary, it provided a standard measure for determining whether an individual was in a sustained destination, be it education, training, or employment, and notably, other researchers have used this threshold.<sup>32</sup>

<sup>29</sup> Anderson and Nelson, 'Technical Report for Education and Labour Market Pathways of Individuals (LEO)'.

<sup>30</sup> For datasets that are recorded as 'per' benefit spell, employment spell, or learning aim rather than just per pupil, any given row had to be sustained (i.e., end date - start date  $\geq$  180 days) rather than cumulatively sustained. For example, a pupil with three employment spells of two months each was not considered in sustained employment, whereas a pupil with a single six-month employment spell was.

<sup>31</sup> Previous research has found that individuals can be employed but report no income in the tax year (e.g. because they were on career break); see Anderson and Nelson, 'Technical Report for Education and Labour Market Pathways of Individuals (LEO)'.

<sup>32</sup> Beynon, 'Early Literacy Skills and Long(Er) Term Outcomes'.

If individuals did not meet the criteria for sustained education, employment or training, they were classified as NEET.<sup>33</sup> We measured this at age 24 to capture those who may be self-employed since this information is only available from 2014-15 and we did not want to misclassify self-employed individuals as not in employment.<sup>34</sup> Approximately 75 per cent of our sample were in a sustained education, employment or training destination at 24.

#### Receipt of sustained out-of-work benefits by age 24

We measured whether individuals received out-of-work benefits at any point between leaving secondary school and age 24.<sup>35</sup> Some benefit spells were short (lasting one or two days), so we used 180 days as a measure of sustained benefit use, in line with previous research.<sup>36</sup> The following benefits were categorised as an out-of-work benefit: Jobseeker's Allowance, Jobseeker's Training Allowance, Employment and Support Allowance, Income Support, Universal Credit (Searching for Work), Universal Credit (No Work Requirements), Universal Credit (Preparing for Work), Universal Credit (Planning for Work), and Invalid Care Allowance.<sup>37</sup> Approximately 21 per cent of our sample had been in receipt of sustained out-of-work benefits by age 24.

#### Receipt of sustained health-related benefits by age 24

We measured whether individuals received sustained health-related benefits, again defined as for at least 180 days, at any point between leaving secondary school and age 24. The benefits system in the UK has specific benefits available to those living with health conditions or disabilities.<sup>38</sup> In line with previous research, we categorised Disability Living Allowance, Employment and Support Allowance, and Personal Independent Payment as health-related benefits.<sup>39</sup> Approximately 7 per cent of our sample had been in receipt of sustained health-related benefits by age 24.

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<sup>33</sup> It is possible some pupils we categorised as NEET may have been a result of not being able to match administrative datasets, emigration, death etc. However, the scale of this is unknown. For example, there is no way to track individual level emigration flows or deaths with current LEO data. Equally, whether these factors (e.g., death) affect one group (not-suspended) over the other (suspended pupils) is also unknown in case these sources of error 'even' out between the groups and the gap can be focused upon instead.

<sup>34</sup> As sensitivity analysis, we also analysed this outcome at age 19, acknowledging that this will not include all those who are self-employed as the academic year cuts through the financial year.

<sup>35</sup> For all sustained benefit outcome measures, any benefits that were open at the end of the 2020-21 financial year, when the LEO data was extracted, we included as sustained use, provided they started before the cut-off date (31-08-2019). This way we include those who would have gone on to claim benefits for a sustained period, acknowledging that any cut-off date would have been arbitrary.

<sup>36</sup> Beynon, 'Early Literacy Skills and Long(Er) Term Outcomes'.

<sup>37</sup> Anderson and Nelson, 'Technical Report for Education and Labour Market Pathways of Individuals (LEO)'. Note that in our LEO data extract there was already a variable that flagged benefits considered 'out-of-work' benefits. Importantly, there were other benefits such as Pension Credit, Incapacity Benefit, Severe Disablement Allowance etc. that were flagged as out-of-work benefits in the data but were not present in the data once we had filtered to records within our sample and timeframe (e.g., because pupils in our cohort were not eligible by age, e.g. pension credit, or if the benefit had been phased out, e.g. Severe Disablement Allowance etc.). Lastly, note that the benefits data does not include all possible benefit spells, e.g. Housing Benefit, Child Benefit or Tax Credits.

<sup>38</sup> Ray-Chaudhuri and Waters, 'Recent Trends in and the Outlook for Health-Related Benefits'.

<sup>39</sup> There are two main types of health-related benefits: incapacity benefits (Employment and Support Allowance) and disability benefits (Disability Living Allowance and Personal Independent Payment). These have separate eligibility criteria and application processes, but individuals can apply for both. Technically, there are other health-related benefits such as Attendance Allowance, Incapacity Benefit etc, but these have either been phased out, are not relevant to our cohort (due to their age), or are not currently available to researchers.

## Analytical approach

As mentioned in the literature review, estimating the direct effects of school suspensions is challenging because they do not occur randomly. Suspended pupils may differ from their non-suspended peers in terms of individual characteristics, family backgrounds, and wider context – which can independently influence later outcomes. Directly comparing these groups could conflate the effects of suspensions with that of pre-existing differences. The methodological challenge in estimating the effect of the suspension on outcomes is therefore to account for all the differences between individuals that might affect the probability of an outcome (see Appendix B: Descriptive statistics for descriptive statistics that highlight these differences). In this section, we set out our method for accounting for these differences, along with the assumptions that this implies.

To better isolate the ‘net-effect’ of suspensions on our binary outcomes, we employed logistic regression to account for confounding factors by controlling for variables such as demographics and economic disadvantage. We then considered the relationship once attainment at GCSE was accounted for. We adopted a sequential approach to modelling, building our logistic regressions in blocks, to understand the predictive power of suspensions and how this changed as different sets of factors were accounted for:

- Model 1 established the baseline effect size without covariates.
- Model 2 adjusted for pupil demographics, including month of birth, gender, ethnicity, English as an additional language status, and free school meal eligibility.<sup>40</sup>
- Model 3 further incorporated GCSE attainment, measured by average GCSE grades in English and Maths.<sup>41</sup>

It is important to note that controlling for GCSE attainment impacts the interpretation of our outputs, as it is a plausible mediator of the relationship between secondary school suspensions and later outcomes.<sup>42</sup>

Detailed regression tables from our models are available for reference here: <https://epi-uk.gitlab.io/suspensions/><sup>43</sup>

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<sup>40</sup> Month of birth, gender, and ethnicity data were taken based on a pupil’s most recent, non-missing, census return; English as an additional language status and free-school meal eligibility were determined as whether they were flagged as such at any point in secondary school

<sup>41</sup> We mapped GCSE letter grades {U, G, F, E, D, C, B, A} to numbers {0, 1, 1.5, 2, 3, 4, 5.5, 7, 8.5}, including double awards where appropriate — see Department for Education, ‘Progress 8 and Attainment 8 Measure in 2016, 2017, and 2018 Guide for Maintained Secondary Schools, Academies and Free Schools’. Provided the pupil had reached the end of KS4, we also replaced missing GCSE grade data with zero. We then took the average grade.

<sup>42</sup> Rohrer, ‘Thinking Clearly About Correlations and Causation’.

<sup>43</sup> We did not include SEND as a covariate for two reasons. Firstly, part of the process of managing misbehaviour may include the identification of SEND and/or suspension. The SEND Code of Practice describes some manifestations of social, emotional, or mental health needs (SEMH), as “[d]isplaying challenging, disruptive or disturbing behaviour”. In addition, the SEMH label can also capture pupils with ongoing behavioural difficulties, not least because it used to explicitly include pupils with behavioural issues. These factors risk damaging the temporal sequencing of our study. Secondly, we have previously found that SEND is associated with suspension, with stronger collinearity between SEMH and suspension in particular. Therefore, including SEND as a covariate in a statistical model intended to tease out the relationship between suspensions and attainment risks introducing (collider) bias that attenuates the true association.

To aid the interpretability of our outputs, we used the {marginaleffects} package in R to convert our logit models to relative risks (also known as risk ratios) under various specifications.<sup>44</sup> Risk ratios are more intuitive and easily interpretable than odds ratios – e.g., “suspended pupils are x times as likely” rather than the “odds of an outcome being x times as likely”. We decided that reporting risk ratios was appropriate as LEO data could effectively be considered ‘population’ level data.<sup>45</sup> Additionally, some of our outcomes were common, and when events are common, the unadjusted odds ratio could vastly overestimate the relative risk — see Appendix C: The rare-outcome assumption. Lastly, the average predicted probabilities of an outcome under various specifications occurring are also available in Appendix D: Predicted probability of outcomes.

## Sensitivity analysis

We conducted robustness checks at various steps of the research process. For example, we conducted sensitivity analysis on two subsequent cohorts to check that the selection of one particular year group did not inadvertently bias results (see Appendix E: Testing alternative cohorts); these sensitivity analyses suggested that the average outcomes for suspended pupils were similarly poor across all three cohorts. Moreover, although we have only presented the outputs of five key outcomes that we believed may be of interest to policymakers, we have provided regression tables of additional outcomes, such as receipt of incapacity and disability benefits separately, as part of our sensitivity analyses [online](#). We found that the association between suspension and these additional outcomes remained statistically significant. Additionally, we modelled our data using an alternate nonlinear binary response model (e.g., probit) and the linear probability model, available in Appendix F: Logit, probit and the linear probability model, to assess whether our findings were robust to the model used; they showed a similar pattern of results. Lastly, in terms of our models, we also included a model that added being permanently excluded in secondary school, available [online](#). Whilst the proportion of pupils permanently excluded was small, outcomes for permanently excluded pupils *may* be worse than for suspended pupils. Therefore, we included this factor in our statistical model in case the negative outcomes for pupils with multiple suspensions were actually being driven by their (potentially) subsequent permanent exclusion, rather than the suspensions themselves. We found that our findings were mostly robust to the inclusion of being permanently excluded in our statistical model.

## Strengths and limitations of our approach

By using the extensive longitudinal data available in LEO, we were able to look at long-term outcomes for suspended pupils, while accounting for a range of pupil characteristics. Despite this, some limitations of our study could be addressed in future research.

Whilst our study employed a selection-on-observed variables approach, accounting for a comprehensive set of pupil characteristics as recorded in the NPD, we acknowledge the inherent limitations associated with the absence of a causal research design. Factors at various levels such as at the pupil level (e.g. attitudes towards learning, social-emotional skills), family level (family support) and community level (e.g. access to early intervention services) may all play a role in the likelihood of experiencing suspensions, achieving good GCSE grades, and attaining favourable long-

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<sup>44</sup> Arel-Bundock, Griefer, and Heiss, ‘How to Interpret Statistical Models Using Marginal Effects in R and Python’.

<sup>45</sup> Odds ratios are considered more appropriate when data on the entire population is not available and alternate sampling techniques must be used — see George, Stead, and Ganti, ‘What’s the Risk’.



term outcomes. The exclusion of these factors from our model makes it challenging to isolate the effect of suspensions from these underlying risk factors and thus may have resulted in a potential overestimation of our effect sizes.

Whilst these factors were not measured in our data, even their inclusion would likely still leave other unmeasured variables as data cannot feasibly capture all relevant characteristics that could influence both suspension and subsequent outcomes; this limitation, known as ‘omitted-variable bias’, is inherent to all non-experimental research. Therefore, we focus primarily on the outcomes for these pupils, and what may contextualise our findings, rather than attempting to assert the direct (and implicitly causal) effects of suspension.

Our decision to use the selection-on-observed variables approach can be considered in light of the limitations of relying solely on, often context-specific, quasi-experimental evidence. Given the steady rise in suspension rates, there is a pressing need to inform broad policy debates in a timely manner. Consequently, it is not always feasible to await ideal quasi-experimental conditions before conducting analysis and drawing conclusions. This is not to suggest that these methods are not worthwhile, rather it is likely that combining various empirical strategies will be necessary to further our understanding of the causal impact of suspensions.

In sum, whilst our findings show a strong association between suspensions and long-term outcomes, we cannot rule out the potential influence of unmeasured confounding variables.<sup>46</sup> Our findings should therefore be viewed alongside other studies that have used more causal inference designs.<sup>47</sup>

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<sup>46</sup> Of note, we did not account for school effects as random intercepts or fixed effects due to several considerations. Firstly, the LEO dataset imposed restrictions on school-level outputs, limiting our ability to incorporate such effects directly – see Digital Economy Act 2017. Secondly, previous researchers working with restricted LEO data extracts have cautioned that estimating average partial effects (i.e. the method we used to derive risk ratios) from binary models with more sophisticated specifications (e.g. with school effects) could become computationally expensive – see Hodge, ‘Key Stage 2 Attainment and Early Labour Market Outcomes’. Thirdly, pupils may experience suspensions across multiple schools, lending uncertainty to decisions regarding school-level controls. Despite these considerations, it is important to acknowledge the potential bias introduced by not including school effects. Although pupil level factors are thought to be more important in shaping outcomes (see Leckie et al., ‘School, Family, Neighbourhood’), the omission of school effects might overestimate the ‘net’ effect of suspensions, even if by very little, since school characteristics likely influence the chances of a pupil being suspended and potentially their long-term outcomes as well.

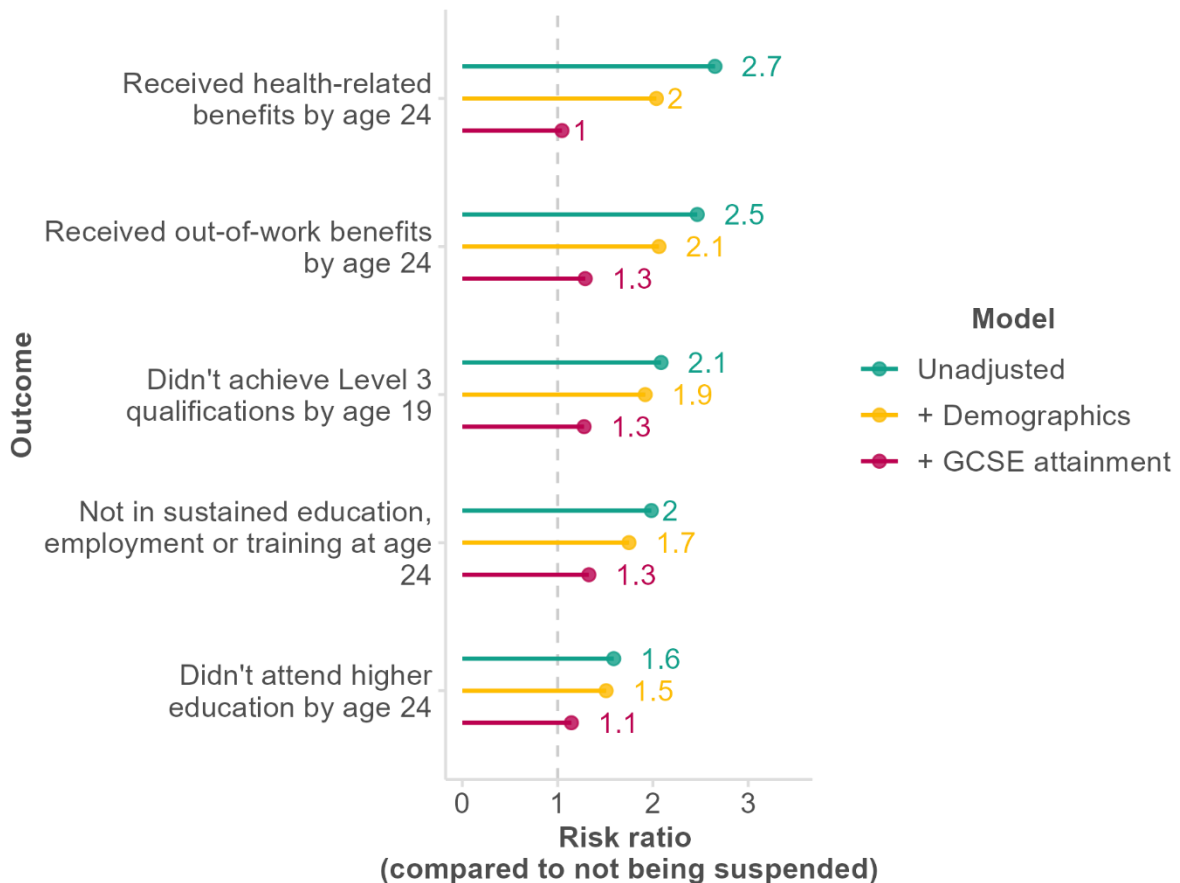
<sup>47</sup> Madia et al., ‘Long-Term Labour Market and Economic Consequences of School Exclusions in England’; Obsuth et al., ‘The Impact of School Exclusion in Childhood on Health and Well-Being Outcomes in Adulthood’.

## Results

### What are the outcomes in early adulthood for pupils who have been suspended at least once?

Suspended pupils were more likely to experience poor outcomes compared to their not-suspended peers. Figure 8 shows the relative risk of various outcomes for pupils who have been suspended at least once during secondary school compared to those who were never suspended; a risk ratio of one indicates an equal likelihood of experiencing the outcome for both groups. Suspended pupils were 2.7 times as likely to receive health-related benefits, 2.5 times as likely to receive out of work benefits, 2.1 times as likely to not achieve Level 3 qualifications, 2 times as likely to not be in sustained education, employment or training, and 1.6 times as likely to not attend higher education. When adjustments were made for demographics (seen in yellow), the risk ratios decreased, and they reduced further when attainment at GCSE (seen in red) was also accounted for.

**Figure 8: Risk ratios of outcomes having been suspended.**

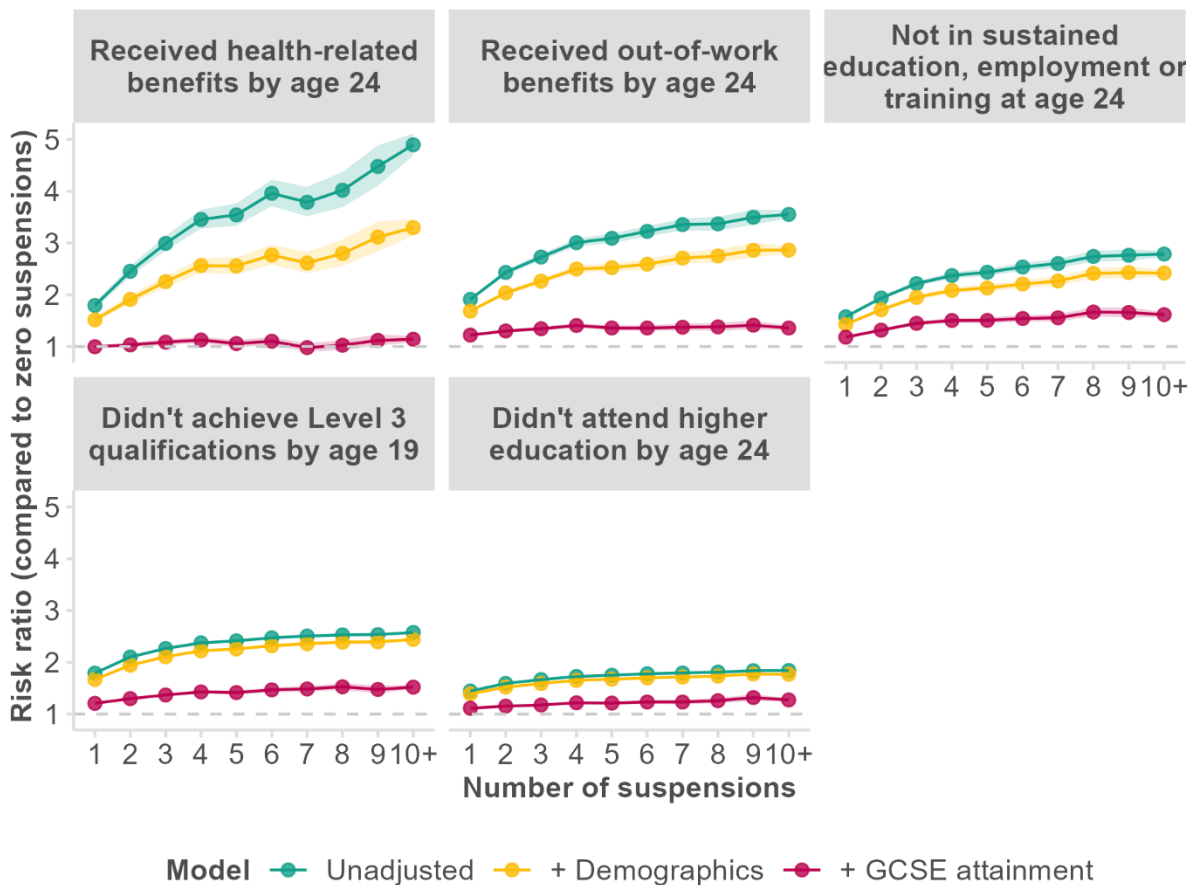


The substantive reduction in the effect size once we accounted for GCSE attainment, where pupils mostly became equally likely to experience an outcome, suggested that whilst suspension was associated on average with poorer long-term outcomes, some of this association can be explained by attainment at GCSE. In other words, the behaviour, social and contextual factors that led to suspension, as well as the suspension itself, may lead to poor GCSE attainment which, in turn, may contribute to challenges in accessing further education and other opportunities.

## What are the outcomes in early adulthood for pupils who have been suspended multiple times?

Pupils with multiple suspensions were more likely to experience poor outcomes compared to both those with zero suspensions and those with fewer suspensions, as seen in Figure 9. As before, adjusting for demographic factors reduced risk ratios, and they decreased further when GCSE attainment was controlled for. For example, the risk of receiving health-related benefits by age 24 increases with the number of suspensions, peaking at almost 5 times higher for those with 10 or more suspensions. This risk virtually disappeared once we accounted for differences in pupils' GCSE attainment. This pattern again suggested that whilst the number of suspensions correlates with poor long-term outcomes, much of this relationship is likely to be mediated by attainment at GCSE (or partially explained by unmeasured factors that led to both the suspension and low GCSE attainment).

Figure 9: Risk ratios by the number of suspensions



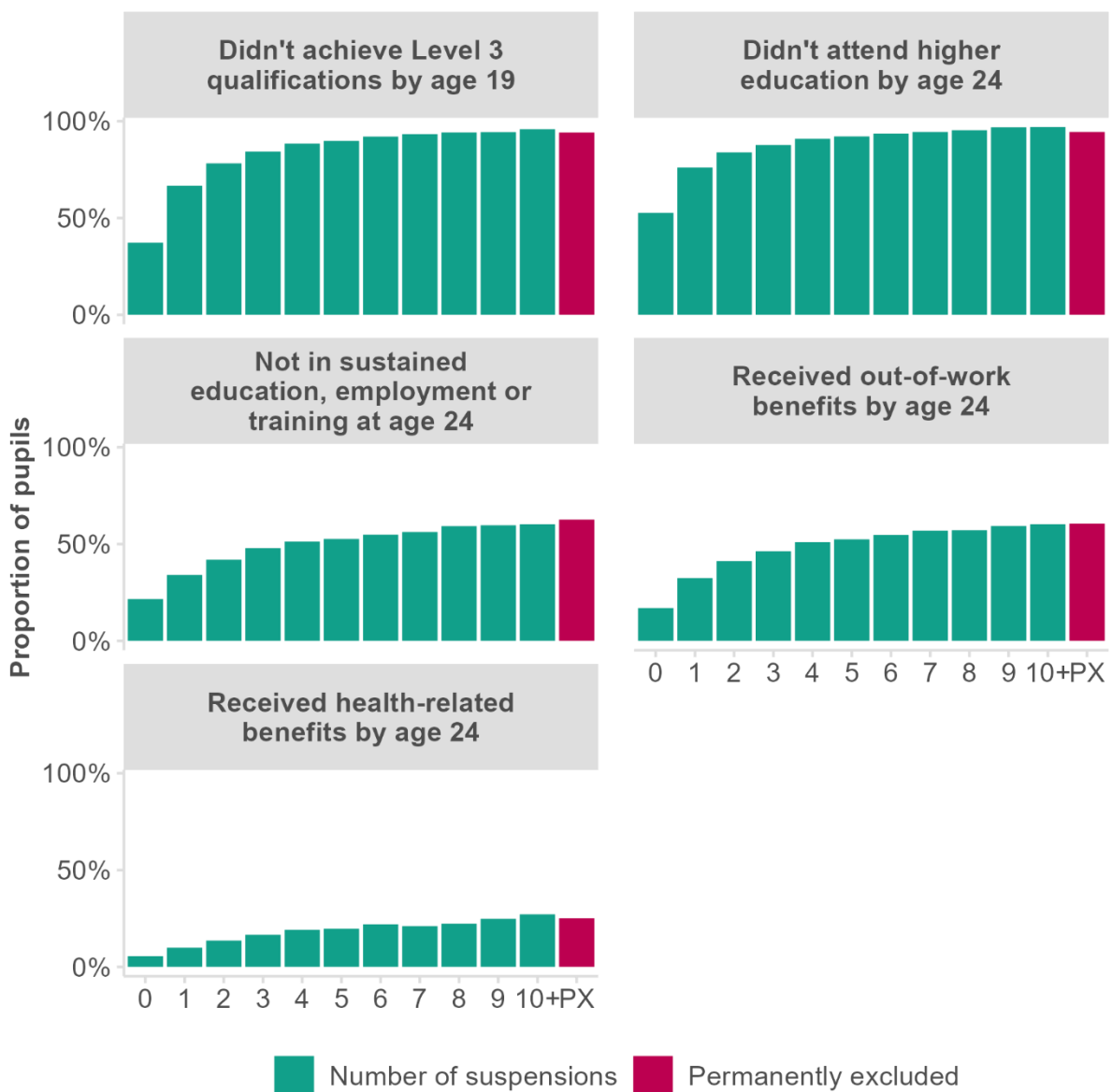
Shaded error bands refer to 95% confidence intervals

## How do the outcomes of pupils with multiple suspensions differ from those who are permanently excluded?

Pupils with 10+ suspensions have similarly poor outcomes compared with those who are permanently excluded (see Figure 10). For example, around 90 per cent of pupils suspended 5 times, 96 per cent suspended 10+ times, and 94 per cent of permanently excluded pupils did not achieve Level 3 qualifications by age 19.

This similarity cannot be solely attributed to multiple suspensions leading to permanent exclusion. As we have previously explored, the relationship between multiple suspensions and permanent exclusion is weak.<sup>48</sup> Additionally, the effect persisted even when removing pupils with multiple suspensions who also experienced permanent exclusion from the analysis (see Appendix G: The effect of removing permanently excluded pupils from our sample).

**Figure 10: Outcomes for pupils suspended multiple times compared to those permanently excluded**



<sup>48</sup> Joseph and Crenna-Jennings, 'Outcomes for Young People Who Experience Multiple Suspensions'.

Although these findings are exploratory, further investigation is also needed to understand the reasons behind them. One possible explanation for this convergence in outcomes could be the detrimental effects of these disciplinary measures — e.g. a threshold of time spent out of school. Alternatively, the similarities in the measurable (and difficult to measure) characteristics between the pupil populations experiencing multiple suspensions versus permanent exclusion could account for the convergence in outcomes. It is also possible that different mechanisms and factors underlie these similar consequences. Nonetheless, on average, our findings suggest that the outcomes for those with multiple suspensions can be as poor as if not worse than for those who are permanently excluded.

## What role does GCSE attainment play in the association between suspension and outcomes in early adulthood?

Accounting for GCSE attainment weakened the relationship between suspensions and early adult outcomes and the reasons for this are multi-faceted.

It is possible that GCSE grades may mediate this relationship. In other words, the behaviour and social and contextual factors that led to suspension, as well as the suspension itself, may lead or contribute to poor GCSE attainment which in turn, leads to challenges in accessing later educational opportunities and better employment and health outcomes.

Alternatively, it is possible that controlling for GCSE attainment effectively adjusts for underlying and unmeasured factors that contribute to both suspensions and poor long-term outcomes. For instance, GCSE attainment may serve as a proxy for unmeasured pupil-level factors (e.g. attitudes towards learning, task persistence, special educational need, etc.), family-level factors (e.g. family support; the home learning environment), school-level factors (e.g. the quality of education, the level of inclusion, support provided to pupils, etc.) and/or community factors (access to early intervention services). Even though questions remain as to whether it is the suspension, the behaviour, or other factors leading to these outcomes, addressing the root causes and a direct focus on early intervention will likely be key to improving them.

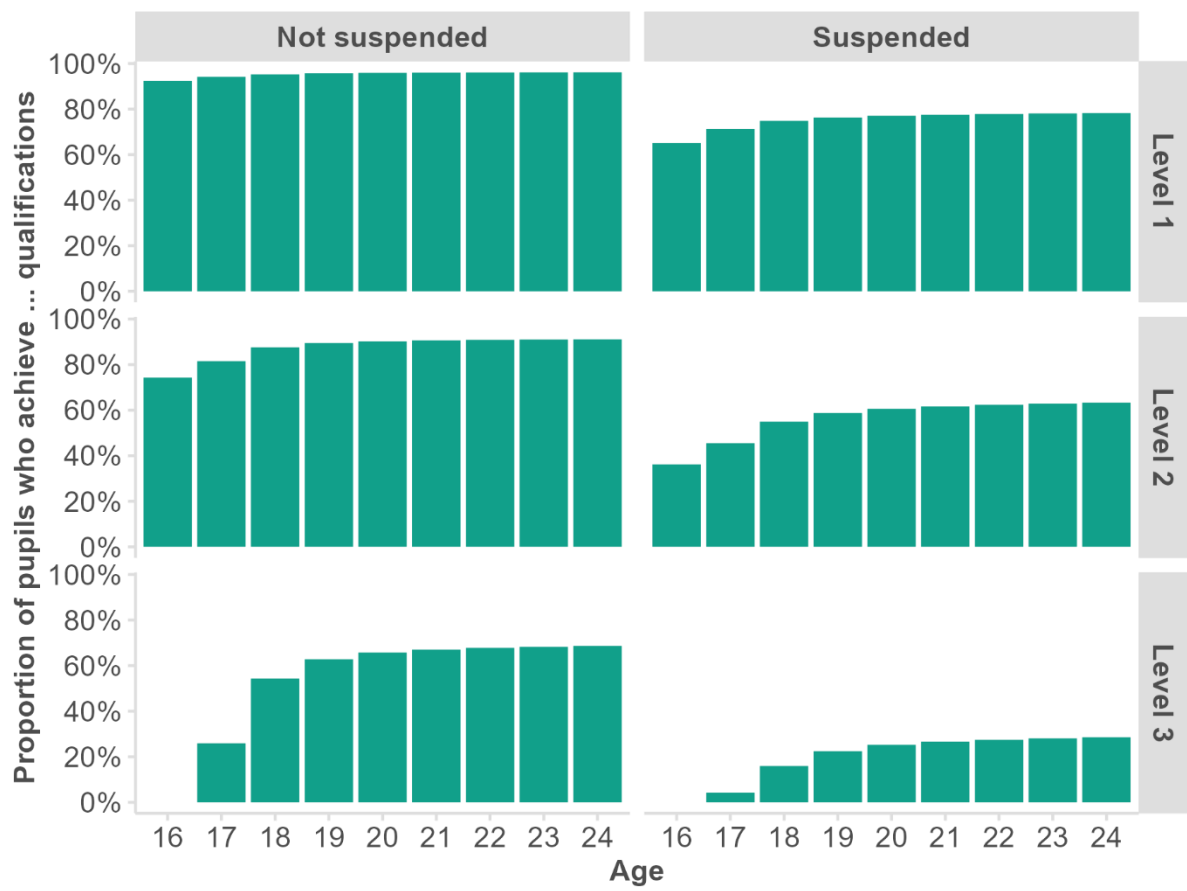
Figure 11 reveals two additional findings about the educational outcomes of suspended pupils compared to their not-suspended peers. Firstly, the attainment gap widens as the level of qualification increases.<sup>49</sup> For instance, amongst 18-year-olds, the gap in achieving Level 1 qualifications is 20 percentage points, but this gap grows to 33 percentage points for Level 2 qualifications and 38 percentage points for Level 3 qualifications. Secondly, whilst around three-quarters of suspended pupils eventually achieve Level 1 qualifications and two-thirds of suspended pupils eventually achieve Level 2 qualifications, narrowing the gap as they get older, the gap for Level 3 qualifications continues to widen. This indicates that although suspended pupils catch up somewhat in lower-level qualifications over time, they are less likely to access higher-level qualifications that are often necessary to access higher wages.<sup>50</sup>

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<sup>49</sup> Level 1 qualifications are equivalent to five full course GCSEs at grades D-G; Level 2 qualifications are equivalent to five full course GCSEs at grades A\*-C; Level 3 qualifications are equivalent to two A-levels at grades A\*-E.

<sup>50</sup> Belfield et al., 'The Impact of Undergraduate Degrees on Early-Career Earnings'.

**Figure 11: The attainment gap between suspended pupils and their not-suspended peers by age**



## Discussion

### Summary of results

This analysis shows that outcomes for suspended pupils are, on average, relatively poor, even eight years after finishing secondary school. Suspended pupils are less likely to attain Level 3 qualifications, attend university, be in employment, education or training, and more likely to receive out-of-work benefits and health-related benefits. This is consistent with previous findings presented in correlational and quasi-experimental studies on outcomes for children excluded from school.<sup>51</sup> Our study adds to the existing literature, and shows that the more suspensions a pupil experiences, the worse their average outcomes.

Our findings also show that academic attainment appears to explain a large portion of this relationship. Indeed, once we account for GCSE grades, the relationship between suspensions and outcomes reduces substantially. Suspended pupils, on average, are less likely to have the necessary GCSE qualifications associated with good economic, occupational, and health outcomes.

Whilst these findings cannot show that suspensions *cause* poor outcomes, related research shows that missing even a few days of school is associated negatively with attainment.<sup>52</sup> Meanwhile, there is growing quasi-experimental evidence suggesting school exclusion is causally related to poor outcomes in adulthood including lower earnings and worse health.<sup>53</sup> Given these findings and data showing a striking rise in the suspension rate since the pandemic, we believe descriptive mapping of outcomes for suspended pupils to be a worthwhile first step.

### Implications

It is important to consider the challenges that many young people who are suspended already face. In our first report in this series, we found that young people with social, emotional or mental health needs (SEMH) and those who are persistently absent are likely to be suspended – and that many of these young people are only identified as having a SEMH need, or become persistently absent, after their first suspension. This raises questions about the impact of suspension, as well as the impact of missing classroom learning time for a group of young people who are, in many cases, already struggling with learning and/or disengaged from education. Given the poorer long-term trajectories of these children, suspension could be considered an important indicator for schools and wider services that more significant intervention may be necessary.

Our findings also highlight the role GCSE qualifications play as a gateway to accessing further educational and employment opportunities. Poor GCSE grades are linked to a higher likelihood of

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<sup>51</sup> Madia et al., 'Long-Term Labour Market and Economic Consequences of School Exclusions in England'; Obsuth et al., 'The Impact of School Exclusion in Childhood on Health and Well-Being Outcomes in Adulthood'; Cathro, Tagliaferri, and Sutherland, 'School Exclusions and Youth Custody'.

<sup>52</sup> Department for Education, 'The Link between Absence and Attainment at KS2 and KS4'; Dräger, Klein, and Sosu, 'Trajectories of School Absences and Pupils' Academic Performance'; Dräger, Klein, and Sosu, 'School Absence Trajectories and Their Consequences for Achievement'.

<sup>53</sup> Obsuth et al., 'The Impact of School Exclusion in Childhood on Health and Well-Being Outcomes in Adulthood'; Madia et al., 'Long-Term Labour Market and Economic Consequences of School Exclusions in England'.



unemployment and inactivity in early adulthood.<sup>54</sup> Additionally, unemployment and economic inactivity during these formative young adult years are associated with later disengagement from the labour market and increased risk of long-term dependence on the welfare system.<sup>55</sup> Taken together, there is a real risk that the factors contributing to suspension and the suspension itself may contribute to educational and life course inequality among at-risk groups through their possible detrimental impact on GCSE attainment. This potential for disadvantage to accumulate and perpetuate over time should compel policymakers to place special focus on ensuring suspended pupils can gain qualifications and/or achieve success in the labour market, thereby mitigating the extent to which early setbacks can translate into long-term marginalisation. Addressing this issue will require a nuanced approach that balances the importance of setting high expectations with the need to provide equitable opportunities and support systems for those at risk of falling behind.

Beyond the consequences for the individual, our research, and that of others, shows that the factors leading to suspension, as well as the suspension itself, likely incur society-level costs. These manifest as economic inactivity and a need for support from the welfare benefits system.<sup>56</sup> Although questions remain as to whether it is the suspension, the behaviour, or other explanatory factors that may lead to these outcomes, higher rates of unemployment and economic inactivity place a greater financial burden on society.<sup>57</sup> The economic implications are therefore clear: addressing the root causes of suspensions could yield substantial long-term benefits not only for the individuals involved but also for society.

Addressing the root causes of suspension involves consideration of effective early intervention. Behaviour is influenced by many factors, some of which go beyond the classroom, such as experiences in early life, pupils' mental health and emotional wellbeing, and the home environment. There is also growing causal evidence that mental health and wellbeing support can reduce suspension rates whilst parental support can reduce antisocial behaviour more broadly.<sup>58</sup> A comprehensive approach to tackling the root causes of suspension would therefore incorporate strategies that target these broader factors.

We also note that the evidence on best practices to support pupils with multiple suspensions, particularly those with five or more, is currently limited. Existing guidance provides little helpful direction on how to effectively support pupils experiencing repeated suspensions, beyond a vague recommendation to implement "additional strategies".<sup>59</sup> This lack of guidance is concerning, given

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<sup>54</sup> Siraj et al., 'Report on Students Who Are Not in Education, Employment or Training (NEET)'; Gadsby, 'Establishing the Employment Gap'.

<sup>55</sup> Gregg, 'The Impact of Youth Unemployment on Adult Unemployment in the NCDS'; Gregg and Tominey, 'The Wage Scar from Male Youth Unemployment'.

<sup>56</sup> Scott et al., 'Financial Cost of Social Exclusion'; Romeo, Knapp, and Scott, 'Economic Cost of Severe Antisocial Behaviour in Children - and Who Pays It'.

<sup>57</sup> Gregg, 'The Impact of Youth Unemployment on Adult Unemployment in the NCDS'.

<sup>58</sup> Cattan et al., 'The Impact of Area Level Mental Health Interventions on Outcomes for Secondary School Pupils'; Toth et al., 'From a Child Who IS a Problem to a Child Who HAS a Problem'; Scott et al., 'Randomised Controlled Trial of Parent Groups for Child Antisocial Behaviour Targeting Multiple Risk Factors'; Scott et al., 'Which Type of Parenting Programme Best Improves Child Behaviour and Reading? Follow-up of the Helping Children Achieve Trial'.

<sup>59</sup> Department for Education, 'Suspension and Permanent Exclusion from Maintained Schools, Academies and Pupil Referral Units in England, Including Pupil Movement Guidance for Maintained Schools, Academies, and Pupil Referral Units in England'.

that the number of pupils experiencing one or more suspensions is increasing, the risk of negative outcomes grows with the number of suspensions, and that outcomes for students with multiple suspensions can be as poor as, if not poorer, than those for permanently excluded pupils. Our findings highlight the need for a specific focus on understanding how to appropriately support pupils who face multiple suspensions, moving beyond the current reliance on repeated exclusionary measures that may fail to tackle the root issues.

Lastly, ignoring the substantial rise in the suspension rate of secondary school pupils over time risks more young people who are suspended, and suspended multiple times, being underserved. Even if the effect on outcomes can be entirely explained by behaviour, more research is required on the specific factors that have resulted in worsening behaviour since 2013/14, and further still after the pandemic. Data is clear that young people's mental health has been worsening for a decade, particularly in the most recent years.<sup>60</sup> Rates of persistent and severe absence have risen over the same period.<sup>61</sup> The government must therefore seek to understand the drivers behind the rise of these likely related issues, and what systems or interventions can make the biggest difference, especially for those young people with multiple or complex barriers to good outcomes.

## Recommendations

- The case for early intervention to address the factors leading to suspension, respond to the underlying behavioural issues and prevent low GCSE attainment is bolstered by our research, which suggests that neglecting to address these factors could contribute to long-term consequences for the individual and materialise in wider costs to society, e.g. contact with the welfare system. Behavioural issues are influenced by various factors, including those beyond the classroom, such as pupils' mental health and parental support, and there is growing causal evidence that such support can reduce suspension rates and antisocial behaviour.<sup>62</sup> Therefore, the Department for Education (DfE) should consider conducting a programme of work which sets out how to best respond to behaviour that reflects the evidence on in-school and out-of-school drivers. Given the poorer long-term trajectories of these children, suspension could be considered an important indicator for schools and wider services that more significant intervention may be necessary. Schools, colleges, and wider services will need to be adequately resourced to deliver these early intervention programmes to support at-risk pupils to remain engaged in education without disrupting the learning of others. Monitoring and evaluating these programmes will likely be key in ensuring they are effective.
- DfE should develop the evidence base on what works to support pupils who experience multiple suspensions. Existing guidance provides little direction on how to effectively support pupils experiencing repeated suspensions beyond a recommendation to implement

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<sup>60</sup> NHS England, 'Mental Health of Children and Young People in England 2023 - Wave 4 Follow up to the 2017 Survey', 4.

<sup>61</sup> Hunt, 'Examining Post-Pandemic Absences in England'.

<sup>62</sup> Cattan et al., 'The Impact of Area Level Mental Health Interventions on Outcomes for Secondary School Pupils'; Toth et al., 'From a Child Who IS a Problem to a Child Who HAS a Problem'; Scott et al., 'Randomised Controlled Trial of Parent Groups for Child Antisocial Behaviour Targeting Multiple Risk Factors'; Scott et al., 'Which Type of Parenting Programme Best Improves Child Behaviour and Reading? Follow-up of the Helping Children Achieve Trial'.

"additional strategies".<sup>63</sup> This lack of guidance is concerning, given that the number of pupils in secondary school experiencing one or more suspensions is increasing, the risk of negative outcomes grows with the number of suspensions, and the outcomes for students with multiple suspensions can be as poor as, if not poorer than, those for permanently excluded pupils. Our findings highlight the need for a specific focus on understanding how to appropriately support pupils who face multiple suspensions, moving beyond the current reliance on repeated exclusionary measures that may fail to tackle the root issues.

- Future research should continue to better understand causal relationships. Since randomised control trials are unethical and impractical in this context, researchers should continue to explore quasi-experimental methods that mimic random allocation to suspension from the perspective of the pupil, including changes in behaviour policies (e.g. local authority boundary changes, governing structure changes, etc.), to add to the growing body of literature on the causal effects of suspension and permanent exclusion.
- Future research should also aim to understand outcomes for the peers of pupils who are suspended. Much research, including our own, has focused on the outcomes for pupils who are excluded rather than those of their peers. Whilst the effects of disruptive behaviour on peers have been widely discussed, to our best knowledge, no research has yet empirically explored or quantified this effect in an English context. Quantifying such 'spill-over' effects (if any) may be key for devising national policy to inform school leaders' decisions to exclude pupils.
- Future research should also explore protective factors that enable some suspended pupils to succeed in later life. Although suspended pupils on average experience poorer outcomes, it is worth acknowledging that some do go on to achieve favourable results. Studies could investigate the individual (e.g. motivation), family (e.g. support for learning), school (e.g. inclusive approaches), and community (e.g. access to early intervention) characteristics that contribute to more positive outcomes for the pupils who experience them. Understanding these protective factors could inform more effective interventions and support to improve long-term outcomes for at-risk pupils.
- Given that the suspension rate in secondary school is increasing, more research is needed to understand the drivers of this recent rise. Young people's mental health has been worsening for a decade.<sup>64</sup> Rates of persistent and severe absence have risen in the same period.<sup>65</sup> Understanding of the drivers of suspension could include using existing cohort studies or exploring the feasibility of collecting new cohort data. This could allow researchers to investigate and compare drivers across successive cohort studies to understand determinants and how these may have changed over time. By deepening our understanding of underlying factors, this research could inform more effective interventions to address the circumstances that led to the suspension as well as appropriately respond to challenging behaviour. Resourcing alternative approaches, such as off-site and in school alternative provision, and wider support systems will likely be essential in the meantime.

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<sup>63</sup> Department for Education, 'Suspension and Permanent Exclusion from Maintained Schools, Academies and Pupil Referral Units in England, Including Pupil Movement Guidance for Maintained Schools, Academies, and Pupil Referral Units in England'.

<sup>64</sup> NHS England, 'Mental Health of Children and Young People in England 2023 - Wave 4 Follow up to the 2017 Survey', 4.

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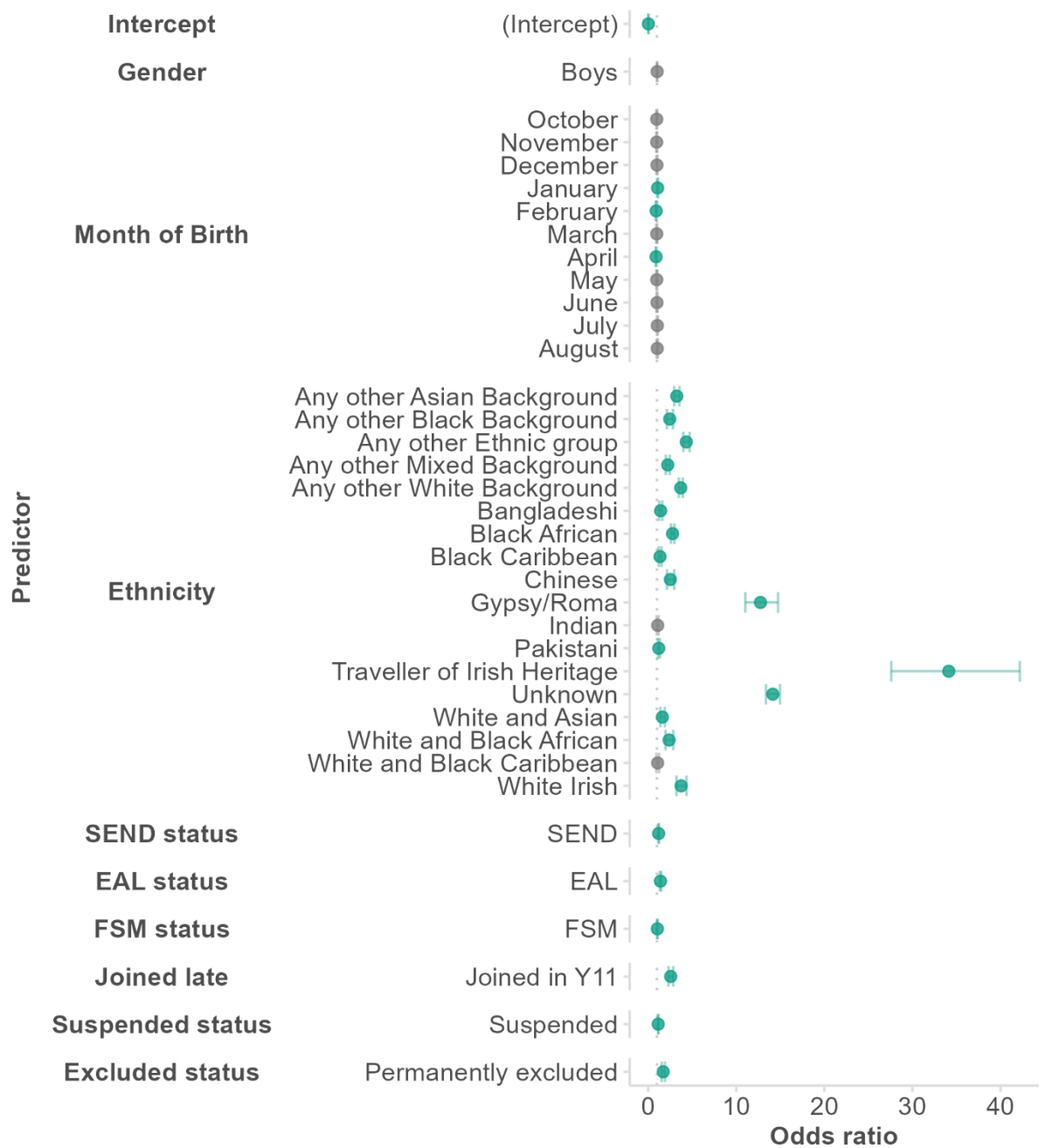
## Appendices

### Appendix A: Predictors of missing data

We conducted a complete-case analysis of our data which we deemed acceptable because only four per cent of pupils had missing data. To ensure the robustness of our approach, we also analysed the predictors of missingness in our dataset, as shown in Figure 12. We found that ethnicity, joining the school system late (e.g., potentially due to immigrating to the country after school-starting age), and to a lesser extent permanent exclusion were associated with being missing from the final sample. Because permanently excluded pupils are less likely to be retained in our analyses, and outcomes for this group tend to be poor, it is possible that our estimates are biased downwards rather than upwards. Despite this potential bias in our estimates, the overall impact on our results is still likely to be small, given that only four per cent of pupils had missing data.



Figure 12: Predictors of missingness



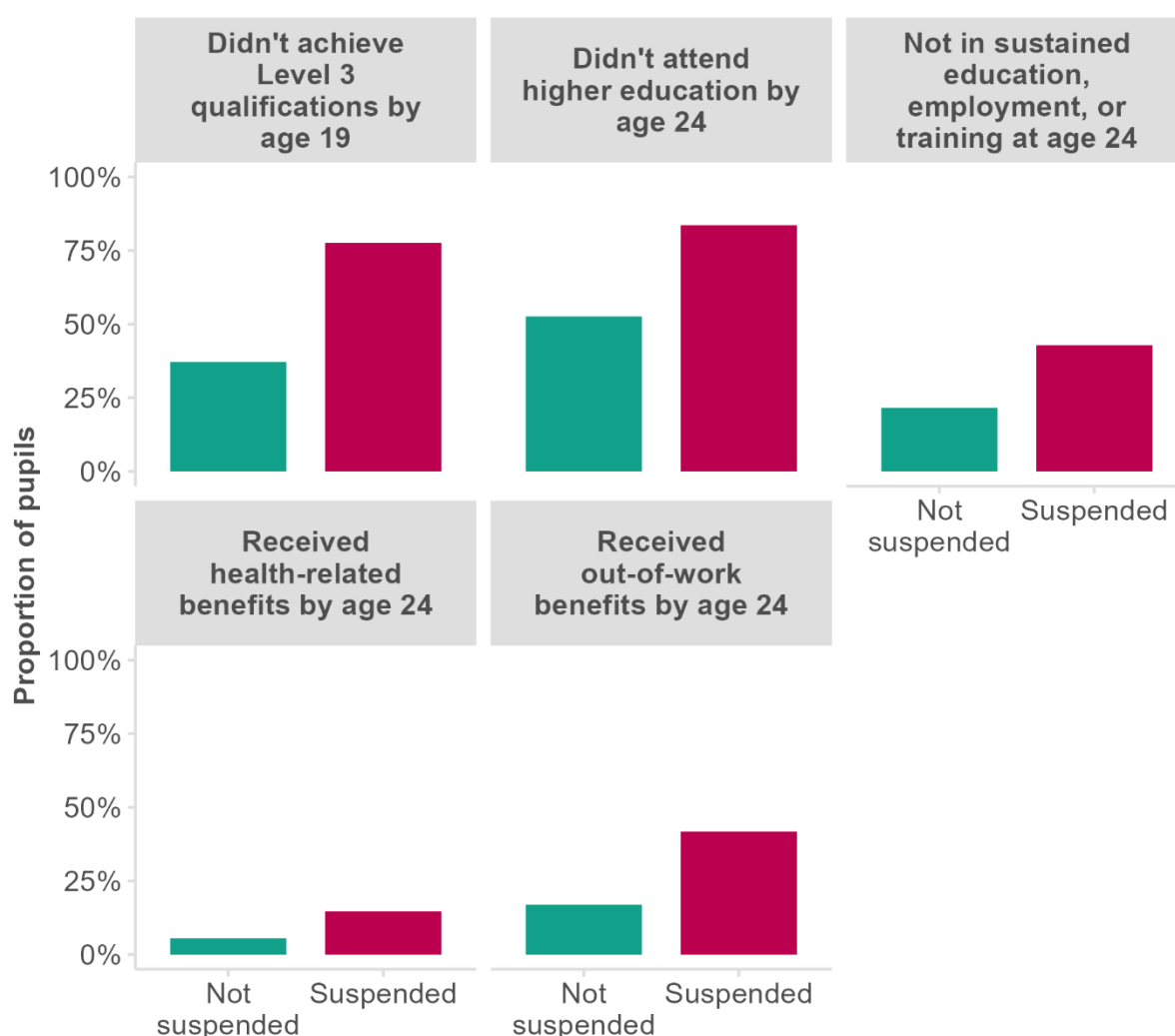
Note that the dotted line is '1'  
 Error bars refer to 95% confidence intervals  
 Statistically significant effects highlighted in green  
 Reference categories: Month of birth (September); Ethnicity (White British)

## Appendix B: Descriptive statistics

The following figures present outcomes for suspended pupils and their not-suspended peers showing significant disparities.

The proportion of suspended pupils who experienced a given outcome compared to those who are not suspended are shown in Figure 13. Suspended pupils, on average, had much worse outcomes than their not-suspended peers. For example, suspended pupils were almost 2.1 times as likely to not achieve Level 3 qualifications, 1.6 times as likely to not attend higher education, 2 times as likely to not be in sustained education, employment or training, 2.5 times as likely to receive out of work benefits, and 2.7 times as likely to receive health-related benefits. Note, these descriptive figures are the same as those from our unadjusted statistical models.

**Figure 13: The proportion of pupils who experienced a given outcome**

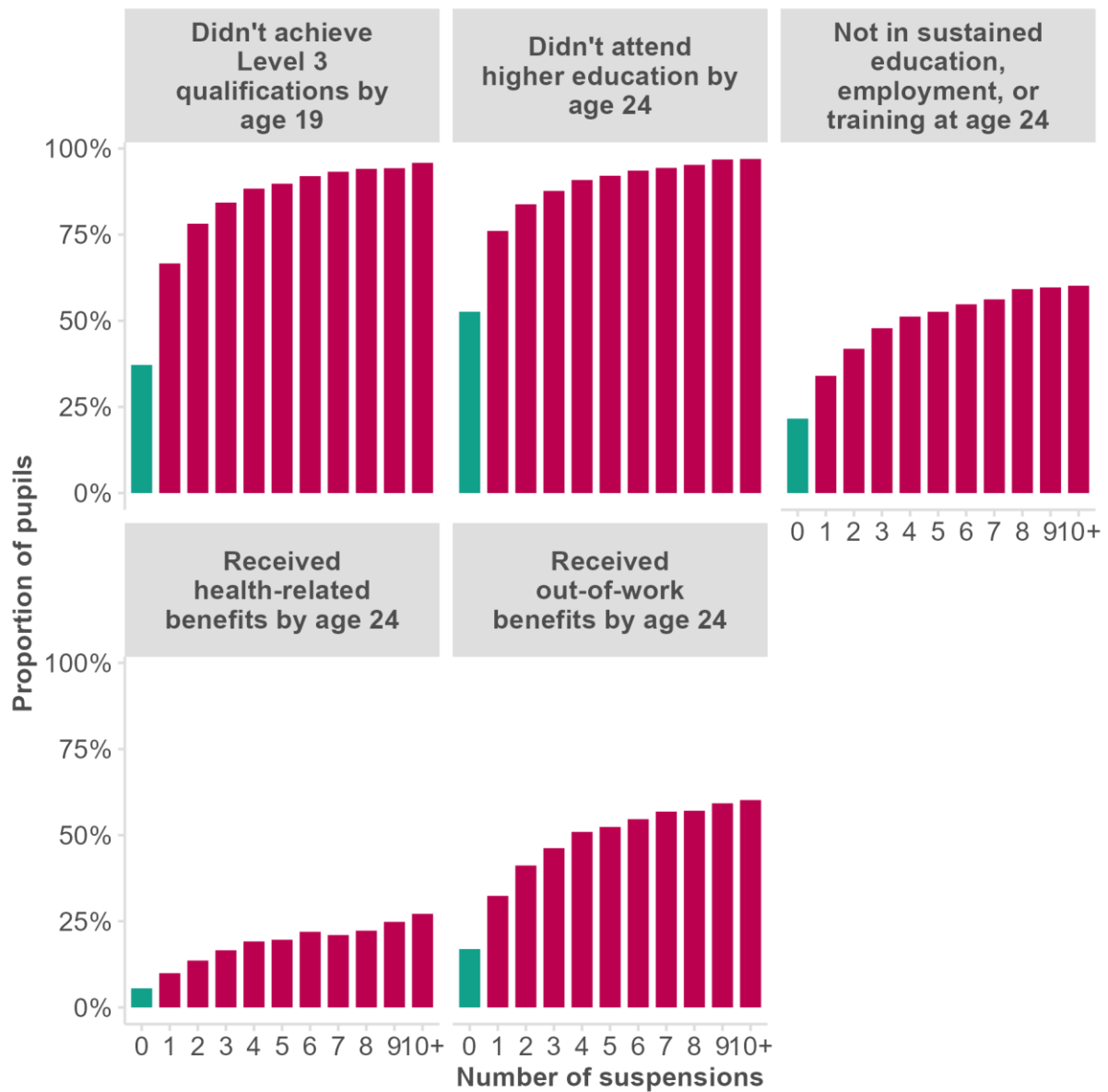


The relationship between the *number* of suspensions and the same outcomes are shown in Figure 14. Similar to findings from our previous research, we found a concave relationship between the number of suspensions and outcomes.<sup>66</sup> The relationship was approximately linear up to around five

<sup>66</sup> Joseph and Crenna-Jennings, 'Outcomes for Young People Who Experience Multiple Suspensions'.

suspensions, after which, the effect 'levelled off' and each additional suspension had a weaker relationship with the number of suspensions.

**Figure 14: Outcomes for pupils by the number of suspensions**



### Appendix C: The rare-outcome assumption.

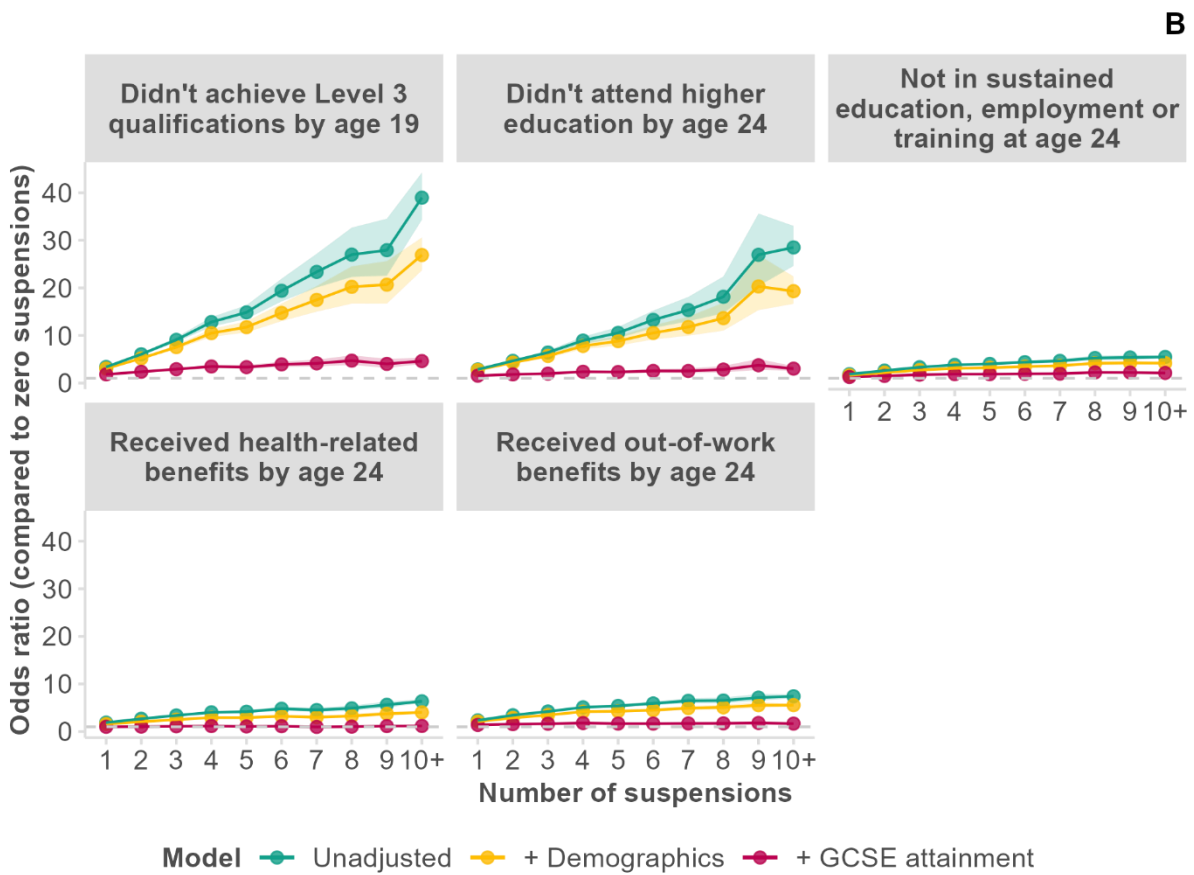
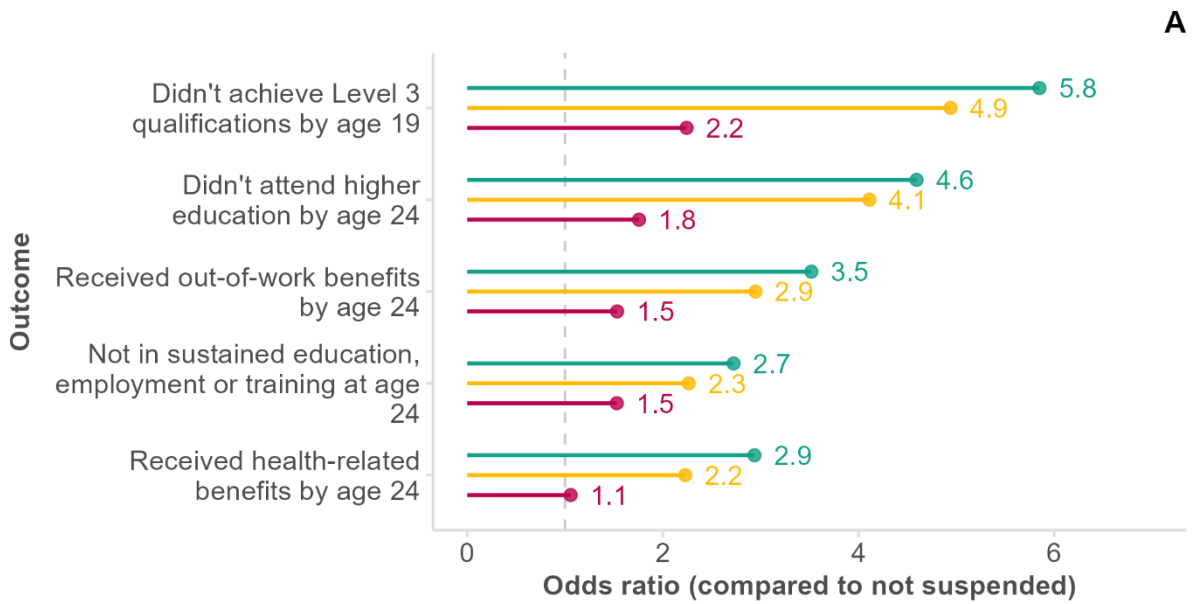
We used the risk ratios instead of odds ratios for two reasons: interpretability and the prevalence of certain outcomes. Firstly, risk ratios are generally considered more intuitive and easier to understand as they directly compare the probability of an event occurring in one group to the probability in another group. Secondly, when an event is rare, the risk ratio and odds ratio are similar, and the odds ratio can be interpreted as if it were the risk ratio. This is known as the rare-outcome assumption. However, when an event is 'common' — which can be conservatively defined as a prevalence greater than 10 per cent — the odds ratio can be substantially larger than the risk ratio, potentially leading to misinterpretation, particularly for audiences unfamiliar with the distinction between these two measures.<sup>67</sup> This consideration was particularly relevant to our study, as some of the outcomes we analysed were relatively common. For instance, as shown in Figure 13, the majority of suspended (84 per cent) and non-suspended pupils (54 per cent) did not attend higher education.

To illustrate this potential issue, the odds ratios from our analyses are presented in Figure 15 and are also available [online](#). Panel A shows the odds ratios of being suspended on various outcomes whilst Panel B shows the odds ratios of the number of suspensions on outcomes. Notably, the odds ratio for pupils with 10 or more suspensions reaches a large value of 40 for certain outcomes, highlighting the potential for misinterpretation when using odds ratios for common events.

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<sup>67</sup> Altman, Deeks, and Sackett, 'Odds Ratios Should Be Avoided When Events Are Common'.

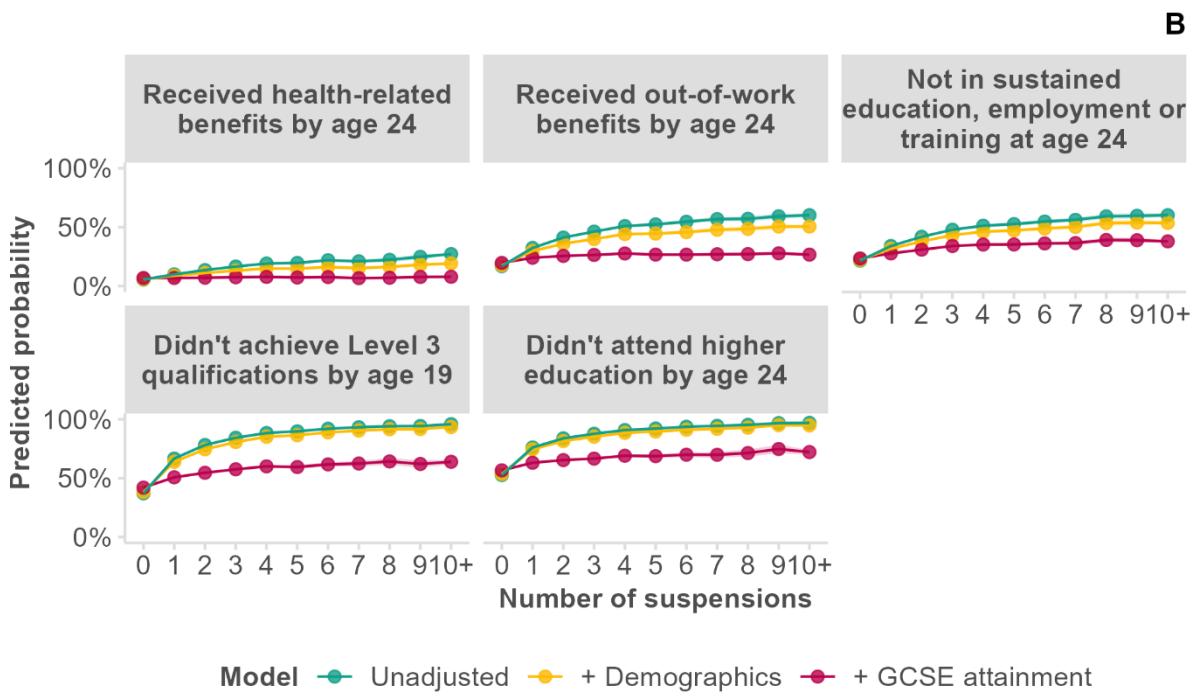
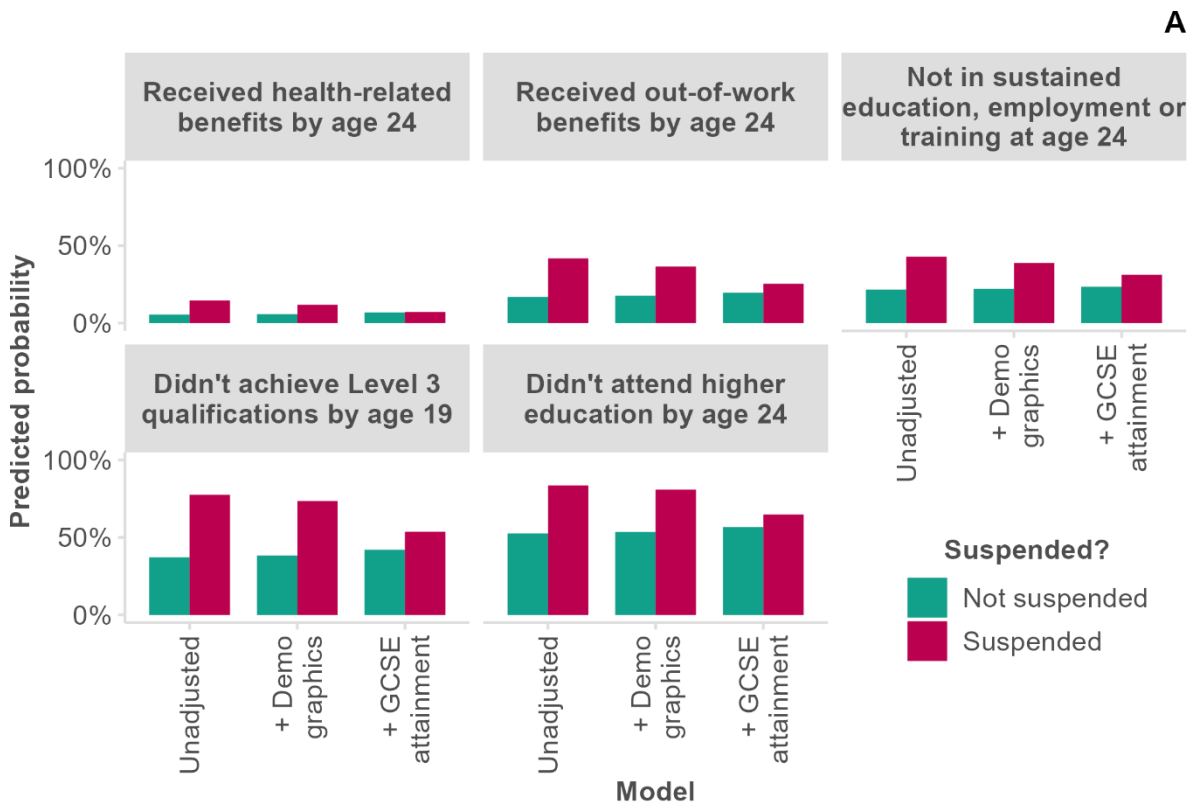
Figure 15: Odds ratio of being suspended on various outcomes



## Appendix D: Predicted probability of outcomes

To aid interpretation and illustrate the risk differences more intuitively, we used the {marginaleffects} package to calculate the average predicted probabilities of various outcomes under different model specifications. Predicted probabilities for the exposure variables (being suspended in Panel A and the number of suspensions in Panel B) across each model and each outcome are shown in Figure 16. As the models were adjusted by incorporating more control variables, the difference in predicted probabilities between suspended and non-suspended pupils tended to decrease. This pattern suggests that accounting for differences in individual characteristics and backgrounds explains a large portion of the initially observed disparities in outcomes.

Figure 16: Predicted probabilities of outcomes by suspension status



Shaded error bands refer to 95% confidence intervals

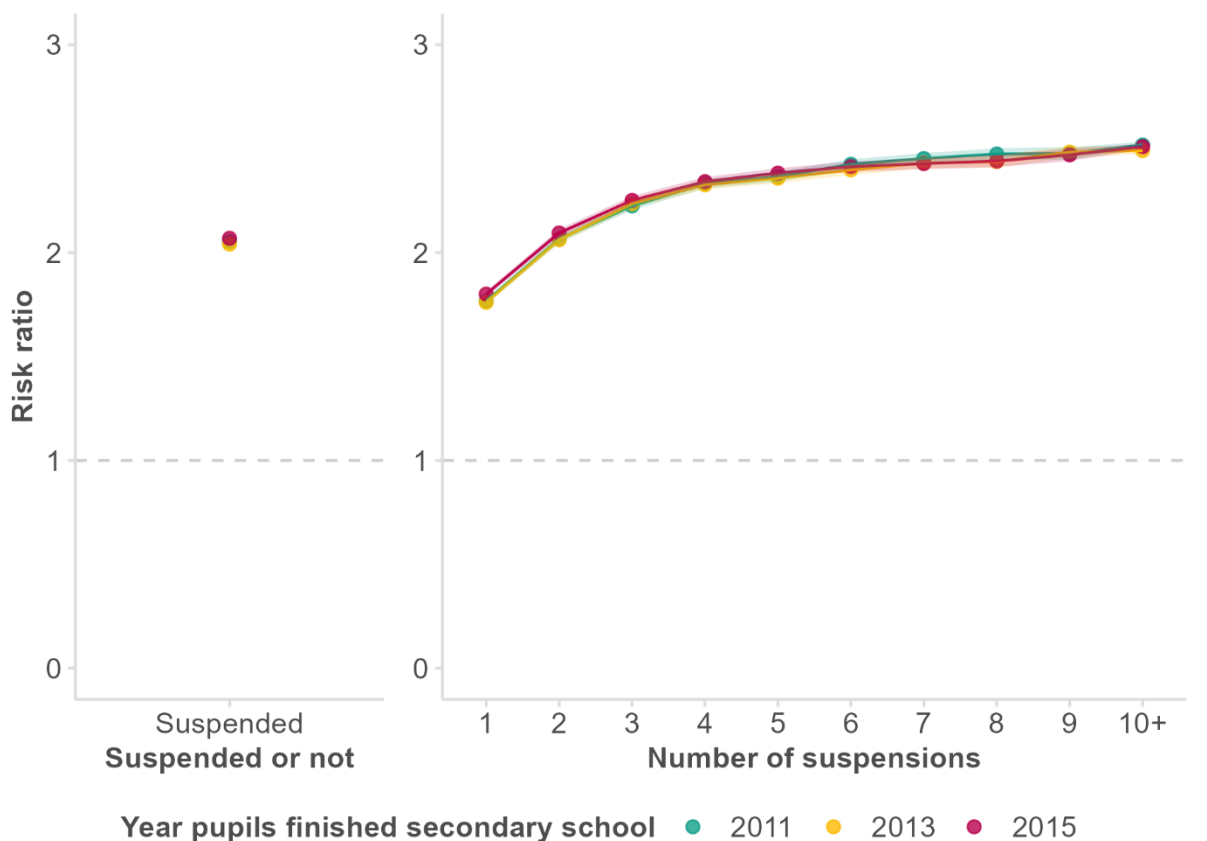
## Appendix E: Testing alternative cohorts

Our study focused on the 1994/95 birth cohort as they were the earliest cohort with recorded information on their suspension history and the aim of this study was to measure long-term outcomes.

However, specific changes in the education system can introduce period effects that limits generalisability to current policy debates. The suspension rate, shown in Figure 1, changed over time and the participation age increased in England to 17 in 2013 and 18 in 2015. Our cohort, who finished secondary school in 2011, were therefore not subject to these participation requirements and so we were concerned that the observed effects on Level 3 attainment may not accurately reflect more recent cohorts.

We assessed the potential impact of the time period on our results by comparing the risk ratio over time. Risk ratios can be more easily compared over time unlike the odds ratio.<sup>68</sup> By re-estimating the (unadjusted) relative risk with two additional cohorts who finished secondary school 2013 and 2015, we found that the risk ratio of not attaining Level 3 qualifications did not change. It hovered around 2.1 across all three cohorts for the outcome measured at age 19 (see Figure 17). Therefore, period effects on Level 3 attainment at age 19 were likely to be small.

**Figure 17: Risk ratio over time for the 1994/95, 1996/97 and 1998/99 birth cohorts in achieving Level 3 qualifications by age 19**



Shaded error bands refer to 95% confidence intervals

<sup>68</sup> Mood, 'Logistic Regression'.



As LEO continues to be updated with more recent data, replicating the analysis for other outcomes would be valuable.

## Appendix F: Logit, probit and the linear probability model

We explored alternative modelling approaches beyond the logistic regression to ensure the robustness of our findings. Whilst logistic regression is a widely used method for binary outcomes in certain disciplines, other techniques such as the probit model or linear probability model (LPM) have also been used for binary outcomes.<sup>69</sup> It is important to employ multiple methods in case our conclusions were unduly influenced by the choice of a specific model.

To facilitate meaningful comparisons across different model outputs, we used the {marginaleffects} package to convert the estimates into a common metric.<sup>70</sup> The raw outputs from logit, probit, and LPM models were not directly comparable, as they represent changes to the log odds, z-scores, and in probability, respectively. By using {marginaleffects}, we harmonised these outputs into a consistent measure by calculating the average partial effect, i.e. the change in probability associated with a one-unit change in the predictor variable (e.g., going from not suspended to suspended).

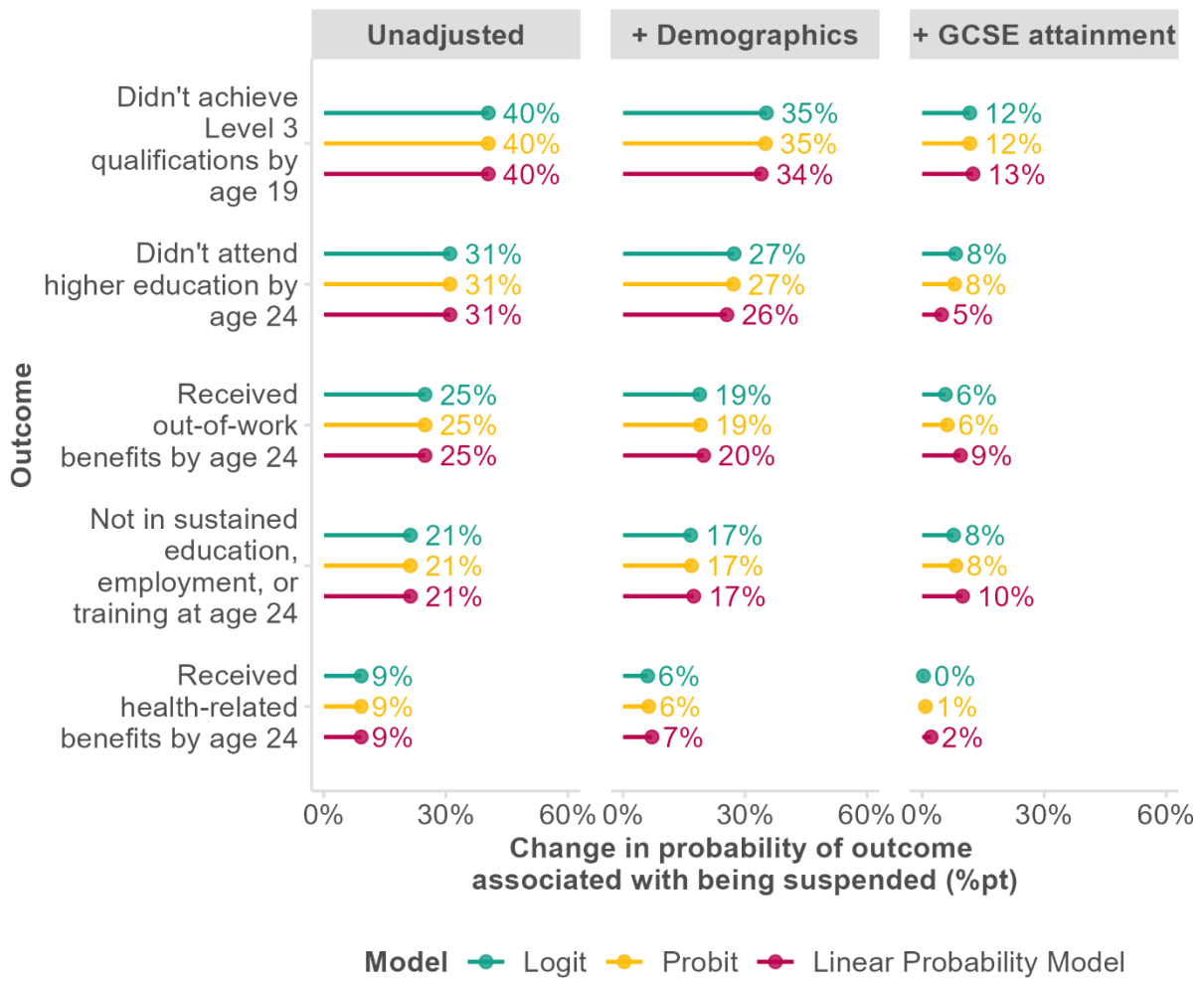
The results across the different modelling approaches exhibited a similar pattern, reinforcing our confidence in our findings, shown in Figure 18. This convergence strengthened the credibility of our conclusions as it reduced any concerns about potential biases arising from the choice of a specific model.

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<sup>69</sup> Note that the LPM violates the assumption of homoscedasticity. This can be accounted for using heteroskedasticity-consistent standard errors and so we used the HC1 estimator to correct for this.

<sup>70</sup> Arel-Bundock, Grieser, and Heiss, 'How to Interpret Statistical Models Using Marginal Effects in R and Python'.

**Figure 18: Logit model v probit model v linear probability model to estimate the effect of suspension on outcomes**



We also checked the ordinal version of the suspensions variable using the logit model, probit model and LPM. We found that the results were generally consistent, suggesting that the choice of model did not substantially alter our conclusions.

## Appendix G: The effect of removing permanently excluded pupils from our sample

Accounting for whether the effects of suspensions and multiple suspensions may be driven by subsequent permanent exclusions could be dealt with in multiple ways. Whilst we had statistically accounted for the effect of permanent exclusion in our sensitivity analysis, available [online](#), we could have also removed permanently excluded pupils from our sample entirely.

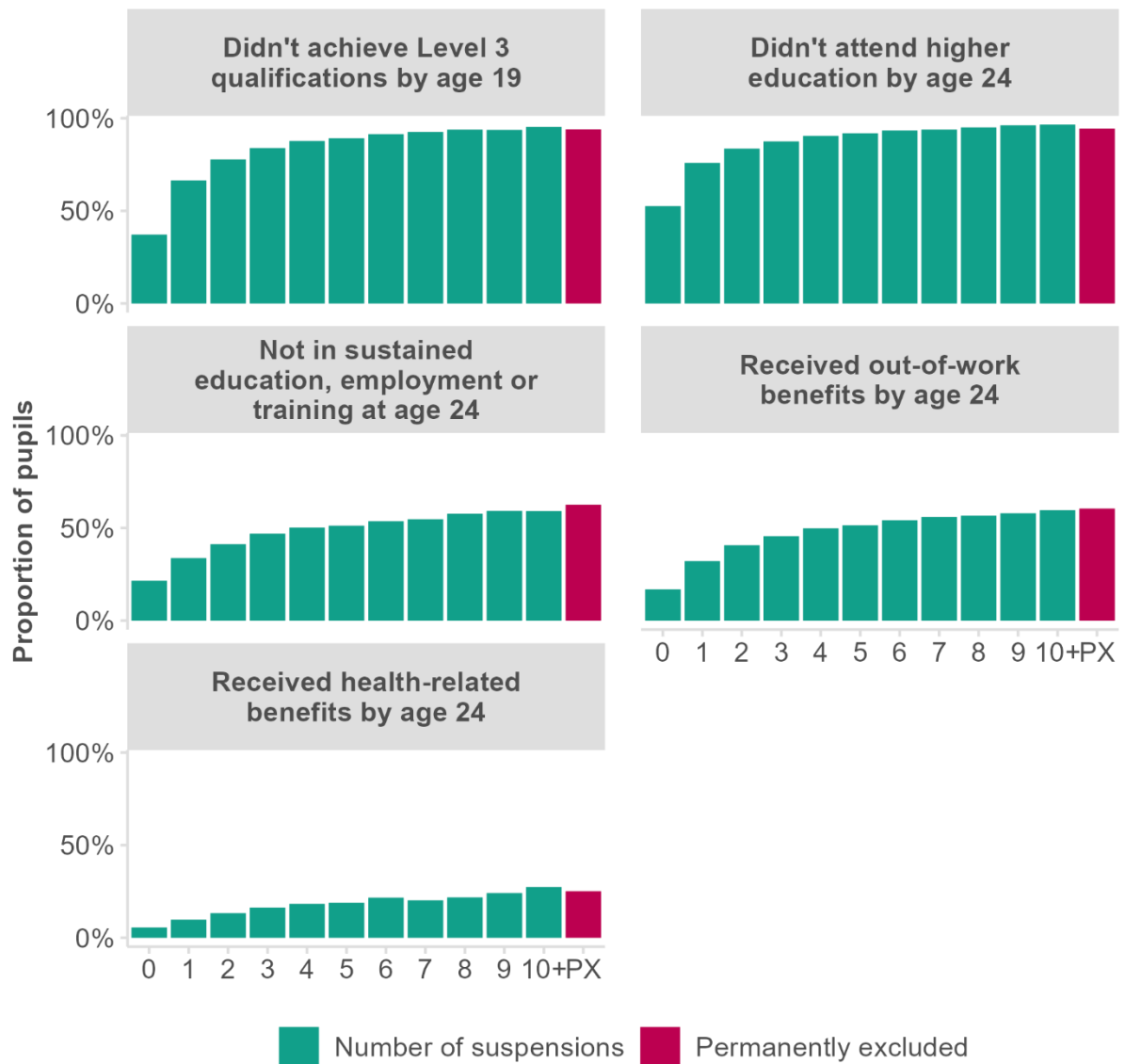
As shown in Error! Reference source not found. Figure 19 and Figure 20, removing permanently excluded pupils did not substantially alter the proportion of suspended pupils with poor outcomes. In other words, the patterns observed in our analysis remained largely consistent, regardless of whether permanently excluded pupils were included or excluded from the sample. Although we did not formally test for this, the relative risk, at least in the unadjusted model, is unlikely to have changed.

The reasons for this need further exploration. It could potentially be because the effect of suspensions on various outcomes is independent of subsequent permanent exclusions and not solely attributable to the potential pathway of permanent exclusion. Alternatively, it could be because there is a very low overall proportion of permanently excluded pupils in our data, meaning their inclusion or exclusion had minimal influence on our estimates once we accounted for those with multiple suspensions.

**Figure 19: Outcomes for suspended pupils including and excluding pupils who get permanently excluded**



**Figure 20: Comparing the outcomes for permanently excluded pupils and suspended pupils (after removing suspended pupils who were also permanently excluded)**



Note: These figures exclude suspended pupils who were also permanently excluded